

### **7.1.6. Events Based Significant Threats Assessment Studies**

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In the Thames-Sydenham and Region, a comprehensive *threat* and *risk* assessment for *IPZ-3* has not been completed. However the spills scenarios used to delineate an *IPZ-3* based on event specific modelling were also used to identify *activities* that could be *significant threats*. The events based modelling is described in detail Section 4.2.5.

The events based approach is based on Technical Rules 68, 69 and 130 and further direction from MOE based on their Technical Bulletin ‘Delineation of Intake Protection Zone 3 Using the Events Based Approach (EBA)’, dated July 2009, as well as a memorandum issued November 15, 2010. As discussed in Section 4.2.5, an *IPZ-3* is to be delineated if modelling demonstrates that contaminants released during an extreme event may be transported to an intake.

In addition, according to Rule 130, an *activity* is or would be a *significant threat* in an *IPZ* if modelling demonstrates that the contaminant reaches the intake at a concentration that deteriorates the water as a drinking water source. In the St. Clair Region SPA, for purposes of *IPZ-3* delineation and threats assessment, a contaminant concentration at or above the Ontario Drinking Water Quality Standard is considered to be indicative of the deterioration of a drinking water source.

A future *activity* may also be considered where it is known that the *activity* will be taking place or is expected to take place in the future. Also, it is important to note that Technical Rule 130 may also be used to identify potential *significant threats* not only in *IPZ-3s*, but also in *IPZ-1s* and *IPZ-2s*.

The identification of *significant threats* using the events based spills modelling approach, in the *LAWSS*, *Petrolia* and *Wallaceburg IPZ-3s*, are described in Section 7.2.2 and Section 7.2.7.

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## **7.2 Drinking Water Quality Threats and Risk Assessment**

For the *IPZ-1s* and *IPZ-2s*, from the *prescribed* list of *activities*, the *drinking water threats* and their *circumstances* were identified in *vulnerable areas* of each *drinking water system*. They are described further in this section. For the *IPZ-3s*, *significant threats* were identified through *events based modelling* of various contaminant spill scenarios.

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