Washed Away: What Hurricane Harvey Wrought and What It Left Behind

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Introduction

Hurricane Harvey started as a weak tropical storm over the Lesser Antilles and hit Texas as a Category 4 storm on August 26, 2017.[1] At least 68 people died as a direct result of the storm, which also caused $125 billion in damage according to the National Hurricane Center.[2] That is more than any other natural disaster in U.S history except Hurricane Katrina.[3]

Harvey made landfall three times in six days.[4] It caused statistically incredible damage. At its peak on September 1, 2017, one-third of Houston was underwater.[5] Two feet of rain fell in the first 24 hours. Harvey spawned 57 tornadoes, half of which occurred in or near the Houston metro area.[6] Flooding forced 40,000 people out of their homes and into shelters. As of September 5, 2017, Hurricane Harvey had flooded 300,000 structures, including 203,000 homes. Finally, FEMA reported 30,000 water rescues were conducted during Harvey.[7]

Much of Harvey's damage came from massive rainfall. It was the most significant tropical cyclone rain in United States history since reliable records began in the 1880s.[8] Harvey created a 1-in-1,000-year flood event, which can be reasonably interpreted to mean that nothing of its size has happened within modern recorded history.[9] Flooding covered southeast Texas the size of the state of New Jersey. Thirty inches of rain fell on an area near the coast the size of the state of

[1] National Hurricane Center Tropical Cyclone Report, *Hurricane Harvey*, January 23, 2018, at 1 (hereinafter "NHC Report").
[2] *Id*. at 8.
[3] *Id*.
[4] *Id.* at 2-3.
[5] *Hurricane Harvey Facts, Damage and Costs*, Kimberly Amadeo, thebalance.com (March 1, 2018).
[6] NHC Report at 8.
[7] *Id*. at 9
[8] *Id*. at 6.
[9] Amadeo.

Maryland. Total rainfall hit 60.58 inches near Nederland, Texas directly southeast of Beaumont.[10] That was a record for a single storm in the continental United States.[11]

In the Texas Gulf Coast area, 1 million vehicles were ruined beyond repair, according to auto data firm Black Book. That includes 300,000 to 500,000 vehicles owned by individuals. Harvey also flooded 800 wastewater treatment facilities and 13 Superfund sites. That spread sewage and toxic chemicals into the flooded areas. Harvey's destruction left in its path not only human loss and massive property damage, but also a wake of litigation that will continue for years.

Part One of this paper, written by Barbara Barron, focuses on the environmental impacts reported in the greater Houston area, how the government and businesses have responded, the current state of litigation concerning the environmental impacts, and practical considerations for defense counsel and their clients to preparing for and defend against those claims.

Part Two of the paper, written by Neil Rambin and Matt Sapp, addresses property damage and insurance coverage issues. Harvey affected thousands of businesses. In the aftermath, myriad insurance issues have arisen, including many business interruption claims under property insurance policies. These claims often include interruptions due to direct physical damage to the insured's own property, property loss that sidelines a major supplier or customer base, ingress/egress blockages, and civil authority orders affecting access to the business.

Part Three of the paper, written by Deron Wade, reviews how refineries and petrochemical plants along the Texas Gulf Coast implemented lessons learned from the Hurricane Katrina disaster to avoid similar catastrophes during and after Hurricane Harvey.

Disasters seem to be more prevalent than ever. Kilauea is erupting, record earthquakes have

[10] NHC Report at 6.
[11] Amadeo.

been occurring, and a highly active hurricane season is predicted. The following discussion is vital to FDCC members to be prepared for the legal challenges that accompany disaster when it comes calling.

I. Toxic Tort and Environmental Considerations

1. What is a natural disaster?

This presentation focuses on Harvey, but natural disasters occur in almost all states with varying degrees of frequency. Unlike technological hazards such as explosions, releases of toxic materials, structural collapses and social hazards (terrorist attacks), natural disasters originate in the biosphere, lithosphere, hydrosphere or atmosphere. There would be no natural disasters if not for humans. Without humans, these are only natural events.

Since 1980, according to NOAA's National Centers for Environmental Information (NCEI), the United States has sustained 219 weather and climate disasters where the overall damage costs reach or exceeded $1 billion adjusted based on the Consumer Price Index. The cumulative costs for these events exceed 1.5 trillion.[12] They include:

- Earthquakes
- Volcanic Eruptions
- Tsunami
- Landslides
- Subsidence
- Wildfires
- Floods
- Droughts
- Hurricanes
- Tornadoes
- Asteroid Impacts[13]

[12] Smith, Adam. "U.S. Billion-Dollar Weather and Climate Disasters: A Historic Year in Context." 8 July 2018. https://www.climate.gov/news-features/blogs/beyond-data/2017-us-billion-dollar-weather-and-climate-disasters-historic-year.

[13] Nelson, Stephen. "Natural Hazards and Natural Disasters." 9 January 2018 http://www.tulane.edu/~sanelson/Natural_Disasters/introduction.htm.

As human populations continue to grow in areas vulnerable to earthquakes, volcanic eruptions, tsunamis, floods, fires, hurricanes, and landslides, the effects of disasters will be more severe.

