STORMWATER DISCHARGE
Permit Program

Water Quality Handbook

For Austin Businesses

"how-to" tips for keeping Austin's lakes and waterways clean.

WATERSHED PROTECTION

Welcome to the Water Quality Handbook!

This handbook provides information to business owners and employees on protecting water quality. Although it's against the law to pollute, people don't always know the practical steps to take to keep pollutants out of creeks and lakes.

Clean Water Fact Sheets are provided in the handbook to explain pollution prevention steps for different types of businesses, and for daily practices such as pavement cleaning and waste disposal. They also describe various types of pollutants.

You can use this information to train workers and implement procedures in your daily operations. Implementing pollution prevention procedures at your business will not only protect the environment and save you money in clean-up costs, but will also help protect the health and safety of your workers and the community.

Table of Contents

(Click on the Blue links for additional information)

WHAT'S YOUR BUSINESS?

PROBLEM POLLUTANTS

DO IT RIGHT!

SPILL CONTINGENCY PLAN

Spill Plan Instructions

Spill Plan Template

ZERO WASTE ON-SITE ASSESSMENT

GLOSSARY

APPENDIX

24-Hour Pollution Hotline

Austin Enviro Mechanics Program

Clean Shop Poster

Coal Tar Ban – Before you seal your lot read this!

Emergency Leak Response Procedures – Fuel Dispensing

Stormwater Discharge Permit Program

Stormwater Pond Maintenance Guide

Underground Storage Tanks

Wildfire Best Management Practices – Before and After the Fire

East Austin Environmental Initiative

CLEAN WATER FACT SHEET

AUTOMOTIVE REPAIR

City of Austin - Watershed Protection Department

Automotive service stations and repair shops generate a variety of wastes such as fuels, motor oil and filters, antifreeze, solvent, detergents, oven residues, tires, batteries, rags, used sorbent and metal scrap. These materials may enter nearby creeks and lakes, if not handled, stored and disposed of properly. Customers appreciate a clean shop – and appreciate your efforts towards keeping our community, and its waterways, free of pollution.

Customers appreciate a clean shop and your efforts to keep our community and its waterways free of pollution.

The City of Austin Watershed Protection Department is responsible for preventing polluting discharges to the city storm drainage system as mandated by Title VI, Chapter 6-5 (Water Quality) of City Code. This fact sheet provides automotive service stations and repair shops with information on how to operate without polluting Austin's valuable water resources.

The Problem

Unfamiliarity with regulations.

Unfamiliarity with hazardous materials and waste regulations can result in danger to employees and water resources due to mishandling or illegal storage and disposal practices. Furthermore, violations of City, State and Federal regulations result in legal action with subsequent fines and penalties.

Improper mixing of wastes.

Mixing of incompatible chemicals can lead to violent reactions and spills. In addition, combining hazardous wastes (e.g. flammable solvent) with non-hazardous wastes (e.g. motor oil) in a storage container leads to increased disposal costs, since the entire mixture is then classified as hazardous. The costs for transport and disposal of hazardous wastes is much higher compared to costs for non-hazardous wastes.

Outdoor storage of auto parts.

Auto parts such as engine blocks, transmissions, torque converters and other scrap parts stored outside are exposed to rainfall. Batteries stored outside increase the chance for leaks from cracked casings and terminal corrosion. Rainfall runoff containing oil, grease, and other pollutants, washed from auto parts, flows to storm sewers leading directly to creeks and lakes.

Oil and grease coats fish gills and aquatic plants and animals, destroying them. The oily sheen at the water surface blocks transfer of oxygen into water, needed by aquatic life. Used motor oil is toxic and can kill aquatic life at low concentrations. Used motor oil contains heavy metals such as lead, copper and zinc that persist in the environment and pose an exposure threat to humans and animals. Battery acid destroys living organisms and damages surfaces that contact it.

Did you know...

One car's oil change poured into a storm drain can create an eight acre oil slick in a waterway.

Outdoor storage of automotive fluids. Liquids stored in containers exposed to rain without lids or overhead cover can overflow onto the ground. Outdoors, container labels may be damaged or unreadable—losing valuable product information. Fluids accumulating on the outside or on top of containers from spills are easily washed off by rain water. Containers in poor condition (rusty, bloated, dented) can leak. Unlabeled containers can be misused and neglected. Storage tanks, fuel dispensers, drums and other containers not properly secured are subject to vandalism and traffic accidents, increasing the chance for a release. Spills outside spread or wash off with rain water to soil or storm drains and waterways resulting in costly fines and cleanups. Storing containers on unpaved surfaces also increases the chance for soil contamination. Illegal discharges are more likely when containers are stored near storm drains leading to nearby waterways.

Improper pavement cleaning practices. Pollutants such as trash, grease, oil, and antifreeze often accumulate on paved surfaces of businesses. Blowing wind or storm water run-off carries dirt and sediment from unvegetated areas. Trash ends up on the ground from overfilled dumpsters and careless customers. Leaves and grass clippings collect along curbsides and gutters during seasonal leaf fall and lawn maintenance. Absorbent material is applied to spills and slick spots and left on pavement. Besides being unsightly and a possible safety hazard, these pollutants will be flushed by rain to a storm drain or waterway if not removed. Antifreeze and motor oil are toxic to humans, animals, and aquatic life. Grease, oil and oil emulsions, in very low concentrations, interfere with respiration and reproduction in aquatic organisms. Oil coats and destroys algae and plankton, which are important food sources for fish. Fish eating contaminated algae and plankton may accumulate toxins in their flesh, making them unfit to eat. Dirt and sediment cause turbidity and cloudiness in creeks and lakes. Turbidity affects the growth of aquatic plants by reducing available sunlight. Sediment smothers bottom-dwelling aquatic life and clogs fish gills. Many other pollutants, including metals, bacteria, and some nutrients adhere to sediment particles, increasing the pollution impact. Leaves and grass cuttings contribute excessive organic material to a waterway. Oxygen is used up during the decay process, depleting oxygen needed by aquatic life. Trash and debris clogs storm drains and waterways, leading to increased maintenance costs and flooding problems. Trash and debris also create an aesthetic nuisance, thereby decreasing the recreational value of our creeks or lakes.

When pavement is cleaned, people tend to flush soaps, detergents, or degreasing solvents to storm sewers and waterways. Furthermore, the use of both chemical cleaning agents and/or hot water significantly increases the amount of contaminants in the wash water. Hot water dissolves oil and grease from surfaces, so when flushed, pollutants are washed to the environment. Cleaning agents are designed to emulsify or bind pollutants such as oil and grease. So, flushing chemical cleaning agents from surfaces to the environment can have a devastating impact. Oil and grease destroys aquatic organisms. In addition, some cleaning agents contain hazardous or toxic ingredients that kill aquatic life. Soaps and detergents (especially phosphate detergents) promote algae blooms in waterways. The subsequent death and decay of the algae deplete sunlight and oxygen needed by aquatic life. The cumulative effect on our waterways from incorrect pavement cleaning is significant.

Did you know...

The most common problems found at automotive repair shops are storage of oily parts, open oil containers, and batteries outside, exposed to rain.

Inappropriate auto parts cleaning.
Used automotive parts often require heavy duty degreasers and solvents to remove oil and grease buildup. The common solvents used at automotive shops have a high human health risk rating and are extremely flammable and toxic. Cleaning parts outside with cleaning agents and discharging the wash water to the ground, storm drain, oil/grit separator, storm water pond, or waterway is illegal. Cleaning parts outside also results in difficult, expensive decontamination of all impacted surfaces, and is a public health threat. Cleaning parts on an asphalt surface not only pollutes the environment, but over time, dissolves the asphalt surface since it is made of heavy petroleums.

In addition, plumbing a parts cleaning machine or sink to the ground or storm drain results in illegal discharges to the environment. Solvent parts cleaning devices installed outside can leak or overflow onto the ground. Parts cleaners (e.g. wet cleaners, dry ovens, bead agitators) also accumulate sludge containing oil and grease, and heavy metals. Disposal of the sludge on the ground, in a drain, storm water pond, waterway, or dumpster is subject to costly penalties.

Improper vehicle washing.
The cleaning of vehicles often creates a polluting discharge of wastewater to a storm drain or waterway, especially when cleaning agents are used. Cleaning agents discharged to a waterway not only carry dirt and grime, but also can provide nutrients that promote the growth of algae or toxic ingredients. The cumulative effect on our waterways from all the vehicle washing by the community is great.

Using microbes incorrectly.
Microbes are sometimes used for pavement cleaning and spill cleanup, since these specialized bacteria and fungi "eat" petroleum and break it down to non-toxic compounds. Microbes, like other living organisms, need water, food, and air to survive. So, microbes applied to hot pavement without water will die. Likewise, applying microbes to contaminated soil without water and without tilling the soil to ensure adequate aeration results in microbial death.
Many microbial cleaning agents contain detergents which promote efficient cleaning by dissolving oil and grime off dirty surfaces. This concentrates pollutants in wash water. Microbial cleaning agents may also contain nutrients like nitrogen to stimulate microbial growth and reproduction. But, if microbial cleaning agents are flushed by pavement cleaning or spill cleanup – or if rain water flushes cleaning agents off a dirty surface – the microbes may not find their intended food source. As a result, the dissolved oils and greases in the wash water will impact receiving waterways, and nutrients will overstimulate algae growth. Also, applying microbes over large paved areas increases the likelihood they will be flushed to storm sewers and waterways.

Washing hands outside.
Some shops don't have separate employee hand washing sinks. As a result, employees may wash their hands outside with the water hose to prevent the customer restroom sink from getting dirty. However, washing hands outside and allowing the wash water to discharge to the environment is illegal and can result in fines.

Illegal disposal.
Automotive wastes dumped on the ground, in a drain connected to either the storm or sanitary sewer system, in a septic system, or in the trash has serious consequences. Liquids or hazardous materials (e.g. solvent waste, acid car batteries) disposed in the trash result in landfill and associated groundwater contamination. These materials can also spill from trash trucks, harming sanitation workers and the general public. Used motor oil, antifreeze, and oil filters dumped in a dumpster can leak or spill out, contaminating the ground outside. This may result in time consuming and costly cleaning of the dumpster and the ground around it. Discarding many of these wastes in the trash is a waste of reusable resources. Dumping wastes on the ground contaminates the soil causing costly removal, disposal, and replacement of the contaminated soil. Disposal in a storm drain will carry the pollutant to area creeks and lakes, impacting aquatic life. Disposal in a sanitary drain may render a treatment system inoperative duplicate used to treat raw sewage. Disposal of hazardous wastes in either storm drain or sanitary sewer system drains also poses a public health threat. Flammable gases from some hazardous materials may

react with natural gases in confined sewers causing violent explosions.

Improper use and maintenance of storm water drainage structures.

Oil/grit separators and storm water ponds redirect storm water and remove minor amounts of sediment and oil from storm water runoff, but they are not designed to treat chemical wastes. Costly sampling and disposal of sediment/wastewater is required if chemical wastes are spilled or discharged to these structures. Fines as well as storm drain and creek restorations are also a possibility. Many businesses in Austin have interior drains in work and storage areas connecting to the storm drain system. Chances for an illegal discharge are greatly increased when vehicles are repaired or chemicals are stored near storm drains. Furthermore, if not maintained properly, these structures become less efficient and fail, resulting in untreated storm water runoff.

Did you know...

Motor oil dumped in the trash results in landfill and associated groundwater contamination. Thoroughly drain containers prior to their disposal.

Mishandling of spills.

Most spills typically occur during the transport of chemicals to and from storage receptacles, fuel transfer, vehicle repair, or from leaking vehicles. Unattended spills outside are carried by rain to the environment. This only spreads the contamination, causing costly cleanups, fines, and site restorations. Some facilities are not properly equipped with spill containment and cleanup materials, a spill plan, or the appropriate training needed to use them effectively. Therefore, spills are often mishandled by flushing them with water to a storm drain, storm water pond, or adjacent property.

Improper fueling activities.

Careless gasoline dispensing creates discharges to the environment. Fuel releases occur from overfilling tanks, customers leaving the station without removing the pump handle from their cars (drive-offs), customers propping the pump handle switch open and disabling the pump's automatic shut-off, customers topping off tanks, filling of inappropriate fuel containers, maintenance by untrained workers, inaccessible shut-off switches, or employees unaware of shut-off switch locations. Fueling over a permeable surface such as soil or gravel leads to expensive clean-ups and creates the potential for groundwater contamination should a spill occur. Uncovered fuel islands allow accidental spills from pumping activities and leaking vehicles to wash off during rain. Every gallon of gasoline that hits the ground increases the cost of clean-up and the risk of fire and explosions.

Illegal plumbing connections.

Plumbing hand washing sinks, mop sinks, car wash bays, solvent sinks, parts washing machines, soda machines or drinking fountains to the ground outside, storm drain, or oil/grit separator is illegal. In addition, solvent parts cleaning devices installed outside can malfunction, leaking or overflowing onto the ground. Polluting discharges to the ground result in costly cleanup of contaminated soil or pavement. Discharge of wastewater to storm drains transports pollutants such as detergents, solvent, dirt, oil and grime to Austin's creeks and lakes.

Poor secondary containment.

Secondary containment is necessary and often required for certain sized product or waste storage containers or for a certain number of smaller containers kept in one area. When storm drains are located inside containment areas, accidental releases from containers can reach waterways if special provisions are not made. Furthermore, if not maintained, they can leak rain water and contaminants. If containment is absent or inadequately sized, spills discharge or overflow to the environment.

Improper use and maintenance of dumpsters.

It is illegal to dispose of toxic or hazardous chemicals, or any liquids in dumpsters. These materials can spill out while being emptied, threatening the

safety of the sanitation workers and the general public. Liquid wastes are not accepted by municipal landfills. Spills inside the dumpster can create odor problems and attract vermin, thereby requiring removal of the dumpster for thorough cleaning at an approved facility operated by your dumpster service.

Trash and debris spill out of dumpsters that are overfilled, in poor condition, or left open. Unbagged trash also promotes spills. This material is then easily carried to storm sewers or waterways by wind and rain. Decaying food wastes in waterways require oxygen for decomposition, resulting in strong odors, and a depleted oxygen supply for aquatic life. Trash and debris also clog waterways and decrease the waterway's recreational value. Cleaning the area around the dumpster is sometimes necessary, but can cause illegal discharges of cleaning agents and grime to storm sewers and waterways. In addition, placement of dumpsters on unpaved surfaces such as soil results in costly removal, disposal, and restoration of contaminated areas when leaks or spills occur.

Poor landscape practices.

Excessive application of fertilizers and pesticides to landscaped and even paved areas, especially before a rain, causes the discharge of algae-promoting or toxic chemicals to a storm drain or creek. Use of petroleum products to kill weeds significantly impacts the environment. These substances are very toxic, persist in the soil for many years, and seep into and pollute our groundwater supply. Some are cancer-causing agents. Leaves and grass clippings blown off sidewalks, driveways and parking lots are also carried to storm drains when it rains, providing excess harmful organic matter to waterways. Tree and hedge trimmings can clog drainageways and promote flooding. As these wastes decompose in a waterway, they use up oxygen needed for aquatic life to survive.

Polluting construction/remodeling activities.

When businesses expand or remodel, chemicals and materials such as drywall, joint compound, paint , thinner, turpentine, wood, and insulation are typically used. Any of these materials pollute our waterways if dumped or spilled. Drywall, paint, and joint compound act like very fine sediments blocking light needed by plants and smothering bottom-dwelling organisms. Some paint, especially oil-based paint, contains petroleum products and hazardous metals. Poorly managed materials such as wood and insulation will clog the waterway, increasing the potential for flooding.

The Solution

Know hazardous waste regulations and obtain necessary permits.

Applicable State and Federal hazardous waste regulations depend upon the quantity of hazardous wastes generated and stored each month at your business. Follow these steps for compliance:

- Become familiar with the wastes you generate. A waste is anything you intend to discard. Knowledge of the chemicals used and stored at your shop will also help protect the health and safety of your employees.
- Determine which wastes are hazardous. Some common hazardous wastes include: used batteries, carburetor cleaner containing chlorinated hydrocarbons or cresylic acid, gasoline, caustic parts cleaner and sludge, parts cleaning oven residues, and automotive paint wastes. Hazardous wastes are more strictly regulated than non-hazardous wastes. However, it is still important that all wastes are managed appropriately.
- Determine how much hazardous waste you generate during a typical calendar month.
- Contact the Texas Commission on Environmental Quality (TCEQ) to verify your generator status, register your hazardous wastes, and obtain applicable requirements such as labeling, accumulation time, record keeping, transporting, and quantity limits.
- Contact the Austin Fire Department (AFD) to determine if you need a permit for receiving, producing, or storing specific quantities of hazardous materials. See the phone number at the end of this document.

Familiarity with these regulations, as well as obtaining the necessary registration from TCEQ, reduces your liability, and lowers the likelihood of penalties and costly remediations.

Do not mix incompatible wastes.
Mix wastes only if it is safe and approval is received by your waste disposal service.

Dispose of shop wastes legally.
Do not dispose of chemicals on the ground, in the trash, to a storm drain, or to a storm water pond. Recycle used motor oil, drained oil filters, waste antifreeze, batteries, tires and spent solvent through a service company. Give waste metal such as used parts, metal lathe filings, and solder to a scrap metal dealer. Have shop rags laundered by an approved service and tell them what the shop rags are used for. Do not saturate rags with gasoline, solvents or other hazardous liquids. Have wastes like caustic sludge and parts cleaning oven residues picked up by an approved hazardous waste disposal service (often called treatment, storage and disposal facilities-TSD's). The Watershed Protection Department provides a list of recycling and disposal services for various types of wastes. Choose a reliable TSD since you are responsible for wastes from "cradle to grave". Call the Hazardous Substances Information Hotline at 1-800-633-7585 to find out if a TSD has an EPA identification number or has been cited for past violations. They also provide a list of vendors who can transport your waste. Keep disposal receipts and waste manifests as verification of proper disposal. They must be kept for at least three years but can be kept indefinitely to minimize liability.

Contact Austin Water for approved discharges to the sanitary sewer system such as pavement, equipment or vehicle cleaning wash or rinse water.

Reduce, reuse, recycle.
The costs for treatment and disposal of hazardous waste is expensive. To reduce disposal costs

- Do not mix wastes together – mixing may increase the amount of hazardous waste generated or prevent a waste from being recyclable,
- purchase supplies in bulk and keep them in bulk dispensers – this helps reduces empty waste containers requiring disposal,
- reduce the number of containers by reducing the number of different brands or grades of materials used,
- evaluate the use of hazardous products and find ways to reduce the quantity of product used,
- substitute a non-hazardous material for a hazardous material,
- recycle wastes when possible – the useful life of some materials like solvents can be extended by such methods as filtration to remove solids or distillation to remove impurities,
- utilize TCEQ's RENEW Program (waste exchange program) which provides information on businesses and industry that reuse or reclaim wastes and,
- contact the City of Austin Zero Waste Business Services for other alternatives and a non-regulatory, free assessment of your business.

Store parts under overhead cover.
Store oily, greasy automotive parts indoors or under overhead cover, not exposed to rain. Store covered parts on a paved surface to prevent soil or groundwater contamination. If you use plastic or canvas as a covering outside, secure the covering during windy conditions and immediately clean any fluids seeping from underneath the covering. Install

Did you know...

"Parts" cars and wrecked vehicles can drip fluid for several days. So, drain them upon arrival or temporarily use drip pans. Keep them on paved areas for easier cleaning if a spill occurs.

concrete curbing (with sealer applied to the floors and walls) around the storage area to contain any seepage or sorbent material used. Parts that are not oily or greasy can be stored outside provided rust staining on the pavement is not washed off with rain. If wrecked vehicles and "parts cars" are parked outdoors, keep them on paved areas.

Store chemicals properly.

Keep containers (e.g. drums, buckets, pans) under overhead cover with secured lids and bungs. Properly label and regularly inspect containers to ensure they are in good condition. Follow hazardous waste labeling, accumulation time, and quantity limit requirements for stored hazardous wastes. Storage units must not leak, overflow, or display any signs of failure or incompatibility with their contents. Wipe drips and spills off the tops or sides of containers. Keep storage containers in a secured area away from traffic and possible acts of vandalism. Keep containers on a paved surface that is easily cleaned, such as concrete.

Collect and dispose of wastes during pavement cleaning.

Check your lot daily for cleaning. Pick up trash and sweep up dirt, litter, leaves, and grass clippings. Absorb automotive fluid puddles with absorbent materials such as kitty litter or mop & bucket. Pre-clean heavy oil and grease stains, and slick spots using a small mixture of water and mild, powdered detergent. Brush the mixture into the stain. Pick up the mixture and waste, using absorbent material, for disposal in the trash. Up to 220 lbs. of dry absorbent material can be placed in the dumpster each month. For larger areas that require cleaning, do not allow wash water to enter a storm drain, oil/grit separator, landscaping, or a storm water pond. Instead, collect wash water by using a mop & bucket, scrubbing machine, or vacuum booms.

Dispose of wash water, not containing hazardous cleaning compounds, via indoor sanitary sewer drains (e.g. mop sink) with prior approval from Austin Water. Collect and dispose of hazardous waste through an approved recycling/disposal service. Do not dump mop water in storm drains. The Watershed Protection Department provides a list of absorbent material suppliers and a fact sheet describing approved pavement, vehicle and equipment cleaning methods. See the phone numbers provided at the end of this fact sheet.

Contain and properly dispose of parts cleaning waste.

Clean parts in a system that contains the cleaning material and collects the accumulated sludge for pick up by a certified disposal service. There are sinks, ovens or wash machines designed specifically for that purpose. Once a system is installed, maintain it properly. Install these systems indoors and do not plumb them to the ground outside, a storm drain, a storm water pond, or a septic system. Wet parts cleaning machines plumbed to the sanitary sewer system must meet specific conditions including use of a non-hazardous cleaning agent. Contact Austin Water for the requirements and approval to connect to the City sanitary sewer system. For more details on parts cleaning, the Watershed Protection Department provides a solvent fact sheet.

Clean vehicles properly.

Removing dust and fallen debris such as leaves from vehicles with plain, cold water is acceptable; use the wash water to irrigate the landscape. When using cleaning agents, wash vehicles at approved facilities with drains having overhead cover and connecting to a wastewater treatment plant or system. Do not use cleaning agents containing hazardous substances. Car wash businesses typically have approved facilities that are permitted by the City of Austin Water and Wastewater Department. Do not discharge wash water to a storm drain or storm water pond.

Use microbes responsibly.

Petroleum-consuming microbes are very useful in controlled cleanup situations such as oily soil remediation, contained parts cleaning, and wastewater treatment. Apply microbial cleaning agents according to manufacturer's directions, providing ample food, water, and oxygen. For pavement cleaning, use microbes only on oil stains and slick spots. Apply microbes with a minimal amount of water so that runoff does not occur. After ample application time,

pick up the microbes for reuse or disposal by using absorbent material. Never leave microbes on paved areas – rain will wash them to a storm drain or waterway. Do not apply microbes over large areas such as parking lots. Never flush microbes to a storm drain or waterway.
When using microbes for cleaning spills on soil, protect the treated area from rain so microbes will not wash away. Cover the spill area with tarpaulins or plastic sheeting and construct a berm around the perimeter of the spill. Do not use microbes for lead contaminated soil – microbes cannot break down lead.

Obtain approval from the Watershed Protection Department to routinely use microbes for pavement cleaning or spill cleanup – a phone number is provided at the end of this fact sheet. Approval for microbe use is granted on a case-by-case basis. A phone number is provided at the end of this fact sheet. If you are using a wastewater treatment system, consider investigating the usefulness of microbes to help treat collected wash water to reduce disposal costs.

Wash hands at a designated hand wash sink.

Wash hands at a sink plumbed to the wastewater treatment system, never outside with a water hose. Shops should have a separate employee hand washing sink near the work area, so workers don't have to leave the work area or get the customer restroom sink dirty. Install a sink for both mop water and employee hand washing – it is a great way to combine uses efficiently and prevent illegal discharges.

Prevent spills before they happen.

Prevent spills, as much as possible, through simple planning of daily operations. While working on vehicles, keep drip pans or spill pallets under the vehicle. Capture the spill or leak as soon as detected. Use larger, flat, low-brimmed pans under cars where ordinary drip pans are too cumbersome. Don't leave drip pans or other open containers unattended. Promptly transport collected fluids to your recycling or waste storage unit. Inspect customer vehicles and equipment regularly for leaks and repair them appropriately. Drain all fluids from wrecked vehicles and "parts" cars upon arrival. If necessary, place drip pans under them until they are drained. Also, drain engines, transmissions and other used parts kept for rebuilding. Work over an impervious surface such as concrete to prevent more extensive and costly soil cleanup. Don't allow customers to change their personal vehicle's oil on your lot. Most important, prevent discharges to the environment by working inside your shop.

Handle spills properly.

Spills happen. Do not flush spills away with water. Instead, contain them immediately, before they reach a storm drain and spread to a creek or lake. Also, do not put yourself or others in danger. Before containment, evaluate what materials have spilled, make a thorough assessment of risk, and determine how to contain the spill safely. If safe containment is possible, immediately stop the spread of liquids using absorbent materials. Keep spill containment and clean up materials appropriate for the type and quantities of chemicals used or stored at your facility. The Watershed Protection Department can provide a list of absorbent material suppliers. Immediately block off nearby drains (sanitary sewer or storm drain). It is much more costly to decontaminate the inside of a storm drain pipe and/or restore a contaminated creek than it is to purchase spill containment materials.

Always wear appropriate safety equipment such as gloves, coveralls, goggles, and respirators. Access Safety Data Sheets (SDS) for information about spilled materials. Keep SDSs readily available for each chemical used or stored at the facility. A SDS contains

Did you know...

Oil-eating microbes cannot be flushed to storm drains or waterways.

information that enables persons responsible for handling or encountering chemicals to estimate the likely harm, potential hazards and risks that might arise in emergency situations involving those chemicals. Obtain a SDS free of charge by calling the manufacturer's phone number from the label on the chemical container.

Never leave spills unattended; designate someone to make spill notification phone calls. Immediately notify the Austin Fire Department by dialing 911. Then, report the spill to the Watershed Protection Department by calling the City's 24-Hour Pollution Hotline at 512-974-2550.

Clean up surfaces contaminated by hazardous chemicals only if you are trained and qualified. Excavate spills on pervious (e.g. soil) surfaces as quickly as possible to prevent spread of the contamination. Contact the Watershed Protection Department for soil cleanup instructions. Sweep up and containerize dry material spills on impervious surfaces (e.g. pavement) for proper disposal. Absorb liquid spills on impervious surfaces with absorbent materials (e.g. clay absorbent, pads, booms, etc.) and containerize for proper disposal. Do not use wet/dry shop vacuums for gasoline, solvents or other volatile fluids because of explosion hazards.

Post a site-specific spill contingency plan at your facility providing step-by-step instructions. Practice these steps in a "spill drill." The Watershed Protection Department provides information regarding spill contingency plans and a fact sheet detailing proper spill handling. A phone number is provided at the end of this fact sheet.

Ensure careful fueling.

Monitor tank filling activities to prevent overfilling and drive-offs. Install and maintain overfill prevention equipment. Reduce drive-offs by monitoring fueling activities and installing break away hoses. In addition, install and anchor shear valves at the dispenser. Also, install automatic closing type hose nozzle valves to prevent spills during customer fill-ups. Clearly mark the shut-off switch and educate employees on its location and use.

Pave areas where fuel is stored and dispensed so accidental spills are easily contained and removed. Pave with Portland cement, not asphalt; fuel deteriorates asphalt. Cover the fuel island and do not drain the area to storm drain catch basins. Carefully plan aboveground storage tank structures for product dispensing. Contact the Watershed Protection Department and the Austin Fire Department for requirements. Phone numbers are provided at the end of this fact sheet.

Maintain storm water structures.

According to Federal law, only clean rain water may enter storm drainage systems. Keep all solid waste, wastewater and spilled products from entering drains, oil/grit separators and storm water ponds. Educate employees about these devices and how to prevent their misuse. Post signs at storm drains. The Watershed Protection Department provides a free kit for marking storm drains. Routinely maintain these structures so they function as originally designed. The Watershed Protection Department provides a fact sheet with detailed information on storm water treatment structures. A phone number is provided at the end of this fact sheet.

If you know your interior drains are plumbed to the sanitary sewer system, contact Austin Water for sanitary sewer discharge regulations. Work areas of machine shops or any business that manufactures, rebuilds or overhauls engines, transmissions, hydraulic systems or similar machinery cannot have work area drains plumbed to the storm drain system or a waterway. Instead, plumb them to a hold-haul tank. Otherwise, if your interior drains are plumbed to the storm drain system or to a waterway and your facility was built after January 9, 1978, disconnect work area drains and remove them from service. If your building was constructed prior to this date and you have interior drains plumbed to the storm drain system, you may not be required to plug them, but it is highly recommended. If you are unsure which system (storm drain or sanitary sewer) your drains are connected, contact the Watershed Protection Department or a licensed plumber for plumbing verification.

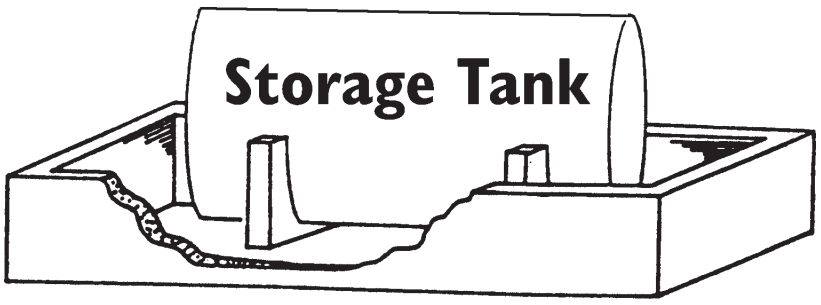
Correct illegal plumbing connections.
If a mop sink, hand wash sink, water fountain, or car wash drain is not connected to a wastewater treatment system, have it fixed immediately. Stop use of illegally plumbed fixtures until they can be reconnected to the wastewater treatment system such as the sanitary sewer. Contact the Watershed Protection Department for guidance on proper plumbing of parts washers.

Have proper secondary containment.
Install secondary containment around product and waste storage areas to prevent costly spreading of accidental releases. For example, store used batteries inside where leaks from cracked casings or terminal corrosion will be contained (e.g. concrete bin with sealed floors and walls). AFD requires secondary containment for certain types and quantities of stored chemicals. AFD has sizing and other structural requirements for public safety and health protection. For more details, contact AFD at the phone number provided at the end of this document.

There are special City and Federal requirements for any containment area with a storm drain. Familiarize yourself with these requirements before you decide to install a storm drain. Contact the Watershed Protection Department for storm drainage requirements. Keep containment areas clean and check them routinely for structural failure. Fix structural failures promptly. Immediately notify the Watershed Protection Department of a spill within the containment. Pump contaminated materials from the area for legal disposal. There are pumping companies that provide this service. City Department phone numbers are provided at the end of this fact sheet.

Did you know...

Tanks of certain chemicals including waste oil must be secondarily contained according to the Austin Fire Departments requirements.



Use and maintain dumpsters properly.
Keep outdoor dumpsters on a concrete pad and consider installing concrete curbing around them to adequately drain storm water. Dispose of only dry, non-hazardous waste in them. Do not dispose of used oil filters in the dumpster. Dispose of garbage in the dumpster in tightly sealed bags. Carefully transport wastes to and from your dumpster, immediately clean up anything that spills. Plan scheduled waste service pick-ups to prevent overfilling. Should unanticipated overfilling occur, contact your disposal service for timely removal. Monitor emptying of your dumpster and promptly clean up spills caused by waste haulers. You are responsible for any contamination on your property. Keep the dumpster lid closed.

Check the dumpster area routinely for needed cleaning. If your dumpster needs cleaning, contact your disposal service to arrange for replacement of the dumpster rather than clean it yourself. Trash services have facilities to clean dumpsters and dispose of the wash water properly. Keep the exterior of the dumpster, and surrounding pavement, as clean as possible. During cleaning, capture and remove wastewater for approved disposal to the sanitary sewer system. A mop and bucket works well to prevent cleaning wastewater runoff. The Watershed Protection Department provides a fact sheet detailing proper dumpster use and maintenance.

Environmentally friendly landscaping.
Use Integrated Pest Management which emphasizes prevention and natural pest control methods instead of chemicals. For example, control weeds by using ground cover plants and mulch. Landscape with native adapted plants that require less water, chemical fertilizers and pesticides. Use compost or manure as natural fertilizers. If used, chemical fertilizers and pesticides should be applied according to the directions on the label. Use only the amount necessary to do the job. Never apply toxic pesticides near water bodies, water wells and wildlife habitats. Check the weather before applying lawn chemicals to avoid application during wind or rain. Design a landscape that limits the volume or decreases the speed of storm water runoff and irrigation water. This lowers the chances of erosion and washing of pollutants into storm drains. Leave grass clippings on the lawn. Sweep grass and leaves out of the street to keep them out of storm drains and waterways. Collect tree and hedge trimmings for disposal through your waste disposal service. If your business is located along or near a waterway, be careful about the landscaping methods you choose. For more information, see the Landscaping fact sheet provided by the Watershed Protection Department.

Proper construction/remodeling activities.
Use plastic sheeting or tarpaulins while painting to capture drips and spills. Wash water-based paint equipment at a sink that is plumbed to the sanitary sewer system. Place chemical containers under protective cover and keep them closed to prevent spills. Pick up construction trash and debris regularly and dispose of it in your dumpster. Plan to buy only the amount of materials needed to minimize disposal costs. If you have reusable leftover chemicals, contact the City's Zero Waste Business Services for disposal alternatives. Dispose of non-reusable oil-based paint and other toxic chemicals through an approved waste disposal service. Contact the Watershed Protec-tion Department disposal services for various waste types.

Train employees.
Educate employees on how and why to keep pollutants out of our creeks and lakes. Develop written procedures for everyday practices which prevent pollution. Conduct training sessions, especially for new employees. Periodically check employees' work practices to be sure proper procedures are followed. Have employees routinely inspect the shop to identify areas needing attention. Provide employees with educational materials like fact sheets from environmental agencies and organizations. Display signs and posters to serve as reminders. Finally, recognize employees who are helping you keep a clean shop.

Educate your customers.
Be aware of customer activities at your site. Ask them not to discard liquids into your trash cans, dumpster or lot drains. If they dispose of materials improperly at your shop, you will be responsible for the violation. If you have persistent problems, monitor your customers more carefully. Let your customers know, that as a "good neighbor" you are minimizing wastes and recycling fluids. Encourage your customers to do the same.

The Bottom Line

Businesses have found that it costs time and money to implement water pollution prevention measures. However, the expense to clean up spills and restore property is much greater. Small, seemingly insignificant leaks and spills become large contamination problems over time if steps are not taken for containment, clean up, and prevention. Clean up and disposal after hazardous material spills is often extremely expensive. Unless handled properly, spills cause soil or groundwater contamination which could impact future sale or transfer of property.
Cleanup costs and real estate depreciation are not the only possible pollution costs. Treatment of injuries and time lost from work are also substantial costs. Fines from City, State or Federal agencies add thousands of dollars to the overall cost of a polluting discharge. In addition to fines, regulatory agencies can require businesses to undergo detailed compliance audits, implement long-term water monitoring programs, or require the installation of expensive pollution prevention equipment and programs.

For more information:

Regulation of polluting discharges to storm sewers and waterways, spill reporting, lists of chemical disposal and recycling services, treatment system companies, storm drainage identification, soil cleanup instructions
City of Austin Watershed Protection Department
Pollution Prevention and Reduction Section
(512) 974-2550

Hazardous Materials Permit (underground storage tanks), underground storage tank requirements, including containment
City of Austin Planning and Development Review Department
Underground Storage Tank Program
(512) 974-2715

Hazardous Materials Permit, aboveground tank secondary containment requirements
City of Austin Fire Department
Hazardous Materials/Prevention Division
(512) 974-0182

Plumbing Code information
City of Austin Planning and Development Review Department
Building Inspections
(512) 978-4000

Hazardous materials registration and requirements, spill reporting, RENEW Program
Texas Commission on Environmental Quality
Region 11 office
(512) 339-2929,
(512) 239-3171, RENEW Program

Discharges to the sanitary sewer system
Austin Water
Special Services Division
(512) 972-1060

Septic system discharges
Austin Water
On-Site Sewage Facility Program
(512) 972-0050

Small business waste disposal information,
Austin Resource Recovery
Zero Waste Business Services
(512) 974-9727

Emergency Numbers

Austin Fire Department (emergencies only)	911
City of Austin Environmental Hotline (24 hour)	(512) 974-2550
TCEQ Emergency Response Center (24 hour)	1-800-832-8224

CLEAN WATER FACT SHEET

FOOD SERVICE

City of Austin - Watershed Protection Department

Austin is known for its entertaining music and good food. Many food service establishments serve Austin including eateries along famous 6th Street, "fast food" operations, quick stop convenience stores, and food processing plants. All of these establishments must be cleaned and maintained - everything from grease receptacles to cooking equipment. Most businesses understand why in terms of public health. What people may not know is these practices also potentially pollute Austin's waterways. The Watershed Protection Department is responsible for preventing pollutant discharges to the City storm drainage system and waterways as mandated by Title VI, Chapter 6-5 of the Austin City Code (Water Quality). This document provides food service establishment employees with information on maintaining the facility without polluting the environment.

Food service establishments must maintain their facilities without polluting the environment

The Problem

Poor grease bin maintenance.

Food service establishments that fry or grill foods accumulate cooking grease requiring disposal. Outdoor bins are commonly used to store the grease. Carrying heavy buckets of food grease to the bin, then lifting and emptying the buckets, is a difficult task. Too often, the grease splashes and drips down the sides and onto the ground. Overfilling the bin creates the same mess. Allowing the spilled grease to accumulate outside the storage container is not only an illegal pollutant discharge, but a public health nuisance as well. Food grease attracts flies and rodents, is a slip hazard, and is smelly. Leaving the lid open attracts vermin and allows entrance of rainwater that can overfill the bin.

Grease discharged to a storm drain ends up in our creeks and lakes - where it coats fish gills, smothers aquatic organisms, and uses up oxygen needed by fish and aquatic life. If the grease bin is located on an unpaved surface such as soil, spill clean up can be more costly. The contaminated soil must be removed, disposed of properly and replaced. Grease spills smother landscape vegetation.

To make matters worse, cleaning agents used to remove spilled grease are discharged to the environment. Grease is typically removed by use of heavy duty degreasing agents that end up flushed to the

Wake up and smell the coffee...

Did you know that when you wash trash cans, floor mats, and kitchen equipment outside on the ground you are polluting the environment?

nearest storm drain. Some cleaning agents contain hazardous ingredients. Others contain nutrients that promote algae and weed growth in waterways. This unsightly growth depletes sunlight and oxygen needed for fish, chokes waterways, creates unpleasant drinking water taste and odors, and is costly to remove.

Overflowing grease traps.
Grilling and frying appreciable amounts of food requires the use of large outdoor grease traps. These grease traps remove food grease from dish and equipment cleaning wastewater, and diverts the wastewater to the sanitary sewer system. Traps that are not pumped regularly by a waste disposal service will become clogged and eventually overflow. Overflows are typically large in volume and have the potential to spread to vegetation, a storm drain, or a storm water pond. Grease trap overflows also clog storm water drainageways, leading to increased maintenance costs and potential flooding problems. Food grease is difficult to clean up and removing it is time consuming and costly. Other common causes of polluting discharges from these traps are overfilling, clogged sewer lines, improper maintenance of grease trap filters, and accidental spills caused by the waste hauling service during routine trap pumping.

Careless equipment cleaning.
Cleaning food service equipment (e.g. cook's line ventilation hood filters, trash cans, floor mats, mop/buckets, etc.) outside, especially near a storm drain, is illegal. It may seem convenient, but the grease and grime in the wash water accumulates on the ground and is washed into and pollutes storm sewers and waterways. Wash water typically contains food particles and grease, cleaning chemicals (many are toxic), trash, and debris. Similar to grease trap waste, wash water can create a public health nuisance and pollute the environment.

Poorly maintained dumpsters.
Unfortunately, many people use dumpsters for disposing of all kinds of waste. However, they cannot be used for food grease, liquid wastes, or hazardous materials. Such disposal not only threatens the environment, but also threatens the health and safety of sanitation workers and the general public. Spills inside the dumpster can create odor problems and attract vermin, thereby requiring removal of the dumpster for thorough cleaning at an approved facility operated by your dumpster service. In addition, liquid wastes will not be accepted by landfills.

Another problem is when trash and debris spill or blow out of the dumpster, when they are open, overfilled, or in poor condition. Unbagged trash and food refuse also promotes waste spreading and spills. This material is then easily carried to storm sewers or waterways by wind and rain. Decaying food wastes in waterways require oxygen for decomposition, resulting in strong odors, and a depleted oxygen supply for aquatic life. Trash and debris also clog waterways and decrease the waterway's recreational value. As with grease bins, cleaning the area around the dumpster is sometimes necessary, but can cause illegal discharges of cleaning agents and grime to storm sewers and waterways. In addition, placement of dumpsters on unpaved surfaces such as soil results in costly removal, disposal, and restoration of contaminated areas when leaks or spills occur.

Improper pavement cleaning.
Paved areas around a food service establishment will, over time, accumulate dirt, grime, grease and trash from pedestrians, vehicle traffic, and daily operations. If left to accumulate, these pollutants are flushed by rain, contaminating our creeks and lakes. Businesses usually strive to keep public areas clean and safe for their customers. However, during this effort, cleaning agents are used and too often illegally flushed, along with the grease and grime, to storm sewers and waterways. The cumulative effect of illegal discharges to streams and lakes from pavement cleaning all over the City would be tremendous. In addition, common automotive fluid leaks and spills like antifreeze, left on the pavement, are toxic to humans, animals, and aquatic life.

Improper vehicle cleaning.
Some food service establishments have delivery vehicles or food transport trucks requiring routine cleaning. Allowing the wash water to reach the nearest storm drain is a polluting discharge. Again, the cumulative impact on our waterways from all the equipment, pavement and vehicle washing by the community is great.

Mishandling of spills.
Accidental spills will happen. For example, food products from delivery trucks may be spilled around the loading area. Customer, employee and delivery vehicles may leak oil, fuel and antifreeze. If left on the pavement, spills are carried to storm drains, landscape, oil/grit separators and storm water ponds by rain or storm water runoff. This pollutes the environment and results in costly fines and site cleanups. In addition, if spills are flushed off site with a water hose, the untreated pollutants are carried to our creeks and lakes.

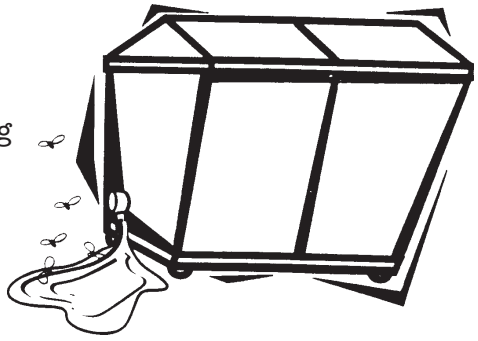
Not knowing your storm drainage structures.
Some older buildings may have floor drains connected to the storm drain system. Occasionally, a building will have a mop or hand wash sink illegally plumbed to the storm drain system. Some food service establishments have a loading dock with a drain that collects storm water and diverts it to the storm drain system or a storm water pond. Many business lots have storm drain oil/grit separators that capture and help filter oils and sediment from storm water runoff. Others have storm water ponds that help prevent flooding and filter pollutants. If business operators do not know what these structures are, though, chances are they will be misused for illegal dumping of wastes, or not maintained properly. If a pond or separator is not maintained, it will not function efficiently or effectively. Allowing chemicals to enter these structures costs in environmental remediations, fines, and maintenance of the structures.

Poor landscape practices.
Excessive application of fertilizers and pesticides to landscaped and even paved areas, especially before a rain, causes the discharge of algae-promoting or toxic chemicals to a storm drain or creek. Use of petroleum products to kill weeds significantly impacts the environment. These substances are very toxic, persist in the soil for many years, and seep into and pollute our groundwater supply. Some are cancer-causing agents. Leaves and grass clippings blown off sidewalks, driveways and parking lots are also carried to storm drains when it rains, providing excess harmful organic matter to waterways. Tree and hedge trimmings can clog drainageways and promote flooding. As these wastes decompose in a waterway, they use up oxygen needed for aquatic life to survive. If your business is located along a waterway, be extra cautious about the landscaping methods you choose.

Misuse of septic systems.
Some more remote food establishments are connected to septic systems instead of wastewater treatment plants. Knowing how these systems operate and what cannot be discharged through them will prevent the potential for costly maintenance and subsurface pollution. Septic systems use biological organisms to facilitate the breakdown of wastes typically found in domestic sewage. Chemicals that kill the biological organisms in the septic system will cause the system to fail, thereby releasing pollutants to the environment. Therefore, dumping strong cleaning chemicals (e.g. bleach) or toxic materials into a septic system will destroy the organisms in the system. Overfilling a septic system

Did you know...

The most common polluting violations found by Health Department inspectors at restaurants are dumpsters with missing drain plugs and spilled grease around grease bins.



with waste will cause the system to overflow and release partially or untreated wastewater (sewage). Sewage contaminates drinking water and promotes prolific algae growth in waterways.

Polluting construction/remodeling activities.

When businesses expand or remodel, chemicals and materials such as drywall, joint compound, paint , thinner, turpentine, wood, and insulation are typically used. Any of these materials pollute our waterways if dumped or spilled. Drywall, paint, and joint compound act like a very fine sediment, blocking light needed by plants and smothering bottom-dwelling organisms. Some paint, especially oil-based paint, contains petroleum products and hazardous metals. In addition, poorly managed materials such as wood and insulation will, at a minimum, clog the waterway, increasing the potential for flooding.

The Solution

Properly maintain grease bins.

Place grease bins in a easily cleaned paved area. Surround the area with a concrete curbing to contain spills and cleaning wastewater. The spills and wastewater are then easily removed for disposal. Carefully transport grease to and from your bin. If a grease spill occurs, clean it up immediately. Properly schedule waste service pick-ups to prevent overfilling. Should unanticipated overfilling occur, contact your disposal service for prompt removal. Monitor pumping activities and promptly clean up spills caused by waste haulers. You are responsible for any contamination on your property. Make sure grease bin lids are closed to prevent entry of vermin and overflows due to accumulated rainwater.

