

Construction

CITY OF ABILENE—STORMWATER SERVICES DIVISION

New development to support rapid growth in the City of Abilene, 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 sewers, creeks, or lakes.

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

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 Abilene's valuable water resources.

The City of Abilene's Stormwater Utility Division is responsible for preventing pollutant discharges to the City's storm sewer system and waterway conveyances as mandated by Chapter 32, Article VII (Municipal Drainage Utility - Stormwater

Protection) 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 Stormwater Protection code can result in stop work orders and stiff fines per violation per day. In addition, State and Federal penalties may add to the total cost from noncompliance.

Erosion and Sedimentation

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

Sediment causes obstructions to normal flow and siltation of lakes and creeks. 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 toxins at the bed of waterways.

Did You know...

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



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Polluting discharges from site dewatering, tank, and pipe testing.

Construction sites often discharge large amounts of water—accumulated ground-water, 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, algacides, petroleum compounds and other chemicals. Water used during pipe testing creates discharges of rusty water and collected debris.

Poor product and waste storage 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 removal and sandblasting can also be a problem. Road paving, surfacing and asphalt removal provide numerous opportunities from storm drain contamination. Asphalt emulsion from roads or parking lots run off in stormwater, if not dried prior to a rain event.

Any material spilled on 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. a local creek). 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. Hazardous materials discarded in a dumpster create a danger to sanitation workers emptying the dumpster, as well as to the groundwater beneath the landfill. If these materials are transported through the soil or a storm sewer 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 trimmings, 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

Did you know...

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



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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, 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 stormwater runoff. Unfortunately, accumulated oil and sludge contained inside the structures are often illegally dumped in a field or pumped to a storm sewer 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 ordinance requirements.

Before construction activities begin, familiarize yourself with the City's ordinance and erosion control criteria. These regulations apply to all land located within the Abilene city limits.

Did you know...

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

In addition, if construction activities disturb one acre or more of land, or are part of a larger common plan of development that will disturb one acre or more of land, a Stormwater Pollution Prevention Plan (SWP3) and a Construction Site Notice (CSN) are required. If construction activities disturb five acres or more of land, or are part of a common plan of development that will disturb five acres or more of land, an SWP3 and a Notice of Intent (NOI) and/or a Construction Site Notice are required. Contact or visit the Texas Commission on Environmental Quality Website for information regarding the requirements of the Texas Pollutant Discharge Elimination System (TPDES) General Permit TXR150000. This permit contains storm-water runoff and erosion control requirements that must be met prior to initiation of construction activities. Contact information for the TCEQ and other helpful websites is provided at the end of this fact sheet.



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Plan ahead.

Avoid unexpected construction delays and costly environmental remediation by planning ahead. Assess the properties surrounding the site to check for potential surface and/or sub-surface contamination that could impact your site during excavations. Immediately contact the TCEQ if contamination (e.g. soil odor, discoloration, abandoned underground storage tanks, buried debris, unusual liquid seepage) is suspected or detected during work. Always check ahead for existing utilities in the areas to be excavated as well as needed permits (e.g. grading, building, demolition) prior to beginning of work activities.

Prevent erosion and minimize sediment laden runoff. Before starting work, prevent sediment runoff by implementing controls such as silt fencing, rock berms, rip rap, sand bags, mulch socks, and temporary vegetation. Diversion dikes and drainage swales with grass or roughened pavement to reduce runoff velocity. Also, consider check dams, filter fabric and

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terracing. Whenever possible, minimize areas of disturbance as much as possible. Also, be aware of weather conditions and 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.

Install sediment 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.

Store and handle waste materials 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 conditions. 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 vehicle 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 absorbent 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 material. 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 sediment control structures prior to removing them.

Don't top off fuel tanks because it increases your chance of fuel overflowing onto the ground. Store above-ground fuel and other petroleum products, greater than established quantities, within secondary containment. Though not required, store all containers in a secured and contained area to capture leaks and protect from construction traffic and acts of vandalism.

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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 stockpiles of soil, aggregate base or sand, and away from adjacent property, storm drains or waterways. 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 to complete the project. If there is leftover paint, seek avenues for reuse or donate to a local 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.

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 or at the Environmental Recycling Center which will shred tree trimmings into mulch.

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

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) surface by using an absorbent material (e.g. kitty litter, sand, peat, etc.), and dispose of the waste properly. Contain hazardous or large non-hazardous spills if it is safe, and immediately contact the Abilene 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 personnel to protect the health and safety of yourself and the public.

Report all spills to the Stormwater Utility Division to receive assistance in proper clean up instructions, especially



for hazardous materials and large volume spills

Post a site specific spill contingency plan. A material safety data sheet (MSDS) should be readily available for each hazardous chemical used and stored at the site. An MSDS contains information that enable 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 MSDS by calling the manufacturer's phone number from the label on the chemical container.



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Collect and dispose of cleaning activity waste properly.

Clean without creating any discharge of soaps, detergents, oil or other pollutants to a storm sewer or waterway. These cleaning agents contain surfactants that can have adverse effects on aquatic life. 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 the 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 absorbent (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.

Employee Training.

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

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Use less toxic alternatives.

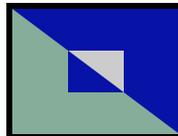
Use the least toxic materials available. For example, use latex or water based paint instead of oil based paint. Find non-toxic or less toxic alternatives to other chemicals to use at your site. Doing this not only protects the environment, it also reduces cleanup and disposal costs.

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 Texas involved wastewater, from paint equipment cleaning discharge to a local 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 dollars to the overall cost of a polluting spill.



Contractors with a Texas Pollutant Discharge Elimination System (TPDES) permit for construction sites that will disturb one acre or more of land may also face fines for not preparing a Stormwater Pollution Prevention Plan (SWP3), keeping required records or conducting self inspections to ensure that the SWP3 and erosion control structures are implemented correctly.



Our Water, Our Environment
Our Responsibility!



For More Information:

City of Abilene Stormwater Services Division

555 Walnut Street
(325) 676-6281

City of Abilene Environmental Recycling Center

2209 Oak Street
(325) 672-2209

Hazardous Materials Handling and Storage

City of Abilene Fire Department
(325) 676-6434

National Pollutant Discharge Elimination System (NPDES) Permits

U.S. Environmental Protection Agency (EPA)
Region 6: (214) 665-7523
Federal: (202) 564-9545

Texas Pollutant Discharge Elimination System (TPDES) Permits

Texas Commission on Environmental Quality (TCEQ)
Local: (325) 698-9674
State: (512) 239-4671

Utility Types and Locations

One Call Location Center
(800) 545-6005 (call 2 working days before you dig)

Waste Disposal Information

City of Abilene Solid Waste and Recycling Division
(325) 676-6053

Emergency Numbers

Abilene Fire Department (emergencies)	911
City of Abilene 24-hour Hotline	(325) 676-6000
TCEQ Emergency Response Center (24-hour)	(512) 463-7727 or (800) 832-8224