

ASSAULT ON AMERICA:

A Decade of Petroleum Company Disaster, Pollution, and Profit

NATIONAL WILDLIFE FEDERATION 2010



United States Coast Guard



CONFRONTING GLOBAL WARMING

Report

introduction



The BP catastrophe in the Gulf of Mexico, with its tragic loss of life and devastating impact on the Gulf Coast economy, has brought the risk and high cost of oil development to the public's attention. Predictably a round of oil industry executives have testified before Congress offering countless apologies and empty assurances that such an incident will never happen again. The oil industry is running ads asserting that this is an exceptional 'once-in-a-lifetime' event for an otherwise safe and responsible industry. But this is the fourth major oil spill in 33 years in North America after the following: in 1977, Hawaiian Patriot spewed over 30 million gallons of oil 300 miles off the coast of Hawaii; in the Gulf of Mexico, Ixtoc 1 spilled over 140 million gallons of oil in 1979; and Exxon Valdez was responsible for dumping over 11 million gallons of oil into the Prince William Sound of Alaska in 1989.

Major oil spills are really only a small part of the real story. From 2000 to 2010, the oil and gas industry accounted for hundreds of deaths, explosions, fires, seeps, and spills as well as habitat and wildlife destruction in the United States. These disasters demonstrate a pattern of feeding America's addiction to oil, leaving in their wake sacrifice zones that affect communities, local economies, and our landscapes.

The BP Deepwater Horizon event is the largest and potentially most devastating environmental disaster the oil and gas industry has yet to foist on Americans. However, the frequency and recurrence of these events bears closer scrutiny. Incidents occur on a monthly and, sometimes, daily basis across the country but sadly only a portion of these make the front page or evening news.

This report provides a sampling of the oil and gas industry's performance over the past 10 years — the first decade of the new millennium. These 'lowlights' and examples from each year shed light on how the oil and gas industry has continued to show negligence and experience accidents all over the country. While not exhaustive, the listing offers a cross-section of spills, leaks, fires, explosions, toxic emissions, water pollution, and more that occurred in the last decade — the post- Exxon Valdez era, the post- Oil Pollution Act of 1990 era, when the industry said "we've got it under control."

QUICK & DIRTY FACTS

- **PROFITS:** While most of the world was hit hard by the economic downturn, the top 10 petroleum refining companies in the world reported \$2.8 trillion in revenue and \$150 billion in profit during 2009.ⁱ
- **LOBBYING:** With their stockpile of cash, oil and gas companies have spent \$38 million lobbying Congress in 2010 so that they can continue business as usual: Making billions of dollars, cutting back on safety and pollution standards, and blocking the gateway for a new, clean energy economy. ConocoPhillips, BP, Exxon Mobil, Chevron Corp, and Royal Dutch Shell have contributed \$18.74 million of that total.ⁱⁱ The American Petroleum Institute, the trade association that represents oil and gas industries, spent \$7.3 million in 2009ⁱⁱⁱ and \$3.6 million so far in 2010^{iv} in lobbying expenditures. Direct political contributions from the oil and gas industry to members of Congress have accounted for another \$13.9 million already this year.^v
- **OFFSHORE:** The U.S. Mineral Management Service (now Bureau of Ocean Energy Management, Regulation, and Enforcement) determined that 1,443 incidents occurred in the Outer Continental Shelf waters from 2001 - 2007. Of these incidents, 41 fatalities, 302 injuries, 476 fires, and 356 pollution events were reported.^{vi}
- **ONSHORE:** From 2000 - 2009, pipeline accidents accounted for 2,554 significant incidents, 161 fatalities, and 576 injuries in the United States.^{vii}

See these incidents mapped across the U.S. on pages 16 - 17

This was supposed to be the era of “never again,” the refrain often heard following a major tanker spill, refinery explosion, or pipeline leak. We were told that spill prevention plans, better safety procedures, and improved technology, would help eliminate spills, fires, explosions, leaks and seeps. Yes, this was supposed to be the era of no more leaky river barges, no more oil refinery smog, no more worker deaths and injuries, no more well blow-outs, and no more underground tank farm plumes or gas station oil seepage into

groundwater or beneath neighboring communities. Yet we have had all of that and more in the last decade.

The stories that follow show that today’s oil and gas industry threatens Americans in countless ways. This industry continues to knowingly endanger its own workers, the environment, wildlife, and our communities in states across the nation.

The total cost of the status quo — in lives lost and health risks as well as social and environmental degradation — is far too high.

THE TOP 10 STATES FOR PIPELINE ACCIDENTS

Rank	State	Significant Incidents	Fatalities	Injuries
1	Texas	523	15	60
2	Louisiana	223	6	18
3	California	177	9	24
4	Kansas	117	3	18
5	Illinois	115	2	28
6	Pennsylvania	114	10	33
7	Oklahoma	113	3	8
8	Ohio	74	6	12
9	Michigan	61	5	26
10	New Mexico	58	15	17

The negative consequences for our health, our land, our climate and our children’s future are too great to continue to depend on oil to power our economy. Now is the time to enact laws that favor and encourage safe and clean energy development and remove federal subsidies and tax advantages for oil and gas development. Now is the time to increase mitigation fees. Now is the time to create an oil and gas disaster fund paid for by industry. Now is the time to determine environmentally sensitive areas that should be permanently off limits to oil and gas development.

And now is the time to cap global warming pollution from all oil and gas production — including every aspect of the extraction and refining processes where methane, carbon dioxide, and other global warming gases are released into the air every day.

The BP Deepwater Horizon spill is truly a tragedy of our time. It should be used to take a closer and more comprehensive look at the full and continuing costs that the oil and gas industry continues to impose on society with its pollution, environmental degradation, habitat destruction, wildlife loss, worker and community endangerment, health effects consequences, and loss of life.

2000

“Campers Killed in Blast” *Gas Pipeline: New Mexico*



“The fire raged so strongly that the trucks had to retreat. ‘We saw it was going to melt the paint off our trucks.’”

The Heady, Smith and Sumler families (seven adults, three children, and two infants) headed out to Carlsbad, New Mexico for some weekend camping on the evening of Friday August 18th, 2000. When they arrived at their camping area along the Pecos River they unknowingly chose a spot where a buried natural gas pipeline lay. In fact, they had driven their pick-up trucks and other vehicles unwittingly across the buried pipeline for miles in order to reach their campsite.

At about 5:30 a.m. the next morning, still in darkness, the buried 30-inch diameter El Paso Natural Gas pipeline violently ruptured and

exploded beneath their campsite, shooting an enormous fireball 500 feet into the air, visible for miles. The massive explosion was so powerful that it registered with seismic monitoring instruments some distance away. The fire following the explosion burned for nearly an hour before firefighters could reach the fire and put it under control.

Firefighters came from several nearby towns including Carlsbad, Otis, Joel, and Loving in order to fight the massive blaze. A few fire trucks moved within a half-mile of the fire but, even at that distance, the fire raged so strongly that the trucks had to retreat. “We saw it was going to melt the paint off our trucks,” said one firefighter. Upon arriving at the gasoline explosion, the firefighters were initially unaware that campers had been at the site. After the gas from the pipeline was turned off and

the flames were tamed, the firefighters thought they were ready to go home after extinguishing a few scattered grass fires. But that’s when they heard the screams from the direction of the river.

Hearing the eerie cries for help, firefighters and emergency crews ran across several hundred yards of rocky desert carrying their medical gear. In the river bed they found six survivors who had escaped 300 yards downstream of the flames but, according to witnesses, were “hideously burned” and “looked like mummies.”¹ One of the survivors, young mother Amy Heady, was lying

next to her husband, Royle, aged 20. Amy told medics that she wanted to see her babies. Her husband raised his head, looked sadly into her eyes, and told her that they were all dead. Back at the explosion site, firefighters later found the bodies of three young children with the residue of a playpen melted all around them. The explosion and raging fire would eventually take the lives of all 12 of the campers.

The National Transportation Safety Board later determined that the probable cause of the pipeline explosion and fire was “a significant reduction in pipe wall thickness due to severe internal corrosion.” This severe corrosion occurred, according to the NTSB, because El Paso Natural Gas Company’s corrosion control program “failed to prevent, detect, or control” internal corrosion within the pipeline. Contributing to the accident, said the NTSB, were “ineffective Federal pre-accident inspections...that did not identify deficiencies in the company’s internal corrosion control program.”² In other words, negligence and regulatory non-compliance were the root cause of this horrific accident.

In the U.S. today, there are nearly 500,000 miles of oil and gas transmission pipelines that crisscross the country. These lines often carry hazardous materials with the potential to cause public injury and environmental damage in rural and urban areas. According to an investigation in the Austin American-Statesman, from 1984 - 2000 pipeline related fatalities occurred in more than 40 states.

2000 Incident List

January 27

PIPELINE RUPTURES, CAUSES LARGE SPILL

A pipeline owned by Marathon-Ashland, ruptured near **Winchester, Kentucky** spilling nearly 500,000 gallons of crude oil. The 24-inch pipeline, which travels 265 miles between Owensboro and Catlettsburg, Kentucky, spilled and leaked into Two-mile Creek and onto a golf course. While no injuries or deaths resulted, Marathon-Ashland spent over \$7.1 million responding to the accident. The probable cause of the accident, reported by the U.S. National Transportation Safety Board, was fatigue cracking in the line due to a dent in the pipe that produced high levels of stress in the pipe wall. Contributing to the severity of the accident was the failure of the controller and supervisors to recognize and isolate the rupture, as well as shut down the pipeline in a timely manner.³

March 22

WORKERS BURNED IN FLASH FIRE

A flash fire at Tosco Corp.'s **Avon, California** oil refinery burned two workers after gasoline infiltrated the refinery's fire-fighting water supply. Routinely, when welders work inside refineries their sparks are doused with refinery water as a precaution. But on this day, two men working on

scaffolding were burned as the water spray used to douse their welding sparks was gasoline, not water. Neal Jones, 45, working on scaffolding two stories off the ground, was blown off his feet and sent flying to a smaller platform five feet below. He landed on his left arm, crushing his wrist, but lay on the platform close to the fire. As the fire burned, he could feel its heat and pushed himself away, sliding down the scaffolding with one arm to the ground. Later, after Jones had been rescued and treated, he was dumbfounded to learn that gasoline had permeated the fire fighting water system at the refinery. The incident raised serious questions about Tosco's operation at the Avon location and elsewhere.