2. Why was 2017 a historical year?

In 2017, the United States experienced a historical year of weather/climate disasters and was impacted by 16 separate billion –dollar disaster events, including tornados, hurricanes, inland floods, crop freezes, drought, and wildfires. 2017 ties 2011 for the highest number of billion-dollar disasters during a single year, but the cumulative costs of the disasters in 2017 exceeded $300 billion (NOAA 2017). [14]

3. Did past storms cause toxic issues?

Hurricane Sandy affected wastewater treatment plants that lost power and discharged 11 billion gallons of sewage into receiving waters.[15] The toxic Gowanus Canal – a Superfund site – flooded and overflowed into people's homes, covering people and possessions in what one victim called a "greasy, oily slick." [16] Homeowners' heating oil tanks broke apart and leaked fuel into the soil. [17] Even Hurricanes Katrina and Rita are reported to have spilled a total of 741,000 gallons of oil.

After Hurricane Katrina, human carcinogens, hexavalent chromium and arsenic, were reported in the New Orleans' flood waters at levels unsafe for drinking water. [18] Additionally, five

[14] Id.
[15] Atkin, Emily. "America Has a Toxic Waste Hurricane Problem." New *Republic*. 8 September 2017 https://newrepublic.com/article/144737/america-toxic-waste-hurricane-problem.
[16] Id.
[17] Id.
[18] Cone, Marla. "Toxic Threat Still Vague but Ominous, EPA Says" *LA Times*, 20, Sept 15, 2005.

superfund sites in the New Orleans area were flooded by Hurricane Katrina.[19] In addition, hundreds of commercial establishments, such as service stations, pest control businesses, and dry cleaners may have released chemicals into the floodwaters. [20] After Hurricane Katrina, sampling was conducted and elevated levels of contaminants were found in nearly all samples for some constituents, such as arsenic, or less frequently, PAHs or other hydrocarbons.[21]

4. What is unique about the Gulf Coast Region?

Texas Gulf Coast is home to an immense concentration of chemical and plastics plants, oil and gas refineries, Superfund sites, fossil fuel plants and wastewater discharge treatment plants. There are alone around 450 petrochemical plants, making it one of the biggest oil refining hubs. Southeast Texas includes roughly one third of the country's known oil and natural gas reserves. [22] "The refineries and plants around Galveston Bay are responsible for approximately 25 percent of the United States' petroleum refining, more than 44 percent of its ethylene production, 40 percent of its specialty chemical feed stock and more than one half of its jet fuel." [23] Many of these facilities are located near or on rivers, ship channels, bays or the Gulf, or near or on waterways that drain into other bodies of water. As Harvey approached Texas, environmental advocates worried that

[19] Barrett, Craig, et al. "Toxic and Contaminant Concerns Generated by Hurricane Katrina." *The Bridge Linking Engineering and Society*. Spring 2006 Vol 36, No 1, Spring 2006 p. 5. https://www.nae.edu/Publications/Bridge/TheAftermathofKatrina/ToxicandContaminantConcernsGeneratedbyHurricaneKatrina.aspx.
[20] Id.
[21] Id.
[22] Atkin, Emily. "Hurricane Harvey Could Also be a Major Pollution Disaster." *New Republic*. 25 August 2017 https://newrepublic.com/article/144513/hurricane-harvey-also-major-pollution-disaster.
[23] Id.

the storm would create long-term public health problems from accidental toxic substance releases. [24] They rightly predicted leakage from dozens of Superfund sites. [25]

5. What happened as Harvey approached?

Before Harvey made landfall, Texas Governor Greg Abbott's administration suspended storm-related pollution regulations and stated they would be forgiven as "acts of God."[26] Days later, environmental regulations relating to air pollution, waste water, and fuel standards for vehicles were suspended. In total more than a dozen environmental regulations were suspended. [27] The Governor stated after the storm that "these waters are filled both with chemicals [and] waste, things like that, that can pose real health hazards." [28] Seven months later, the suspension was lifted.[29]

6. What general toxic tort damage was caused by Harvey?

The Houston Chronicle and the Associated Press reviewed county, state, and federal records and discovered:

- Nearly half a billion gallons of industrial wastewater mixed with storm water discharged from of just one chemical plant in Baytown (east of Houston).
- Carcinogens, including benzene, vinyl chloride, and butadiene were released into both neighborhoods and waterways.
- 100 Harvey–related toxic releases occurred in air, water, and on land.

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[24] Id.
[25] Id.
[26] Bajak, Frank and Lisa Olsen. "Hurricane Harvey's Toxic Impact Deeper than Public Told." *Houston Chronicle*. 22 March 2018 https://www.chron.com/news/texas/article/Hurricane-Harvey-s-toxic-impact-deeper-than-12772799.php.
[27] Hiar, Corbin. "Hurricane Harvey: Among Storm Casualties: Texas Environmental Regulations." *E&E News*. 17 November 2017 https://www.eenews.net/stories/1060067093.
[28] Watkins, Eli. "Texas Governor Abbott: 'Compare it to Katina." 3 September 2017 https://www.cnn.com/2017/09/03/politics/texas-greg-abbott-harvey-cnntv/index.html.
[29] Stuckey, Alex. "Abbott Lifts Post-Harvey Suspension of Environmental Regulations." *Houston Chronicle*. 6 April 2018 https://www.chron.com/news/houston-texas/texas/article/Abbott-lifts-post-Harvey-suspension-of-12811664.php.

- Port of Houston stated they had up to 10 feet of silt deposited in the ship channel.

- 400 wastewater treatment plants were not fully operational after the storm and some facilities spilled due to flooding.

