

10.9 FUEL

Definition

The handling and storage of fuels is a prescribed drinking water threat under O. Reg. 287/07 under the *Clean Water Act, 2006*. Fuels include diesel, kerosene and hydrocarbon fuel (e.g., gasoline). The main activities that pose a threat to drinking water sources includes the handling of liquid fuel in relation to its storage and the storage of fuel. The types of fuel storage facilities include:

- bulk plants or facilities where fuels are manufactured or refined;
- permanent or mobile retail outlets;
- marinas;
- cardlocks/keylocks;
- private outlets (e.g., public works yard, contractor yard);
- farms; and
- furnace oil tanks for home and business heating purposes.

Most of these storage facilities are defined in O. Reg. 213/01 (Fuel Oil) or O. Reg. 217/01 (Liquid Fuels) which are made under the *Technical Standards and Safety Act, 2000* as regulated by the Technical Standards and Safety Authority (TSSA). Facilities where fuel is manufactured or refined are not included in the TSSA Regulations because they are regulated under the *Environmental Protection Act, 1990* and *Ontario Water Resources Act, 1990*.

Why is Fuel a Threat to Drinking Water Sources?

A number of chemicals from the handling and storage of fuel could make their way into drinking water sources. The Ministry of the Environment and Climate Change's *Tables of Drinking Water Threats* identifies the following sub-threat activities:

- The handling of fuel (see circumstances #112-191)
- The storage of fuel (see circumstances #1289-1408)

The Ministry of the Environment and Climate Change’s *Tables of Drinking Water Threats* identifies the following chemicals as potential concerns:

- Benzene, Toluene, Ethylbenzene and Xylene (referred to as BTEX)
- Petroleum hydrocarbons F1 to F4 (referred to as PHC)

BTEX compounds have strong odours and tastes, which generally discourages any accidental consumption of drinking water. However, benzene is a known carcinogen, and some research has suggested that ethylbenzene may be carcinogenic and produce birth defects. BTEX is a non-aqueous phase liquid that does not easily dissolve into water and persists in the environment. It can lead to contamination of groundwater over a long period of time and the BTEX contaminated water can travel over long distances. Petroleum hydrocarbons can cause an array of negative health effects to the reproductive, respiratory, immune and nervous systems and can also harm the kidneys, liver, skin, eyes, and blood. PHCs may also affect the odour, taste, and appearance of water. The assessment of potential threats to drinking water sources from handling and storage of fuel is dependent on the location; the chemicals of concern in the fuel; whether it is stored above, below or partially below grade; the type of facility where it is stored; and the quantity stored.

See **Table 10-11** for when and where the handling and/or storage of fuel may be a significant drinking water threat. Note: to determine if a specific activity is a significant drinking water threat consult the *Tables of Drinking Water Threats* for the specific circumstances that must be met for the activity to be a threat.

Prescribed Drinking Water Threat	Fuel Threat Sub-Category	Area and Vulnerability Score (VS)
The handling and storage of fuel	The handling of fuel	<ul style="list-style-type: none"> • WHPA-A • WHPA-B (VS = 10) • WHPA-E (VS = 10)
	The storage of fuel	<ul style="list-style-type: none"> • WHPA-A • WHPA-B (VS = 10) • WHPA-E (VS = 10)

Table 10-11: When/where fuel may be a significant drinking water threat

Policy ID	Threat Description	Implementing Body	Legal Effect	Policy	Where Policy Applies	When Policy Applies	Related Policies	Monitoring Policy
FUEL-1	Handling and Storage of Fuel (Municipal Wellheads)	MOECC	C	<p>Prescribed Instrument</p> <p>Where the handling and storage of fuel at a municipal wellhead is in an area where the activity is, or would be, a significant drinking water threat, drinking water licences under the <i>Safe Drinking Water Act</i> shall be reviewed or established to ensure appropriate terms and conditions are included so that the activity ceases to be, or does not become, a significant drinking water threat in any of the following areas:</p> <ul style="list-style-type: none"> • WHPA-A (existing, future); or • WHPA-B (VS = 10) (existing, future); or • WHPA-E (VS = 10) (existing, future). 	See Maps 1.1 - 1.21	<p>Future: Immediately (T-3)</p> <p>Existing: 3 years (T-1)</p>	GEN-3	MON-4
FUEL-2	Handling and Storage of Fuel (Aggregate Extraction Sites)	MNRF	C	<p>Prescribed Instrument</p> <p>1) The handling and storage of fuel at an aggregate extraction site shall be prohibited where the activity would be a significant drinking water threat in any of the following areas:</p> <ul style="list-style-type: none"> • WHPA-A (future); or • WHPA-B (VS = 10) (future); or • WHPA-E (VS = 10) (future). 	See Maps 1.1 - 1.21	<p>Future: Immediately (T-3)</p>	N/A	MON-4
				<p>2) Where the handling and storage of fuel at an aggregate extraction site is in an area where the activity is a significant drinking water threat, the license, site plan or permit that governs the activity shall be reviewed to ensure appropriate terms and conditions are included so that the activity ceases to be a significant drinking water threat in any of the following areas:</p> <ul style="list-style-type: none"> • WHPA-A (existing); or • WHPA-B (VS = 10) (existing); or • WHPA-E (VS = 10) (existing). 		<p>Existing: 3 years (T-1)</p>	GEN-3	MON-4

