Panhandle Health District Aquifer Protection

"Boots on the Ground"

Issue 3

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Understanding Eco-Terms

We have all visited sites with products described as biodegradable or environmentally friendly. Most likely these products were chosen with the best of intentions and are the less toxic choice, but it's wise to understand the significance and limits of the terms *environmentally friendly* and *biodegradable*.

A product may initially be considered environmentally friendly, but its classification may change after use. For example, a facility may choose to use an aqueous cleaner in its parts washer because it's less toxic than solvent cleaners. The aqueous solution exposes workers to fewer toxic chemicals and reduces the fire hazard.

But it's important to recognize that the wastewater generated during its use will most likely be considered hazardous. The wastewater may contain significant quantities of oil and grease, suspended solids, heavy metals and organics from the cleaning equipment. In this case, the wastewater generated would need to be disposed of following Best Available Techniques or Best Management Practices.

Environmentally friendly, eco-friendly, green and biodegradable are marketing terms that suggest products are harmless and consumers who use them are making an environmentally respectful choice.

These terms are not required to meet any specific criteria. The U.S. Environmental Protection Agency has deemed this language useless in determining whether a product is truly green. There is no international standard for the green concept, so the International Organization for Standardization considers such labels too vague to be meaningful.

The American Society for Testing and Materials defines biodegradable as "a degradation caused by biological activity, especially by enzymatic action, leading to a significant change in the chemical structure of the material." The Consumers Union, publisher of Consumer Reports magazine, maintains that there are no specific standards for the "biodegradable" claim and that no official organization exists to verify the claim.

However, the U.S. Federal Trade Commission says products should be marketed as biodegradable if they contain materials that "break down and decompose into elements found in nature within a reasonably short amount of time when they are exposed to air, moisture and bacteria or other organisms."

Still, the FTC acknowledges that even products appropriately labeled as biodegradable may not break down easily when buried under a landfill or not exposed to sunlight, air and moisture—key agents of biodegradation.

Also, it's important to understand that biodegradable products or

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Rathdrum Prairie/ Spokane Valley Aquifer Facts

Close to 1 billion gallons of water flow into and out of the Aquifer each day,

Spokane River provides about 49% of the Aquifer inflow and receives about 59% of the Aquifer outflow.

Human use of the Aquifer comprises 22% of the average Aquifer outflow.

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Who We Work With

- **Agricultural Chemical** (distributor, applicator)
- **Aircraft maintenance/ fueling**
- **Auto Body, Service, Supply**
- **Building Supply Retail**
- **Cleaning Service** (carpet)
- **Convenience Store without fuel**
- **Dry Cleaners**
- **Fabrication/Metal**
- **Farm and Feed Retail**
- **Fueling Site** (private fleet, convenience store, bulk storage, public cardlock)
- **Landscape Maintenance** (retail supply, wholesale supply, service, nursery, golf course)
- **Machine Shop**
- **Manufacturing**
- **Medical Facility** (on septic)
- **Metal Finishing** (plating, powder coating)
- **Print Shop**
- **Public Utilities** (electrical substations, hydroelectric site)
- **Road Maintenance** (dust control, de-icing, highway districts)
- **Small Engine Maintenance**
- **Surface Mining** (concrete, asphalt)
- **Vehicle Wash**
- **Wood Products**

Lowdown on De-Icers

The floodgates have opened, and de-icing fluids are flowing like never before. Starting in the mid 1990s, de-icing fluids became a popular alternative to street sanding. Highway districts, landscapers, golf courses and even construction companies pursuing snow removal contracts began to store and use de-icing fluids, which consist primarily of magnesium chloride.

Like its relative table salt or sodium chloride, magnesium chloride lowers the freezing temperature of water and helps melt ice and snow from our roadways, parking lots and sidewalks. It gained popularity as an alternative to the windshield-busting crushed basalt. Still, it has drawbacks. Magnesium chloride can accelerate corrosion on vehicles. Corrosion inhibitors are added to some solutions. Liquid de-icers lose their effectiveness in the low 20-degree range, which is one reason highway districts still keep sand in stock.

Perhaps the biggest drawback is the rising chloride levels in our drinking water. PHD's groundwater monitoring shows a steady increase in chloride levels since the mid 1990s, although concentrations are still far below drinking water standards.

A continual increase eventually could harm drinking water quality and the ecosystem.

Magnesium chloride and other de-icing fluids are considered 'critical materials' under PHD's rule governing the handling and storage of chemicals over the Rathdrum Prairie Aquifer. Because we intentionally apply these chemicals to the ground does not make poor storage and handling practices acceptable. De-icing with magnesium chloride follows a beneficial use doctrine: there is benefit to using it as prescribed, but there is no benefit to allowing it to come in contact with the ground in unintended ways. For example, hydrogeologists have thoroughly documented that point sources, such as spills and chronic leaks, flow straight down through our gravelly soils to our drinking water.

Most businesses that handle and store de-icing fluids are required to have secondary protection to prevent leaks in storage and during transfer. Spills and leaks should be captured with stormwater and reused. Careful handling and storage of de-icing fluids will help continue their unrestricted use. If you have questions about containment or use of these chemicals, please call Rick in the Aquifer Protection Program at 415-5215.

Secondary Maximum Contaminant Level = 250 mg/l

Range Seen in PHD's Monitoring Program = 2 to 6 mg/l

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ingredients are not always healthy or safe for the environment. DDT biodegrades to two compounds more toxic and dangerous than the DDT.

Our intent is not to discourage businesses from using these products or ingredients but to encourage them to become informed consumers. If you have questions about specific ingredients, practices or disposal requirements, please contact PHD at 415-5220.