

# Alabama

11 Jan 2002 **Pipe Leak.** An unreported amount of diesel and gasoline leaked from a Shell Oil Co. pipeline into ditch along U.S. highway 90 near Mobile, Alabama.<sup>1</sup>

# Alaska

9 Feb 2001 **Pipeline Violations.** U.S. Office of Pipeline Safety issued a final order and findings of violation for Shell Alaska Resources' A and C pipeline facilities in Nikiski, Alaska. The violations included: failing to have 57 specific required items in its procedural manuals for operations, maintenance and emergencies; failing to maintain complete records for the useful life of the pipe or repairs made to the pipeline along the shore of Cook Inlet during the summer of 1997; failing to maintain records for 2 years or until the next inspection is performed, whichever is longer, for three types of inspection; failing to maintain current pipeline facility maps which contain required information; failing to correct, within a reasonable time, conditions at a location where two pipelines cross in a manner which could adversely affect the safe operation of the pipeline system; failing to maintain a protective coating suitable for the prevention of atmospheric corrosion on a section of exposed pipeline; and failing to maintain a valve in good operating condition at all times.<sup>2</sup>

17 Apr 2001 **Oil Field Leak.** A hole in a pipeline used for transporting by-products at the Kuparuk oil field on Alaska's North Slope leaked 92,400 gallons of "produced water," a mixture of salty water and oil. While oil amounted to 3 percent of the volume from the discharge, the mixture is still harmful to the tundra, and according to DEC, has about the same toxicity as diesel fuel. And saltwater, if it seeps into the earth, kills the tundra plants and has lingering effects. The cleanup for this spill was expected to last a few weeks.<sup>3</sup>

3 Mar 2003 **Alaska Pipe Leak.** A BP pipeline failure and spill in Alaska leaked 200,000 of crude oil at Prudhoe Bay.

2 Mar 2006 **Corroded Pipeline.** 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 about five days until 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. 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.<sup>4</sup>

Sept 2008 **BP Pipe Blast.** A section of a BP gas line on the North Slope blew apart. A 28-foot-long section of steel -- the length of three pickup trucks -- flew nearly 1,000 feet through the air before landing on the Alaskan tundra...

25 May 2010 **Tank Overflows.** Several thousand barrels of crude oil from the Trans-Alaska Pipeline System spilled into a containment area at a pump station near Fort Greely, Alaska after a relief tank overflowed when some shut-off valves failed. Workers at the site were evacuated, but no injuries were reported. An

on-scene spill coordinator for Alaska's Department of Environmental Conservation reported that any contamination would be limited to the gravel on top of a lined containment area.<sup>5</sup>

# Arizona

30 Jul 2003 **Bad Pipe.** A Kinder Morgan pipeline in Tucson, Arizona ruptured and spewed 10,000 to 19,000 gallons of gasoline on five houses under construction, flooding nearby streets. The resulting pipeline closure caused major gas shortages in the state. The U.S. Office of Pipeline Safety had warned carriers previously that pipe of the type that Kinder Morgan had in Arizona had manufacturing defects that could grow over time. In 2000, the office also warned that the Kinder Morgan line from El Paso to Phoenix was corroded and in need of repair. One investment advisor, taking note of the Kinder incident and the company's generous sharing of profits with its partners noted: "Kinder Morgan bleeds more than 40 percent of pipeline cash flow for general partner compensation. Had only a fraction of that been spent on protecting the public convenience and necessity, the present debacle might never have happened. Some would have investors believe that pipelines last forever and all the cash flow is for the taking. Common sense tells us that pitch is too good to be true...."<sup>6</sup>

# California

15 Jan 2000 **Flare Pollution.** Health Services unit of Contra Costa County, California reports incident at Tosco Corp oil refinery in Rodeo, California: "Flaring from the MP-30 ground flare for approximately 2 hours. The low level point in the header caused the flaring. Unit shutdown. Black smoke visible offsite."<sup>7</sup>

7 Feb 2000 **Refinery Fire.** Catacarb leak and hydrogen fire occurred at the uncracking unit of Tosco Corp's oil refinery in Rodeo, California. Corrosion caused a pipe to fail and dumped the Catacarb from the unit and then hydrogen was released and ignited. The unit was shutdown with the loss of the supply of Catacarb and smoke wafted offsite into surrounding area.<sup>8</sup>

22 Mar 2000 **Workers Burned.** 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 there and elsewhere.

27 May 2000 **Wrongful Death Case.** The Tosco Corporation agreed to pay \$21 million to settle wrongful death lawsuits from the families of three workers killed in a February 1999 explosion at the company's Avon, California oil refinery near San Francisco. The payout was one of the largest in California history for a wrongful death case.<sup>9</sup>

31 Dec 2000 **Walker River Spill.** A 6,100-gallon tanker truck rolled over an icy curve near Bridgeport, California killing its driver and sending more than 3,500 gallons of crude and gas-oil directly into the East Walker River.

This was the first large oil spill to occur in the river – a world-class trout stream prized by sportsmen also important for downstream agricultural users in California and Nevada. A difficult, three-month spill response and river clean up ensued under wintry conditions.<sup>10</sup>

- 23 Apr 2001 **Tosco Refinery Blaze.** In Carson, California a brief but spectacular refinery fire created huge balls of flame and a pillar of black smoke visible 90 miles away. The blaze, at a Tosco Refining Co. plant 15 miles south of Los Angeles, burned for nearly three hours. The fire began in the refinery's coker unit sent billowing smoke to about 3,000 feet above the Los Angeles area. Los Angeles County Fire Department instructed people to stay indoors and close their windows. About 200 plant workers were evacuated.<sup>11</sup>
- 4 Oct 2001 **Oilfield Fire.** A well fire occurred at an oilfield 30 miles northwest of Bakersfield, California. No injuries or damaged structures reported. The blaze appeared to be touched off by a natural gas leak. At the well site, flames were reported 30 feet wide and 50 feet high and also sparked small grass fires in the rural area. Firefighters on the scene noted that it could be "a few days" before the oil-fire experts arrive, meaning it burned for a few days.<sup>12</sup>
- 6 Dec 2001 **Refinery Pollutes 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.<sup>13</sup>
- 25 Jan 2002 **Refinery Pollutes 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.<sup>14</sup>
- 17 Apr 2002 **Lake Tahoe Wells.** A San Francisco Superior Court jury found three companies – Shell Oil, Lyondell Chemical Co. and Tosco Corp – responsible for poisoning South Lake Tahoe's drinking water supply with a possible carcinogen, MTBE, found in gasoline. The pollution, from leaking gasoline stations, shut down more than a third of South Lake Tahoe's 34 drinking wells. The jury also found that two of the companies knew of the chemical's dangers for years but failed to warn water officials.<sup>15</sup>
- 24 Jun 2002 **Storage Tank Violations.** Inspectors with California's South Coast Air Quality Management District (AQMD) in Los Angeles, found that more than 80 percent of the large storage tanks inspected at the BP/ARCO Carson oil refinery violated AQMD's air pollution rules (Rule 463), due to numerous leaks, gaps, torn seals and other defects that caused excess violations. Inspectors issued a total of 12 Notices of Violation to the company documenting thousands of counts of air pollution violations. Earlier, on June 20, 2002, AQMD inspectors had notified BP that it was going to inspect its tanks, but BP officials refused the inspectors access to the refinery. AQMD then obtained an inspection warrant from Superior Court, conducting the inspection on June 24 with the assistance of the Los Angeles County Sheriffs.<sup>16</sup>
- 17 Dec 2002 **Gas Station Pollution.** ARCO oil company settled a lawsuit with Orange County, California that alleged 143 ARCO gas stations caused soil and groundwater pollution that threatened public drinking water supplies. The lawsuit, originally filed in 1999, was settled for \$8 million and had claimed that underground gasoline storage tanks at the stations leaked the fuel additive methyl tertiary butyl ether (MTBE) into the soil and groundwater. ARCO, which merged with BP in 2000, agreed to pay for all cleanup and to bring all of its gas stations into compliance.<sup>17</sup>