- Only a handful of spills were investigated. Texas regulators say they have investigated 89 incidents, but no enforcement actions have been announced.

- EPA's Samuel Coleman stated the priority was "addressing any environmental harms as quickly as possible as opposed to making announcements about what the problem was." He added that in hindsight, maybe it won't be a bad idea to inform the public about the worst of "dozens of spills."[30]

Other sources of leakage of oil were the 1 million cars damaged or destroyed from the rising waters with 75 percent being declared a total loss as compared with 570,000 in Hurricane Katrina. [31]

7. What specific toxic issues have been reported?

The Houston Chronicle and AP investigated and delineated specific issues as follows:

- U.S. Environmental Protection Agency has confirmed that rains from Harvey damaged a temporary protective cap on a pit of toxic sludge along the San Jacinto River, east of Houston. The EPA Superfund site is known as the San Jacinto River Waste Pits and is contaminated with waste, including dioxins. Testing showed dioxins at 70,000 ng/kg. Harris County and the state won a $29.2 million settlement from McGinnes Industrial Maintenance Corporation and Waste Management Inc. in 2014. The EPA has now authorized the removal of 212,000 cubic yards of waste from the site at a cost of $115 million dollars.

- In Crosby, Texas, containers of liquid organic peroxides exploded at Arkema Inc. after floodwaters disabled backup generators needed for refrigeration of the organic peroxides. After the initial explosions, a 1.5 mile evacuation zone was put in place after the storm because Arkema exploded its six remaining chemical containers in a "controlled burn." Arkema reported to the Texas Commission on Environmental Quality that over 62,000 pounds of chemicals and over 17,000 pounds of particulates were released in the flooding and the fire. In addition to the lawsuit brought by seven first responders, lawsuits were filed by local residents in October 2017, a lawsuit brought by Harris County, TX, in November 2017, and one brought by Liberty County, TX, in March 2018. (Mid -2015 Texas laws only permit

[30] Bajak and Olsen. Hurricane Harvey's Toxic.
[31] Breslin, Sean. "Up to 1 Million Cars Were Destroyed by Hurricane Harvey." 26 February 2018 https://weather.com/news/news/2018-02-26-hurricane-harvey-cars-destroyed.

counties to collect the first 2.15 million from polluters in lawsuits; the rest goes to the state. A more recent law obliges counties to give the state the right of first refusal on any pollution enforcement cases.) The Harris County suit seeks up to $1 million in penalties and asks that Arkema be ordered to upgrade its emergency response plans, build stronger storage areas, and set up a notification system for alerting resident of future incidents. [32]

- During the storm, an 18 inch pipeline leak at Williams Midstream Services released a plume of chemicals near the intersection of two major highways, where the San Jacinto River meets the 50-mile ship channel. A county pollution inspector wrote in his report that he could not safely monitor the toxic plume, but believed it did not reach homes less than a mile away.

- 42,000 gallons of gasoline spilled as a result of Harvey at the Magellan terminal in Galena Park, Texas. The spill was reported to Coast Guard, 6 days after Harvey made landfall, but 11 days after the spill a Magellan report indicated that it was 10 times bigger. Harris County officials have withheld information on this spill since it, along with 2 others, are still under investigation.

- W&P Development Corporation remains under investigation for 100,000 gallons of oily waste water spilling into the San Jacinto River, but later it was reported that only 30,000 gallons had escaped from a water treatment plant.

- Channel Biorefinery & Terminals spilled into Greens Bayou which enters the Houston Ship Channel some 80,000 gallons of methanol from a tank rupture.

- ExxonMobil's Olefins Plant in Baytown reported some 457 million gallons of storm water mixed with untreated wastewater, including oil and grease, surged into an adjacent creek.

- Royal Dutch Shell at Deer Park, Texas, stated that 3,000 pounds of benzene was released and initially reported half a ton of phenol was released which was later lowered to 2 pounds.

- Chevron Phillips chemical plant in Baytown, Texas, stated that about 34,000 pounds of sodium hydroxide or lye was released and 28,000 pounds of benzene, but a containment pond reduced the amount by over one-third.

- Dow Chemical initially reported that 60,000 tons of non-hazardous biosolids were released from their Deer Park facility, but later clarified that only 50 tons was biosolids, and the rest was primarily storm water.

[32] Dempsey, Matt and Kerri Blakinger. "Harris County Sues Arkema for Chemical Disaster during Harvey." *Houston Chronicle*, 16 November 2017 https://www.houstonchronicle.com/news/houston-texas/article/Harris-County-sues-Arkema-for-chemical-disaster-12363560.php.

- Thirteen Superfund sites were inundated with water. [33]

New York Times testing found instances of E. coli contamination 135 times the legal limit in standing floodwaters around the city.[34] Also, a "private firm hired by environmental groups" found "concerning" benzene levels in neighborhoods around a Valero refinery. [35]

8. Any Harvey related toxic tort lawsuits besides the Arkema lawsuits?

Though some suits have been filed, as mentioned above, toxic tort injuries develop over a period of time, impacting some victims quickly, while others experience little or no discernible effects. Toxic torts by definition involve a biological interaction between the alleged hazardous substance and an individual. Plaintiff attorneys utilize these events to request future medical monitoring for individuals who do not now have claims, because an injury has not been sufficiently manifested, but based on their exposures might possibly have claims in the future.