Schedule regular clean ups of the bin and surrounding pavement. During cleaning, capture and remove wastewater for disposal to the sanitary sewer system. A mop and bucket works well to prevent cleaning wastewater runoff. Contact Austin Water for sanitary sewer system disposal and permit requirements. Their phone number is listed at the end of this document.

Use and maintain outdoor dumpsters and trash compactors properly.

Like grease bins, keep outdoor dumpsters and trash compactors on a concrete pad and consider installing a concrete containment area. Dumpster and compactors are only for disposal of dry, non-hazardous wastes - never food grease, liquid or hazardous wastes. The Watershed Protection Department provides a dumpster fact sheet describing detailed waste prohibitions. Dispose of garbage in the dumpster in tightly sealed bags. Carefully transport wastes to and from your dumpster or trash compactor. Clean up anything that spills. Properly schedule waste service pick-ups to prevent overfilling. Should unanticipated overfilling occur, contact your disposal service for timely removal. Monitor emptying of your dumpster and promptly clean up spills caused by waste haulers. You are responsible for any contamination on your property. Keep lids closed. Check the dumpster or compactor area routinely for cleaning needs. If your dumpster needs cleaning inside, contact your disposal

Did you know...

A single garbage container can produce up to **20,000** fly larvae each week if left uncovered.

Dumpsters and compactors are only for disposal of dry, non-hazardous wastes—never food grease, liquid or hazardous wastes.

service to replace the dumpster rather than trying to clean it yourself. Trash services have facilities to clean dumpsters and dispose of the wash water properly. Keep the exterior of the dumpster and compactor, and surrounding pavement as clean as possible. During cleaning, capture and remove wastewater for disposal to the sanitary sewer system. A mop and bucket works well to prevent cleaning wastewater runoff. Contact AustinWater for sanitary sewer system disposal and permit requirements. The Watershed Protection Department provides a fact sheet detailing proper dumpster use and maintenance.

Keep grease traps cleaned.
Outdoor sanitary sewer grease traps and associated sewer lines must be regularly cleaned by a disposal service to prevent overflows into your parking lot and storm drains. Schedule regular trap pumping, and monitor the trap for unanticipated overfilling.

Provide a proper equipment cleaning area.
Do not use any outdoor drains for disposal of equipment cleaning wastewater unless they are connected to the sanitary sewer system, and a permit is obtained from Austin Water. Drains without overhead cover are typically not allowed to connect to the sanitary sewer. Provide a large enough area inside your business or in an area with overhead cover to wash equipment such as trash cans, floor mats, mops, mop buckets, and hood filters. This area needs a drain that collects the wash water and diverts it to the sanitary sewer system. The sanitary drain connection must be approved by Austin Water.

Collect and dispose of wastes during pavement cleaning.
Check your lot daily for cleaning needs. Pick up trash and sweep daily to remove dirt and sediment. Absorb any puddles such as automotive fluids using kitty litter, mop & bucket, wet vacuum or similar equipment. Pre-clean heavy oil and grease stains, and slick spots using a small mixture of water and mild, powdered detergent. Brush the mixture into the stain. Let stand until dry and sweep up for disposal in the trash. A cold water rinse might be all that is needed after pre-cleaning.

However, if you have larger areas that require cleaning, the wash water discharge must not drain to a storm drain, oil/grit separator, the landscape or a storm water pond. Instead, pavement cleaning is legal if the wastewater is collected for proper disposal with a mop & bucket or scrubbing machine that vacuums up the water and grime as it cleans.

The wastewater can be disposed of via indoor sanitary sewer drains, with prior approval from Austin Water. Do not dump mop water in outside storm drains. The Watershed Protection Department can provide a list of sorbent material suppliers as well as a fact sheet describing approved pavement,

Provide an area with overhead cover and a sanitary sewer drain to wash equipment such as trash cans, floor mats, mops, mop buckets and hook filters.

vehicle and equipment cleaning methods. See the phone numbers provided at the end of this document.

Clean food service vehicles at an approved location.

Washing vehicles must be done at approved facilities with drains under overhead cover and connected to a wastewater treatment plant or system. Car wash businesses typically have approved facilities that are permitted by Austin Water. No wash water is allowed to discharge to the environment.

Clean spills as they happen.

If a spill occurs, clean it up immediately with sorbent material or a mop and bucket - before it reaches a storm drain and spreads to a creek or lake. Never leave spills unattended or flush them with water. If necessary, block drains with sorbent material to keep the spill out. Spills on soil should be excavated for proper disposal. Small spills can be dug up, sealed in garbage bags and placed in the trash. Contact the Watershed Protection and Development Review Department for soil cleanup instructions resulting from larger spills.

Keep spill cleanup and containment materials handy for use when needed. Have a written spill contingency plan posted at your site giving information on what to do in the event of a release. Federal and State law requires Safety Data Sheets (SDS) for each chemical used at your facility - they must be readily available if a chemical spill occurs. The chemical manufacturer should supply these documents free of charge. The manufacturer's phone number is sometimes found on the product label.

Use care during landscaping.

Use Integrated Pest Management which emphasizes prevention and natural pest control methods instead of chemicals. For example, weeds can be controlled by the use of ground cover plants and mulch. Ashes, diatomaceous earth, limestone and other natural materials applied to the landscape may act as an irritant and repel bugs. Landscape with native or adaptive plants that require less water, chemical fertilizers and pesticides. Use compost or manure as natural fertilizers. If used, chemical fertilizers and pesticides should be applied according to directions on the label. Use only the amount necessary to do the job. Never apply toxic pesticides near water bodies, water wells and wildlife habitats. Check the weather before applying lawn chemicals to avoid application just before it rains or when it is windy.

Design a landscape that limits the volume or decreases the speed of storm water runoff and irrigation water. This lowers the chances of erosion and washing of pollutants into storm drains.

Spill cleanup tips

- Clean up spills immediately with proper tools
- Never leave spills unattended or flush with water.
- Keep spill cleanup and containment materials handy
- Develop a spill contingency plan and post it.

Leave grass clippings on the lawn. Sweep grass and leaves out of the street to keep them out of storm drains and waterways. Collect tree and hedge trimmings for disposal through your waste disposal service. The Watershed Protection Department provides a fact sheet with more details regarding the proper use of fertilizers and pesticides as well as proper landscape maintenance.

Know your drainage.
Nothing but clean rain water may enter our storm drainage system according to Federal law. Keep all wastes/wastewater and spilled products from entering drains, oil/grit separators and storm water ponds. Educate employees on the function of these structures and what to do to prevent their misuse. The Watershed Protection Department provides a fact sheet with instructions on proper use and maintenance of separators and ponds. If you do not know to which system (storm drain or sanitary sewer system) the drains connect, contact the Watershed Protection Department or a licensed plumber for a dye trace and/or other verification method. If you find that a mop sink or other plumbing fixture is improperly connected, have it fixed immediately to prevent additional contamination. Post signs at outside storm drains to prevent their misuse. The Watershed Protection Department can provide a free kit to mark your storm drains.

Keep all wastes/wastewater and spilled products from entering drains, oil/grit separators and storm water ponds.

Proper use of septic systems.
Keep septic systems regularly maintained to prevent failure. If you are concerned about chemicals harming your septic system, contact the Austin-Travis County Health and Human Services Department for specifics. Their phone number is at the end of this document.

Proper construction/remodeling activities.
Use plastic sheeting or tarpaulins during painting activities to capture drips and spills. Wash water-based paint equipment at a sink that is plumbed to the sanitary sewer system. All containers of chemicals should be placed under protective cover and kept closed to prevent spills. Construction trash and debris should be picked up regularly and disposed of through your dumpster service. If you have reusable leftover chemicals, contact the City's Zero Waste Business Services for disposal alternatives. Non-reusable oil-based paint and other toxic chemicals must be disposed of through an approved waste disposal service. The Watershed Protection Department can provide disposal service lists for various waste types.

Reduce , reuse, recycle.
Reducing the amount of waste generated saves on disposal costs. The best way to do this is buy only what you need. Then, use up all you bought to prevent waste generation.

Many waste materials can be reused or recycled. Reuse landscape debris such as leaves, grass clippings, and small shrub trimmings by composting. When mowing the grass, leave the grass clippings on the lawn. Used food grease can be stored in a leak-proof container for recycling through an approved hauler. Special dumpsters to recycle cardboard are available through many of the local waste disposal services. Donate excess construction materials to a non-profit organization such as Habitat for Humanity. Other wastes such as metal and plastic product containers can be recycled either through local waste haulers or non-profit organizations. The City's Zero Waste Business Services Program can help with alternative material handling and waste exchange options. Their phone number is provided at the end of this document.

Train employees.
Prevention is the key to eliminating pollution. The best pollution prevention method is training your employees on how to do their job without creating polluting discharges. While it takes time to train employees, it is actually time well spent and invested in your business to prevent clean ups, site restorations, regulatory fines, and injuries.

The Cost

Businesses have found that it costs time and money to implement water pollution prevention measures. However, the expense to clean-up spills and restore property after they occur is much greater. Small, seemingly insignificant leaks and spills become large contamination problems if steps are not taken for containment, clean up, and prevention. Many spills are extremely expensive to clean up and dispose of properly. Spills that are not mitigated can cause soil or groundwa-

ter contamination which could impact future sale or transfer of property until the responsible party mitigates the damage.

Clean up costs and real estate depreciation are not the only possible pollution costs. Fines from City, State or Federal agencies add thousands of dollars to the overall cost of a polluting discharge. In addition to imposing fines, regulatory agencies can require businesses to undergo detailed compliance audits to implement long-term water monitoring programs, or require the installation of expensive pollution prevention equipment and programs.

For more information:

Pollution prevention for food service establishments; spill response, list of recycling and disposal services, sorbent material suppliers; fact sheets on dumpsters, proper cleaning methods, landscape maintenance, oil/grit separators and storm water ponds
City of Austin Watershed Protection Department
Pollution Prevention and Reduction Section
(512) 974-2550

Food establishment permitting and inspection, restaurant grease receptacle requirements, liquid waste hauler licensing, public health nuisances, septic system regulations
Austin-Travis County Health and Human Services Department
(512) 972-5000

Sanitary sewer discharges
Austin Water
Special Services Division
(512) 972-1060

Small business waste disposal information
Austin Resource Recovery
Zero Waste Business Services
(512) 974-9727

Waste storage/disposal requirements, recycling/reuse information
Texas Commission on Environmental Quality
Region 11 Office
(512) 339-2929

CLEAN WATER FACT SHEET

CONSTRUCTION

City of Austin - Watershed Protection Department

New development to support rapid growth in the City of Austin, as well as necessary maintenance of existing roads, utilities and other structures, can create polluting discharges unless proper precautions are taken. Construction often involves the use of large amounts of paints, asphalt materials, lubricants, concrete materials and soil. Any of these materials can pollute if allowed to enter storm drains, creeks or lakes. Furthermore, when rainfall hits surfaces, it carries spilled materials to waterways, or leaches them into groundwater. Plan reviews, permits and inspections help ensure that construction activities do not impact Austin's valuable water resources.

Plan reviews, permits, and inspections ensure that construction activities do not impact Austin's valuable water resources.

The City of Austin Watershed Protection Department is responsible for preventing polluting discharges to the City's storm drain system and waterways as mandated by Title VI, Chapter 6-5 (Water Quality) of City Code. This document provides information on how to conduct construction activities without polluting the environment.

The Problem:

Not following the City's construction requirements.

Conducting construction activities without following regulatory requirements can have significant impact on both the environment and the cost of construction. Violations of the City's Land Development Code can result in stop work orders and stiff fines per violation per day. In addition, State and Federal penalties add to the total cost from non-compliance.

Erosion and sedimentation.

Clearing, grading, and excavations require temporary removal of impervious cover or disturbance of large areas of soil and vegetation. This greatly increases the potential for exposed soil to erode and enter storm water runoff. Also, unprotected stockpiles of dirt, sand, or gravel erode in the same manner.

Sediment causes obstructions to normal flow and siltation of lakes, rivers, and streams. Only dredging, which is costly, can clear the waterway. Sediment and grit also smother bottom dwelling aquatic life, clog fish gills , and block sunlight needed by underwater plants. Toxic materials, such as lead and pesticides, adhere to sediment particles which then concentrate these toxics at the bed of waterways.

Did you know...

For every inch of soil lost on a one-acre construction site, 170 tons of sediment choke receiving waterways.

Polluting discharges from site dewatering, tank and pipe testing.

Construction sites often discharge large amounts of water - accumulated groundwater, surface water or rain water from excavated pits, groundwater pump tests, remediation activities, new pipe tests, and storage tank tests. Discharges from these activities are usually very turbid (muddy) and can contain residual waste materials.

In addition, some discharges have an oily sheen on the surface indicating the presence of a chemical contaminant. Such discharges can be from leaking underground petroleum storage tank systems and cause serious damage to aquatic life. Discharges from tank hydrostatic testing and cooling system testing can contain corrosion inhibitors, algaecides, petroleum compounds and other chemicals. Water used during pipe testing creates discharges of rusty water and collected debris.

Poor product and waste storage and handling.

Liquids stored in containers exposed to rain without lids or overhead cover can result in overflow onto the ground. Fluids accumulating on the outside or on top of containers from spills are easily washed off by rain water. Other activities, such as fuel or oil dispensing, create discharges to the environment if done carelessly. Containers in poor condition (rusty, bloated, dented) leak. Storage tanks, fuel dispensers, drums and other containers not properly secured are subject to vandalism as well as traffic accidents, increasing the chance for a release. Scattered trash and debris from improper maintenance (overflowing dumpsters, dumpsters without lids, lack of a contained storage area) are blown off site.

Materials spilled from uncontrolled work areas during activities such as paint and drywall applications, paint removal and sandblasting can also be a problem. Road paving, surfacing and asphalt removal provide numerous opportunities for storm drain contamination. Asphalt emulsion from roads or parking lots run off in storm water, if it has not dried prior to a rain event.

Any material spilled onto the ground is subject to being flushed by water to storm drains and waterways - with serious effects. For example, petroleum products flushed to the environment smother vegetation. In addition, they often contain lead, benzene and other hazardous materials toxic to humans, animals, and aquatic life.

Improper waste disposal.

Construction wastes are sometimes illegally dumped on site (e.g. on the ground) or off site (e.g. to a storm drain). These wastes may include oil, transmission fluid and hydraulic fluid from construction equipment, excess concrete aggregate and cement-related mortars, or concrete chute wash water. Hazard-ous materials and many non-hazardous materials discarded in a dumpster create a danger to sanitation workers emptying the dumpster, as well as to the ground-water beneath the landfill. If these materials are transported through the soil or a storm drain to our streams and rivers, they can severely affect aquatic life and render water unusable for drinking or recreation. Organic wastes such as cleared vegetation, tree trim-mings, and leaves washed to storm sewers and waterways, impede water flow and require large amounts of oxygen to decompose -reducing the amount of oxygen available to aquatic life.

Mishandling of spills.

Spills happen. For example, hydraulic line failures cause localized spills; poorly maintained equipment leak oil, fuel, and coolant; fueling activities (especially topping off fuel tanks) cause large and small spills. In addition, spills of paint, petroleum products, and hazardous materials are sometimes flushed from an area with water - or not cleaned up at all. Once released to the environment, these materials are toxic to many aquatic organisms. Small quantities of hazardous materials such as those found in oil based paints and thinners (e.g. solvents,

Did you know...

About 40% of construction waste is wood. Some wood can be recycled for use as landscape mulch or fuel.

heavy metals) cause fish kills and destroy aquatic plants.

Improper cleaning activities.

The cleaning of construction equipment (e.g. cement trucks, large and small tools, painting equipment), vehicles, building exteriors, roofs and paved surfaces often creates a polluting discharge of wastewater to a storm drain or waterway. Paint pollution most often occurs from cleaning paint equipment in areas where runoff enters a storm drain or waterway. Some paints, especially those used for pavement marking or on outdoor surfaces, contain lead or chromium which are toxic to aquatic life.

Fine sediments from washing the exterior of limestone structures become suspended in creek water and clog fish gills and smother bottom dwelling aquatic life. Dirt, oil buildup, and accumulated debris cleaned from walkways and drives impacts water quality when discharged to a storm drain and waterway. Cleaning agents discharged to a creek not only carry dirt and grime, but also can provide nutrients that promote the growth of algae. Algae blooms deplete sunlight and oxygen needed by aquatic life.

Improper disposal of oil/grit separator wastes.

Construction sometimes requires the removal of oil/grit separators used by a previously existing facility as a treatment structure for storm water runoff. Unfortunately, accumulated oil and sludge contained inside the structures are often illegally dumped in a field or pumped to a storm drain or waterway. Sludge from a separator can contain a combination of pollutants such as oil and grease, antifreeze, residual gasoline, solvents, heavy metals, soaps and detergents, contaminated sediment or grit - which all can have adverse effects on humans, animals, and aquatic life if released to the environment.

The Solution

Follow the City's construction requirements.

Before construction activities begin, familiarize yourself with the City's ordinances and criteria. Chapter 25-8 of the Land Development Code (LDC) addresses required erosion controls, spoils disposal, development in or near environmentally sensitive areas, tree protection, and landscape requirements. The City's Environmental Criteria Manual provides technical design criteria needed to achieve the environmental protection and preservation goals identified in Chapter 25-8 of the LDC. These rules apply to all land located within the Austin City limits and those areas outside the limits unless specifically exempted.

For more information on LDC and associated criteria, contact the Environmental Inspection Division of the Planning and Development Review Department at the phone number listed at the end of this fact sheet.

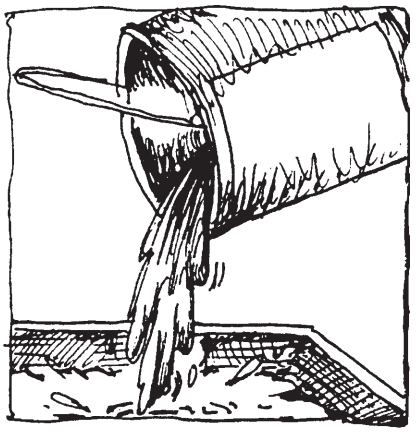
In addition, if the construction site is greater than five acres in size, contact the U.S. Environmental Protection Agency to apply for a required National Pollutant Discharge Elimination System (NPDES) Permit prior to beginning work. Proposed federal regulations may also require NPDES permits of construction sites between one and five acres. A phone number is provided at the end of this fact sheet.

Plan ahead.

Avoid unexpected construction delays and costly environmental remediations by planning ahead. Assess the properties surrounding the site to check for potential surface and/or subsurface contamination that could impact your site

Did you know...

Rinse water from cleaning painting equipment must be collected and disposed of properly, not poured onto the ground or sewer.



during excavations. Immediately contact the City's 24-Hour Pollution Hotline at 512-974-2550 if contamination (soil odor, discolora-tion, abandoned underground tanks, buried debris, unusual liquid seepage) is suspected or detected during the work. Always check ahead for existing utilities in the areas to be excavated as well as needed permits prior to beginning work.

Prevent erosion and minimize sediment laden runoff. Before starting work, prevent sediment runoff by using erosion controls such as silt fencing, rock berms, rip rap, sand bags, and temporary vegetation. Diversion dikes and drainage swales channel storm water runoff around the site. Line swales with grass or roughened pavement to reduce runoff velocity. Also, consider check dams, filter fabric and terracing. Whenever possible, minimize areas of disturbance as much as possible. Also, be aware of weather conditions. Attempt to avoid land disturbance when rain threatens and assure that erosion controls are in place and disturbed areas are stabilized to the greatest extent possible before storms. Re-vegetate disturbed areas as soon as possible to prevent further loss of top soil. Fore more details, access the City's Environmental Criteria Manual.

Avoid unexpected construction delays and costly environmental remediations by planning ahead.

Install erosion controls around excavated and stockpiled soil to prevent discharges to storm sewers and waterways. If contaminated, store the soil on an impervious surface to prevent it from impacting the ground or subsurface. Minimize tracking of mud by vehicles onto paved streets by using stabilized construction entrances.

Many of the above practices are required by City ordinance. Contact The Planning and Development Review Department's Environmental Inspection Division for permitting requirements and specifications regarding erosion controls.

Pollutant-free site dewatering, tank removals and pipe testing.

Discharges from dewatering, hydrostatic tank testing or pipe pressure testing must be free of sediment, chemicals (e.g. chlorine from superchlorination of potable water lines), and any other pollutants. Since these discharges tend to be larger volumes with increased flow rates, plan carefully to ensure that erosion and impact to adjacent properties does not occur. Planning may include diversion of the water over plastic sheeting to designated areas equipped to capture, test, and treat the waste. Many of these discharges, such as those involving underground storage tank equipment and excavations, require notification and permitting by the Watershed Protection Department. Prevent surface water runoff from entering contaminated excavations by using berms or other containment devices.

Store and handle waste and materials and product properly.

Place all containers of new and used products under protective cover and keep them closed (e.g. bags of dry materials like plaster). Properly label and regularly inspect containers to ensure that they are in good condition. Prevent or capture drips and spills (e.g. drip pans, sorbent pads) during product dispensing or vehicles and equipment maintenance. Do not conduct storage, dispensing and fluid draining activities on permeable surfaces (e.g. soil) where leaks accumulate, requiring extensive remediation. Designate a bermed area on a paved surface for vehicles and equipment parking and for vehicle maintenance. The bermed area should have no outlet to storm sewers or waterways.

Apply concrete, asphalt and seal coat during dry weather, leaving ample time to cure before it rains. Cover storm drains and manholes when applying seal coatings. Park paving equipment over drip pans or sorbent materials, since they tend to drip continuously. Berm the area during saw-cutting and shovel or vacuum the slurry for recycling or disposal with other construction debris. When breaking asphalt or concrete, control runoff and remove chunks and pieces from the site for recycling.

Use impermeable cloths or tarpaulins at the work area to capture airborne particles from paint applications, paint removal and sandblasting. Obtain the required specialized licensing, training, equipment and procedures prior to removing lead paint and asbestos materials. Pick up trash regularly, place it in a contained area or dumpster, and have the trash receptacle serviced regularly for proper disposal. Sweep up paved surfaces and remove litter

from work areas before it rains. Collect silt from erosion control devices prior to removing them.

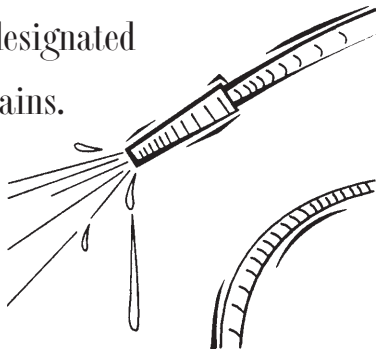
Don't top off fuel tanks because it increases your chance of fuel overflowing onto the ground. Store aboveground fuel and other petroleum products, greater than certain quantities, within secondary containment as specified in the City of Austin Fire Code. Contact the Austin Fire Department for requirements and specifications. A phone number is provided at the end of this fact sheet. Though not required, store all containers, regardless of quantity, in a secured and contained area to capture leaks and protect containers from construction traffic as well as possible acts of vandalism.

Dispose of wastes properly.

Containerize petroleum wastes, such as waste oil and used oil filters, for recycling through an approved service. Wash out concrete mixers only in designated wash-out areas where water flows into settling ponds, or onto stock-piles of soil, aggregate base or sand, and away from adjacent property, storm drains or water-ways. Avoid mixing excess amounts of fresh concrete or cement on site. Dispose of small amounts of excess concrete, grout and mortar in the trash.

Plan to buy only the amount of paint needed. If there is leftover paint, seek avenues for reuse such as through the City's Household Hazardous Waste Collection Facility, the Texas Commission on Environmental Quality (TCEQ) Resource Exchange Program, or a community organization. Allow latex or water based paint to dry in the container (kitty litter can be added to help dry it) and dispose of it, in small quantities, in the trash. Dispose of non-reusable oil based paint and empty paint cans, solvent and other chemicals through an approved disposal company. The Watershed Protection Department provides a list of disposal services for a variety of wastes - from contami-nated sorbent material and soil to empty drums or hazardous materi-als. Waste disposal information can also be obtained from the City's Zero Waste Business Services Program. Their phone number is provided at the end of this fact sheet.

Wash out concrete mixers in designated areas and away from storm drains.



Never dispose of any liquid wastes (e.g. paints, petroleum products, hazardous wastes) in the trash or dumpster where they may spill and enter the environment. Collect all removed vegetation for disposal at a landfill that composts yard waste. Shred tree trimmings into mulch.

Clean up spills properly.

Immediately clean up spills to prevent environmental impacts, especially spreading of the spill to a storm drain and waterway. Never leave spills unattended or flush a spill with water.

Prevent spills, as much as possible, through prevention planning. Inspect vehicles and heavy equipment for leaks and repair promptly. Inspect portable toilets routinely for leaks and keep them in a secured area away from traffic and possible vandalism.

Clean up non-hazardous spills on impervious (paved) surfaces by using a sorbent material (e.g. kitty litter, sand, peat, etc.), and disposed of the waste properly. Contain hazardous or large non-hazardous spills, if it is safe, and immediately contact the Austin Fire Department by dialing 911.

Excavate or remediate spills on pervious (soil) surfaces as quickly as possible to prevent spread of the contamination. Any surfaces contaminated by hazardous or toxic materials should be remediated by experienced, qualified individuals to protect the health and safety of yourself and the general public.

Report all spills to the Water-shed Protection Department to receive proper clean up instructions, especially for hazardous materials and large volume spills. Staff are available 24 hours a day through the City's Pollution Hotline, 512-974-2550.

Post a site specific spill contingency plan. A safety data sheet (SDS) should be readily available for each hazardous chemical used and stored at the site. An SDS contains information that enables persons responsible for handling, using or encountering chemicals to estimate the likely harm, potential hazards and risks that might arise in emergency situations involving those chemicals. Obtain an SDS by calling the manufacturer's phone number from the label on the chemical container.

Collect and dispose of cleaning activity waste properly.

Clean without creating any discharge of soaps, detergents, oil or other pollutants to a storm drain or waterway. Ideally, wash equipment and vehicles at an approved wash facility over a drain to the sanitary sewer. If any washing must be done on site, use plain water and make sure the wash water does not create silty runoff.

When cleaning paint equipment outside, contain wastewater in a bucket or other container and dispose of it properly. Dispose of water based or latex paint wastewater in the sanitary sewer (e.g. sink, toilet). Collect oil based paint wastes, including solvents and thinners, and dispose of through a hazardous waste disposal company.

When cleaning paved areas, sweep up debris, pre-treat oil stains and slick spots with dry sorbent (make a paste with water, kitty litter and powdered soap), and clean large areas with approved equipment such as vacuum scrubbers that collect the wastewater for proper disposal to a sanitary drain.

Removal of oil/grit separators and other treatment structures.

Obtain approval from the Watershed Protection Department prior to removal of treatment devices. According to federal law, before removing oil/water separators or traps, the waste within the structure must have been tested (Toxicity Characteristic Leachate Procedure or TCLP) within the last two years. This test is conducted to determine if the contained material is a hazardous waste. Be aware that this test takes approximately two to three weeks to complete. Submit the test results and waste disposal receipts to Watershed Protection Department staff before removing the trap.

Train employees and subcontractors. Educate all workers on the importance of a clean and safe work environment. Taking time to train employees saves a lot of time and expense in clean ups, regulatory fines and site restorations.

Use less toxic alternatives.

Use the least toxic materials available. For example, use latex or water based paint instead of oil based paint. Find non-toxic or less toxic alternatives to other chemicals you use at your site. Doing this not only protects the environment, it also reduces cleanup and disposal costs. For more information, contact the City's Zero Waste Business Services at the phone number listed at the end of this fact sheet.

The Bottom Line:

It does cost time and money to implement environmental pollution prevention measures at your construction site. However, it will take more time and money to clean up spills or other unplanned environmental problems. One case in Austin involved wastewater, from paint equipment cleaning, discharged to Shoal Creek via a storm drain. It cost the responsible party over $20,000 to remove the material from the creek and have the contaminated water disposed of properly. In addition, fines from City, State or Federal agencies can add thousands of dollar to the overall cost of a polluting spill. Contractors with a TPDES permit for construction sites greater than five acres in size may also face fines for not preparing a Storm water Pollution Prevention Plan or keeping required records.

For More Information:

Regulation of polluting discharges to storm sewers and waterways, spill reporting, lists of waste disposal services, discharge permits, soil cleanups
City of Austin Watershed Protection Department
Pollution Prevention and Reduction Section
(512) 974-2550

Underground storage tank removal, installations, and testing
City of Austin Planning and Development Review Department
Underground Storage Tank Program
(512) 974-2715

Erosion and sedimentation controls, construction inspection
City of Austin Planning and Development Review Department
Environmental Inspection Division
(512) 974-2278

Hazardous Materials Handling and Storage Permits, aboveground storage tank secondary containment requirements
City of Austin Fire Department
Hazardous Materials/Prevention Division
(512) 974-0182

Small business waste disposal information,
Austin Resource Recovery
Zero Waste Business Services
(512) 974-9727

Cut Work Permit for Excavations within City Right of Way
City of Austin Public Works Department
Construction Inspection Division
(512) 974-6330

Utility types and locations
One Call Location Center
811 (Call 2 working days before you dig)

National Pollutant Discharge Elimination System (NPDES) Permits
U.S. Environmental Protection Agency (EPA)
1-800-887-6063

Emergency Numbers

Austin Fire Department (emergencies)	911
City of Austin Environmental Hotline (24 hour)	(512) 974-2550
TCEQ Emergency Response Center (24 hour)	1/800-832-8224

CLEAN WATER FACT SHEET

LANDSCAPING

City of Austin - Watershed Protection Department

The way you manage your landscaping business or the care of your home lawn and garden can have a major impact on Austin's environment. Misuse of many of the products and practices associated with landscape maintenance can harm water quality. Fortunately, when done properly, landscaping activities can minimize pollution and even improve water quality.

The care of your home, lawn and garden can have a major impact on Austin's environment

The Watershed Protection Department is responsible for preventing polluting discharges to the city's storm drain system and waterways as mandated by Title VI, Chapter 6-5 (Water Quality) of City Code. This document provides information on maintaining a beautiful, healthy landscape without polluting the environment.

The Problem

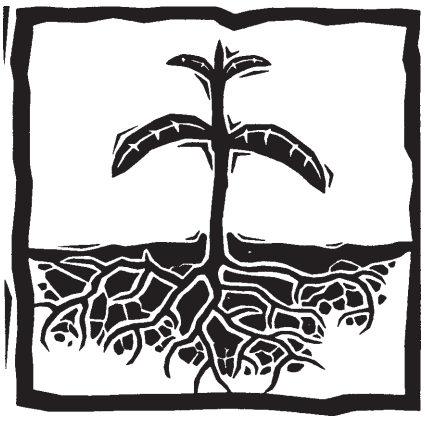
Not following the city's landscape requirements.
The City of Austin is growing rapidly resulting in development and restoration of homes, businesses, roadways and utilities. If this development is not carefully planned, essential vegetation such as trees and groundcover will be destroyed. Without them, natural filtering of pollutants from storm water runoff would not occur prior to flowing into our creeks and lakes. Trees and natural vegetation would not be protected from paved surfaces, glare, and heat. Local stock of native trees and vegetation would not be preserved. The City would lose vegetation that enhances its beauty, provides visual buffering, increases property values, helps conserve energy and water, reduces erosion, and preserves the unique identity of Austin.

Misuse of pesticides.
Pesticides (herbicides, fungicides, rodenticides, insecticides) are a major source of toxic pollutants. Some people believe that more is better. But, while designed to destroy pests, pesticides can also poison birds, fish and other wildlife, especially if designated application rates are exceeded. Just five tiny granules of diazinon can kill a house sparrow. Pesticides can seep into groundwater and contaminate drinking water, and destroy soil by killing essential organisms from microbes to earthworms. Application in and along creeks and lakes can kill aquatic life, and can pose a health threat to children who play there. Applying pesticides just before it rains or in unneeded

Did you know...

Each year, Texans apply about 5 million pounds of fertilizers and 4 million pounds of pesticides on our lawns.

It is estimated that almost one third of that usage is wasted because we use too much or the wrong mix.



areas increases their chance of being flushed to a storm drain.

Some toxic pesticides accumulate in the environment and migrate up the food chain, as larger organisms eat many smaller contaminated organisms. Fish in Lady Bird Lake have been contaminated in this way. So, often, the long term health and environmental effects of pesticide products are not known.

Use of fuels as weed killer.

Using gasoline, diesel, kerosene and other petroleum products to destroy unwanted vegetation has a significant impact on the environment. These substances are toxic. Some are cancer-causing and can persist in soil for many years. In areas with very porous soil, toxins can seep into our groundwater supply.

Misuse of fertilizers.

Many people over apply fertilizers in an effort to have a perfect landscape. This wastes fertilizer and can damage plants. Water soluble fertilizers applied before a rainfall easily washes into our creeks and lakes. Furthermore, careless use of fertilizers can result in application on sidewalks and other paved areas, where they are easily washed to a storm drain.

Fertilizers, as well as leaves and grass clippings, contain nitrogen and phosphorus - primary nutrients for plant growth. These nutrients, when washed into our creeks and lakes by rain or lawn watering, result in a rapid growth of algae and aquatic weeds commonly referred to as a "bloom". As these plants die and decay, they use up oxygen in the water, create foul odors and taste in drinking water, and clog pipes and water intakes. A bloom can kill fish and other aquatic life. Excessive vegetation is also dangerous to swimmers and boaters and requires costly mechanical removal. Some nitrogen fertilizers release ammonia, which is toxic to fish.

Careless storage of lawn and garden chemicals.

Storing chemicals improperly can cause pollution. Fertilizers and pesticides stored in areas exposed to weather, especially those in cardboard boxes and paper sacks, will deteriorate, then leak or spill. Extreme temperatures or dampness can reduce the effectiveness of pesticides, and degrade the packaging. This increases the chances for overapplication or a spill. Outdoors, product labels become unreadable, or peel from their containers, thus separating the chemical from very important information regarding material use, storage, and disposal. Open, uncovered, or damaged chemical containers will overflow if filled with rainwater. Chances for an illegal discharge are greatly increased when chemicals are stored in unsecured areas and close to storm drains leading to our creeks and lakes.

Illegal disposal of lawn and garden chemicals.

Unusable or unwanted lawn and garden chemicals are sometimes dumped down sinks, on the ground outside, into storm drains, or even in the dumpster. Sinks carry lawn and garden chemicals to municipal and private wastewater treatment systems, potentially damaging plumbing and treatment equipment. Chemicals placed in dumpsters contaminate the landfill and may seep into the groundwater. They also spill inside the dumpster, posing a danger to the trash haulers and the environment if they leak out the dumpster seams or drain hole. Disposal onto the ground is an exposure hazard and results in expensive soil cleanups. Chemicals disposed of in storm sewers are carried by storm water directly to area creeks and lakes where the impact on aquatic life can be devastating. Illegal disposal of chemicals can have long

Did you know...

Many landscapers pollute by blowing leaves or grass clippings into the street or storm drains where they will end up in waterways.

lasting effects on the environment - many take decades to break down, while others persist in tissues of fish, birds, and other wildlife.

Improper disposal of yard wastes.
A common scene during landscape maintenance activities is the use of blowers to remove leaves and grass cuttings from sidewalks and driveways. Blowing these materials into the street or directly into storm drains impact our waterways. Also, collecting lawn wastes and dumping them "over the fence" adjacent to a creek will impact our waterways.

The decay of leaves, mulch, grass clippings, and other vegetation releases nutrients into the environment as they decompose. These nutrients become pollutants if they migrate to our creeks and lakes. Bulkier wastes that are dumped, such as brush and tree limbs, can block storm drains and waterways and promote flooding.

Mismanagement of composting activities.
Composting is an excellent way of recycling plant wastes such as grass clippings, leaves, and other organic materials. However, dumping compost materials along waterways or establishing piles too close to creeks and lakes creates a problem. The decaying organic materials in compost piles contain nutrients and chemical by-products harmful to aquatic life. Furthermore, waste products, other than plant waste, carelessly disposed of in compost piles also create pollution problems. Some examples of these waste products are trash, toxic chemicals, and bacteria from meat and dairy products. In addition to being a source of pollutants, compost piles located along waterways can cause flooding by physically blocking the drainage channel. Compost piles also pose a fire hazard if not properly located and managed.

Improper erosion controls for stockpiles and work sites.
Storm water runoff from cleared or excavated land and from unprotected stockpiles of landscaping materials such as topsoil, sand, compost, or mulch, carries sediment and debris to our storm drains and waterways. Sediment smothers bottom dwelling aquatic life, clogs fish gills , and blocks sunlight required for aquatic plant growth. Toxic materials such as lead and pesticides attach to sediment particles. So, when sediments settle out, the toxins are concentrated at the bottom of waterways. In addition, accumulations of sediment and debris clogs storm drains, obstructing normal flow and promoting flooding.

Mishandling of spills.
Accidents will happen. However, spills from leaking containers or from mishandling chemicals are often neglected or rinsed away with water. Hosing the spill with water spreads the contamination and carries the toxins to the storm drain. Pesticides washed into a waterway have an enormous impact on water quality, even in very small quantities. For example, Dursban, a common pesticide, is lethal to fish in concentrations of less than 4 parts per billion. This is equivalent to less than 2 tablespoons diluted in an Olympic size swimming pool.

Careless handling of maintenance equipment.
A wide variety of equipment is used by landscaping businesses and homeowners alike. Use of lawn mowers, trimmers, edgers, chain saws, leaf blowers and even vehicles used to transport these items can pollute the environment if not properly handled. Gas powered equipment can leak fuel and oil. Petroleum products are toxic to humans, animals and aquatic life. They contain metals such as lead that persist in the environment. They can destroy vegetation upon contact.

A part of routine maintenance includes washing equipment like vehicles and mowers. Flushing equipment cleaning wastewater to the environment is an illegal pollutant discharge. Some cleaning agents contain hazardous ingredients; others contain nutrients. Cleaning agents are made to bind with oil, grease, grime and dirt. So, if wash water is flushed to storm sewers, waterways or elsewhere - it carries both the cleaning agent and the bound dirt, grease and grime. Grass clippings and debris washed off dirty surfaces contribute excess organic material in waterways which depletes oxygen needed by aquatic life.

The Solution

Follow the City's landscaping requirements.
If you are involved in landscape planning, become familiar with the City's ordinances and criteria. Subchapter B, Chapter 25-8 of the Land Development Code (LDC) provides requirements for tree and natural area protection, and landscaping activities.

The Environmental Criteria Manual provides technical design criteria needed to meet the landscape re-quirements, as well as the tree and natural area preservation re-quirements identified in Chapter 25-8 of the LDC. These rules ap-ply to all land located within the Austin City limits and to those areas outside the limits which have agreed to comply with these provisions. A tree removal permit is required for protected trees. For more information, contact the City Arborist at the phone number provided at the end of this fact sheet.

Protect water quality through landscape design.

A landscape designed to limit runoff and reduce the use of chemical products helps protect water quality. In addition, designs limiting the volume or decreasing the speed of storm water runoff and irrigation water reduces erosion and prevents pollutants from washing into storm sewers and waterways. To reduce runoff, substitute impermeable surfaces (such as concrete and asphalt) with more porous alternatives (such as wood decking, gravel, and modular pavers) which allows water to soak into the ground. Prepare the soil so water will be absorbed into the landscape, by adding missing soil components and cultivating the soil as deeply as possible. Runoff is also reduced by preventing thatch build up on lawns and turning the soil in flower beds and borders to prevent soil compacting. Design irrigation systems to deliver only as much water as is needed to each area of the landscape. Avoid overspray on impermeable surfaces such as driveways and sidewalks.

Continue to monitor irrigation systems after installation for broken sprinkler heads, leaks, and other problems increasing the amount of runoff. Route site runoff through grass lined ditches and vegetated swales to help remove pollutants from the water before they leave the site.

Landscape with native vegetation or "xeriscape " plants.

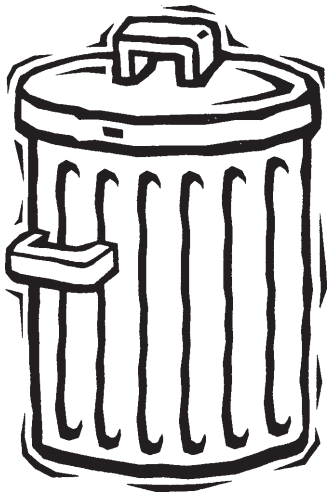
They require less water, chemical fertilizers, and pesticides. Xeriscape is "quality landscaping that conserves water and protects the environment." Plant varieties adapted to this area are more resistant to pests and disease. Use a mix of plants to minimize pest infestations. Promote optimum growing conditions and eliminate conditions favorable to pests. For example, in the Austin area, many harmful molds and fungi can be controlled by watering in the early morning rather than in the evening. Some xeriscape plants attract beneficial insects and birds to your yard. For details on xeriscape plants and water conservation, contact Austin Water at the phone number provided at the end of this fact sheet.

Prevent the need for chemicals when possible.

You can avoid routine use of herbicides by properly watering, fertilizing and mowing the lawn. A thick, healthy lawn and root system is the best defense against weeds. Fertilizing in early fall promotes deep healthy root systems. Shallow root systems are unable to help lawns survive a drought or harsh winter. Consider removing damaged or diseased portions of plants, rather than trying to save them with chemical use. If the entire plant is diseased, consider removing it along with the roots and surrounding soil. Seal in a garbage bag for trash removal. Afterwards, wash hands and sterilize garden tools with a mild bleach solution. Use crop rotating techniques to prevent buildup of disease-causing organisms.

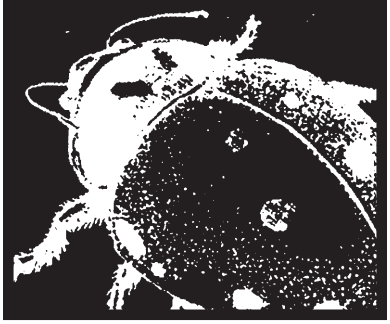
Did you know...

Yard waste makes up about **18%** of America's trash. Reuse yard waste as mulch or compost.



I.P.M.

3 letters,
4 simple steps



Use Integrated Pest Management.

Learn about Integrated Pest Management (IPM) which emphasizes prevention and natural pest control methods instead of chemicals such as manually removing weeds and larger insects from plants. Weeds can also be controlled in landscapes by using ground cover plants and mulch. Ashes, diatomaceous earth, limestone, and other natural materials applied to the landscape may act as an irritant and repel bugs. For more information, contact the Watershed Protection Department's Integrated Pest Management Program at the phone number listed at the end of this fact sheet.

Avoid misuse of pesticides.

Use pesticides only as a last resort. Always follow the directions on the package label. Twice as much does not mean twice the results. Do not mix chemicals unless specifically indicated on the label. Mixing can produce explosive reactions or toxic fumes. Apply pesticides only in calm, dry weather. This reduces pesticide losses from drift and storm water runoff. Avoid regular application. Do not apply pesticides to bare ground or eroded areas. Never apply toxic pesticides near water bodies, water wells, and wildlife habitats. Cluster landscape jobs that use the same spray solution to minimize the number of times the equipment must be cleaned; this reduces waste.

Select the right fertilizer.

Whenever possible, choose natural fertilizers such as manure and compost materials. If you must use a chemical fertilizer, choose the correct type and concentration and, thereby, reduce environmental risk. Read the label for the recommended application rate. The label also provides the percentage (by weight) of the three necessary nutrients: nitrogen (listed first), phosphate (supplies phosphorus), and potash (supplies potassium). For example, a bag of 25-4-5 fertilizer contains 24 percent nitrogen, 4 percent phosphate, and 5 percent potash. The remaining ingredients are usually ground limestone or sand.

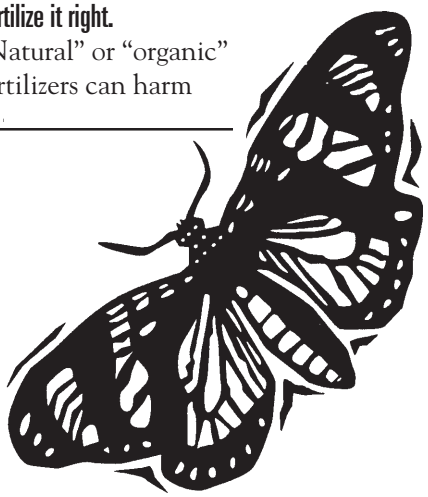
Many soils already contain enough phosphorous to grow a healthy lawn. Try low-phosphorous or phosphorous-free fertilizers. They can provide necessary nutrients while minimizing the threat to water quality. Adding 1/2 inch of compost, manure or other natural materials on top of lawns or soil is an ideal way to supply nutrients to your landscape. Most organic fertilizers contain lower concentrations of nutrients than synthetic fertilizers and release the nutrients more slowly. On sandy soils, nitrogen can quickly seep through the soil into the groundwater, thus slow release is ideal. A soil test (soil analysis for nitrogen, phosphorus, and potassium) will help determine the right fertilizer formulation to use and prevent over applications. Nutrient requirements for gardens, trees and shrubs can vary. Consult your local nursery and garden supply, agricultural extension office, or the Watershed Protection and Development Review Department for more information.

Fertilize it right.

"Natural" or "organic" fertilizers can harm

Did you know...

Xeriscaping conserves water, reduces chemical fertilizer and pesticide use and attracts beneficial insects and birds to your yard.



aquatic life, too, by providing nutrients prolific for plant and animal growth. So, keep them out of storm sewers and waterways also. Use chemical fertilizers sparingly. Overapplication can "burn" or damage plants, causing them to die. Do not spread or spray fertilizers in unneeded areas such as sidewalks, streets, or driveways. Fertilizer should be applied at the time of day and under the conditions indicated in the package directions; do not apply them in windy or rainy conditions. Water the landscape lightly after application to help fertilizers soak in.

Leave it on the lawn.

Reuse yard waste whenever possible. Grass clippings and leaves can be collected and used as mulch to protect tender garden and landscape plants during the winter months or they can be composted. Grass clippings can be left on the lawn. Sweep grass and leaves out of the street and off sidewalks and driveways, so they are not washed into the storm drain system. Do not dispose of yard wastes in the street gutter, in storm drains, in ditches, or in waterways.