April

PIPE SPILLS INTO RIVER, KILLS WILDLIFE & HABITAT

An oil pipeline supplying the Potomac Electric Power Company's Chalk Point power plant in **Calvert County, Maryland** ruptured releasing 129,000 gallons of fuel oil into the Swanson Creek Marsh. The pipeline stretches along Maryland's Patuxent River shore for over 50 miles. During the cleanup, a storm with high winds swept oil over containment booms along the Patuxent River. Nearly 17 miles of the river's shoreline and wetlands were affected.

The spill killed at least 553 ruddy ducks, 376 muskrats, 143 assorted birds and 122 diamondback terrapins; reduced turtle hatchlings by 10 percent; and caused the loss of thousands of pounds of fish and shellfish. Federal investigators concluded the rupture occurred after a flaw in the pipeline went undetected because consultants misread inspection data.⁴

October

ANOTHER FATALITY IN THE OIL FIELDS

One worker was killed and three others injured after an attempt to weld a ball valve onto the back of an oilfield tanker truck went wrong. Gases from hydrocarbon residue in the tanker truck ignited and blew a hole in the workshop's metal roof. The accident occurred at the Key Energy facility in **Kilgore, Texas**, an oilfield services firm.

November

MISSISSIPPI RIVER SPILL ENDANGERS LOCAL WILDLIFE

The oil tanker *Westchester* lost power on the Mississippi River and ran aground some 60 miles south of **New Orleans**, spilling 554,400 gallons of crude oil, according to the U.S. Coast Guard. Soon after the spill the Coast Guard closed 29 miles of the river to traffic. At risk in the area at the time were 300,000 migratory geese and ducks that had settled into the marshes and bays of eastern Plaquemines Parish near the mouth of the river, as well as millions of oysters. The area was also home to pelicans, shorebirds, seabirds, crabs, shrimp and sport fish. Pelicans and other animals were found covered with oil. Officials said it was fortunate the wind and tide pushed the oil to the river's west bank, keeping it concentrated there and minimizing harm to wildlife in the Delta National Wildlife Refuge on the east bank.⁵



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2001

“Motiva Tank Explosion” *Delaware City, Delaware*

“I saw a big fireball and a black cloud coming at me,” recounted 40-year-old truck driver John Beaver, who was working at the Motiva Enterprises oil refinery in Delaware City, Delaware on July 17th, 2001. Beaver was describing the scene when a giant storage tank at the refinery exploded. He was sitting in the cab of his truck at the time, waiting to be loaded with some petroleum waste. When he saw the fireball coming at him he ducked under the dashboard for protection, but immediately began to have trouble breathing. He managed to get the truck rolling for about 50 feet, but then passed out. Two other contract workers nearby managed to get to him and pull him away from

the fumes. Later, from his hospital bed, Beaver recalled seeing two men working on top of the tank that was destroyed in the explosion. One of those workers was killed and eight others injured.

The tank that had exploded was one of a cluster of six big storage tanks that held more than 1.2 million gallons of spent sulfuric acid. During the explosion, the tank was rocked off of its foundation and later collapsed in the fire, while a nearby tank began to leak. More than

660,000 gallons of sulfuric acid spilled from the tanks, breached a large containment area and began polluting the nearby Delaware River.⁶ Thousands of fish and crab were killed. The body of Jeff Davis, 50 — a contractor who died when he fell from atop the collapsing storage tank into a pool of the toxic acid — was never found.

The EPA estimated that more than 1 million gallons of sulfuric acid and petroleum products spilled into waterways leading to Red Lion Creek

“Had any one of these elements been handled more effectively, this accident probably would not have occurred.”



and the Delaware River, killing at least 2,400 fish and 240 blue crabs, as well as affecting nesting herons on nearby Pea Patch Island.

In August 2002, the U.S. Chemical Safety Board (CSB) charged that the accident occurred because of neglected warnings, shoddy equipment changes, and chronic, unrepaired corrosion and leaks in the 415,000-gallon storage tank. “Had any one of these elements been handled more effectively,” said CSB chairwoman, Carolyn Merritt, “this accident probably would not have occurred.”⁷

2001 Incident List

April 1

FROST CAUSES PIPELINE FIRE?

A few miles west of **Bottineau, North Dakota**, a Dome gasoline pipeline ruptured and burned 1.1 million gallons of gasoline before the pipeline was eventually shut down. The company attributed the break to damage by an "outside force," which Bottineau County Sheriff Steven Watson said appeared to be frost that melted at uneven rates, twisting and breaking the pipeline. The real culprit? Lax regulation on pipelines.⁸

April 19

MECHANICAL FAILURE CAUSES RIG BLOWOUT

Near the crawfish ponds and sugarcane fields of **Loreauville and New Iberia, Louisiana**, an oil drilling rig, owned by Louisiana Swabbing and contracted to Nuex Exploration, experienced a failure on the blowout stack preventer. Escaping natural gas, combined with sand and oil, caused a spark that ignited the well, resulting in an explosion that destroyed the rig. The resulting 80-foot flames and thick, black clouds could be seen from several miles away. Although there were no reported injuries at the well site, the fire burned for four days. Over 46,000 gallons of oil were spilled during the blowout which affected the nearby Tee Bayou.⁹

June

COMMUNITY HEALTH THREATENED BY LOCAL GAS STATIONS

The EPA ordered cleanup of an underground gasoline leak from the former Tranguch Tire Service site in **Hazleton, Pennsylvania** where an underground gasoline plume of an estimated 50,000 gallons or more had



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impacted a nearby residential community. Although the Tranguch site was believed to be the main source of the spill, three additional gas stations, all within a 1 mile radius, also contributed to the plume. The site's impact area involved a 12 city-block area of 402 properties, 359 of which are residential. EPA found 71 private residences exceeding the non-detect level for benzene, a highly dangerous liquid toxin, and installed sewer vent traps to help prevent vapors from entering homes in this area. EPA also had to remove contaminated soil from the site and also treat contaminated groundwater.¹⁰

July

DEADLY OFFSHORE BLOWOUT

One worker was killed and others were injured during an uncontrolled well blowout in the **Texas** offshore area of the Gulf of Mexico during drilling operations. The fatality, injuries and blowout occurred in association with

The transportation and storage of fuels can become dangerous processes when safety measures are not followed correctly.

the jack-up drilling rig *Marine IV*, then owned by Pride Offshore Drilling.¹¹

November

BARGE SPILL SHUTS DOWN RIVER

While waiting to enter the McAlpine lock and dam on the **Ohio River**, a tank barge's cargo tanks were damaged by an unknown object below the waterline. Workers were able to plug the leak but not until after 125,000 gallons of gasoline were dumped into the Ohio River. Not only were water and local wildlife disturbed by the large spill, but local business was affected as well when the locking chambers on the river had to be shut down in an effort to contain this mishap.¹²

2002

“Gas Station Blues” *Leaking Underground Tanks*

Perhaps no other part of the oil system is better known to the average person than the corner gas station. In America, and around the world, there are hundreds of thousands of gasoline stations, many under the banner of the familiar gasoline brands — Exxon, Chevron, Texaco, Shell, Sunoco, and others. But buried beneath each and every gas station are a series of tanks that hold thousands of gallons of gasoline or diesel fuel. Not all of these tanks have what experts call “good integrity,” meaning that they are much more likely to leak. In the early 1990s, EPA estimated that about 25 percent



“Gasoline is a toxic substance. Depending on the blend, gasoline can have as many as 225 chemical components and additives, including known carcinogens such as benzene.”

of the 800,000 underground tanks at U.S. gas stations were leaking. In the 2000-2010 period, despite tougher laws and regulation, gas stations have continued leaking gasoline and diesel fuel throughout America. These leaks sometimes contaminate groundwater and drinking water sources, foul creeks and rivers, threaten wildlife, or seep beneath residential communities, posing dangers with fumes.

In February 2001, 12 years after the Chevron company first knew it had an underground gasoline leak at a Maryland/Washington, D.C. service station, the company informed Washington, D.C. officials and local residents, that a large underground plume of leaked gasoline had migrated beneath their community. Some residents complained for years about gasoline smells, but to no avail.

Chevron first disclosed a small spill to Maryland officials in 1989, but testing in February 2001 indicated that the large, 1,300-foot underground gasoline plume had migrated beneath the Washington, D.C. community. The plume was found to contain high levels of benzene in a few locations and gasoline was found in groundwater several feet below the basements in the neighborhood.¹³

In June 2001, EPA took over the cleanup of an underground gasoline leak in Hazelton, Pennsylvania where several gas stations owned or formerly owned by Shell, Amoco, and Standard Oil were all believed to have contributed to a gasoline plume larger than 50,000 gallons. That leak crept beneath a nearby residential community, impacting a 12 city-block area with more than 350 residential

properties, some of which were found to have excessive levels for benzene.¹⁴ In July 2001, the Plainview Water District of Long Island, New York, which supplies drinking water to 35,000 residents, brought a lawsuit against ExxonMobil over a gasoline leak from a former Mobil gas station the district feared would contaminate its 11 drinking wells.