- 2002 **Falsified 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.<sup>18</sup>
- 12 Feb 2003 **Gas Station Leaks.** Thrifty Oil agreed to pay \$1.6 million to settle a lawsuit over the groundwater contamination caused by MTBE in gasoline leaks. The oil company also agreed to pay to for cleanup of any contamination at their 43 gas stations in Orange County as well as pay for ongoing monitoring for potential leaks at the sites.<sup>19</sup>
- 29 Dec 2003 **Refinery Fire.** A fire broke out at Valero's Benicia, California oil refinery following a mechanical failure in a cold, low-pressure separator near the center of the refinery. The fire burned for about an hour and half. The fire forced the company to shut down a jet hydrotreater and adjacent diesel hydrotreater. Later reports indicated that diesel fuel had ignited. No injuries were reported. The incident was attributed to mechanical failure.<sup>20</sup>
- 1 Feb 2004 **Refinery Fire.** Fire at Tesoro's oil refinery in Martinez, California.
- 28 Apr 2004 **Diesel Fuel in Bay.** A petroleum pipeline owned and operated by Kinder Morgan Energy Partners ruptured, and spilled an estimated 1,500 -1,600 barrels of diesel fuel into marshes adjacent to Suisun Bay in Northern California. The line was corroded. The company failed to notify California authorities about the spill for 18 hours, a failure for which it was later cited. Kinder attributed the delay to identifying the certainty of the leak. Company officials also claimed California's "cumbersome permitting process" held up its attempts to change the line. Still, Kinder Morgan pled guilty in the case and paid about \$3 million in penalties and restitution.
- Dec 2004 **Pipeline Geyser.** A Kinder Morgan pipeline burst in the Mojave Desert in California and for 12 hours it spewed diesel more than 70 feet into the air. The fuel seeped an estimated 50 feet below the surface and the clean up involved removing 7,500 tons of dirt from the site.<sup>21</sup>
- 10 Jan 2005 **Gas Station Leaks.** The Shell Oil Co. settled a six-year-old lawsuit brought by Orange County, California over soil and groundwater contamination caused by underground storage tanks at its gas stations. Shell agreed to pay \$14.5 million to conduct tests to determine the amount of methyl tertiary butyl ether (MTBE) is in leaked gasoline in the ground beneath 173 of its stations. Shell also is required to pay whatever it costs to clean up the ground at gas stations where the leaks occurred, authorities said.<sup>22</sup>
- 1 Apr 2005 **Hazardous Waste Fine.** Valero Energy agreed to pay the U.S. Environmental Protection Agency \$97,940 for alleged violations of state and federal hazardous waste regulations at its oil refinery in Benicia, California. EPA fined Valero for the following violations of federal Resource Conservation and Recovery Act: treating and storing sludge from petroleum processing (a hazardous waste) on a concrete pad without a permit; failure to maintain decontamination equipment; failure to label containers of hazardous waste with required information; and transportation of hazardous waste on a public road without a manifest. "Improper hazardous waste management can put the surrounding community at risk," said Jeff Scott, director of the waste management division of EPA's Pacific Southwest office. EPA discovered the violations during a June 2003 site inspection.<sup>23</sup>
- April 2007 **Highway Fireball.** An oil tanker truck with 8,600 gallons of gasoline exploded in burned in the San Francisco Bay area. The truck, traveling south on Interstate 80 in Oakland, California, came into an

interchange with Interstate 880. As the truck entered a curve, the driver lost control, hit a guardrail, and the truck flipped over on its side. The tanker then exploded, which sent flames hundreds of feet into the air. The driver of the truck was hospitalized with second-degree burns, but no other injuries were reported. This incident occurred at about 3:45 a.m., when there was minimal traffic. However, a traffic nightmare followed for weeks during repairs, as the fire had buckled a three-lane section of Interstate 580 and caused it to collapse onto portions of Interstate 880 some 30 feet below. Both were key commuter routes and heavily used.

- 9 May 2007 **Air Pollution Fine.** Shell Oil was fined \$2.9 million by California's San Francisco Bay Area Air Quality Management District for equipment failure at its Martinez, California oil refinery that sent 925 tons of excess carbon monoxide pollution into the air that escaped the refinery over the course of a week. Shell said that none of the pollution had reached nearby communities. "We have rigorous maintenance standards, and you hope something like this never happens and you work to make sure it doesn't happen," said Steve Leshner, a refinery spokesman. "We have never bumped up against our CO [carbon monoxide] limit before, but we are only as good as our recent performance."<sup>24</sup>
- 27 Aug 2007 **Refinery Groundwater Plume.** California state Sen. Dean Florez asked the California state attorney general to take legal action against Shell Oil for the company's inaction in cleaning up contaminated groundwater beneath the Rosedale Highway refinery it previously owned. Soil and water beneath the 525-acre site are saturated with oil, benzene, MTBE and other petroleum chemicals, mainly due to spills and leaks that occurred when Shell owned and operated the refinery. The site is near the Kern River and a city well that supply local drinking water. The California Central Valley Regional Water Quality Control Board also issued a cleanup order to Shell.<sup>25</sup>
- 7 Nov 2007 **San Francisco Bay Spill.** The 900-foot *Cosco Busan* container ship spilled 53,000 gallons of oil into San Francisco Bay on November 7, 2007, after sideswiping a San Francisco-Oakland Bay Bridge tower on a foggy morning. The spilled oil fouled Rodeo Beach in the Marin headlands, among other areas.<sup>26</sup>
- 4 Jan 2010 **Tank Leak.** A storage tank at Tesoro's Wilmington, California refinery leaked 4,600 barrels of naphtha.<sup>27</sup>
- 7 Jan 2010 **Bad Air.** BP reported "unscheduled emissions" at its Carson, California oil refinery.<sup>28</sup>

## Colorado

- 2004 **Gas Fouls Creek.** EnCana Oil & Gas, one of several companies drilling for gas on the Roan Plateau near Parachute, CO, was fined a then-record \$371,200 by the Colorado Oil and Gas Conservation Commission for a gas seep into W. Divide Creek south of Silt, Colorado.<sup>29</sup>
- 12 July 2005 **Tanker Truck Spill.** The wreck of a tanker truck south of Silt, Colorado caused a spill of what was believed to be 189 barrels of produced water and condensates (a byproduct of natural-gas drilling) according to Garfield County oil and gas auditor, Doug Dennison. 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 to my worries," said Gagne after seeing the respirator-equipped

workers. "What do I do?" he said. "I'm very upset that I'm not getting phone calls. There's nothing scarier than when the gas industry leaves us uninformed."<sup>30</sup>

- 21 Nov 2005 **Drilling Fluids Discharge.** The Colorado Oil & Gas Conservation Commission (COGCC) issued a notice of alleged violation to Presco, Inc., for an unpermitted discharge of fluids into state waters. In October 2005, at a Presco drilling site on Battlement Mesa in Garfield County, Colorado, drilling fluids used by Presco found an underground conduit and leaked out of a natural spring 1/4 mile from the drilling rig. According to one report "the drilling mud leak eventually made its way to Battlement Creek causing a visible, 'milky-white' color change in the creek due to the turbidity. The effects of the mud leak were visible for at least 3 1.2 miles downstream."<sup>31</sup>
- 31 Jan 2008 **Drilling 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 32,000 barrels of 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 leaked out – "infiltrated the subsurface, moved laterally, and discharged from a cliff" above Garden Gulch, Colorado and into the Parachute Creek drainage.<sup>32</sup>
- Jan 2008 **Pit Leak.** Berry Petroleum, one of several companies drilling for gas on the Roan Plateau near Parachute, Colorado, reported a defective pit liner, resulting in the release of an unknown quantity of drilling fluids into Garden Gulch. According to newspaper accounts, the company hadn't reported two previous spills that occurred in 2007 and 2008.<sup>33</sup>
- 17 Apr 2008 **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. Behr had stripped the man's clothes off to treat him and stuffed them into plastic bags. During the incident, hospital alarms were triggered and the ER locked down. Although the worker was later released, Cathy Behr became critically ill and faced multiple organ failure. When her doctors sought to uncover the chemical identity of a drilling fluid called *ZetaFlow*, they were stymied by a proprietary, confidential claim. As Behr began to recover, her doctor finally learned the chemical make-up of *ZetaFlow*, but he was sworn to secrecy by the chemical's manufacturer and couldn't even share the information with his patient.<sup>34</sup>
- June 2008 **Drilling Fluids Pollution.** Near Rock Spring, Colorado, benzene was discovered in local groundwater, suspected to have come from spills or leaks of fracturing fluids used in natural gas drilling operations. Three weeks later, a rancher in the area was hospitalized after he drank well water out of his own tap. Tests showed benzene in his water supply, and the Colorado Oil and Gas Conservation Commission cited four gas operators for violations, not knowing which one was responsible for the spill.<sup>35</sup>
- 2008 **Gas Leak Fine.** Colorado Interstate Gas Co., one of numerous companies drilling for gas in Colorado, was fined \$374,000 by the Colorado Oil and Gas Conservation Commission for a gas leak that caused problems in the Fort Morgan, Colorado area.<sup>36</sup>
- 26 Apr 2010 **Pit Leaks Fine.** Oxy USA, one of several companies drilling for gas on the Roan Plateau near Parachute, Colorado, agreed to pay fines of nearly \$650,000 to the Colorado Oil and Gas Conservation Commission for pit leaks of drilling fluids that caused oil and gas contamination of spring waters northwest of Parachute.<sup>37</sup>

# Connecticut

March 2004 **Fiery Truck Collision.** A tractor-trailer carrying 9,000 gallons of home heating fuel collided 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, forcing one of the busiest highways in the Northeast to close for more than two weeks. Hundreds of these kinds of fiery and dangerous tanker truck accidents occur every year.