Residential customers of the Austin Resource Recovery Department can put leaves and grass clippings into 30 gal. garden brown paper bags, curbside pickup. Limbs up to three inches in diameter and five feet long can also be put out at the curb for pickup, provided they are tied in bundles using rope or twine, not wire. Tree limbs can be shredded and used for mulch. For more information on curbside pickup, contact customer service at Austin Resource Recovery 512-494-9400.

Store lawn and garden chemicals properly.

Consult the product label for storage conditions needed to avoid product damage. All materials should be stored in a well ventilated, easily cleaned, dry area, never exposed to weather. The storage area should be constructed such that it can contain a spill. Keep storage areas locked and identified with warning signs.

Store dry products above liquids and keep them off the floor. Consult the Safety Data Sheets (SDS) for chemicals to avoid storing incompatible chemicals near one another. This can cause violent reactions and spills. An SDS contains information that enables persons responsible for handling, using or encountering chemicals to estimate the likely harm, potential hazards and risks that might arise in emergency situations involving those chemicals. Obtain an SDS by calling the manufacturer's phone number from the label. Keep lids securely in place and bags tightly closed after opening. In case of spills, pesticides and fertilizers should not be stored near storm drains or drainage ways leading to creeks and lakes. Always keep pesticides in their original containers with labels intact. If a label becomes unreadable, re-label the container with as much information as possible.

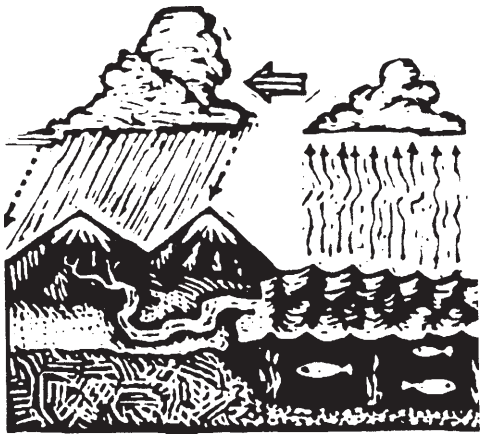
Regularly inspect storage areas and check for damaged containers. Broken or leaking containers can be placed inside a second container of similar material (e.g. glass for corrosives, metal for flammables) until used or disposed of properly. Some pesticides are hazardous materials and require special storage as well as a Hazardous Materials Permit from the Austin Fire Department (AFD). For advice, call AFD at the phone number listed at the end of this fact sheet.

Properly dispose of excess lawn and garden chemicals.

Routinely check inventory and use the oldest material, to avoid disposal of outdated materials.

Did you know...

Xeriscaping can help Austin delay the construction of additional water treatment facilities. Therefore, xeriscaping will save you money on your water bill.



Before buying chemicals, calculate how much you need and buy only that amount. If you have excess fertilizers or pesticides, try to find someone who might have an immediate use for them. Wood preservatives such as creosote and some banned insecticides should not be reused. If disposal is your only option, requirements may vary according to the type and quantity of the chemical. Never pour unwanted chemicals down any drain. Homeowners in the City of Austin and Travis County may dispose of limited amounts of pesticides and fertilizers at the City's Household Hazardous Waste Collection Facility. Austin Resource Recovery has a disposal program for small business which accepts limited quantities of some business waste for a fee. Otherwise, unusable chemicals can be disposed of through a licensed disposal company. The Watershed Protection Department provides a list of disposal services.

Triple rinse empty containers and dispose of or use the rinse water the same way you would dispose of or use the product. Containers that stored hazardous chemicals must be disposed of through a hazardous waste disposal service. Otherwise, non-hazardous chemical containers should be rinsed, wrapped in several layers of newspaper and placed in the trash. Recycle as much waste as possible such as plant pots, yard waste (make compost), and fluids from vehicles and equipment (e.g. oil, filters, batteries, antifreeze). For more information about hazardous waste collection and disposal, contact the Texas Commission on Environmental Quality at the phone number provided at the end of this fact sheet.

Composting without polluting.

Do not locate a compost pile in a drainageway or on the bank of a waterway. Compost piles should be located in a flat area as far away from storm sewers and waterways as possible. Install wood fencing, earth berms or other means to control erosion and runoff from the pile. Care should be taken to ensure that your compost pile does not contain pollutants such as petroleum products, pesticides, trash, or other materials that will contaminate the compost.

Control erosion and sediment runoff from stock piles and work sites.

Whenever you clear the land, excavate, or otherwise expose bare soil, prevent erosion by using appropriate controls like silt fencing, rock berms, and sand bags. A permit must be obtained prior to any excavations within City right-of-way. Contact the City's Transportation Department for permit information by dialing the phone number listed at the end of this fact sheet. These erosion control structures should always be put in place prior to any kind of excava-tion or land clearing activities. Be prepared for rain and have addi-tional controls on hand for use in severe weather. Re-vegetate dis-turbed areas as soon as possible to prevent loss of topsoil. Protect any stockpiled soil or other mate-rials from rainfall runoff. Cover the piles with plastic and sur-round them with silt fencing, berms, or other controls as necessary. If landscaping includes the use of concrete or cement related mortars, use a designated wash out area to keep these materials out of storm drains and waterways. Contact the Planning and Development Review Department's Environmental Inspection Division for requirements and specifications regarding erosion and sedimentation controls.

Clean spills as they occur.

Spills must be cleaned up immediately, especially before they reach a storm drain and spread to a creek or lake. For chemical spills, use the necessary protective clothing as instructed on the product label and the SDS. Keep other people and pets away from the spill. Dry material spills may be swept up and reused or disposed of properly. Do not flush liquid spills with a hose. Instead, small chemical spills can be picked up with sorbent material (e.g. kitty litter, sawdust, or dirt). Sweep or shovel the used sorbent material or spilled dry material into several plastic bags (one placed inside the other) and seal the bag shut. Follow the same disposal protocol as with unused or unwanted chemicals. Contain large chemical spills with sorbent, if it is safe to do so, then immediately contact the Austin Fire Department by dialing 911. Once cleaned up, paved surfaces can be rinsed with water and a mild detergent and the rinsewater contained and absorbed for proper disposal.

Contaminated soil must be dug up and disposed of legally. Contact the Watershed Protection Department for instructions.

Spills to waterways must be stopped, contained where possible (e.g. build an earthen dike in small streams), and assessed by the Watershed Protection Department by calling the City's 24-Hour Pollution Hotline.

Handle maintenance equipment responsibly.

Use routine preventive maintenance of equipment to prevent drips and leaks. If they do occur, stop use of the equipment and capture the leaking material with drip pans or sorbent pallets until they can be repaired. Drain fluids from retired vehicles and equipment so they cannot leak. Consider using electric or battery powered equipment where possible. Wash vehicles and larger equipment at car wash facilities that are connected to the sanitary sewer system. Otherwise, rinse smaller equipment with plain water over a grassy area.

Know your drainage.

Runoff from properties often flow to storm drains on lots, and along street curbs. Some properties in Austin have oil/grit separators, storm water ponds, and even drains inside buildings which connect to the storm drain system. Some incorrectly assume that oil/grit separators and ponds are receptacles for waste disposal. If you plan to landscape near any of these drainage structures, make sure workers know that nothing can be dumped or discharged to them. The Watershed Protection Department provides fact sheets with instructions on proper use of separators and ponds. Preventing spilled materials from entering these structures prevents costly environmental remediations, fines, and maintenance.

Train landscapers.

Prevention is the key to eliminating pollution. The best prevention method is training landscaping workers about pollution prevention techniques. Make sure they are knowledgeable about the chemicals they use and what to do if a spill occurs. Training will save time and money in clean ups, regulatory fines, site restorations, and injuries.

Educate your customers.

Share information with your landscaping customers about how to maintain their landscape to protect the environment and conserve water.

The Bottom Line

An environmentally conscious approach to landscaping emphasizes reducing the amount of chemical products needed and maximizing the usefulness of the chemicals that are needed. This translates into fewer chemicals used and fewer chemicals washed away, which also translates to reduced costs. Landscape designs that incorporate hardy native plants and minimize runoff leads to decreased maintenance levels as well as a reduced water use. These factors save money. Using compost and grass clippings as mulch, or as a soil additive, puts nutrients back into the soil and minimizes fertilizer cost. Composting and mulching also saves hauling and landfill disposal costs. These measures not only help to keep your costs down, but also reduce the cost of pollution to our environment.

It does cost time and money to implement measures to prevent water pollution from everyday activities. However, more time and expense is needed to clean-up a polluted site. Spilled materials such as pesticides, oil, gasoline, and diesel can be extremely expensive to clean-up. Spills that are not cleaned up cause soil or groundwater contamination which could impact future sale or transfer of the property. Practices allowing materials to enter a storm drain or waterway results in stiff fines and penalties. In addition, treatment of injuries and time lost from work, results in significant costs.

For more information:

Regulation of polluting discharges to storm sewers and waterways, spill reporting, lists of disposal/recycling services, soil cleanup instructions
City of Austin Watershed Protection Department
Pollution Prevention and Reduction Section
(512)974-2550

Tree protection information
City of Austin Planning and Development Review Department
City Arborist
(512) 974-1876

Commercial Landscape ordinance information
City of Austin Planning and Development Review Department
Environmental Review
(512) 974-2680

Composting information
Austin Resource Recovery
(512) 494-9400

Household Hazardous Waste Collection Facility
Austin Resource Recovery
(512) 974-4343

Small business waste disposal information
Austin Resource Recovery
Zero Waste Business Services
(512) 974-9727

Pesticides and landscaping information
City of Austin Watershed Protection Department
Integrated Pest Management Program
(512) 974-1475

Xeriscape and water conservation information
Austin Water
Water Conservation Program
(512) 974-2199

For more information, continued:

Hazardous materials permit and storage requirements
Austin Fire Department
Hazardous Materials Prevention Division
(512) 974-0182

Erosion and sedimentation controls, construction inspection
City of Austin Planning and Development Review Department
Environmental Inspection
(512) 974-2278

Permit for excavations within City right-of-way
City of Austin Transportation Department
Construction Inspection Division
(512) 974-6330

Waste storage/disposal requirements, spill reporting, alternatives to household hazardous chemicals
Texas Commission on Environmental Quality
(512) 339-2929 (waste storage and disposal)
(512) 239-4747 (chemicals alternatives)
1-800-832-8224 (24-Hour spill reporting)

Weed problems are usually the result of improper lawn care.

CLEAN WATER FACT SHEET

PRESSURE WASHING

City of Austin - Watershed Protection Department

Pollution! For most of us this word conjures visions of grounded oil tankers spilling millions of gallons of petroleum onto pristine beaches, and bubbling pools of green toxic waste dumped by a defunct chemical plant. What some people do not realize is the cumulative effects of our everyday activities such as pressure washing of equipment, vehicles, and pavement can also greatly impact the environment. Pressure washing removes dispersed grime, dirt, oil, and grease off surfaces being cleaned and concentrates these pollutants in the wash water. If this contaminated water drains to storm sewers which empty to our creeks and lakes, it pollutes our waterways. The Watershed Protection Department is responsible for preventing polluting discharges to the City storm sewer system and waterways as mandated by Title VI, Chapter 6-5 (Water Quality) of City Code. This fact sheet provides pressure washing contractors with information on how to operate without polluting the environment.

The cumulative effect of improper pressure washing significantly impacts the environment

The Problem

Not planning for collection and disposal of wash water.

Not planning for proper wash water disposal could result in significant costs to a pressure washing business. It's too late to decide where to dispose of wash water after cleaning a customer's lot, structure, or equipment. Chances are, the wash water will be dumped somewhere it shouldn't, resulting in costly fines and wastewater cleanups.

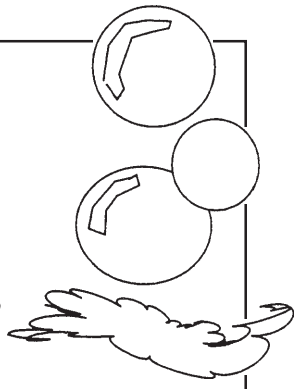
Using toxic and hazardous cleaning chemicals.

The use of toxic or hazardous cleaning agents such as flammable solvent, acids, or caustics make wastewater disposal more difficult and expensive. If flushed to a storm sewer or waterway, they can destroy aquatic life. Some examples are:

- chlorine (found in disinfectants),
- ammonia (found in many floor and interior surface cleaners),
- sodium hydroxide (found in floor stripper),
- phosphoric acid (found in many different cleaning agents),
- nitrilotriacetic acid (found in detergents),
- meta, para, ortho-xylenes (found in concrete cleaners) and,
- hydrofluoric acid (found in metal brighteners).

Did you know...

If all Texans washed their vehicles twice a year and used 5 gallons of water per wash, they would generate an estimated 150 million gallons of wastewater annually. This is a lot of dirty, soapy water that can pollute our valuable water resources.



Flushing chemicals to soil or storm water ponds results in costly cleanups. It is illegal to discharge hazardous cleaning agents to septic or sanitary sewer systems because these materials destroy biological organisms that treat the sewage and could damage the treatment plant. Most landfills will not accept liquid materials. Therefore, the only option is costly - using a hazardous waste disposal service.

Not pretreating heavily soiled areas prior to pavement cleaning.

Parking lots, walkways, and driveways accumulate motor oil, fuel, and antifreeze from leaking vehicles, grease, trash, and dirt. Flushing these contaminants to storm drains and streams not only results in serious fines, but also serious pollution impacts. Trash and debris clogs storm drains and waterways, leading to increased maintenance costs and flooding problems.

Trash and debris also create an aesthetic nuisance, thereby decreasing the recreational value of our creeks or lakes. Leaves and grass clippings add unneeded organic materials to a waterway that depletes oxygen for fish. Antifreeze, fuels, oil, and metals found in used automotive fluids (arsenic, chromium, copper, lead and mercury) are toxic to humans, animals and aquatic life. Sediment and dirt cause creeks and lakes to become cloudy, reducing sunlight needed for aquatic plants. Sediment also smothers bottom-dwelling aquatic life and clogs fish gills. Many other pollutants, including metals, bacteria, and some nutrients adhere to sediment particles, increasing the sediment pollution impact.

Not collecting wash water.

Washing occurs when surfaces are dirty. So, even washing with plain, cold water can produce dirty wash water. Furthermore, the use of both chemical cleaning agents and/or hot water increases the amount of contaminants in the wash water. Hot water dissolves oil and grease from surfaces, so when flushed, pollutants are washed to the environment.

Cleaning agents are designed to emulsify or bind pollutants such as oil and grease. For example, engine cleaning wastewater contains petroleum products and heavy metals (e.g. lead); and, kitchen exhaust/equipment cleaning wastewater contains food grease and oil. So, if pressure wash water is flushed away - it not only carries the cleaning wastes to storm sewers or waterways, but also oil and grease residues from surfaces over which it flows. Oil and grease destroys aquatic organisms. In addition, some cleaning agents contain hazardous or toxic ingredients that kill aquatic life. Soaps and detergents (especially phosphate detergents) promote algae blooms in waterways. The subsequent death and decay of the blooms deplete sunlight and oxygen needed by aquatic life.

Using microbes incorrectly.

Microbes are commonly used for pavement cleaning, since these specialized bacteria and fungi "eat" petroleum and break it down to non-toxic compounds. Microbes, like other living organisms, need water, food, and air to survive. So, microbes applied to hot pavement without water will die.

Many microbial cleaning agents contain detergents which promote efficient cleaning by dissolving oil and grime off dirty surfaces. This concentrates pollutants in the wash water. Microbial cleaning agents may also contain nutrients like nitrogen to stimulate microbial growth and reproduction. But, if microbial cleaning agents are flushed by pavement cleaning - or if rain water flushes cleaning agents off

Did you know...

Heavy metals such as cadmium, lead, and copper can interfere with reproductive cycles of fish, invertebrates, and other aquatic life. Sources of metal pollution include vehicle and parking lot washing discharges.

a dirty surface - the microbes may not find their intended food source. As a result, the dissolved oils and greases in the wash water will impact receiving waterways, and nutrients will overstimulate algae growth. Also, applying microbes over large paved areas increases the likelihood they will be flushed to storm sewers and waterways.

Improper disposal of collected wash water. Disposal of collected wash water from pressure washing activities to a storm drain, storm water pond, or oil/grit separator is a violation of City, State, and Federal regulations. Discharging pressure washing wash water containing soaps or detergents to storm water ponds or oil/grit separators can cause these structures to fail, and release their contents (concentrated wastes such as oil, heavy metals, and sediment) to the storm drainage system. Wash water contains contaminants that harm aquatic life if discharged to storm sewers and waterways. It is preferable to wash or divert to a vegetated area, given mild cleaning activities were performed and no residual pollutants are in the discharge. For example, wash water generated from cleaning a heavily soiled area with or without cleaning agents should not be discharged to a vegetated area. This wastewater should be disposed of in the sanitary sewer system.

Improper disposal of sludge from wash water treatment or recycling systems. Some pressure washers use portable wastewater recycle or treatment systems. These typically produce a sludge as the solids settle out of the reusable water. This sludge contains dirt, grease, oil, heavy metals, cleaning agent residues, and other wastes depending on the surface being cleaned. Discarding the sludge to a storm drain, waterway, or landscaped area will pollute it. Putting the contaminated sludge in the trash can result in contamination of the landfill and groundwater.

The Solution

Effectively plan for wash water disposal. Before a cleaning job, determine what kinds of contaminants might be on the surfaces to be cleaned. Choose a cleaning agent that will do the job, but ones without hazardous ingredients that make disposal difficult. Review the Safety Data Sheet for the cleaning agent prior to choosing a cleaning ma-terial. With this information, plan for responsible disposal. If you have a recycle or treatment system, check with the manufac-turer to find out what quality wastewater is produced. This will also determine where the waste-water can be disposed. Explore your disposal options and choose the one right for you.

Pre-clean areas of frequent, heavy grease and grime buildup.
For pavement:

(1) Pick up litter and debris and sweep up accumulated sediment and dirt; seal it in trash bags and put it in trash receptacles.

(2) Clean up puddles, leaks or spills with a dry absorbent material such as kitty litter; seal in garbage bags and place in trash.

(3) Clean heavy oil stains and slick spots by brushing these areas with a mixture of granular clay, detergent

Before cleaning, find out what kinds of contaminants are on the surface and choose a cleaning agent that will do the job. Then collect the wastewater for proper disposal.

and a small amount of water; allow it to dry; sweep it up and dispose with the trash.

Spot clean relatively small, exceptionally soiled areas on vehicles, aircraft, kitchen equipment, and buildings with a small amount of cleaning agent. Absorb the wash water using a rag, mop & bucket, wet vacuum, or similar equipment. If spot cleaning is not practical, capture and dispose of the wash water as described later in this document.

Clean dirty surfaces using a "dry" method. Several products can be applied to recently cleaned vehicles or airplanes to prevent attachment of dirt and oils. However, many of these products require the surface to be initially wet washed to remove most of the concentrated grime. Then, the clean surface is coated with dry washing product, allowing it to be simply rinsed or wiped with a damp cloth at the next cleaning. This will save on water usage. Check the yellow pages of the phone book under "Dry Washing" for contacts and phone numbers, or check with a cleaning chemical supplier for additional options.

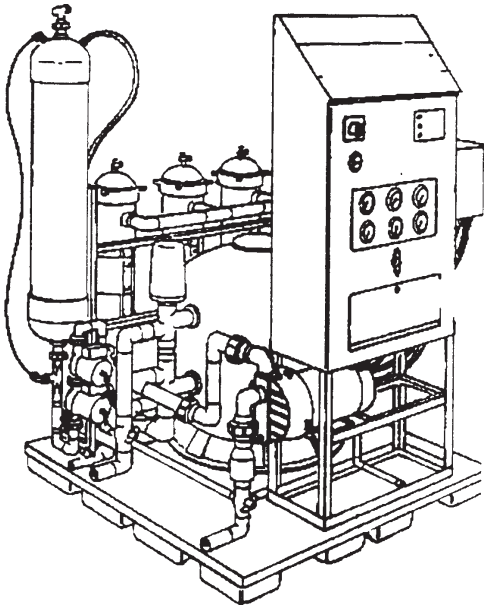
Use plain, cold water to wash. Save money by not purchasing chemicals, and not disposing of polluted wash water. Instead of using chemical cleaning agents, rinse or sweep dust and debris such as leaves off surfaces. Some pressure washing companies around Austin use this method to clean cars at dealerships or homes and residential decks.

Choose biodegradable cleaning agents. Choose less toxic cleaning chemicals - it makes disposal much easier and less expensive. These cleaning agents generally decompose quickly and are safer to use. Environmental liability associated with hazardous waste disposal is reduced.

Note: Using a biodegradable cleaning agent does not mean that the wash water won't harm the aquatic life when flushed to storm drains and waterways. When a biodegradable agent concentrates potentially hazardous materials into the wash water from the surface being cleaned (e.g. heavy metals and petroleum products), the entire volume of the wash water is polluted.

Use microbes responsibly. Petroleum-consuming microbes are very useful in controlled cleanup situations such as oily soil remediation, contained parts cleaning, and waste water treatment. Apply microbial cleaning agents according to manufacturer's directions, providing ample food, water, and oxygen, and then collect the cleaning agent for proper disposal. Use microbes only on oil stains and slick spots. Apply microbes with a minimal amount of water so that runoff does not occur. After ample application time, pick up the microbes for disposal by using absorbent material. Never leave microbes on paved areas - rain will wash them to a storm sewer or waterway. Do

Wastewater recycling systems may be expensive, but they save the enormous cost of contaminated waste disposal.



Note: Using a biodegradable cleaning agent does not mean that the wash water won't harm the aquatic life when flushed to storm drains and waterways. When a biodegradable agent concentrates potentially hazardous materials into the wash water from the surface being cleaned (e.g. heavy metals and petroleum products), the entire volume of the wash water is polluted.

Note: Do not use wet vacuums to pick up wash water containing flammable materials found in some cleaning agents or from gasoline spills—this can lead to fire and explosions.

not apply microbes over a large area. Never flush microbes to a storm sewer or waterway. Obtain approval from the Watershed Protection Department to routinely use microbes, a phone number is provided at the end of this fact sheet.

Capture wash water containing cleaning agents.

At permanent sites, construct a covered wash pad (such as a car wash bay) that contains and recovers the wash water for disposal to the sanitary sewer system. For temporary or mobile cleaning operations, other options are:

- Wash mats contain wash water through raised or curbed edges. Wash mats are commonly used in mobile vehicle washing applications.
- Barrier or boom systems capture wastewater by placing them around equipment or structures being washed. These systems are also placed down gradient of the wash area, capturing wastewater before it drains into a storm sewer. Barrier systems are not recommended for use on soil or uneven surfaces which allow the wash water to soak in or run underneath the barrier.
- Seals and plugs to cover storm drains and inlets, preventing wastewater from entering. A seal is a waterproof mat placed over a storm drain, while a plug is usually placed inside the storm sewer at the outlet pipe. The wastewater is then collected in or around the storm drain, which is usually the low point of the parking lot or paved surface.

Collect or pick-up contained wash water. For small jobs, pick up wash water using a mop and bucket or wet vacuums. The following are typically used for larger jobs:

- Pumps to collect wastewater from a collection area and place it in a tank or drums for treatment or disposal.
- Floor scrubbing machines, street sweepers, and similar equipment to spray water and sometimes a cleaning solution onto the surface being cleaned, and immediately vacuum it into a tank for treatment and disposal.

Store wash water for treatment and/or disposal safely and properly.

For some jobs, especially those at gas stations or facilities with an on site car wash, storage may not be necessary. Here, discharge the wash water directly into the wash bay drain where it will be treated and recycled or sent to the sanitary sewer. If on site sanitary sewer disposal is not possible, place the wastewater in a tank or drums for hauling to an approved disposal site. In some instances, the wastewater may need storage for an extended period of time to await sampling results or disposal approval. Regardless of how long the wastewater is stored, handle it in a safe and legal manner.

Keep storage containers securely closed and labeled to identify the contents. Stored containers in a well-ventilated area with overhead cover to protect them from rain. Keep containers in a secure location protected from traffic and vandalism. If the containers are portable, such as a plastic tank on a flatbed truck or trailer, they must meet Department of Transportation requirements. These requirements include type of container, volume it can carry, proper labeling, proper documentation (manifest), etc. For transported wastes, develop a spill contingency plan. Educate all workers transporting such wastes with the response actions listed in the plan. For more details on spill contingency planning, contact the Watershed Protection Department. Phone numbers can be found at the end of this fact sheet.

Reduce, reuse, recycle.

Treat wash water prior to disposal to: (1) separate out pollutants (e.g. oil for recycling), (2) reduce the volume of wastewater for disposal, and (3) provide reusable

wash water - all which reduce business costs and pollution. Wastewater treatment is most frequently used for construction equipment and vehicle washing to remove sediment and grime. It is also used for engine detailing and oily equipment washing (such as the landing gear for aircraft or automotive parts to be machined) to remove petroleum products.

Wastewater treatment is not necessary in all cases. Some pressure washing contractors choose not to treat the wastewater due to cost of the equipment. However, treatment systems may actually pay for themselves, as heavily contaminated wastewater is more expensive to dispose of than slightly contaminated wastewater. Several types of treatment systems are available:

- Total recycling units reprocess wastewater for reuse as wash water. These units are usually found at a stationary or permanent wash site. The settled sludge may need disposal as hazardous waste due to concentration of hydrocarbons and heavy metals.
- Limited recycle units reprocess the wastewater for limited reuse as wash water. Waste from limited recycle units are generally clean enough for disposal in the sanitary sewer, with prior approval.
- Pretreatment units only clean the wastewater enough for disposal to the sanitary sewer, with prior approval. Unlike limited recycle units, the wastewater is not clean enough for reuse.
- Evaporator units reduce the amount of wastewater for disposal by heating the water for evaporation losses. Evaporator units are used in sequence with other treatment systems (see above) to prevent pollutants from releasing to the atmosphere.

These treatment systems can use one or more of several methods to clean up wastewater.

- Gravity settling allows gravity to do the work - oil floats on water and sediment falls to the bottom.
- Oil-water separation skims or strains oil from the wastewater. This process is complicated if there are detergents in the wastewater because they disperse and suspend oil and grease in the water. A chemical additive may be necessary to break apart the oil and water.
- Chemical treatment adds chemicals to separate contaminants (e.g. using flocculants - large particles which attract contaminants and separate them from the water).
- Carbon filtration removes pollutants by adsorbing them to carbon particles in the filter.
- Mechanical filtration pumps the wastewater through filters to remove solids.
- Media filtration removes pollutants from wastewater with sand or gravel as filter media.
- Reverse osmosis (RO) filtration forces clean water, under pressure, through a very fine membrane. Contaminants present in the wastewater that are too large to pass through the filter membrane are retained. RO membranes are very sensitive and are expensive to replace if they are subjected to very dirty wastewater. RO filters are used in sequence behind other filters.
- Oxidation or ozonation breaks down organic pollutants by adding liquid oxygen or ozone to the wastewater.

Austin Resource Recovery provides free, non-regulatory audits of businesses to help reduce the amount of waste generated. Contact them for more details at the phone number provided at the end of this document.

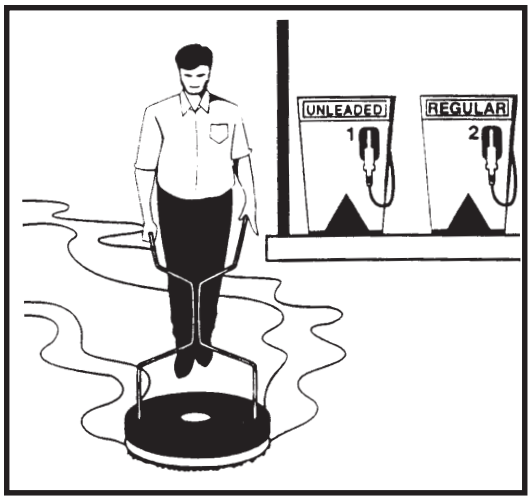
Austin Resource Recovery provides free, nonregulatory audits of businesses to help reduce the amount of waste generated.

Dispose of wash water properly. Check with your client; some work sites have an approved facility such as a car wash or recycle system that can legally handle pressure washing wash water. But, obtain permission from the site owner or operator first; these systems connect to the sanitary sewer and may have loading limitations. Wastewater

from kitchen equipment cleaning and some pavement cleaning may be acceptable for discharge to the sanitary sewer system, only with prior approval from Austin Water. Contact Austin Water for more information. Never discharge pressure washing wastes to a septic system, as some clean-ing agents may destroy the bio-logical organisms necessary for the system to operate.

Store and dispose of sludge from recycle or treatment systems properly.
Waste filters, sludge, and/or solids generated from reuse or recycle wash water systems will eventually need disposal. These materials may be hazardous if they contain specific quantities of contaminants like heavy metals. Dry the sludge prior to disposal to make disposal easier (liquid wastes are prohibited at some landfills) and less costly. Follow the same storage protocol as described earlier. In general, disposal companies will require laboratory analysis of the wastes, to determine proper handling and disposal procedures. Always keep records of the disposal company, its location, copies of manifests, and any other documentation to demonstrate that the waste has been legally handled and discarded. Contact the Watershed Protection Department for a list of disposal companies.

Know your drainage.
Familiarize yourself with the location and purpose of storm drains, oil/grit separators, and storm water ponds in areas where you plan to clean. Prevent wash water from entering these drains and ponds. Be aware that most outdoor and some indoor drains connect to the City's storm sewer system leading to area creeks and lakes. If you are unsure which system (sanitary or storm) is connected to your drains, contact the Watershed Protection Department
or a licensed plumber for a dye trace and/or other verification method. Train employees. Prevention is the key to eliminating pollution. The best prevention method is to train employees to clean pavement, equipment, vehicles, and structures properly. Take time for training; it can save time and money in clean ups, fines, and site restorations.



Make wastewater disposal easier and less expensive. Use the least toxic cleaning chemicals when pressure washing.

The Bottom Line

There are costs associated with environmental damages due to discharges or spills to storm sewers, oil/grit separators, storm water ponds, grassy areas, and dumpsters from improper wastewater or sludge disposal. Clean up costs, in addition to costs associated with treatment of injuries or time lost from work can be substantial. This is especially true if the discharged waste is hazardous and poses a public health or environmental threat. Fines or criminal penalties can be levied against persons contributing to illegal discharge or waste disposal practices. It is the responsibility of the pressure washer and their clients to ensure all applicable regulations are followed.

For more information:

Regulation of polluting discharges to storm sewers and waterways; fact sheets on oil/grit separators, storm water ponds and pavement cleaning; spill contingency planning; proper use of microbes; hazardous waste disposal companies; list of wastewater treatment/recycling vendors
City of Austin Watershed Protection Department
Pollution Prevention and Reduction Section
(512) 974-2550

Septic system discharges
Austin Water
On-site Sewage Facility Program
(512) 972-0267

Sanitary sewer discharges
Austin Water
Special Services Division
(512) 972-1060

Small Business waste reduction
Austin Resource Recovery
Zero Waste Business Services
(512) 974-9727

Department of Transportation (DOT) material transportation regulations, waste storage/disposal requirements, recycling/reuse information, microbe use approval
Texas Commission on Environmental Quality
Region 11 Office
(512) 339-2929

Cleaning Equipment Trade Association (CETA)
(800) 441-0111

International Carwash Association (ICA)
(888)422-8422

International Kitchen Exhaust Cleaning Association (IKECA)
(215) 320-3876

International Window Cleaning Association
(IWCA) (800) 875-4922

National Air Duct Cleaners Association (NADCA)
(855) 466-2322

Power Washers of North America (PWNA)
(800) 393-7962

Water Jet Technology Association (WJTA)
(314) 241-1445

CLEAN WATER FACT SHEET

NURSERY & GARDEN SUPPLY

City of Austin - Watershed Protection Department

In these days of threatened environments, gardens are becoming increasingly important. These open areas increase property value and provide a haven for birds and butterflies. Establishing gardens often begins at nurseries and garden suppliers. However, keeping these plants healthy for customers requires water and sometimes fertilizer or pesticide applications. Improper application of chemicals and overwatering can discharge pollutants to storm drains leading to our creeks and lakes. In addition, environmental pollution occurs if nursery and garden supply businesses do not handle, store or dispose of chemicals properly.

Improper application of lawn and garden chemicals can pollute the environment

The City of Austin Watershed Protection Department is responsible for preventing polluting discharges to the City storm drain system and waterways as mandated by Title VI, Chapter 6-5 (Water Quality) of the City Code. This document provides information on storage and handling of nursery and garden supplies without polluting the environment.

The Problem

Misuse of fertilizers.

Fertilizers, applied shortly before rainfall or heavy watering, may be flushed to our storm drains leading to our waterways. Also, if fertilizers are accidentally applied to paved surfaces, rain water or wash water carries it to a nearby storm drain or waterway. Another problem is when people think - "more is better."

Fertilizers contain large amounts of nitrogen and phosphorus - primary nutrients for plant growth. These nutrients, when washed to a waterway, result in rapid growth of algae commonly referred to as a "bloom", and an abundance of aquatic weeds. As these plants die and decay, they use up oxygen in the water, which can cause fish and other aquatic life to die. Decomposing organic matter also creates foul odors and taste in drinking water, and clogs pipes and water intakes. Excess vegetation can be dangerous to swimmers and boaters and requires costly removal. Some nitrogen fertilizers also release ammonia, which is toxic to fish.

Misuse of pesticides.

Sometimes, plants need a pesticide application due to an infestation of pests. As with fertilizers, applying pesticides before it rains or in unneeded areas pollutes the environment. While designed to destroy pests, "broad spectrum" pesticides also poison "good bugs", birds and other wildlife that prey on the pests you intend to get rid of.

Pesticides may seep into groundwater and contaminate drinking water, and destroy soil by killing essential organisms from microbes to earthworms. They can also kill aquatic life. Frequently, the long term health and environmental effects of pesticides products are not fully understood.

Irresponsible use of water.

Plants at nurseries require watering every day. Standing pools of water in your parking lot every time you irrigate indicates you are wasting water and money. Overuse of water also pollutes the environment by transporting fertilizers, pesticides, dirt, and grime to the local storm drain or waterway.

"I think that I shall never see, a poem lovely as a tree."
-Joyce Kilmer

Careless storage of chemicals.
Storing chemicals improperly causes pollution. Cardboard boxes and paper sacks of fertilizers, pesticides and other chemicals stored in areas exposed to weather will break down, then leak or spill. Product labels become unreadable, or peel from their containers, thus separating the chemical from very important information regarding material use, storage, and disposal. Rainwater will fill and overflow chemical containers that are damaged or left open (missing caps or lids). Chances for an illegal discharge are greatly increased when chemicals are stored close to storm drains leading to our creeks and lakes.

Improper storage of bulk dry products.
Bags of soil, peat moss, mulch and manure stored outside become weathered, spilling their contents through holes and tears. Wind and rain then carry these materials to storm sewers and our creeks and lakes. Unsecured stockpiles of bulk materials are also spread by wind or rain.

Fertilizers lost to lakes and streams cause prolific aquatic plant growth and algae blooms. And, pesticides lost to the environment are often toxic to fish, birds and wildlife. Soil washed away to creeks and rivers creates silty water, degrading habitat for aquatic life. Larger materials like mulch can clog storm drainageways, increasing the potential for flooding.

Overuse of water can pollute the environment by transporting fertilizers, pesticides, dirt, and grime to the local waterway.

Improper disposal of excess supplies.
Often outdated chemicals, spilled materials, and supplies are dumped down sinks, storm drains, on the ground outside, or even in the dumpster. Sinks carry pesticides and fertilizers to municipal and private wastewater treatment systems, potentially causing costly damage to plumbing and treatment equipment, and the discharge of contaminants into the environment. Chemicals placed in dumpsters contaminate the landfill and potentially seep into the groundwater supply. They also spill inside the dumpster, posing a danger to the trash haulers, or leak out of the dumpster seams and drain holes into the environment. Disposal onto the ground is an exposure hazard and results in expensive soil cleanups. Disposal of chemicals in storm sewers are carried directly to area creeks and lakes where the impact on aquatic life can be devastating. Illegal disposal of chemicals can have long lasting effects on the environment - many take decades to break down , while others persist in tissues of fish, birds, and other wildlife.

Mishandling of spills.
Bottles can accidentally drop and break open during stocking activities, bags can rip or tear during transport, containers can leak due to wear and tear, pesticides can spill during preparation, and soil can leak from drain holes in pots during watering. Some nursery and garden supply workers may not know how to safely clean up the spilled material. Therefore, spills are sometimes flushed with water to a storm drain. Storm drains lead directly to our creeks and lakes without treatment. The storm drain inlets along the street, lot drains, and floor drains in some buildings, discharge directly into the storm drain system.

Pesticides washed to a waterway, during cleaning activities or with rain water, have an enormous impact on water quality, even in very small quantities. For example, Dursban, a common pesticide, is lethal to fish in concentrations of less than 4 parts per billion, which is equivalent to less than 2 tablespoons in an Olympic size swimming pool.

Mismanagement of composting activities.
Composting is an excellent way for nurseries to recycle plant wastes such as grass clippings, leaves, and other organic materials. However, establishing piles too close to creeks and lakes can create a problem. The decaying organic material in compost piles contains nutrients and chemical by-products that are harmful to aquatic life. Furthermore, waste products, other than plant waste, carelessly disposed of in compost piles also creates pollution problems. Some examples of these waste products are trash, toxic

chemicals, and bacteria from meat and dairy products. Compost piles can also pose a fire hazard if they are not properly located and managed.

Improper pavement cleaning.
Paved areas accumulate dirt, grime, automotive fluids, and trash from pedestrians, vehicle traffic, and natural sources. If not removed, these pollutants are flushed away by rain, contaminating our creeks and lakes. Businesses usually strive to keep public areas clean and safe for their customers. However, during this effort, cleaning agents used are too often illegally flushed, along with the grease and grime, to storm water drainageways. The cumulative effect of this on our waterways is tremendous.

Poorly maintained dumpsters.
Unfortunately, many use dumpsters for disposing of all kinds of waste. However, they cannot be used to dispose of toxic chemicals or any liquid wastes. Such disposal not only threatens the environment, but endangers the health and safety of sanitation workers and the general public. Liquid wastes will not be accepted by landfills.

Another problem is when trash and debris spill or blow out of the dumpster when they are open, overfilled or in poor condition. Unbagged trash also promotes waste spreading and spills. This material is then easily carried to storm sewers and waterways by wind or rain. Trash and debris can clog waterways, impact recreational value of the waterway, and cause an aesthetic nuisance. Cleaning the area around the dumpster is sometimes necessary, but can also cause illegal discharges of cleaning agents and spilled materials. In addition, placement of dumpsters on unpaved surfaces such as soil can result in costly removal, disposal, and restoration of the contaminated soil, if a leak or spill occurs.

Improper vehicle cleaning.
Some businesses have delivery vehicles or transport trucks that require routine cleaning. Washing in an area where wash water flows to the nearest storm drain creates a polluting discharge. Considering all the equipment, pavement and vehicle washing done every day by the community, large volumes of wash water containing dirt, grime and cleaning chemicals could impact our waterways, if illegally discharged.

Poor landscape practices.
Excessive application of fertilizers and pesticides to landscaped and even paved areas, especially before a rain, causes discharge of algae-promoting or toxic chemicals to a storm drain or creek. Use of petroleum products as weed killers significantly impacts the environment. These sub-stances are toxic, can persist in the soil for many years, and seep in and pollute our groundwater supply. Some are cancer-causing agents.

Leaves and grass clippings blown off sidewalks, driveways and parking lots are carried to storm drains when it rains, providing excess harmful organic matter to waterways. Tree and hedge trimmings clog drainageways and promote flooding. As these wastes decompose in a waterway, oxygen needed for survival of aquatic life is used up.

Polluting construction/remodeling activities.
Some businesses may expand or remodel. A lot of chemicals and materials are used during these activities such as drywall, joint compound, paint materials including thinner and turpentine, wood, and insulation. Any of these materials can pollute our waterways if dumped or spilled. Drywall, paint, and joint compound impact a waterway similar to a very fine sediment, blocking needed light for plants and smothering bottom-dwelling organisms. Some paint, especially oil based, contains petroleum products and even heavy metals which might designate the waste as hazardous. Wood and insulation will clog the waterway, increasing the potential for flooding.

The Solution

Prevent the need for chemicals when possible.
Consider removing damaged or diseased portions of plants, rather than trying to save them with chemicals. If the entire plant is diseased, consider eliminating it

Did you know...

According to the EPA, at least 74 different pesticides have been found in the groundwater of 38 states.

along with the roots and surrounding soil. This prevents spreading of disease and infestations. Seal diseased materials in a garbage bag for trash removal. Afterwards, wash hands and sterilize garden tools with a mild bleach solution. If you raise your own stock, use crop rotating techniques to prevent buildup of disease-causing organisms. Promote optimum growing conditions and eliminate conditions favorable to pests. For example, in the Austin area, many harmful molds and fungi can be controlled by watering in the early morning rather than in the evening.

Use Integrated Pest Management.
Learn about Integrated Pest Management (IPM) which emphasizes prevention and natural pest control methods instead of chemicals. Manually removing weeds and pests such as larger insects from plants is a natural method. Herbicide use is also reduced if weeds are controlled by ground cover plants and mulch. Ashes, diatomaceous earth, limestone, and other natural materials applied to the landscape act as an irritant and repel bugs. For more information, contact the Watershed Protection Department's Integrated Pest Management Program at the number provided at the end of this fact sheet.

Integrated Pest Management emphasizes prevention and natural pest control methods instead of chemicals.

Use fertilizers and pesticides responsibly.
If you must use fertilizers and pesticides, seek non-toxic alternatives. For example, manure and compost materials are natural fertilizers. However, "natural" or "organic" fertilizers can harm aquatic life, too, by providing nutrients for prolific plant and algae growth. So, keep them out of storm sewers and waterways. Use chemicals only as a last resort. Carefully read the product label and follow the manufacturer's instructions, since twice as much does not mean twice the results. In fact, overapplication of fertilizers can "burn" plants, causing them to die. Don't apply chemicals outdoors if rain is forecast so that no runoff from the site occurs. But, you can lightly water after fertilizer applications, to help it soak in. If you must use pesticides, treat plants individually with spray bottles to prevent overspray. Do not apply pesticides to bare ground or eroded areas. Never apply pesticides near water bodies, water wells, or wildlife habitats. For more details, the Watershed Protection Department provides a fact sheet regarding proper fertilizer and pesticide use.

Use water responsibly.
Construct or purchase a water recycling system. By catching it in french drains or basins plumbed into a holding tank or pond, water reuse not only conserves water and landscape chemicals, but also saves money and the environment. For more water saving ideas, contact the City of Austin Water Conservation Program by calling the phone number provided at the end of this fact sheet.

Store lawn and garden supplies properly.
Consult the product label for storage conditions needed to avoid product damage. Do not store chemicals in outdoor sheds if they are affected by high temperatures. Supplies should be stored in a well ventilated, easily cleaned, dry area, never exposed to weather. The storage area should be protected from traffic and vandalism to prevent unanticipated releases which could impact the environment. Do not store chemicals near storm drains leading to our creeks and lakes. Keep dry products off the floor and store them separate from liquids. Check the Safety Data Sheet (SDS) to avoid storing incompatible materials near each other, since mixing of these materials can cause violent reactions and spills. An SDS contains information that enables persons responsible for handling, using or encountering chemicals to estimate the likely harm, potential hazards and risks that might arise in emergency situations involving those chemicals. Obtain an SDS by calling the manufacturer's phone number from the label. Always keep chemicals in their original containers with labels intact.

Regularly inspect storage areas and check for damaged containers. Place broken or leaking containers inside a second container of similar material (e.g.

glass for corrosives, metal for flammables) until used or properly disposed. Some pesticides are hazardous and require special storage as well as a Hazardous Materials Permit from the Austin Fire Department (AFD). For advice, call AFD at the phone number provided at the end of this fact sheet.

Reduce, reuse, recycle when possible.
Suppliers should establish proper inventory control to avoid disposal of outdated chemicals. Nurseries growing their own stock can reduce the amount of chemicals for disposal by calculating the amount needed for each application. Never pour unwanted chemicals on the ground, down a storm or sanitary drain, or in the trash. Contact the product's manufacturer to inquire whether they accept unused or damaged materials for recycling. Austin Resource Recovery's Zero Waste Business Services can assist in determining ways to reduce and recycle waste. They can approve disposal of limited quantities of some small business wastes at the City's Household Hazardous Waste Collection Facility. Otherwise, dispose of chemicals through a licensed disposal company. The Watershed Protection Department provides a list of dis-posal companies. Recycling and disposal information can also be obtained from the Texas Com-mission on Environmental Qual-ity. Phone numbers are provided at the end of this fact sheet.

Empty chemical containers can sometimes be reused if the operation applies its own chemicals. But, only reuse them for the same chemical. For example, a bucket that once contained a fertilizer could be labeled and used to mix solutions of the same fertilizer. If you can't reuse the container, contact the manufacturer - they may recycle used containers such as buckets or spray bottles. If the manufacturer does not accept them, rinse them thoroughly and use the rinse water on plants. Then, contact your waste pickup service for approval to place them in with your trash after wrapping them in several layers of newspaper. Eliminate your need for new pots or planters by accepting used ones from your customers for reuse.

Clean spills as they occur.
Spills happen. However, they must be cleaned up immediately, before they reach a storm drain and spread to a creek or lake. For chemical spills, use appropriate protective clothing as instructed on the product label and the SDS. Keep other people and pets away from the spill. Dry material spills may be swept up and reused or disposed of properly. Do not flush liquid spills with a hose. Instead, small chemical spills can be picked up with sorbent material (e.g. kitty litter, sawdust, or dirt). Sweep or shovel the used sorbent material or spilled dry material into several plastic bags (one placed inside the other) and seal the bag shut. Follow the same disposal protocol as with unused or unwanted chemicals. Contain large chemical spills with sorbent , only if it is safe, then immediately contact the Austin Fire Department by dialing 911. Once cleaned up, rinse paved surfaces with water and a mild detergent, and collect the rinsewater for proper disposal.

Contaminated soil must be dug up and disposed of legally. Contact the Watershed Protection Department for instructions. Spills to waterways must be stopped, contained where possible (e.g. build an earthen dike in small streams), and assessed by the Watershed Protection Department; call the City's 24-Hour Pollution Hotline at 512-974-2550 for assistance. Develop and post a written spill contingency plan giving information on what to do

Did you know...