9. Any plaintiff attorney advertising after Harvey?

One plaintiff firm had the below information on their web page by September 5, 2017:

> Late last week in Houston and the surrounding area, aerial images confirmed 13 of the 41 Superfund sites were flooded by Hurricane Harvey, raising the threat to possible pollution and damage from contaminated waters. Oil refineries, chemical plants, oil and gas wells, and steel mills all have the potential to release toxic chemicals if these Superfund sites become too damaged. The rising flood water may carry away and spread toxic materials over an area that was not previously contaminated, or contaminated groundwater could filter into the system, exposing people to dangerous levels of benzene, creosote, toxic dioxins, and PCBs. Residents are concerned that soil from waste pits that contain toxins and dioxins that are linked to some birth defects and cancer, is now exposed.
>
> Exposure to benzene can be incredibly dangerous and lead to several forms of cancer including Acute Myelogenous Leukemia (AML) which is a cancer that

[33] Bajak, Hurricane Harvey's Toxic.
[34] "Toxic Aftereffects of Hurricane Harvey Plague Houston." EcoWatch. 15 September 2017. https://www.ecowatch.com/toxic-aftereffects-hurricane-harvey-2485611357.html)
[35] Id.

originates in the bone marrow. It grows quickly and renders the body useless in being able to fight off other infections. Water may become contaminated with benzene when underground storage tanks from hazardous waste sites are damaged and begin leaking. The ExxonMobil plant damaged by Hurricane Harvey has released more than 12,500 lbs. of chemicals, including benzene, into the atmosphere.

The water may now be receding in Houston, but that does not mean the threat of toxic chemical exposure is over. The receding water is now full of contaminates like pesticides and polychlorinated biphenyls (PCBs), which can cause skin infections, liver damage, neurological effects, and damage to the immune and reproductive system. Injuries caused by toxic exposures can take months, years, or even decades to develop and while exposures due to natural disasters often cannot be helped, thousands of people have been injured by toxic exposure at the workplace.

Since the 1970s, the lawyers at xxxx, have been protecting the rights of those injured by toxic exposures. Our clients have been injured by these toxic products on the job, through secondary exposure, and through contact with seemingly harmless household products. We have helped many people who have been injured themselves, but also many families who've lost loved ones to toxic exposures. Contact us today to find out how our toxic tort lawyers can help you.

10. How should defense counsel respond to client needs in natural disasters?

After a natural disaster, various governmental entities, environmental agencies and the news media all investigate spills and releases. Unfortunately, the information they report is not always correct.

1. If you have a client in a disaster area, reach out to them and inquire about his or her and the company's well-being.
2. Ask if there is anything you can help with.
3. If you represent a client in petrochemical industry or one that you are aware could be subject to a leak, spill or release, ask if everything is intact and is there anything you can do?
4. If you read about a spill, release, or leak, and you have a less sophisticated client; notify your client of what you are reading. If asked, suggest a plan of action.
5. Keep in mind that investigations are likely to be implemented by local, state, and federal agencies. For instances in the Arkema fire, both the Texas Commission on Environmental Quality and Harris County Pollution Control were coordinating post-event monitoring, sampling, and complaint response activities. The U.S. Chemical Safety Board also initiated an

investigation, and law enforcement limited access to the Arkema plant in Crosby. Consulting experts hired by the attorneys may be able to be utilized to confidentially investigate issues.

6. If the opportunity arises, please inform clients to remind their employees not to discuss releases or Hurricane related toxic issues in emails. For instance, "We have a heck of a mess; we should have replaced that control valve years ago."
7. If there is a spill, in Texas, companies are required under federal law to report spills to state and federal government, but not to counties. Each state has their unique reporting regulations. Make sure you are aware who the company should be reporting to. Remember these documents are likely to be released in a Freedom of Information Act or open records request, so consider having a client notify county officials as well. If the release was non-hazardous, it is best to indicate that information.
8. Always be careful about what you are saying and remind your client to be careful about making remarks, particularly sarcastic comments. In one instance, a board member of a River Authority after an earlier flood stated that her area probably benefited economically with traffic being diverted to the northeast Texas because of the flooding. [36]

11. In what ways can attorneys help clients plan for future natural disasters?

The increasing number and intensity of storms, wild fires, and earthquakes is a wake-up call to discuss potential catastrophic events with clients.

There are two questions the public often asks and so might your clients:

1. Is the frequency of hazardous events increasing?

2. Why is the frequency of natural disasters increasing?

The first question is much more difficult to answer since natural events responsible for natural disasters have been occurring throughout the 4.5 billion year history of the earth. According to Professor Stephen A. Nelson of Tulane University, there is no evidence to suggest that hazardous events are occurring more frequently.[37]

[36] "Sabine River Authority Board Member Resigns." Longview News-Journal. 27 April 2016 https://www.news-journal.com/news/local/longview-woman-resigns-from-sabine-river-authority-apologizes-for-email/article_5214a034-1912-5d88-8696-a0a3a655a248.html.
[37] Nelson, Stephen. "Natural Disaster." Spring 2018

The second question is also not as easy as it would seem and very political. There is evidence to suggest that weather-related disasters are becoming more frequent compared to other disasters like earthquakes (magnitude > than 8.5 occur once every 3 years.), and this is what we would expect with global warming, but there is not yet enough statistical data to support the proposition that global warming is causing more natural weather related disasters.[38]