# Delaware

July 2001 **Tank Explosion.** At Motiva's Delaware City, Delaware oil refinery, a large aboveground storage tank holding sulfuric acid exploded, killing one worker, injuring eight others, and releasing more than 600,000 gallons of sulfuric acid into the Delaware River killing thousands of fish and crabs.

April 2002 **Flare Pollution.** Motiva's Delaware City, Delaware oil refinery reported refinery "upsets" involving the use of flares, releasing pollutants such as SO<sub>2</sub>, nitrogen dioxide, smoke and soot on multiple occasions during the month of April – 10th, 11th, 12th, 14th, 15th, 18th, 19th, 23rd, 24th, 26th, 27th, and 29th. Flares serve as a kind of refinery "safety valve" when there is process difficulty of one kind or another, but refinery flares do not always burn cleanly or completely, and typically release pollutants.<sup>38</sup>

Nov 2005 **Two Killed.** Two workers asphyxiated at Valero Energy's Delaware City, Delaware, refinery.<sup>39</sup>

17 May 2009 **Refinery Explosion.** A violent explosion and fire occurred at Sun Oil's Delaware / Pennsylvania Marcus Hook oil refinery near Claymont, DE. The explosion was so strong it shook homes and rattled windows miles away. Residents in Wilmington, Delaware and across the river in New Jersey reported feeling the blast. Some reported smelling a strange odor, others complained of headaches. However there were no reports of injuries or evacuations, although some neighbors left the area voluntarily.<sup>40</sup>

# District of Columbia

February 2001 **Gasoline Plume.** Some 12 years after it first knew it had an underground gasoline leak from a Maryland/Washington, D.C. service station, Chevron informed Washington, D.C. officials and residents of a Northeast Washington, D.C. community that a large underground plume of leaked gasoline had migrated beneath their community. Residents there had complained for years about gasoline smells, but to little avail. Chevron had first disclosed a small spill to Maryland officials in 1989, but testing in February 2001 indicated that a large, 1,300-foot underground gasoline plume had migrated to Washington, D.C. The plume was found to contain high levels of benzene in a few locations but officials said at the time there was no immediate health hazard. The gasoline was found in groundwater several feet below the basements in the neighborhood. Initial cleanup efforts from the 1990s failed, based on the migration of fuel into the neighborhood. EPA subsequently became involved in the cleanup oversight. Chevron produced a short-term remediation plan in May 2002 followed by a long-term cleanup plan begun in June 2002.<sup>41</sup>

# Florida

8 Aug 2000 **Florida Beaches Oiled.** U.S. Coast Guard investigators boarded ships in Miami and Port Everglades, trying to determine the source of dumped oil off the South Florida coast, creating the area's worst oil spill in a decade. The oil contaminated 15 miles of beach, which were subsequently closed. Endangered and threatened sea turtles, then about to hatch, confronted oily debris on their path to the ocean.

# Idaho

6 Jan 2002 **Clearwater River Spill.** 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 impact. The systems were closed for two days. Hi-Noon Petroleum, Inc. provided bottled water to local residents.<sup>42</sup>

13 Nov 2003 **Wild & Scenic Impact.** A fuel trailer connected to a tanker truck overturned on Idaho State Highway 12, about 30 miles northwest of Kooskis, Idaho. The accident resulted in the spill of 6,300 gallons of red-dyed diesel. The spilled diesel from the accident migrated into a roadside ditch and into the Lochsa River, a Wild and Scenic River. Seeps were visible along approximately 350 feet of riverbank. Possible contamination to municipal water supplies was a concern at the time as well, as were risks to several endangered species including bull trout and steelhead. The river's ecosystem also supports Chinook, bald eagles, waterfowl, and other wildlife. The impacted area also included Nez Perce tribal lands.<sup>43</sup>

# Illinois

25 Sept 2001 **Gasoline Sewer Spill.** Over 500 gallons of gasoline spilled into the town of Fairfield, Illinois' sewer system from a filling station. Residents reported strong odors but the filling station's owners did not report the spill until nearly 37 hours had elapsed. A Fairfield police officer was told the driver of the fuel tanker apparently fell asleep while filling the station's underground tanks, causing the spill. No evacuations were ordered as a result of the spill.<sup>44</sup>

7 Aug 2009 **HF Release.** A release of propane and dangerous hydrogen fluoride (HF) occurred at the ExxonMobil refinery in Joliet, Illinois. The sudden release of the chemicals came from the refinery's alkylation unit, which uses HF as a catalyst. The leak did not ignite, but one operator was transported to the hospital suffering from what were described as serious, HF-related chemical burns; he was initially reported in critical condition. A second operator was examined at the hospital and released. The unit's water deluge system, designed to contain airborne HF releases, was activated and the alkylation unit was shut down. Refinery personnel were instructed to shelter in place. U.S. Chemical Safety Board chairman John Bresland remarked at the time: "We are concerned about the three apparent releases of hydrogen fluoride from refinery alkylation units in Pennsylvania, Texas, and now Illinois that have been reported

since March 2009. Because of [HF's] high toxicity, any loss of primary containment for hydrogen fluoride is a serious matter."<sup>45</sup>

29 Apr 2010 **Refinery Fire.** Fire reported at ConocoPhillips' 306,000-barrel-a-day Wood River refinery at Roxana, Illinois. Fire broke out at a sulfur-treatment unit and according to the company was safely extinguished with no reported injuries or offsite impact. The fire erupted in the S-Zorb unit which strips sulfur out of naphtha, a key component in making low-sulfur gasoline. Wood River is the largest refinery operated by ConocoPhillips, one of 11the company operates in the U.S . Wood River is a joint venture with EnCana.<sup>46</sup>

## Indiana

5 May 2009 **Gas Pipe Blast.** A natural gas pipeline exploded and caught fire near Rockville, Indiana in Parke County, a rural area in west-central Indiana, about 24 miles north of Terre Haute. No injuries were reported, but more than 40 homes were evacuated in a one-mile radius of the explosion. The U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration indicated the possibility of external corrosion in a Corrective Action Order issued to the pipeline company.<sup>47</sup>

18 May 2009 **Benzene Emissions.** EPA notice of violation was issued to BP for toxic air pollution at the company's Whiting, Indiana oil refinery. According to EPA, for nearly six years, the BP refinery emitted cancer-causing benzene at its wastewater treatment plant without proper air pollution control equipment. BP said at the time there was no evidence that humans or the environment were harmed. The violations occurred between 2003 and 2008. In 2008, the BP plant totaled just over 100 tons of benzene waste – nearly 16 times the amount allowed, according to the EPA. Similar violations took place between 2003 and 2008.<sup>48</sup>

## Iowa

18 Apr 2001 **Train Derailment.** A southbound Burlington Northern Santa Fe Railroad train derailed about 50 miles southeast of Des Moines, Iowa near Bussey. The derailment involved nine tank cars containing diesel fuel, six of which were damaged when they rolled down a steep embankment, causing the release of an estimated 50,000 gallons of diesel fuel. A large amount of the spill made its way into an intermittent tributary of Cedar Creek. A clean up of the spill and removal of the damaged rail cars ensued following the incident.<sup>49</sup>

## Kansas

23 Apr 2001 **BP Pollution Fine.** BP agreed to pay a \$804,700 fine for violating the federal Clean Water Act by dumping almost 162,500 gallons of oil in a Kansas river, according to the U.S. EPA. The wrongdoing occurred in January 1994 by a pipeline affiliate of Atlantic Richfield (ARCO). BP assumed ARCO's liabilities when it merged with the company in 2000. The oil was dumped in the Marais des Cygnes River in Osawatomie, Kansas, disrupting the town's water supply for 38 days during the winter of 1994. The oil

spill was caused by a break in an ARCO-owned pipeline. In addition to the fine, BP agreed to spend at least \$145,300 on reconstruction improvements to Osawatomie's water intake.<sup>50</sup>