Disposal of outdated chemicals can be avoided by suppliers through establishing proper inventory control. Nurseries growing their own stock can reduce the amount of chemicals for disposal by calculating and buying the amount needed for each application.

if a spill occurs. The Watershed Protection Department provides an example of an effective plan.

Composting without polluting.
Do not locate a compost pile in a drainageway or on the bank of a waterway. Compost piles should be located in a flat area as far away from storm sewers and waterways as possible. Install wood fencing, earth berms or other means to control erosion and runoff from the pile. Care should be taken to ensure that your compost pile does not contain pollutants such as petroleum products, pesticides, trash, or other materials that will contaminate the area.

Manage wastes during pavement cleaning.
Check the lot daily for cleaning needs. Pick up trash and sweep daily to remove dirt and sediment. Absorb any puddles such as automotive fluids using kitty litter, mop & bucket, wet vacuum or similar equipment. Pre-clean heavy oil and grease stains, and slick spots using a small mixture of water and mild, powdered detergent. Brush the mixture into the stain. Let stand until dry and sweep up for disposal in the trash. A cold water rinse might be all that is needed after pre-cleaning. However, if a larger areas requires cleaning, the wash water cannot discharge to a storm drain, oil/grit separator, the landscape or a storm water pond. Instead, the pavement cleaning operation must collect the wastewater for proper disposal through use of a mop & bucket or a scrubbing machine that vacuums the water and grime as it cleans. The mop water may be disposed of via indoor sanitary sewer drains with approval from Austin Water. Their phone number is provided at the end of this fact sheet. Do not dump mop water in storm drains. The Watershed Protection Department provides a list of sorbent material suppliers as well as a fact sheet describing approved pavement cleaning methods. See the phone numbers provided at the end of this fact sheet.

Use and maintain dumpsters properly.
Keep outdoor dumpsters on a concrete pad and consider installing concrete curbing around them. Only dispose of dry, non-hazardous waste in them. The Watershed Protection Department provides a dumpster fact sheet describing detailed waste prohibi-tions. Dispose of garbage in the dumpster in tightly sealed bags. Carefully transport wastes to and from your dumpster, immediately clean up anything that spills. Properly plan scheduled waste service pick-ups to prevent over-filling. Should unanticipated overfilling occur, contact your disposal service for timely re-moval. Monitor emptying of your dumpster and promptly clean up spills caused by waste haulers. You are responsible for any con-tamination on your property. Keep the dumpster lid closed.

Check the dumpster area routinely for cleaning needs. If your dumpster needs cleaning inside, contact your disposal service to arrange for replacement of the dumpster rather than trying to clean it yourself. Trash services have facilities to clean dumpsters and dispose of the wash water properly. Keep the exterior of the dumpster, and surrounding pavement as clean as possible. During cleaning, capture and remove wastewater for approved disposal to the sanitary sewer system. A mop and bucket works well to prevent cleaning wastewater runoff. The Watershed Protection Department provides a fact sheet detailing proper dumpster use and maintenance.

Clean delivery and transport vehicles properly.
Washing vehicles must be done at approved facilities with drains under overhead cover that connect to a wastewater treatment plant or system. Car wash businesses have approved facilities permitted by Austin Water. No wash water is allowed to discharge to the environment.

Wash delivery and transport vehicles at car washes that route wash water to a wastewater treatment system to prevent pollution.

Good Plants for Good Bugs

These plants will attract beneficial insects:

Buckwheat
Clover
Cosmos
Dill
Goldenrod
Fennel
Sunflower
Sweet Allysum
Tansy
Yarrow

Use care during landscaping.
Use Integrated Pest Management which emphasizes prevention and natural pest control methods instead of chemicals. For example, control weeds with ground cover plants and mulch. Ashes, diatomaceous earth, limestone and other natural materials applied to the landscape act as an irritant and repel bugs. Landscape with native vegetation or adaptive plants which require less water, chemical fertilizers and pesticides. Use compost or manure as natural fertilizers. If used, chemical fertilizers and pesticides should be applied according to the directions on the label. Use only the amount necessary. Never apply pesticides near water bodies, water wells and wildlife habitats. Keep fertilizers out of storm drains and waterways. Check the weather before applying lawn chemicals to avoid application during high wind or before it rains.

Design a landscape which limits the volume or decreases the velocity of storm water runoff and irrigation water. This lowers the chances of erosion and washing of pollutants into storm drains. Leave grass clippings on the lawn. Sweep grass and leaves out of the street to keep them out of storm drains and waterways. Collect tree and hedge trimmings for disposal through your waste disposal service. The Watershed Protection Department provides a fact sheet detailing the proper use of fertilizers and pesticides as well as proper landscape maintenance.

Proper construction/remodeling activities.
Use plastic sheeting or tarpaulins during painting activities to capture drips and spills. Wash water-based paint equipment at a sink that is plumbed to the sanitary sewer system. All containers of chemicals should be placed under protective cover and kept closed to prevent spills. Construction trash and debris should be picked up regularly and disposed of through your dumpster service. Plan to buy only the amount of materials you will need to minimize disposal costs. If you have reusable leftover chemicals that you do not need, contact the City's Zero Waste Business Services for disposal alter-natives. Non-reusable oil-based paint and other toxic chemicals must be disposed of through an approved waste disposal service. Contact the Watershed Protec-tion Department for disposal services for various waste types.

Know your drainage.
Knowing where storm drain drains are located on or near your property is important, so drains can be blocked in the event of a spill. Most exterior and some interior drains are connected to our City's storm drain system. Nothing but clean rain water may enter our storm drain system according to Federal law. If you are unsure to which system your drains are connected, contact the Watershed Protection Department or a licensed plumber for a dye trace or other verification method. Also, be aware of use limitations on pesticides and fertilizers adjacent to creeks and other waterways.

Train your employees.
Success in pollution prevention starts with staff training. All employees need to know why and how to keep pollutants out of our creeks and lakes. If staff know the proper use of products sold at your facility, they can help customers make fiscally and environmentally responsible choices.

Develop written procedures for every day practices which prevent pollution. Conduct training sessions, especially for new employees. Provide them with educational materials such as fact sheets from environmental agencies and organizations. Display signs and posters to serve as reminders.

Educate your customers.
The instructions and suggestions you provide to customers are

valuable, not only in terms of environmental protection - but also as cost savings to the customer. These include:

- proper plant selection
- water conservation practices
- erosion prevention practices
- fertilizer and pesticide alternatives
- proper application methods.

The Bottom Line

Businesses have found that it costs time and money to implement water pollution prevention measures. However, the expense to clean-up spills and restore property is much greater. Small, seemingly insignificant leaks and spills can become large contamination problems if steps are not taken for containment, clean up, and prevention. Spills that are not mitigated can cause soil or groundwater contamination which could impact future sale or transfer of property.

Clean up costs and real estate depreciation are not the only possible pollution costs. Treatment of injuries and time lost from work can be substantial costs. Fines from City, State or Federal agencies add thousands of dollars to the overall cost of a polluting discharge. In addition to fines, regulatory agencies can require businesses to undergo detailed compliance audits, to implement long-term water monitoring programs, or require the installation of expensive pollution prevention equipment and programs.

For more information:

Regulation of polluting discharges to storm sewers and waterways, spill reporting, soil cleanup instructions, spill contingency planning, drain dye tracing, waste disposal/recycling service lists
City of Austin Watershed Protection Department
Pollution Prevention and Reduction Section (512) 974-2550

Pesticides information, organic alternatives to pesticides
City of Austin Watershed Protection Department
Integrated Pest Management Program
(512) 974-1475
Lower Colorado River Authority
1-800-776-LCRA

Water Conservation information
Austin Water
Water Conservation Program
(512) 974-2199

Hazardous Materials Permit
Austin Fire Department, Hazardous Materials Prevention Division
(512) 974-0182

Hazardous waste regulations, spill reporting
Texas Commission on Environmental Quality, Region 11 Office
(512) 339-2929

Small business waste disposal information,
Austin Resource Recovery
Zero Waste Business Services
(512) 974-9727

Guidelines for water recycling and efficient business practices
Texas Nursery and Landscape Association
(512) 280-5182

Pesticides information and complaints
Texas Department of Agriculture 512-463-7476

Composting information
Austin Resource Recovery (512) 494-9400

Emergency Numbers

Austin Fire Department (emergencies only)	911
City of Austin Pollution Hotline (24 hour)	(512) 974-2550
TCEQ Emergency Response Center (24 hour)	(512) 463-7727
	1-800-832-8224
CHEMTREC Chemical Spill Hotline	1-800-424-9300
National Response Center	1-800-424-8802

CLEAN WATER FACT SHEET

PAINT

City of Austin - Watershed Protection Department

Paints are widely used to protect surfaces from deterioration, corrosion, oxidation, or simply for decorative purposes. Commercial builders and home decorating contractors use both latex and oil-based paints to protect surfaces from weathering and for aesthetic reasons. Auto parts manufacturing and repair facilities, including radiator repair, machine shops, and auto body shops use paints to protect parts from corrosion or oxidation. Road construction and sign manufacturing companies use paints that contain hazardous ingredients such as lead, cadmium, chromium, and chlorinated hydrocarbons, to increase durability. Marinas and boat manufacturers use antifouling paints containing metals, like copper and mercury, to discourage barnacles and other aquatic organisms. Paint is also made of polluting chemicals such as solvents, binding agents, additives, and pigments. So, when paint products or cleanup materials are discharged to storm sewers, they drain to waterways, harming fish and other aquatic life.

When paint products are dumped into storm drains, they pollute waterways and harm aquatic life.

The City of Austin Watershed Protection Department is responsible for preventing or stopping illegal pollutant discharges to the City's storm drain system and waterways as mandated by Title VI, Chapter 6-5 of the City Code (Water Quality). This fact sheet provides paint users with information on how to handle, store, and dispose of paint without polluting Austin's valuable water resources.

The Problem

Messy application practices.

Painting any surface can be a challenge, whether you are dealing with overspray, dripping brushes or rollers, or leaking paint guns. Larger jobs like enameling radiators and painting vehicles can be even more challenging. Without a bit of planning and care, paint and harmful fumes can enter the environment, creating problems of exposure, ruined landscapes, and contamination of air, land, and water.

Oil-based paints are flammable and toxic because of petroleum-based solvents and heavy metals. Other oil-based products include urethane or polyurethane, epoxy, varnish, mineral spirits, and thinners. Illegal discharges of oil-based paints not only present a pollution problem, but also a fire and safety hazard.

It is a misconception that latex or water-based paints can be flushed to storm drains and waterways since they do not contain petroleum-based solvents. Latex paint does introduce high levels of organic materials causing algae blooms and robbing oxygen needed by fish. Some latex paints, especially those for exterior use, also contain hazardous

Did you know...

The City's Household Hazardous Waste Collection Facility has a paint blending program that recycles reusable paint. Good quality latex paint is recycled into "Old Paint" latex primer. "Old Paint" is available to various community groups and organizations for civic projects.

materials such as mercury, a toxic metal used to prevent the growth of bacteria, molds, and fungi. Water-based paints should be handled just as carefully as oil-based paints.

Unsafe paint removal practices.
Stripping, sandblasting, or pressure washing to remove paint from buildings, boats, cars and other surfaces outside results in a discharge of toxins harming the environment. Most chemical paint strippers are hazardous, and when combined with even non-hazardous paint, become a hazardous waste. In some cases, even the paint itself is hazardous or toxic, especially lead-based paint. Work which spreads lead dust, fumes, or debris can be highly dangerous for adults as well as children. Most homes built before 1978 have lead-based paint; it was banned from use in housing by the Federal government that year. If these products are not properly handled, they can be released into the environment endangering human health or contaminating waterways and surrounding soil.

Mishandling of spills.
Spills will happen. Buckets or cans are accidentally knocked over or pressurized lines to paint applicators unexpectedly spring leaks. If left on the ground, spills can spread to storm drains, landscape, oil/grit separators and storm water ponds, especially when it rains. This harms the environment and results in costly fines and site cleanups. In addition, if spills are flushed off site with a water hose, the pollutant laden water drains to our creeks and lakes without treatment. Flushing anything, other than plain cold water, to storm drain or waterway, is illegal.

Cleaning paint equipment outside.
Too often, painters wash their brushes, paint buckets, rollers, pans and other equipment outside where the wash water drains to someone's landscaping or down a driveway to a nearby storm drain. This practice is an illegal discharge that results in costly environmental cleanups and stiff fines.

Did you know...

People can get lead in their bodies by breathing or swallowing lead dust, or by eating soil or paint chips with lead in them. One out of every 11 children in the U.S. has dangerous levels of lead in the blood stream. Removing lead-based paint improperly can increase the danger to your family by spreading more lead dust around the house.

Careless storage practices.
Storing paints and like products improperly causes pollution. Extreme temperatures or dampness renders the product unusable and degrades the packaging. Flammable paint materials ignite under high temperatures. Latex paint exposed to freezing temperatures develops a "cottage cheese" appearance and becomes unusable. Unusable paint is subject to being illegally dumped. Containers stored outside often have unreadable and peeling labels, thus separating the very important information (e.g. material use, storage, and disposal instructions) from the product. Unlabeled containers are subject to misuse and neglect. Paint containers stored without lids can dry up or become contaminated with other materials rendering the paint unusable. Containers in poor condition (rusty, bloated, dented) and without an overhead covering result in the contamination of soil or a waterway from rainfall runoff. Spills on the outside of containers wash off with rain. Chances for an illegal discharge are greatly increased when chemicals are stored close to storm drains leading to our creeks and lakes. Containers not stored in a secured area increase the chance for a release into the environment due to accidents or vandalism.

Improper disposal of paint wastes on the ground, in drains, or into the trash.
Sometimes there are leftover painting materials. Those stored for too long degrade and become unusable. People with excess paint may dispose of it illegally. Dumping it on the ground, in storm drains or in the trash is

prohibited. Paint wastes dumped on the ground results in costly excavation and disposal of contaminated soil and vegetation. If the dumped material has hazardous ingredients, disposal can be even more expensive. Disposal in the dumpster often results in a spill leaking outside to the environment, as well as posing a danger to trash haulers. Paint dumped in with trash can also contaminate the landfill and potentially seep into groundwater. Dumping paint wastes in storm drains is not only unsightly, but can kill living organisms in our creeks and lakes.

Disposal of many paint materials in sinks impacts septic systems and treatment plants. Used solvents such as turpentine, mineral spirits, and paint thinners destroy living organisms needed to treat raw sewage. This damages wastewater treatment systems and allows chemicals to discharge to septic system drain fields. The soil and groundwater is then contaminated too. Disposal of flammable paint wastes in either storm drain or sanitary sewer drains presents a public health threat. Flammable gases may re-act with natural gases in confined sewers causing violent explosions.

The Solution

Use less toxic paint materials.

Ask paint suppliers for safe, environmentally-friendly paint products. Buy the least hazardous products to do the job. Avoid the use of paint products containing flammable or toxic materials such as solvents or heavy metals. When possible, use latex or water-based paints instead of oil-based or enamel paints. This alternative prevents the use of solvents or thinners to clean up brushes and equipment. Look for products with low VOCs (volatile organic compounds). Higher VOC products evaporate and contribute to air pollution. Instead of toxic exterior latex paints, use limestone-based whitewash or casein (a milk and cheese protein) based paints. Instead of using flammable or toxic stains and finishes, consider using latex or natural earth pigment finishes. Use paints made of recycled post-consumer product.

Read labels - choose the least hazardous products. When shopping for paint products, read the labels to help you decide which ones are better to use. Latex or water-based paints and related products can be identified by words on labels such as “clean with soap and water”, “latex”, “vinyl”, “acrylic” or “water-based”. Solvent based paints and related products may have the words “alkyd”, “oil-based”, “urethane”, “epoxy”, “varnish”, “clean up with mineral spirits or paint thinner”, “contains petroleum distillates”, or ”combustible: keep away from heat and flame.”

Buy only what you need.

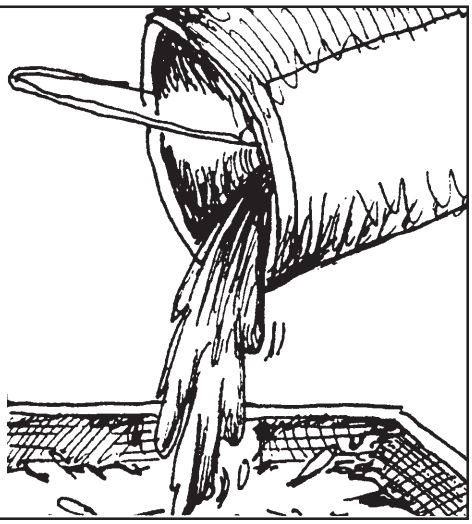
Carefully measure the area to be painted - and buy only enough to complete the job. Paint products usually cover between 250 and 600 square feet per gallon depending on the surface material and the type of product used. If more than one coat is needed, be sure to include that in your estimate. Most paint suppliers have accurate paint matching equipment that reproduces virtually any color of paint. So, the need to buy and blend paints, and then have more than necessary - is prevented. Ask your retailer or distributor for assistance. Leftover paint becomes unusable as it ages. Although buying larger quantities may appear cheaper per gallon, disposal costs for excess paint can be just as expensive.

Inspect and maintain equipment.

If you use paint application equipment (e.g. pressurized sprayer systems), develop an equipment inspection checklist to use prior to beginning a project. Immediately replace any parts in poor condition. A pre-job inspection prevents equipment failure that may result in

Did you know...

Even latex paint (especially for exterior use) can contain hazardous materials such as mercury and other heavy metals to prevent growth of mildew and bacteria?



unnecessary spills. Spill prevention saves valuable time as well as money that would have been spent on an expensive environmental cleanup.

Use responsible application practices.

Always read labels for caution warnings and proper use instructions. Never blend paint with non-paint products. Use drop cloths, drip pans or other coverings where paints are mixed, carried, or applied. For radiator repair businesses, the radiator painting must be done in a contained area with overhead cover so overspray and drippage is controlled. Auto body paint businesses must also conduct paint activities in an approved area, such as a booth, to prevent contamination of air and storm water.

Use safe paint removal practices.

Paint removal must be done such that scrapings, dust and fumes are not released to the environment. The use of dry scrapers, belt sanders, propane torches or heat guns can create large amounts of dust and fumes. This is especially dangerous with removal of lead-based paints. Consider using a paint stripper paste or spray that allows the paint to be peeled away, thus avoiding the danger of loose paint chips and dust. Materials are available on the market that remove multiple coats of paint and varnish from various types of surfaces.

Obtain Safety Data Sheets (SDS's), for all chemicals, to obtain warnings and guidance on personal protection equipment like gloves and safety goggles. Federal law requires employees be provided with SDS's. Follow the manufacturer's instructions carefully. For lead-based paint removal, vacate and isolate the work area until the work and cleanup is complete. Seal the area in a plastic shroud to contain loose particles. Any rinse water must be collected and sampled to determine proper disposal. Post warning signs. Lead-based paint removal should only be done by certified lead abatement contractors. Special safety equipment is needed. For information on paint removal licensing and certification within the State of Texas, call the Texas Department of Health at the phone number provided at the end of this document.

Avoid generating waste.

If the lead based paint is not peeling or damaged, don't remove it. Simply paint over the leaded paint to seal it in, rather than removing it and exposing yourself and the environment to this toxic and hazardous material. If it is peeling or damaged, it should be removed.

Be prepared for spills.

If you accidentally spill some paint, clean it up immediately. Delaying cleanup only allows the paint material to spread, resulting in a more time consuming and costly cleanup. Never wash paint spills to the street, storm drain or landscape. Clean spills on paved surfaces with sorbent material such as kitty litter, sawdust or rags. Up to 220 lbs. of contaminated sorbent can be placed in two plastic bags (double bagged) and disposed of in your trash. If a small amount of paint is spilled onto soil, allow it to dry, dig it up and dispose of it in plastic bags. Immediately contact the Watershed Protection Department for instructions on disposal of larger paint spills by calling the 24-Hour Pollution Hotline at 512-974-2550. Always keep spill con-tainment and clean up materials on hand. Painting businesses should have a spill plan with instructions on spill notification procedures, equipment, containment, cleanup, and disposal. Employees should be familiar with the plan.

Clean paint equipment in an approved manner.

Painting equipment containing water-based paint may be rinsed over a bucket or a sink and discharged to the wastewater treatment plant via the sanitary sewer

Did you know...

Before remodeling or renovating, you should have the area tested for lead-based paint by a qualified testing service.

system. Oil-based paint materials should not be cleaned in sinks that drain to the sanitary sewer or septic system. Instead, they can be cleaned in containers with turpentine or other cleaning agents that can be reused.

Properly store paint products and waste.

Properly secure and store all containers and supplies at the end of each day to prevent any releases to the environment. Read labels for safe storage instructions. Keep products in their original containers with original labels. Check storage areas regularly. If you have a leaking container, place it inside another container of similar material and label it. Paint products should be kept in tightly sealed containers in a well ventilated, cool, dry area that is protected from the weather. Keep containers away from extreme heat, cold, flame sources, pilot lights, and out of the reach of children or pets. Store incompatible chemical products separately. For example, oil-based paint stored next to buckets of pool chlorine can result in a fire or explosion. If you use or store certain quantities of flammable and toxic materials such as oil-based paints or paint thinners, you must follow specific storage rules enforced by the Austin Fire Department (AFD). For information, call AFD at the number provided at the end of this document.

Reduce, Reuse, Recycle

used paint products whenever possible. If you are faced with unanticipated leftover paint, find ways to reuse it. Give a wall an extra coat of paint, mix leftover latex paint together to use as a base coat (interior with interior, exterior with exterior), give it to your neighbor, or donate it to organizations such as schools or theater groups. Austin Resource Recovery has a paint recycling program that blends reusable paint from businesses. Businesses will be charged a fee and can contact the City Zero Waste Business Services for further recycling infor-mation. Call the phone numbers provided at the end of this docu-ment.

"Paint out" your brushes as much as possible to reduce the amount of wastewater or thinner necessary to adequately clean them. Commercial painters can leave the extra paint with their customers for future touch ups. Reuse paint thinners or cleaners by allowing the paint particles to settle to the bottom of the used thinner container or filtering the thinner through a fine mesh filter. Pour off the clear liquid thinner into a clean container with a lid and label it clearly for reuse. Add sorbent (e.g. kitty litter, shredded newspaper, sawdust) to the remaining residue and let it dry completely. Consider reusing plastic paint containers. If you can't use them, donate usable containers to a charity or contact the Steel Can Recycling Institute for recycling locations near you. Their phone number can be found at the end of this document.

Proper disposal of non-reusable paint and associated waste.

If you have paint that cannot be used, recycled or taken to a household hazardous waste facility, it must be disposed of legally. Never dispose of paint materials in a storm drain, on the ground, or in the trash. Containers that store paint, paint thinners, turpentine, etc. can be put in the trash provided they are empty, dry and left open so that the sanitation workers can see that they are dry. City of Austin and Travis County businesses can take their aerosol paint cans to the City's Household Hazardous Waste facility. Businesses will be charged a minor fee. Paint wastes that have dried or solidified (sorbent material added to dry it) can be disposed of as regular trash. Contact your local landfill or solid waste pickup service provider to make sure they will accept the solid material.

Small quantities of water-based paints can be rinsed down a sink connected to the sanitary

Did you know...

You don't need paint thinner to soften stiff brushes; instead, dip them in hot vinegar.

sewer system. Oil-based paint should never be disposed of in the sanitary sewer system. Businesses with larger quantities of oil-based paint and associated wastes can dispose of them through a certified disposal company. Other typically hazardous wastes such as chips and dust from marine and auto body painting, chemical stripping agents and lead-based paint from abatement projects, and cleaning solvent sludge from brush and equipment cleaning must be collected for disposal through a licensed disposal service. The City's Zero Waste Business Services can help with dis-posal options. Lists of recycling and paint disposal companies can be obtained by contacting the Watershed Protection Department. Phone numbers are provided at the end of this document.

Know the drainage.

Be aware that most exterior and some interior drains are connected to our City's storm drainage system which drains directly to area creeks and lakes. Nothing but clean rain water may enter our storm drainage system accord-ing to Federal law. Determine where storm drains are located before painting so you can block them should a spill occur. The Watershed Protection Department can assist you in determining your drainage.

Train employees.

Prevention is the key to eliminating pollution. The best pollution prevention method is providing employees with proper handling, storage and disposal training. Also, train your employees in careful application of paints and other coatings to prevent polluting discharges. While it takes time to train employees, it is actually time well spent and invested in your business to prevent clean ups, site restorations, regulatory fines, and injuries.

The Cost:

It costs time and money to implement pollution prevention measures associated with painting activities. Keep in mind that it is even more costly to clean up spills particularly if they are allowed to enter a storm drain or a waterway. Environmental cleanup and remediation costs are not the only possible costs. Regulatory agencies can require businesses to implement expensive water monitoring programs or require the installation of expensive pollution prevention equipment. In addition City, State, and Federal agencies can impose thousands of dollars in administrative fines that add to the overall cleanup cost.

Compare what it might cost your business in time and money to clean up a spill to the cost of preventative maintenance and preparation. For example, a 1 gallon spill of paint to an Austin creek cost the responsible party $20,000 to pump the creek and dispose of the dispersed material. This figure did not include the man-hours spent trying to locate an environmental cleanup contractor or the time spent on paperwork required by the Texas Natural Resources Conservation Commission for approved transportation and disposal of the material. Preventative maintenance and emergency spill response preparation are the most effective ways to reduce potential cleanup costs.

Train your employees in careful application of paints and other coatings to prevent polluting discharges.

Did you know...

Oil-based paints contain Volatile Organic Compounds (VOCs) which evaporate and contribute to air pollution.

For more information:

Pollution prevention, lists of recycling and disposal services
City of Austin Watershed Protection Department
Pollution Prevention and Reduction Section
(512) 974-2550

Discharges to the sanitary sewer system
Austin Water,
Special Services Division
(512) 972-1060

Small business waste disposal information
Austin Resource Recovery,
Zero Waste Business Services
(512) 974-9727

Household Hazardous Waste Collection Facility
Austin Resource Recovery
(512) 974-4343

Hazardous Materials Permit
City of Austin Fire Department, Hazardous Materials Prevention Division
(512) 974-0182

Hazardous waste storage and disposal, recycle/reuse information, air pollution prevention Texas Commission on Environmental Quality, Region 11 Office
(512) 339-2929

Texas environmental lead reduction rules, licensing and certification requirements for lead paint abatement contractors, general paint removal information
Texas Department of Health, Environmental Lead Program
(512) 834-6787 ext.2434

Regulations and lead protection programs
Environmental Protection Agency, Region VI Office
1-800-887-6063

American Coatings Association, Inc.
1500 Rhode Island Avenue, NW, Washington, D.C. 20005-5597
(202) 462-6272

Free pamphlets and other publications on lead-based paint
Paint and Coatings Industry Information Center
(202) 332-3194

Steel Can Recycling Institute
www.Recycle-Steel.org

Request information packets regarding lead, answers to questions about lead
National Lead Information Center Hotline
(800) 424-LEAD

CLEAN WATER FACT SHEET

PETROLEUM

City of Austin - Watershed Protection Department

Did you know that about 62% of all petroleum related pollution in the United States is caused by illegal dumping of motor oil? This fact is not surprising since petroleum products like motor oil are among the most widely used today. Petroleum provides fuel for vehicles (gasoline and diesel), lubrication for engines and moving parts (motor oil and grease), decorative coatings (enamel paints and paint thinners), and solvents to remove oil and dirt residue from parts during vehicle repair (naptha, Varsol, and carburetor cleaners). These products must be carefully handled, stored, and disposed of to prevent petroleum from polluting the environment.

Petroleum products must be carefully handled, stored, & disposed of to prevent them from polluting the environment.

The City of Austin Watershed Protection Department is responsible for preventing polluting discharges to the City storm drain system and waterways as mandated by Title VI, Chapter 6-5 (Water Quality) of the City Code. This fact sheet provides information about how to handle petroleum products without polluting the environment.

The Problem

Improper use of petroleum. Using petroleum products or wastes for unintended purposes results in environmental contamination. For example, using waste oil to treat fire ant mounds and for dust control on dirt roads or parking lots, and using gasoline as an herbicide along fence lines or other areas pollutes the environment.

Poorly planned/maintained tank equipment.

A petroleum release can be caused by the mechanical failure of a fuel pump or shut-off valve due to improper installation and maintenance. More fuel will spill if the shut-off switch to the pump is inaccessible. Bulk storage tank systems, including transfer lines, valves, and other connections, leak over time. Some pump nozzles will drip if the shut-off valve is not properly maintained. Drips from your pumps and dispensers add up to hundreds of gallons per year.

Locating fuel pumps on or near unpaved surfaces such as soil or gravel leads to expensive clean-ups and creates the potential for groundwater contamination should a spill occur. Uncovered fuel islands allow accidental spills from pumping activities and leaking vehicles to wash off during rain. Even though some of these releases may seem insignificant, over time they can accumulate into very significant and costly cleanups.

Did you know...

Every year, Americans throw away enough motor oil to fill 120 supertankers.

Improper fueling.
Careless gasoline dispensing creates discharges to the environment. Fuel releases occur from overfilling tanks, customers leaving the station without removing the pump handle from their cars (drive-offs), customers propping the pump handle switch open and disabling the pump's automatic shut-off, customers topping off tanks, filling of inappropriate fuel containers, suppliers overfilling the storage tank or carelessly connecting to the storage tank fill pipe, or employees unaware of shut-off switch locations. Every gallon of gasoline that hits the ground increases the cost of clean-up and the risk of fire and explosions.

Poor secondary containment.
Secondary containment is necessary and often required for certain sized product or waste storage containers or for a certain number of smaller containers kept in one area. When storm drains are located inside containment areas, accidental releases from containers can reach waterways if special provisions are not made. Furthermore, if not maintained, they can leak rain water and contaminants. If containment is absent or inadequately sized, spills discharge or overflow to the environment. Furthermore, uncovered containment areas will also collect rain water. Without proper spill detection, contaminants can reach the environment due to overflow and storm drain release.

Messy product/waste storage.
Liquids stored in containers (tanks, drums, buckets, pans) exposed to rain without lids or overhead cover can overflow onto the ground. Outdoors, container labels may be damaged or unreadable—losing valuable product information. Fluids accumulating on the outside or on top of containers from spills are easily washed off by rain water. Containers in poor condition (rusty, bloated, dented) can leak. Unlabeled containers can be misused and neglected. Storage tanks, fuel dispensers, drums and other containers not properly secured are subject to vandalism as well as traffic accidents, increasing the chance for a release. Spills outside end of spreading or washing with rain water to soil or storm sewers and waterways resulting in costly fines and cleanups. Storing containers on unpaved surfaces also increases the chance for soil contamination. In addition, illegal discharges are more likely when containers are stored near storm drains leading to nearby waterways.

Gasoline and some solvents can cause cancer and injury from skin contact and inhalation. Petroleum has toxic effects on the environment. Waste oil contains heavy metals such as lead, cadmium, and chromium from the wear and tear of engine parts. Metals can destroy aquatic life at low concentrations, become concentrated in plant and animal tissues, persist in the environment, and pose a threat to humans and animals. Oil and grease smother aquatic plants, fish, birds and landscape vegetation. Oil on the water blocks sunlight needed for underwater plants to survive.

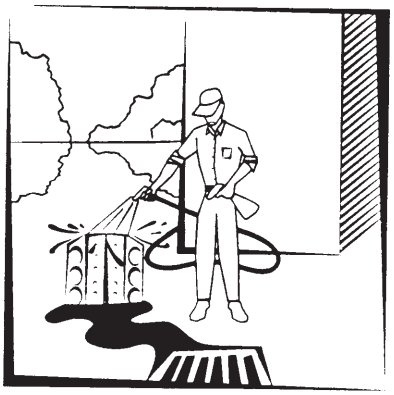
Outdoor storage of auto parts.
Auto parts such as engine blocks, transmissions, torque converters and other scrap parts stored outside are exposed to rainfall. Rainfall runoff containing oil, grease, and other pollutants, washed off the auto parts, flows to storm sewers leading directly to creeks and lakes. Pollutants also wash off to storm water ponds and soil, resulting in expensive excavation and disposal of contaminated soil and filter media.

Outdoor cleaning of auto parts.
Used automotive parts often require heavy duty degreasers and solvents to remove oil and grease buildup. The common solvents used at automotive shops have a high human health risk rating and are extremely flammable and toxic. Cleaning parts outside with cleaning agents and discharging the wash water to the ground,

Did you know...

Recycling used oil takes 70% less energy than refining new oil and saves energy and money.

storm drain, oil/grit separator, storm water pond, or waterway is illegal. Cleaning parts outside also results in difficult, expensive decontamination of all impacted surfaces, and is a public health threat. Cleaning parts on an asphalt surface not only pollutes the environment, but over time, dissolves the asphalt surface since it is made of heavy petroleums.



Improper plumbing of parts cleaning machines.

Parts washers are used to clean large parts and collect the wastewater. Plumbing a parts cleaning machine or sink to the ground or storm drain results in illegal discharges of pollutants to the environment. Parts cleaning devices installed outside can leak or overflow onto the ground. Parts cleaners (e.g. wet cleaners, dry ovens, bead agitators) accumulate sludge containing oil, grease, and heavy metals. Disposal of the sludge on the ground, in a drain, pond, waterway, or dumpster is subject to costly penalties.

Illegal disposal.

Automotive wastes dumped on the ground, in a drain connected to either the storm or sanitary sewer system, in a septic system, or in the trash has serious consequences. Liquids or hazardous materials disposed in the trash results in landfill and associated groundwater contamination. These materials also spill from trash trucks, harming sanitation workers and the general public. Improper disposal of flammable petroleum products such as gasoline or solvents, creates a fire or explosion hazard. Used motor oil, antifreeze, and oil filters and other petroleum products dumped in a dumpster can leak or spill out, contaminating the ground outside. This may result in time consuming and costly cleaning of the dumpster and the ground around it. Discarding many of these wastes in the trash is a waste of reusable resources.

Dumping wastes on the ground contaminates the soil causing costly removal, disposal, and replacement of the contaminated soil. Disposal in a storm drain will carry the pollutant to area creeks and lakes, impacting aquatic life. Disposal in a sanitary drain (e.g. via sinks or toilets) may render a treatment system inoperative by destroying living organisms used to treat raw sewage. Disposal of hazardous wastes in either storm drain or sanitary sewer system drains also poses a public health threat. Flammable gases from hazardous materials such as gasoline accumulate in confined sewers potentially causing violent explosions.

Mishandling of spills.

Spills happen. For example, bulk petroleum storage and distributing facilities may receive a drum or container of oil that is leaking from damage during shipping or delivery. Unattended spills outside are carried by rain to the environment. This only spreads the contamination, causing costly cleanups, fines, and site restorations. Some facilities are not properly equipped with spill containment and cleanup materials, a spill plan, or the appropriate training needed to use them effectively. Therefore, spills are often mishandled by flushing them with water to a storm drain, storm water pond, or adjacent property.

Improper storage and use near storm drains.

Many businesses in Austin have drains inside work and storage areas. Chances for polluting our creeks and lakes are greatly increased when chemicals are handled or stored close to drains connected to the storm drainage system. Storm drainage systems provide a direct path to our creeks and lakes without treatment. Petroleum stored or used near oil/grit separators or storm water leads to expensive repair of the structure or very expensive sampling and disposal of accumulated soil or sludge.

Improper mixing of wastes.

Mixing of incompatible chemicals can lead to violent reactions and spills. In addition, combining hazardous wastes (e.g. flammable solvent) with non-hazardous wastes (e.g. motor oil) in a storage container leads to increased disposal costs, since the entire mixture is then classified as hazardous. The costs for transport and disposal of hazardous wastes is much higher compared to costs for non-hazardous wastes.

The Solution

Use petroleum products responsibly.

Never use waste motor oil or gasoline as an herbicide. Instead, learn Integrated Pest Management (IPM) which emphasizes prevention and natural pest control methods instead of chemicals such as manually removing weeds and mowing high grass along fencelines. The Watershed Protection Department can provide a fact sheet on fertilizers and pesticides use that discusses IPM methods. Oil should never be used for dust control. According to an Environmental Protection Agency
study, over 90% of oil leaves the road surface on dust particles or is rinsed into local waterways. Remember, used oil often contains toxic heavy metals which persist in the environment. Instead, use water-based or biodegradable products that do not contain hazardous or toxic ingredients. Plant grass, a ground cover, or pave the area to reduce dust.

Properly plan and maintain tank equipment.

To prevent petroleum releases caused by mechanical failure, regularly check and maintain your tank, transfer lines (if aboveground), valves, and dispensers. If you identify a problem or leak, fix it as soon as possible. Ensure the shut-off switch to the pump is easily accessible and well-marked. Pave areas where fuel is stored and dispensed so accidental spills are easily contained and removed. Pave with Portland cement, not asphalt; fuel deteriorates asphalt. Cover fuel islands and do not drain the area to storm drain catch basins, so spills do not wash away during rain. Carefully plan aboveground storage tank structures for product dispensing. City and State regulations require tank owners to perform routine maintenance and tank tightness testing to prevent mechanical failure and spills from breached containers or malfunctioning equipment. Contact the Watershed Protection Department, Austin Fire Department, and the Texas Commission on Environmental Quality for more information. See the phone numbers provided at the end of this document.

Ensure careful fueling.

Monitor tank filling activities to prevent overfilling and drive-offs. Install and maintain overfill prevention equipment. Reduce drive-offs by monitoring fueling activities and installing break away hoses currently required at most fuel facilities. In addition, install and anchor shear valves at the dispenser. Also, install automatic closing type hose nozzle valves to prevent spills during customer fill-ups. Clearly mark the shut-off switch and educate employees on its location and use.

Have proper secondary containment.

Install secondary containment around product and waste storage areas to prevent costly spreading of accidental releases. For example, store used batteries inside where leaks from cracked casings or terminal corrosion will be contained (e.g. concrete bin with sealed floors and walls). AFD requires secondary containment for certain types and quantities of stored chemicals. AFD has sizing and other structural requirements for public safety and health protection. For more details, contact AFD at the phone number provided at the end of this document.

There are special City and Federal requirements for any containment area with a storm drain. Familiarize yourself with these requirements before you decide to install a storm drain. Contact the Watershed Protection Department for storm drainage requirements.

Did you know...

According to an Environmental Protection Agency study, over 90% of oil leaves the road surface on dust particles or is rinsed into local waterways.

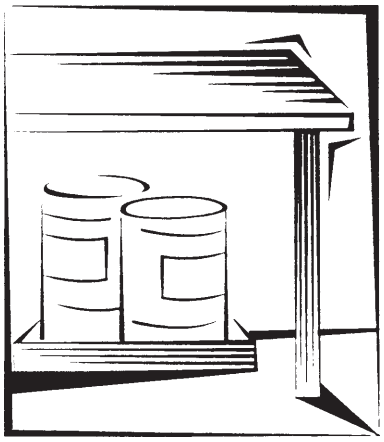
Keep containment areas clean and check them routinely for structural failure. Fix structural failures promptly. Immediately notify the Watershed Protection Department of a spill within the containment. Pump contaminated materials from the area for legal disposal. There are pumping companies that provide this service. City Department phone numbers are provided at the end of this fact sheet.

Store product and wastes properly.

Keep containers (e.g. drums, buckets, pans) under overhead cover with secured lids and bungs. Properly label and regularly inspect containers to ensure they are in good condition. Follow hazardous waste labeling, accumulation time, and quantity limit requirements for stored hazardous wastes. Storage units must not leak, overflow, or display any signs of failure or incompatibility with their contents. Wipe drips and spills off the tops or sides of containers from filling and emptying practices. Keep storage containers in a secured area away from traffic and possible acts of vandalism. Keep containers on a paved surface that is easily cleaned, such as concrete.

Store parts under overhead cover.

Store oily, greasy automotive parts indoors or under overhead cover, protected from rain. Store covered parts on a paved surface to prevent soil or groundwater contamination. If you use plastic or canvas as a covering outside, secure the covering during windy conditions and immediately clean



any fluids seeping from underneath the covering. Install a concrete curbing (with sealer applied to the floors and walls) around the storage area to contain any seepage or sorbent material used. Parts that are not oily or greasy can be stored outside provided rust staining on the pavement is not washed off with rain. If wrecked vehicles and "parts cars" are parked outdoors, keep them on concrete paved areas.

Clean parts properly:

Clean parts in a system that contains the cleaning material and collects the accumulated sludge for pick up by a certified disposal service. There are sinks, ovens or wash machines designed specifically for that purpose. Once a system is installed, maintain it properly. Install these systems indoors and do not plumb them to the ground outside, a storm drain, a storm water pond, or a septic system. Wet parts cleaning machines plumbed to the sanitary sewer system must meet specific conditions including use of a non-hazardous cleaning agent. Contact Austin Water for the requirements and approval to connect to the City sanitary sewer system. If you do not have equipment to properly clean large parts, many car wash operations, machine shops, and general automotive repair shops do. Be aware that hazardous solvents cannot be discharged to sanitary sewer drains. For more details on parts cleaning, the Watershed Protection and Development Review Department provides a solvent fact sheet.

Legally dispose of wastes.

Do not dispose of petroleum on the ground, in the trash, to a storm drain, or to a storm water pond. Recycle used motor oil, drained oil filters, and spent solvent through a service company. Have shop rags laundered by an approved service and tell them what the shop rags are used for. Do not saturate rags with gasoline, solvents or other hazardous liquids. Have wastes like caustic sludge and parts cleaning oven residues picked up by an approved hazardous waste disposal service (often called treatment, storage and disposal facilities-TSD's). The Watershed Protection Department can provide lists of recycling and disposal services for wastes. Choose a reliable TSD since you are responsible for wastes from "cradle to grave". Call the Hazardous Substances Information Hotline at 1-800-633-7585 to find out if a TSD has an EPA identification number or has been cited for past violations. They also provide a list of vendors who can transport your waste. Keep disposal receipts and waste manifests as verification of proper disposal. They must be kept for at least three years but can be kept indefinitely to minimize liability.

Reduce, reuse, recycle.

Costs for the treatment and disposal of hazardous waste continue to rise. Reduce disposal costs by:

- not mixing wastes together—this may increase the amount of hazardous waste generated or prevent a waste from being recyclable,
- purchasing supplies in bulk and keeping them in bulk dispensers—this helps reduces empty waste containers requiring disposal,
- reducing the number of containers by reducing the number of different brands or grades of materials used,
- evaluating the use of hazardous products and finding ways to reduce the quantity of product used,
- substituting a non-hazardous material for a hazardous material,
- recycling wastes when possible—the useful life of some materials like solvents can be extended by such methods as filtration to remove solids or distillation to remove impurities,
- utilizing TCEQ's RENEW Pro-gram (waste exchange pro-gram) which provides information on businesses and industry that reuse or reclaim wastes and,
- contacting the City of Austin Zero Waste Business Services for other alternatives and a non-regulatory, free au-dit of your business.

Prevent spills before they happen.

Prevent spills, as much as possible, through simple planning of daily operations. While working on vehicles, keep drip pans or spill pallets under the vehicle. Capture the spill or leak as soon as detected. Use larger, flat, low-brimmed pans under cars where ordinary drip pans are too cumbersome. Don't leave drip pans or other open containers unattended. Promptly transport collected fluids to your recycling or waste storage unit. Inspect customer vehicles and equipment regularly for leaks and repair them appropriately. Drain all fluids from wrecked vehicles and "parts" cars upon arrival. They can drip fluids for several days so place drip pans under them until they are drained. Also, drain engines, transmissions and other used parts kept for rebuilding. Work over an impervious surface such as concrete to prevent more extensive and costly soil cleanup. Don't allow customers to change their personal vehicle's oil on your lot. Most important, prevent discharges to the environment by working inside your shop.

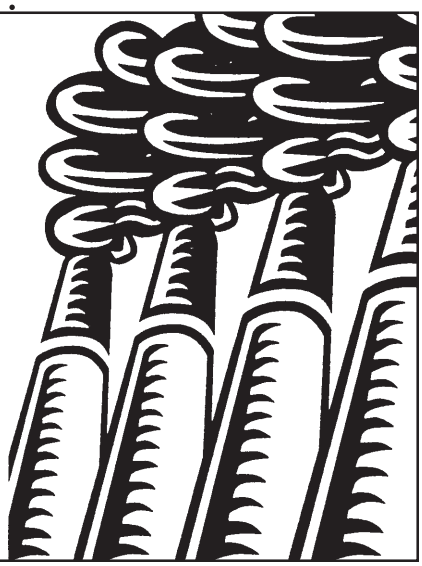
Handle spills properly.

Spills happen. Do not flush spills away with water. Instead, contain them immediately, before they reach a storm drain and spread to a creek or lake. Also, do not put yourself or others in danger. Before containment, evaluate what materials have spilled, make a thorough assessment of risk, and determine how to contain the spill safely. If safe containment is possible, immediately stop the spread of liquids using absorbent materials. Keep spill containment and clean up materials appropriate for the type and quantities of hazardous chemicals used or stored at your facility. The Watershed Protection Department can provide a list of absorbent material suppliers. Immediately block off nearby drains (sanitary sewer or storm drain). It is much more costly to decontaminate the inside of a storm drain pipe and/or restore a contaminated creek than it is to purchase spill containment materials.

Always wear appropriate safety equipment such as gloves, coveralls, goggles, and respirators. Access Safety Data Sheets (SDS) for information about spilled materials. Keep SDS's readily available for each

Did you know...

It takes 42 gallons of crude oil to produce 2.5 quarts of new lubricating oil. But, it only takes one gallon of used oil to produce the same high quality 2.5 quarts of oil through re-refining processes.



chemical used or stored at the facility. An SDS contains information that enables persons responsible for handling, using or encountering chemicals to estimate the likely harm, potential hazards and risks that might arise in emergency situations involving those chemicals. Obtain an SDS free of charge by calling the manufacturer's phone number from the label on the chemical container.

Never leave spills unattended; designate someone to make spill notification phone calls. Immediately notify the Austin Fire Department by dialing 911. Then, report the spill to the Watershed Protection and Development Review Department by calling the City's 24-Hour Pollution Hotline at 512-974-2550.

