



LIFE ON THE BAY

A STEWARDSHIP GUIDE FOR
EASTERN GEORGIAN BAY
AND INLAND LAKES



United Nations
Educational, Scientific and
Cultural Organization



GEORGIAN BAY
BIOSPHERE
MNIDOO GAMII

Worksheet #9 – Chemical Storage & Handling

Use this worksheet to learn about best management practices for household fuels and chemicals.

Why Should You Be Concerned?

- Petroleum products contain toxic compounds such as benzene, which can cause cancer.
- Some toxic chemicals are colourless and odourless, and can therefore go undetected in water.
- Contaminated water or soil greatly devalues property and is very expensive to clean up. Clean up may not be possible in some cases.
- A property owner can be held liable for contaminating a water source.
- Vapours from some chemicals such as fuels can ignite or cause explosions.
- Pesticides have been found in amounts below the tolerance levels set by the government in Ontario's drinking water. The effects of repeated exposure to small amounts of pesticides over a long period of time are unknown. Chronic health problems may not appear for many years.

What Can You Do?

1. Select non-toxic or lower toxicity chemicals to suit your purposes, research what options might be best.
2. Avoid storing chemicals. Buy only the amount you need. If you do need to store chemicals, make sure you have a safe area in which to do so. Contact your local municipality to learn how you can safely dispose of empty chemical containers and rinse water.
3. Never store fuel or any chemical on your property where it may come in contact with water.
4. Read and follow instructions carefully. Note if weather conditions can affect application of a product.
5. Never pour leftover chemicals down the drain, storm sewer, or into open water.

Chemical Storage & Handling: How Do You Rate?

Topic	Best 4	Good 3	Fair 2	Poor 1	Your Rating
FUEL CHEMICALS					
1. Vehicles and machinery	Regular checks to ensure vehicles and machinery are not leaking.		Irregular checks to ensure vehicles and machinery are not leaking.	Never check to ensure vehicles and machinery are not leaking.	<input type="checkbox"/>
	Any fluid spills are cleaned up immediately. Rags are disposed of appropriately.	Any fluid spills are cleaned up immediately.	Some fuel spills are cleaned up immediately.	Drips and spills are not cleaned up.	<input type="checkbox"/>
	Used oil, antifreeze, and other wastes are appropriately recycled.	Used oil, antifreeze, and other wastes are disposed of at landfill.	Used oil, antifreeze, and other wastes are allowed to accumulate on your property.	<i>Used oil, antifreeze, and other wastes are dumped down the storm sewer, in a ditch, or on the ground.</i>	<input type="checkbox"/>
	No unused or decommissioned vehicles on the property.			Unused or decommissioned vehicles on the property.	<input type="checkbox"/>
	No dirty car parts, wastes, or chemicals.	Dirty car parts and vehicle wastes/chemicals are kept out of reach of stormwater runoff.	Dirty car parts and vehicle wastes or chemicals are left on unpaved areas outside.	<i>Car parts and vehicle wastes or chemicals are left near watercourses.</i>	<input type="checkbox"/>

*These conditions may violate provincial legislation or municipal bylaws.

Topic	Best 4	Good 3	Fair 2	Poor 1	Your Rating
FUEL STORAGE					
2. Portable fuel storage	All fuel is used up regularly so that storage is not required anywhere on the property.	A minimal amount of fuel is stored in safe, approved, original-sale, and clearly labelled containers. Liquid fuel containers have a spout to prevent spills.	Fuel is stored in safe, approved, original-sale, and clearly labelled containers.	Fuels are stored in unmarked, open, or unapproved containers.	<input type="checkbox"/>
	Distance between petroleum storage and the nearest surface water is greater than 150 m (500 ft).	Distance between petroleum storage and the nearest surface water is 61-150 m (200-500 ft).	Distance between petroleum storage and the nearest surface water is 30-60 m (100-199 ft).	<i>*Distance between petroleum storage and the nearest surface water is less than 30 m (100 ft).</i>	<input type="checkbox"/>
	Distance between petroleum storage and well(s) is greater than 90 m (300 ft).	Distance between petroleum storage and well(s) is 24-90 m (76-300 ft) for a drilled well or 47-90 m (151-300 ft) for a bored/dug well.	Distance between petroleum storage and well(s) is 15-23 m (50-75 ft) for a drilled well or 30-46 m (100-150 ft) for a bored/dug well.	<i>*Distance between petroleum storage and well(s) is less than 15 m (50 ft) for a drilled well or 30 m (100 ft) for a bored/dug well.</i>	<input type="checkbox"/>