Policy ID	Threat Description	Implementing Body	Legal Effect	Policy	Where Policy Applies	When Policy Applies	Related Policies	Monitoring Policy
FUEL-3	Handling and Storage of Fuel (Liquid Fuel and Fuel Oil in Non-Residential (includes ICI, Farm), Multi-unit Residential and Small Business in quantities ≥2500 litres above or below grade)	RMO	G	<p>Part IV, s.57, s.58</p> <p>Where the handling and storage of liquid fuel and fuel oil at non-residential properties, multi-unit residential properties or small businesses (in quantities ≥ 2500 litres above or below grade) is in an area where the activity is, or would be, a significant drinking water threat, the following actions shall be taken:</p> <p>1) The handling and storage of fuel is designated for the purpose of s.57 under the <i>Clean Water Act</i>, and is therefore prohibited where the threat would be significant in any of the following areas:</p> <ul style="list-style-type: none"> • WHPA-A (future); or • WHPA-B (VS = 10) (future); or • WHPA-E (VS = 10) (future). 	See Maps 1.1 - 1.21	Future: Immediately (T-5)	GEN-1	MON-2
			H	<p>2) The handling and storage of fuel is designated for the purpose of s.58 under the <i>Clean Water Act</i>, requiring risk management plans, where the threat is significant in any of the following areas:</p> <ul style="list-style-type: none"> • WHPA-A (existing); or • WHPA-B (VS = 10) (existing); or • WHPA-E (VS = 10) (existing). <p>Without limiting other requirements, risk management plans shall incorporate appropriate provisions of Ontario Regulations 213/01 and 217/01 and their codes, best management practices and standards as amended from time to time to ensure the activity ceases to be a significant drinking water threat.</p>		Existing: 1 year/ 5 years (T-6)	GEN-1 GEN-2	MON-2
		SPA	E	<p>3) The Source Protection Authority shall:</p> <p>a) request inspection reports from the Technical Standards and Safety Authority (TSSA) on Private Fuel Outlets (PFOs) in areas where the handling and storage of fuel is a significant threat as requested by the SPA; and</p> <p>b) provide this information to the Risk Management Official to aid in prioritizing the development of the risk management plans for those that pose the greatest risk first; and</p> <p>c) provide to TSSA any data about leaks and other concerns observed, as they relate to TSSA's mandate to enforce O. Reg. 213/217 (as amended) and their corresponding codes, at PFOs from risk management officials or through SPA staff work that would support TSSA's enforcement of regulatory requirements for PFOs.</p>		Existing: 180 days (T-14)	N/A	MON-3

Policy ID	Threat Description	Implementing Body	Legal Effect	Policy	Where Policy Applies	When Policy Applies	Related Policies	Monitoring Policy
FUEL-4	Handling and Storage of Fuel (Liquid Fuel and Fuel Oil in Non-Residential (includes ICI, Farm), Multi-unit Residential, Residential, and Small Business)	Municipality	E	<p>Education and Outreach</p> <p>1) The municipality shall prepare and deliver education and outreach materials and programs to residences and small businesses where the handling and storage of liquid fuel and fuel oil is, or would be, a significant drinking water threat to advise the owner/tenant about the actions to take to ensure that the activity ceases to be, or does not become, a significant drinking water threat, in any of the following areas:</p> <ul style="list-style-type: none"> • WHPA-A (existing, future); or • WHPA-B (VS = 10) (existing, future); or • WHPA-E (VS = 10) (existing, future). <p>Where appropriate education and outreach materials prepared by the Ministry of the Environment and Climate Change, the Technical Standards and Safety Authority or other parties are available, the municipality shall deliver those materials.</p>	See Maps 1.1 - 1.21	Existing & Future: Implement within 2 years (T-10)	GEN-8	MON-1
		MOECC TSSA	K	<p>2) The Ministry of the Environment and Climate Change shall collaborate with the Technical Standards and Safety Authority (TSSA) and the Ministry of Government and Consumer Services to:</p> <p>a) provide education and outreach materials for delivery by local municipalities to residences and small businesses about how to prevent spills or leaks from contaminating water and what to do if a spill happens or is suspected;</p> <p>b) include source water safety information into current public education vehicles, such as TSSA’s website and seasonal brochures;</p> <p>c) work with fuel industry associations to facilitate distribution of educational materials to fuel suppliers; and</p> <p>d) provide colleges with source water awareness information that can be integrated into fuel technician training programs.</p>				MON-4
		MOECC TSSA MGCS	K					MON-4