



Water is Life : Quality Matters



# HOW TO PROTECT YOUR WATER FROM SPILLED FUEL

**Fact Sheet 4**  
**Revised**  
**March 2012**

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Fuel spills and leaks pose a serious threat to human health and environmental quality. One gallon of gasoline can contaminate up to 1 million gallons of water. Cleanup of fuel-contaminated soil and water can be extremely difficult and expensive. It is best to take precautions to ensure that spills or leaks do not occur. This fact sheet provides basic guidelines for reducing the potential risk of water contamination from handling and storage of fuel such as diesel, gasoline, and home heating oil.

For additional information or reading materials, refer to contacts and references section at the end of this fact sheet.

## FUEL HANDLING

Small spills during fueling are bound to happen. Although fuel evaporates rapidly at the land surface it also readily seeps into the soil. Local geology and soil type determine how quickly fuel may reach groundwater supplies or runoff to nearby streams or lakes. Once in the groundwater, fuel contamination is often difficult to clean up. Even small spills or leaks in the same place over time are a potential threat to water resources. The cumulative results of many small spills over time can lead to big problems.

To protect water resources from fuel spills, take care to reduce any potential leaks and spills during fuel transfers. Always supervise fuel transfers from storage tanks to equipment, replace leaking or defective nozzles and use a can to catch any dripping that may occur after shutting off the fuel nozzle. To meet Utah state fire codes, always post a “No Smoking” sign and enforce a no smoking rule at the fuel handling and storage facility. Keep fuel pumps and nozzles secure from children and vandalism, and label each pump or nozzle as to the type of fuel dispensed.



### TAKE ACTION!

- Supervise fuel transfers from storage tanks to equipment.
- Replace leaking or defective nozzles.
- Install a breakaway and an automatic shutoff on the nozzle of each pump.

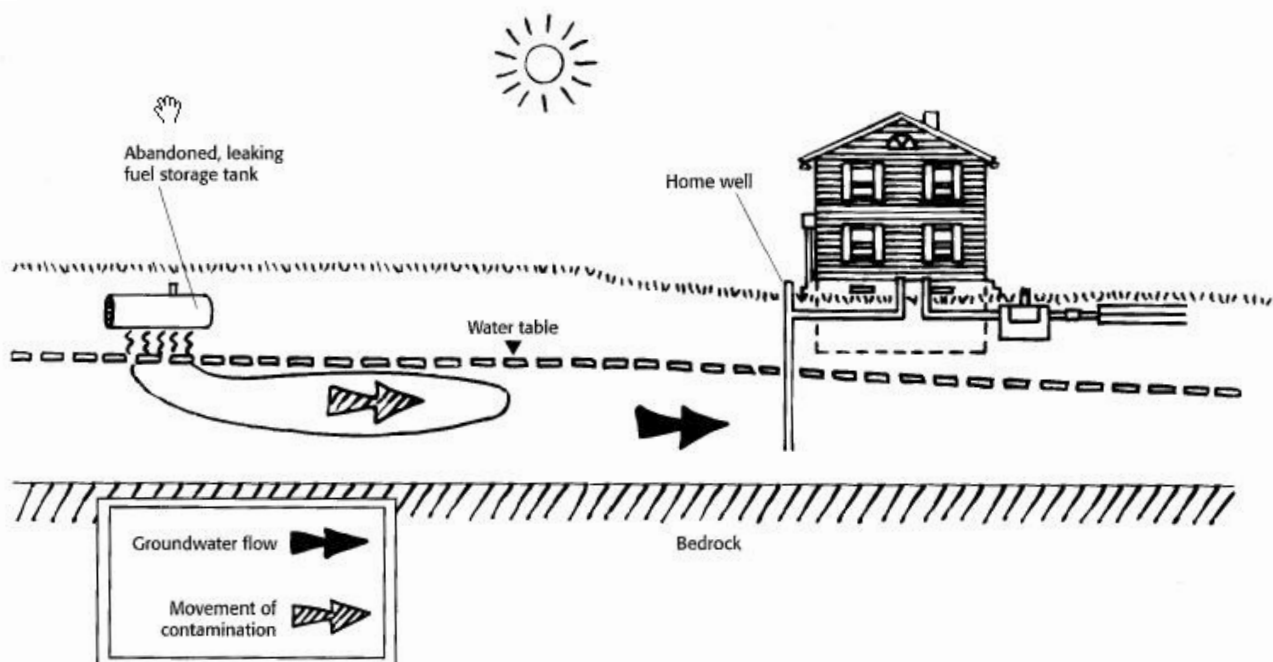
## ABOVEGROUND STORAGE TANKS (ASTs)

The use of above ground storage tanks (ASTs) is the preferred choice for storing gasoline, propane, heating oil, and diesel on farmsteads or acreages. Compared to underground tanks, ASTs provide easy access and greater opportunity to observe and monitor tanks for leaks. However, special care must be taken with ASTs to protect them from impact by farm equipment and personal vehicles. To protect against the rare event of an explosion, ASTs need to be placed as far as possible from livestock facilities and human dwellings. Choose a site where farm vehicles can easily maneuver for fueling.