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Topic	Best 4	Good 3	Fair 2	Poor 1	Your Rating
ABOVE GROUND FUEL TANK STORAGE					
3. Gasoline and diesel fuel tanks	No fuel tanks are present above or below ground anywhere on the property.	All tanks are made of steel and have a protective, anti-corrosive coating, and are ULC approved.		<i>*Steel tank with no protective coating, fiberglass tank, or tank that is not ULC approved.</i>	<input type="checkbox"/>
	Tanks are regularly checked for leaks.		Tanks are tested monthly for leaks.	Tanks are not checked for leaks.	<input type="checkbox"/>
	The water table is located more than 3 m (10 ft) below the surface, under the fuel tank.		The water table is located consistently 1.5 m (5 ft) to 3 m (10 ft) below the surface, under the fuel tank.	The water table is located consistently less than 1.5 m (5 ft) below the surface, under the fuel tank.	<input type="checkbox"/>
	Inactive tanks are decommissioned and properly removed.			Inactive tanks are abandoned.	<input type="checkbox"/>
	Tank sites are checked for contamination. If found, it is immediately reported.			Tank sites are not checked for contamination. If found, not immediately reported.	<input type="checkbox"/>

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Topic	Best 4	Good 3	Fair 2	Poor 1	Your Rating
ABOVE GROUND FUEL TANK STORAGE					
4. Heating oil tanks	All types of tanks are located more than 3 m (10 ft) from any building.	Tanks with a capacity of less than 2,500 L (550 gal) are located 3 m (10 ft) or more from any building.		Fuel tank is located inside a building.	<input type="checkbox"/>
				<i>*Tanks with a capacity of greater than 2,500 L (550 gal) are located less than 1.5 m (5 ft) from a building.</i>	
	Tanks are ULC approved, monitored for leaks, and proper vent pipe is used.			<i>*Tanks are not ULC approved, not monitored for leaks, and/or no vent pipe is used.</i>	<input type="checkbox"/>
	Protective coating maintained.			<i>Protective coating not maintained.</i>	
	Tank is less than 5 years old.	Tank is less than 10 years old.	Tank is less than 20 years old.	Tank is more than 25 years old, or the age of the tank is unknown.	<input type="checkbox"/>
	Fuel delivery system between fuel storage and the appliance is installed by a registered contractor and inspected annually for leaks.			<i>*Fuel delivery system between fuel storage and the appliance is not installed by a registered contractor and/or is not inspected annually for leaks.</i>	<input type="checkbox"/>

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Topic	Best 4	Good 3	Fair 2	Poor 1	Your Rating
HOUSHOLD CLEANERS AND NON-FUELS					
5. Cleaning products	All household cleaning products are non-toxic and non-harmful to humans. Minimal quantities are used.	Most household cleaning products are non-toxic and non-harmful to humans.	Typical chemical cleaners are used properly. Minimal quantities are used.	No consideration given to a product's toxicity. More than is necessary is used.	<input type="checkbox"/>
6. Total amount of non-fuel chemicals stored	No chemicals are stored at any time.	Chemicals are not stored longer than the immediate use period.	Small amounts of chemicals are stored for longer than the immediate use period.	Large quantities of chemicals are stored for longer than immediate use period.	<input type="checkbox"/>
7. Distance from chemical storage to nearest water source	Greater than 150 m (500 ft).	60-150 m (200-500 ft).	30-60 m (100-199 ft).	Less than 30 m (100 ft).	<input type="checkbox"/>
8. Distance from chemical storage to well	Greater than 90 m (300 ft).	23-90 m for a drilled well (76-300 ft) or 46-90 m for a bored/dug well (151-300 ft).	15-23 m for a drilled well (50-76 ft) or 30 -45 m for a bored/dug well (100-150 ft).	Less than 15 m for a drilled well (50 ft) or less than 30 m for a bored well (100 ft).	<input type="checkbox"/>
9. Chemical solution mixing	Chemicals are mixed in well-ventilated areas, on an impervious surface, and far from any open drain or open water source.			Chemicals are not mixed in well-ventilated areas, not on an impervious surface, and/or mixed close to an open drain or open water source.	<input type="checkbox"/>

Topic	Best 4	Good 3	Fair 2	Poor 1	Your Rating
HOUSEHOLD CLEANERS AND NON-FUELS					
10. Chemical storage area and containers	Stored in a waterproof, locked cabinet or storage container. The container itself is stored in a garage.	Stored in a garage or shed with a concrete floor that does not contain any drains.		Stored with human or animal food, in a residence, and/or in a garage or shed with a concrete floor that contains a drain.	<input type="checkbox"/>
	Shed with a concrete floor that does not contain any drains.				
	Sill installed in the cabinet to contain any spills.	No sill installed in the cabinet.		No sill installed in the cabinet. <i>*Garage or shed has a floor drain that leads to anything other than a municipal sewer.</i>	<input type="checkbox"/>
	Garage or shed is well ventilated to outside.			Garage or shed is not ventilated to outside.	<input type="checkbox"/>
	Emergency numbers are posted nearby.			No emergency numbers are posted nearby.	<input type="checkbox"/>
	All chemicals are in clearly marked containers.			Containers not labelled.	<input type="checkbox"/>
	Chemicals are used before the expiration date.			Chemicals are stored or used beyond expiration date.	<input type="checkbox"/>