# Kentucky

- 27 Jan 2000 **Crude Pipe Spill.** A crude oil pipeline run owned by Marathon-Ashland, ruptured near Winchester, Kentucky spilling about 11,644 barrels (489,000 gallons) of crude oil. The 24-inch pipeline travels some 265 miles between Owensboro and Catlettsburg, Kentucky. The crude spilled made its way into Two mile Creek and onto a golf course. No injuries or deaths were reported. As of December 13, 2000, Marathon-Ashland had spent about \$7.1 million in response 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, in combination with fluctuating pressures within the pipe, produced high local stresses in the pipe wall. Contributing to the severity of the accident was the failure of the controller and supervisors to recognize the rupture in a timely manner, shut down the pipeline, and isolate the ruptured section of the pipeline.<sup>51</sup>
- 7 Nov 2001 **Ohio River Spill.** U.S. Coast Guard reports: "While waiting to enter the McAlpine lock and dam on the Ohio River, the tank barge WTC 105 was moored along a guide wall. At that location, three of the barge's starboard cargo tanks were damaged by an unknown object, below the waterline. Approximately 124,320 gallons of gasoline was discharged into the Ohio River." The barge at the time was transporting 1.5 million gallons of gasoline to the Paducah, Kentucky area. The leaking tanks held 315,000 gallons, but workers were able to plug the leak. The lock chambers on the river were closed after the incident to confine the spill, shutting down the shipping lane on a busy river.<sup>52</sup>
- 2 Nov 2003 **Gas Pipe Explodes.** A Texas Eastern Transmission natural gas pipeline exploded in Bath County, Kentucky, about 1.5km south of a Duke Energy pumping station. A fire burned for about an hour before firefighters extinguished it. No one was injured and no property damage was reported. The same line exploded in October 1985 in Hillsboro, about 8km north of the 2003 blast. Two people were injured in that explosion.<sup>53</sup>

# Louisiana

- 28 Feb 2000 **Gulf of Mexico Incident.** An accidental riser disconnect and uncontrolled release of substances occurred during drilling operations on a Murphy Oil Gulf of Mexico offshore lease at Mississippi Canyon, Block 538, offshore Louisiana. The *Ocean Concord* drill ship was in the process of running a liner on drill pipe when the lower marine riser package was disconnected from the blowout preventer stack. The disconnect resulted in the discharge of approximately 806 barrels of synthetic mud from the riser and 150 barrels of synthetic mud and 150-200 barrels of crude oil from the wellbore. Included on a list of several training and procedural failures noted as contributing causes to the accident by MMS was also "the lack of a secondary system capable of securing the well in the absence of the primary BOP control."<sup>54</sup>
- 17 Mar 2000 **Bayou Spills.** About 80 barrels of crude oil spilled into the Miller Branch Creek bed near Stiles, Louisiana when a small oil pipeline was snapped by falling tree. Approximately 200 yards of the Miller Branch Creek bed, which flows into the James Bayou, was affected. The James Bayou flows in Caddo Lake, two

miles south of the spill. Another spill not far from the Stiles site had occurred two days earlier when 300 barrels of crude was discharged into a creek after a bulldozer ran over a pipeline.<sup>55</sup>

- 2 Jun 2000 **Refinery Emissions.** Louisiana DEQ sends “notice of potential penalty” to Shell/Motiva Norco refinery for air pollution violations in “26 areas of concern,” including possibly thousands of emissions violations, most regarding pipe & valve leaks of benzene and other chemicals.<sup>56</sup>
- 18 Aug 2000 **Refinery Explosion.** An explosion at Motiva’s Convent, Louisiana refinery injured nine workers; two were treated at the scene with seven others taken to area hospitals, including one transported to the burn unit at Baton Rouge General Hospital. Some evacuations were also reported.<sup>57</sup>
- 28 Nov 2000 **Mississippi River Spill.** 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 some 300,000 migratory geese and ducks that had then settled into the marshes and bays of eastern Plaquemines Parish near the mouth of the river, as well as millions of oysters. The area is also home to pelicans, shorebirds, seabirds, crabs, shrimp and sport fish. Some 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.<sup>58</sup>
- 1 Mar 2001 **Gulf Blowout & Fire.** An well blow out and fire occurred aboard the rig *EnSCO 51* during drilling operations on Forest Oil’s Gulf of Mexico oil lease at Eugene Island Block 273, offshore Louisiana. The U.S. Minerals Management Service later described the incident as follows: During an attempt to weld the casing head of a slip-on wellhead, a flow of gas came from the +10 valve. Unsuccessful attempts were made to stop the flow, which was then coming from the drive pipe/surface casing annular region. The gas flow eventually ignited and caused extensive damage to the platform. The well bridged over and kill operations were completed. There were no injuries. MMS listed several communication and procedural errors as contributing causes in the incident.<sup>59</sup>
- 19 Apr 2001 **Well Blow Out.** A completion oil drilling rig owned by Louisiana Swabbing and under contract to Nuex Exploration experienced a well blow out. The rig was located between the communities of Loreauville and New Iberia, Louisiana in an area surrounded by crawfish ponds and sugarcane fields. The blowout occurred when a bull plug on the blowout preventer stack failed. Escaping natural gas, combined with sand and oil, caused a spark that ignited the well, resulting in an explosion. A large, thick, black cloud and 80-foot flames could be seen several miles away. There were no reported injuries at the well site, but the fire burned for four days. Oil was observed in drainage ditches and in Tee Bayou. About 1,100 barrels of oil were spilled during the blow out.<sup>60</sup>
- 21 Sept 2001 **Citgo Fire.** A fire at Citgo’s Lake Charles, LA oil refinery injured two workers and burned for more than 18 hours. It was a three-alarm fire and included at least two explosions and flames that leapt 250 feet into the air. More than 120 emergency personnel from a dozen agencies and businesses responded. Citgo safety manager Dennis Calhoun reported in mid October 2001: “We had a vessel in which there was an accidental mixing of air and hydrogen. That led to an explosion, sent a piece of metal out of the vessel, which struck a support column, which then struck a six inch gasoline line. And the gasoline led to the big explosion that most people heard.” Calhoun added that the fire cost a half million dollars in fire-fighting foam alone. The incident occurred in the Unicracker Unit which makes turbine fuel. The cause was charged to “an internal detonation in the Unicracker hydrogen supply coalescer.” When the incident occurred, it ruptured a six-inch gasoline line that served as the primary fuel for the fire.<sup>61</sup>

- 13 Jan 2002 **Workers Burned.** Five workers were injured when a fire broke out at ExxonMobil's Scenic Highway refinery in Baton Rouge, Louisiana. An ExxonMobil spokesman said refinery workers, and workers for maintenance and construction contractor were isolating a part of the refinery's equipment by installing a blind. It was reported that residual light hydrocarbon, likely butylene, ignited in the pipes and valves, resulting in the fire that burned the workers.<sup>62</sup>
- 12 Feb 2002 **Explosion Kills Worker.** An explosion and flash fire at Shell Chemical Co.'s Geismar, Louisiana plant kills one worker and injures another during maintenance and cleaning. Gregory Gibson, 40, died of injuries at the Gonzales Hospital following the incident. He had worked at the plant for four years. At the time, Shell and the Louisiana State Police were investigating the incident.<sup>63</sup>
- Feb-Mar 2002 **Abandoned Oil Works.** The U.S. EPA initiated a cleanup of an abandoned oil production & storage site in Franklin, Louisiana. The former Ed I. Estis-Blanche L. Smith oil facility contained an abandoned oil barge in a slip, a tank farm in a secondary containment berm, and an oil well. The site bordered the Intercoastal Canal Waterway, and drains into it. Above ground storage tanks at the site were in poor condition, with rust and corrosion, leaking oil into secondary containment. The barge was rusted and periodically produced oily sheens on the waterway. The site's well was discovered to be leaking by the Louisiana Department of Natural Resources during an orphan well inspection in February 2002. DNR requested assistance from EPA to plug the well. The total volume of oil and sludge at the site was estimated at 4,840 barrels. Clean up costs at the site were \$1.1 million as of late March 2002 and were expected to be higher with continuing clean up.<sup>64</sup>
- 6 Apr 2002 **BP Pipe Leak.** An oil leak from a BP pipeline resulted in a 90,000 gallon crude oil spill on the southeastern Louisiana coast after a three-inch hole was found in a pipeline that may have been hit by a boat propeller, according to BP spokesman. BP shut down the pipeline and notified Garner Environmental, which dispatched five boats to begin containment and cleanup. It was not initially known if the spill had damaged marine or coastal wildlife in the area known as Little Lake. However, the potential impact on shrimp, crabs and oysters, then in their larval stages, was a concern, but would not be known until harvests were collected.<sup>65</sup>
- 24 May 2002 **Tank Fires.** An environmental emergency was declared in Mamou, Louisiana after three oil tank storage containers erupted in flames and left a moat of crude oil and salt water threatening nearby homes. The fire was contained and did not damage any of the homes. But water from the firefighting filled a containment area, and the blaze destroyed a pipeline into a second containment area. At the time, salt water from the site was also leaking onto private property.<sup>66</sup>
- 8 Oct 2002 **Oily Release.** The Shell/Motiva refinery in Norco, LA spewed an oily substance over a nearby residential area.<sup>67</sup>
- 30 Jan 2003 **Bay Spill.** A Shell Oil pipeline spilled an estimated 160 barrels of oil into northwest Terrebonne Bay, LA. The spill extended from a few miles southeast of Cocodrie to barrier islands 10 to 15 miles south and southwest. Initial reports indicated potential impacts on salt marshes, beaches, fish, shellfish, and birds.<sup>68</sup>
- 5 May 2003 **River Spill.** U.S. Coast Guard reports that the U.S. tanker barge *Kirby 26906*, spilled 20,000 gallons of No. 2 diesel oil in the Mississippi River near Baton Rouge, Louisiana.<sup>69</sup>
- 10 Jun 2003 **Refinery Fire.** The Murphy Oil refinery in Meraux, Louisiana reported a major fire that closed the plant down for three months.<sup>70</sup>

