

**Proper handling and disposal of unwanted and unused chemicals is important, at home and at work. This is especially important if you live in a vulnerable area for drinking water.**

### Dense non-aqueous phase liquids (DNAPLs)

Dense non-aqueous phase liquids, or DNAPLs (see table below), are chemicals that are denser than water and can sink into the ground and groundwater. Even small levels of DNAPLs can be harmful to human health and some are known as human carcinogens. If spilled, DNAPLs can sink in aquifers and contaminate deep groundwater sources that are often

used for municipal wells. DNAPLs are very difficult to clean out of municipal water sources. For these reasons, the Clean Water Act pays special attention to DNAPLs.

DNAPLs have been found in products that have been used in commercial and industrial applications. Below is a list of commonly used DNAPLs that are a threat to municipal drinking water.



COMMON NAME	CHEMICAL	COMMON USES
1,4-dioxane	1,4-dioxane	degreasing, manufacturing
PAH	poly aromatic hydrocarbons	wood preservatives, pharmaceuticals, dyes, asphalt products
PCE (Perc)	tetrachloroethylene, perchloroethylene	dry cleaning, metal cleaning, manufacturing
TCE	trichloroethylene	metal cleaning, dry cleaning, paint removers, adhesives
VCM	vinyl chloride	pipes, wire coating, vehicle upholstery, kitchenware
TCM	chloroform	pharmaceuticals, fats, oils, rubber, resins
CTC	carbon tetrachloride	fats, oils, laquers, varnishes, waxes, resins, seed oils
DCM	dichloromethane, methylene chloride	paint stripper, metal cleaning, pharmaceuticals, aerosols
TCA	trichloroethane	metal/plastic cleaning, adhesives, aerosols, inks, fats, waxes
PCP	pentachlorophenol	herbicide, insecticide, fungicide, algaecide, wood preservative

### Organic Solvents

Organic Solvents are liquid organic compounds that dissolve solids, gases, and liquids and are also a risk to municipal water. They are used to dissolve oils, fats, resins, rubber, and plastics. Organic solvents are found in paints, varnishes, lacquers, adhesives, glues, and degreasing/cleaning agents. In commercial settings, they are used to create dyes, polymers, plastics, textiles, printing inks, agricultural products, and pharmaceuticals.

Many organic solvents are recognized as carcinogens, neurotoxins, and reproductive hazards. Solvents such as chloroform evaporate quickly from surface water, but can leach into ground water from spills or leaks and remain for years. Carbon Tetrachloride is a known human carcinogen.

# FACT SHEET 10

## CHEMICAL HANDLING AND STORAGE

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### In Wellington County

Wellington County is covered by five Source Protection Plans. This means that requirements will vary based on your location within Wellington County.

Activities are regulated by education, prohibition or a risk management plan.

Storage of some hazardous chemicals is regulated in the following zones, depending on the chemical, its volume, the proximity to the well and whether the storage is new or existing.

Generally, DNAPLs are regulated in WHPA-A, WHPA-B, WHPA-C zones regardless of vulnerability score and TCE ICA (Trichloroethylene Issue Contributing Area). Similarly, organic solvents are regulated in a WHPA-A and WHPA-B with a vulnerability score of 10.

Wellhead Protection Areas (WHPA) are used in conjunction with vulnerability scores, which are measured from 2 (low)



whether the activity is new or was existing prior to the Source Protection Plan and distance to the municipal well.

### Proper Disposal

Make sure you use these, and all, chemicals carefully and dispose of them properly. More information on proper household hazardous waste disposal can be

found at [www.wellington.ca/sws](http://www.wellington.ca/sws). For more information on how to manage hazardous waste materials at work, go to [www.ontario.ca](http://www.ontario.ca) and search “hazardous waste.”

- **WHPA-A** – 100m around the wellhead
- **WHPA-B** – 2-year time-of-travel to a wellhead
- **WHPA-C** – 5-year time-of-travel to a wellhead
- **TCE ICA** – Area of known concern for trichloroethylene

This regulation comes through education, prohibition or a risk management plan, which sets requirements to manage the chemicals. How the chemicals are regulated varies between Source Protection Plans,

found at [www.wellington.ca/sws](http://www.wellington.ca/sws). For more information on how to manage hazardous waste materials at work, go to [www.ontario.ca](http://www.ontario.ca) and search “hazardous waste.”

### For more information, contact:

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Or your local municipal office.

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