Clean up surfaces contaminated by hazardous chemicals only if you are trained, experienced, and qualified. Excavate spills on pervious (e.g. soil) surfaces as quickly as possible to prevent spread of the contamination. Contact the Watershed Protection Department for soil cleanup instructions. Sweep up and containerize dry material spills on impervious surfaces (e.g. pavement) for proper disposal. Absorb liquid spills on impervious surfaces with sorbent materials (e.g. clay sorbent, pads, booms, etc.) and containerize for proper disposal. Do not use wet/dry shop vacuums for gasoline, solvents or other volatile fluids because of explosion hazards.

Post a site-specific spill contingency plan at your facility providing step-by-step instructions in the event of a spill. Practice these steps in a "spill drill." The Watershed Protection Department provides information regarding spill contingency plans and a fact sheet detailing proper spill handling. A phone number is provided at the end of this fact sheet.

Know your drainage.

Eliminate storm drains inside your shop. If you have storm drains, storm water ponds or oil/grit separators outdoors, educate all workers on their function and maintenance requirements. Some business operators don't know the purpose of these structures, especially if the structures already existed before they purchased or leased the property. Do not handle or store petroleum products or wastes in or near storm water ponds, storm drains or oil/grit separators—this prevents costly environmental cleanups, fines, and maintenance. The Watershed Protection Department provides a fact sheet explaining the purpose and proper maintenance of separators and ponds. Know where your drains connect. If you are unsure to which system your drains connect (storm drain or sanitary sewer), contact the Watershed Protection Department or a licensed plumber for a dye trace and/or other verification method. Post signs at storm drains. The Watershed Protection Department provides a free kit to mark your storm drains.

Train employees.

Prevention is the key to eliminate pollution. The best prevention method is to train employees on proper handling and disposal of petroleum. Taking time for training; it can save time and money in clean ups, fines, worker injuries, and site restorations.

The Bottom Line

Businesses have found that it costs time and money to implement water pollution prevention measures. However, the expense to clean up spills and restore property is much greater. Small, seemingly insignificant leaks and spills can become large contamination problems over time if steps are not taken for containment, clean up, and prevention. Clean up and disposal after solvent, oil, gasoline, and diesel spills is expensive. Unless handled properly, spills cause soil or groundwater contamination which could impact future sale or transfer of property.

Cleanup costs and real estate depreciation are not the only possible pollution costs. Treatment of injuries and time lost from work are also substantial costs. Fines from City, State or Federal agencies add thousands of dollars to the overall cost of a polluting discharge. In addition to fines, regulatory agencies can require businesses to undergo detailed compliance audits, implement long-term water monitoring programs, or require the installation of expensive pollution prevention equipment and programs.

For more information:

Regulation of polluting discharges to storm sewers and waterways, spill reporting, lists of chemical disposal and recycling services, treatment system companies, storm drainage identification, soil cleanup instructions
City of Austin Watershed Protection Department
Pollution Prevention and Reduction Section
(512) 974-2550

Hazardous Materials Permit (underground storage tanks), underground storage tank requirements, including containment
City of Austin Planning and Development Review Department
Underground Storage Tank Program
(512) 974-2715

Hazardous Materials Permit, aboveground storage tank containment requirements
Austin Fire Department
Hazardous Materials Prevention Division
(512) 974-0182

Hazardous materials registration and requirements, spill reporting, RENEW Program
Texas Commission on Environmental Quality
Region 11 office
(512) 339-2929,
(512) 239-3171, RENEW Program

Sanitary sewer system discharges
Austin Water
Special Services Division
(512) 972-1060

Septic system discharges
Austin Water
On-site Sewage Facility Program
(512) 972-0050

Small business waste disposal information
Austin Resource Recovery
Zero Waste Business Services
(512) 974-9727

Emergency Numbers

Austin Fire Department (emergencies only)	911
City of Austin Environmental Hotline (24 hour)	(512) 974-2550
TCEQ Emergency Response Center (24 hour)	1-800-832-8224

CLEAN WATER FACT SHEET

FERTILIZERS & PESTICIDES

City of Austin - Watershed Protection Department

In many ways, vegetation helps to keep our creeks and lakes clean. It filters out pollutants from storm water runoff and allows storm water to seep into the soil rather than directly into our waterways. Vegetation also reduces summer temperatures, helps prevent erosion, minimizes dust, and helps clean the air. Unfortunately, millions of pounds of pesticides and fertilizers are used in the United States every year to maintain landscapes.

Pesticides and fertilizers are often misused, polluting Austin's valuable water resources

Homeowners, commercial landscapers, plant nurseries, golf courses, and the food and agriculture industry use various forms of chemicals to maintain lawns, trees, and shrubs, and to control the growth of unwanted plant or animal pests. But, pesticides and fertilizers are often misused, creating the potential for discharges of pollutants to Austin's valuable water resources.

The City of Austin Watershed Protection Department is responsible for preventing the discharge of pollutants to the City's storm drain system and waterways as mandated by Title VI, Chapter 6-5 (Water Quality) of City Code. This fact sheet provides information on fertilizer and pesticide application methods which reduce the potential for environmental pollution.

The Problem

Misuse of fertilizers.

Many people over apply fertilizers, in an effort to have perfect landscapes. This wastes fertilizer and can damage plants. Water soluble fertilizers applied before a rainfall easily washes into our creek and lakes. Furthermore, careless use of fertilizers can result in application on sidewalks and other paved areas where they are easily washed off to a storm drain drain.

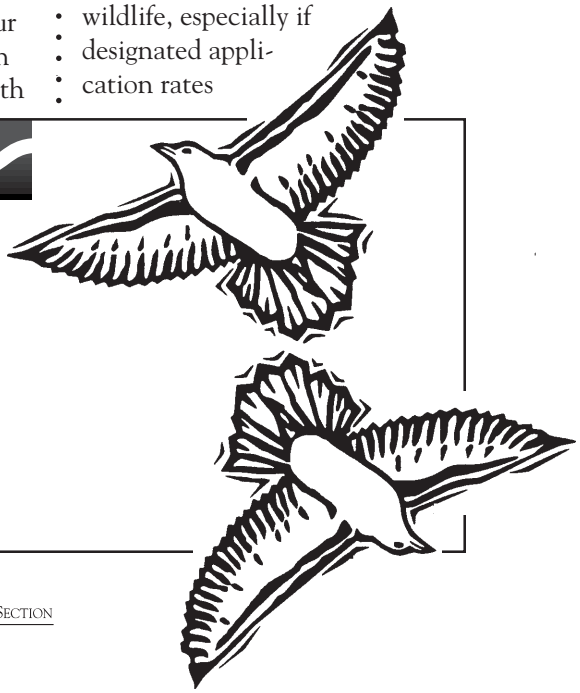
Fertilizers, as well as leaves and grass clippings, contain nitrogen and phosphorus - primary nutrients for plant growth. These nutrients, when washed into our creeks and lakes by rain or lawn watering, result in a rapid growth of algae and aquatic weeds commonly referred to as a "bloom". As these plants die and decay, they use up oxygen in the water, create foul odors and taste in drinking water, and clog pipes and water intakes. A bloom can kill fish and other aquatic life. Excessive vegetation is also dangerous to swimmers and boaters and requires costly mechanical removal. Some nitrogen fertilizers also release ammonia, which is toxic to fish.

Improper use of pesticides.

Pesticides (herbicides, fungicides, rodenticides, insecticides), used for landscape maintenance, are a major source of toxic pollutants. Some people believe that more is better. But, while designed to destroy pests, pesticides can also poison birds, and other wildlife, especially if designated application rates

Did you know...

Just five tiny granules of diazinon can kill a house sparrow.



are exceeded. Just five tiny granules of diazinon can kill a house sparrow. Pesticides can seep into groundwater and contaminate drinking water, and destroy soil by killing essential organisms from microbes to earthworms. Application in and along creeks and lakes can kill aquatic life, and pose a health threat to children who play there. Like fertilizers, applying pesticides just before a rainfall or in unneeded areas increases their chance of being flushed to a storm drain.

Some toxic pesticides accumulate in the environment and migrate up the food chain, as larger organisms eat many smaller contaminated organisms. Fish in Lady Bird Lake have been contaminated in this way. So, often, the long term health and environmental effects of pesticides are not known.

Use of fuels as weed killer.
Using gasoline, diesel, kerosene and other petroleum products to destroy unwanted vegetation has a significant impact on the environment. These substances are toxic. Some are cancer-causing and can persist in soil for many years. In areas with very porous soil, toxins can seep into our groundwater supply.

Careless storage of lawn and garden chemicals.
Storing chemicals improperly can cause pollution. Fertilizers and pesticides stored in areas exposed to weather, especially those in cardboard boxes and paper sacks, will deteriorate, then leak or spill. Extreme temperatures or dampness can reduce the effectiveness of pesticides, and degrade the packaging. This increases the chances for overapplication or a spill. For example, pellet fertilizer stored outside in bags hardens if exposed to moisture - it is then unusable. Outdoors, product labels become unreadable, or peel from their containers, thus separating the chemical from very important information regarding material use, storage, and disposal. Open, uncovered, or damaged chemical containers will overflow if filled with rain water. Chances for an illegal discharge

Chances for an illegal discharge are greatly increased when chemicals are stored in areas close to storm drains.

are greatly increased when chemicals are stored in areas close to storm drains leading to our local waterways.

Mishandling of spills.
Accidents will happen. However, if spills from leaking or damaged containers are neglected or rinsed away with water, the contamination spreads and toxins are carried to the storm drain. Pesticides washed into a waterway have an enormous impact on water quality, even in very small quantities. For example, Dursban, a common pesticide, is lethal to fish in concentrations of less than 4 parts per billion. This is equivalent to less than 2 tablespoons in an Olympic size swimming pool.

Illegal disposal of chemicals.
Unusable or unwanted fertilizers and pesticides are sometimes dumped down sinks, in storm drains, on the ground outside, or even in the dumpster. Sinks carry pesticides and fertilizers to municipal or private wastewater treatment systems, potentially damaging plumbing and treatment equipment. Chemicals placed in dumpsters contaminate the landfill and may seep into the groundwater. They also spill inside the dumpster, posing a dan-

Did you know...

Each year, Texans apply about 5 million pounds of fertilizers, and 4 million pounds of pesticides on lawns. It is estimated that almost 1/3 of that usage is wasted because we use too much or it's mixed incorrectly.

Illegal disposal of chemical pesticides has long lasting effects on the environment—many take decades to break down while others persist in the tissues of fish, birds and other wild life.

ger to trash haulers who empty them and the environment if they leak out the dumpster seams or drain hole. Disposal onto the ground creates an exposure hazard and results in expensive soil cleanups. Chemicals disposed of in storm drains are carried by storm water directly to our waterways where the impact on aquatic life can be devastating. Illegal disposal of chemicals has long lasting effects on the environment - many take decades to break down while others persist in the tissues of fish, birds, and other wildlife.

The Solution

Prevent the need for chemicals whenever possible.

Avoid regular use of herbicides by properly watering, fertilizing and mowing your lawn. A healthy and thick lawn and root system is the best defense against weeds. Fertilizing in early fall promotes deep root systems. Shallow root systems are unable to help lawns survive a drought or harsh winter. Consider removing damaged or diseased portions of plants, rather than trying to save them with chemicals. If the entire plant is diseased, consider removing it along with the roots and surrounding soil. Seal in garbage bag for trash removal. Afterwards, wash hands and sterilize garden tools with a mild bleach solution. Use crop rotating techniques to prevent buildup of disease-causing organisms.

Use Integrated Pest Management.

Learn about Integrated Pest Management (IPM) which emphasizes prevention and natural pest control methods instead of chemicals such as manually removing weeds and larger insects from plants. Weeds can also be controlled in landscapes by using ground cover plants and mulch. Ashes, diatomaceous earth, limestone, and other natural materials applied to the landscape may act as an irritant and repel bugs. For more information, contact the Watershed Protection Department's Integrated Pest Management Program at the phone number provided at the end of this fact sheet.

Landscape with native vegetation or "xeriscape " plants.

They require less water, chemical fertilizers, and pesticides. Xeriscape is "quality landscaping that conserves water and protects the environment." Plant varieties adapted to this area are more resistant to pest and disease. Use a mix of plants to minimize pest infestations. Promote optimum growing conditions and eliminate conditions favorable to pests. For example, in the Austin area, many harmful molds and fungi can be controlled by watering in the early morning rather than in the evening. Some xeriscape plants attract beneficial insects and birds to your yard. For details on xeriscape plants and water conservation, contact Austin Water at the phone number provided at the end of this fact sheet.

Avoid misuse of pesticides.

Use pesticides only as a last resort. Always follow the directions on the package label. Twice as much does not mean twice the results. Do not mix chemicals unless specifically indicated on the label. Mixing can produce explo-

Did you know...

Ironically, pesticides don't seem to be improving agricultural yield. Before their use, farmers lost about 33% of their crops to pests. Today, farmers still lose about 33%.

sive reactions or toxic fumes. Apply pesticides only in calm, dry weather. This reduces pesticide losses from drift and storm water runoff. Water the chemicals in with a low intensity, controlled application rate, such that no runoff from the site occurs. Avoid regular application. Do not apply pesticides to bare ground or eroded areas. Never apply toxic pesticides near water bodies, water wells, and wildlife habitats. Cluster landscape jobs that use the same spray solution to minimize the number of times the equipment must be cleaned; this reduces waste.

Select the right fertilizer.

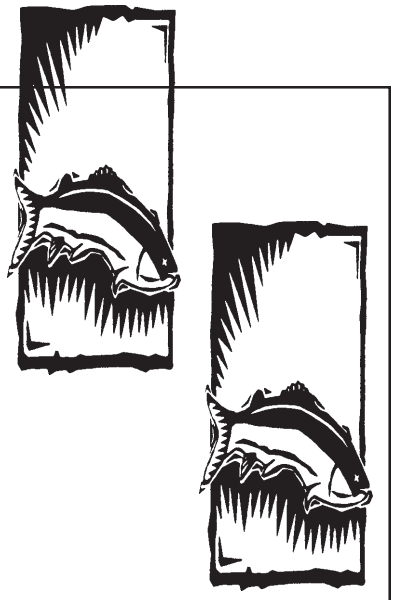
Whenever possible, choose natural fertilizers such as manure and compost materials. If you must use a chemical fertilizer, choose the correct type and concentration and, thereby, reduce environmental risk. Read the label for the recommended application rate. The label also provides the percentage (by weight) of the three necessary nutrients: nitrogen (listed first), phosphate (supplies phosphorus), and potash (supplies potassium). For example, a bag of 25-4-5 fertilizer contains 24 percent nitrogen, 4 percent phosphate, and 5 percent potash. The remaining ingredients are usually ground limestone or sand.

Many soils already contain enough phosphorous to grow a healthy lawn. Try low-phosphorous or phosphorous-free fertilizers. They can provide necessary nutrients while minimizing the threat to water quality. Adding 1/2 inch of compost, manure or other natural materials on top of lawns or soil is an ideal way to supply nutrients to your landscape. Most organic fertilizers contain lower concentrations of nutrients than synthetic fertilizers and release the nutrients more slowly. On sandy soils, nitrogen can quickly seep through the soil into the groundwater, thus slow release is ideal. A soil test (soil analysis for nitrogen, phosphorus, and potassium) will help determine the right fertilizer formulation to use and prevent over applications. Nutrient requirements for gardens, trees and shrubs can vary. Consult your local nursery and garden supply, agricultural extension office, or the Watershed Protection Department for more information.

"Natural" or "organic" fertilizers can harm aquatic life by providing nutrients for prolific plant and animal growth. So, keep them out of storm sewers and waterways.

Fertilize it right.

"Natural" or "organic" fertilizers can harm aquatic life, too, by providing nutrients prolific for plant and animal growth. So, keep them out of storm sewers and waterways also. Use chemical fertilizers sparingly. Overappli-cation can "burn" or damage plants, causing them to die. Do not spread or spray fertilizers in un-



Did you know...

Dursban is lethal to fish in concentrations of less than 4 parts per billion or less than 2 tablespoons in an Olympic size swimming pool.

needed areas such as sidewalks, streets, or driveways. Fertilizer should be applied at the time of day and under the conditions indicated in the package directions; do not apply them in windy or rainy conditions. Water the landscape lightly after application to help fertilizers soak in.

Store lawn and garden chemicals properly.
Consult the product label for storage conditions needed to avoid product damage. All materials should be stored in a well ventilated, easily cleaned, dry area, never exposed to weather. The storage area should be constructed such that it can contain a spill. Keep storage areas locked and identified with warning signs.

Store dry products above liquids and keep them off the floor. Consult the Safety Data Sheets (SDS) for chemicals to avoid storing incompatible chemicals near one another. This can cause violent reactions and spills. An SDS contains information that enables persons responsible for handling, using or encountering chemicals to estimate the likely harm, potential hazards and risks that might arise in emergency situations involving those chemicals.

Obtain an SDS by calling the manufacturer's phone number from the label. Keep lids securely in place and bags tightly closed after opening. In case of spills, pesticides and fertilizers should not be stored near storm drain drains or drainage ways leading to creeks and lakes. Always keep pesticides in their original containers with labels intact. If a label becomes unreadable, re-label the container with as much information as possible.

Regularly inspect storage areas and check for damaged containers.
Broken or leaking containers can be placed inside a second container of similar material (e.g. glass for corrosives, metal for flammables) until used or disposed of properly. Some pesticides are hazardous materials and require special storage as well as a Hazardous Materials Permit from the Austin Fire Department (AFD). For advice, call AFD at the phone number listed at the end of this fact sheet.

Clean spills as they occur.
Spills must be cleaned up immediately, especially before they reach a storm drain and spread to a creek or lake. For chemical spills, use the necessary protective clothing as instructed on the product label and the SDS. Keep other people and pets away from the spill. Dry material spills may be swept up and reused or disposed of properly. Do not flush liquid spills with a hose. Instead, small chemical spills can be picked up with sorbent material (e.g. kitty litter, sawdust, or dirt). Sweep or shovel the used sorbent material or spilled dry material into several plastic bags (one placed inside the other) and seal the bag shut. Follow the same disposal protocol as with unused or unwanted chemicals. Contain large chemical spills with sorbent material, if it is safe to do so. Then, immediately call the Austin Fire Department by dialing 911. Once cleaned up, paved surfaces can be rinsed with water and a mild detergent and the rinsewater contained and absorbed for proper disposal.

Contaminated soil must be dug up and disposed of legally. Contact the Watershed Protection Department for instructions. Spills to waterways must be stopped, contained where possible (e.g. build an earthen dike in small streams), and assessed by the Watershed Protection Department by calling the City's 24-Hour Pollution Hotline.

Know your drainage.
Find out where storm drains are located on or near your site so you can immediately block them in the event of a spill. Be aware that most exterior and some interior drains are connected to the City's storm drain system. Nothing but rainwater may enter our storm drain system according to Federal law. If you are unsure to

Be aware that most exterior and some interior drains are connected to the City's storm drain system.

which system your drains are connected, contact the Watershed Protection Department or a licensed plumber for a dye trace or other verification method. Do not use fertilizers and pesticides in or immediately adjacent to a waterway.

Properly dispose of excess fertilizers and pesticides.
Try to reduce the amount of fertilizer and pesticides you dispose of by purchasing only what you need. Use the oldest material first to avoid disposal of outdated materials. Before buying chemicals, calculate how much you need and buy only that amount. If you have excess fertilizer or pesticides, find someone who might have immediate use for them. Wood preservatives such as creosote and some banned insecticides should not be reused. Never pour unwanted chemicals down any drain. Homeowners in the City of Austin and Travis County may dispose of limited amounts of pesticides and fertilizers, at no charge, at the City's Household Hazardous Waste Collection Facility. Austin Resource Recovery has a disposal program for small businesses which accepts limited quantities of some business wastes for a fee. Phone numbers are provided at the end of this fact sheet. Other wise, unusable pesticides and fertilizers can be disposed of through a licensed disposal company. The Watershed Protection Department provides lists of disposal services.

Never

pour

unwanted

chemicals

down

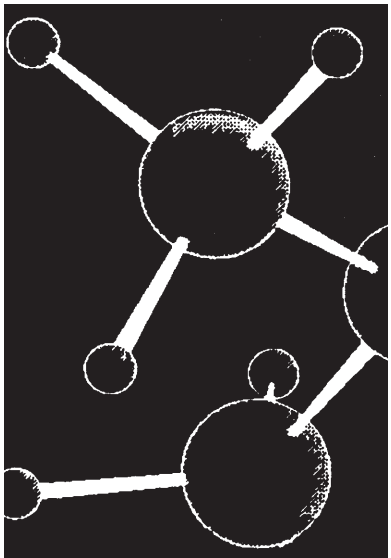
any

drain.

Triple rinse empty containers and dispose of or use the rinse water the same way you would dispose of or use the product. Containers that stored hazardous chemicals must be disposed of through a hazardous waste disposal service. Otherwise, non-hazardous chemical containers should be rinsed, wrapped in several layers of newspaper, and placed in the trash. For more information on hazardous waste disposal, contact the Texas Commission on Environmental Quality at the phone number provided at the end of this fact sheet.

The Bottom Line

It all adds up! It does cost time and money to implement water pollution prevention measures at your home or business. However, it takes more time and costs more money to clean-up spills after they occur. Small, seemingly insignificant discharges can accumulate into large contamination problems if steps are not taken for prevention or immediate clean-up. Contamination costs escalate if humans, pets, wildlife and fish are harmed. In addition, fines from City, State or Federal agencies add thousands of dollars to the overall cost of a polluting spill. Furthermore, careless application of fertilizers and pesticides is a waste of your money. Using Integrated Pest Management techniques, which emphasize preventative pest control, saves you money and protects the environment.



Chemical insecticides should be used sparingly, with extreme care, and only as the label directs.

For More Information:

Regulation of polluting discharges to storm sewers and waterways, spill reporting, soil cleanups, waste disposal service lists
City of Austin Watershed Protection Department,
Pollution Prevention and Reduction Section
(512) 974-2550 (24-Hr. Pollution Hotline)

Pesticides & landscaping information
City of Austin Watershed Protection Department,
Integrated Pest Management Program
(512) 974-2581

Xeriscape and water conservation information
Austin Water
Water Conservation Program
(512) 974-2199

Household Hazardous Waste Collection Facility
Austin Resource Recovery
(512) 974-4343

Small business waste disposal information
Austin Resource Recovery
Zero Waste Business Services
(512) 974-9727

Hazardous Materials Permit
Austin Fire Department,
Hazardous Material Prevention Division
(512) 448-8338

Waste storage/disposal requirements, alternative to hazardous households chemicals
Texas Commission on Environmental Quality (TCEQ)
(512) 339-2929 (waste storage and disposal)
(512) 239-4747 (chemical alternatives)
1-800-832-8224 (24-Hour Spill Reporting)

Pesticides information & complaints
Texas Department of Agriculture (512) 463-7476

Pesticide Applicator's Certification/pesticides information
Structural Pest Control Board (512) 463-7476

Health effects information
Austin-Travis County Health and Human Services Department (512) 972-5000

Organic alternatives to pesticides
Lower Colorado River Authority 1-800-776-5272

Emergency Numbers

Austin Fire Department (emergencies only)	911
City of Austin Environmental Hotline (24 hour)	(512) 974-2550
TCEQ Emergency Response Center (24 hour)	1-800-832-8224
National Response Center	1-800-424-8802
CHEMTREC Chemical Spill Hotline	1-800-424-9300

CLEAN WATER FACT SHEET

HAZARDOUS SUBSTANCES

City of Austin - Watershed Protection Department

Most people know that hazardous chemicals are dangerous and must be handled with extreme caution. However, when mishandled, hazardous materials and waste are released to the environment, endangering the general public and Austin's natural resources. A variety of hazardous materials and wastes are used and generated by the automotive repair industry such as automotive batteries, caustic parts cleaners, gasoline, blast abrasives containing heavy metals, caustic sludge from radiator boil-out tanks, parts cleaning oven residues, some paints and used thinners, rust remover, paint booth dust, solder, and muriatic acid. If they are discharged to storm drains, storm water ponds, waterways, or even on the ground, they are not only a danger, but also result in very costly cleanups, site restorations, and stiff fines for the responsible party.

Hazardous substances are dangerous and must be handled with extreme caution.

A hazardous material is any material that is listed in the federal regulations as hazardous or exhibits one or more of the characteristics of a hazardous material. These characteristics are ignitability, corrosivity, reactivity, and toxicity. Any materials meeting the specific criteria for any one characteristic is considered hazardous. In addition, any substance containing a hazardous material is considered hazardous. For example, putting waste solvent (hazardous) in waste motor oil (non-hazardous) classifies the entire mixture as a hazardous waste. A hazardous waste is any hazardous material that no longer has a use or has been spilled or accidentally released.

The City of Austin Watershed Protection Department is responsible for preventing polluting discharges of hazardous materials and wastes to the City storm drain system and waterways as mandated by Title VI, Chapter 6-5 of City Code (Water Quality). This fact sheet provides automotive businesses storing and handling hazardous materials and wastes with information on managing them, without polluting the environment.

The Problem:

Careless storage and handling.
Liquids stored in containers exposed to rain without lids or overhead cover can overflow onto the ground. Fluids accumulating on the outside or on top of containers from spills are easily washed off by rain water. Containers in poor condition (rusty, bloated, dented) can leak. Unlabeled containers can be misused and ne-

Did you know...

Any substance that contains a hazardous material is considered hazardous. For example, putting waste solvent (hazardous) in waste motor oil (non-hazardous) results in the entire mixture being classified as hazardous waste.

glected. Batteries stored outside increase the chance for leaks from cracked casings and terminal corrosion. Storage tanks, fuel dispensers, drums, and other containers not properly secured are subject to vandalism as well as traffic accidents, increasing the chance for a release. Materials are spilled from uncontrolled practices during oil based paint projects and lead paint abatement.

Hazardous chemicals are toxic to many aquatic organisms. Small quantities of hazardous chemicals such as solvents or gasoline can cause fish kills and destroy aquatic plants. Skin contact or inhalation of hazardous substances by workers causes injury.

Improper fueling activities.

Gasoline dispensing creates discharges to the environment if done carelessly. Other fuel releases occur from overfilling tanks, customers leaving the station without removing the pump handle from their cars (drive-offs), customers topping off tanks, filling of inappropriate fuel containers, maintenance by untrained workers, inaccessible shut-off switches, or employees unaware of shut-off switch locations. Fueling over a permeable surface such as soil or gravel leads to expensive clean-ups and creates the potential for groundwater contamination should a spill occur.

Inappropriate parts cleaning.

Used automotive parts often require heavy duty degreasers and solvents to remove oil and grease buildup. The common solvents used at automotive shops have a high human health risk rating and are extremely flammable and toxic. Cleaning parts outside with cleaning agents and discharging the wash water to the ground, storm drain, oil/grit separator, storm water pond, or waterway is illegal. Cleaning parts outside also results in difficult, expensive decontamination of all impacted surfaces, and is a public health threat. Cleaning parts on an asphalt surface not only pollutes the environment, but over time, dissolves the asphalt surface since it is made of heavy petroleums. In addition, plumbing a parts cleaning machine or sink to the ground or storm drain results in illegal discharges to the environment. Solvent parts cleaning devices installed outside can leak or overflow onto the ground. Parts cleaners (e.g. wet cleaners, dry ovens, bead agitators) also accumulate sludge containing oil and grease, and heavy metals. Disposal of the sludge on the ground, in a drain, pond, waterway, or dumpster is subject to costly penalties.

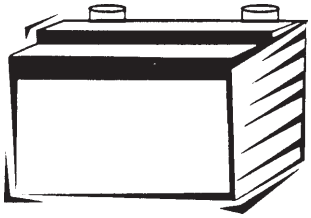
Mishandling of spills.

Most spills typically occur during the transport of chemicals to and from storage receptacles, fuel transfer, vehicle repair, or from leaking vehicles. Unattended spills outside are carried by rain to the environment. This only spreads the contamination, causing costly cleanups, fines, and site restorations. Some facilities are not properly equipped with spill containment and cleanup materials, a spill plan, or the appropriate training needed to use them effectively. Therefore, spills are often mishandled by flushing them with water to a storm drain, storm water pond, or adjacent property.

Illegal disposal.

Hazardous substances dumped on the ground, in a drain connected to either the storm or sanitary sewer system, in a septic system, or in the trash has serious consequences. Disposing of hazardous substances in the trash results in hazardous waste accumulating in the landfill, where it can contaminate groundwater. It can also spill from trash trucks, harming sanitation workers and the general public. Hazardous substances, such as solvent, generated from automotive parts cleaning are toxic to humans, animals, and aquatic life not only because the solvent product itself is toxic, but

Did you know...



Most car batteries contain 18 lbs. of lead and a gallon of sulfuric acid—both are hazardous wastes. So, store batteries in a contained area.

because the waste contains heavy metals such as lead, cadmium and chromium picked up from cleaning engine parts. Dumping hazardous substances on the ground contaminates the soil causing costly removal, disposal, and replacement of the contaminated soil area. Disposal in a storm drain will carry the pollutant to area creeks and lakes, having a devastating effect on aquatic life. Disposal in a sanitary drain may render a treatment system inoperative by destroying living organisms used to treat raw sewage. Disposal in either storm drain or sanitary sewer system drains also poses a public health threat. Flammable gases may react with natural gases in confined sewers causing violent explosions.

Unknown drain connections.

Many businesses in Austin have drains and storm water ponds that connect to the storm drain system. Some even have oil/grit separators and storm drains inside the shop. Some business operators don't know the purpose of these structures, especially if the structures already existed when they purchased or leased the property. If you do not know what it is or where it connects, chances are you cannot prevent it from being misused. Many people incorrectly assume that oil/grit separators and storm water ponds are receptacles for waste disposal.

Storage near storm drains or storm water ponds.

Many businesses in Austin have sewer drains inside work and storage areas. Chances for an illegal discharge are greatly increased when chemicals are handled or stored near interior and exterior drains connected to the storm drain system. Storm drain systems provide a direct path to our creeks and lakes without treatment. The discharge of hazardous substances through storm drain oil/grit separators and storm water ponds can result in expensive repairs to the storm drainage system as well as very expensive sampling and disposal of accumulated sediment or sludge.

Unfamiliarity with hazardous waste regulations.

Unfamiliarity with hazardous materials and waste regulations can result in danger to employees and water resources due to mishandling of wastes or illegal storage and disposal practices. For example, hazardous wastes should not be mixed; incompatible chemicals can lead to violent reactions, even explosions and spills. And, combining a hazardous waste, such as a solvent used to clean shop floors, with a non-hazardous waste, such as used motor oil, in the same drum classifies the contents of the entire drum hazardous. The cost for disposal of hazardous waste is much more expensive - in comparison to costs for disposal (recycling) of materials done separately. Furthermore, violations of City and State regulations result in legal action with subsequent fines and penalties.

The Solution

Store and handle product/waste properly.

Keep containers under protective cover with secured lids. Properly label and regularly inspect containers to ensure they are in good condition. Storage units must not leak, overflow, or display any signs of failure or incompatibility with their contents. Keep storage containers in a secured area away from traffic and possible vandalism. Store used batteries inside where leaks from cracked casings or terminal corrosion will be contained (e.g. concrete bin with sealed floors and walls). Capture drips and spills during vehicle repair using equipment such as drip pans, containment pallets or sorbent pads. Use impermeable cloths or tarpaulins at the work area to capture particles during activities such as paint applications and removal.

Store fuel and hazardous materials, above certain quantities, within secondary containment as

Did you know...

Flushing fuel spills into storm sewers pollutes Austin's valuable water resources—our creeks and lakes.

specified in the City of Austin Fire Code. Ideally, keep any amount of chemicals within secondary containment in the event of an accidental release. For secondary containment requirements and specification, contact the Austin Fire Department at the phone number provided at the end of this fact sheet.

Ensure careful fueling.

Monitor tank filling activities to prevent overfilling and drive-offs. Install and maintain overfill prevention equipment. Reduce drive-offs by monitoring fueling activities and installing break away hoses currently required at most fuel facilities. In addition, install and anchor shear valves at the dispenser. Also, install automatic closing type hose nozzle valves to prevent spills during customer fill-ups. Clearly mark the shut-off switch and educate employees as to its location and use.

Pave areas where fuel is stored and dispensed so accidental spills are easily contained and removed. Pave with Portland cement, not asphalt; fuel deteriorates asphalt. Cover the fuel island and do not drain the area to storm drain catch basins. Carefully plan aboveground storage tank structures for product dispensing. Contact the Watershed Protection Department and the Austin Fire Department for requirements. Phone numbers are provided at the end of this fact sheet.

Contain and properly dispose of waste from parts cleaning.

Clean parts in a system that contains the cleaning material and collects the accumulated sludge for pick up by a certified disposal service. There are sinks, ovens or wash machines designed specifically for that purpose. Once a system is installed, maintain it properly. Install these systems indoors and do not plumb them to the ground outside, a storm drain, a storm water pond, or a septic system. Wet parts cleaning machines plumbed to the sanitary sewer system must meet specific conditions including use of a non-hazardous cleaning agent. Contact Austin Water for the requirements and approval to connect to the City sanitary sewer system. For more details on parts cleaning, the Watershed Protection Department provides a solvent fact sheet.

Handle spills properly.

Spills happen. Do not flush spills away with water. Instead, contain them immediately, before they reach a storm drain and spread to a creek or lake. Also, do not put yourself or others in danger. Before containment, evaluate what materials have spilled, make a thorough assessment of risk, and determine how to contain the spill safely. If safe containment is possible, immediately stop the spread of liquids using absorbent materials. Keep spill containment and clean up materials appropriate for the type and quantities of hazardous chemicals used or stored at your facility. Immediately block off nearby drains (sanitary or storm drain). It is much more costly to decontaminate the inside of a storm drain pipe and/or restore a contaminated creek than it is to purchase spill containment materials.

Always wear appropriate safety equipment such as gloves, coveralls, goggles, and respirators. Access Safety Data Sheets (SDS) for information about spilled materials. Keep SDS's readily available for each chemical used or stored at the facility. An SDS contains information that enables persons responsible for handling, using or encountering chemicals to estimate the likely harm, potential hazards and risks that might arise in emergency situations involving those chemicals. Obtain an SDS free of charge by calling the manufacturer's phone number from the label on the chemical container.

Never leave spills unattended; designate someone to make spill notification phone calls. Immediately notify the Austin Fire Department by dialing 911. Then, report the spill to the Watershed Protection Department by calling the City's 24-Hour Pollution Hotline at 512-974-2550.

Clean up surfaces contaminated by hazardous chemicals only if you are trained, experienced, and qualified. Excavate spills on pervious (e.g. soil) surfaces as quickly as possible to prevent spread of the

Keep containment and cleanup materials available in the event of a spill.

contamination. Contact the Watershed Protection Department for soil cleanup instructions. Sweep up and containerize dry material spills on impervious surfaces (e.g. pavement) for proper disposal. Absorb liquid spills on impervious surfaces with sorbent materials (e.g. clay sorbent, pads, booms, etc.) and containerize for proper disposal.

Post a site-specific spill contingency plan at your facility providing step-by-step instructions in the event of a spill. Practice these steps in a "spill drill." The Watershed Protection Department provides information regarding spill contingency plans and a fact sheet detailing proper spill handling. A phone number is provided at the end of this fact sheet.

Dispose of hazardous substances properly.
Do not dispose of hazardous chemicals on the ground, in the trash, to a septic system, or in a storm or sanitary sewer drain. Instead, containerize hazardous chemicals for recycling or disposal by a certified company. For example, collect spent solder from radiator repair activities for recycling. Lists of recycling and disposal companies are available from the Watershed Protection Department. Also, keep disposal receipts and copies of waste manifests, as verification of proper disposal. Keep them for at least three years, or indefinitely to minimize liability.

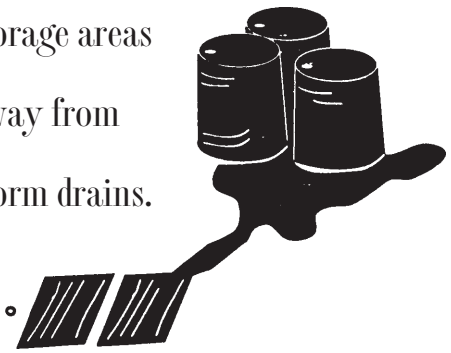
Know your drainage.
If you have storm drains, storm water ponds or oil/grit separators at your facility, educate all workers on their function and maintenance requirements. Some business operators don't know the purpose of these structures, especially if the structures already existed before they purchased or leased the property. Storm drains, oil/grit separators, and storm water ponds are not receptacles for waste disposal. The Watershed Protection Department provides a fact sheet explaining the purpose and proper maintenance of separators and ponds. Prevent hazardous substances from entering these structures - this prevents costly environmental cleanups, fines, and maintenance. If you are un-sure to which system your drains connect (storm or sanitary), contact the Watershed Protection Department or a licensed plumber for a dye trace and/or other verification method.

Keep hazardous substances away from storm drains and storm water ponds.
Avoid having storm drains inside chemical handling and storage areas. Drains in areas where chemicals are stored and dispensed, vehicle fluids are changed (e.g. vehicle lifts), and parts are repaired, are subject to contamination. Do not store hazardous chemicals in or immediately adjacent to storm water ponds. Contact the Watershed Protection Department for requirements regarding storm drains inside aboveground storage tank containment areas.

Reduce, reuse, recycle.
The cost for treatment and disposal of hazardous waste is expensive. Reduce disposal costs significantly by:

- not mixing hazardous and non-hazardous wastes - this may increase the amount of hazardous waste generated or prevent a waste from being recyclable
- evaluating the use of hazardous products and finding ways to reduce the quantity of product used
- substituting a non-hazardous waste for a hazardous waste - contact your chemical supplier, business association, or fellow shop operator for ideas
- recycling wastes, when possible - the useful life of some materials like solvents can be extended by filtration to remove solids or distillation to remove impurities
- utilizing TCEQ's RENEW Program (waste exchange program) which provides information on businesses and industry that reuse or reclaim waste materials
- contacting the City of Austin Zero Waste Business Services for other alternatives and a non-regulatory free audit of your business

Relocate chemical handling and storage areas away from storm drains.



Contact the TCEQ to learn how to determine your generator category and the requirements that apply such as labeling, accumulation time, recordkeeping, transporting, and quantity limits.

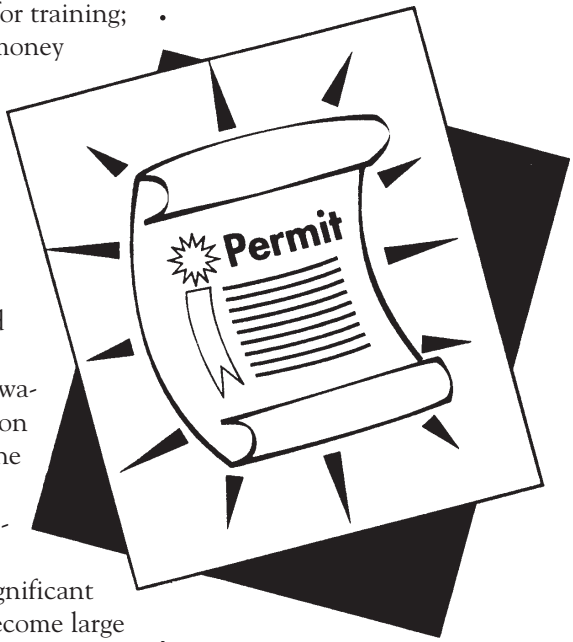
Know hazardous waste regulations and obtain necessary permits. The State and Federal hazardous waste regulations that apply to your business depend upon the quantity of hazardous wastes generated and stored each month. Contact the TCEQ to learn how to determine your generator category and the requirements that apply such as labeling, accumulation time, recordkeeping, transporting, and quantity limits. Reduce your liability and chance for penalties and costly remediations by remaining familiar with these regulations and requirements and obtaining the necessary permits. In addition, contact the Austin Fire Department for possible permitting if your facility receives, produces, or stores specific quantities of hazardous materials.

Train employees.
Prevention is the key to eliminate pollution. The best prevention method is to train employees who work with hazardous substances. Taking time for training; it can save time and money in cleanups, fines, worker injuries, and site restorations.

The Bottom Line

Businesses have found that it costs time and money to implement water pollution prevention measures. However, the expense to clean up spills and restore property is much greater. Small, seemingly insignificant leaks and spills can become large contamination problems over time if steps are not taken for containment, clean up, and prevention. Clean up and disposal after hazardous material spills is often extremely expensive. Unless handled properly, spills cause soil or groundwater contamination which could impact future sale or transfer of property.

Cleanup costs and real estate depreciation are not the only possible pollution costs. Treatment of injuries and time lost from work are also substantial costs. Fines from City, State or Federal agencies add thousands of dollars to the overall cost of a polluting discharge. In addition to fines, regulatory agencies can require businesses to undergo detailed compliance audits, implement long-term water monitoring programs, or require the installation of expensive pollution prevention equipment and programs.



Contact the Austin Fire Department for possible permitting if your facility receives, produces, or stores specific quantities of hazardous materials.

For More Information:

Regulation of polluting discharges to storm sewers and waterways; spill response; lists of services for disposal, recycling, treatment systems; storm drainage identification

City of Austin Watershed Protection Department
Pollution Prevention and Reduction Section
(512) 974-2550

Hazardous Materials Permit (underground storage tanks), underground storage tank requirements, including containment

City of Austin Planning Development Review Department
Underground Storage Tank Program
(512) 974-2715

Hazardous Materials Permit, aboveground tank secondary containment requirements

Austin Fire Department
Hazardous Materials Prevention Division
(512) 974-0182

Hazardous waste regulations and spill reporting,

Texas Commission on Environmental Quality
Region 11 Office
(512) 339-2929

Sanitary sewer system discharges

Austin Water
Special Services Division
(512) 972-1060

Septic system regulations

Austin Water
On-site Sewage Facility Program
(512) 972-0050

Small business waste disposal information

Austin Resource Recovery
Zero Waste Business Services
(512) 974-9727

Emergency Numbers

Austin Fire Department (emergencies only) City	911
of Austin Environmental Hotline (24 hour)	(512) 974-2550
TCEQ Emergency Response Center (24 hour)	1-800-832-8224

CLEAN WATER FACT SHEET

ANTIFREEZE

City of Austin - Watershed Protection Department

Many people know that antifreeze (ethylene glycol) is poisonous to humans and animals; however, they may not know that flushing antifreeze into a storm drain can have serious consequences for the environment as well. Ethylene glycol and propylene glycol are used as coolants for automotive engine systems because they lower the freezing point of water and are less corrosive and flammable than other coolant compounds. While propylene glycol has become a popular, less toxic substitute for ethylene glycol, it is still combustible, toxic if ingested, and will harm the environment. Other lesser known antifreeze compounds such as methanol and isopropanol (used as gasoline additives to prevent ice formation in fuel lines and carburetors) also have flammable and toxic properties.

Flushing antifreeze into a storm drain will pollute waterways

The City of Austin Watershed Protection Department is responsible for preventing or stopping illegal pollutant discharges to the city storm drainage system or waterways as mandated by Title VI, Chapter 6-5 (Water Quality) of the City Code. This fact sheet provides information to automotive repair shop operators on how antifreeze should be used and disposed of without polluting Austin's valuable water resources.

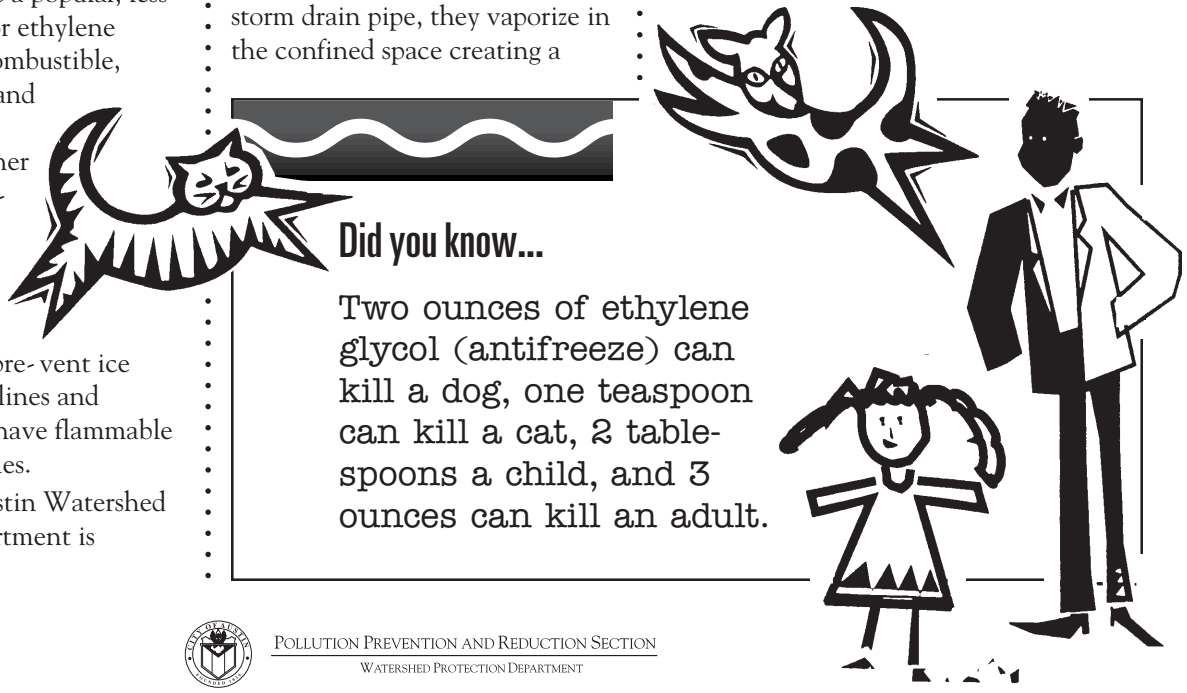
The Problem:

Improper flushing of radiators.

Radiators are flushed when they overheat and during fluid changes. It is illegal to discharge the antifreeze wastewater onto the ground or into a storm drain where it is carried to a storm water pond, creek or lake. When antifreeze compounds enter a storm drain pipe, they vaporize in the confined space creating a potential explosion or fire hazard. Ethylene glycol also has a sweet taste making it attractive to pets and young children, another reason its discharge to the ground is prohibited. Both ethylene and propylene glycols are toxic to humans, animals, and aquatic life. Waste antifreeze contains heavy metals from wear and tear of engine parts. Discharges of waste antifreeze on the ground or to a storm water pond results in expensive soil and sediment clean-up. The Watershed Protection Department provides a fact sheet explaining the proper use of storm water ponds.

Improper cleaning of radiators.