- 22 Nov 2003 **Small Fire.** The Murphy Oil refinery in Meraux, Louisiana reported a small, hydorgen-fed fire in a new hydrocracker unit that was being tested. Problems with pipes connected to the unit were suspected. A witness three blocks away reported a yellowish powder coming from the flare.<sup>71</sup>
- 2 Dec 2003 **ExxonMobil Leak.** ExxonMobil Pipeline Co. shut down two of its pipelines that deliver crude oil from wells in the Grand Isle, Louisiana area of the Gulf of Mexico after about 15,400 gallons of oil leaked from one of the lines. The company operates two pipelines in the area and was initially unsure which line had the leak, but later made that determination. The leak went into Barataria Bay and oil also reached small islands in the bay, with “limited shoreline impact” near Racoon Lake, according to a combined news release from the U.S. Coast Guard, ExxonMobil, and Louisiana Oil Spill Coordinator.<sup>72</sup>
- 19 Feb 2004 **River/Harbor Spill.** U.S. Coast Guard reports that a Marshall Islands flagged tanker ship, *Genar Alexander*, spilled approximately 40,000 gallons of crude oil and No. 6 oil in the New Orleans area.<sup>73</sup>
- 20 Feb 2004 **Refinery Fire.** Fire at Marathon-Ashland’s oil refinery in Garyville, LA
- 9 Apr 2004 refinery fire at Murphy Oil refinery, Chalmette, LA
- 14 May 2004 **Refinery Fire.** Fire at Murphy Oil’s crude unit at its Meraux, Louisiana refinery, which was then shut down for two weeks.<sup>74</sup>
- 19 June 2006 **Citgo Fouls River.** A waste oil tank at the Citgo oil refinery on the Calcasieu River, near Sulphur, Louisiana released an estimated 3 million gallons of slop oil after being compro-mised during a violent rain storm. The spill was initially contained by oil booms, but later the booms failed and oil spread down the Calcasieu River and into Calcasieu Lake. While the exact amount of oil that reached the water was not determined, estimates ran as high as 1,470,000 gallons. On June 28, 2006, the Louisiana Department of Public Health issued a public health and recreational advisory on swimming, fishing, and boating in the Calcasieu Estuary.<sup>75</sup>
- March 2008 **Worker Killed.** An oil refinery worker was killed while working on a pipe at the Exxon Mobil oil refinery in Baton Rouge, Louisiana.
- 23 July 2008 **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, including NOAA, worked on cleanup efforts for more than month. The barge was salvaged and about 100 miles of the affected river was cleaned. However, 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. Conventional flushing techniques, NOAA explained, even with hot water and relatively high pressure, were not effective, because the stranded oil was “high and dry.”<sup>76</sup>
- 5 Nov 2009 **LOOP Spill.** U.S. Coast Guard (USCG) contacted the NOAA Emergency Response Division for support on a potential spill from the Louisiana Offshore Oil Port (LOOP). “A mechanical issue at Buoy No.3 has the potential to result in a 100 barrel crude oil spill. USCG requested trajectory and weather support.”<sup>77</sup>
- 4 Jan 2010 **Refinery Flaring.** Flaring occurred at the ConocoPhillips Belle Chasse, Louisiana refinery with the shutdown of the gasoline-producing fluid catalytic cracker unit for unknown reasons.<sup>78</sup>

- 7 April 2010 **Wildlife Refuge Spill.** An 18,000 gallon leak of crude oil from a pipeline of the Cypress Pipe Line Company spilled pipeline into the 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 has been 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.<sup>79</sup>
- 14 Apr 2010 **Workers Injured.** Three workers were injured, one seriously, in a fire at ExxonMobil's Baton Rouge, La., refinery. USW Local 13-12 member Robert McNaylor was working on a gas compressor. He received second and third degree burns to his face, neck, hands, forearms and upper chest. Two contractors were also injured. One had minor burns on his face while the other received severe burns. Both were taken to the hospital and one was later discharged. The cause of the incident was not initially reported. There was also a secondary explosion that occurred during a gas test on the equipment affected. The gas tester, a supervisor, was knocked off his feet, but was not injured. Union officials sent one of its health and safety investigators to look into the incident. OSHA is also at the plant doing a preliminary investigation and interviewing workers. The Steelworkers union has charged that ExxonMobil, instead of focusing on process safety, bases its health and safety program on a behavior-based approach called Loss Prevention System. This approach, charges the union, is based on shifting attention away from unsafe equipment and hazardous conditions to a focus on workers and working safely around the hazards.<sup>80</sup>
- 11 May 2010 **Two Injured.** Two workers were injured in a boiler fire at Marathon's Garyville, Louisiana oil refinery.<sup>81</sup>

## Maryland

- 7 April 2000 **Pipe Spill Fouls River.** 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 Swanson Creek Marsh. The pipeline stretches for 51.5 miles along Maryland's Patuxent River shore. During the cleanup, a storm with high winds swept oil over containment booms, affecting a 17-mile stretch of the Patuxent River and shoreline. Nearly 90 acres of 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.<sup>82</sup>

## Massachusetts

- 8 Jun 2000 **Tug Causes Spill.** U.S. Coast Guard reports: "While departing a facility in Boston, MA, the tank ship *Posavina* was damaged by the tug *Alex C.* Damage to the tank ship resulted in the spillage of approximately 59,000 gallons of No. 6 fuel oil into the waterway."<sup>83</sup>

# Michigan

- 10 Apr 2002 **Waste Oil Spill.** 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 PCBs or other toxic chemicals, according to preliminary tests. About 70 oiled birds were found according to agent of the U.S. Fish and Wildlife Service. Clean up costs had run to \$500,000 at the time of the spill's discovery and were expected to reach at least \$2 million.<sup>84</sup>
- 30 May 2010 **BP Pipe Leak.** In southwest Michigan a BP pipeline carrying gasoline leaked nearly 93,000 gallons into a farm field over the Memorial Day weekend. The leak occurred in Constantine Township, St. Joseph County. Some local residents there were unaware of the line. "I had no idea there was any gasoline lines underground," said local resident Jeff Russell. "They brought bottled water and containers for bathing," said Russell. Russell and three other families were also evacuated for a few nights while BP crews tested the water and the air to make sure it was safe. BP also sampled residential wells, testing the water for gasoline. Michigan's Department of Natural Resources and Environment reported that there have been about a half-dozen spills like this one that have occurred in southwest Michigan in about 40 years. Testing at the leak site area was expected to go on for months, with concern for possible groundwater impacts a priority. The 243 mile pipeline – which runs from BP's Whiting, Indiana oil refinery to the Detroit area – is about 50 years old and was possibly corroded. The line is monitored and controlled by BP from a center in Tulsa, Oklahoma which shut it down when the leak occurred.<sup>85</sup>

# Minnesota

- 4 July 2002 **Pipeline Rupture.** A 34-inch-diameter steel pipeline owned and operated by Enbridge Pipelines, ruptured in a marsh west of Cohasset, Minnesota. Approximately 6,000 barrels (252,000 gallons) of crude oil were released into the environment. The cost of the accident was reported to the U.S. Office of Pipeline Safety to be approximately \$5.6 million. No deaths or injuries resulted. 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 along the seam of the longitudinal weld during transit. After the pipe was installed, the fatigue crack grew with pressure cycle stresses until the crack reached a critical size and the pipe ruptured."<sup>86</sup>
- 23 Mar 2004 refinery fire, Flint Hills Resources refinery, Rosemount, MN
- 28 Nov 2007 **Two Killed in 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. As the two workers were removing the temporary repair, oil began leaking and the fumes ignited. The 34" 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.<sup>87</sup>
- 21 Apr 2010 **60 Year-old Pipe?** Local officials, in the aftermath of a wildfire on part of the Leech Lake Indian Reservation in rural northern Minnesota, discovered a small leak of crude oil from the Enbridge Energy

pipeline. Workers found what appeared to be a small amount of crude oil on the ground – about five barrels or so – and later discovered a crack in the pipeline. The Indigenous Environmental Network charged that the leak showed Enbridge's pipeline to be susceptible to leaks because of its age. Marty Cobenais, an organizer with the group, said the pipeline is about 60 years old and had other sections that appeared to be in bad shape. "It's very disturbing to see," he said of the leak "particularly when you consider that there is now a new lease allowing the pipeline to remain in place for another 20 years."<sup>88</sup>

