Education and Outreach for Source Protection

Hazardous Liquids

Dense Non-Aqueous Phase Liquids (DNAPLS) and Organic Solvents

Audiences	Key Content

All Audiences	• Some common household products contain liquids that can be harmful to our health and drinking water. Ontario's Clean Water Act identified two groups of hazardous liquids that may put our drinking water sources at risk: dense non-aqueous phase liquids (DNAPLs) and organic solvents.
	• DNAPLs are liquids that are denser than water and sink down into the ground, polluting water sources. Organic solvents are the most commonly used DNAPL. Organic solvents are liquids made from oil. Organic solvents are used to dissolve other substances (e.g., paint remover).
	• These hazardous liquids may be in products you use regularly, for example:
	  ○ paints, stains and coatings, paint removers or strippers, wood treatment products, nail polish removers, spot removers and rug-cleaning fluids, adhesives, batteries, printing inks, cleaning and degreasing products and pesticides.
	• A spill or leak from the handling or improper storage of hazardous liquids:
	  ○ could contaminate our drinking water sources;
	  ○ be difficult and costly to clean up; complete cleanup is considered impossible;
	  ○ could cause short and long term health effects.
	To prevent a spill or leak, hazardous liquids should be stored in sealed containers with secure lids.
	• Avoid or minimize the use of hazardous liquids by using products that are naturally occurring or water based, such as vinegar.
	• If products are labelled as flammable, corrosive or hazardous

	they could harm your health and drinking water.
	• There are many product lines that are safer for your health and the environment. Use these best practices:
	  ○ Read the label. Look for words that indicate the product may contain harmful substances (danger, caution; poison). Choose products without warnings that the product could be harmful.
	  ○ Look for products containing naturally occurring or plant-based materials.
	  ○ Choose water-based, heavy duty detergent cleaners for the removal of dirt and grease on mechanical equipment and parts.
	  ○ Choose solvents that are not made from petroleum.
	  ○ Use plain vinegar, baking soda and borax.
	• If alternative products cannot be found, only buy the amount you need. Do not dispose of hazardous liquids in to your garbage. Visit makethedrop.ca to find your nearest municipal disposal site for hazardous materials.
	• Always use the safest product that will get the job done.

Businesses, Industrial and Commercial Chemical Use	• Typical uses of hazardous liquids include: dry cleaning, metal degreasing, pharmaceutical production, timber treatment, pesticide formulations, transformer coolants, and other chemical applications. • You may be required to develop a risk management plan. This involves working with the local Risk Management Official to document measures that would minimize the risk of a spill or leak. Include in your risk management plan new procedures or upgrades that would help ensure drinking water sources are protected.

RESOURCES

Using the resources below you can find information about hazardous liquids, why they have been identified as threats to drinking water sources and what to do to avoid or minimize these threats.

TECHNICAL BULLETIN: DNAPLS AND ORGANIC SOLVENTS (PIBS # 8521E)	
Link Author Date Published Notes	DNAPLS and organic solvents (PIBS # 8521E) Ministry of the Environment and Climate Change August 2011 Provides a clarification on the Ontario Ministry of the Environment and Climate Change classification of certain chemicals as DNAPLs and organic solvents for the drinking water threats related to the handling and storage of these chemicals.
FACTSHEET: KEEPING CHEMICALS OUT OF OUR DRINKING WATER SOURCES	
Link Author Date Published Notes	Keeping Chemicals Out of Our Drinking Water Sources Ausable Bayfield Maitland Valley Drinking Water Source Protection Region 2009 Explains the DNAPLs and what type of chemicals are threats, and talks about the importance of proper disposal practices for hazardous waste to keep toxic substances away from water sources.
ORANGE DROP PROGRAM [UNDER THE AUTHORITY OF THE WASTE DIVERSION ACT, 2002 (WDA)]	
Link Author Date Published Notes	http://www.makethedrop.ca Stewardship Ontario N/A A program for hazardous and special waste that provides accessible collection sites for wastes such as paints, solvents, single-use batteries and pesticides.

OTHER INFORMATION

- Pollution Probe*:
  - Primer on Toxic Substances, 2012
  - Toxic Substances: What They Mean for You

- Environment Canada*
  - Groundwater Contamination

    - Guide to Classification: Generic types of potentially hazardous waste

- Quinte Region
    - What About Dangerous Chemicals?

- Sault Ste. Marie Region Source Protection Area*
    - What are DNAPLs and why are they a threat to drinking water?

- South Georgian Bay, Lake Simcoe Source Protection Region
    - Dense, Non-Aqueous Phase Liquids (DNAPLs)

*This organization requires written credit for use of excerpted materials.

For inquiries about this information sheet contact:

Chris MacLean, Senior Advisor Stakeholder Relations
Ontario Ministry of the Environment and Climate Change
3rd floor, 40 St. Clair Avenue West, Toronto, ON M4V 1L5
416-212-1334

Ontario Ministry of the Environment and Climate Change
Public Information Centre
2nd Floor, Macdonald Block, 900 Bay Street, Suite M2-22
Toronto, ON M7A 1N3
Tel: 416-325-4164; Toll-free: 1-800-565-4923; TTY 1-855-515-2759