## Recommendations on Locating an AST to Protect Ground and Surface Water

Locate fuel tanks as far as reasonably possible from wells. Generally, you should try to locate a new tank downslope and at least 250 feet from your well. Avoid areas with porous, corrosive or wet soils or sites that contain abandoned drainage tiles or previously disposed waste materials. Also avoid designated flood plain areas or areas where the water table is close to the surface.

The tank should not be in contact with bare soil. All tanks should be within a secondary containment system with sufficient holding capacity for the contents of the existing tank (or largest tank for multiple-tank facilities) plus a 10% freeboard.



# Safety Considerations for an AST

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Underground storage tanks should never be reused as aboveground storage tanks. This practice is not only illegal, but also dangerous. Your AST must comply with state and local rules for electrical safety and for fire prevention. Check with your local fire department for details on fire code. At a minimum, follow these safety recommendations for all ASTs:

1. Keep a fire extinguisher in close proximity.
2. Locate ASTs at least 50 feet from any building or combustible storage.
3. Label tank contents along with health and physical hazards.
4. Display a "No Smoking" sign.
5. Secure against vandalism or tampering.
6. If the AST is top-opening only, place tank on a non-combustible surface.
7. If the AST has gravity discharge, equip it with a heat-actuated shut-off valve at the discharge opening, and a self-closing valve at the fuel dispensing hose.
8. Use a light colored tank to avoid heating problems
9. Enclose wiring in a conduit.
10. Above ground piping must be made of steel and coated to prevent corrosion.
11. All piping within a dike must be above ground and must extend over, rather than through, the dike wall.

## **TAKE ACTION!**

Write a Spill Prevention Control and Countermeasure (SPCC) plan. It should be approved and certified by a registered professional engineer. The plan needs to be updated every three years. Check with your local fire department for details.

## Special Considerations

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In most cases, the installation of an AST with a capacity of less than 660 gallons does not require a permit. However, the location of an AST may put



environmentally sensitive waters at risk, and in these cases special precautions must be taken. Keep the following considerations in mind:

- Community water supplies are required by law to protect an area around their source from potential contaminants. If a proposed fuel tank is within a contamination zone for a community water supply, the Utah Division of Drinking Water has specific regulations for the construction of the tank. To find out if these regulations apply to you, contact the Division of Drinking Water.

- Tanks placed in environmentally sensitive areas, such as flood plains or areas with a shallow water table, may be subject to local rules and require special installation. For example, a double walled tank may be necessary in these situations because it provides greater protection than other tank designs. Contact the Utah Division of Environmental Response and Remediation (DERR) for more information about placing tanks in these areas.

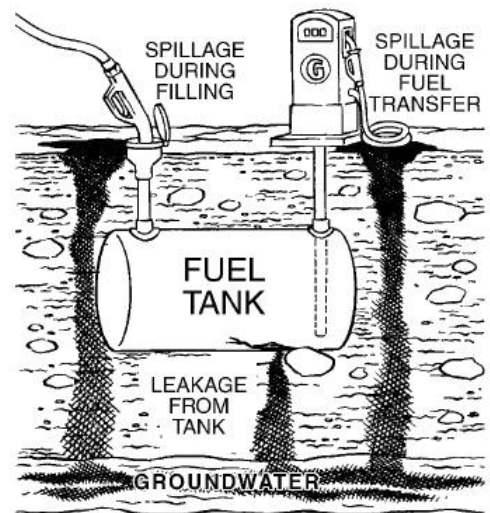
# UNDERGROUND STORAGE TANKS (USTs)

Underground storage tanks are no longer the preferred means of storing fuel on your farmstead or acreage. Anyone who has a UST should take special care that the tanks are in good condition and are not leaking. A primary factor in leaking tanks is age and type. Steel tanks need special corrosion protection prior to installation. Older tanks made of unprotected steel are subject to corrosion that weakens the tank walls and seams, eventually creating a leak. If you have a steel UST that is more than 15 years old, consider replacing the tank with a new underground storage tank or an aboveground storage tank.