## Mississippi

- 5 June 2006 **Oilfield Explosion.** 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. The 15-to-20 foot tanks contained flammable hydrocarbons, ethyl benzene, xylene, toluene, and naphthalene fumes. 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 at the report's 2007 release.<sup>89</sup>
- 1 Nov 2007 **2 Dead, 7 Injured.** A 12-inch-diameter pipeline operated by Dixie Pipeline Co., carrying liquid propane, ruptured in a rural area near Carmichael, Mississippi. The resulting gas cloud expanded over nearby homes and ignited, creating a large fireball that was heard and seen miles away. About 430,626 gallons of propane were released. In the ensuing fire, two people were killed and seven injured. Four houses were destroyed, and several others damaged. About 70 acres of grassland and woodland were burned. Dixie Pipeline reported that total damages – including property damage and loss of product – were \$3,377,247. The U.S. National Transportation Safety Board determined that the probable cause of the ruptured liquid propane pipeline was failure of a welds and portions adjacent pipe joints.<sup>90</sup>
- 31 Oct 2009 **Teens Killed.** Two teenage boys – 18-year-old Wade White and 16-year-old Devon Byrd – were killed when "hanging out" at an oil tank site located in a rural area near the town Carnes, Mississippi. The tank suddenly exploded while the two boys were at the site. In the past 27 years, some 42 teenagers and young adults – who sometimes seek out isolated locations for hanging out – have died in oil tank explosions across the country, mostly in rural areas in the South and the West, according to the U.S. Chemical Safety Board.<sup>91</sup>

## Montana

- 13 Dec 2000 **Conoco Tank Spill.** A Conoco storage tank in Helena, Montana spilled 60,000 to 100,000 gallons of gasoline, forcing the evacuation of nearby residences and businesses. According to a Conoco

spokesman, the flow was stopped within 24 hours and the spill was contained within a protective berm surrounding the tank. County officials reported that gasoline had initially spilled from two overflow holes at the top of the storage tank. According to reports, 100 to 400 residents living within a half-mile radius were evacuated. A fire suppression foam was sprayed on the spill to reduce the threat of fire or explosion. A nearby highway was closed after motorists complained of fumes. Planes were temporarily barred from the airspace above the plant, and Montana Rail Link halted its trains from entering the area to avoid sparks.<sup>92</sup>

16 Oct 2007 **Refinery Explosion & Fire.** An early morning explosion and fire occurred on October 16, 2007 at the Exxon Mobil oil refinery in Billings, Montana. The explosion rocked nearby residents and continued to burn for the better part of a day. At the peak of the blaze, flames of 100 feet or more could be seen at the site. The malfunction that caused the explosion and fire occurred in piping of the hydrocracker unit. The blast occurred at about 6:18 a.m. in the central area of the refinery after piping leaked hydrogen and hydrocarbon gases that ignited and caused the large explosion and fireball. As of about 4 p.m. on the day of the explosion, the high-pressure piping that had failed continued to leak hydrogen and hydro-carbon gases, feeding a small fire near the refinery's hydrocracker unit. 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." Others reported their structures shaking. Harper added: "You really realize how close you live to something that could be dangerous."<sup>93</sup>

24 Dec 2009 **Refinery Tank Fire.** A fire occurred at the Billings, Montana ConocoPhillips refinery when a large storage tank containing asphalt caught fire and spewed thick black smoke into the air on Christmas Eve. The fire destroyed the tank that held asphalt and pitch, a feed stock for the refinery's coker. The coker processes heavier crude into gasoline and diesel. A refinery spokesman said the company's investigation found that while oil was being removed from the tank, the oil level fell below a small warming heater inside the tank, which in turn, caused the heater to increase in temperature, igniting vapors inside the tank. "We are implementing operational changes to prevent fires from occurring when we remove products from tanks in the future," said a ConocoPhillips spokesman. The company also reported emissions from the fire that included 6.8 tons of sulfur dioxide, 10.4 tons of particulate matter, 5 tons of carbon monoxide, 1.5 tons of hydrocarbons, and 400 pounds of nitrogen oxides. There were some complaints about odors and soot from nearby residents. Jim Hughes, an environmental specialist with the Montana DEC, said there would be no enforcement action because the fire is considered to be a malfunction.<sup>94</sup>

## New Jersey

28 Feb 2004 **Coastal Sinking & Spill.** U.S. Coast Guard reports that the Singapore flag tanker ship *Bow Mariner* sank off the New Jersey coast, spilling its cargo of 3.6 million gallons of ethyl alcohol and 55,000 gallons of diesel oil.<sup>95</sup>

6 Feb 2007 **Hydrogen Sulfide Release.** The Valero oil refinery in Paulsboro, New Jersey released hydrogen sulfide gas into the air which forced the nearby high school to close after students and some faculty developed headaches and nausea. Valero officials tested the interior of the high school after the release and measured sulfur dioxide at levels between 0.0 and 5.0 ppm (five parts per 1 million parts of air). The

smell of rotten eggs lingered in Paulsboro until late afternoon. The Valero refinery in Paulsboro, and other U.S. refineries, still use a gasoline refining method involving hydrofluoric acid. Community safety advocates have called for the use of other existing technology that offers a safer alternative.<sup>96</sup>

## New Mexico

- 19 Aug 2000 **12 Dead in Explosion.** A 30-inch-diameter natural gas transmission pipeline operated by El Paso Natural Gas Co. ruptured adjacent to the Pecos River near Carlsbad, New Mexico. The released gas ignited and burned for nearly an hour. Twelve persons camping under a bridge that supported the pipeline across the river were killed and their three vehicles destroyed. Two nearby steel suspension gas pipeline bridges also crossing the river were extensively damaged. According to El Paso, property and other damages and losses totaled \$998,296. The U.S. National Transportation Safety Board (NTSB) determined the probable cause was a “significant reduction in pipe wall thickness due to severe internal corrosion.” The severe corrosion had occurred, said NTSB, “because El Paso Natural Gas Company’s corrosion control program failed to prevent, detect, or control internal corrosion within the company’s pipeline.” Also contributing to the accident, said the NTSB, were “ineffective Federal pre-accident inspections of El Paso...that did not identify deficiencies in the company’s internal corrosion control program.”<sup>97</sup>
- 2002 **Dead Birds in Pits.** In 2002, wildlife agents collected 34 protected species from a fluids/oil pit at the Ray Westall Operating site – a pit with a poorly maintained cover of metal pipe and chicken wire. Westall Operating argued that the company could not be held accountable because no cause of death had been determined. But evidence directly linked the pollutants in the pit to the deaths of 18 kingbirds, 11 orioles, two pyrrhuloxias, a meadowlark, a lark bunting and a cactus wren. The judge found the company guilty and fined it \$11,108.50; he also sentenced its officers to two years' probation and ordered them to write an avian protection plan to prevent future poisoning. Westall appealed.<sup>98</sup>
- 1 Apr 2004 refinery fire at Giant Industries refinery, Gallup, NM

## New York

- July 2001 **Gasoline & Drinking Water.** The Plainview Water District on Long Island, New York, which supplies drinking water to 35,000 residents, brought a lawsuit against ExxonMobil over a gasoline spill from a closed Mobil gas station the Water District feared would contaminate its 11 drinking wells. The water district sought some \$500 million in compensatory damages and \$2 billion in punitive damages in litigation that is still ongoing.<sup>99</sup>
- 22 Feb 2003 **Barge Explodes.** A tanker barge offloading gasoline at an ExxonMobil oil depot in Staten Island exploded with earthquake force, shaking businesses, homes and nerves for miles around. Towering black smoke spread a pall over much of New York City. Two barge crewmen were killed and a depot worker on shore was critically burned. The ExxonMobil depot then included 39 storage tanks and eight berths at its facility. The depot’s tanks could hold up to 2.5 million barrels of gasoline, low-sulfur diesel and jet fuel. Less than 500,000 gallons of product were then in storage, according to ExxonMobil.<sup>100</sup>
- 27 Apr 2003 **Barge Grounding & Spill.** Oil cargo barge "B No. 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 heavy No. 6 fuel oil. Overall, more than 90 miles of coast line were oiled – 40 miles of direct impact and 50 miles of tar ball impacts. There were also 415 birds killed, and the habitats of three endangered species– roseate tern, piping plover and tiger beetle – were also oiled. Two oiled seals were also reported, but not captured. Shell fish habitat was also damaged. Cleanup costs exceeded \$23 million. A lawsuit was brought by Massachusetts property owners.<sup>101</sup>

