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CLEAN BUSINESS IN A WATERSHED

The Scituate Reservoir Watershed Education Program

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Passing On Clean Water

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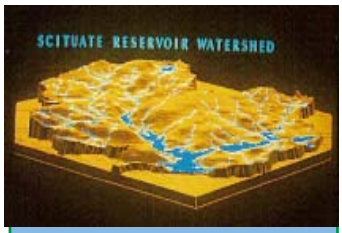

Above is a 3-D image of the Scituate Reservoir Watershed.

Portions of Foster, Glocester, Johnston and Scituate comprise this land area.

The Scituate Reservoir, lying in the lowest part of this land area, catches all water flowing over this watershed.

The Scituate Reservoir is a major source of drinking water in Rhode Island.

Customer awareness of all the services and goods a business offers can make the difference between steady customers and inconsistent customers.

Awareness is key.

Awareness: having or showing realization, perception, or knowledge.
(Merriam Webster's Collegiate Dictionary)

Awareness is a key element in your business' success.

The same is true for business in the Scituate Reservoir Watershed. Are you aware of the pollution you and your business associates may be unknowingly causing right now? Are you aware that your daily decisions can make a difference in the health of your own drinking water?

Research has shown that gasoline, oil, antifreeze and other engine fluids are some of the highest contributors to the degradation of water sources. Cars, chain saws, lawn mowers, go-karts, and other engines used around homes and businesses significantly impact drinking water quality.

Let this bulletin *increase your awareness* about engines and their effects on drinking water quality. Whether your business deals primarily with automobiles or other engines, or you simply use a lawn mower or chain saw at home, we hope you will become more cognizant of how your daily actions affect the water you are drinking, the quality of water your neighbors are drinking and the overall health of your watershed environment.

What's Driving Water Quality?

Part Two: Safely using gasoline and oil

Little drip here...Little drip there

A drip seems like such an insignificant thing. Although one drip may seem insignificant, consider how many drips may end up in the area where you fill your lawnmower's gas tank over the course of a month. Over time, those drips accumulate in your lawn and make their way into the groundwater system. Studies have shown that a mere ¼ cup of gasoline can contaminate a drinking water well.

Drips of oil, gasoline, antifreeze and other engine fluids are toxic to the environment. First, we need to be *aware* that dripping is occurring, then we can *prevent* the drips from reaching the ground. It is much easier to prevent drips of gas or oil from entering the ground, storm drain and possibly our drinking water supply than it is to remedy the aftereffects.
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WHAT'S IN A DRIP?

In **Clean Business in a Watershed, Volume 3 (Spring 2005)**, we published an article entitled, '*Local Drinking Wells Contaminated with TCE*'. This article discussed the findings of trichloroethylene (TCE) in Scitutate drinking water wells.

TCE and MTBE (Methyl tertiary-butyl ether) are chemicals found in gasoline-run engines. They are considered to be volatile organic compounds (VOCs). Chemicals such as these have a high vapor pressure and low water solubility, which makes them common groundwater and surface water contaminants. Studies have shown that a mere ¼ cup of gasoline can contaminate a drinking water well. When that figure is extrapolated throughout a watershed, there is also an alarming amount of surface water polluted.

Research shows that automotive fluids, roadway chemicals and oil are the leading sources of impairment to water sources. Diesel fuel, gasoline, oil, salts and other ice dissolving agents are listed by EPA (US Environmental Protection Agency) as the most significant sources of pollution found in highway runoff.

Although the state of RI does not require that drinking water from wells be tested for TCE or MTBE, studies show that within the small number that ARE tested, ONE out of FIVE (20%) contain trace amounts of MTBE.

These wells are not near a gas station.

This data indicates that your well (private or business) could be unknowingly contaminated with MTBE.

¼ cup of gasoline can contaminate a drinking water well.

* The above info was found in a detailed technical case study from DEM Waste Management. You can contact the DEM Waste Management Dept. for more information.

PREVENTING DRIPS...

Below are a few basic tips for maintaining a healthy environment, as well as healthy machinery. Machines can include cars, trucks, SUV's, go-karts, dirt bikes, chain saws, lawn mowers, leaf blowers, snow blowers, etc.

General Tips:

- Conduct engine maintenance or fill-ups more than 100 feet away from drinking water wells.
- Be very careful not to spill gasoline or oil onto the ground.
- Use a funnel when pouring liquids into engines.
- Do not overfill engine tanks.
- Make sure the fuel cap is properly replaced when fueling is complete.
- Promptly clean spills using an absorbent material that can swept up or picked up (i.e. activated charcoal or cat litter). Remember to properly dispose of absorbent material.
- Promptly fix leaks from machinery. Keep cars, trucks, lawnmowers, chainsaws, etc. maintained.
- NEVER wash spills into the street or storm drain.
- Avoid mixing or using pesticides, fertilizers, herbicides, degreasers, fuels and other pollutants near your well.

"How much is a *part per billion*, anyway?"

http://extoxnet.orst.edu/newsletters/n63_86.htm

"Even a minute concentration can add up to a sizable total amount of material when contained in a large sample. For example, consider the amount of material that would be involved in the amount of water used in the Los Angeles area (3,000,000 acre-feet/year) if some selected contaminants were present at a part per billion level."

ONE PPB IN 3,000,000 ACRE-FEET/YEAR WOULD AMOUNT TO:	
Substance	**Amount**
lead	Cast 1,000,000 bullets
chromium	Plate 50,000 car bumpers
mercury	Fill 4,000,000 rectal thermometers
phenols	250,000 bottles of Lysol
herbicide	Kill all dandelions in 100,000 lawns
insecticides	Fill 5,000,000 aerosol cans of bug killer
gold	Run the federal government for nearly 20 minutes or support 50 average families for eternity

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"The point of these calculations is to remind us that while low ppb quantities are usually not significant toxicologically, they can indicate the release of significant quantities into the environment."