Litigation attorneys often are hired after a toxic release, potential lawsuit, or lawsuit. We can offer services to clients in both hazard assessment and risk assessment before a natural disaster. Hazard Assessment consists of determining the following:

> •when and where hazardous processes have occurred in the past;
> •the severity of the physical effects of past hazardous processes (magnitude);
> •the frequency of occurrence of hazardous processes;
> •the likely effects of a process of a given magnitude if it were to occur now; and
> •making all this information available in a form useful to our clients who would then decide what to make available to planners and public officials responsible for making decisions in event of a disaster.[39]

Risk Assessment involves not only the assessment of hazards from a scientific point of view, but also the socio-economic impacts of a hazardous event. Risk is a statement of probability that an event will cause "x" amount of damage, or a statement of the economic impact in monetary terms that an event will cause. Risk assessment involves hazard assessment, as above:

> •location of tanks, buildings, chemicals, pipelines, etc in the areas subject to hazards;
> •potential exposure to the physical effects of a hazardous situation; and
> •the vulnerability of the community when subjected to the physical effects of the event.[40]

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http://www.tulane.edu/~sanelson/Natural_Disasters/index.html.

[38] Id.

[39] Id.

[40] Id.

Risk assessment aids decision makers compare and evaluate potential hazards, set priorities on what kinds of mitigation are possible, and set priorities on where to focus resources and further study. As attorneys, we are used to hiring experts post lawsuit, but what about before a lawsuit? The benefit to hiring an outside lawyer leading such a study is obvious. Such work, if protected within the company and not shared to non-decision makers, can be protected by the attorney-client privilege.

12. How can a natural disaster be utilized in defending a toxic tort case?

Natural disasters need to be kept in mind when defending any type of toxic tort case. For instance, was an alleged leukemia related to exposure to work materials or was the plaintiff exposed to high levels of an alleged leukemia-causing product after a natural disaster. In any toxic tort case, it is important to develop background information, but that information should include addresses where the plaintiff has lived since birth or general descriptions. In states where other responsible third parties are permitted to be submitted to the jury, there may be information from natural disaster spills, leaks, or releases that increase the number of the these third parties or empty chairs.

Additionally, causation is an element of any toxic tort case. A natural disaster might allow causation to be questioned by both the defense lawyer and ultimately, the jury. Therefore, lawyers should have some familiarity with natural disasters located in the area where the toxic tort plaintiff lives in order to place blame in the disasters.

Over the years, a number of toxic soup cases have been filed against various industries in a given location alleging that these facilities caused whatever health ailments the plaintiffs that lived in the location allege. These lawsuits are often brought by environmental justice groups. After a natural disaster, these same groups advocate bringing lawsuits on behalf of residents

because the lawyers assert that poor and minority citizens are the group most repeatedly and most adversely impacted by toxic pollutants.[41] These lawyers point to the images from Hurricane Katrina. Frankly, if you look closely at the Harvey photographs of Superfund sites or petrochemical refineries, most are not located in upper class neighborhoods. Causation continues to be a strong defense because with water migration or wind, determining who is responsible for what toxic can be difficult for the plaintiff to prove. Interestingly, the law review article encouraging suits against companies for polluting or causing damage to lower income neighborhoods, also, criticized the Daubert decision because "it is not unusual for scientists to reach different conclusions about the same dataset addressing the issue of causation of diseases in people."[42]

13. What suits might be filed in the future?

Already, some environmentalists are discussing that if scientists can demonstrate that global warming is causing higher casualty rates, then countries "facing higher risks may decide to sue the largest CO2 producers to cover the extra cost of adaptation. It is equally possible that families of the victims of tropical cyclones may sue them for gross negligence."[43]

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[41] (Weeden, L. Darnell. "Hurricane Katrina and the Toxic Torts Implications of Environmental Injustice in New Orleans." *J. Marshall L. Rev.* 1 (2006).
[42] Id.
[43] Peduzzi, Pascal. "Is Climate Change Increasing the Frequency of Hazardous Events." UNEP/GRID-Arenal. Nd http://formosastudio.pbworks.com/w/page/11091893/Is%20Climate%20Change%20Increasing%20the%20Frequency%20of%20Hazardous%20Events.

II. Property Damage and Insurance Coverage Considerations

This past year, Hurricanes Harvey and Irma caused massive destruction in the Gulf Coast region of the United States. In doing so, they also completely or partially interrupted a great many businesses in the region, resulting in considerable revenue losses. Many of these businesses are, therefore, expected to submit claims under their commercial insurance policies not only for direct physical damage to their plants, offices, and stores, but also for business interruption losses. Those losses are likely to come in various forms, including interruptions due to direct physical damage to the insured's own property, property loss that sidelines a major supplier or customer base, ingress/egress blockages, and civil authority orders affecting access to the business.

As always, the question will be: "what's covered?" Not surprisingly, the answer is: "it depends on the policy."

1. Is covered physical damage to the property required?

The most common type of business interruption claim is a claim for losses stemming from interruption to a business's daily operations due to direct physical damage to the business's property. A typical insuring agreement reads similar to the following:

> **A. Coverage**
> **1. Business Income**
> **….**
> We will pay for the actual loss of Business Income you sustain due to the necessary "suspension" of your "operations" during the "period of restoration." The "suspension" must be caused by direct physical loss of or damage to property at premises which are described in the Declarations and for which a Business Income Limit of Insurance is shown in the Declarations. The loss or damage must be caused by or result from a Covered Cause of Loss.