26 Jun 2006 **MTBE Pollution.** The West Hempstead, New York Water District notified the New York Department of Environmental Conservation that MTBE was detected in its public water system at concentrations above the New York Department of Health maximum contaminant level. The water system was temporarily closed. The MTBE contamination came from an underground gasoline leak (one of many such incidents and systems similarly polluted). MTBE, or methyl tert-butyl ether, added to gasoline to raise octane levels and foster cleaner combustion, reducing air pollutants, became a nationwide scourge. Leaked by gas stations and supply terminals all across the country, it quickly became a problem as it is soluble in water, fast-moving, and hard to remove.<sup>102</sup>

17 Jul 2007 **Oil Beneath Brooklyn.** The New York State attorney general's office filed a lawsuit against Exxon Mobil and four other companies to force them to clean up a 57-year-old oil spill that has polluted the soil beneath Greenpoint, Brooklyn and left traces of toxic chemicals in nearby Newtown Creek. In the lawsuit, filed in Federal District Court in Brooklyn, attorney general Andrew M. Cuomo said he is seeking to compel Exxon Mobil and the other companies to speed up the cleanup and to force them to pay millions of dollars in fines. Also named in the suit were BP, Chevron, KeySpan and Phelps Dodge. At the time of the lawsuit, about eight million gallons of oil and petroleum byproducts — including benzene, arsenic and lead — were believed to still remain underground, with soil tests verifying the release of toxic vapors from the plume into the neighborhood.<sup>103</sup>

4 Mar 2008 **Hess Gasoline Stations.** The New York State Department of Environmental Conservation reached agreement with the Hess Corporation over more than 100 environmental violations at 65 Hess gas station locations in New York city and the lower Hudson Valley region and Hess's Brooklyn, New York oil storage facility. Hess agreed to pay \$1.1 million in fines and also bring its 65 stations and oil storage facility into compliance with state requirements. The violations of gasoline and oil storage regulations go back to inspections in the 1990s and early part of this decade.<sup>104</sup>

## North Dakota

1 Apr 2001 **Pipeline Fire.** A Dome Pipeline in North Dakota carrying gasoline ruptured and burst into flames a few miles west of Bottineau, N.D. An estimated 1.1 million gallons of gasoline burned before the pipeline could be 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.<sup>105</sup>

Aug 2007 **Bird Kills.** The U.S. Fish and Wildlife Service (USFWS) inspected oil well sites in the northwestern North Dakota – in Bottineau, Renville, Ward, Mountrail, Burke and Williams counties – and found dead birds. "We found trapped birds in reserve pits at active drilling sites, within drip barrels under storage tank spigots, in oil pooled in flare pits and in oil spilled on the ground," said biologist Kevin Johnson. "We collected swallows, flycatchers, gadwalls, blue-winged teal and gulls." The inspections, done on the

ground and by air, turned up 29 dead birds, and one site that had 11 birds in standing oil in a flare pit. While North Dakota is a small producer by big oil standards, even remote sites like these add up in the national count of “bird-deaths-in-oil-pits” – a number now estimated at 2 million annually.<sup>106</sup>

10 Jan 2010 **North Dakota Pipe Leak.** Enbridge Energy Partners shut down one leg of its main pipeline system delivering Canadian crude to the U.S. after discovering a leak in northeastern North Dakota. Line 2B of the Enbridge Lakehead Pipeline System leaked an estimated 3,000 barrels (126,000 gallons) of light crude oil.<sup>107</sup>

## Ohio

22 Apr 2003 **Flare & Odors.** Neighbors of the Toledo, Ohio Sunoco oil refinery reported an unusual 'huge' flare and thick black smoke pouring from one of refinery's tall stacks, producing a smell of burning diesel or petroleum, distinct from the more usual sulfur smell of the plant. Some residents noted the smell was strong enough to irritate the mouth, producing a 'foggy,' and 'fatigued.' reaction in others. The Ohio EPA later confirmed an “equipment failure” had occurred at the refinery leading to the release.<sup>108</sup>

20 Sept 2004 **Drill Rig Malfunction.** During construction of a new well in Kingston Township, Ohio, a drilling rig malfunctioned resulting in an oil spill. The mud and cuttings pit overflowed with oil and into a nearby cornfield. 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 a 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 1,500-2,000 barrels, or approximately 63,000-84,000 gallons of crude had been released, some impacting stream wildlife. Cleanup crews later vacuumed large amounts of oil off from West Branch Creek and approximately one mile of the creek was excavated to remove heavily impacted vegetation.<sup>109</sup>

Dec 2007 **Fracking Pressures.** In Bainbridge, Ohio, a house exploded in a fireball after methane gases had infiltrated the house from the groundwater below. An Ohio Department of Natural Resources study of September 2008 concluded that pressures caused by hydraulic fracturing – a technique used in natural gas well production – had pushed the gases, found naturally thousands of feet below, through underground geology into the groundwater aquifer beneath the house.<sup>110</sup>

4 Jan 2010 **Equipment Failure Flaring.** A valve malfunction at Husky Energy's Lima, Ohio refinery triggers flaring. The incident reported was “minor” according to state regulators.<sup>111</sup>

## Oklahoma

7 Apr 2003 **Tank 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. The tank had previously contained gasoline, removed earlier that day. More than 7,300 barrels of diesel were in the tank when it exploded. The resulting fire burned for about 21 hours and damaged two other storage tanks. The cost of the accident, including emergency response, environmental remediation, evacuation, lost product, property damage, and claims, was \$2,357,483. 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 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.”<sup>112</sup>

- 22 July 2003 **Blast & Fire.** The ConocoPhillips oil refinery in Ponca City, Oklahoma had an explosion and fire that injured three workers and knocked out of service a crude distillation unit. The fire burned for 12 hours. ConocoPhillips engineers began an investigation to determine the cause of the blast.<sup>113</sup>
- 9 Mar 2004 **Refinery Fire.** Fire at Sunoco’s oil refiner in Tulsa, Oklahoma.
- 29 Apr 2010 **Pipeline Pollution Fine.** The Magellan Pipeline Company of Tulsa, Oklahoma, in a consent decree with the EPA, agreed to pay a \$418,000 fine to resolve violations of the federal Clean Water Act. On January 5, 2008, approximately 1,075 barrels of gasoline leaked from Magellan's 12-inch distribution pipeline near Oologah, Oklahoma. The gasoline reached Four Mile Creek, a tributary of the Verdigris River, which flows into Lake Oologah. The cause of the pipeline leak was a failed weld at a coupling point.<sup>114</sup>

## Oregon

- 27 Jan 2001 **Yaquina River Spill.** A tanker truck accident on Highway 20, near Toledo, Oregon resulted in the death of the truck driver and an oil spill. Approximately 5,800 gallons of No. 6 fuel oil was spilled in an area directly adjacent to the Yaquina River. According to EPA, a significant amount of the spill entered the river. The truck was owned by Blue Line Transportation Co. The spill threatened a variety of species, including salmon, beaver, otters, eagles, osprey, ducks, and geese. Of concern during clean up was the need to avoid harming delicate salmon spawning beds and minimize further damage.<sup>115</sup>

## Pennsylvania

- 31 Aug 2000 **Thick Yellow Smoke.** A power interruption caused a fire in a catalytic cracking unit at the Sunoco refinery in Trainer, PA, sending thick yellow smoke into the air. Neighbors were asked to shelter in place until the smoke, which contained alumina silica, dispersed. No serious injuries were reported outside of some reported eye irritation. Local firefighters extinguished the blaze within an hour. The incident was similar to one on June 21, 2000 due to a crude oil processor malfunction.<sup>116</sup>
- 7 Sept 2000 **Refinery Fire.** A fire at Sunoco's south Philadelphia refinery caused one person to be taken to a local hospital, and another was treated at the scene. The fire broke following an equipment failure in a crude oil unit, which emitted a thick, black cloud that sparked a fire, according to company spokesman Jerry Davis. The fire was the latest in a string of minor problems at the time for Sunoco. A week earlier, a small fire at Sunoco's Marcus Hook refinery in southeastern Pennsylvania caused yellow smoke to billow through the area for several hours.<sup>117</sup>
- June 2001 **Gasoline Plume.** EPA reported continuing cleanup work on an underground gasoline leak from the former Tranguch Tire Service site in Hazelton, Pennsylvania where an underground gasoline plume of an estimated 50,000 gallons or more has impacted a nearby residential community. Although the Tranguch site is believed to be the main source of the spill, three gas stations – Orloski’s Shell, Sam’s Amoco, and

Hazleton Standard Oil – have also contributed to the plume. They are all within a one-block radius of the spill. The site’s impact area involves 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, and installed sewer vent traps to help prevent vapors from entering homes in this area. EPA as of this date had removed contaminated soil from the site and was also treating contaminated groundwater.<sup>118</sup>

