FACT SHEET

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

Flooding and Underground Storage Tanks

Office of Land Quality

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Description:
A flood creates an elevated level of risk for environmental damage from underground storage tank (UST) systems. For example, UST systems may become displaced and release their contents into the environment, causing soil, surface water, and groundwater contamination. While there is little that can be done to prevent flooding, UST owners can take actions to minimize the damage USTs have on human health and the environment during a flood event.
The following impacts on UST systems could occur as a result of flooding:

- **Buoyancy** – the flood waters or saturated soil may offset the restraint of backfill, pavement or hold-down straps causing the tank to shift from its location. If the UST is unanchored, it could lift out of the ground and float, resulting in a rupture or separation of the connecting pipes – releasing product into the environment.
- **Erosion and Scour** – rapidly moving water can cause soil erosion and scour, which may expose the system to stressors from the water pressure or floating debris. Underground piping can also shift and become detached, releasing product into the environment.
- **Product Displacement** – during a flood, water or debris can enter the UST through openings such as fill and vent pipes, loose fittings or damaged tank walls. As water and debris settle on the bottom of the tank, product will rise and float to the top until it's released into the environment.
- **Electrical System Damage** – extended contact with flood waters may cause damage to electrical equipment such as automatic tank gauging systems, panel boxes, emergency shutoff switches, submersible turbine pumps and/or dispensers.

After a flood:
UST owners and operators who have questions or problems with their tank systems should call IDEM's UST section at 1-800-451-6027, option 6. Owners/operators of facilities and modes of transportation are required to report all spills, including the total amount spilled, to IDEM's 24-Hour Emergency Spill Line: (888) 233-7745. Affected parties may also call the National Response Center (NRC), the federal government's sole point of contact for reporting all hazardous substance and oil spills, by calling 1-800-424-8802.

The following practices may help owners and operators quickly and safely restart UST systems and bring them back into service, depending on the site-specific situation. Before entering the tank remember the following:

- Make sure the power is off to any UST-related equipment (such as power to the dispensers, pumps, release detection equipment, and other devices).
- Determine if product leaked from the UST.
- Determine if water or debris entered the UST.
- After inspecting the electrical system, return power to the UST system.
- Check release detection system for proper operation. Perform release detection again, as soon as possible after the flood.
- Check all equipment including pumps, shear valves, fill pipes, and vent lines for proper operation.
- Clean and empty spill buckets and sumps, including those under the dispensers and above the tanks. Inspect the piping and fittings for damage and possible leaks.
- Perform a UST system tightness test to ensure integrity prior to adding product.
- Test spill buckets and sumps to ensure they are tight.
- Test cathodic protection to ensure it is operating properly.

What if a tank floats out of its excavation?
The tank may float out of its original backfill site if not adequately anchored. If this occurs, the following actions may be appropriate:

- Notify the appropriate authorities according to applicable policies, if there is any evidence of spilled product.
- Notify the local fire department.
- Turn off any power in the vicinity of the tanks and piping, and immediately call the electric company if any power lines are down in the area.
- Rope off the area and keep people away from the affected area.
- Remove all contents of the tank.
- Perform initial leak mitigation and release reporting, if necessary.
- Obtain a contractor to dismantle any piping and/or dispensers, and remove the piping and tank properly.

What if a Remediation System is Flooded?
Some UST facilities have an active soil and/or groundwater remediation system in place that floods can significantly impact. Owners and operators may take the following precautions to minimize damage to the system and safely bring it back into service:

Before a flood –

- Shut off power to the remediation system.
- Disconnect the wiring and piping to the trailer and remove from the water hazard.
- Cap and secure any monitoring, recovery, or injection wells to prevent flood waters from entering the wells.
- Remove equipment from the building and store away from flood waters, if remediation equipment is located in a non-portable building.
- Close all control valves to isolate as much of the system as possible.

After a flood –

- Do not attempt to restart motors until an electrician checks the motors and/or controls for damage and presence of moisture or silt.
- If equipment trailer was removed from the site, reconnect the trailer to the power and piping system.
- Return power to the remediation system after inspecting electrical system. A qualified professional should disinfect components and systems.
- Remove and discard system components that are contaminated with flood water and cannot be effectively cleaned and disinfected. Replace them with new components.
- Clear piping of water and/or silt that may have collected in the lines, if piping has been damaged and/or flood water has entered the pipe.
- Inspect monitoring wells for damage.
- Check the valves in the piping system for proper operation.
- Check to see if water and/or silt entered monitoring/extraction/injection wells.
- Notify the implementing agency of any damage that may have occurred.

Emergency Contacts

- IDEM Emergency Response: http://www.in.gov/idem/cleanups/2352.htm
- IDEM UST Branch: http://www.in.gov/idem/tanks/2337.htm
- EPA emergency response programs: https://www.epa.gov/emergency-response
- National Response System (NRS): https://www.epa.gov/emergency-response/national-response-system

Financial Assistance
For individuals, the State Disaster Relief Fund (https://www.in.gov/dhs/3535.htm) may be available to provide financial assistance. In addition, the Office of Community and Rural Affairs (OCRA) offers funding through the Disaster Recovery Program for local units of government (http://www.in.gov/ocra/disasterrecovery.htm).

References and Resources
This guide is a shortened version of the Underground Storage Tank Flood Guide developed by the EPA Office of Underground Storage Tanks. It's been adapted by IDEM for use in Indiana. The full guide can be found here: https://www.epa.gov/sites/production/files/2014-03/documents/ustfloodguide.pdf.