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Topic	Best 4	Good 3	Fair 2	Poor 1	Your Rating
HOUSEHOLD CLEANERS AND NON-FUELS					
11. Return, rinsing, and disposal of chemical containers	Use of returnable or refillable containers.	Triple/pressure rinsed containers or empty bags taken to a municipal landfill.	Appropriate disposal of triple/pressure rinsed containers.	<i>*Inappropriate disposal of unrinsed containers including burning them.</i>	<input type="checkbox"/>
	Rinse water is used as per label instructions.	Rinse water is used as per label instructions.	Rinse water is allowed into septic system or storm drain.		
12. Emergency plan and clean up equipment for spills	Emergency plan easily accessible, outlining actions to be taken in case of spill, leak, fire, or explosion.	Emergency plan easily accessible, outlining actions to be taken in case of spill, leak, fire, or explosion.	Emergency phone numbers are posted nearby.	No emergency plan prepared. No spill cleanup equipment is ready nearby.	<input type="checkbox"/>
	Cleanup equipment is available.		General plan in case of emergency.		
DISPOSAL OF CHEMICALS					
13. Disposal of hazardous chemicals or materials	No unused vehicle batteries are stored on the property.			Vehicle batteries are stored on the property.	<input type="checkbox"/>
	Disposal of hazardous materials is unnecessary because the appropriate amount is purchased and used.	Leftover hazardous substances are given to others in proper and clearly labelled containers for their appropriate use as soon as possible.	Chemical waste is properly disposed of at a hazardous waste facility.	<i>*Hazardous substances are poured down the drain, on the ground, burned, or taken to a landfill.</i>	<input type="checkbox"/>
	Expired household batteries are taken to a hazardous waste facility or a retail store that recycles them.		Expired household batteries are put in the garbage and taken to a landfill.		Expired household batteries are not disposed of.

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Helpful Hints

Prevention of Chemical Spills

- Keep your vehicles regularly serviced to check for oil, antifreeze, and gas leaks.
- Avoid storing chemicals on your property. Purchase only what you will use and properly dispose of any containers.
- Follow proper storage and handling of chemicals to reduce the likelihood of spills or leaks. If a spill or leak occurs, report it immediately.
- If you have leftover chemicals such as paint or turpentine, ask your neighbours or friends if they need it for a current project or return it to a store that collects used paints.



Hazardous Household Chemicals

Consult your local waste management site to determine how to properly dispose of hazardous household waste. Refer to hazard warning labels on the product or consult the supplier to determine safe handling. All chemicals listed below can pose a threat to human and environmental health if improperly used or disposed of. Refer to the resource list for additional information.

- **Vehicle maintenance chemicals:** antifreeze, oil, gasoline, grease, transmission fluid, solvents, engine cleaners, lead-acid batteries, tire cleaners, rust removers, aerosol car paint, primers.
- **Building and equipment maintenance products:** strong acids or bases, oils, paints, primers, aerosols, stains, finishes, sealants, lubricants, adhesives, water repellants, solvents, degreaser, paint thinner, varnishes, wood polish, wood floor cleaner.
- **Household items:** artists paint, lighter fluid, household batteries, shoe polishes, mothballs, solvent-based laundry products, pest control chemicals.
- **Pesticides, Insecticides, and Fungicides**

Resource List

Government

- Report Pollution and Spills
www.ontario.ca/page/report-pollution-and-spills
- Safe Use of Household Chemicals
www.canada.ca/en/health-canada/services/home-safety/household-chemical-safety.html
- Types of Chemicals and Pollutants
www.canada.ca/en/health-canada/services/chemicals-product-safety.html

Stewardship & Conservation

- Call2Recycle Battery Recycling
www.call2recycle.ca/ontario
- Household Hazardous Waste Recycling
www.productcare.org/products/hhw/ontario
- Paint Recycling
www.productcare.org/products/paint/ontario
- Underwriters Laboratories of Canada (ULC)
<https://canada.ul.com>
- Rice, K. (2018). 483 Non-Toxic DIY, Health, Beauty, and Household Recipes to Replace the Chemicals in your Life (eBook).

Thank You Miigwech

The Georgian Bay Mnidoo Gamii Biosphere (GBB) is a community-based organization that builds capacity for regional sustainability in eastern Georgian Bay.

The GBB is a non-profit registered Canadian charity governed by a Board of Directors.

For more information, please visit:

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