Monitoring Water Quality During Crises:
ITC Fire & Bayport Channel Collision

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The mission of Galveston Bay Foundation is to preserve and enhance Galveston Bay as a healthy and productive place for generations to come.
ITC Incident Timeline

Sunday, March 17th
ITC fire begins

Wednesday, March 20th
Firefighting foam released into Tucker Bayou, Galveston Bay Foundation gets involved
Wednesday evening, March 20:
Galveston Bay Foundation President Bob Stokes on KHOU

“We’re looking for transparency on what exactly is being sampled, how they’re sampling it, where they’re sampling it and we still haven’t been told even that.” – Bob Stokes
Partnerships & Need for Independent Testing

Identified the need for independent water sampling, established Environmental Defense Fund and Texas A&M partnership

Friday, March 22nd: Began testing along the Houston Ship Channel, invited the media
Goal: to bring transparency and answers about the water quality to the public and ensure proper incident response.

Seafood Consumption Advisory: As a result of the ITC fire, the State Health Department recommends that no person consume any amount of fish or blue crab from the Houston Ship Channel and associated waters north of the Fred Hartman Bridge (Highway 146) due to the potential for toxic concentration of volatile organic compounds.
Elevated water

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How to protect community with elevated levels of benzene detected near ITC

Miller says they've found benzene levels of up to 495 parts per billion on Peninsula Street near the ITC facility. That's well above the 180 parts per billion the TCEQ says is safe.
What are we sampling for?

Volatile Organic Compounds (VOCs)

TCEQ Standards for Galveston Bay waters (waters not used as a source of drinking water)

The state standards for each compound are highlighted below.

<table>
<thead>
<tr>
<th>Compound</th>
<th>TCEQ Standard (μg/L)</th>
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<tbody>
<tr>
<td>Benzene</td>
<td>581 μg/L</td>
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<tr>
<td>Toluene</td>
<td>–</td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td>1,867 μg/L</td>
</tr>
<tr>
<td>Xylenes</td>
<td>No standards listed at all</td>
</tr>
</tbody>
</table>
Viewing our results

This is above EPA’s recommended National Ambient Water Quality Criteria of 16 µg/L but below TCEQ’s state standards. All other samples collected Saturday had concentrations below state standards and national criteria.
Man-made chemicals used in a variety of industries. Highly persistent in the environment and in the human body – known as the “forever chemical”

Exposure can lead to adverse health effects. **Much is still unknown**, but PFAs exposure is linked to:

- Increased cholesterol
- Reproductive & development issues
- Kidney & immunological effects
- Cancer and tumors
- Thyroid hormone effects

Source: www.epa.gov/pfas
Preliminary Findings

• VOCs levels likely increased somewhat in the days during/after the event, but reduced relatively quickly.

• There was a definite presence of PFAs in Galveston Bay after the incident, but pre-incident levels cannot be established.

• These levels were above EPA drinking water advisories at some points, but below the calculated risk for swimming/recreation.

• Several of these sites saw increases in PFAs/PFOAs from 3/22 to 3/29.

• Ongoing monitoring is needed.
“I feel like we’ve got a snapshot, an early snapshot of data that looks okay. But this is a snapshot. The thing about data and monitoring is that this needs to continue to occur,”
Bayport Channel Collision

Galveston Bay Foundation Role:

- Worked with partner organizations to evaluate the potential impacts the spill could have on the Bay.
- Invited by the Unified Command response to serve on a Resources at Risk committee to evaluate the impact on natural resources.
Bayport Channel Collision

• Tested water quality once, but confident in incident response
• Incident response webpage/hotline
• Monitored impacts to Kemah property through the media/social media & informed the public
Our Best Practices

• Transparency and accuracy
• Work with all parties involved with incidents
• Conduct independent sampling when necessary
• Open line of communication