In Orange County, California, hundreds of leaking gasoline stations resulted in settlements during the 2002-2005 period revealing the extent of the problem in that area. BP, ARCO¹⁵, Thrifty Oil¹⁶, and Shell Oil¹⁷ agreed to pay over \$10 million in order to clean up nearly 400 gas stations which had leaked gasoline into groundwater, threatening public drinking water supplies.

In November 2008, Shell Oil entered an agreement with the state of Washington to clean up contamination from leaks at 83 current and former gas stations. Shell agreed to clean up soil or groundwater contamination in seven Washington counties, including King, Snohomish, Skagit and Whatcom counties.¹⁸

2002 Incident List

January 6

TRUCK SPILLS DIESEL INTO RIVER

A petroleum tank on a truck carrying red-dyed diesel and being transported by Hi-Noon Petroleum, Inc. was involved in a traffic accident on Idaho State Highway 12, just northwest of **Kooskia, Idaho**. The accident resulted in the release of approximately 10,000 gallons of diesel into the Middle Fork of the Clearwater River. Notification was sent to four downstream municipal water systems to prepare for potential oil impacts. The systems were closed for two days. Hi-Noon Petroleum, Inc. provided bottled water to local residents.¹⁹

January 25

REFINERY POLLUTES LOCAL SCHOOLS

According to charges brought by California's South Coast Air Quality Management District, strong odors from BP's Carson oil refinery in the Los Angeles area "caused a public nuisance and severely affected

students" at nearby schools including the Broad Avenue Elementary School and the Wilmington Middle School, both in **Wilmington, California**.²⁰

April 10

MYSTERIOUS SPILL OILS BIRDS

A spill of unknown origin of at least 10,000 gallons of industrial grade waste oil was found in the Rouge River in **Detroit, Michigan**. The spill did not appear to contain toxic chemicals, according to preliminary tests but about 70 oiled birds were found according to agent of the U.S. Fish and Wildlife Service. Cleanup costs were expected to reach at least \$2 million.²¹

July 4

MAJOR PIPELINE RUPTURE

A 34-inch diameter steel pipeline owned and operated by Enbridge Pipelines, ruptured in a marsh west of **Cohasset, Minnesota** spilling over 250,000 gallons of crude oil into the environment. The cost of the accident was reported to be approximately \$5.6 million. In an attempt to keep the oil from

contaminating the Mississippi River, the Minnesota Department of Natural Resources set a controlled burn that lasted for one day and created a smoke plume about a mile high and five miles long. The U. S. National Transportation Safety Board determined the probable cause was "inadequate loading of the pipe for transportation that allowed a fatigue crack to initiate...The fatigue crack grew with pressure cycle stresses until the crack reached a critical size and the pipe ruptured."²²

2002

BP FALSIFIES INSPECTIONS

California officials alleged that BP had falsified inspections of storage fuel tanks at a **Los Angeles** area refinery and that more than 80 percent of the facilities didn't meet requirements for maintaining storage tanks. Inspectors had to get a warrant before BP allowed them to check the tanks. The company eventually settled a lawsuit brought by the South Coast Air Quality Management District for more than \$100 million.²³



When oil is spilled, birds and other wildlife can be devastated two-fold: they can be directly covered in the sludge and their habitat and food sources get contaminated.

2003

“Barge Explodes in New York”

ExxonMobil Oil Depot

On Friday morning, February 21, 2003, a tanker barge off-loading gasoline at ExxonMobil’s oil depot at Staten Island, New York exploded with tremendous force, shaking businesses and homes for miles around. Black smoke from the blaze drifted through the boroughs of Brooklyn, Manhattan and Queens and rattled city residents. On Wall Street, stock traders, thinking that the explosion was a terrorist attack, began to feverishly sell off stock²⁴.

Meanwhile, at the accident scene, it looked like a war zone. “I looked up at the sky, and I saw pieces of

been responsible for other previous New York spills, including one East River spill in March 2002 in which a Bouchard employee was found legally drunk. The cleanup for that spill lasted several weeks and cost \$1.3 million. Bouchard would have yet another spill just two months following the Staten Island barge explosion, when one of its barges ran aground outside a shipping lane at Buzzards Bay, Massachusetts. In that spill, 98,000 gallons of fuel oil took a considerable toll on shorelines, birds and other wildlife.

Five years after the Staten Island

barge explosion, the U.S. attorney’s office in Brooklyn asked a federal judge for a judgment against Bouchard of up to \$61.6 million under the Clean Water Act.²⁵ About 3.2 million gallons of gasoline were spilled into the Arthur Kill waterway at the time of the incident, much of which was assumed to have been burned off in the fire that followed. “Shipping companies that spill large quantities of gasoline into the environment and navigable waters must be penalized and made to contribute to the cost of future cleanups,” said U.S. attorney, Benton J. Campbell, in a statement at the filing.

“It sounded like a bomb going off. I could feel the debris hitting the top of my car.”

metal flying all over,” said worker Jaime Villa, who was repairing a pump at the depot when the barge exploded. “I ran as fast as I could go.” Electrical contractor Ernie Camerlingo also described the scene: “It sounded like a bomb going off. I could feel the debris hitting the top of my car.” The barge — Bouchard Barge 125 — had unloaded about half its cargo of 100,000 barrels of unleaded gasoline before it exploded, killing two barge crewmen and injuring one ExxonMobil worker. The barge continued to burn ferociously following the explosion, sending flames higher than 100 feet into the air. A NASA satellite image later showed the smoke plume stretching 94 miles from the site of the fire.

The Bouchard barge company had



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2003 Incident List

January 24

ANOTHER ENBRIDGE PIPE LEAK

A pipeline at the Enbridge Energy terminal in **Douglas County, Wisconsin** ruptured, spilling crude oil onto the frozen Nemadji River, a tributary of Lake Superior. At least 100,000 gallons of oil spilled during the event, most of which was contained at the terminal site in storm water ditches and two retention ponds. Approximately 18,000 gallons migrated to the frozen Nemadji River, about a half mile away.²⁶

April 7

IMPROPER TANK OPERATIONS CAUSE EXPLOSION

An 80,000 barrel storage tank at a ConocoPhillips Co. tank farm in **Glenpool, Oklahoma**, exploded and burned as it was being filled with diesel fuel. More than 300,000 gallons of diesel were in the tank when it exploded. The resulting fire burned for 21 hours and damaged two nearby storage tanks. The cost of the accident, including emergency response, environmental remediation, evacuation, lost product, property damage, and claims, was almost \$2.5 million. There were no injuries or fatalities, although nearby residents were evacuated, and schools were closed for two days. The U.S. National Transportation Safety Board determined that the probable cause was "ignition of a flammable fuel air mixture within the tank by a static electricity discharge due to the improper manner in which ConocoPhillips Company conducted tank operations."²⁷

April 27

BARGE SPILL DESTROYS ENDANGERED HABITAT

Oil cargo barge "B-120" owned by the Bouchard Transportation Co. of Hicksville, New York, grounded in

waters outside of the shipping lanes at the entrance to Buzzards Bay in southern **Massachusetts**. Barge "B 120" had a capacity of more than 4 million gallons and discharged approximately 98,000 gallons of that into the waterway. Overall, more than 90 miles of coast line were oiled. Over 400 birds were killed, and the habitats of three endangered species — roseate tern, piping plover and tiger beetle — and shell fish were damaged when they were soaked in oil. Two oiled seals were also reported in the terrible incident. Clean up costs exceeded \$23 million and a lawsuit was later brought by Massachusetts property owners.²⁸

November 2

GAS PIPELINE EXPLODES...AGAIN

A Texas Eastern Transmission natural gas pipeline exploded in **Bath County, Kentucky**, less than one mile south of a Duke Energy pumping station. A fire burned for about an hour before firefighters extinguished it. The same line had previously exploded in October 1985 in Hillsboro, about 5 miles north of the 2003 blast where two people were injured.²⁹

December 18

PEMEX REFINERY INCIDENT KILLS WORKERS...AGAIN

A fire at a Pemex oil refinery at **Tula, Mexico**, about 50 miles north of Mexico City, killed one worker and injured four others. Pemex officials said the blaze started in a unit that produces diesel fuel. Firefighters were able to control the blaze. The Tula refinery is Pemex's second most important refinery, with a capacity of 320,000 barrels per day, and is the main supplier for the Mexico City area. A series of accidents occurred at this same refinery two years earlier, killing two workers and prompting a temporary, partial closure.³⁰



Oil and fire do not go well together. Unfortunately, we've seen too many incidents involving dangerous fires and explosions from oil rigs, pipelines, and refineries over the past decade.

2004

“Highway Fireballs” Tanker Truck Explosions



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He was running a little late and headed for his next delivery stop south in Bethesda, Maryland. As he came into the turn off the elevated ramp, passing over I-95, he lost control of the truck as it rode over and through the concrete guard barrier, going airborne over the side, and crashing onto the northbound I-95 lanes below. An explosion and large fire followed, spreading 8,800 gallons of burning gasoline all over the traffic lanes and beyond. Four vehicles traveling northbound on I-95 drove into the fire, losing visibility and colliding.

“There was fire everywhere,” reported one spokesman for the Maryland State Highway

with a car on an elevated stretch of Interstate 95 near Bridgeport, Connecticut, igniting a fire that caused part of the roadway to buckle and cave in. The blaze was so strong that it also melted steel support beams on a newly constructed bridge on the southbound side. The incident forced partial closing and traffic rerouting on one of the busiest highways in the Northeast for more than a week.

TRAFFIC NIGHTMARE.

In late April 2007, an oil tanker truck with 8,600 gallons of gasoline came onto an interchange in Oakland, California. As the truck entered a curve, the driver lost control, hit a guardrail, and flipped the truck on its side. The tanker then exploded, sending flames hundreds of feet into the air. The driver of the truck was hospitalized with second degree burns, but no other injuries were reported. Luckily, the incident occurred at 3:45 a.m., when there was minimal traffic. The fire was so powerful that it buckled a three lane section of Interstate 580 and caused it to collapse onto some lanes of Interstate 880 30 feet below.³³ Both were key commuter routes and heavily used. On an average day, the two spans carried 160,000 vehicles. Repairs on the interchange lasted several weeks.