During radiator repair, the radiator is removed from the



Did you know...

Two ounces of ethylene glycol (antifreeze) can kill a dog, one teaspoon can kill a cat, 2 tablespoons a child, and 3 ounces can kill an adult.

vehicle and thoroughly cleaned. This is often accomplished by pressure washing with a hose (using plain water and/or soap) or dipping in a vat of heated caustic cleaner to remove mineral accumulation. If the pressure washing is done outside in an uncontained area or inside adjacent to a storm drain, the contaminated wastewater flows to the storm drain and pollutes the receiving streams and lakes.

Improper disposal of tank wastewater.
Automotive shops that repair radiators contaminate their leak check tank water during immersion of radiators, and if soldering is done over the tank. The tank water becomes contaminated with antifreeze, loose debris, and heavy metals (e.g. lead, copper, and zinc). The boil-out tank contains the same contaminants found in the leak check tank plus the caustic cleaning agent. As a result, a significant amount of wastewater and sludge is generated when the tanks need to be emptied and refilled with clean water. Dumping these hazardous wastes on the ground results in expensive cleanups, stiff fines, and threats to public health and safety.

Mishandling spills.
Automotive shops work with leaking and overheated vehicles. Leaving antifreeze spills pooled on the ground not only endangers pets and humans, but pollutes the environment as well.

Unknown drain connections.
Many properties in Austin have drains that connect to the storm drain system. Some properties have oil/grit separators or storm water ponds, and even storm drains inside the shop. Some business operators do not know the purpose of these structures, especially if they existed prior to their purchase or lease of the property. If you do not know what it is or where it connects, chances are you cannot prevent it from being misused. Some people incorrectly assume that these devices are receptacles for waste disposal. This is not their function.

Vehicle repair and waste storage near storm drains or storm water ponds.
Chances for an illegal discharge are greatly increased when chemicals are handled (e.g. fluid changes) or stored near interior and exterior drains connected to the storm drain system. Many businesses in Austin have drains inside work and storage areas. Storm drain systems provide a direct path to our creeks and lakes for untreated wastewater containing antifreeze. Costly maintenance, and sampling and disposal of sludge/wastewater is required if antifreeze is spilled or discharged to sewers, storm drains, storm water ponds or oil/grit separators.

Improper de-icing activities.
During freezing weather conditions, antifreeze is sometimes used for de-icing of walkways and drives. If not used carefully, de-icing chemicals will discharge to vegetation or a storm drain, polluting the environment.

The Solution:

Use the least toxic product available.
Doing this not only protects the environment and prevents costly cleanups should a spill occur, but it significantly reduces disposal costs as well. Use propylene glycol as a less toxic antifreeze alternative to the more toxic ethylene glycol. Instead of antifreeze, sand can be used to make a slippery surface safer, then swept up for proper disposal.

Contain radiator cleaning wastewater for proper disposal.
Construct a designated containment basin indoors for wastewater collection prior to disposal, or install a "closed loop" recycling unit that has a built in flush booth. Final rinse water, after flushing is completed, may be discharged to the sanitary sewer system under certain conditions.

Did you know...

In a single year, Americans improperly discarded over 21 million lbs. of antifreeze.

Contact Austin Water for more information and approval.

Radiator repair shops can reduce disposal costs by installing "closed loop" recycling systems.

Reduce, reuse, recycle.
Reuse antifreeze removed from vehicles whenever possible, otherwise, collect it for recycling by a commercial service. The Watershed Protection Department provides a list of antifreeze recyclers. Antifreeze can be characterized as a hazardous material, therefore, recycling prevents costly hazardous waste disposal.

Reuse as much radiator rinsewater and tank wastewater as possible to reduce disposal costs. One way to prolong the life of the radiator repair wastewater is to use a "closed loop" recycling system that can be purchased and installed by a number of service providers. The Watershed Protection Department provides a list of recycle system vendors. A variety of recycling systems are available, all based upon the principle of separating reusable water from the solids and oils. Separation is accomplished by using equipment like settling tanks, oil skimmers, and filters. The wastewater is effectively reduced to a much smaller volume (sludge or powder). The skimmed oil is collected for recycling. The dried material contains the heavy metal deposits and most likely will require disposal as a hazardous waste. The Watershed Protection Department provides a list of hazardous waste disposal services. These recycling systems effectively reduce the amount of hazardous waste generated, that require costly disposal. Be aware that hazardous materials handled and stored above specific quantities require a Hazardous Materials Permit with the Austin Fire Department. Their phone number is provided at the end of this fact sheet.

Leak check tank water use can be prolonged by adding a neutralizing agent to adjust the pH from acidic to a neutral level. While prolonging the life of the leak check tank wastewater is ideal, extending it indefinitely is impossible. A recycle system is ideal due to the water savings (wastewater reuse); however, there are other ways to reduce wastes generated at your shop. Waste minimization is also accomplished by evaporating leak check tank wastewater in the boil-out tank when it's time to change out the tank water. Removing used flux from the leak check tank for recycling reduces the amount of hazardous waste generated. The sludge accumulated in the boil-out tank must eventually be disposed of, typically as a hazardous waste by a certified waste hauler. Do not dispose of any wastewater in a storm or sanitary drain, oil/grit separator, storm water pond, trash container, or on the ground.

Clean up spills properly.
Prevent antifreeze spills whenever possible. Use drip pans to catch leaking or changed fluids. Repair leaks promptly. Avoid leaving fluid filled drip pans exposed outside to rain and subject to being accidentally dumped over. If spills occur, clean them up immediately with sorbent material (e.g. clay, kitty litter, Oil Dri, sawdust, shop rags, etc.), or with a mop and bucket. Never leave spills unattended or flush them with water. Have a posted site-specific spill contingency giving step-by-step instructions in the event of a release. Have Safety Data Sheets (SDS) for each chemical used at the facility readily available. The chemical manufacturer supplies these documents free of charge. The manufacturer's phone number is usually on the product label.

Use drip pans to catch leaking or changed fluid.

Know your drainage.

Most exterior and some interior drains connect to our city's storm drain system. Only clean rainwater may enter our storm drain system according to Federal law. If you are unsure to which system your drains are connected, contact the Watershed Protection Department or a licensed plumber for a dye trace or other verification method. Knowing where your drains connect helps everyone understand why antifreeze wastes must not be dumped into them.

Train employees.

Prevention is the key to eliminating pollution. The best pollution prevention method is training individuals who work with and around antifreeze. Training will save time and money in clean ups, regulatory fines, site restorations, and injuries.

The Bottom Line.

Businesses have found that it costs time and money to prevent water pollution. However, the expense to clean-up spills and restore property is much greater. Cleanup and disposal costs after toxic or hazardous material spills are extremely expensive. Fines and criminal penalties due to illegal discharges are costly, too. For example, an Austin radiator repair shop spent thousands of dollars to excavate, containerize, and dispose of lead contaminated soil after employees disposed of leak check tank water on the ground.

Additional costs were incurred to restore the property. Another example of cleanup costs involved two individuals caught flushing antifreeze into the city's storm drainage system while changing an auto's radiator fluid. The individuals were prosecuted, received fines and a criminal record as a result of their actions. In addition to imposing fines, regulatory agencies can require businesses to implement expensive water monitoring programs or require the installation of expensive pollution prevention equipment.

Prevention is the key to eliminating pollution, so train employees who work with and around antifreeze.

For more information:

Storm drain and waterway protection; lists of companies for chemical disposal, recycling, treatment systems; storm drainage identification; storm water pond fact sheet
City of Austin Watershed Protection Department
Pollution Prevention and Reduction Section
(512) 974-2550

Waste storage/disposal requirements; reuse and recycling information
Texas Commission on Environmental Quality
Region 11 Office
(512) 339-2929

Hazardous Materials Permit
City of Austin Fire Department
Hazardous Materials/Prevention Division
(512) 974-0182

Sanitary sewer system discharges
Austin Water
Special Services Division
(512) 972-1060

Small business waste disposal information
Austin Resource Recovery
Zero Waste Business Services
(512) 974-9727

CLEAN WATER FACT SHEET

SOLVENT

City of Austin - Watershed Protection Department

The word "solvent" usually conjures visions of paint thinners and industrial-type automotive parts washers. However, not all solvents are petroleum based. Solvents are liquid substances, that dissolve other substances to form uniform mixtures (solutions). Water is a common solvent. Solvents used in industry such as alcohol, acetone, and chlorinated hydrocarbons clean by dissolving accumulated materials such as oil, grease, or other chemicals, and then carry them away in solution. Mechanics use solvents (e.g. Varsol, citrus based cleaners) to remove oil, grease, and grit from car parts, tools, and floors. Many solvents (particularly organic solvents) are flammable and toxic to humans, animals and aquatic life and are classified as hazardous materials. Because solvents dissolve other materials that can be toxic or hazardous themselves, even nonhazardous solvents become hazardous when in contact with hazardous chemicals.

Proper handling and disposal of solvent is essential to prevent pollution.

Proper handling and disposal of solvents and the materials they dissolve is essential to prevent pollution. The City of Austin Watershed Protection Department is responsible for preventing polluting discharges to the City storm drain system and waterways as mandated by Title VI, Chapter 6- 5 (Water Quality) of City Code. This document provides information to employees at automotive repair shops on handling and disposing of solvents, without polluting the environment.

The Problem

Careless storage and handling.
Liquid stored in containers exposed to rain without lids or overhead cover can cause overflow onto the ground. Fluids accumulating on the outside or on top of containers from spills are easily washed off by rain water. Containers in poor condition (rusty, bloated, dented) can leak. Unlabeled containers can be misused and neglected. Outside storage containers not properly secured are subject to vandalism as well as traffic accidents, increasing the chance for a release.

Small quantities of spilled hazardous substances such as solvents cause fish kills and destroy aquatic plants. Skin contact or inhalation of hazardous substances by workers causes injury.

Inappropriate parts cleaning.
Used automotive parts often require heavy duty degreasers and solvents to remove oil and grease buildup. The common solvents used at automotive shops have a high human health risk rating and are extremely flammable and toxic. Cleaning parts outside with cleaning agents and discharging the wash water to the ground, storm drain, oil/grit separator, storm water pond, or waterway is

Did you know...

Many solvents are flammable and toxic to humans, animals and aquatic life.

illegal. Cleaning parts outside also results in difficult, expensive decontamination of all impacted surfaces, and is a public health threat. Cleaning parts on an asphalt surface not only pollutes the environment, but over time, dissolves the asphalt surface since it is made of heavy petroleums.

In addition, plumbing a parts cleaning machine or sink to the ground or storm drain results in illegal discharges to the environment. Solvent parts cleaning devices installed outside can leak or overflow onto the ground. Parts cleaners (e.g. wet cleaners, dry ovens, bead agitators) also accumulate sludge containing oil and grease, and heavy metals. Disposal of the sludge on the ground, in a drain, pond, waterway, or dumpster is subject to costly penalties.

Use of solvents for pavement cleaning.

Solvents do an excellent job of cleaning petroleum products off the dirty surface of vehicle parts and tools. Consequently, solvents have sometimes been used to clean up oily paved areas both inside and outside the shop. Pavement cleaning with solvent subjects any storm drain on the property to receiving solvent waste and carrying it to the nearest waterway, especially if the cleaned areas are flushed with water. Even if a mop and bucket are used to contain the wash water to prevent run off, the solvent-laden mop water may then need to be disposed of as a hazardous waste.

Illegal disposal.

Solvent waste dumped on the ground, in a drain connected to either the storm drain or sanitary sewer system, in a septic system, or in the trash has serious consequences. Disposing of solvent waste in the trash results in hazardous waste accumulating in the landfill, where it can contaminate groundwater. It can also spill from trash trucks, harming sanitation workers. Many solvent wastes generated from automotive parts cleaning are toxic to humans, animals, and aquatic life not only because the solvent product itself is toxic, but because the waste contains heavy metals such as lead, cadmium and chromium picked up from cleaning engine parts. Dumping solvents on the ground contaminates the soil causing costly removal, disposal, and replacement of the contaminated soil area. Repeated dumping on the ground can contaminate groundwater. Disposal in a storm drain will carry the pollutant to area creeks and lakes, having a devastating effect on aquatic life. Disposal in a sanitary drain may render a treatment system inoperative by destroying living organisms used to treat raw sewage. Disposal of solvents in either storm drain or sanitary sewer system drains also poses a public health threat. Flammable gases may react with natural gases in confined sewers causing violent explosions.

Unfamiliarity with hazardous waste regulations.

Unfamiliarity with hazardous materials and waste regulations can result in danger to employees and water resources due to mishandling of wastes or illegal storage and disposal practices. For example, hazardous wastes should not be mixed; incompatible chemicals can lead to violent reactions, even explosions and spills. And, combining a hazardous waste, such as a solvent used to clean shop floors, with a non-hazardous waste, such as used motor oil, in the same drum classifies the contents of the entire drum hazardous. The cost for disposal of hazardous waste is much more expensive - in comparison to costs for disposal (recycling) of materials done separately. Fur-

Did you know...

A common way to clean small parts and tools while containing the solvent is by using a commercially available recycling sink.

thermore, violations of City and State regulations result in legal action with subsequent fines and penalties.

Mishandling of spills.
Unattended spills outside are carried by rain to the environment. This only spreads the contamination, causing costly cleanups, fines, and site restorations. Some facilities are not properly equipped with spill containment and cleanup materials, a spill plan, or the appropriate training needed to use them effectively. Therefore, spills are often mishandled by flushing them with water to a storm drain, storm water pond, or adjacent property.

The solvent itself is a concern as well as the petroleum and heavy metals carried along with it. Even citrus-based cleaners will remove petroleums and associated dirt and grime, polluting the environment.

The Solution

Store and handle product/waste properly.
Keep containers under protective cover with secured lids. Properly label and regularly inspect containers to ensure they are in good condition. Storage containers must not leak, overflow, or display any signs of failure or incompatibility with their contents. Keep storage containers in a secured area away from traffic and possible vandalism. Store hazardous solvents, above certain quantities, within secondary containment as specified in the City of Austin Fire Code. Ideally, keep any amount of solvent inside secondary containment, in the event of an accidental release. Contact the Austin Fire Department for secondary containment and storage permit requirements at the phone number listed at the end of this fact sheet.

Clean parts and equipment in a contained area.
Clean small parts and tools using a parts cleaning sink. Commercially available sinks reuse the liquid solvent, and solids and debris are filtered or settle out into a containment basin. Periodically replace the unreusable liquid and dispose of the collected sludge through a certified hazardous waste disposal service. Use "carburetor cans" and brake cleaning machines for additional parts cleaning. The carburetor cans are usually self-contained units that provide an area for enclosed cleaning of parts using stronger chemicals. Brakes must be cleaned separately because the waste usually contains asbestos that has unique disposal requirements. Never clean large equipment such as engine blocks or transmissions outside, because

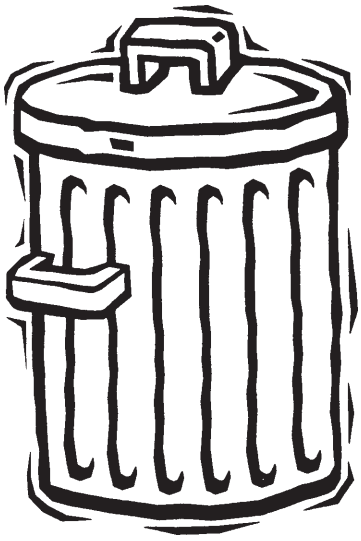
Clean large parts such as engine blocks using a large parts washer that contains the cleaning wastewater for proper disposal.

they do not fit in a standard shop parts cleaning sink. Instead, use a large parts washer that contains the cleaning materials and wastes for proper disposal.

Do not plumb sinks to the ground, storm drain, storm water pond, or waterway. This is illegal. Wet parts cleaning machines plumbed to the sanitary sewer system must meet specific conditions including us of a non-hazardous cleaning agent. Contact Austin Water for requirements and approval to connect to the City sanitary sewer system. Their phone number is

Did you know...

Solvent discarded with trash can spill from waste receptacles or trash trucks and harm sanitation workers.



provided at the end of this fact sheet. Otherwise, clean your large parts at a commercial car wash, machine shop, or other automotive repair shop that will allow you to use their approved facilities. Remember that hazardous solvents cannot be discharged to sanitary sewer drains at car wash facilities.

Dispose of used solvent properly.

Do not dispose of solvent on the ground, in the trash, storm drain, storm water pond, or waterway. Dispose of accumulated hazardous waste solvent through an approved recycling or disposal service. The Watershed Protection Department provides a list of disposal services. Contact Austin Water for approval to discharge non-haz-ardous waste solvent cleaners to the City sanitary sewer system. For their discharge requirements, contact the Special Services Division at the phone number provided at the end of this fact sheet. Keep disposal receipts and copies of waste manifests, as proof of proper disposal. Keep them for at least three years, or indefinitely to minimize liability.

Reduce, reuse, recycle.

The cost for treatment and disposal of hazardous waste is expensive. Reduce disposal costs significantly by:

- not mixing hazardous and non-hazardous wastes - this may increase the amount of hazardous waste generated or prevent a waste from being recyclable
- evaluating the use of hazardous products and finding ways to reduce the quantity of prod-uct used
- substituting a non-hazardous waste for a hazardous waste - contact your chemical supplier, business association, or fellow shop operator for ideas
- recycling wastes, when possible - the useful life of some materials like solvents can be extended by filtration to remove solids or distillation to remove impurities - contact a solvent recycling service to collect solvent waste on a regular basis - the Watershed Protection and Development Review Department provides a list of solvent recyclers
- utilizing TCEQ's RENEW Program (waste exchange program) which provides information on businesses and industry that reuse or reclaim waste materials
- contacting the City of Austin Zero Waste Business Services for other alternatives and a non-regulatory free au-dit of your business

Know the hazardous waste regulations that apply to you.

Find out if the solvent you are using is considered hazardous. If it is, the waste from its use will most likely need to be disposed of as hazardous. Laboratory analyses and/or process knowledge of the material may be used to help determine if certain wastes are hazardous. The State and Federal hazardous waste regulations that apply to your business depend upon the quantity of hazardous wastes generated each month at your shop. Contact the TCEQ to learn how to determine your generator category and the requirements that apply such as labeling, accumulation time, recordkeeping, transporting, and quantity limits. Reduce your liability and chance for penalties and costly remediations by remaining familiar with these regulations and requirements and obtaining the necessary permits. In addition, contact the Austin Fire Department for possible permitting if your facility receives, produces, or stores specific quantities of hazardous materials.

Handle spills properly.

Spills happen. Do not flush spills away with water. Instead, contain them immediately, before they reach a storm drain and spread to a creek or lake. Also, do not put yourself or others in danger. Before containment, evaluate what materials have spilled, make a thorough assessment of risk, and determine how to contain the spill safely. If safe containment is possible, immediately stop the spread of liquids using absorbent materials. Keep spill containment and clean up materials appropriate for the type and quantities of

hazardous chemicals used or stored at your facility. Immediately block off nearby drains (sanitary sewer or storm drain). It is much more costly to decontaminate the inside of a storm drain pipe and/or restore a contaminated creek than it is to purchase spill containment materials.

Always wear appropriate safety equipment such as gloves, coveralls, goggles, and respirators. Access Safety Data Sheets (SDS) for information about spilled materials. Keep SDS's readily available for each chemical used or stored at the facility. An SDS contains information that enables persons responsible for handling, using or encountering chemicals to estimate the likely harm, potential hazards and risks that might arise in emergency situations involving those chemicals. Obtain an SDS free of charge by calling the manufacturer's phone number from the label on the chemical container.

Never leave spills unattended; designate someone to make spill notification phone calls.

Immediately notify the Austin Fire Department by dialing 911. Then, report the spill to the Watershed Protection Department by calling the City's 24-Hour Pollution Hotline at 512-974-2550.

Clean up surfaces contaminated by hazardous chemicals only if you are trained, experienced, and qualified. Excavate spills on pervious (e.g. soil) surfaces as quickly as possible to prevent spread of the contamination. Contact the Watershed Protection Department for soil cleanup instructions. Sweep up and containerize dry material spills on impervious surfaces (e.g. pavement) for proper disposal. Absorb liquid spills on impervious surfaces with sorbent materials (e.g. clay sorbent, pads, booms, etc.) and containerize for proper disposal.

Post a site-specific spill contingency plan at your facility providing step-by-step instructions in the event of a spill. Practice these steps in a "spill drill". The Watershed Protection Department provides information regarding spill contingency plans and a fact sheet detailing proper spill handling. A phone number is provided at the end of this fact sheet.

Know your drainage.

If you have storm drains, storm water ponds or oil/grit separators at your facility, educate all workers on their function and maintenance requirements. Some business operators don't know the purpose of these structures, especially if the structures already existed before they purchased or leased the property. Storm drains, oil/grit separators, and storm water ponds are not receptacles for waste disposal. The Watershed Protection Department provides a fact sheet explaining the purpose and proper maintenance of separators and ponds. Prevent hazardous substances from entering these structures - this prevents costly environmental cleanups, fines and maintenance. If you are unsure which system your drain connects to (storm drain or sanitary sewer), contact the Waterhshed Protection Department or a licensed plumber for a dye trace and/or other verification method.

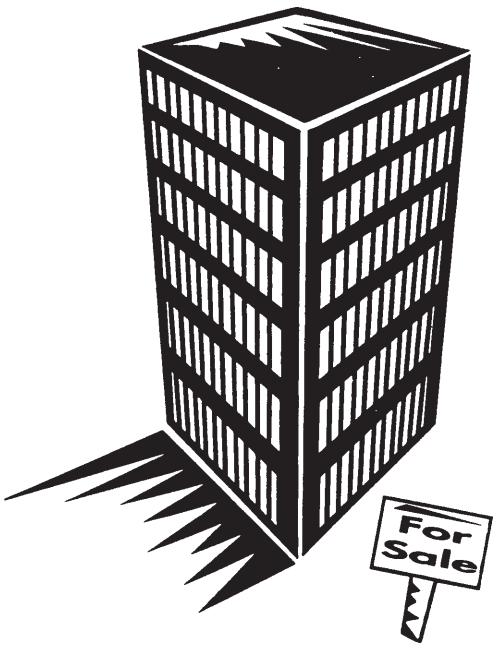
Train employees.

Prevention is the key to eliminate pollution. The best prevention method is to train employees on proper handling and disposal

Remember:

Environmental spills can result in clean up costs and real estate depreciation.

Often, properties cannot be sold until the problem is solved.



of solvents. Taking time for training; it can save time and money in clean ups, fines, worker injuries, and site restorations.

The Bottom Line

Businesses have found that it costs time and money to implement water pollution prevention measures. However, the expense to clean up spills and restore property is much greater. Small, seemingly insignificant leaks and spills can become large contamination problems over time if steps are not taken for containment, clean up, and prevention. Clean up and disposal after hazardous material spills is often extremely expensive. Unless handled properly, spills cause soil or groundwater contamination which could impact future sale or transfer of property.

Cleanup costs and real estate depreciation are not the only possible pollution costs. Treatment of injuries and time lost from work are also substantial costs. Fines from City, State or Federal agencies add thousands of dollars to the overall cost of a polluting discharge. In addition to fines, regulatory agencies can require businesses to undergo detailed compliance audits, implement long-term water monitoring programs, or require the installation of expensive pollution prevention equipment and programs.

For more information:

Regulation of polluting discharges to storm sewers and waterways, spill reporting, lists of solvent disposal and recycling services, storm drainage identification

City of Austin Watershed Protection Department
Pollution Prevention and Reduction Section
(512) 974-2550

Small business waste disposal information,
Austin Resource Recovery
Zero Waste Business Services
(512) 974-9727

Hazardous waste regulations and spill reporting, RENEW Program
Texas Commission on Environmental Quality
Region 11 Office
(512) 339-2929

Hazardous Materials Permit,
secondary containment criteria for aboveground storage tanks
Austin Fire Department
Hazardous Materials Prevention Division
(512) 974-0182

Sanitary sewer discharges
Austin Water
Special Services Division
(512) 972-1060

Septic system discharges and health issues
Austin Water
On-site Sewage Facility Program
(512) 972-0050

Emergency Numbers

Austin Fire Department (emergencies only)	911
City of Austin Environmental Hotline (24 hour)	(512) 974-2550
TCEQ Emergency Response Center (24 hour)	1-800-832-8224
CHEMTREC Chemical Spill Hotline	1-800-424-9300

CLEAN WATER FACT SHEET

PAVEMENT CLEANING

City of Austin - Watershed Protection Department

Grease, dirt and litter is cleaned from parking lots, sidewalks, drives, dumpster pads and other outside areas every day. A lot of filthy wash water is generated. Where does all this wash water go? Unfortunately, many people do not know drains on their lots or in the street are openings to storm drains - which carry storm water, street debris, and polluted wash water directly to Austin's waterways. If certain precautions are taken while cleaning paved areas, our water quality can be protected. The key is to ensure that pollutants generated during cleaning activities are collected and disposed of properly.

In order to protect water quality, prevent wash water discharge to storm drains while cleaning paved areas.

The City of Austin Watershed Protection Department is responsible for prevent polluting discharges from entering the City's storm drains and waterways as mandated by Title VI, Chapter 6-5 (Water Quality) of City Code. This fact sheet provides information on how to prevent polluting discharges during pavement cleaning.

The Problem

Not cleaning paved areas.

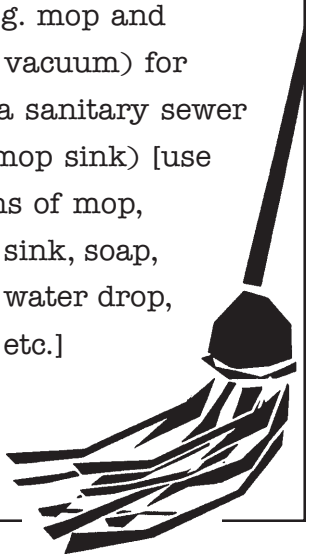
Pollutants such as trash, grease, oil, and antifreeze often accumulate on paved surfaces of businesses. In addition, blowing wind or storm water run-off carries dirt and sediment from unvegetated areas. Trash ends up on the ground from overfilled dumpsters and careless customers. Leaves and grass clippings collect along curbsides and gutters during seasonal leaf fall and lawn maintenance. Besides being unsightly and a possible safety hazard, these pollutants will be flushed by rain to a storm drain or waterway if not cleaned up.

Antifreeze and motor oil are toxic to humans, animals, and aquatic life. Grease, oil and oil emulsions, in very low concentrations, interferes with respiration and reproduction in aquatic organisms. Oil coats and destroys algae and plankton, which are important food sources for fish. Fish eating contaminated algae and plankton may accumulate toxins in their flesh, making them unfit to eat. Dirt and sediment cause turbidity and cloudiness in creeks and lakes. Turbidity affects the growth of aquatic plants by reducing available sunlight. Sediment smothers bottom-dwelling aquatic life and clogs

Good Cleaning "Recipe"

- Spot clean heavily stained/ slick pavement with a paste of clay absorbent (e.g. cat litter), water, and soap
- Brush mixture into stain
- Let stand until dry and sweep up for disposal in the trash

Note: Remaining area can be cleaned and the wastewater collected (e.g. mop and bucket, wet vacuum) for disposal in a sanitary sewer drain (e.g. mop sink) [use clip art/icons of mop, sink, soap, water drop, etc.]



fish gills. Leaves and grass cuttings contribute excessive organic material to a waterway. Oxygen is used up during the decay process, depleting oxygen needed by aquatic life.

Not pretreating heavily soiled areas prior to cleaning.
Many pollutants from business activities accumulate on paved areas. The most heavily soiled areas tend to be around waste storage locations such as dumpsters, grease bins and waste oil drums, in vehicle maintenance areas, and in high traffic areas, such as the center of parking spaces and drive through lanes. When left to accumulate, people tend to use heavy duty cleaners for removing the oily, greasy mess. Trying to clean such areas by flushing with hot water, caustic detergents or solvents will only spread the grime rather than remove it and will wash pollutants to waterways.

Not collecting wash water.
Washing occurs when surfaces are dirty. So, even washing with plain, cold water produces dirty wash water. Furthermore, the use of both chemical cleaning agents and/or hot water significantly increases the amount of contaminants in the wash water. Hot water dissolves oil and grease from surfaces, so when flushed, pollutants are washed to the environment.

Cleaning agents are designed to emulsify or bind pollutants such as oil and grease. So, flushing chemical cleaning agents from surfaces to the environment can have a devastating impact. Oil and grease destroys aquatic organisms. In addition, some cleaning agents contain hazardous or toxic ingredients that kill aquatic life. Soaps and detergents (especially phosphate detergents) promote algae blooms in waterways. The subsequent death and decay of the blooms deplete sunlight and oxygen needed by aquatic life.

Disposal of collected wash water to a storm drain or the ground.
Dumping or flushing pavement cleaning wastewater to a storm drain, street, or grassy area is an illegal discharge according to local, state and federal laws. Pavement cleaning wastewater contains contaminants that harm vegetation and aquatic life. In addition, discharging wastewater containing cleaning agents and oil to soil or landscaped areas simply moves the contaminants from one area to another. This can require costly removal of the contaminated soil and vegetation. Pooled wash water becomes stagnant, smelly, and attract pests such as flies and mosquitoes, resulting in a public health nuisance. Discharging pavement cleaning wastes to a septic system may destroy the biological organisms necessary for the system to operate.

Discharging collected wash water into storm water treatment structures.
Pavement cleaning wastewater draining into a storm water pond (e.g. detention/filtration basin) or an oil/grit separator can cause these structures to fail, and release their contents (concentrated wastes such as oil, heavy metals, and sediment) to the storm drainage system. Flushing hot water or cleaning agents through an oil/grit separator is especially harmful because it emulsifies the oil and grease. The oil and grease then pass through the separator with wash water or rain water to the storm drain, polluting the receiving waterway. Flushing wash water containing hazardous chemicals to storm water ponds and oil/grit separators contaminates these structures, requiring costly cleaning.

Allowing spills and waste products to accumulate on paved areas.
Spills happen. For example, motor oil spills during fluid changes, fuel spills during fuel pumping, antifreeze spills during radiator repair, and food grease spills at restaurants during filling and emptying grease bins often occur. Any other material or chemical used has the potential to be spilled and accumulate on or settle into the pavement surface. If not cleaned up promptly, pavement cleaning can wash these contaminants to the environment. All of these spills are harmful to aquatic life when flushed or allowed to drain to the storm drain leading to a waterway. Spills that leak to an unpaved area often requires expensive cleanup.

Flushing chemical cleaning agents into the environment can have a devastating impact.

Using microbes incorrectly.
Microbes are commonly used for pavement cleaning, since these specialized bacteria and fungi "eat" petroleum and break it down to non-toxic compounds. Microbes, like other living organisms, need water, food, and air to survive. So, microbes applied to hot pavement without water will die.

Many microbial cleaning agents contain detergents which promote efficient cleaning by dissolving oil and grime off dirty surfaces. This concentrates pollutants in the wash water. Microbial cleaning agents may also contain nutrients like nitrogen to stimulate microbial growth and reproduction. But, if microbial cleaning agents are flushed by pavement cleaning - or if rain water flushes cleaning agents off a dirty surface - the microbes may not find their intended food source. As a result, the dissolved oils and greases in the wash water will impact receiving waterways, and nutrients will overstimulate algae growth. Also, applying microbes over large paved areas increases the likelihood they will be flushed to storm drains and waterways.

The Solution

Regularly clean paved areas.
Clean your lot daily, not only to operate a clean and safe business, but also to prevent accumulated waste from flowing off paved surfaces and polluting the environment. Sweep up dirt, litter, leaves, and grass clippings. Remove litter and debris from storm drains to prevent clogging of the drainage system and reduce the potential for flooding. Clean oil, grease and grime buildup without discharging the cleaning wastewater to a storm drain, street, storm water pond, or adjacent lot. Clean up waste materials from construction activities, especially before some materials like cement or mud dry and become unsightly as well as difficult to remove.

Pre-clean areas of heavy grease and grime buildup.
Spot clean areas daily that accumulate oil and grime. This reduces heavy buildup requiring strong cleaners. Do not assume hosing areas with plain water will work; that only spreads the contamination. Apply a small amount of a mild, powdered soap and water, then absorb the wastewater using a rag, kitty litter, mop & bucket, wet vacuum or similar equipment. Once the cleaning chemical and heavy contamination are removed, rinse with plain cold water, if necessary. The Watershed Protection Department provides a list of absorbent material suppliers.

Contain and collect wash water.
Never assume that the wastewater is "clean enough" to enter the storm drain system or the environment. For smaller jobs, use a mop and bucket to contain and collect wash water. For larger jobs, contain the wash water by diking and blocking drains using absorbent booms and pads. Then, collect the wash water by using a floor scrubbing machine or vacuum booms.

Dispose of wash water properly.
Dispose of wash water from pavement cleaning activities in the sanitary sewer system (e.g. mop sink, on-site car wash drain), provided the wash water does not contain hazardous substances. There may be other requirements as well. Before disposing of wash water to the sanitary sewer, obtain permission from Austin Water. Otherwise, dispose of the wash water through a commercial disposal service. The Watershed Protection Department provides a list of commercial services.

Daily cleaning is essential to preventing storm drain and waterway pollution.

Clean up spills as they occur.
Prevent spills from soaking into the pavement or spreading. Capture spills and leaks using drip pans, containment pallets, or absorbent pads. Contain and clean up spills that reach the ground using a "dry" method such as using kitty litter, sawdust, a mop/bucket, or rags. Quickly contain larger spills, if it is safe, and call the Austin Fire Department for assistance by dialing 911. The Watershed Protection Department provides a fact sheet detailing proper spill handling procedures.

Know your drainage.

Be aware that most outdoor and some indoor drains connect to the City's storm drain system leading to area creeks and lakes. Prevent wash water from entering these drains. If you have a storm water treatment structure on your property, prevent wash water from draining to them as well. If you are unsure which system (sanitary or storm) is connected to your drains, contact the Watershed Protection Department or a licensed plumber for a dye trace and/or other verification method.

Reduce, reuse, recycle.

After washing with a cleaning agent, a final rinse is sometimes needed. Consider reusing clean rinse water to irrigate landscape areas. Using potable water to corral trash, dirt and debris is a waste of valuable water; instead, sweep them up with a broom. Use dry cleaning methods for regular spot cleaning to also save water. After picking up litter, recycle materials such as used absorbent, cardboard boxes, aluminum cans, and plastic or glass containers instead of placing them in the trash. The Watershed Protection Department provides a list of recycling companies. Obtain additional recycling and waste reduction information by calling the Texas Commission on Environmental Quality and the City's Zero Waste Business Services. Phone numbers are provided at the end of this fact sheet.

Use microbes responsibly.

Petroleum-consuming microbes are very useful in controlled cleanup situations such as oily soil remediation, contained parts cleaning, and waste water treatment. Apply microbial cleaning agents according to manufacturer's directions, providing ample food, water, and oxygen, and then collect the cleaning agent for proper disposal. Use microbes only on oil stains and slick spots. Apply microbes with a minimal amount of water so that runoff does not occur. After ample application time, pick up the microbes for reuse or disposal by using absorbent mate-rial. Never leave microbes on paved areas - rain will wash them to a storm drain or waterway. Do not apply microbes over a large area. Never flush microbes to a storm drain or waterway. Obtain approval from the Watershed Protection Department to routinely use microbes, a phone number is provided at the end of this fact sheet.

Train employees.

Prevention is the key to eliminating pollution. The best prevention method is to train employees to clean pavement properly. Take time for training; it can save time and money in clean ups, fines, and site restorations. Educate employees about the location and purpose of storm drains, oil/grit separators, and storm water ponds.

The Bottom Line

There are costs associated with environmental damages due to discharges or spills to storm sewers, oil/grit separators, storm water ponds, adjacent properties, and waterways. Cleanup costs can be substantial. This is especially true if the discharged waste is hazardous or poses a public health or environmental threat. Fines or criminal penalties can be levied against persons contributing to illegal discharges or waste disposal practices. It is the responsibility of both the staff cleaning the pavement and the employer, to ensure all applicable regulations are followed.

Did you know...

According to a recent survey, 60% of Austinites do not know that storm sewers drain into a creek or lake. Do you?

For more information:

Regulation of polluting discharges to storm sewers and waterways, spill reporting, waste disposal instructions, lists of suppliers and services, review of microbe use
City of Austin Watershed Protection Department
Pollution Prevention and Reduction Section
(512) 974-2550

Restaurant grease receptacle requirements, liquid waste hauler licensing, public health nuisances, septic system discharges
Austin Water
(512) 972-1060

Sanitary sewer discharges
Austin Water
Special Services Division
(512) 972-1060

Small business waste disposal information
Austin Resource Recovery
Zero Waste Business Services
(512) 974-9727

Hazardous waste regulations, recycling information
Texas Commission on Environmental Quality
Region 11 Office
(512) 339-2929

CLEAN WATER FACT SHEET

SPILL HANDLING

City of Austin - Watershed Protection Department

Spills, large and small, can have serious consequences if not handled properly. They can significantly impact property, public safety, and the environment, especially if they involve hazardous substances. Also, if not quickly cleaned up, they can reach storm drains leading to Austin's waterways.

The City of Austin Watershed Protection Department is responsible for preventing polluting discharges to the City's storm drain system or waterways as mandated by Title VI, Chapter 6-5 (Water Quality) of the City Code. This fact sheet provides information on properly handling spills to prevent pollution.

Spills flushed into storm drains end up in our creeks and lakes.

The Problem

Not cleaning up spills.
Spills left on the ground spread to storm drains or are flushed by rain to waterways or soil. Also, untended spills inside a shop can spread to an inside drain connected to the storm drain system. Materials discharged to storm sewers end up in our creeks and lakes without pretreatment. Anything other than clean, cold water is an illegal discharge. Small, seemingly insignificant spills that are not cleaned up daily create a cumulative effect with significant impact on the environment.

Not knowing what to do when spills occur.
Unfortunately, many workers find themselves in the uncomfortable and unsafe position of not knowing how to conduct a spill cleanup. Uninformed employees often get injured or do something to make the situation worse.

Not having spill clean up material readily available.
A spill cannot be contained if the appropriate amount or type of absorbent is not available at the work site. Without containment, the spill contaminates a larger area, resulting in a more costly cleanup and an increased danger to the public and the environment.

Flushing spills to storm drains, storm water ponds, vegetation or soil.
Some people choose to flush away spills with water. However, this spreads the contamination to vegetation, soil, waterways, and storm water ponds. The result is a significant increase in costs for cleanup, site restoration, and fines—and a greater impact on public health and the environment.

Murphy's Law #13:

"Accidents will happen, and usually at the worst possible time." Despite efforts to prevent such episodes, at some time you will probably need to clean up a spill of something that could potentially become a serious water pollutant. Do you know exactly what to do and who to call to protect yourselves, the public, and the environment?

Improper storage of contaminated material.
Improper storage practices may result in polluting discharges. Sometimes contaminated materials from spill cleanups require temporary storage while disposal arrangements are made. Open or uncovered containers, exposed to rainfall fill up with water and overflow the polluted water onto the ground. Containers in poor condition can leak. Unlabeled containers may be misused and neglected. Unsecured containers are subject to vandalism and traffic accidents, increasing the chance for a release. Contaminated soils from excavations due to spills can erode during rain storms while stockpiled outside.

Improper disposal of contaminated material.
Spills can contaminate many surfaces such as soil, vegetation, sludge inside an oil/grit separator, and accumulated sediment in a drain. All these impacted materials need cleanup and disposal. Even the absorbent material (e.g. kitty litter) used to clean impacted surfaces needs disposal.

Contaminated materials from hazardous chemical spills cannot be dumped in the trash, since hazardous chemicals (1) can leach from landfills and contaminate groundwater, (2) can leak from dumpsters seams and drain holes and spread, and (3) can injure sanitation workers during dumpster emptying. Dumping contaminated materials on the ground, in a waterway, storm water pond, or storm drain is illegal and only moves the contamination from one area to another. Stiff fines and criminal penalties are levied for incidents involving improper waste disposal, especially those adversely affecting human health and the environment.

Using microbes incorrectly.
Microbes are commonly used for cleaning spills, since these specialized bacteria and fungi "eat" petroleum and break it down to non-toxic compounds. Microbes, like other living organisms, need water, food, and air to survive. So, microbes applied to hot pavement without water will die. Likewise, applying microbes to contaminated soil without water and without tilling the soil to ensure adequate aeration results in microbial death.

Many microbial cleaning agents contain detergents which promote efficient cleaning by dissolving oil and grime off dirty surfaces. This concentrates pollutants in the wash water. Microbial cleaning agents may also contain nutrients like nitrogen to stimulate microbial growth and reproduction. But, if microbial cleaning agents are flushed by spill cleaning—or if rain water flushes cleaning agents off a dirty surface—the microbes may not find their intended food source. As a result, the dissolved spill pollutants such as oil and grease in the wash water will impact receiving waterways, and nutrients will overstimulate algae growth. Also, applying microbes over large paved areas increases the likelihood they will be flushed to storm sewers and waterways.

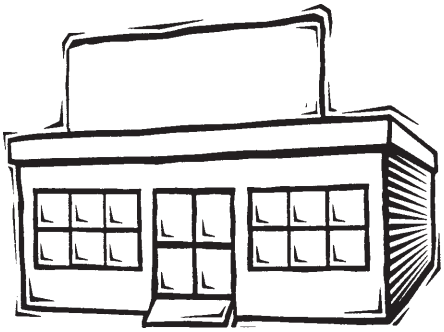
Did you know...

Flushing one quart of oil into Austin's creeks and lakes contaminates 250,000 gallons of water.

The Solution

Prevent spills BEFORE they happen.
Prevent spills, as much as possible, through simple planning of daily operations. Store all chemicals safely:

- Protect them from the weather—so contaminants are not in contact with rainfall or storm water.
- Store them in secured areas—so vandalism and traffic related damage does not occur.
- Store in containers that are in good condition—to eliminate leaks.
- Check containers regularly—for leaks.



Prevent spills to the environment by working inside your shop.

- Use secondary containment (e.g. concrete curbing) around storage areas—to prevent spills from spreading. The Austin Fire Department (AFD) requires secondary containment for certain quantities of stored materials. For more information, contact AFD by calling the phone number provided at the end of this fact sheet.

In addition, capture leaks and spills—with drip pans or spill pallets during vehicle/equipment maintenance (e.g. fluid changes). Inspect vehicles/equipment for leaks—repair them promptly. Most importantly, prevent discharges to the environment by working inside your shop.

Develop and post a spill contingency plan.
Post a site-specific spill contingency plan at your business providing step-by-step instructions in the event of a release. The spill plan should include the after-hours telephone numbers for all emergency response personnel. Also, include the name, business address, and phone number of at least one clean up contractor capable of handling and disposing of spilled material and contaminated media. Post emergency contact numbers by your business phone.

Keep Safety Data Sheets (SDS) readily available for each chemical used or stored at the facility. An SDS contains information that enables persons responsible for handling, using or encountering chemicals to estimate the likely harm, potential hazards and risks that might arise in emergency situations involving those chemicals. Obtain an SDS free of charge by calling the manufacturer's phone number from the label on the chemical container. Contact the Watershed Protection Department for more information on how to develop a spill contingency plan. A phone number is provided at the end of this fact sheet.

Keep spill containment and clean up materials readily available.
Keep appropriate materials on hand for the type and quantities of chemicals used or stored at your facility. Consider positioning "spill kits" in selected areas of your business. These kits make spill cleanup and personal protection materials readily available.

A variety of synthetic and natural materials are available to pick up liquid spills. Contact an emergency response equipment supplier to obtain information on types and applications of absorbent materials. The Watershed Protection Department provides a list of some local suppliers of various materials. Some common types of cleanup materials are:

- Absorbent pads are usually made of thin sheets of cloth-like material with a large surface area designed to float on water and absorb petroleum products. Although these pads are expensive and not biodegradable, they are often easy to apply, reuse, and less expensive overall for disposal.
- Absorbent pillows are a thicker version of the absorbent pad with even greater absorbing capacity.
- Absorbent booms are long tubes of absorbent. Booms are made of the same synthetic material as pads and pillows, but are typically utilized on larger petroleum spills because of their ability to contain or "corral" spills.
- Clay absorbent, also known as kitty litter, is a natural, biodegradable absorbent that has been dried and crumbled to increase its surface area and absorbing capacity. Clay absorbent is most effective at recovering petroleum or other liquid spills on pavement.
- Sawdust and peat moss are natural absorbents that are similar in function to clay, readily available, inexpensive and biodegradable. They are

most effective when used on dry surfaces such as pavement. However, it may be difficult to apply them in windy conditions or retrieve them once they have absorbed a spill.

- Rags are similar to clay in function. Shop rags made of cotton or natural fibers can be laundered and dried by a commercial service, which can save on disposal costs over time. Rags, generally, are not appropriate for the clean up of hazardous materials.
- Mop and bucket removal is most effective when used on liquid spills on dry surfaces. Depending on the nature of the liquid being recovered, mops may be reused, saving on disposal costs. Remember if you use water to clean the surface, you may have a problem disposing of the contaminated water.

Isolate the spill area.

Keep unauthorized individuals away from the spill. Keep vehicles and equipment from tracking through the spill and spreading the contamination. Isolate the area by using items like cones, safety tape, and temporary warning or detour signs.

Contain the spill.

Spills should be contained immediately to prevent costly cleanups, especially before they reach a storm drain and spread to a creek or lake. Do not put yourself or others in danger. Before cleanup begins, evaluate what materials have spilled, make a thorough assessment of risk, and determine how to contain the spill safely. When safe containment is possible, immediately stop the spread of liquids using absorbent materials. Always wear appropriate safety equipment such as gloves, coveralls, goggles, and respirators. Follow instructions on the SDS for safe containment of both liquid and dry materials. Immediately block off nearby drains (sanitary sewer or storm drain). It is much more costly to decontaminate the inside of a storm drain pipe and/or restore a contaminated creek than it is to purchase materials to contain the spill.

Notify the appropriate agencies.

Immediately call 911 if there is a threat to human health and safety. Report spills that either have entered or threaten to enter storm sewers or waterways to the Watershed Protection Department at 512-974-2550 (24-Hour Pollution Hotline). In addition, report all spills that have contaminated soil. Never leave spills unattended; designate someone to make any necessary phone calls. You may be required to report spills to a variety of other agencies, depending upon the materials involved at your facility. The Watershed Protection Department provides a list of environmental emergency response agencies and their phone numbers. Whether or not a spill needs to be reported usually depends on the type and amount of the spilled material. Find out each agency's notification and spill reporting quantity requirements.