## TAKE ACTION!

Check tanks regularly for leaks and keep good records about locations, age and construction of any tanks on your property.

Federal and state environmental regulations do not apply to farm or residential tanks which hold 1,100 gallons or less of motor fuel, are not used for commercial purposes, or for tanks storing heating oil to be used on the premises. Even if your underground storage tank is not covered by environmental regulations, you should take the precautions to prevent contamination of water resources. Make sure that the tank meets new tank standards. Avoid locating the tank near a water supply, where there is standing water, or where the water table is close to the surface at any time of the year. Consider installing a spill and overflow protection (such as a catch basin to collect



spills when the tank is filled) and an automatic shut-off or buzzer. Utah's Division of Environmental Remediation and Response (DERR) can provide more details.

Also, you must comply with fire code regulations for all USTs. Contact your local fire department for more information.

## Regulated Underground Storage Tanks

All USTs with a capacity greater than 1,100 gallons (in single or multiple-tank arrangements) are covered by state and federal environmental regulations.

These tanks must be registered with DERR, be monitored for leaks at least monthly with a DERR-approved leak detection method, and comply with approved corrosion protection requirements for tanks and piping. USTs also require a minimum set of basic requirements for spill and tank overflow prevention.



## MONITORING OF ALL TANKS, PIPES AND VALVES

Regular monitoring of fuel levels in your storage tanks helps detect leaks quickly. At a minimum, compare the volume of tank contents regularly with product delivery and withdrawal records to help detect leaks before major problems develop.

Remember most leaks result from piping failures. You can easily spot leaks in an AST by noting a fuel spot on the tank or dead vegetation on the ground below the tank.

### **TAKE ACTION!**

Check your pipes. A leak as small as one drop per second can release 400 gallons of fuel into the environment in one year.



Although unregulated USTs (less than 1,100 gallons) are not required to be monitored for leaks, it is still a very good idea to check for leaks at least once a year. If your tank is more than 15 years old, or if you don't know its age, make a special effort immediately to determine whether leaks exist or possible danger spots. Regulated USTs have monitoring requirements (see above) and must be fitted with leak detection systems.

## Testing for Leaks in Tanks With a Capacity of 1,100 Gallons or Less

You will need a gauging stick with a scale to one-eighth inch increments, a pencil, and a notebook.

1. Measure and record the depth of product at the beginning and end of a pre-defined time period (e.g. 24 hours) during which no fuel is being used.
2. Perform test several times to improve accuracy of the test.
3. If product level changes over the defined time period, check your tank for leaks.

## If You Find a Leak

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If you suspect a leak (due to suspicious smells, fumes, or loss of product), call the local fire department immediately. They can check your tank and piping to make sure it's safe. Remember, leaking tanks not only endanger our waters but create a serious risk of explosion.

Fuel leaks of less than 25 gallons that are cleaned up within 24 hours do not have to be reported to the DERR.

For all other leaks or spills, whether from an AST, a UST, or a vehicle-mounted tank, state law requires you notify the DERR UST Program within 24 hours of its discovery. DERR has a 24 hour hotline (801-536-4123) to report spills and leaks. Owners or operators of storage tanks are required to follow the instructions they receive and must take whatever actions are necessary to remedy the problem.

## Closing Tanks

~~Tanks no longer in use can cause problems for owners and operators many years later. They continue to corrode and, if they still contain gas or oil, will likely contaminate groundwater. Determine the location of any unused tanks on your property. Proper closure procedures must be followed to prevent groundwater contamination, fire, explosion, or other health and safety problems. Always notify the fire department before removing a tank to ensure it is safe to remove it, and to follow fire protection codes.~~

Any regulated underground tank which has not been used for 12 months or more must be removed from the property and properly disposed of in accordance with fire code requirements and DERR regulations. This requires pre-approval by DERR and the fire department, a site assessment, and supervision by a certified tank contractor.

## CONTACTS AND REFERENCES

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### FUEL SPILLS AND INCIDENTS

Spill Hotline: Division of Environmental Response and Remediation: (801) 536-4123.

National Response Center: Call toll free (800) 424-8802.

Local fire department (check county or city phone book).

EPA Oil Spill Program Information Line: Call toll free (801) 536-4123.

Report oil spills online at: <http://www.epa.gov/oilspill/oilhow.htm>.

### ABOVEGROUND STORAGE TANK REGULATIONS

Contact your fire marshal through your local fire department.

Environmental Protection Agency: (800) 424-9346.