These are only a few of the “rolling fire bomb” incidents that have occurred in the U.S. during the last decade, many incurring considerable disruption and repair costs. Other tanker truck incidents were less disruptive, however, they still involved spills of oil, gasoline, diesel, oil waste, etc. that polluted nearby rivers, streams, or other water sources.

“There was fire everywhere. It was down in the woods, on other vehicles. It was terrible there.”

Tens of thousands of oil tanker trucks travel North American highways every day. And as with all vehicles, accidents happen, whether it's vehicle problems, driver mistakes, roadway design, or some combination of factors. Yet oil tankers — typically hauling flammable, explosive and/or toxic cargoes — are not just any vehicle. Accidents involving these vehicles, when they occur, can often be catastrophic, killing and maiming people, polluting the environment, and creating disruptions that can tie up a region for weeks and months, costing millions of dollars. Here are a few examples, beginning in 2004.

FOUR DEAD.

On January 13th, 2004, the driver of the Petro Chemical Transport tanker truck had just filled up for the second time that day at the Citgo fuels terminal in Baltimore, Maryland.

Administration.³¹ “It was down in the woods, on other vehicles. It was terrible.” Later, after firefighters had extinguished the blaze, they found the wreckage of five vehicles within the burned area. Four people died in the incident with one of the commercial truck drivers escaping from his burning vehicle. The National Transportation Safety Board determined the cause of the accident to be “failure of the tanker driver to maintain control of his vehicle for undetermined reasons.”³² Also contributing to the accident according to the NTSB was “the narrowed shoulder at the beginning of the overpass and the outdated design of this section of the roadway.”

DAMAGED BRIDGE.

A few months later, in late March 2004, a tractor trailer carrying 9,000 gallons of home heating fuel collided

2004 Incident List

January 19

FRONTIER REFINERY EXPLODES...AGAIN...AND AGAIN

Loud explosions rocked the Frontier Oil refinery in **Cheyenne, Wyoming** on a Monday afternoon in mid-January 2004, causing flames to shoot high in the air along with thick, black smoke. Raymond Cleveland, a contractor who was working inside the refinery grounds, told an Associated Press reporter that he heard two loud explosions — a smaller one followed by a larger one — and then he and another worker bolted for the gate. About a third of the work force was on duty at the time of the explosions, but, fortunately, no injuries were reported. Refinery fire-fighting crews were joined by the Cheyenne Fire Department in battling the blaze, which was extinguished within a couple of hours. The refinery is owned by Houston based Frontier Oil Corp. and produces gasoline, diesel, liquefied petroleum gas, asphalt and coke. The plant was the scene of two previous explosions: one in 1992 that killed an employee and injured five others, and one in 2001 when hydrogen gas compressor exploded and injured two workers.³⁴

April 28

COMPANY FAILURES LEAD TO DIESEL SPILL

A petroleum pipeline owned and operated by Kinder Morgan Energy Partners ruptured and spilled over 65,000 gallons of diesel fuel into marshes adjacent to Suisun Bay in Northern **California**. The company failed to notify California authorities about the spill for 18 hours, a failure for which it was later cited. It was found that the line was corroded for which Kinder Morgan pled guilty and paid \$3 million in penalties and restitution.

September 20

RIG SPILLS INTO STREAM AFFECTING WILDLIFE

During construction of a new well in **Kingston Township, Ohio**, a drilling rig malfunctioned resulting in an oil spill. The spill, first reported to the Ohio Department of Natural Resources by the drillers, was initially believed to be contained to the drilling site. Response to neighbors' concerns regarding petroleum odors revealed that crude oil had reached the nearby West Branch Creek and traveled about 1.5 miles downstream past a residential area. Later estimates indicated that up to 84,000 gallons of crude had spilled, contaminating stream wildlife. Cleanup crews later vacuumed large amounts of oil off of West Branch Creek, and approximately one mile of the creek was excavated to remove heavily impacted vegetation.³⁵

October 14

PUGET SOUND MYSTERY SPILL

A tugboat captain on Puget Sound, Washington, noticed and reported an expanding oil slick in the channel between **Tacoma and Vashon, Washington** known as the Dalco Passage. The oil came from an unknown source. An extensive cleanup effort gathered 59 tons of oily debris from the shores and over 6,800

gallons of oily water from skimming operations. The cleanup cost to federal and state oil spill contingency funds was nearly \$2 million. No responsible party was initially identified, but oil sample tests conducted by both state and federal laboratories indicated that a Polar Texas oil tanker, owned by ConocoPhillips, was the source of the oil that soiled beaches around the Dalco Passage.³⁶

November 26

TANKER SPILLS INTO RIVER

Cyprus-registered tanker *M/T Athos I*, a 750-foot vessel, was believed to have hit one or more obstructions in the Delaware River near **Philadelphia, Pennsylvania** during maximum spring low tide, resulting in three hull holes, including a major gash in the cargo hull. The tanker was carrying 13.6 million gallons of heavy crude oil from Venezuela, approximately 264,000 gallons of which were released into the river. The spill spread downriver, oiling 57 miles of river shoreline in Pennsylvania, New Jersey, and Delaware. The spill also closed the Delaware River to commercial vessel traffic for over a week. Submerged oil resulted in contaminated water intakes and also forced the closure of the Salem Nuclear Power Plant on the New Jersey side of the river.³⁷



Spilled oil, like that from the Athos barge in the Delaware River, does not only pollute the water and wildlife but it also requires costly and time intensive cleanup efforts.

“BP’s Texas City Disaster” *15 Killed, 180 Injured*

On March 23rd, 2005 in Texas City, Texas, a horrendous explosion and fire at the BP oil refinery killed 15 workers and injured another 180 people. It was one of the worst U.S. industrial accidents to have occurred since the late 1980s. Pat Nickerson, a veteran of that refinery for 28 years, was on site that day, driving his truck inside the refinery to an office trailer. “I looked down the road. It looked like fumes, like on a real hot day, you see these heat waves coming up,” he explained, describing the scene, “and then I saw an ignition and a blast.

“Cost-cutting and failure to invest in the 1990s by Amoco and then BP left the Texas City refinery vulnerable to a catastrophe.”

Then my windshield shattered. The roof of the vehicle I was driving caved in on me.”³⁸

A thunderous explosion occurred when a gasoline processing unit under repair overflowed with gas and was ignited by a nearby idling truck. After the blast, Nickerson began digging through the wreckage looking for survivors. “Out of the corner of my eye, there was somebody on the ground,” he later recalled in a 60 Minutes interview, “A guy named Ryan Rodriguez, was just kind of staring at me. He couldn’t move because his face was so deformed from the blast. And bones and stuff were protruding from his chin.”³⁹ Rodriguez died in the ambulance.

When the explosion occurred that day, the surrounding community was rocked; 43,000 people were told to “shelter in place.” Homes were damaged as far away as three-quarters of a mile from the refinery.

Financial losses would exceed \$1.5 billion.

Eva Rowe, 21 years old, was driving to Texas City on the day of the explosion to visit her parents, who both worked at the refinery. “I was at a gas station about 45 minutes away,” she would later recall. “Some man inside said that the BP refinery had exploded. I called my mom. And my mom didn’t answer, and that’s not like my mom. She always answered.”⁴⁰ Rowe later learned that both of her parents were among the 15 killed that day.

In the aftermath of the accident there were several investigations, none of which had good things to report about BP. The U.S. Chemical Safety Board (CSB) March 2007

report on the accident noted: “Cost-cutting and failure to invest in the 1990s by Amoco and then BP left the Texas City refinery vulnerable to a catastrophe. CSB Chair Carolyn Meritt, appointed by President George Bush, noted at a press conference on the investigation: “What BP experienced was the perfect storm where aging infrastructure, overzealous cost cutting, inadequate design, and risk blindness occurred. The result was the worst workplace catastrophe in more than a decade.”⁴¹

Meritt said much of the same thing in a CBS 60 Minutes interview: “The problems that existed at BP Texas City were neither momentary nor superficial. They ran deep through that operation — of a risk denial and a risk blindness that was not being addressed anywhere in the organization.” She added: “These things do not have to happen. They are preventable. They are predictable, and people do not have to die because they’re earning a living.”