Often one of the first key issues is whether the physical damage loss at issue was caused by a covered peril. Of course, the hazards and perils covered under the policy will depend on the parties' agreement. Unless otherwise prohibited by law, the parties can specifically include or exclude any hazard or peril such as tornado, flood, or hurricane.

A second—and equally significant question—may be what constitutes "the property?" Say an accounting firm rents out floors five (5) and six (6) of a ten-story office building. A big storm causes flooding in the basement, damaging water pumps and rendering the building's air conditioning system inoperative. This, in turn, forces the accounting firm to shut down its computers and servers to prevent them from overheating. The computers and servers are located on floor five, but the flooding is limited to the basement of the building.

Whether business interruption coverage is triggered in that circumstance will likely depend on how "the property" is defined in the policy. If it is defined narrowly to only include direct physical damage to the floors occupied by the accounting firm, there is likely no business interruption coverage available. If "the property" is defined broadly, or if the definition is vague, a court may find that "the property" equates to the entire ten-story building including the basement, thereby triggering coverage.[44]

Golf courses seem particularly susceptible to this issue. Assume that a storm fells tress on a golf course damaging some of the fairways and greens. Some of the holes are flooded, but none of the buildings on property are damaged. The golf course shuts down until the felled trees can be removed, the flooding abated, and the greens and fairways restored to a playable condition. The golf course's insurance policy limits business interruption coverage to suspensions of operations "caused by direct physical loss or damage to the property at the premises as described in the Declarations." The Declarations list the clubhouse, storage building, pool house, and restaurant as "the property at the premises," but do not list the golf course. Unless the policy includes language somewhere else unambiguously stating that the "covered property" includes the golf course itself, there is likely no coverage.[45]

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[44] *See, e.g., Datatab, Inc. v. St. Paul Fire & Marine Ins. Co.*, 247 F.Supp. 36 (S.D.N.Y. 1972).

[45] *See, e.g., Ormond County Club v. James River Ins. Co.*, 2008 WL 859482 (E.D. La. Mar. 27, 2008).

2. What if business interruption losses are caused by both covered and uncovered perils?

As discussed above, many policies require actual physical damage to the business's property before business interruption coverage is triggered. But what if a business suffers both covered and uncovered physical damage to the property, such as wind damage (covered) and flood damage (uncovered). Is coverage still available?

In Texas, the answer is generally "no" if the policy contains an anti-concurrent-causation clause. An anti-concurrent-causation clause often looks something like this:

> We will not pay for loss or damage caused directly or indirectly by any of the following. Such loss or damage is excluded regardless of any other cause or event that contributes concurrently or in any sequence to the loss.

The Texas Supreme Court recently held that these clauses, which essentially limit coverage to only those damages caused exclusively by a covered peril, are valid and enforceable.[46] Courts of varying levels in many other states have issued similar holdings.

California, Washington, and West Virginia have rejected these clauses.[47] These states have held that when a loss is caused by a combination of covered and specifically excluded risks, the loss is covered if the covered risk was the "efficient proximate cause of the loss." The "efficient proximate cause" is generally the risk that sets others in motion. No coverage exists for a loss if the covered risk was only a remote cause of the loss, or conversely, if the excluded risk was the efficient proximate cause of the loss.

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[46] *See JAW the Point, LLC v. Lexington Ins. Co.*, 460 S.W.3d 597 (Tex. 2015).

[47] *See, e.g.*, *Murray v. State Farm Fire & Cas. Co.*, 509 S.E.2d 1 (W.Va. 1998); *Safeco Ins. Co. of Am. v. Hirschmann*, 773 P.2d 413 (Wash. 1989); *Garvey v. State Farm Fire & Cas. Co.*, 770 P.2d 704 (Cal. 1989).

3. Is coverage triggered if a business's property suffers no direct physical damage, but access to the business's property is blocked?

If a business has not suffered any direct physical damage, coverage likely will not be triggered under the standard business interruption clause. But coverage could be triggered in such a situation under an "ingress/egress clause" or under a "civil authority clause" depending on the circumstances and the policy language, as these clauses generally do not require direct physical damage to the business's property.

A typical ingress/egress clause looks like this:

> Loss of Ingress or Egress: This policy covers loss sustained during the period of time when, as a direct result of a peril not excluded, ingress to or egress from real and personal property not excluded hereunder, is thereby denied.

No direct physical loss to the business's property is required. But the business interruption usually must be the result of a covered peril or hazard under the policy.

Consider a sporting goods store that did not suffer any direct physical damage from a hurricane, but the ensuing flooding blocked all roads leading to the store for two weeks. Because the store suffered no direct physical damage, coverage likely would not be triggered under the standard business interruption clause. But the store may have coverage under an "ingress/egress" clause if flooding is a covered peril, because the flooding blocked access to the store.[48]

Civil authority clauses offer a similar type of coverage. A civil authority clause provides coverage for losses sustained by a business during the length of time that access to the business's premises is specifically prohibited by order of a civil authority. A civil authority clause often looks like the following:

[48] *See, e.g.*, *Fountain Powerboat Industries, Inc. v. Reliance Ins. Co.*, 119 F. Supp. 2d 552 (E.D.N.C. 2000).

