



# UPPER THAMES RIVER ASSESSMENT REPORT

## Section Summary - 6.0 Conditions Assessment

### Section Summaries

The Assessment Reports for the Thames-Sydenham and Region are large summary documents compiling information from many technical reports. These technical reports include Water Budgets, Watershed Characterization Reports and many Source Protection Technical Studies related to municipal drinking water systems. That information has been summarized and compiled into Assessment Reports of the Region. Each section of the Assessment Reports has been summarized in a series of Section Summaries.

## 6.0 Conditions Assessment

The Source Protection Committee (SPC) is required to identify as a drinking water threat any "Condition" of which it is aware. A condition is the result of a past activity that has the potential to pose a risk to a drinking water source. The Technical Rules: Assessment Report identifies the types of situations that can be considered a condition.

### What is a Condition?

One of the following situations must be satisfied in order to be identified as a condition:

- the presence of a non-aqueous phase liquid in groundwater in a highly vulnerable aquifer, significant groundwater recharge area or wellhead protection area;
- the presence of a single mass of more than 100 litres of one or more dense non-aqueous phase liquids in surface water in a surface water intake protection zone;
- the presence of a contaminant in groundwater in a highly vulnerable aquifer, significant groundwater recharge area or a wellhead protection area, if the contaminant is listed in Table 2 of the Soil, Ground Water and Sediment Standards and is present at a concentration that exceeds the potable groundwater standard set out for the contaminant in that Table;
- the presence of a contaminant in surface soil in a surface water intake protection zone, if the contaminant is listed in Table 4 of the Soil, Ground Water and Sediment Standards and is present at a concentration that exceeds the surface soil standard for industrial/ commercial/ community property use set out for the contaminant in that Table; and
- the presence of a contaminant in sediment, if the contaminant is listed in Table 1 of the Soil, Ground Water and Sediment Standards and is present at a concentration that exceeds the sediment standard set out for the contaminant in that Table.

The Soil, Ground Water and Sediment Standards refer to the MOE publication, 'Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act' (March 9, 2004). More information on the use of the standards may be obtained from the Conditions Assessment Section of the Assessment Report.

### Impact of identifying a Condition

Should the SPC become aware of a condition, as described above, it is to be considered a drinking water threat. As for all drinking water threats, risk is quantified in the technical rules as the product of vulnerability and hazard.

$$\text{Risk} = \text{Vulnerability} \times \text{Hazard}$$

Although for activities the hazard score is determined through the table of drinking water threats, for a condition the hazard score is 6 or 10. It is 10 if: (a) there is evidence that the situation is causing off-site contamination, or (b) the condition occurs on a property on which a drinking water system intake, well, or monitoring well is located. The hazard score is 6 if neither (a) nor (b) apply. The threat level is dependent on the vulnerability score of the area within which the condition is located, and whether the hazard score is 6 or 10.

**Table 1. Threat Levels for Conditions**

Threat Level	Risk Score
Significant	80 or greater
Moderate	60 to less than 80
Low	Greater than 40 but less than 60
No threat	40 or less

There are additional scenarios where, regardless of the risk score, a condition is a significant threat. These scenarios are when a condition is related to a drinking water quality issue



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or an intake protection zone-3 (IPZ-3). For more information, refer to Section 6.0 – Conditions Assessment of this Assessment Report.

The Clean Water Act requires that significant threats be managed to the point that they no longer become significant. The SPC may also develop policies for moderate and low drinking water threats; however, it is anticipated that the types of policies that can be applied to moderate and low threats will not be as broad as for the significant drinking water threats. Policies for conditions are, however, expected to be significantly different than those for prescribed activities, due to the fact that the activity is no longer being undertaken and the contaminant has already been released into the environment.

### Conditions Investigations

At the time of drafting this Assessment Report, the SPC has not completed an extensive investigation to determine if there are any conditions that need to be reported on. Their investigation at this point is limited to the following:

- Those undertaking municipal technical studies were requested to determine if there are conditions of which the water treatment plant operating authorities are aware.
- MOE provided information from their local offices to determine if their files contain any information that might lead to identifying a condition. This information was restricted to a fixed radius around intakes and wells. Although it has been provided to the consultants for their consideration, not all of the consultants have been able to review the information. In addition, the information does not include the entire vulnerable areas.
- It is anticipated that stakeholders, including the public, may identify situations they believe may be a concern and that will require investigation to determine if they are conditions. Some of these have been identified, but are yet to be reviewed to determine if they should be considered a condition.

More information on data reviewed while assessing vulnerable areas for conditions may be obtained from Section 6.0 - Conditions Assessment of this Assessment Report. While the efforts completed to date do not constitute an extensive investigation of potential conditions, they serve as a preliminary screening for known situations that the SPC should consider in developing a Source Protection Plan for the area. Known situations in the Upper Thames River Source Protection Area are described below.

At the Mitchell municipal well supply system, a spill containing polychlorinated biphenyls (PCBs) occurred in the WHPA-A of well 4, at a former dairy industry site. No further data on this spill are available yet.

At the Stratford municipal well supply system, a former landfill is identified as a potential condition west of the Romeo wells 3, 4 and 6. No data on this former landfill are available yet.

At the St. Marys municipal well supply system, there is an old fuel storage, which was remediated in 2008, located within the St. Marys wellhead protection area (WHPA), to the east of Well No. 1. There is also an old fuel storage and fill area along the Thames River, within the WHPA-A (100 m radius around the wellhead) of Well No. 2. Located in this area are buried petroleum and concrete degreasing tanks. An Environmental Assessment was conducted in 2005, prior to the construction of Well No. 2. The findings of the report indicate that the historical activities do not impact the well water quality.

A site of historical contamination occurred at Woodstock within the HVA and SGRA, not in the Woodstock WHPA. According to MOE, there was a historical underground storage tank leakage site in the late 1990s. Petroleum hydrocarbon related subsurface contamination still exists as of 2010. Impacts include free product light non-aqueous phase liquids, soil contamination, and relatively large groundwater plume.

### Next Steps for Conditions

At this time, the SPC has not identified any conditions resulting from past activities. Additional information made available to the committee will be reviewed to determine if the criteria for a condition are met. Should the SPC identify any conditions, the information would be included in a subsequent Assessment Report.

For more information contact your local Conservation Authority or visit our website



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