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2005 Incident List

June 16

COMPANIES FORCED TO COMPLY

The U.S. Environmental Protection Agency (EPA) and the U.S. Department of Justice announced a settlement with petroleum refiners Valero, Tesoro, and Sunoco for repeated violations of its Clean Air Act permits at 18 refineries in 8 states. The companies agreed, for each refinery, to upgrade leak detection and repair practices, implement programs to minimize flaring of hazardous gases, reduce emissions from sulphur recovery plants, and adopt strategies to ensure the proper handling of benzene wastewater. Air pollution fines were also part of the settlement. Valero agreed to pay a \$5.5 million civil

penalty and spend more than \$5.5 million on environmentally beneficial projects to reduce emissions and support activities in the communities where it operates. Sunoco agreed pay a \$3 million civil penalty and spend more than \$3.9 million on environmentally beneficial projects.⁴²

July 12

TANKER TRUCK SPILLS

The wreck of a tanker truck south of **Silt, Colorado** caused a spill of what was believed to be nearly 8,000 gallons of produced water and condensates (a byproduct of natural-gas drilling). Witnesses reported that fumes filled the air and a yellow substance formed roadside puddles. The spill occurred six miles up Dry Hollow Road and the accident caused a seven-hour road closure covering a half-mile radius. One resident in the area, Gary Gagne, reported seeing two hazardous materials trucks at the accident scene and clean-up workers with respirators. "That just sort of adds

Instead of more wind turbines, Americans have seen increased occurrences of explosions, fire, and black smoke since 2000.

to my worries," said Gagne after seeing the respirator-equipped workers. "What do I do?" he asked. "I'm very upset that I'm not getting phone calls. There's nothing scarier than when the gas industry leaves us uninformed."⁴³

November

TWO WORKERS KILLED

Two workers were asphyxiated at Valero Energy's **Delaware City, Delaware** refinery due to a nitrogen gas leak.⁴⁴

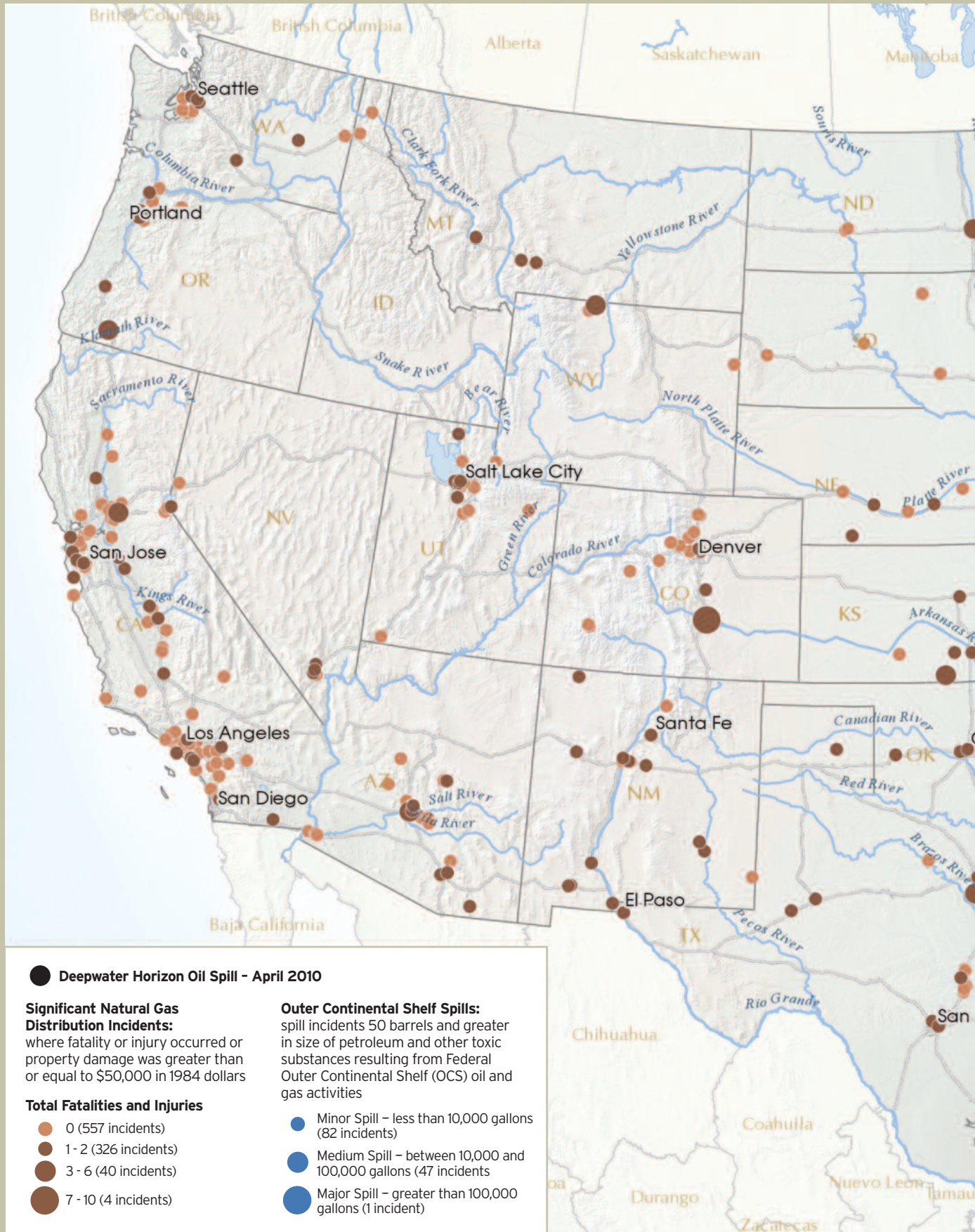
Year 2005

ANNUAL REPORTED SPILLS

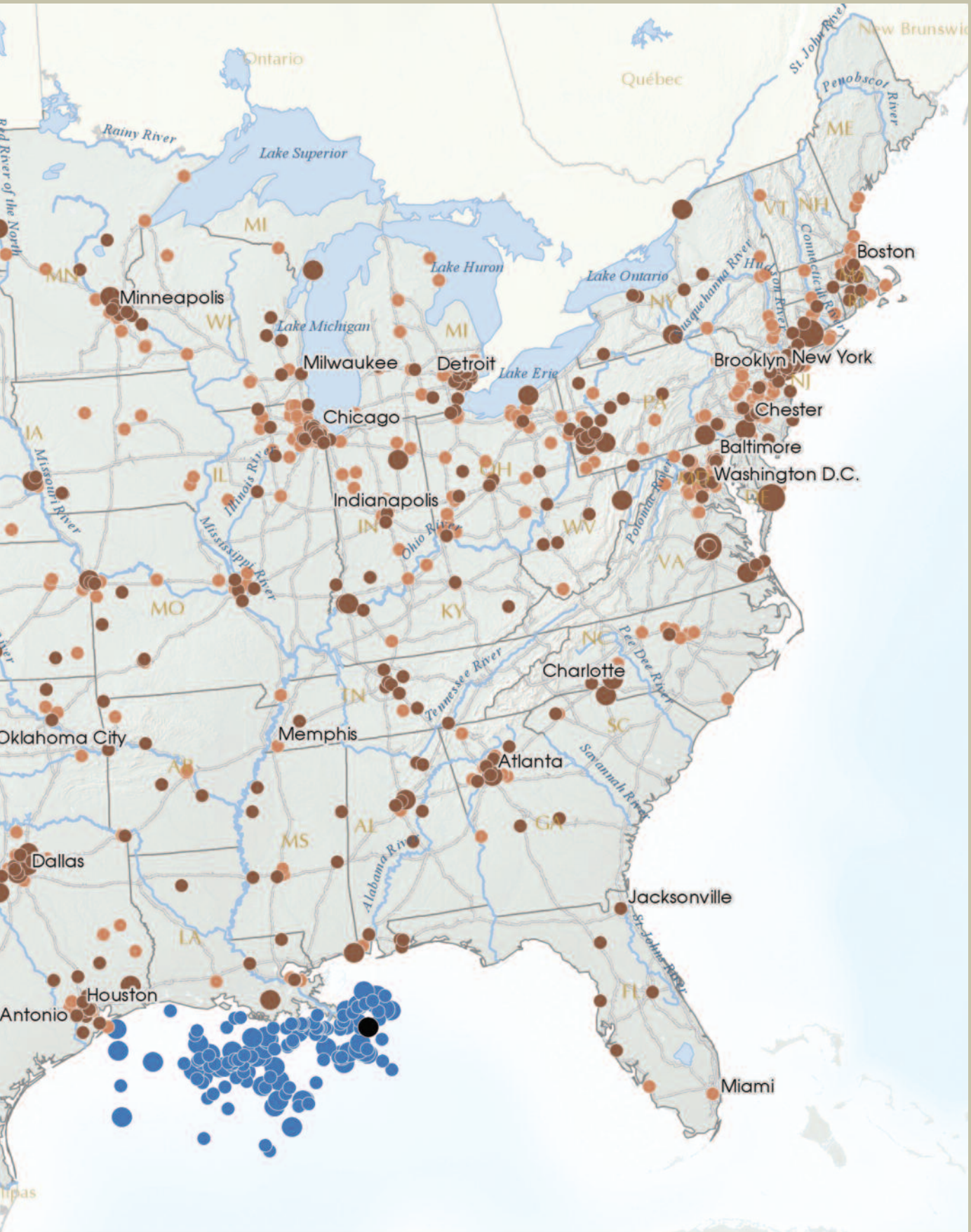
Calgary-based Enbridge, Inc., a large North American pipeline operator, reported that it spilled over 412,000 gallons in its operations during 2005, spills which the company says were largely 'contained within its facilities.'⁴⁵

“There’s nothing scarier than when the gas industry leaves us uninformed.”

Petroleum Company Accidents and Spills 2000-2009



Data Sources: Significant Natural Gas Distribution Incidents: geocoded from 2010-02-17 PHMSA Pipeline Safety - Flagged Incidents.zip at <http://primis.phmsa.gov/>
Outer Continental Shelf Spills: geocoded from Spills50bb11964-2009.xls at <http://www.mms.gov/incidents/spills1996-2011.htm>



2006

“Citgo Fouls The Calcasieu” *June 2006: River Spill*

On June 19th, 2006, a waste oil tank at the Citgo Lake Charles oil refinery on the Calcasieu River in southwestern Louisiana spilled an estimated 3 million gallons of slop oil after being compromised during a violent rain storm.

Citgo's spill was initially contained by oil booms, but the booms later failed and oil spread down the river into Calcasieu Lake. Roughly 2.25 million gallons of slop oil were released into the water as a result.⁴⁶ The Louisiana Department of Public

Two years after the spill, the federal government brought legal action against Citgo under the Clean Water Act. In court, EPA argued that Citgo failed to maintain its wastewater treatment facilities and oil skimming system for 10 years before the spill. In

guilty to negligence for failing to maintain storm water tanks and adequate storm water storage at its refinery. The company was fined \$13 million, the largest ever at that time for a criminal misdemeanor violation of the Clean Water Act.⁴⁷ The court

“Citgo knowingly misinformed government agencies of the status and capabilities of their waste water treatment unit.”