> This Policy is extended to include the actual loss sustained by the Insured, resulting directly from an interruption of business as covered hereunder . . . when as a direct result of damage to or destruction of property . . . access to such described premises is specifically prohibited by order of civil authority.[49]

Again, direct physical damage to the business's property is generally not required. But physical damage caused by a covered peril is generally required to some property nearby, or to the immediate surrounding area. How broad or narrow the area in which physical damage is required will depend on the specific language of the policy at issue.

The application and scope of civil authority clauses could be a hot topic in the wake of Harvey. In areas of South Texas, some civil authorities made the conscious decision not to issue an evacuation order during Harvey—even though circumstances arguably warranted an evacuation—because they feared people would be stranded on the roads during the storm. Under a literal reading of the provision quoted above, the civil authority clause would not be triggered because no evacuation order was issued. What if a city's mayor publically stated that he would have given an evacuation order but for his concern that people would end up stranded on the roads, but strongly encouraged the residents to shelter in place? Such a situation could pit the literal wording of a civil authority clause against the underlying intent of the clause.

Restrictions by civil authorities on the use of water may, or may not, trigger a civil authority clause. Harvey prompted some civil authorities to become so concerned about the safety of their water supplies that they shut down the distribution of water and/or issued "boil water" orders instructing all residents and businesses to boil the water before using it. In these situations an order was issued, but the order did not specifically deny or restrict access to the business at issue. However, what if, as a practical matter, a business was forced to shut down because it could not

[49] *See, e.g.*, *Altru Health Sys. v. Am. Prot. Ins. Co.*, 238 F.3d 961 (8th Cir. 2001).

operate without water, or boiling the water was impractical. Either way, is contaminated or polluted water property damage caused by a covered peril?

4. Can a business recover business interruption damages for physical damage suffered by a supplier or customer?

In another hypothetical, assume that a business north of Houston did not suffer any physical damage, and that the area and roads around it are clear for customers to come and go. But the business's main supplier is an oil refinery on the coast just south of Houston which suffered severe damage causing it to shut down for one month. Without the weekly deliveries from the refinery, the business was forced to shut down. Does the business have a business interruption claim? Possibly, if it has contingent business interruption coverage.

Contingent business interruption coverage is generally triggered when a business loses revenue after a property loss sidelines a major supplier or customer base. The contingent property may be specifically named in the policy, or the coverage may include all customers and suppliers. While the business itself usually does not need to sustain any physical damage to trigger the coverage, it does generally need to have coverage for the type of damage that affected its suppliers, business partners, or customers. For example, if the damage at the refinery was caused by flooding, the business would generally need to have flood coverage to recover on a contingent business interruption claim for losses triggered by the refinery being incapacitated by flooding.

Contingent business interruption coverage is generally limited to coverage for the "direct" relationship between the business and its suppliers or customers, meaning that a loss suffered by a company that supplies a component part to the supplier of the insured business is usually not covered. This is the case even if damage to the "indirect" business necessarily causes an interruption at the "direct" supplier, which inevitably results in the interruption of the business of the insured. This can create gaps in coverage for businesses involved in multi-tiered supply chains.

What if the damage at issue was damage to a service provider's premises like a power company that caused a power outage rendering a business's computers unusable? If the power outage causes some physical damage at the business—such as physical damage to a computer's or server's internal components due to a temporary power surge—then coverage may be triggered under the standard business interruption clause. But if the only "damage" on the business's property is the lack of power, *i.e.* not being able to turn on any electronics, any resulting loss is not likely to be covered under the standard business interruption clause.[50]

Even in the absence of physical damage to the business's property, the business could still have coverage under a utility service interruption clause. These clauses usually address loss of electricity and "power-outages," and are often referred to as "off-premises power coverage." They provide coverage for losses due to lack of incoming electricity caused by damage from a covered peril to property away from the business's premises—usually the utility generating station. These clauses vary widely as to what utility services are included, the circumstances under which they are triggered, and the damages covered.

5. How are post-catastrophe business interruption losses calculated?

Another frequent issue is how is a business interruption loss should be calculated. Major disasters can have a wide ranging impact on local economies. Some industries could see a spike (like hotels or restaurants if there is an influx of temporary workers), while others suffer a steep decline.

Some policies take the "economy ignored" approach and value the claim based on the business's historical earnings, ignoring any post-disaster impact of the local economy. Critics of this approach argue that it can result in a windfall to the business. Others take an "economy

[50] *See Pentair, Inc. v. Am. Guar. & Liab. Ins. Co.*, 400 F.3d 613 (8th Cir. 2005).

considered" approach. This approach seeks to place the business in the position that it would have occupied in the actual post-disaster environment had it been able to continue its operations.

Regardless of the valuation approach used, a business's recovery may also be subject to a "sublimit" in the policy applicable to loses caused by specific perils. Some commercial property insurance policies, for example, provide different "sub-limits" for losses caused by "flood," "storm surge," and "named storms/hurricanes." Harvey initially hit the Houston area as a hurricane, but inflicted a substantial amount of damage after it was downgraded to a tropical storm. How these key terms are defined can be critical in determining the amount recoverable for a business interruption claim.

III. Harvey's Impact on Energy Infrastructure Along the Texas Gulf Coast

Harvey's impact on U.S. energy infrastructure highlighted the country's increased reliance on fewer facilities that run closer to full capacity. Disruption of those facilities, in particular oil refineries, therefore, has a greater impact today than ever before.

