Pollution Here and Your Health: Air Quality and Health Impacts

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ITC Fire

- Sunday March 24, storage tank caught fire at Intercontinental Terminals Co. (ITC)

- Fire burned for more than 60 hours

- Forced school closures, shelter-in-place orders

- More than 1,000 people sought treatment at mobile clinics for headaches, nausea and other fire-related ailments
ITC Fire

Why is Benzene more of a concern now than during the fire?

During the fire, Benzene was being pushed up into the air — heat rises. Due to the high-heat, when reaching the air, the Benzene quickly evaporated.

The tanks are covered by a foam sealant. If there is a hole in the sealant, the Benzene vapors can escape. Because there is no high-heat from the fire, the Benzene gas will linger in the air and not evaporate as quickly.

AFTER THE FIRE, WHAT CHANGED?
ITC Fire

AIR QUALITY MONITORING DURING FIRE

Legend
- ITC Fire
- Harris County Readings
  - Total VOC 0 to 0.499 PPM
  - Total VOC greater than 0.5 PPM
- City of Houston Readings
  - Total VOC 0 to 0.499 PPM
- Texas National Guard Readings
  - Total VOC 0 to 0.499 PPM
  - Harris County
Ship Channel Barge Collision

- 11,000 barrels (462,000 gallons) of oil spilled
- Officials reported no air quality concerns
- On 5/10/19 TCEQ contractor detected 2,400 – 2,600 ppb of benzene in Seabrook
  - Unified Command not notified until 2 hours later
  - No public notification for more than 15 hours
Benzene Health Effects and Levels

- Common component of crude oil

- Acute symptoms of high levels of benzene exposure:
  - Drowsiness
  - Dizziness
  - Rapid/irregular heartbeat
  - Headaches
  - Confusion

- Long term (greater than one year) exposure linked to harmful effects on bone marrow, low birth weight (animal studies), leukemia
Benzene Health Effects and Levels

- Health effects are based on *population-level assessment*. It is impossible to know what health effects will result from a single exposure to a single individual.

- However, we do know that there is really **no safe level of exposure**.

- American Petroleum Institute, oil and gas industry trade group, in 1948:
  - “The only absolutely safe concentration…is zero.”
Benzene Health Effects and Levels

- After barge accident TCEQ contractor found levels of benzene >2,600 parts per billion (ppb) in Seabrook

- After ITC, EDF measured concentrations as high as 495 ppb, EPA and TCEQ found concentrations > 500 ppb

- Texas one-hour threshold for benzene is 180 ppb

- California’s six-hour standard is 8 ppb

- After the barge accident – unified command set the action level at the workplace threshold 1 ppm or 1000 ppb
Texas imposed penalties on only 3% of emission violations reported by companies from 2011-2016.

Source: “Breakdowns in Enforcement” by Environmental Integrity Project and Environment Texas

onebreathhou.org
A Vision for Harris County

- **Enhanced Monitoring & Enforcement**

- **Benzene Action Plan** - The City and County adopt a benzene action plan that establishes acceptable limits and updated notification procedures for public communication.

- **Air Quality Control Chart & Dashboard (HUB)** – The City (County) creates a centralized mechanism for integrating air quality information from multiple sources that is used to inform enforcement actions and mobile monitoring.

- **Active Monitoring Protocol** – City and County adopt a new monitoring protocol to inform their use of mobile monitoring vehicles, ensuring the vehicles are used proactively in the pursuit and identification of pollution sources.

- **Increased Transparency and Emergency Notification**
END