National Ocean and Atmospheric Administration

Health issued a public health and recreational advisory on swimming, fishing, and boating in the Calcasieu Estuary. A cleanup effort commenced and continued for weeks, costing millions of dollars. About 20 miles of the Calcasieu River, its ship channel, and three area lakes were closed for weeks.

1994, Citgo had converted its lagoon waste water system into a tank system, but to cut costs, only two storm water tanks were built, although they were advised that an additional tank was needed.

Documents surfaced which showed that Citgo cut \$30 million from its storm water tank project. Citgo pled

also found that Citgo knowingly misinformed government agencies of the status and capabilities of their waste water treatment unit. In one August 2009 state court proceeding, a judge found that Citgo downplayed the hazards of the spill and failed to warn the public about what was in the slop oil that was released into the river.

2006 Incident List

March 2

CORRODED BP PIPELINE SPILLS

A leak from a BP pipeline on the tundra of **Alaska's** North Slope spilled some 267,000 gallons of thick crude oil over two acres near the Prudhoe Bay production area. The spill went undetected for nearly five days before an oilfield worker driving through the area detected the scent of hydrocarbons. BP and the Alaska Department of Environmental Conservation initially stated the oil escaped through a pinprick size hole in a corroded 34 inch pipe that tied into the larger Trans Alaska Pipeline System. However, five months after the incident, BP conceded that the leak was part of a widespread corrosion problem in its system that would force it to replace 16 miles of a 22 mile pipeline from Prudhoe Bay. In 2007, BP pled guilty to the negligent discharge of oil under the federal Clean Water Act and was fined \$20 million for the spill.⁴⁸

June 1

VALERO SPILLS INTO SHIPPING CHANNEL

Valero Refining spilled over 140,000 gallons of oil into the Corpus Christi Ship Channel at **Corpus Christi, Texas**. The spill came from the West Plant section of Valero's Corpus Christi Refinery where an above-ground storage tank on the edge of the canal leaked oil into the water. The Corpus Christi Ship Channel, which spills into the Gulf of Mexico, is used for heavy

barge and commercial ship traffic. Two years after the spill, Valero paid \$2 million for violations of the Clean Water Act and was required to institute safety measures that would prevent future oil discharges.⁴⁹

June 5

DANGEROUS WORKING CONDITIONS TURN DEADLY

Three workers were killed and another seriously injured when explosions and a fire occurred at the Partridge Raleigh oilfield in **Raleigh, Mississippi**. The workers, all employees of Stringer's Oilfield Services, were completing piping connections between tanks when welding sparks ignited flammable vapor venting from one of the tanks. An investigation by the U.S. Chemical Safety Board (CSB) found that unsafe work practices were the cause of the accident and recommended increased Occupational Safety and Health Administration (OSHA) inspections of the region's oil and gas production facilities. CSB also called on the Mississippi Oil and Gas Board to identify, and refer to OSHA, potentially unsafe health and safety conditions observed during field inspections of well sites and drilling operations. The fatality rate of the oil and gas extraction industry is over eight and a half times higher than the average for all industries in the U.S., according to the CSB. "Lives cannot be an acceptable added cost of providing fuel to American consumers," said CSB Chairman Carolyn Merritt.⁵⁰

August 15

SUNOCO PIPELINE LEAKS

Sunoco Pipeline LP and Mid-Valley Pipeline Co. agreed to pay a \$2.57 million penalty in a U.S. Justice Department settlement for a January 2005 pipeline leak that dumped more than 260,000 gallons of crude oil into the **Kentucky River**.⁵¹ The spill



A petroleum company's negligence can magnify an incident by several fold. Some leaks, like this one in Alaska's North Slope, go on for days before they are detected, fixed, and cleaned up.

affected a 16 mile stretch of the Kentucky River, and also eventually entered the Ohio River. The spill resulted from a weld failure in a pipe that had been laid nearly 60 years prior. Both Mid-Valley Pipeline Co. and Sunoco Pipeline LP are affiliates of Sunoco Logistics, of Philadelphia, a company responsible for constant leaks, spills, and other incidents.

October 17

ANOTHER SUNOCO LEAK

An estimated 220,000 gallons of crude oil spilled onto the ground at Sunoco's oil refinery in **South Philadelphia, Pennsylvania**. The oil spill occurred at a storage tank on the Sunoco tank farm, and remained on site, within a containment area surrounding the tank, according to Philadelphia Fire Department officials. According to EPA, the incident reinforced the importance of providing secondary containment for bulk storage containers as required by the Oil Spill Prevention regulations.⁵²

“The fatality rate of the oil and gas extraction industry is over eight and a half times higher than the average for all industries in the U.S.”

2007

“The Oil Beneath Brooklyn”

Leak Causes Underground Oil Lake



The Brooklyn Paper

On July 17th, 2007, New York State attorney general Andrew Cuomo filed a lawsuit against Exxon Mobil and four other companies ordering them to clean up a 57 year old oil spill that had formed a giant underground pool of mixed petroleum beneath the streets of Brooklyn, New York. The giant oil leak — variously estimated at between 17 and 30 million gallons — began sometime in the 1940s. Oil refining had begun in that part of the city as early as the 1860s but it wasn't until a gasoline explosion in 1950 that city officials were alerted to the seriousness of the problem.

Construction workers excavating in the 1970s confronted a black ooze seeping up from the ground, temporarily halting construction there until the material could be removed. By 1978, New York officials

had traced the problem to oil storage tanks located on a site along Newtown Creek near the Brooklyn-Queens boundary line. Mobil, Amoco and a number of other companies had oil storage tanks there dating at least to the 1940s. Paragon Oil, a subsidiary of Texaco, now Chevron/Texaco, had a terminal there as well. Over the years, leaks from tanks and pipes, plus occasional spills, led to the accumulation of a huge underground plume of mixed petroleum products.

In the late 1970s, the U.S. Coast Guard made the first study of the plume, estimating its size to be 17 million gallons. By 1979, the oil had spread underground 52 acres, moving beyond the tank farm, now beneath a residential neighborhood near the Brooklyn Queens Expressway. Oil

could be found at depths ranging from 10 to 40 feet. Under a 1981 agreement with the U.S. Coast Guard and New York City, Mobil and Amoco began a recovery program, pumping out 2.5 million gallons from the underground plume. In the late 1980s, other leaks were found — one from 1988 when a Mobil pipeline leaked 60,000 gallons of gasoline.⁵³

In July 1990 — at a time following the Exxon Valdez oil spill of 1989 and a resurgence of environmentalism — Mobil Oil announced a renewed commitment with New York to clean up the Greenpoint spill.⁵⁴ The initiative played well in the newspapers, and for a time, the clean up seemed to be moving forward. By the mid-1990s, however, there came reports of elevated levels of several toxic chemicals in air and soil samples leading to additional problems and lawsuits. To this day, EPA and local officials are struggling to clean up this site.

The oil mess in Brooklyn, New York is not an isolated case. Similar leaks and plumes are found throughout the U.S., especially near oil refineries and tank farms, but also near many active and abandoned neighborhood gas stations where underground storage tanks have leaked. Leaked underground oil and gasoline plumes such as these have migrated beneath residential communities, contaminating drinking water aquifers and wells. Toxic fumes have also have also threatened public health and safety. These are yet another real cost that society continues to pay for its oil and gasoline — in health effects, community endangerment, local disruption, and cleanup costs.

2007 Incident List

January 1, February 2

PIPE SPILLS TWICE INTO FARMLAND, WATER TABLE

An Enbridge Inc., pipeline moving Canadian crude oil through Wisconsin to Chicago leaked 50,000 gallons of crude oil onto farmland and into drainage ditches of **Clark County, Wisconsin**. Company officials reported that the line cracked open and released crude until an operator could shut it down from an operations center in Canada. Just one month later and 80 miles up the pipeline, over 125,000 additional gallons were spilled when construction crews struck the pipeline. Not all of the oil from this spill was cleaned up quickly enough which resulted in oil seeping into the local water table.⁵⁵

October 16

REFINERY EXPLOSION & FIRE

An early morning explosion and fire occurred at the Exxon Mobil oil refinery in **Billings, Montana**. The explosion rocked nearby residents and continued to burn for most of the day. At the peak of the blaze, flames of 100 feet or more could be seen at the site. The fire began at the refinery after piping leaked hydrogen and hydrocarbon gases that ignited and caused the large explosion and fireball. There were no injuries in the refinery or in nearby communities, though residents reported feeling the blast a mile or two from the refinery. Shanie Harper, a clerk at a gas station in the Lockwood area told the *Billings Gazette* the blast was enough to “rattle the windows.” Harper added: “You really realize how close you live to something that could be dangerous.”⁵⁶

There’s no room for error when it comes to pipeline, rig, and refinery safety. Lax regulation and non-compliance has been a recipe for disaster over the past decade.

November 1

TWO DEAD, SEVEN INJURED

A 12 inch diameter pipeline operated by Dixie Pipeline Co., carrying liquid propane, ruptured in a rural area near **Carmichael, Mississippi**. About 430,000 gallons of propane were released and the resulting gas cloud expanded over nearby homes and ignited, creating a large fireball that was heard and seen miles away. In the ensuing fire, two people were killed, seven were injured, four houses were destroyed, and several others damaged. About 70 acres of grassland and woodland were also burned. Dixie Pipeline reported that damages — including property damage and loss of product — totaled \$3.4 million. The U.S. National Transportation Safety Board determined that the probable cause of the ruptured liquid propane pipeline was failure of welds near pipe joints.⁵⁷

November 28

TWO KILLED IN ANOTHER PIPE BLAST

Two workers were killed after an Enbridge pipeline leak caught fire in

Northern **Minnesota** near Clearbrook.