There are 141 operable oil refineries in the United States, down from 220 in 1977.[51] The nation's largest refiner, Saudi Arabian-owned Motiva, is located in Port Arthur, Texas about 90 miles east of Houston along the Texas coast. Motiva began a planned shutdown of its 603,000 barrel-per-day facility on August 30, 2017 after Harvey dropped more than a foot of rain on the Beaumont-Port Arthur area.[52] The same day, Exxon Mobil completed a full shut down of its Beaumont refinery, which normally produces 362,300 barrels-per-day, after the plant had operated at reduced capacity for several days. Exxon Mobil had three days earlier also shut down its Baytown plant, the second largest U.S. refinery behind Motiva. Additionally, smaller refineries up and down the Texas coast from Corpus Christi to the Louisiana border experienced full or partial shutdowns due to Harvey.

Harvey's long duration and historically unprecedented rainfall ultimately knocked 11 Texas refineries offline.[53] Another seven did not fully shut down but were forced to significantly curtain production. These refineries collectively produce approximately 3 million barrels-a-day,[54] or 25 percent of total U.S. domestic refining production.[55] While this damage was significant and

[51] Jakab, *Harvey's Lessons for America's Stretched Energy Infrastructure*, Wall Street Journal (August 28, 2017).
[52] Molinski, *U.S.'s Largest Refinery Shuts Down Due to Harvey Flooding*, Wall Street Journal (August 30, 2017).
[53] Matthews, *As Houston Recovers from Harvey, Getting Fuel Flowing Again Is a Slow Process*, Wall Street Journal (September 6, 2017).
[54] Molinski.
[55] Matthews.

costly, the impact on U.S. energy infrastructure could have been much worse if operators had not prepared wisely and moved aggressively to blunt Harvey's onslaught.

Most operators knew the biggest risk from Harvey was sustained rainfall and flooding, not high winds or derivative storms/tornadoes. Accordingly, refiners such as LyondellBasell Industries, which operates a 268,000 barrel-per-day refinery in Houston, took preventive action to drain dykes and retention ponds and inspect pumps and electrical infrastructure.[56] LyondellBassell was able to continue production during the storm, but at reduced output. The problem which led to reduced production was not plant-related damage, but rather Harvey-related flooding across the Houston area. LyondellBassell's refinery primarily processes heavy crude, but tanker shipments of the raw material couldn't reach the plant because Harvey had caused closure of the Houston Ship Channel. This also prevented movement of outbound tankers loaded with refined fuel products, which meant LyondellBassell had to closely monitor its production volume and on-site storage capacity.[57] The company accomplished its goal of continuing operation, even at greatly reduced production, and avoiding a full shutdown and corresponding complete re-start that would take weeks to perform.

Steps like those LyondellBlassel undertook helped mitigate Harvey's impact, and allowed the energy industry to recover more quickly than it had following prior natural disasters like Hurricane Katrina 2005. According to Karen Harbert, CEO of the US Chamber of Commerce's Global Energy Institute, the lessons from Hurricanes Katrina and Rita helped re-write the "rule book" for industry response:

> Both the oil and gas industry industry and the electric utilities were heroic in the recovery efforts [following Katrina] and learned that they had to prepare better for a future disaster of that scale. Both have invested heavily in hardening their

[56] *Id.*
[57] *Id.*

> facilities, creating redundant systems, and undergoing disaster preparedness training…Today you can find command and control centers hundreds of miles away from the facilities to ensure reliable backup plans. Both industries have also invested in remote sensing to accelerate the identification of needed repairs…Aerial drones are also an important recent advent that allows quicker assessments that were not available in 2005.[58]

These lessons and investments paid off as the energy industry following Harvey was able to more rapidly restore power and resume fuel production, which allowed government agencies to focus on rescuing and assisting thousands residents displaced because of flooding. Approximately 6 million people reside in the greater Houston area, but only 300,000 people lost power and many had it restored fairly quickly.[59] According to Harbert, the "investments made by the industry in the aftermath of Hurricanes Katrina and Rita paid off…The preventative shut down of large facilities avoided more destruction which allowed many facilities to get back into operation more quickly."

Finally, another critically important factor that helped minimize Harvey's impact on energy infrastructure is the shift in U.S. energy posture. The country imports 25 percent less oil than it did a decade ago, and exports over a million barrels a day today.[60] Fuel supply disruption was far less pronounced following Harvey than it was after Katrina because the U.S. is producing oil and natural gas in many regions across the country. High levels of storage, including the Strategic Petroleum Reserve, also helped maintain adequate fuel supply even with substantial refining capacity off-line due to the storm.

But concerns linger even after the energy industry successfully weathered Harvey's deluge.

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[58] Veazey, *Blog: A 'Rule Book' for Harvey Authored by Katrina, Rita, et al.*, Rigzone.com (September 21, 2017).
[59] *Id*.
[60] Jakab.

The primary worry is the lack of redundant infrastructure. More energy passes through fewer, busier pieces of infrastructure today.[61] Too few pipelines carry gas and fuel from the Gulf to other parts of the country, and natural gas pipelines and gas treatment facilities remain prone to disruption due to storm surge.[62] And a functioning electrical grid remains pivotal to restoring energy infrastructure.[63] It took much longer to restore power after Katrina, but fortunately lessons were learned and needed investments made which enabled much faster restoration this time.

[61] *Id.*
[62] *Id.*
[63] Veazey.