### REGULATIONS FOR TANKS WITHIN CONTAMINATION RANGE OF COMMUNITY WATER SUPPLIES

Utah Division of Drinking Water: Source Protection Program: (801) 536-4200 or [http://drinkingwater.utah.gov/source\\_protection\\_intro.htm](http://drinkingwater.utah.gov/source_protection_intro.htm).

## UNDERGROUND STORAGE TANK

Division of Environmental Response and Remediation  
UST Compliance Section: (801)536-4100  
or on the web at:  
<http://www.undergroundtanks.utah.gov/>  
Environmental Response Homepage at  
<http://www.environmentalresponse.utah.gov/>  
Local contact information at  
[http://www.undergroundtanks.utah.gov/ust\\_contacts.htm](http://www.undergroundtanks.utah.gov/ust_contacts.htm)

EPA Office of Underground Storage Tanks Most  
Frequently Asked Questions on the web at:  
<http://www.epa.gov/oust/faqs/index.htm>

## MORE READING:

### UNDERGROUND STORAGE TANK REGULATIONS

*Keeping Utah Clean and Healthy, Fact sheet about DERR*  
[http://www.eq.state.ut.us/offices/ppa/news/fact%20sheets/  
DERR.htm](http://www.eq.state.ut.us/offices/ppa/news/fact%20sheets/DERR.htm)

*Overview of Utah's rules, forms and program for USTs*  
<http://undergroundtanks.utah.gov/ustcomp/utustsum.htm>

*Federal Regulations Regarding Underground Storage Tanks  
(40 CFR, part 280 and 281)*  
<http://www.epa.gov/oust/fedlaws/cfr.htm>

*Utah Administration Rules Concerning Underground Storage  
Tanks*  
[http://www.undergroundtanks.utah.gov/docs/R31120112\\_  
new\\_final.pdf](http://www.undergroundtanks.utah.gov/docs/R31120112_new_final.pdf)

### OTHER EDUCATIONAL MATERIALS ABOUT OIL SPILLS

*EPA Mid-Atlantic Oil Program* at  
<http://www.epa.gov/oilspill/eduhome.htm>

*Understanding Oil Spills and Oil Spill Response* at  
[http://www.epa.gov/osweroe1/content/learning/pdfbook.h  
tm](http://www.epa.gov/osweroe1/content/learning/pdfbook.htm)

### OTHER QUESTIONS?

Contact USU Extension's Water Quality Program:  
(435) 797-2580.  
or on the web at <http://extension.usu.edu/waterquality/>

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#### WE ACKNOWLEDGE THE CONTRIBUTIONS MADE BY THE FOLLOWING INDIVIDUALS:

Mike Allred, Thomas E. Bingham, Kitt Farrell-Poe, Roy Gunnell, Krista Kuester, Dean Maxwell, Stephen E. Poe, W.D. Robinson, Jay Roundy, Adam Siggler and Kyle Peterson Koyle.

Funding provided by USDA CSREES Water Quality Initiative Grant 99-EWQI-1-0542.

MAY 2005, PEER REVIEWED

# GLOSSARY

These definitions may help clarify some terms used in this Fact Sheet and may also help you make more accurate assessments when completing the Utah Farmstead Assessment for Ground Water and Surface Water Protection Survey 4 (Landowner's Survey: What's the Risk to your water from fuels?)

**CERTIFIED TANK CONTRACTOR:** A person certified by the state to install and repair fuel storage tanks. Contact Utah Division of Environmental Response and Remediation for a list of names.

**CORROSION:** Deterioration of a metallic material ("rust") due to a reaction with its environment.

**CORROSION PROTECTION:** Steel tanks can be protected by coating them with a corrosion-resistant coating combined with "cathodic" protection. Steel underground tanks can also be protected from corrosion if they are bonded to a thick layer of non-corrosive material, such as fiberglass-reinforced plastic. Also, the corrosion problem can be entirely avoided by using tanks and piping made completely of non-corrosive material, such as fiberglass.

**SECONDARY CONTAINMENT:** A system such as a sealed basin and dike that will catch and hold the contents of a tank if it leaks or ruptures.

**SPILL AND OVERFILL PROTECTION:** Spill protection usually consists of a catch basin for collecting spills when the tank is filled. Overfill protection is a warning or prevention of an overflow, such as an automatic shutoff or buzzer. These precautions can prevent a number of small releases over a very long period of time from polluting ground water.



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This publication is issued in furtherance of Cooperative Extension work. Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Jack M. Payne, Vice President and Director, Cooperative Extension Service, Utah State University.