The pipeline had leaked two weeks earlier and a temporary repair had been made but as the two workers were removing the temporary repair, oil began leaking and the fumes ignited. The pipeline is part of the Enbridge system that carries crude oil from Canada into the U.S. Several rural fire departments responded to the pipeline fire and residents in a one mile radius were evacuated for a time. Pipeline closings that followed the blaze halted nearly a fifth of oil imports to the U.S.⁵⁸

December

NATURAL GAS EXPLODES HOUSE

In **Bainbridge, Ohio**, a house exploded in a fireball after methane gases had infiltrated the house from the groundwater below. A 2008 study by the Ohio Department of Natural Resources concluded that pressures caused by hydraulic fracturing — a technique used in natural gas well production — had pushed the gases through underground geology into the groundwater aquifer beneath the house.⁵⁹



2008

“Big Blast in Big Spring” *Explosion Shakes Town*

In mid-February 2008, a thunderous explosion rocked the Texas Panhandle town of Big Spring and was felt as far as 45 miles. The Alon oil refinery on the outskirts of town was the source of the blast, and an ominous, mushroom-like cloud of smoke rose into the sky that could be seen for miles across the flat Texas Panhandle.

The refinery, which dates to 1928, had been run by a succession of owners over the years, but most recently by the Alon Israel Oil Company which purchased it and other assets from Atofina Petrochemicals (FINA) in August 2000. The 67,000 barrels per day refinery produces fuel products and asphalt for markets in the southwestern United States.

On the day of the explosion, all 170 workers at the Big Spring refinery were accounted for within an hour or so of the incident. However, four workers were injured; one was hospitalized for burns, while the others were treated and released. One passing motorist was also injured after being struck by debris from the explosion. In town,

the refinery, said, “I thought it would knock the walls down.” Two elementary schools were evacuated, and classes were later canceled at all nine campuses in the Big Spring school district while parents were asked to pick up their children.

At the refinery, meanwhile,

cloud was discovered, the order was given for workers to evacuate the area, which likely saved lives. Those who saw and heard the blast were amazed no one was killed. “There is a very simple explanation for that,” offered Big Spring Mayor Russ McEwen: “The Lord was looking out



David Adams/Mulberry Productions

“It was extremely scary; you shook you were so scared.”

meanwhile, there was a bit of panic as buildings shook for miles around.

“It was extremely scary; you shook you were so scared,” said Laura McEwen, the wife of the town’s mayor, who lived about two miles from the refinery. “Our walls shook...It was like an earthquake.”⁶⁰ John Moseley, managing editor of the Big Spring Herald, whose downtown office was also about two miles from

multiple fires caused by the explosion were fought by firefighters and eventually put under control. Some roads were closed, with emergency officials warning of the potential for more explosions. As details emerged from within the refinery, workers reported seeing a “knee high” gas cloud moving through the refinery minutes before the initial explosion. Once the gas

for our community and the refinery workers today. There is no other explanation.”⁶¹

In mid-December 2008 it was reported by the company that a faulty weld on the bottom of a pump case led to the explosion. Alon, prior to the explosion, was reviewing the welding on similar pump cases at the refinery, but was not certain how many pump cases similar to the one that failed existed at the refinery.

2008 Incident List

January 31

LARGE FRACKING FLUID LEAK

Marathon Oil, one of several companies drilling for gas on the Roan Plateau near **Parachute, Colorado**, reported a defect in a fluid reserve pit liner that caused the release of nearly 1.4 million gallons of toxic watery drilling or “fracking” fluids from the pit that was “flow back” from a hydro-fracture operation. The fluids, according to state documents, were being stored in a reserve pit for use in another “frack” job, but they “infiltrated the subsurface, moved laterally, and discharged from a cliff” above Garden Gulch, Colorado and into the Parachute Creek drainage.⁶²

April

OIL SLUDGE KILLS DUCKS

At least 1,600 ducks died in a toxic tailings pond at a Syncrude tar sands operation in **Alberta, Canada** north of Fort McMurray.⁶³ Ecologist Kevin Timoney estimates that tar sands production has resulted in the permanent loss of as many as 400,000 birds, many of them waterfowl that die in polluted ponds.⁶⁴

April 17

SECRET DRILLING FLUIDS?

Cathy Behr, a **Durango, Colorado** emergency room nurse, almost died after treating a natural gas field worker who had been splashed in a “fracking” fluid spill at a BP natural gas drilling operation. During the treatment, Behr had stripped the man’s clothes off to treat him and stuffed them into plastic bags. Although the worker was later

released, Behr became critically ill and faced multiple organ failure. When her doctors sought to uncover the chemical identity of the drilling fluid called *ZetaFlow*, they were stymied by a confidentiality claim for BP’s concoction. It was not until Behr began the tough road to recovery that the chemical make-up of *ZetaFlow* was finally revealed to the doctor. Even then, the doctor was sworn to secrecy by the chemical’s manufacturer and was prohibited from sharing the information with his patient.⁶⁵

July 23

MAJOR MISSISSIPPI RIVER SPILL

A collision between a barge and a tanker on the Mississippi River resulted in more than 400,000 gallons of heavy

fuel oil being spilled into the river at and below the **Port of New Orleans, Louisiana**. The chemical tanker *MV Tintomara* split an American Commercial Lines fuel barge in half, causing the spill and forcing the closure of a 58 mile stretch of the river south of New Orleans. All vessel traffic was halted and more than 2,000 responders worked on cleanup efforts for more than month. The barge was salvaged and about 100 miles of the affected river was cleaned. However, the National Oceanic and Atmospheric Administration (NOAA) reported for a time that more than 10 miles of “stranded oil” remained, as cleanup efforts were complicated by a six foot drop in river level.⁶⁶



United States Coast Guard

Spilled oil isn't just bad for human health and the environment; it's also bad for business. Large stretches of river have been shut down to barges over the past decade when oil spills have occurred.

2009 “Montana Tank Blaze”

2009: ConocoPhillips, Billings, Montana



A fire raged at the Billings, Montana ConocoPhillips oil refinery on Christmas Eve, 2009 when a large storage tank containing asphalt caught fire and spewed a thick, black cloud of smoke and soot into the air. The fire burned ferociously and the smoke plume was visible for miles. A northeast wind carried the plume over south Billings, along the Yellowstone River Valley and south of Laurel. Refinery and Billings fire-fighting crews focused on keeping the flames from spreading to other nearby fuel tanks as they sprayed surrounding structures and fuel tanks with water to keep them cool as the fire raged nearby.

As the fire came under control, a heavy, dark layer of the smoke hung over Billings for the afternoon. The

“The fire burned ferociously and the smoke plume was visible for miles.”

tank that burned had a total capacity of about 97,000 barrels or four million gallons. But at the time of the fire it was about a quarter full.

In February 2010, a refinery spokesman reported that the company’s investigation found that while oil was being removed from the tank, the oil level fell below the small warming heater inside the tank, which in turn, caused the heater to increase in temperature, igniting vapors inside the tank. Jim Hughes, an environmental specialist with the Montana Department of Environmental Quality, said there would be no

enforcement action taken against ConocoPhillips because the fire was considered to be a malfunction. This “malfunction,” however, was responsible for emitting tons and tons of pollutants including sulfur dioxide, carbon monoxide, nitrogen oxides, and particulate matter into the community’s air.⁶⁷

2009 Incident List

January 1

METHANE IN DRINKING WELLS

After a backyard residential water well exploded in Dimock Township of Susquehanna County in northeastern **Pennsylvania**, an investigation by the state Department of Environmental Protection (DER) determined that methane contaminated the aquifer as a result of nearby natural gas drilling. The gas had seeped into the drinking water wells of at least nine homes in the township, causing a threat of explosion for at least four of them. DER found that Cabot Oil and Gas Corp., the company that had drilled 20 wells into the gas rich Marcellus Shale within three square miles of the drinking well blast, was responsible for polluting groundwater with methane. Inspectors also suspected that too much pressure in the mile-deep wells, or flaws in their cement and steel casings, had opened a channel for the gas.⁶⁸

January 12

TANK FIRE INJURES WORKERS

Four workers were burned and a nearby community evacuated when a large storage tank at the Silver Eagle

oil refinery at Woods Cross near **Salt Lake City, Utah** had a flash fire. The accident occurred when a large flammable vapor cloud was released from the storage tank that held an estimated 440,000 gallons of volatile hydrocarbons. The vapor cloud found an ignition source and the ensuing flash fire spread more than 200 feet from the tank, reaching four workers in a nearby shed. The four injured men, ages 30 to 50, were all burned, but pulled to safety by co-workers. They suffered burns to the face, neck, arms, and hands, with one suffering lung damage from inhaling the searing heat. In a local hospital burn unit, one victim was listed in critical condition while two others were listed in serious. Because other flammable materials were near the fire, police began going door to door to evacuate residents within a half mile of the refinery. Previously in 2004 and 2005, the very same refinery had been cited for “serious” safety violations.⁶⁹

July 25

GULF PIPE LEAK

A pipeline leak of crude oil occurred at the Shell Oil-operated Eugene Island

Pipeline System in the Gulf of Mexico some 33 miles offshore and 60 miles southwest of **Houma, Louisiana**. The leak spilled approximately 63,000 gallons of oil into the Gulf and stemmed from a crack in the system’s pipeline. Local media reported that the spill covered 80 square miles of Gulf waters and the U.S. Coast Guard reported that “a nine-mile sheen with several streamers of darker oil remains from the original spill.”⁷⁰

October 31

TWO TEENS KILLED

Two teenage boys — 18 year old Wade White and 16 year old Devon Byrd — were killed while hanging out at an oil tank site located in a rural area near the town of **Carnes, Mississippi** when the tank abruptly exploded. Investigators could not officially identify the cause of this tragic and mysterious explosion. According to the U.S. Chemical Safety Board, 42 teenagers and young adults — who sometimes seek out isolated locations for hanging out— have died in oil tank explosions across the country over the past 27 years.⁷¹

November 5

PIPELINE EXPLOSION

A major pipeline explosion occurred near **Bushland, Texas** on a weekday morning forcing residents in the area to be evacuated. The explosion, about one mile west of Bushland High School, shook homes, melted window blinds, and shot flames hundreds of feet into the air. Early reports indicated that three structures were damaged and one home near the blast was completely destroyed, but luckily no major injuries

Improperly managed and corroded pipelines crisscross petroleum company refineries and American landscapes spanning the country.