Clean spills properly.

Sweep up dry, non-hazardous material spills—place in proper containers for disposal. Absorb liquid, non-hazardous material spills with absorbent material—

Did you know...

In Alaska, the Exxon Valdez oil tanker spilled 11.4 million gallons of oil. Every year, Americans pour or spill over 400 million gallons of used motor oil onto into storm drains or landfills where it leaks into our groundwater supply. That's the equivalent of **35 Exxon Valdez oil spills.**

sweep up for proper disposal. Surfaces contaminated by hazardous chemicals or unknown substances should be cleaned up by experienced, qualified individuals to protect the health and safety of you and the general public. Follow the safe handling instructions provided on the SDS.

There are many emergency response materials available making clean up of even toxic and hazardous materials fairly simple. Always use the right material for the job. Clean floating pollutants such as petroleum from puddles or from inside storm drains and oil/grit separators using absorbent materials such as pads and pillows. If you need to use a detergent or chemical cleaning agent, apply a small amount of the cleaner to the soiled surface and use absorbents to pick up the wash water. Excavate any contaminated soils as quickly as possible. Contact the Watershed Protection Department for soil cleanup instructions.

Use microbes responsibly.

Petroleum consuming microbes are very useful in controlled cleanup situations such as oily soil remediations, contained parts cleaning, and waste water treatment. If you choose to use microbes for cleaning spills, apply them according to the manufacturer's directions. Provide ample food, water, and oxygen.

When cleaning spills on pavement, apply the microbes with a minimal amount of water so that runoff does not occur. Use microbes to clean small oily spills only—do not use them over large areas such as parking lots. Never flush microbes to a storm drain or waterway. After ample application time, pick up the microbes for reuse or disposal by using absorbent material. Never leave microbes on paved areas—rain will wash them to a storm drain or waterway.

When using microbes for cleaning spills on soil, protect the treated area from rain so microbes will not wash away. Cover the spill area with tarpaulins or plastic sheeting and construct a berm around the perimeter of the spill. Do not use microbes for lead contaminated soil—microbes cannot break down lead.

Before using microbes for cleaning spills, obtain approval from the Watershed Protection Department. Approval for microbe use is granted on a case-by-case basis. A phone number is provided at the end of this fact sheet.

Store contaminated materials properly.

Keep storage containers under protective cover and securely closed, away from traffic and possible acts of vandalism. Use containers in good condition and label them properly. These storage units must not leak, overflow, or show any signs of failure or contents incompatibility. Designate storage areas away from storm drains or storm water ponds.

Store outside stockpiles of soil on and covered by impermeable plastic sheeting or tarpaulins. AFD may require secondary containment as well as other protective methods for certain quantities of materials. The Texas Commission on Environmental Quality (TCEQ) has container labeling rules and accumulation time limits for certain waste materials. For more details, contact AFD and TCEQ at the phone numbers provided at the end of this fact sheet.

Never leave spills unattended; designate someone to make any necessary phone calls in the event of a spill.

Dispose of contaminated materials properly.

Adequately identify the waste to determine appropriate disposal. TCEQ regulates waste disposal within the state of Texas. Contact the TCEQ for assistance with determining if the waste is hazardous. Typically, materials used to clean up small automotive fluid spills such as motor oil, fuel or diesel can be dried, sealed in garbage bags and disposed of in the trash. Up to 220 lbs. of dried petroleum contaminated absorbent can be placed in the trash each month by a business. Dry the absorbent in a safe, secure area protected from weather. Otherwise, collect spill waste and dispose of it through an approved service. The Watershed Protection Department provides lists

of disposal services for various waste types.

Seek services that recycle or reuse your waste to avoid liabilities involved in land disposal via a landfill. If recycling or reuse is not possible, seek services that reduce the amount of waste through technologies such as incineration.

Know your drainage.
Many businesses in Austin have oil/grit separators, storm water ponds, and even inside drains that connect to the storm drain system. Some business operators don't know the purpose of these structures, especially if the structures already existed before they purchased or leased the property. Some people incorrectly assume that they are receptacles for waste disposal. If you have any of these drainage structures at your facility, teach all workers how they should be used and maintained. The Watershed Protection Department provides a fact sheet explaining proper use and maintenance of separators and ponds. Preventing spilled materials from entering these structures prevents costly environmental cleanups, fines, and maintenance. If you are unsure which system your drains connect to (storm drain or sanitary sewer), contact the Watershed Protection Department or a licensed plumber for a dye trace and/or other verification method.

Train employees.
Prevention is the key to eliminating pollution. The best prevention method is training individuals who work in areas where spills can occur. Train employees regarding the location and use of SDS's, and the use of personal protection equipment to prevent injury. Designate individuals to carry out each step in a spill incident, from the person making phone notifications to those securing and cleaning up the spill area. Make sure these individuals are properly trained in recognizing and assessing a spill to prevent impact to humans and the environment. There are specialized companies available to provide this kind of training. Training saves time and money in clean ups, fines, site restorations, and injuries.

Keep workers trained in recognizing and assessing a spill to protect the environment and public safety.

The Bottom Line

Businesses have found that it costs time and money to implement water pollution prevention measures. However, the expense to clean up spills and restore property is much greater. Small, seemingly insignificant leaks and spills can become large contamination problems over time if steps are not taken for containment, clean up, and prevention. Clean up and disposal after spills is often extremely expensive. Unless handled properly, spills cause soil or groundwater contamination which could impact future sale or transfer of property.

Cleanup costs and real estate depreciation are not the only possible pollution costs. Treatment of injuries and time lost from work are also substantial costs. Fines from City, State or Federal agencies add thousands of dollars to the overall cost of a polluting discharge. In addition to fines, regulatory agencies can require businesses to undergo detailed compliance audits, implement long-term water monitoring programs, or require the installation of expensive pollution prevention equipment and programs.

For more information:

Regulation of polluting discharges to storm sewers and waterways, spill reporting, lists of chemical disposal and recycling services, storm drainage identification, soil cleanup advise, absorbent material information
City of Austin Watershed Protection Department
Pollution Prevention and Reduction Section
(512) 974-2550

Spills involving underground storage tank systems
City of Austin Planning and Development Review Department
Underground Storage Tank Program
(512) 974-2715

Secondary containment requirements, protection of public health and safety
Austin Fire Department
Hazardous Materials Prevention Division
(512) 974-0182

Hazardous waste rules, spill reporting
Texas Commission on Environmental Quality
Region 11 Office
(512) 339-2929

Emergency Numbers
Austin Fire Department (emergencies only)
911

City of Austin Environmental Hotline (24 hour)
(512) 974-2550

TCEQ Emergency Response Center (24 hour)
1-800-832-8224

CHEMTREC Chemical Spill Hotline (24 hour)
1-800-424-9300

CLEAN WATER FACT SHEET

DUMPSTERS

City of Austin - Watershed Protection Department

The purpose of the common dumpster is to contain waste for proper disposal. Because these wastes are pollutants, dumpster misuse and improper maintenance results in illegal polluting discharges to the environment. Misuse can create a public health nuisance as well. The City of Austin Watershed Protection Department is responsible for preventing polluting discharges to the City storm drain system and waterways as mandated by Title VI, Chapter 6-5 (Water Quality) of City Code. The Austin-Travis County Health and Human Services Department has responsibility for investigating complaints regarding solid waste disposal and ensuring compliance with health codes. This document provides tips on using and maintaining dumpsters without polluting the environment.

Improper use of your commercial dumpster is illegal

The Problem

Improper disposal of wastes into the dumpster.

Dumpsters are only for the temporary storage and sanitary containment of non-hazardous municipal solid wastes (dry solids) - until the wastes are removed by a municipal or private collection service for transport to a landfill. According to Federal and State law, these dumpsters must not be used to dispose of:

- municipal or industrial hazardous waste (materials that are toxic, corrosive, flammable, strong sensitizers or irritants, or that may pose a present or potential danger to human health or the environment);
- oil or grease (e.g. from restaurants, automotive repair facilities);
- infectious or pathological wastes (e.g. from health care facilities, veterinary hospitals, laboratories);
- septic tank waste;
- oil and grit separator wastes (e.g. from car washes, service stations);
- slaughterhouse wastes;
- dead animals;
- pesticide containers (e.g. insecticide, herbicide, fungicide, or rodenticide);
- discarded materials containing asbestos;
- drugs, contaminated foods, or drink products other than those contained in normal household waste;
- municipal wastewater treatment plant sludges;
- wastes from air pollution control facilities;
- tanks, drums, or other containers used for storage or shipping of any listed hazardous waste;
- used automotive oil filters;
- large automotive parts and scrap (e.g. torque converters, transmissions, tires, etc.); and,
- radioactive wastes.
- motor oil or other automotive fluid containers that are not well drained of their contents;

Did you know...

4% of motor oil is left in each bottle when thrown in the trash.

There are nearly 3.43 billion quart bottles sold in the U.S. every year. As a result, over 137 million quarts of otherwise usable motor oil is landfilled yearly.

That's 3 1/2 Exxon Valdez oil spills, every year! Drain containers before placing them in the dumpster. Recycle drained oil.

Such disposal will contaminate the landfill and threaten the groundwater, as well as endanger the safety of the sanitation workers emptying the dumpsters, and the general public.

Liquid, semi-liquid or loose items placed in the dumpster.

Liquid materials cannot be accepted by municipal landfills. In addition, these materials leak through the seams of the dumpster, spill onto the ground during emptying, or discharge along with collected rainwater when the drain plug is removed - often requiring extensive cleanup. Anything other than clean, clear water is an illegal discharge to the environment according to City, State, and Federal regulations. Items such as loose food refuse and food grease placed in the dumpster can promote fly breeding and create odor problems, a public health nuisance according to the local health department. Loose trash placed in the dumpster can be strewn by the wind during emptying or while the lid is open.

Overfilled dumpsters.

Overfilled dumpsters allow waste to spill onto the ground. Trash and debris exposed to wind or storm water end up in a storm drain or a waterway. Trash and debris clogs waterways, increasing the potential for local flooding. Waste material also impacts recreational value of waterways and creates an aesthetic nuisance.

Dumpsters in poor condition.

Dumpsters in poor condition attract and harbor flies and rodents. Rainwater entering the dumpster becomes contaminated and cannot be discharged to the environment.

Improper cleaning of the dumpster and surrounding area.

As a receptacle for garbage, dumpsters are subject to buildup of dirt and grime. Therefore, chemical cleaning agents are often used to clean them. Flushing cleaning agents and the grime to a storm drain or waterway is an illegal discharge. Some cleaning agents contain hazardous ingredients toxic to aquatic life. Some contain phosphorus, a nutrient promoting the growth of algae. Once algae blooms accumulate and decay, oxygen needed by aquatic life is depleted. Cleaning agents carry large quantities of dirt, grime, oil and grease into storm drains and waterways. These pollutants are toxic to aquatic life.

Unsecured dumpster lids.

Dumpster lids left open allow entrance of vermin. Rainwater also accumulates in them, resulting in stagnant odors and mosquito and fly breeding. Unsecured dumpsters are targets for vandalism, leaving a mess to clean up.

Improper placement of the dumpster.

Placement of a dumpster on a grassy area does not allow for proper cleaning of the surrounding area, should an accidental waste spill occur. This subjects the owner to costly cleanup and replacement of contaminated soil. Placement next to a storm drain significantly increases the potential for polluting materials, from accidental spills and dumpster cleaning, to illegally discharge to the storm drain system and waterways.

Not cleaning up accidental spills around the dumpster.

Spills to the ground outside the dumpster occur from overfilling, improper disposal of liquid items in or around it, or from abandoned chemicals left next to it. Spills left on the ground spread, threatening humans, animals and the environment.

The Solution

Recycle, reuse and dispose of wastes properly.

Strict State rules exist for storage and disposal of hazardous waste generated from commercial and

Did you know...

An estimated 30 million oil filters are dumped in Texas landfills each year.

Oil stays in the environment a long time.

It may take decades to biodegrade.

Collect and recycle used oil filters.

industrial operations. Store hazardous waste such as medical waste separately, in an approved tamper-proof, compatible container for disposal by a certified special waste service. Store used food grease in a leak-proof container for recycling through a commercial grease hauler. Obtain special large capacity dumpsters for separate containment of construction or demolition wastes. Compost food (no meat or dairy products) and landscape waste.

Many waste materials can be reused or recycled.

Recycling companies will schedule pickups of recyclable waste from businesses. Resource exchange networks exist, facilitating the sale of by-products and surplus materials for reuse. Contact the City's Zero Waste Business Services for other disposal alternatives and a non-regulatory free audit of your business. They can allow some small business recyclables and hazardous chemicals for disposal through the City's Household Hazardous Waste Collection Facility. Their phone number is listed at the end of this fact sheet.

Place only dry, solid municipal waste in the dumpster in sealed garbage bags.

Tie garbage bags shut to ensure waste is properly secured. Release rainwater from dumpsters only if the collected water is not contaminated from loose items. Collect and recycle liquid waste such as used motor oil and grease. Sufficiently drain contents of oil and other automotive fluid containers before placing them in the dumpster.

Ensure regular waste disposal service pick-ups.

Plan scheduled waste service pick-ups so the dumpster will not be overfilled. Should unanticipated overfilling occur, contact your disposal service for an extra pick-up.

Keep dumpster in good condition.

The local health department requires dumpsters be maintained in good repair. Dumpsters must be durable, easily cleanable, insect and rodent-resistant, and must not leak. Routinely check the dumpster for missing drain plugs, bent lids, and open seams. Call your dumpster provider for replacement parts or to replace the entire dumpster, if needed.

Properly clean the dumpster and surrounding area.

The local health department requires dumpsters be kept clean to prevent a public health nuisance. Pick up any loose trash on the ground. Spot clean heavy stains and slick spots around the dumpster with a paste consisting of clay sorbent (e.g. kitty litter), water and soap. Brush the mixture into the stain, let stand until dry, and sweep up for disposal in the dumpster. Then, the remaining area can be cleaned using plain cold water under pressure or by collection of the wastewater (e.g. mop and bucket) for disposal in a sanitary sewer drain (e.g. mop sink). The Watershed Protection Department provides a list of sorbent material suppliers, as well as a handout describing approved pavement and equipment cleaning methods.

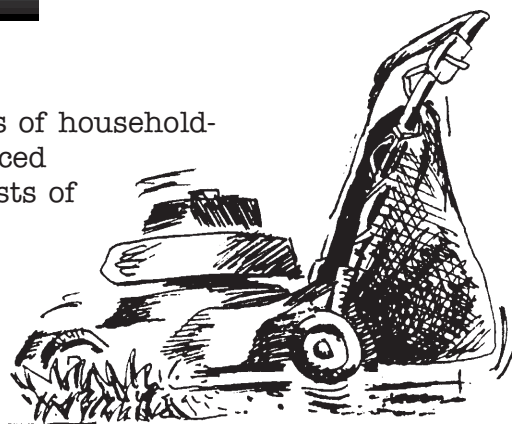
Keep dumpster secured.

Keep dumpster lids closed. If rainwater has collected in the bottom, first check that the water is not contaminated (e.g. discolored, smelly) prior to removing the dumpster plug to release the water. Make sure to put the plug back in place. If the water becomes contaminated, contact the Watershed Protection Department for disposal instructions. Consider locking the dumpster if vandalism is a problem.

Did you know...

20% of nine million tons of household-generated wasted produced annually in Texas consists of leaves, grass and tree trimmings.

Composting eliminates 56 million dollars a year in landfill costs.



Properly place your dumpster.

The local health department requires dumpsters be kept on a smooth surface of non-absorbent material such as concrete or asphalt. Place the dumpster away from storm drains or vegetated areas.

Plan for spills.

Monitor what kind of wastes are placed in the dumpster. Maintain a written plan for employees to follow in the event of an accidental spill or leak. If the spilled material is hazardous, immediately call 911 for assistance. Be aware that hazardous material spills in the dumpster can cause lethal fumes.

Be prepared ahead of time with equipment necessary to clean non-hazardous material spills. Liquid spills can be stopped from spreading or entering a storm drain by containing with sorbent material such as sand or kitty litter. Spills or leaks inside the dumpster should be cleaned up as soon as possible to prevent possible leakage onto the ground and to prevent exposure to the sanitation workers. Spills or leaks onto the ground must also be cleaned up immediately, to prevent a sanitary nuisance and impact to public health and the environment. Usually, non-hazardous material spills can be cleaned using the same cleaning methods for routine cleaning of the dumpster area.

Use non-toxic alternatives.

Using non-hazardous and non-toxic chemicals at your business helps prevent contaminated containers from ending up in the landfill after they are thrown in the trash.

Train dumpster users.

Prevention is the key to eliminating pollution. The best pollution prevention method is training employees and other dumpster users on how to properly use and maintain the dumpster and surrounding area. Schedule routine checks of the area to prevent pollution problems. While it takes time to train, it is actually time well spent and invested in your business to prevent clean ups, site restorations, regulatory fines, and injuries.

The Bottom Line

It can be very costly to clean-up spills or leaks that result from improper disposal of wastes or inadequate maintenance of the dumpster area. This is especially true if the spilled material is hazardous and poses a significant public health or environmental threat. Significant costs are associated with injured sanitation workers and cleanup of contaminated surfaces. Fines and criminal penalties given to persons contributing to illegal discharges or disposal practices are costly. These costs far outweigh the cost of using and maintaining the dumpster properly.

For more information:

Regulation of polluting discharges
City of Austin Watershed Protection Department
Pollution Prevention and Reduction Section
(512) 974-2550

Small business waste disposal information
Austin Rescource Recovery
Zero Waste Business Services
(512) 974-9727

Restaurant grease receptacle requirements, liquid waste hauler licensing, public health nuisance complaint response
Austin-Travis County Health and Human Services Department
(512) 972-5000

Waste storage/disposal requirements, alternatives to hazardous household chemicals, recycling/reuse information
Texas Commission on Environmental Quality
Region 11 Office
(512) 339-2929

Contact your local licensed solid waste hauler for information regarding specific dumpster sizes available, services provided, and what kinds of wastes the landfill will accept. The Watershed Protection Department provides a list of landfills in the Austin area.

CLEAN WATER FACT SHEET

STORM WATER PONDS

City of Austin - Watershed Protection Department

Rapid growth in the City of Austin and consequent development, as well as construction of culverts, drains and channels, continue to alter the natural flow of surface water on land and in our streams. This has increased both the quantity and velocity of storm water runoff. Furthermore, when rainfall hits parking lots, driveways, and other paved surfaces, it picks up gasoline, motor oil, diesel, heavy metals, sediment, litter, detergents, pesticides, spilled materials, and other pollutants which are then washed off to local waterways. As a result, this creates flooding of property, soil erosion, and pollution of our creeks and waterways. New development in the City of Austin is required to reduce the impacts on the drainage system and receiving streams through the construction of on-site storm water management ponds. Detention, filtration and retention ponds provide various levels of storm water runoff control by reducing flooding, channel erosion and the amounts of debris and pollutants which are transported to our creeks and lakes.

Improper use & inadequate maintenance of storm water ponds is bad for the environment

The City of Austin Planning and Development Review Department is responsible for inspection of commercial and residential ponds.

Improper use and inadequate maintenance of storm water ponds can allow the discharge of pollutants to the environment. This fact sheet provides property owners and operators with ways to maintain storm water ponds and prevent polluting of the ponds and the environment.

The Problem

Not knowing what the structure is.
Many Austin businesses have one or more types of storm water ponds on their site. Some owners do not know the purpose of their ponds, especially if they existed when the property was purchased. If you do not know what it is, chances are you don't know how to maintain it properly or prevent it's misuse. Some owners assume these ponds are receptacles for dumping waste. This is not their purpose. Nothing should be dumped into these ponds.

Illegal discharges of chemicals or waste materials into ponds.
Unlike spill containment ponds, storm water ponds are designed for treatment and/or control of storm water runoff only. Nothing should be spilled, dumped or washed into these structures. Illegal discharges to these ponds can occur from flushing fuel spills,

Did you know...

Rain and storm water runoff carry automotive fluids from paved areas to ponds which can result in expensive pond cleanups. Therefore: Clean up fluid leaks and spills as they occur to prevent pollution!

flushing radiators, leaking automobile or equipment fluids, trash from the lot, and washing chemical cleaning agents to the ponds during pavement maintenance. Not only will these materials contaminate the pond, subsurface soils and ground water could potentially be threatened if the pond does not have a liner. The pollutants can also be carried in storm water runoff to a nearby storm drain or waterway after passing through the structure, potentially harming humans, animals and aquatic life.

Commonly found pollutants, their sources and their impacts are described below:

- Gasoline from fuel spills is flammable and toxic to humans, animals, and aquatic life. It contains benzene, a cancer causing chemical.
- Ethylene glycol, a common constituent of spilled antifreeze, is toxic to humans, animals, and aquatic life. Used antifreeze can also contain heavy metals such as lead. Animals, particularly pets, are attracted to its sweet taste and could be poisoned.
- Soaps and detergents from pavement cleaning can emulsify pollutants, such as oil, enabling transport through control structures to the environment. Soaps and detergents that contain phosphates can promote the growth of algae in a waterway. Too much algae in a creek can deplete needed oxygen for aquatic life. In addition, some cleaning agents contain hazardous and/or toxic materials.
- Oil from spills or buildup from poor site maintenance, persists in the environment even as it weathers and biodegrades. Motor oil is toxic to humans, animals, and aquatic life. Automotive oils may also contain hazardous constituents such as lead and additives.

Improper use of ponds.
Ponds must not be used for disposing of shop wastes (e.g. from oil changes), or storing chemical products, wastes, parts, and equipment. Improper use causes the pond to malfunction and leads to pollution of the pond and surrounding environment.

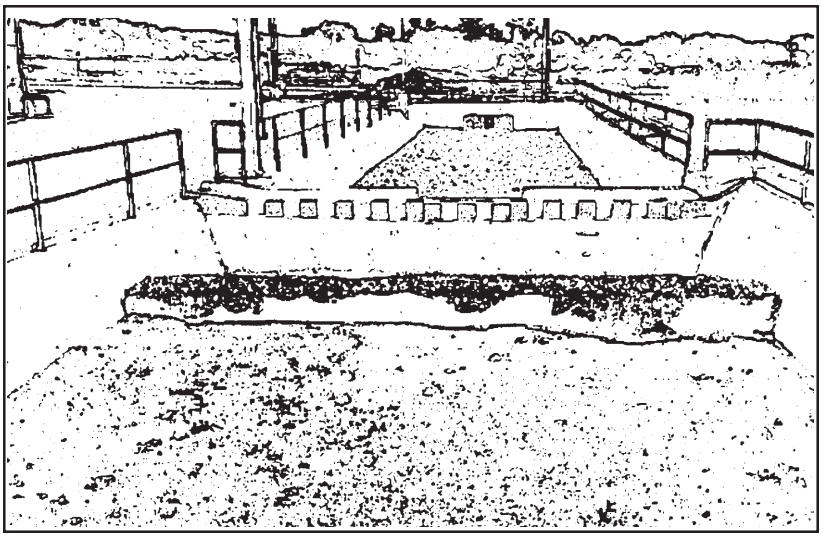
Inadequate maintenance of ponds.
Maintenance is extremely important, in order for ponds to function as originally designed. Trash and debris promotes clogging and often become an aesthetic nuisance. Accumulated sediment, and growth of plants, trees and brush causes pooling and prevents proper flow of water through the pond. Unmaintained filters can clog, creating ponding of water that results in stagnant water and an environment for mosquito breeding. High vegetation poses a problem in these structures, especially if it prevents inspection of their operation. These problems reduce the structure's efficiency, prevent adequate removal of pollutants from storm water runoff, or cause the pond to fail completely. It is a violation of City Code not to maintain storm water ponds.

Improper disposal of waste removed from ponds.
Accumulated sediments and contaminated soils and filter media in ponds require periodic removal and replacement. The removed material is considered a waste by Federal and State law and must be disposed of properly. If a chemical or waste material is dumped or flushed to a pond, the contaminated filter media or soil must be removed and disposed of properly. Dumping or disposal of the material from a pond - to the ground or a dumpster - is illegal and results in stiff penalties.

The Solution

Know what the structure on your property is.
If you have a pond on your property, find out what kind it is and how to maintain it. Contact staff with the Environmental Inspection Division of the City's Planning and Development Review Department for assistance. See the "For More Information" section of this document for a phone number. This will ensure proper function and prevent expensive maintenance. Employees shoud be educated about these ponds to prevent their misuse.

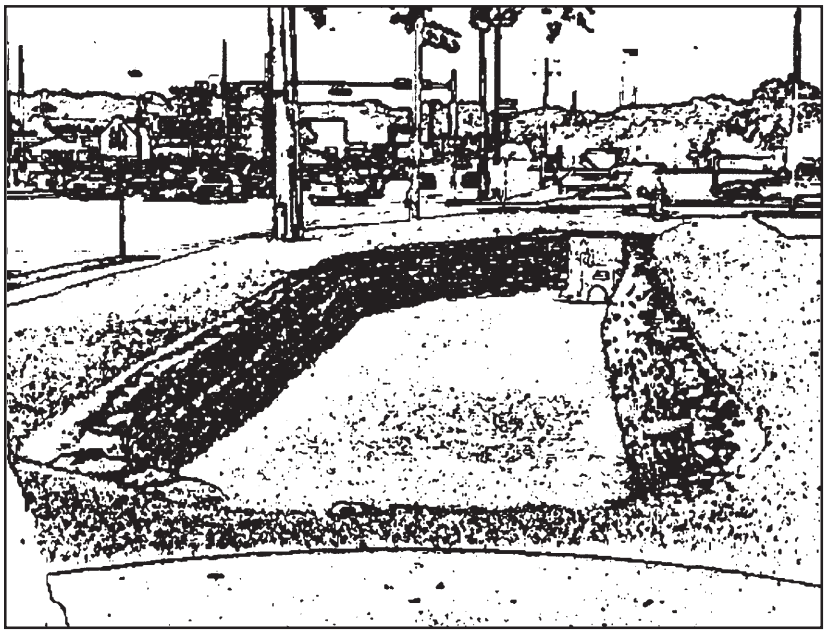
The most common types of storm water ponds are described below:



Filtration Pond

Filtration ponds help remove some of the 100 million pounds of sediment that would otherwise wash into Town Lake each year.

- Detention ponds are open impoundments (ponds, vaults, or tanks) designed to slow storm water runoff flowing from developed areas. After a short detention period (usually in terms of hours), the storm water is slowly discharged from the pond. Detention ponds provide limited treatment of storm water pollutants.
- Filtration ponds are open impoundments designed to receive storm water runoff from a developed area and filter the runoff through layers of materials such as sand and gravel - prior to its discharge to the storm drain system or a stream. Filtration ponds treat storm water runoff by filtering out conventional pollutants such as sediment, debris, heavy metals, phosphate, and oil. Filtration ponds are also somewhat effective at removing nutrients. These structures usually consist of an inlet/diversion structure, a settling basin (for partial removal of trash and particulate), a sand and gravel bed, under drain piping (to collect and discharge the treated storm water) and an outlet pipe. A liner is sometimes included to prevent the treated runoff from percolating into the underlying soil and ground water. Because of the potential for clogging, these structures require a pre-treatment area such as a sedimentation basin. Other components of the filtration system which may be visible are rock berms to slow the flow of storm water; weirs or devices to divert the flow; concrete baffles to isolate the initial storm flow; and overflow or emergency spillways.
- Retention ponds, used much less commonly, are open impoundments (ponds, vaults, or



Retention Pond

tanks) designed to "retain" storm water runoff flows from developed areas. After a retention period (usually several days), the storm water is pumped out of the structure and irrigated on the site. Another example of a retention structure is the wet pond, which contains a permanent pool of water with an aquatic environment designed to remove nutrients through biological uptake and other pollutants through settling.

- Other types of structures which manage spills and storm water runoff are hazardous material traps, designed for accidental spill containment, and oil/grit or oil/water separators. Hazardous material traps are used along major roadways. Oil/grit and oil/water separators are found at some businesses. The Watershed Protection Department provides a fact sheet detailing proper use and maintenance of oil/grit separators.

Prevent illegal discharges to ponds.
Routinely clean trash from your lot and remove any that has accumulated in your pond. Collect fluids leaking from vehicles with drip pans or other containers. Clean up spills immediately with sorbent material (e.g. kitty litter, rags, mop/bucket, etc.) to prevent them from flowing into your storm water pond. While cleaning any paved surfaces adjacent to the structure, do not let cleaning wastewater enter it. Instead, contain and collect the wastewater (e.g. using mop/bucket or portable scrubbing machine) for proper disposal. The Watershed Protection Department provides a fact sheet detailing proper pavement cleaning practices. All wastes generated at a business must be collected and disposed of accord-ing to applicable environmental regulations, typically through a licensed disposal service. Nothing should be stored in the ponds (e.g. product or waste containers, equipment, parts).

Clean up spills immediately with absorbent material (e.g. kitty litter, rags, mop/bucket, etc.) to prevent them from flowing into your storm water pond.

Maintain ponds properly.
The City of Austin Environmental and Drainage Criteria Manuals contain standards for the maintenance of storm water ponds. Ponds should be inspected by the pond operator on a regular schedule to ensure that they are operating effectively and that structural damage or failure is not evident. The schedule should be incorporated into an overall written maintenance plan. Sediment should be removed when the accumulation exceeds 6 inches in detention ponds. Mow vegetation that has exceeded 18 inches in height, except for those provided in the design. Prevent standing water to avoid mosquito breeding and stagnant conditions. Corrective maintenance is required any time detention ponds do not drain within 60 hours. Filtration ponds require maintenance any time drainage or "draw-down"

Did you know...

Commercial pond inspectors commonly find accumulated trash in storm water ponds due to inadequate maintenance on the ponds.

does not occur within 36 hours after the sedimentation portion of the structure has emptied. Remove trees or bushes from filtration ponds. Trees and bushes may remain in sedimentation basins as long as they do not impede flow, reduce pond volume or prevent proper maintenance. Remove paper, trash and other debris every 6 months or as necessary to maintain proper operation.

The City of Austin Planning and Develop-ment Review Department conducts routine inspections of all privately maintained ponds.

Accumulated sediments or contaminated soils and filter media in a pond need to be tested prior to disposal to identify the degree of contamination.

Any significant problems identified during inspections results in a Notice of Violation letter sent to the record property owner.

Dispose of pond waste properly.
Accumulated sediments or contaminated soils and filter media in a pond needs to be tested to identify the degree of contamination. The pond soils, filter media and sediments could contain hazardous and toxic contaminants such as diesel fuel, gasoline, motor oils, heavy metals, particulate asphalt, lawn fertilizers, fungicides/herbicides and pesticides from paving and landscape runoff. The type of activities and materials used or stored at your business determine how significant the risk of contamination is.

The results of the testing will dictate how sediment, soil and filter media is to be disposed of. The individual(s) responsible for the pond are responsible for testing and proper disposal of the contaminated material. Testing must be conducted by a reputable, certified laboratory. If the test results show hazardous constituents above regulatory levels, the removed material must be disposed of as a hazardous waste according to the requirements of the Texas Commission on Environmental Quality (TCEQ). The Watershed Protection Department provides a list of hazardous waste disposal services.

If the tested material is non-hazardous, disposal options might be a local solid waste landfill, a non-hazardous waste disposal service, or beneficial reuse such as a road bed dressing or as fill material. Approval must be granted by the Watershed Protection Department and the TCEQ prior to re-use of the material. Contact the landfill or the disposal company handling your waste for their specific waste acceptance require-ments. Keep test results and disposal records as proof of legal disposal for a minimum of three years.

Dispose of trash and debris removed from the structures in a trash can or dumpster. If removal of stagnant or standing water from a basin is necessary, the Watershed Protection Department can be contacted for possible discharge to the storm drain system or a waterway. Austin Water can be contacted for possible discharge to the sanitary sewer system, or the water can be pumped out and disposed of by a licensed wastewater disposal company.

The Bottom Line

It is much more costly to dispose of the contents of an improperly used and maintained pond, than it is to dispose of the contents of a properly maintained one. This is especially true if hazardous material contamination is detected in the structure.

The cost to test and dispose of hazardous material contaminated media can be extremely high. In addition, clean-up of pollutants flowing through the pond and into a storm drain system, surface water, or ground water is even more costly. Fines from City, State, or Federal agen-cies for violating applicable waste regulations can add thousands of dollars to the overall cost of a spill. In addition to administrative fines, regulatory agencies can require businesses to implement expensive water monitoring programs or require the installation of expensive pollution prevention equipment.

For more information:

Preventing polluting discharges to storm water ponds, spills and complaints response
City of Austin Watershed Protection Department
Pollution Prevention and Reduction Section
(512) 974-2550

Routine inspection of commercial ponds and maintenance of ponds serving single family/duplex residential development and City streets
City of Austin Planning and Development Review Department
Storm water Management
(512) 974-2501

Construction inspection of subdivision infrastructure and Capital Improvement Project roadway ponds
City of Austin Public Works Department
Construction Inspection
(512) 974-7065

Construction inspection of ponds serving commercial and multi-family development, permitting of storm water ponds in the Barton Springs Zone, site development plan review, storm water pond design criteria (including information on replacement of filter media)
City of Austin Watershed Protection Department
Development Assistant Center (512)-978-4000
(512) 974-2278 Construction inspection of ponds
(512) 974-2987 Ponds permitting
(512) 974-2693 Site development plan review
(512) 974-2239 Pond design criteria

Waste storage, disposal, testing requirements
Texas Commission on Environmental Quality
Region 11 Office
(512) 339-2929

Mosquito breeding and stagnant water complaints
Austin-Travis County Health and Human Services Department
(512) 972-5000

CLEAN WATER FACT SHEET

OIL / GRIT SEPARATORS

City of Austin - Watershed Protection Department

Have you wondered what the odd looking drain is at your shop - two drains side by side, one with a metal lid? It is an oil/grit separator (also known as an oil/water separator), a structural device separating oil, grease, and grit from storm water runoff flowing through it. These devices are typically used at vehicle repair shops, gasoline service stations, bulk petroleum storage and dispensing facilities, and other businesses where oil and grease build up.

Oil/grit separators are often misused or improperly maintained

There are several different types and designs of separators. Some separators are used in the car wash and restaurant industries and must connect to the sanitary sewer system. Others are used specifically for spill containment. However, this document only discusses separators connecting to the storm drain system for the purpose of removing oil, grease and grit from storm water runoff. The diagram below illustrates an oil/grit separator commonly found in Austin and explains how one operates.

Once storm water passes through an oil/grit separator, it is considered "treated". However, if these systems are misused or improperly maintained, illegal discharges of pollutants to the environment occur. The City of Austin Watershed Protection Department is responsible for preventing or stopping illegal pollutant discharges to the City storm drain system or waterways, as mandated by Title VI, Chapter 6-5 (Water Quality) of City Code. This fact sheet provides businesses with information about how to maintain oil/grit separators, and prevent polluting discharges.

The Problem

Discharging wastes into separators.
Dumping any shop wastes directly into interior or exterior drains connected to the separator or into the separator itself is illegal. Also, accidental spills and leaks from vehicles draining into them is prohibited. These structures are not designed to handle chemical products or shop wastes, only residual amounts of oil and sediment washed from pavement by rain water. Dumping shop wastes into a separator causes damage to the structure and allows pollutants to flow through the system to the environment. Many types of shop wastes are toxic to humans, animals, and aquatic life.

Drains inside the shop that connect to the oil/grit separator.
Some auto repair shops, built prior to current environmental regulations and building codes, have interior oil/grit separators and/or connecting drains plumbed to the storm drain system. This design increases the probability of accidental or illegal discharges of shop wastes to storm sewers that discharge to creeks and lakes.

Did you know...

Oil/grit separators are not designed to handle chemical products or shop wastes, only residual amounts of oil and sediment washed from pavement by rainwater.

Discharging cleaning agents into separators.
Hot water, soaps, detergents, and other cleaning products are sometimes flushed to the oil/grit separator from vehicle, equipment, or pavement washing activities. This practice emulsifies (breaks down) the oil and grease trapped in the separator, allowing it to flow with storm water runoff to a storm drain or waterway.

Some cleaning agents contain toxic ingredients. Even mild detergents discharged to a creek promote the growth of algae, thereby depleting sunlight and oxygen needed by aquatic life. Motor oil and grease flushed to the environment from the separator smothers vegetation and often contains lead and other hazardous materials toxic to humans, animals, and aquatic life.

Improper maintenance of separators.
Without routine cleaning, oil/grit separators can accumulate large amounts of oil and sediment clogging the system and causing overflow of accumulated oil, grease and sludge to the environment. Separators without grates, covers, and cleanout caps allow trash, debris and sediment to clog the system. Sediment and grit discharged to a waterway smothers bottom dwelling aquatic life, clogs fish gills, and blocks sunlight needed by underwater plants.

Dumping wastes removed from an oil/grit separator into a storm drain, or dumpster or onto the ground is illegal.

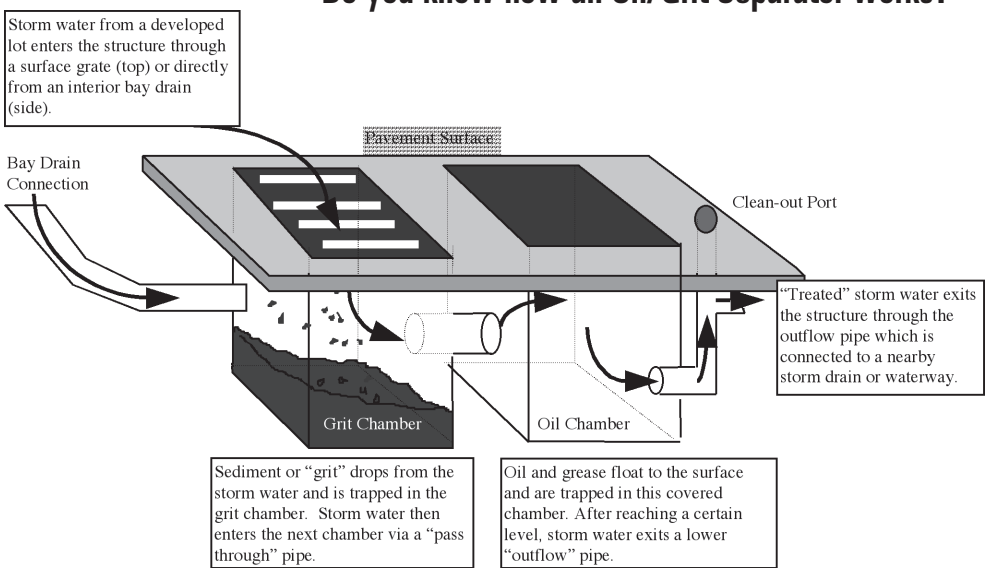
Improper disposal of separator wastes.
Dumping or disposal of oil/grit separator wastes (sediment and wastewater) - to the ground, a storm or sanitary sewer, a storm water pond, or a dumpster is illegal. Federal and State law considers the material removed from the separator a waste. The sludge contains harmful pollutants, such as heavy metals; the wastewater contains automotive fluids such as oil and fuel. Release of separator wastes will harm plants, animals and aquatic life.

The Solution

Collect shop wastes for removal by a disposal service.
All shop wastes must be collected and disposed of through a licensed disposal company or other approved service. Apply sorbent material (e.g. kitty litter) on spills as they occur, then sweep it up for proper disposal. This prevents rain water from flushing the used sorbent to the separator. Should a spill cause waste or product to enter the separator, immediately contact the Watershed Protection Department's 24-Hour Pollution Hotline for containment, removal and disposal instructions. If the spilled material is a hazardous material such as gasoline, call 911 first.

Know your drainage and sewer connections.
If you know your interior oil/grit separator is

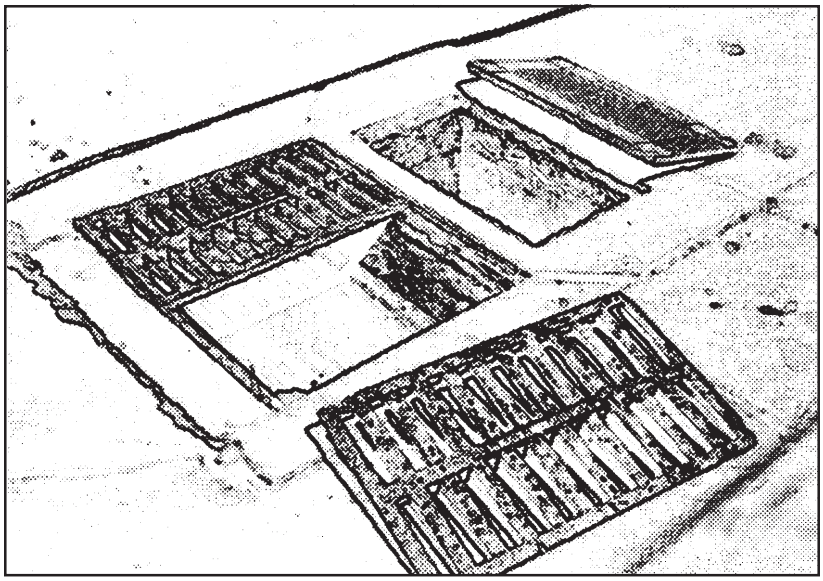
Do you know how an Oil/Grit Separator works?



plumbed to the sanitary sewer system, contact Austin Water for sanitary sewer discharge regulations. If your interior separator and/or associated drains are plumbed to the storm drain system or a waterway and your facility was built after January 9, 1978, these drains must be disconnected and removed from service. If your building was constructed prior to this date and you have interior oil/grit separator(s) and/or associated drains, you will not be required to plug the drains, but it is highly recommended.

Did you know...

If your oil/grit separator is operating properly, you could be helping protect the environment. Properly maintained oil/grit separators trap sediment before it washes into the lake.



In addition, work areas of machine shops or any business that manufactures, rebuilds or overhauls engines, transmissions, hydraulic systems or similar machinery cannot have oil/grit separators or associated drains plumbed to the storm drain system or a waterway. Instead, they can be plumbed to a hold-haul tank. If you are unsure to which system your drains are connected, contact the Watershed Protection Department or a licensed plumber for a dye trace and/or other verification method.

Exterior oil/grit separators and associated storm drains must remain functional. They should never be taken out of service without approval from the Watershed Protection Department. City Code states that "where installed, all grease traps, oil traps, sand traps, and interceptors shall be maintained by the owner or occupant at his own expense, in continuously efficient operation at all times."

Check your separator on a routine basis to ensure that it is working properly.

Use proper cleaning methods.

When cleaning pavement or floors around separators, prevent cleaning agents (including biodegradable soaps) and hot water from getting into them. This applies to contractors hired to do the cleaning or pressure washing, too. Only plain, cold water may be discharged unless the contractor is equipped with a system that picks up wash water for proper disposal or reuse. Contact the Watershed Protection Department for additional pavement cleaning information.

Maintain oil/grit separators properly.

Oil/grit separators must be checked regularly to determine if the system needs cleaning. City Code requires these devices be "maintained by the owner or oc-

cupant at his/her own expense and in continuously efficient operation." Cleaning frequency is determined by the amount of use the system receives. Some facilities choose to place a mesh screen underneath the entry grate to keep small debris such as cigarette butts, twigs and leaves out of it. This method works well. However, the key to having an "efficient" system is to keep a clean lot - sweep up leaves and trash regularly, absorb oily spots. This reduces the cleaning frequency of the separator. Keep grates, covers, and cleanout caps on the separators and in good repair.

Dispose of separator waste properly.

As of March 29, 1990, Federal law requires that oil/grit separator waste (liquid and sludge) be tested prior to disposal to determine whether the contents are hazardous or non-hazardous. Once this determination is made, a licensed pumping service should be contacted to remove the contents. A list of pumping services is available through the Watershed Protection Department.

Ensuring that testing of the separator waste occurs is the responsibility of the facility owner or operator. Some trap pumping services have contracted labs associated with them that collect and analyze separator samples. A sample should be collected both from the solid and the liquid matter. The sample must be collected and analyzed by a laboratory approved by the Texas Commission on Environmental Quality (TCEQ). According to State rules, if the operation of the business has not changed, testing of a separator need only be done every two years no matter how many times the separator is cleaned, provided test results are kept. However, the pumping service may have different requirements. Testing and disposal records should be retained for a minimum of 3 years to establish proof of proper disposal according to applicable regulations.

Train employees

Prevention is the key to eliminating pollution. The best pollution prevention method is training employees on how to properly maintain the oil/grit separator and prevent its misuse. Schedule routine checks of the separator to prevent pollution problems. While it takes time to train, it is actually time well spent and invested in your business to prevent clean ups, site restorations, and regulatory fines resulting from non-compliance.

The Bottom Line

It is more costly to dispose of the contents of a misused and improperly maintained separator than it is to dispose of the contents of a properly used and maintained one. This is especially true if hazardous materials are detected in the separator. In addition, clean up of pollutants due to wastes allowed to flow through the separator to the environment greatly outweighs any costs associated with regular testing and maintenance. Furthermore, fines from City, State, or Federal agencies and the possible installation of expensive pollution prevention equipment can add thousands of dollars to the overall cost of an operation after a polluting spill occurs.

For more information:

Pollution prevention information, spill response, design and maintenance criteria, separator and pavement cleaning criteria, dye tracing
Watershed Protection Department
Pollution Prevention and Reduction Section
(512) 974-2550

Oil/Grit Separators plumbed to the sanitary sewer system
Austin Water
Special Services Division
(512) 972-1060

Waste disposal information
Texas Commission on Environmental Quality
Region 11 Office
(512) 339-2929

Sizing and construction information

American Petroleum Institute	(202) 682-8375
Underwriters Laboratory	(708) 272-8800
Steel Tank Institute	(708) 438-TANK

WATERSHED PROTECTION

Pollution Prevention and Reduction

Elements of an Effective
SPILL CONTINGENCY PLAN

What would happen if fire fighters or other emergency response personnel were not trained or at all prepared when an emergency occurred? Lives could be in danger. Professional emergency responders plan ahead for the worst case scenario to safeguard public health, safety, and property. What would you do if you had a large fuel, used oil, or solvent spill at your place of business? Are you or your employees prepared with training and the necessary tools to safely keep it from spreading and clean it up? The best way to prepare for a spill is to have a plan. **A spill contingency plan is a document explaining step-by-step what to do in the event of a chemical release.**

The following plan format is a guide to assist you in determining what to include in your spill plan. Please note that a spill plan is not a regulatory requirement, but is considered a Best Management Practice to help you respond to a chemical release safely and prevent pollution.

