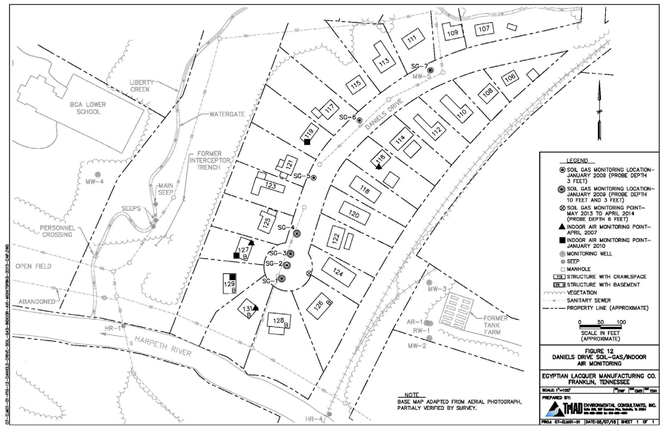
DOR Risk Evaluation at Liberty Creek and Daniels Drive

- **Is there unacceptable risk to children playing in Liberty Creek?**
  - In 2012, TDEC requested concentrations of toluene be measured in the breathing zone at the Main Seep.
    - Toluene detected at 170 ug/m3 in air.
    - 5.47 mg/L used as creek water exposure concentration.
  - Predicted exposure to toluene in air and in creek water determined to be lower than what would be expected to cause negative health effects
  - Sample collected in summer (higher toluene air concentrations expected vs colder seasons)
- **Conclusion – No unacceptable risk to children playing in creek.**

- **Is there unacceptable risk to residents along Daniels Drive due to vapor intrusion?**
  - Analysis of quantitative soil gas data collected in 2009 and 2013-2014 demonstrated minimal risk
  - Toluene vapors known to degrade in presence of oxygen in soil above water table
  - Low toxicity of toluene
- **Conclusion – No unacceptable risk to residents due to vapor intrusion.**

- **Ecological risk to aquatic life in Liberty Creek?**
  - October 2015 sampling only slightly exceeds selected ecological benchmark of 0.175 mg/L at LC-PC location with a value of 0.176 mg/L
  - Low potential for organisms in creek to accumulate toluene
  - Toluene readily volatilizes and degrades in surface water
- **Conclusion – Low probability of significant ecological risk.**

Location Map



Collecting Ambient Air Sample 2012

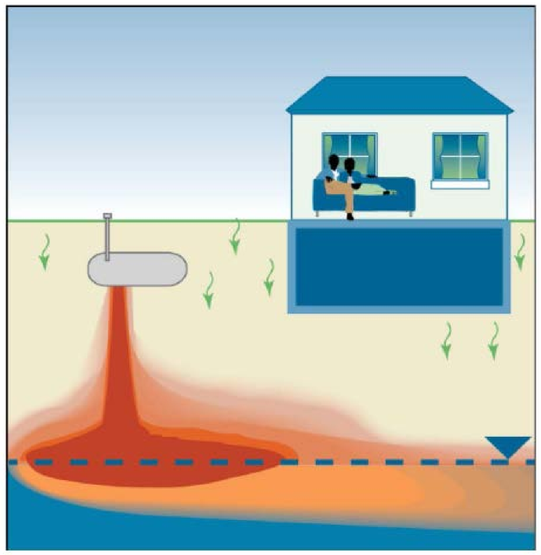


Figure showing what is thought to occur when a chemical that readily degrades in the presence of oxygen is released into the environment

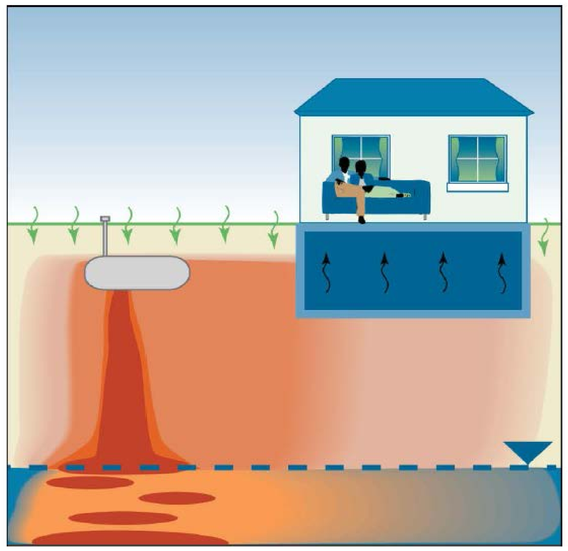


Figure showing what is thought to occur when a chemical that does not readily degrade in the presence of oxygen is released into the environment