2010

“Fed Up With Sunoco” *Repeating Incidents: 2005-2010*



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“...The repeat of this sorry scenario will only be stopped when the nation’s environmental protection laws finally grow some teeth.”

In the southeastern corner of Pennsylvania, where the Philadelphia-based Sunoco Inc. (previously Sun Oil Co.) has operated for decades with its oil refineries and pipelines, local communities have grown tired of the repeating pollution and peril posed by the company’s facilities. Over the years, there have been fires, explosions, chemical releases, and pollution violations. One editorial writer for a newspaper in that community — the Delaware County *Daily Times* — exposed this repeated pattern in a January 2010 editorial after the company was cited for some

recent air pollution violations by the Pennsylvania Department of Environmental Protection (DER).

The citation resulted in a \$173,310 fine by the DER for three separate air pollution violations that occurred in 2008. Combined, these violations resulted in the uncontrolled release of volatile organic compounds, carbon dioxide, and nitrogen oxides.

“This all occurred the same year Sun was posting record revenues of \$776 million,” noted the *Daily Times* editorial.

The *Daily Times* editorial went further to list more of Sunoco’s past

incidents: One, when an overflow of an underground butane storage facility caused explosions and fires, seriously damaging homes on one block and causing evacuations on two other blocks; another, in 2004, when Sunoco released 84 pounds of potentially deadly ethylene oxide; and then another in 2009 when “Delaware County was once again put in harm’s way when Sun’s ethylene unit on the Delaware border exploded, resulting in a fire that took 10 hours to extinguish.”

“...The repeat of this sorry scenario will only be stopped when the nation’s environmental protection laws finally grow some teeth. In the meantime, Delaware County residents must be satisfied with apologies and the prospect of ill health or injury from another industrial disaster.”⁷⁴

2010 Incident List

April 2

SEVEN DEAD IN FIRE

Seven workers were killed in an early morning fire at Tesoro Corp's 120,000 barrels-per-day **Anacortes, Washington** oil refinery. It was the worst refinery accident since the March 2005 fire at BP's Texas City, Texas refinery. Federal investigators say the victims were likely engulfed in "a firewall" that ignited within seconds. The U.S. Chemical Safety Board and others are still investigating.⁷⁵

April 7

WILDLIFE REFUGE SPILL

An 18,000 gallon leak of crude oil from a pipeline of the Cypress Pipe Line (CPL) Company spilled into the Mississippi Delta National Wildlife Refuge south of **New Orleans, Louisiana**. Berry Brothers General Contractors, conducting dredging operations for ExxonMobil in the area, notified the Coast Guard that oil was spilling into a canal located 10 miles southeast of Venice, Louisiana. An area of about 160 square miles was affected — 16 square miles of wetlands in the refuge and 120 square miles offshore in the Gulf of Mexico. CPL is a joint venture between BP and Chevron.⁷⁶

April 19

WORKER KILLED

A contract worker was killed at Motiva's oil refinery in **Port Arthur, Texas** in a construction crane accident. Motiva has now had two fatalities since 2007 at this refinery while it has been attempting to expand production.

April 20

BP DEEPWATER HORIZON SPILL

Possibly the worst and most controversial environmental disaster in U.S. history, BP's Deepwater Horizon Oil Spill stemmed from an explosion in which 11 rig workers were killed and 17 were injured. The Deepwater Horizon

rig, located in the **Gulf of Mexico**, quickly sank and massive amounts of crude oil began pouring out of the destroyed well head. Although the exact amount of oil spilled into the Gulf has not been agreed upon, some government estimates place the total amount as high as 184 million gallons.⁷⁷ From the failed early attempts to stop the flow of oil, it quickly became clear that BP had no backup measures for stopping an oil spill one-mile below the surface of the ocean. The spill has taken a substantial toll: wildlife has been killed and oiled while habitat has been destroyed; and businesses and local economies have been devastated by the halt of the fishing and tourism industries.

June 12

AND THE BEAT GOES ON...

A Chevron oil company pipeline running from Colorado to the company's **Salt Lake City, Utah** refinery leaked 33,600 gallons of crude oil into a creek on the eastern edge of the city near the University of

Utah campus. Oil was found streaming through Red Butte Creek, which feeds into the Jordan River and, eventually, the Great Salt Lake. Emergency crews stopped the oil before it reached the Lake, but about 200 birds were found coated with oil. Salt Lake City Mayor Ralph Becker, seeing the environmental and wildlife impacts, issued a statement saying he was "saddened about the extent of the damages and will do all I can to ensure our city's natural assets are restored."⁷⁸ Chevron assumed responsibility for the spill and initially reported that the pipe may have been damaged by an electrical arc from a nearby electric substation source. However, investigators have now stated that they found a hole in the top of the pipeline where it runs through Red Butte Canyon.

Refineries, such as Tesoro Corp's Anacortes location, have been the location of some of the most deadly disasters in the U.S. over the past decade.



Conclusion

As the preceding litany of disasters makes clear, exploiting oil and gas resources to feed a growing appetite for energy is a dangerous business. Furthermore, petroleum companies repeatedly fail to protect people, nature or the climate. The 2010 BP oil spill in the Gulf of Mexico can and should be a wake-up call to all of us that now is the time to seriously begin reducing our dependence on dangerous fossil fuels and on the companies that repeatedly flaunt the rules, regulations and laws meant to protect all of us. Not only should the 2010 BP oil spill be the last major oil or gas disaster, it should signal the beginning of the end of all oil and gas disasters, including global warming. The 2010 BP oil spill should herald the beginning of a new, safer clean energy world.



United States Coast Guard



Getty Images

Recommendations:

PROTECT THE PUBLIC AND WILDLIFE

■ Eliminate the cap on oil and gas company liability for damages caused by oil and gas disasters.

The record of reckless carelessness outlined in this report demonstrates a clear pattern of companies accepting liability costs and fines as a cost of doing business rather than as a signal to clean up their act. When companies face the full cost of their actions, they will make better decisions to protect against these disasters.

- Remove exemptions from the **Clean Water and Safe Drinking Water Acts** for oil and gas development and strengthen other laws to protect important fish, wildlife and water resources.
- Implement new measures for **monitoring the effects of oil and gas development** and make comprehensive and thorough mitigation and reclamation of fish, wildlife and water resources a fixture in all development decisions.
- Reform the **royalty structure for oil and gas leases on federal land** so the public gets a fair rate of return and so there is dedicated revenue to safeguard wildlife and the environment.

“We are sick of the industry bragging about their safety record when children are burying their parents. Obviously, the status quo is not working.”

Jordan Barab, Deputy Assistant Secretary for the Occupational Safety and Health Administration

STOP MAKING THE PROBLEM WORSE

- **End corporate subsidies for fossil fuel energy development.** It is long past time to stop dipping into the pockets of struggling American taxpayers and families to support the incomes of the most profitable multinational companies in the world.
- **Stop the new trend toward more dangerous and more polluting dirty fuels.** Traditional oil and gas development has a well known set of safety and environmental risks and they need to be reduced. The industry's new efforts to extract oil and gas from deep oceans, tar sands, deep tight shale formations, oil shale, or converting coal to a liquid fuel will not only feed our continuing addiction to fossil fuels and stymie innovation, they will also increase health and safety risks and pollution dramatically.

ACT NOW TO SOLVE THE PROBLEM

- **Pass comprehensive climate and energy legislation in the U.S.** It is critical to begin holding oil and gas

companies accountable for doing their fair share to reduce pollution. It will help create a level playing field and an investment climate that rewards and speeds private investment in new, clean energy technologies and fuels our economy.

- **End our sole dependence on oil for transportation.** Today, 70% of the oil we use goes to fuel cars and trucks, but the gasoline powered internal combustion engine is now being replaced by new technologies that depend far less on oil. By speeding this transition, we can cut oil use rapidly in two decades while improving our quality of life.
- Keep making cars more fuel efficient by enacting and fully implementing strong and popular new fuel economy standards for cars and similar standards for medium and heavy duty trucks due over the next year. Protect EPA's authority to regulate green house gas emissions which underpins these valuable standards.

- Facilitate the rapid adoption of new electric vehicles by retooling car plants with new technology and helping make electric cars and trucks affordable and convenient for households and businesses.
- Encourage businesses and the federal government to use hybrid and natural gas fueled heavy trucks, and develop advanced biofuels for aviation fuels.
- **Invest in high speed rail and improved transit and freight systems** to provide far better ways to move both people and freight within and between our cities.
- **Help homes and businesses that heat with oil** to switch to cleaner fuels or more efficient furnaces.

There is no reason to sentence another generation to cleaning up after the inevitable damage that comes from ongoing dependence on dirty fuels. We have the solutions today that move us away from oil, while anchoring a new and prosperous economy. We only need to act.

FOR MORE INFORMATION ABOUT PETROLEUM COMPANY INCIDENTS SINCE 2000, PLEASE VISIT WWW.NWF.ORG/NEWS-AND-MAGAZINES/MEDIA-CENTER/REPORTS/ARCHIVE/2010/OIL-DISASTERS-REPORT.ASPX



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