General Business Information:

- Provide the business name, business address, business phone number, business owner/operator names and their 24-hour contact phone numbers.

Site chemicals/hazards:

- Identify types and maximum storage quantities of any chemicals/materials stored or handled on site such as gasoline, motor oil, antifreeze, cleaning agents, etc.
- Identify the location of Safety Data Sheets (SDS) for all chemicals stored or used at your facility for quick reference during a spill event. *Note: this is a federal requirement as a part of the Hazard Communication Act.*
- Identify known physical (confined spaces), chemical (hazardous substances), or mechanical site hazards to prevent spill responders from becoming injured. *Tip: a self-inspection of your facility may help you identify such hazards.*
- Identify on a site map the material storage locations and their proximity to storm drains, storm water ponds or oil/grit separators, grassy or soil areas, and drainage ditches, creeks, or other waterways. *Tip: post the site map in all work areas for quick reference.*

Site drainage:

- Identify storm water flow patterns for your facility – where rain goes after reaching all exposed portions of your site. *Tip: use the site map developed under "Site*

chemicals/hazards" to show all storm drains inside and outside your facility. Site maps are important to help identify where a spill might flow.

Secure scene:

- Suggest an evaluation of the on-site hazards identified above to determine if spill containment can be accomplished safely. If the scene is not safe, list steps to make it safe, if possible. *Note: if necessary, securing the scene and containing the spill can occur simultaneously. Keep unauthorized individuals, vehicles and equipment away from the spill to avoid tracking through the spill and spreading the contamination. The area can be isolated using cones, safety tape, and temporary warning or detour signs.*
- Describe who will be "in charge" of the spill response to prevent confusion among responders as to who should be directing their response.

Spill containment:

- When it is safe, list steps to be taken to immediately contain a spill to prevent it from entering a storm drain or waterway or leaving the property. *Note: confine spills to a limited area whenever possible. The greater the area of contamination, the more expensive the cleanup.*
- Detail what materials (i.e. absorbent pads, booms, cat litter), equipment (i.e. pumps, containers, shovels), and/or structures (i.e. secondary containment, concrete curbs or berms) will be used for spill containment. *Tip: different materials may be needed for different chemicals or spilled materials*
- Indicate where the necessary materials and equipment for spill containment are located.

Notification:

- Identify a list of emergency contact numbers to be used during a spill. *Note: post the list by a phone that will be accessible during a spill. Your contact list should include the following:*
    - 911 for notification if life, health or property is threatened.
    - How to contact additional emergency response personnel (i.e. spill response contractor or trained in-house staff), as necessary. *Tip: if the spill cleanup will not be conducted in-house, include the contact name, business address, and 24-hour phone number of at least one clean up contractor trained in handling and disposing of spilled material and contaminated media.*
    - Regulatory authorities and associated phone numbers that must be notified in the event of a release. *Note: provide them with necessary information for successful notification such as the spill type, amount, location, and what steps you are taking to respond. For example, the Watershed Protection Department should be notified immediately via the 24-Hour Pollution Hotline at 512-974-2550 regarding a spill of any amount that enters or threatens to enter a storm drain or waterway. Other agencies such as the Texas Commission on Environmental Quality (TCEQ) or the Environmental Protection Agency (EPA) may need to be notified if a spill enters a waterway, exceeds 25 gallons, or is considered especially hazardous according to certain regulations. See the "Spill Handling" section of your Austin Clean Water Partners Handbook for more details.*
- Describe who at your business will be responsible for notifications.

Clean-up:

- For spills that can be cleaned up "in-house", list the cleanup steps that will be taken in order of their occurrence.
- Detail what equipment should be used such as personal protective gear (i.e. gloves, safety glasses, respirators), transfer equipment (i.e. shovels, backhoe), and waste storage containers (i.e. trash bags, Department of Transportation (DOT) - approved metal drums).
- Request review of the Safety Data Sheets (SDS) for the products involved in the release to gather vital safety information prior to cleanup.
- List appropriate temporary storage locations for waste generated from spill clean up. Indicate that all wastes must be containerized and protected from storm water runoff to prevent the spread of contamination.

Waste disposal:

- Describe appropriate transport and disposal for the various types of wastes generated at your facility. *Note: it may be acceptable to place certain wastes in your solid waste receptacle with prior approval from your solid waste disposal service.*
- Include contact names and phone numbers for waste transporters/disposal facilities in your spill contingency plan.

Recordkeeping:

- Request that a log summarizing spill incidents, amounts, notifications made, and resolution of the incident be kept for training purposes. Provide a log form to use. *Tip: have a "debrief" session after a spill incident to see if you can improve your response, or prevent the incident from occurring in the future. Keep all disposal receipts for wastes generated in an accessible location for a minimum of three years as proof of proper disposal. It is highly recommended that you keep waste disposal receipts indefinitely.*

General Plan Tips:

- Post the site-specific spill contingency plan in an accessible location at your business.
- Train all employees on appropriate spill response and the contents of the plan.
- Keep the plan up to date with current contact names and phone numbers.
- Remember, a spill plan is only as good as you make it, and train personnel in its use!

Spill Contingency Plan
Prepared for:

Prepared by:

Name: _____

Title: _____

Phone Number: _____

Spill Contingency Plan

Contents

Spill Contingency Plan

General Business information

Business Name: _____
Address: _____
Phone Number: _____
Owner/Operator: _____
24hr Contact Phone Number: _____

Site Chemicals/Hazards

Type: _____ Quantity: _____
Type: _____ Quantity: _____
Type: _____ Quantity: _____
Type: _____ Quantity: _____
Type: _____ Quantity: _____
Type: _____ Quantity: _____
Type: _____ Quantity: _____

Location of Material Safety Data Sheets:

_____
_____
_____

Physical, Chemical or Mechanical Site Hazards:

_____
_____
_____
_____

Site Map and Drainage – See Attachment A

Spill Containment

Steps for Spill Containment:

Step 1: _____
Step 2: _____
Step 3: _____
Step 4: _____
Step 5: _____

Materials to be used for Spill Containment:

_____
_____
_____

Location of Materials and Equipment for Spill Containment:

_____
_____
_____

Notification

Dial **911** if life, health or property is threatened!

Spill Response Contractor:

Contractor Name: _____
Contact Name: _____
Address: _____
24hr Phone Number: _____

Trained In-house Staff:

Name: _____
Phone Number: _____

Name: _____
Phone Number: _____

City of Austin 24hr Pollution Hotline: 974-2550 (spills that enter a waterway or threaten to enter a waterway)

Texas Commission on Environmental Quality (TCEQ): 1-800-832-8224

Clean Up

Steps for Cleanup:

Step 1: _____
Step 2: _____
Step 3: _____
Step 4: _____
Step 5: _____

Equipment for Cleanup:

Personal Protective Equipment: _____
Transfer Equipment: _____
Waste Storage Containers: _____
Temporary Storage Location: _____

Waste Disposal

Waste Transport and Disposal:

Type: _____ Disposal Method: _____
Type: _____ Disposal Method: _____
Type: _____ Disposal Method: _____
Type: _____ Disposal Method: _____
Type: _____ Disposal Method: _____
Type: _____ Disposal Method: _____
Type: _____ Disposal Method: _____

Waste Disposal/Transport Company:

Name: _____
Contact Name: _____
Address: _____
Phone Number: _____

Spill Log

Incident	Spill Volume	Notifications	Resolution

Attachment A

Site Map

Glossary

Absorbent
Materials often used to soak up liquid spills (e.g. clay, kitty litter, sawdust, rags).

Asbestos
A mineral fiber that can pollute air or water and cause cancer (asbestosis)when inhaled. EPA has restricted its use in manufacturing and construction.

Berm
A barrier, composed of rocks, concrete and/or earthen materials, used to surround an area requiring containment.

Biodegradable
Capable of being decomposed by natural biological processes.

Bioremediation
The use of living organisms, generally microbes (bacteria and fungi), for removing contaminants from the environment.

Carcinogen
A substance or agent capable of causing or producing cancer in mammals.

Caustic
Capable of destroying or eating away by chemical actions: corrosive.

Check Dams
A small dam constructed in a gully or other small waterway to decrease the stream flow velocity (by reducing channel gradient), minimize channel scour, and promote deposition of sediment.

Compost
A mixture of decaying organic matter, such as leaves and manure, used as fertilizer or mulch.

Contaminant
A substance not naturally present in the environment, or present in amounts that can, in sufficient concentration, affect the environment.

Debris
Broken remains of plants, building materials, and rubble forming trash or refuse.

Decomposition
Breakdown of organic material into simpler compounds

Detention Pond
A pond constructed for the temporary storage of stormwater runoff and for the release of the stored water at controlled rates.

Detention/filtration Pond
A pond constructed for the treatment of stormwater runoff; solid (particulate) matter is removed from the detained water by passing the water through a porous media such as sand or a man-made filter.

Discharge
To deposit, conduct, drain, emit, throw, run, allow to seep, or otherwise release or dispose of, or to allow, permit or suffer any of these acts or emissions to occur.

Disturbed Area
An area in which the natural vegetation or soil cover has been removed or altered and is therefore susceptible to erosion.

Drainage System
See Storm Sewer System

Dumpster
See Trash Receptacle

Dye Trace
The process of tracing the path of a liquid in a pipe system using a colored dye as an indicator.

Emulsify
To blend two components together into a very fine droplet/particle suspension by either mechanical or chemical means.

Erosion
The wearing away of the land surface by running water, wind, ice or other geological processes

Excavate
To remove (soil) by digging.

Gabion
Rectangular or cylindrical wire mesh cages filled with rock and used as a protecting apron, revetment, etc. against erosion.

Grit
A general term often used to describe particles of sand, gravel, earth or soil.

Groundwater
The supply of fresh water found under the Earth's surface, usually in aquifers.

Hazardous Chemicals
Any chemical whose presence or use is a physical or health hazard.

Glossary

Hazardous Materials
A substance or material which has been designated by the Secretary of Transportation to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce. It possesses at least one of four characteristics ignitability, corrosivity, reactivity, or toxicity, or is listed by the EPA or a state environmental agency.

Hazardous Substance
A Material that poses a threat to human health and/or the environment.

Hazardous Waste
Solid wastes that are ignitable, corrosive, reactive, or toxic, and pose a substantial or potential hazard to human health or the environment. It may also be listed by the EPA or a state environmental agency.

Heavy Metals
Elemental or ionic forms of metals that pose long term environmental hazards; they include boron, cadmium, cobalt, chromium, copper, mercury, lead and zinc.

Herbicide
Chemical formulation used to control plants.

Impervious Cover
A land surface through which water, air, or roots cannot penetrate.

Hold-Haul Tank
A tank for the storage of waste materials, usually liquids, such as waste automotive fluids, cleaning wastewater, or any other industrial waste until proper disposal arrangement are made.

Inlet
A surface connection to a closed drain, such as a storm sewer system, e.g. curb opening inlets, grate inlets, etc..

Inorganic
Matter which is of mineral nature, not of vegetable or animal origin; will not decompose and is not biodegradable.

Landfill
A controlled location used for the disposal of trash and waste products; once filled, the site is sealed and buried under soil

Microbes
Specially selected bacteria and fungi that consume petroleum products and turn it into water and carbon dioxide gas.

MSDS (Material Safety Data Sheet)
Information supplied by the manufacturer on the chemical properties, hazards, and special handling of a product.

Non-point Source Pollution
Pollution originating from dispersed or poorly defined sources which cannot be identified at a single point such as an industrial pipe.

NPDES (National Pollutant Discharge Elimination System)
A permitting process established by the Clean Water Act that regulates the release of pollutants to waters of the United States and is intended to eliminate unpermitted non-stormwater discharges and reduce pollution in storm water discharges.

Nutrients
Elements or compounds, such as nitrogen or phosphorus, that are necessary for plant growth and development. High concentrations of these substances can cause excessive aquatic algae growth. Some nutrients can be toxic to aquatic life at high concentrations.

Oil/grit Separator
A device designed to separate oil, grease, and grit from stormwater runoff which flows through the separator.

Organic
Matter of vegetable or animal origin; will decompose and is biodegradable.

Outlet
The point of water discharge from a stream, river, lake, pipe, channel or drainage system.

Pervious
Describes a material through which water passes freely; permeable.

Pesticide
Any chemical agent (insecticides, herbicides, fungicides) intended to prevent, destroy, repel or mitigate pests.

pH
A numerical measure of acidity or hydrogen ion activity in a solution. On a scale of Zero to fourteen, values below seven are acidic and values above seven are basic or alkaline. Neutral is pH of 7.0.

Pollutant
A substance or mixture which after release into the environment and upon exposure to any organism will or may reasonably be anticipated to cause adverse effects in such organisms or their offspring.

Pollution
The condition caused by the presence in the environment of substances of such character and in such quantities that the physical, thermal, chemical biological or radiological quality of the environment is impaired, or rendered not useful for public enjoyment or any reasonable use.

Glossary

Potable Water
Water that is safe for human use; fresh water in which any concentrations of organisms and dissolved toxic constituents has been reduced to safe levels, and which is, or has been treated so as to meet certain standards for objectionable taste, odor, color, or turbidity.

Pressure Washing
To clean surfaces or objects (e.g. pavement, building, equipment, vehicles) using a highly pressurized stream of water.

Releases
Any spilling, leaking, pouring, dumping, discharging, or injecting of waste into the environment.

Remediate
To respond to a release of a pollutant in a manner that permanently removes the material from the impacted area or prevents or minimizes the continued spread of the material in the environment.

Retention Pond
Structure constructed for the long term storage of stormwater runoff with no controlled release during or after a storm, except for evaporation and infiltration.

Revegetation
The planting of trees, shrubs, grasses and wild flowers in an area after its disturbance, along with subsequent maintenance, so as to restore the area to a natural state.

Rip Rap
Broken rock, cobbles, boulders, or concrete placed compactly or irregularly on dam levees, ditches, dikes, channels, etc., for protection of earth surfaces against the erosive action of water.

Rock Gabion
See Gabion

Runoff
See Stormwater Runoff

Sanitary sewer system
A network of pipes carrying sewage or wastewater to a treatment facility.

Secondary Containment
Structures designed to contain all leaks and spills from chemical storage tanks and associated equipment.

Sediment
Solid material, both mineral and organic, that is in suspension, is being transported, or has been moved from its site or origin by air, water or gravity and has come to rest on the ground.

Sedimentation
The process or action of depositing sediment or detached soil particles.

Septic Tank
An underground tank used for the deposition of domestic wastes. Bacteria in the wastes decompose the organic matter, and the sludge settles to the tank's bottom. Effluent flows through the drain into the ground. Sludge is pumped out at regular intervals.

Sewage
The total organic waste and wastewater generated by residential and commercial establishments, free of storm water and industrial wastes.

Sheen
A rainbow like play of colors on the surface of water.

Silt Fencing
A fence constructed of a small mesh fabric that allows stormwater runoff to pass through while trapping sediments.

Soil Test
Chemical analysis of soil to determine the presence or absence of contaminants such a refined petroleum products or heavy metals.

Solvents
A substance, usually a liquid, in which others substances are dissolved.

Spill Contingency Plan
A document giving an organized, planned, and coordinated course of action to be followed in case of a fire, explosion, or other accident that releases toxic chemicals, hazardous wastes, or radioactive materials threatening human health or the environment.

Storm sewer inlet
See Inlet

Storm sewer system
A network of pipes and channels carrying storm and surface water to surface water bodies such as streams and lakes.

Storm Water Ponds
See Water Quality Pond

Storm Water Runoff
That part of rainfall, that runs off the land into streams or other surface waters. It may carry pollutants from the air and land into the receiving waters.

Glossary

Storm Water Treatment Structures
Structures designed to control the flow of and/or remove or reduce the amount of pollutants in stormwater.

Synthetic
Not natural or genuine; artificial or man-made.

Terrace
An embankment or combination of an embankment and channel constructed across a slope to control erosion by diverting or storing surface runoff instead of permitting it to flow uninterrupted down the slope.

Toxic
Poisonous, carcinogenic, or otherwise harmful to organisms during either brief or prolonged exposure.

Toxicity Characteristic Leachate Procedure (TCLP)
Lab procedure which measures the amount of a chemical in a sample which may leach into water.

Turbidity
The cloudy condition caused by sediment suspended in a liquid.

Trash receptacle
Containers, varying in size, that temporarily store and contain discarded refuse and/or recyclable materials.

Vegetated Swales
A natural or constructed channel, usually broad and shallow, covered with erosion-resistant grasses, used to convey surface water across the landscape; grassed waterway.

Waste Manifest
Shipping papers required for the transportation of hazardous wastes.

Wastewater
Water that carries wastes from homes, businesses, farms, and industries; a mixture of water, dissolved and/or suspended solids, and other contaminants.

Wastewater Treatment Plant
A facility containing a series of tanks, screens, filters, and other processes by which pollutants are removed form water.

Water Pollution
The addition of harmful or objectionable material to water in concentrations or quantities sufficient to adversely affect its usefulness or quality.

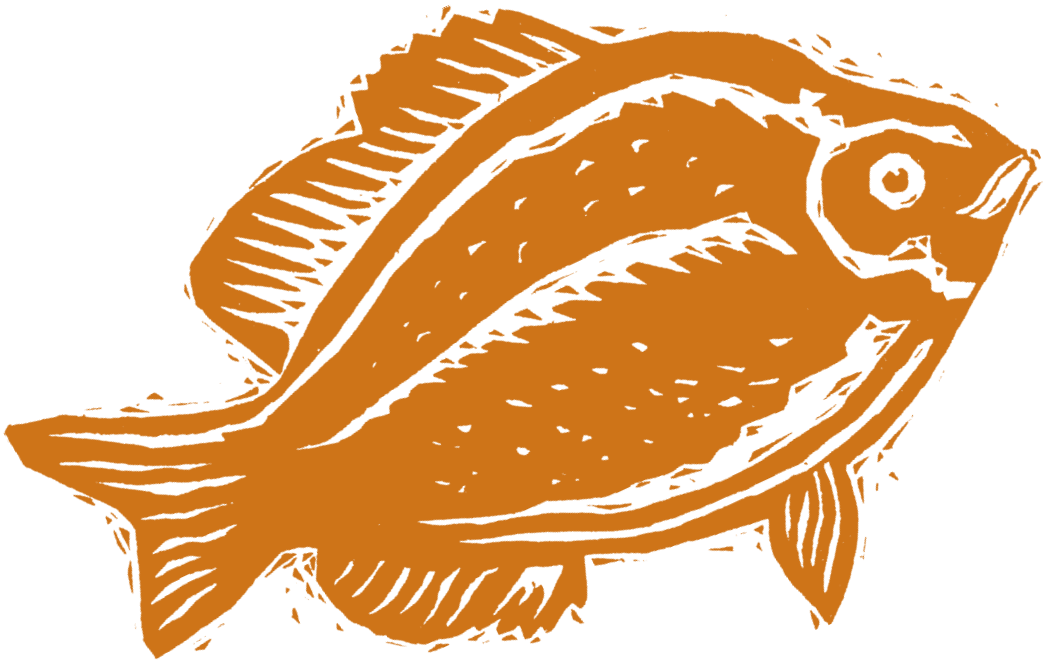
Watercourse
Any natural or artificial channel allowing the passage of water.

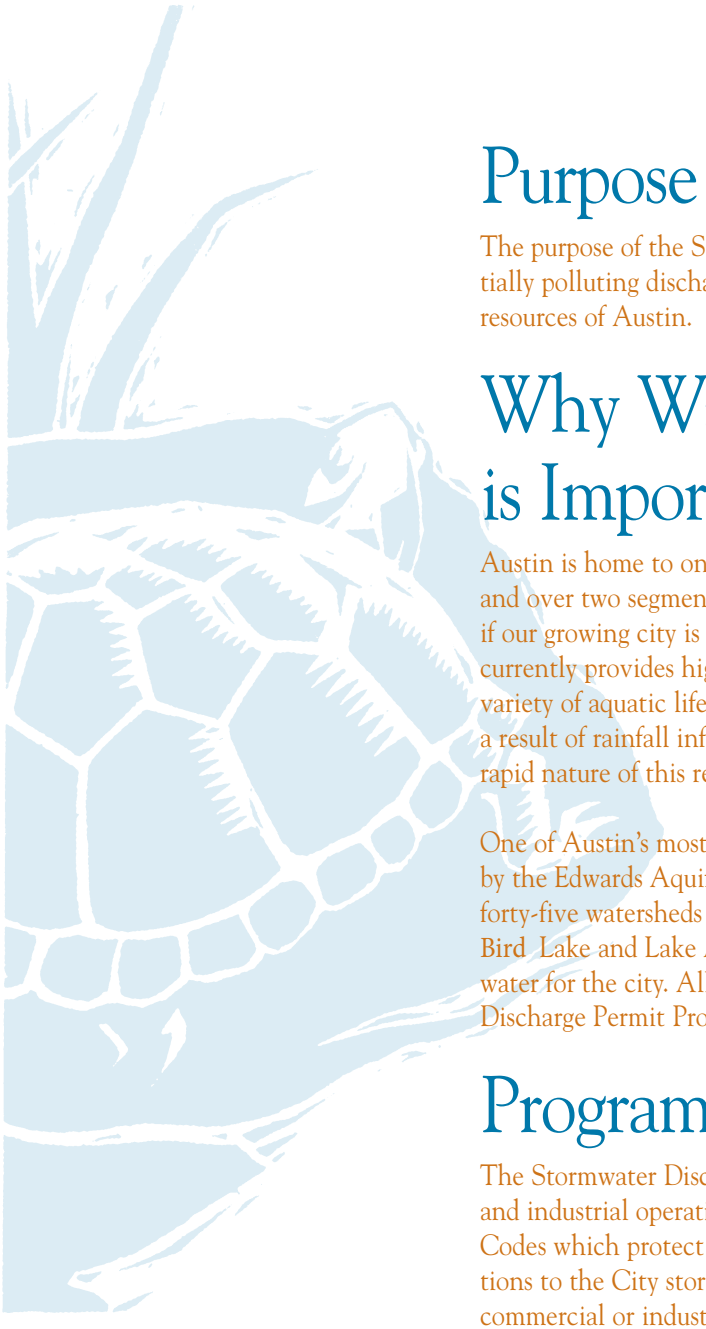
Water Quality Pond
A man-made structure designed to remove pollutants from storm water runoff. Examples include detention and sedimentation/filtration ponds.

Xeriscape
A method of landscaping using certain principles of design and installation which conserve water and energy.

City of Austin
Watershed Protection Department

Stormwater Discharge Permit Program





Purpose

The purpose of the Stormwater Discharge Permit Program is to prevent or minimize potentially polluting discharges to Austin's creeks and lakes in order to preserve the natural aquatic resources of Austin.

Why Water Quality Protection is Important

Austin is home to one half million residents and is located along the lower Colorado River and over two segments of the Edwards Aquifer. Water quality protection efforts are important if our growing city is to preserve these important water resources. The Edwards Aquifer currently provides high quality water for drinking and recreational activities, and it supports a variety of aquatic life and other wildlife. Recharge to the Aquifer occurs in streambeds and as a result of rainfall infiltration through faults, fractures, sinkholes, and caves. Owing to the rapid nature of this recharge, dumped or spilled pollutants can easily end up in the aquifer.

One of Austin's most valued natural resources is Barton Springs, a swimming pool spring-fed by the Edwards Aquifer and visited by over 200,000 people each year. In addition, there are forty-five watersheds within the city limits and sixteen creeks that drain directly to the Lady Bird Lake and Lake Austin portions of the Colorado River, the major source of drinking water for the city. All these water resources are protected by the City of Austin's Stormwater Discharge Permit Program.

Program Description

The Stormwater Discharge Permit Program staff conduct inspections of specific commercial and industrial operations within the City of Austin limits to ensure compliance with City Codes which protect water quality. Inspectors locate, verify, and monitor plumbing connections to the City storm sewer system and receiving waterways to prevent illegal discharges of commercial or industrial wastes. Inspectors check waste storage, handling and disposal practices as well as premise maintenance activities to prevent illegal discharges. The operational condition of water quality controls (oil/grit separators, stormwater ponds, hazardous material interceptors, stormdrains) is assessed. A Stormwater Discharge Permit is issued to the facility on an annual basis. Each facility is responsible for obtaining and maintaining a current permit. Legal action is taken against Code violators when necessary. Inspectors notify and coordinate efforts with other related agencies.

Other program activities include:

- Providing guidance on proposed and existing non-stormwater discharges to the storm sewer system or waterways from activities such as swimming pool filter backwashing, construction work, cooling tower blowdown, and secondary tank containment releases.
- Responding to requests for inspections owing to property assessments, remediations, proposed temporary discharges, or a change in property ownership or management.
- Tracking and dye-tracing plumbing connections to the storm sewer system to determine the route of materials through the system.
- Collecting samples for analysis, typically for enforcement purposes.

- Providing guidance on regulations, pollutant testing, clean up and prevention strategies.
- Reviewing sample plans, remediation plans and stormwater pollution prevention plans.
- Providing records information to the public upon official request.
- Recommending Best Management Practices (BMPs) applicable to each facility or operation. These are pollution prevention measures geared to reducing pollutants at the source and preventing the release of potential pollutants with storm water.
- Providing education materials, such as lists informing operators how to dispose of or recycle waste materials.

Authority

- Surface water quality rules and associated discharge limits enforced by this program are described in Title VI, Chapter 6-5 of the Austin City Code. This Chapter also includes Stormwater Discharge Permit provisions. The City of Austin has not adopted groundwater or soil remediation standards. The Texas Commission on Environmental Quality (TCEQ), is the principal authority over groundwater, air, and soil standards. The TCEQ can be reached by calling the Region VI Field Office at 339-2929.
- State surface water quality rules are found within Title 2, Subtitle D (Water Quality Control), Chapter 26 of the Texas Water Code and the Texas Administrative Codes (31 TAC, Chapters 307 and 321). State statutes give cities authority to enforce state standards.
- Federal guidelines come from the Clean Water Act (Federal Pollution Control Act) of 1972/1977, the Resource Conservation and Recovery Act of 1976 (40 CFR 198-299), and the National Pollutant Discharge Elimination System of 1990 (40 CFR 122, 124).

Types of Permits

- Annual—Issued annually (January 1 through December 31) for facilities in continuous operation.
- Temporary—Issued for one-time discharges that will cease after a specified period of time (e.g. discharges of treated petroleum-fuel-contaminated waters from remediation activities related to leaking aboveground or underground storage tanks).

Types of Facilities Inspected

Several types of industrial and commercial activities are currently inspected and permitted under this program. Included in the list below are some of the regulated operations and the typical wastes that each generates. These wastes must be disposed of properly, not on the ground or to a storm drain or waterway.

- Motor Rebuilding and Repair—oil, caustic cleaner sludge, oven residues, solvents, degreasers, used absorbent materials
- Machine Shop Services—blast abrasives waste, caustic cleaner sludge, oven residues, solvents, degreasers, used absorbent materials
- Transmission Rebuilding and Repair—oil, transmission fluid, solvents, caustic cleaner sludge, oven residues, degreasers, used absorbent materials

- Radiator Repair—antifreeze, leak test tank wastewater and sludge, boil-out tank sludge, paint, solder, soaps and detergents, used absorbent materials
- Fuel Storage and Dispensing Facilities—gasoline, soaps and detergents, used absorbent materials
- General Auto, Truck, Aircraft, Boat, and Equipment Repair—oil, grease/lubricant, antifreeze, batteries, used auto parts and scrap metal, brake fluid, carburetor cleaner, oil filters, fuels, solvents, power steering fluid, empty containers, shop rags, used absorbent materials, transmission fluid, tires, general shop trash, oil/grit separator sludge
- Readymix Concrete Companies—gravel, sand, concrete dispersing agents, concrete hardening compounds, vehicle washing materials (acids, rust inhibitors, detergents), diesel fuel, lubricants
- Chemical Manufacturing and Storage—could include any type of chemical
- Auto Salvage—waste oil, used batteries, fuel, antifreeze, scrap metal and used auto parts, oil filters

Other monitored industrial/commercial activities include:

- Mobile Pressure Washers—cleaning agents, oil and grease, sediment
- Mobile Carpet Cleaners—cleaning agents, oil and grease, dirt and residue
- Auto Detailers—cleaning agents, oil and grease, sediment

How To Contact Us

To obtain information about the City Stormwater Discharge Permit Program, call 512-974-2550 during regular office hours, 7:45 am to 4:45 pm. Please report significant spills or potential pollution to the Watershed Protection Departments 24 Hour Pollution Hotline at 512-974-2550. After regular business hours, you will get a recording which asks you to leave the spill information. Follow the instructions on the recording, and an investigator will be paged immediately.

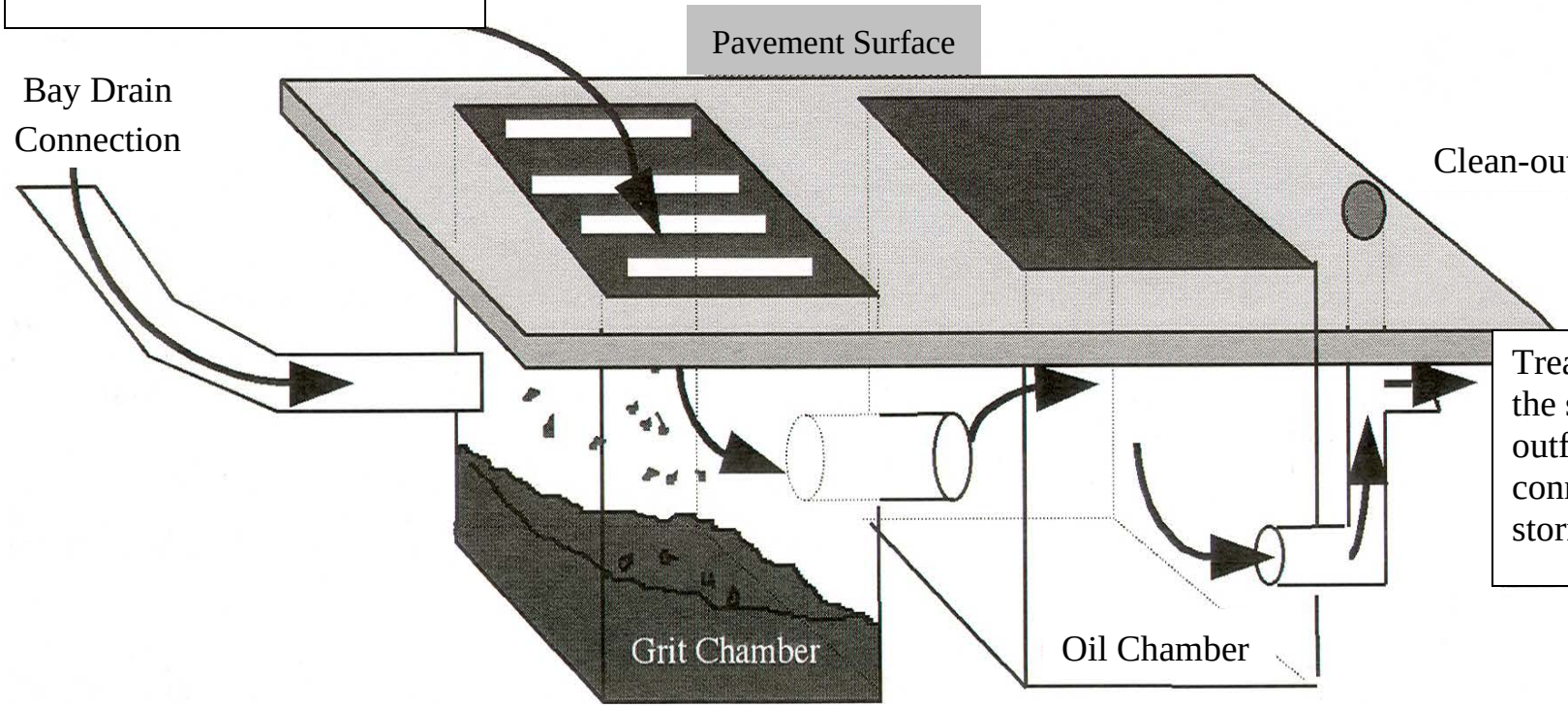
24-Hour Pollution Hotline: 512-974-2550

Watershed Protection Department
P.O. Box 1088
Austin, Texas 78767

WATERSHED PROTECTION
Pollution Prevention and Reduction

What Is An Oil/Grit Separator?

Storm water from a developed lot enters the structure through a surface grate (top) or directly from an interior bay drain (side).



Treated storm water exits the structure through the outflow pipe which is connected to a nearby storm drain or waterway.

Sediment or grit drops from the storm water and is trapped in the grit chamber. Storm water then enters the next chamber via a pass through pipe.

Oil and grease float to the surface and are trapped in this covered chamber. After reaching a certain level, storm water exits a lower outflow pipe.

SRC 4/29/2015

Austin guide to... charity CAR WASHES

Did you know that something as beneficial as a charity car wash can actually damage the environment? Oil, grease and dirt from the cars can be washed off into our creeks and make our waterways less suitable for plant growth, fish life, and recreation. Soaps used to clean the cars can contain nutrients which cause algae blooms. When the algae dies off, it can lead to fish kills and cause our drinking water to smell and taste badly. Excessive vegetation can also clog storm drain inlets and cause flooding. But, a little planning can help you avoid polluting as well as save you costly fines -- the result is beneficial for both your organization and the environment.

Solution Options:

- Check with the Southwest Car Wash Association at 512-343-9023 – they have a list of car washes and gas stations that send their wash water to a wastewater treatment plant (since sites are limited, be flexible on your date and location)

- If there are no suitable car washes or gas stations available, send wash water to a grassy area or storm water filtration pond:
  - Pre-clean paved areas – sweep and dispose of trash, dirt, leaves and debris first
  - Spot clean heavily stained areas with a mixture of kitty litter, water and powdered soap, and then toss in the trash prior to conducting event
  - Use only plain, cold water for washing
  - Wash windows and tires with cleaners and then wipe off instead of rinsing with water
  - If you need a cleanser, use a biodegradable detergent -- most liquid dish detergents, which are free of dyes and perfumes, are considered biodegradable

Be on the Safe Side:

- Notify the Watershed Protection and Development Review Department in advance. They can pre-approve:
  - Your site or offer information on nearby storm water filtration ponds
  - Car wash method
  - Cleaning agent
- If you plan to drain to a grassy area, get approval in advance from the property owner
- Do not discharge wash water to oil/grit separators

Contact Information:

Stormwater Discharge Program:
City of Austin Watershed Protection
(512) 974-2550

Sanitary Sewer Discharge Regulations
City of Austin Water Utility
(512) 972-1060

Commercial Car Wash Locations
Southwest Car Wash Association
(512) 343-9023 1-800-440-0644

WATERSHED PROTECTION

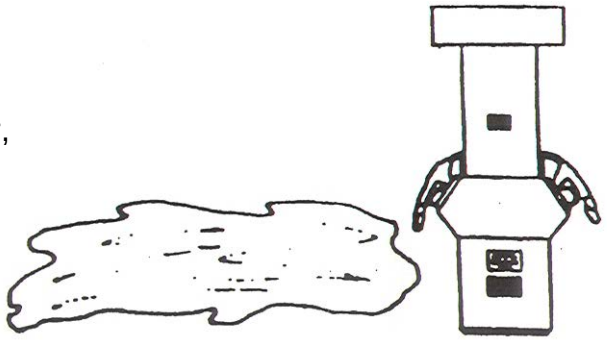
512-974-2550

WATERSHED PROTECTION
Pollution Prevention and Reduction

EMERGENCY LEAK RESPONSE PROCEDURES

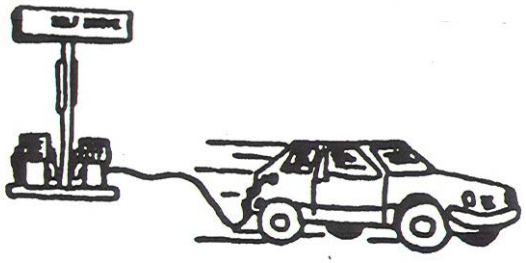
(PLEASE POST AT YOUR FACILITY)

GAS LEAKS AND SPILLS:

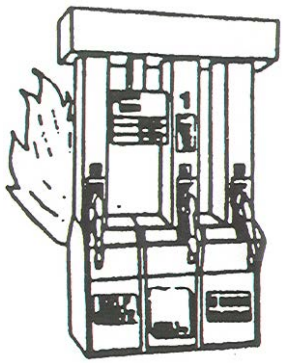


Follow these procedures if there is a gas leak or spill caused by a delivery transport driver, a customer or a vehicle accident/drive-off:

1. Make sure every employee knows where these procedures are posted, as well as the location of the emergency shut off button.
2. Hit the **EMERGENCY SHUT OFF** button on the gas console our outside the store and shut off any circuit breakers for the gas island. Be sure the fuel is stopped.
3. Clear customers from the spill area.
4. If a spill is present and where safety permits, use sorbent material to contain liquids to prevent the gas from entering any adjacent storm drains or waterways (including oil/grit separators).
5. If the spill is large, call the Fire Department at 911.
6. Call the City's 24-hour Pollution Hotline at 512/974-2550
7. Call your Store Manager, if applicable.
8. Do not sell gas again from the affected pump until City of Austin approval is granted.
9. Do not pour water on the gas to try to dilute it or wash it away. The gas could enter the storm sewer system or a waterway, which is a violation of City Code.



FIRE AT THE GASOLINE ISLAND:



Follow these procedures if there is a fire at the gas island:

1. Hit the **EMERGENCY SHUT OFF** button on the gas console or outside the store. Shut off any breakers in the main electrical panel marked for the gas island. Be sure fuel is stopped.
2. Evacuate the store.
3. Call the Fire Department at 911 and the City's 24-hours Pollution Hotline at 512/974-2550 immediately.
4. Call your Store Manager, if applicable.
5. Do not sell gas again until you have received City of Austin approval. Contact Craig Carson at 512/974-2175 for approval.

Austin guide to...
POLLUTION hotline

512-974-2550

Report Pollution 24 Hours a Day

Help protect Austin's water quality by reporting any polluting discharges or spills that could affect creeks, lakes or the aquifer to the City's 24-Hour Pollution Hotline at 512-974-2550. For best results, report spills when observed. City staff will investigate to identify pollutants and their source and will monitor cleanup.

Report the Following Information Quickly

1. Amount and type of pollution, if known. If not, describe the color, odor, consistency and any other characteristics
2. The location of the pollution, such as the address, business name, or creek
3. The name, address and phone number of the party responsible for the pollution, if known
4. Any other information you feel may assist an investigator
5. Your name and phone number if you want a follow-up phone call. (Complaints are handled anonymously.)

www.austintexas.gov/pollutionprevention

512-974-2550

Look for These Pollution Sources

Motor Oil, Gasoline, Diesel & Jet Fuels:

- Leaking vehicles
- Motor oil dumping
- Diesel used for weed control
- Open containers and oily materials left outside

Sewage:

- Leaking sanitary sewer lines
- Malfunctioning septic systems

Fertilizers & Pesticides:

- Unnecessary or excessive use
- Application before rainfall

Silt & Sediment:

- Inadequate silt fences
- Excess water pumped from construction sites

Soaps & Detergents:

- Use in cleaning pavement, vehicles & equipment
- Dumping of soapy water outside
- Failure to connect washing machine to sanitary sewer

Trash & Debris:

- Overflowing dumpsters
- Household or construction waste dumping

Antifreeze:

- Improper flushing or draining of radiator
- Disposal on ground or storm drain

Latex & Oil-based Paints:

- Cleaning painting equipment outside
- Disposal on ground, in dumpster or stormdrain

WATERSHED PROTECTION

Austin guide to...
LEAF BLOWERS

Leaf blowers can be an efficient way to deal with cleaning up yard clippings, dirt and trash. They can save time and money (particularly for professional landscaping firms), and clean areas covered with mulch more effectively than raking.

However, they can have a negative impact on our health and the environment.

Problems:

- **Air Pollution:**
  - Exhaust emissions from gas-powered blowers contain hydrocarbons, particulate matter and carbon monoxide, which when combined with other gases, form ozone and other toxic contaminants. Per gallon of gasoline, they are about ten times more polluting than cars
  - Disturbing dust can cause respiratory problems
- **Noise Pollution:** While just a nuisance for most, those using leaf blowers professionally/repeatedly are at increased risk of hearing loss
- **Water Pollution:**
  - Leaves and debris blown into the street end up in creeks; as they decompose, they can deplete the water of oxygen and potentially cause fish kills
  - Pollutant-laden dirt and sediment can add toxins to the water
- **Flood Hazards:** Leaves, trash and debris can clog storm drains and drainageways, causing them to back up and create localized flooding

Safety Tips:

- Make sure you are at least 50´ from people and pets when using blower
- Wear hearing protection if using repeatedly
- Use goggles to protect eyes
- Wear protective clothing including long pants and enclosed shoes
- Wear a respirator if needed

Solutions:

- **Air Pollution:**
  - Purchase electric-powered models
  - Either avoid dusty areas, or pre-wet them to reduce creation of dust
  - Begin blowing with nozzle close to the ground then lift it to a height that doesn't blow dust, before blowing large areas
  - Avoid using a blower to clean up gravel or construction dirt

- **Noise Pollution:**
  - Purchase electric-powered models
  - Use the lowest possible throttle speed
  - Check and clean the muffler, air intakes and filter
  - Buy a newer, cleaner, blower with a lower decibel level
  - Avoid using very early or very late in the day

- **Water Pollution and Flood Control:**
  - Blow leaves back onto the grass or other vegetated area or bag them for recycling
  - Vacuum the material instead of blowing
  - Bag yard debris in paper bags so it can be recycled
  - Clean up any fuel spills with kitty litter, bag the material and throw in the garbage
  - Collect trash and any accumulated sediment and bag for disposal

References:

- California Environmental Protection Agency, "A Report to the California Legislature on the Potential Health and Environmental Impacts of Leaf Blowers", February 2000
- Outdoor Power Equipment Institute: www.opei.org

AUSTIN ENERGY®

CITY OF AUSTIN FOUNDED 1839

Watershed Protection Development Review

512-974-2550

Austin guide to...
CARPET CLEANING

Carpet cleaning wastewater contains cleaning agents, as well as grease, oil, dirt, and debris. If disposed of improperly, this wastewater can be harmful to our waterways. Cleaning agents can be toxic and increase the nutrient load in our waterways, depleting available oxygen for aquatic life to survive.

Federal, State and City stormwater regulations prohibit the discharge of materials, such as carpet cleaning wastewater, into storm sewers and waterways. Any person responsible for illegally discharging may be subject to legal action that includes cleanup costs and financial penalties.

To enjoy clean carpets and a clean environment, follow these simple tips.

Product Selection:

- **Choose an environmentally-friendly carpet cleaner. Look for products that use less water are non-toxic and biodegradable**
- **Non-toxic and biodegradable cleaning agents reduce the potential for more specialized and expensive wastewater disposal and environmental remediation**
- **Get the Material Safety Data Sheet for a product from the manufacturer or distributor and ask them about non-toxic and biodegradable options**

24-HOUR POLLUTION HOTLINE:
512-974-2550

For More Information:

- Discharge Regulations 512-974-2550
- Sanitary Sewer Discharges 512-972-1060
- Household Hazardous Waste Disposal 512-974-4343

Wastewater Disposal

Even non-toxic and biodegradable products can harm aquatic life, so all carpet cleaning products must be kept out of storm drains and waterways.

- **Obtain prior consent from the property owner for any on-site disposal**
- **Wastewater can be disposed of into sinks, showers, bathtubs, toilets, and sanitary sewer cleanouts, if the site is part of the sanitary sewer system. Know where the drains are plumbed prior to disposal because carpet cleaning products may be harmful to septic systems**
- **Use a lint trap or filter to prevent debris from clogging the drain. Dispose of the dried lint and sediment with regular trash**
- **Wastewater from use of non-toxic, biodegradable cleaning products may be disposed of on the job site in a vegetated area sufficient in size to prevent any runoff**
- **Wastewater can also be collected by the cleaning company and taken back to their place of business for disposal in a pre-approved and permitted sanitary system drain**
- **In Austin, contact the Special Services Division of the Austin Water Utility (512-972-1060) for sanitary sewer system discharge approval and permitting**

Chemical Handling and Disposal

- **Follow label and Material Safety Data Sheet instructions**
- **Unused cleaning chemicals can be taken to the City's Household Hazardous Waste Collection Facility**

WATERSHED PROTECTION

www.austintexas.gov/pollutionprevention

Austin guide to...

GREASE BINS

In order to maintain a safe, healthy and non-polluting grease bin, here are a few tips that will help you avoid fines and cleanup expenses. While grease bin services provide and empty the bins, the business is also responsible for any violations.

- **Choose a bin that is:**
  - Approved
  - Easily cleanable
  - In good condition
- **Locate it:**
  - On a cleanable surface such as a concrete pad
  - Away from a storm drain
- **Keep bin lid:**
  - Closed between use
  - Locked
- **Secure bin** (with a cable or other device to prevent vandalism)
- **Make sure employees:**
  - Take their time filling bin to avoid drips and spills
  - Do not overfill bin
  - Are trained on best grease handling, care and cleanup methods
- **Clean up any spills and drips as they occur:**
  - Use absorbent material which should always be available onsite
  - Do not flush with soap and water which could then travel to waterways through storm drains

WATERSHED PROTECTION DEPARTMENT

512-974-2550

24-HOUR HOTLINE
TO REPORT POLLUTION PROBLEMS

CITY OF AUSTIN

- **Hire an approved service provider**
- **Ensure that service provider:**
  - Changes out bin if in poor condition or leaking
  - Provides regular grease pickups (check periodically that pumping is occurring)
  - Disposes of grease at an approved facility
  - Provides you with paperwork on hauling and disposal for your records
- **Report large spills to the City's 24-Hour Pollution Hotline**

City of Austin
WATERSHED PROTECTION

512-974-2550

STORMWATER DISCHARGE Permit Program

The City of Austin is committed to compliance with the Americans with Disabilities Act. Reasonable modifications and equal access to communications will be provided upon request by calling 974-7058 or 480-9713.

Printed on 100% recycled paper

WATERSHED PROTECTION