- 23 Dec 2002 **Highway Fireball.** An Accent Fuel Inc. tanker truck carrying kerosene and gasoline rolled over and exploded near Connellsville, PA, southeast of Pittsburgh on Route 119, forcing the evacuation of several homes and businesses in the area. No one was injured. Firefighters fought the blaze and foamed the area. The driver of the truck crawled out the truck's window to safety. The Pennsylvania Department of Environmental Protection and hazardous materials crews came on the scene with reports that gasoline from the tanker had reached the nearby Youghiogheny River, a source of drinking water.<sup>119</sup>
- 26 Nov 2004 **Delaware River Spill.** 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, PA during maximum spring low tide, resulting in three hull holes, including a major gash in the cargo hull. The tanker was carrying 325,000 barrels (13.6 million gallons) of heavy crude oil from Venezuela, approximately 264,000 gallons of which were released into the river. The spill spread down river, 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 contamination of water intakes and also forced the closure of the Salem Nuclear Power Plant on the New Jersey side of the river.<sup>120</sup>
- 7 Mar 2006 **Small Explosion.** A “small, contained explosion” was reported at Sunoco’s 175,000 barrels-per-day oil refinery in Marcus Hook, Pennsylvania, resulting in no impact on production or the environment.<sup>121</sup>
- 17 Oct 2006 **Refinery Spill.** An estimated 5,200 - 5,600 barrels of crude oil spilled onto the ground at Sunoco's oil refinery in South Philadelphia, PA. The oil spill occurred at storage tank No. 885 in the Sunoco tank farm, and remained on site, within a containment area surrounding the tank, according to Philadelphia Fire Department officials. Media reports indicated that the spill appeared to have originated from an outlet valve located near the bottom of the tank. According to EPA, the incident reinforced the importance of providing secondary containment for bulk storage containers as required by the Oil Spill Prevention regulations.<sup>122</sup>
- 1 Jan 2009 **Water Well Explodes.** 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 in the water-bearing aquifer had occurred 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, had polluted the fresh groundwater with methane. Methane is the highly combustible, primary element of natural gas. 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.<sup>123</sup>
- 11 Mar 2009 **HF Release.** A release of deadly hydrogen fluoride (HF), the gaseous form of hydrofluoric acid, occurred at the Sunoco refinery in Philadelphia, Pennsylvania, sending 13 workers to the hospital. OSHA later cited Sunoco for four "serious" violations related to the incident. Al D'Imperio, area director of OSHA's Philadelphia office, later said the Sunoco HF unit at the refinery had a "history of leaks," which he partly

attributed to a design change made in 1991 when engineers downgraded tubing in a heat exchanger, replacing expensive nickel-alloy tubes with cheaper carbon-steel tubes.

- 18 Mar 2009 **Gasoline Geyser.** A burst gasoline pipeline shot gas up into the air, raining down on a restaurant and polluting a nearby stream near Murrysville, Pennsylvania. There were no reports of injuries.<sup>124</sup>
- 15 Apr 2010 **Gas Driller Sanctions.** The Pennsylvania Department of Environmental Protection (DEP) levied fines and other sanctions on Houston, Texas natural gas driller, Cabot Oil & Gas, for negligent operations that resulted in residential water well contamination in Dimock Township, Susquehanna County. Cabot is one of the companies drilling for natural gas in Marcellus Shale region of northeastern Pennsylvania. DEP ordered Cabot to plug three existing wells in Dimock Township; barred it from opening any new wells there for at least one year; suspended DEP review of other Cabot drilling permits in the state; and levied \$240,000 in fines.<sup>125</sup>
- 1 May 2010 **Gas Drilling Pit.** The Pennsylvania Department of Environmental Protection ordered Cabot Oil & Gas Corp – one of the companies drilling for gas in the Macellus Shale region of northeastern Pennsylvania – to close and remove an earthen reserve pit at one of its drill site in Susquehanna County that holds drilling fluids. The reserve pit is located at the Hibbard well pad in Dimock Township. Cabot was also ordered to determine whether the pit is contaminating nearby water sources.<sup>126</sup>
- 22 May 2010 **ExxonMobil Gasoline Leak.** More than a dozen plaintiffs settled a nine-year-old lawsuit against ExxonMobil that alleged they were sickened after a gasoline spill from a Hazelton, PA gasoline station. The spill is commonly known as the Laurel Gardens gas spill, which was reported in 2001 after gasoline was leaked into the ground. The plaintiffs were restricted from disclosing the monetary settlement made in the cases. As of May 2010, there were still 270 other cases pending against ExxonMobil in the matter.<sup>127</sup>

## Rhode Island

- 5 Jul 2000 **Narragansett Bay Spill.** A tanker barge, *Penn 460*, was damaged approximately 3 miles north-northeast of the Newport Bridge in Narragansett Bay, Rhode Island. At least 300 barrels of No.6 fuel oil were released into the water from a 12,000 barrel-capacity cargo tank. Approximately two miles of shoreline along the west side of Aquidneck Island were oiled during the initial phases of the spill.<sup>128</sup>

## South Dakota

- 2004 **Old Oil Pollution.** Utility company workers installing fiber optic cables and water lines in South Dakota encountered oil contamination believed to be from the former Hot Springs Oil Refinery in Hot Springs, South Dakota. The refinery, originally opened in 1932, was associated with the Osage oil fields of Wyoming. Waste products from early refining and well drilling were disposed in 20 x 30-foot earthen pits. The refinery ceased operation in the 1940s but the site continued to be used as a bulk petroleum storage business for another 50 years. The Fall River is approximately 550 feet from the site and concerns arose over whether the underground oil contamination had migrated to the river. EPA testing found no river contamination. However, free-flowing oil was encountered in one boring, and samples

taken from 5 of 7 test wells showed the presence of dissolved-phase petroleum. The state of South Dakota continues to monitor groundwater in the area.<sup>129</sup>

# Texas

- 2 Feb 2000 **Texas Spill.** Equilon Pipeline Co. leaked 18 barrels of crude oil from a pipeline in Jefferson County, Texas, west of Highway 366, causing estimated \$75,000 in property damage. Corrosion was listed as the cause of the leak.<sup>130</sup>
- March 2000 **Gasoline Spill.** A spill of about 564,000 gallons of unleaded gasoline containing methyl tertiary butyl ether (MTBE) occurred on the Explorer Pipeline in Hunt County, Texas. The spill reached Lake Tawakoni, a drinking water source for Dallas, Texas.<sup>131</sup>
- 12 Jun 2000 **Overfilling Spill.** U.S. Coast Guard reports: "The No.1 tank of the tank barge NMS 111 was overfilled, resulting in approximately 80,000 gallons of No. 6 oil spilling into the Houston Ship Channel."<sup>132</sup>
- 17 Oct 2000 **Oilfield Services Death.** One worker was killed and three injured after an attempt to weld a ball valve on the back of an oilfield tanker truck. Gases from hydrocarbon residue in the tanker truck ignited. The blast blew a hole in the workshop's metal roof. The accident occurred at the Key Energy facility in Kilgore, Texas, an oilfield services firm.<sup>133</sup>
- 26 Oct 2000 **Tank Fire Closes Highway.** An old storage tank being demolished at Shell's Deer Park, Texas refinery catches fire. The burning tank – which had held naphtha, a gasoline component – produced heavy black smoke in the area, prompting the temporary closure of the Harris County Toll road.<sup>134</sup>
- 13 Jul 2001 **Texas Offshore Blowout.** One worker was killed and others injured during an uncontrolled well blowout in the Texas offshore area of the Gulf of Mexico during drilling operations at the William G. Helis Company's Lease in Brazos Block 417. The fatality, injuries and blowout occurred in association with the jack-up drilling rig *Marine IV*, then owned by Pride Offshore Drilling.<sup>135</sup>
- 22 Sept 2001 **Ship Channel Spill.** U.S. Coast Guard reports: "The Liberian flag tank ship *New Amity* collided with the tank barge *NMS 1486*, while navigating in the Houston Ship Channel.... [A]pproximately 50,000 gallons of intermediate fuel oil was spilled into the waterway." The accident closed the ship channel, servicing the nation's second largest port. The spill occurred at Barbour's Cut in La Porte, Texas. About 18,000 feet of boom, skimmers and some 70 workers were deployed in the clean up.<sup>136</sup>
- 4 Dec 2001 **HF Leak.** A Pasadena, Texas refinery reported that a hydrofluoric acid leak occurred when an operator was checking the operation of a valve. The leak forced plant officials to evacuate the plant after six workers standing several feet away were exposed to the chemical and were having trouble breathing. They were taken to a nearby hospital as a precaution and later released.<sup>137</sup>
- January 2002 **Motiva Upset.** Motiva's Port Arthur, Texas plant reported a refinery upset in which 3,669 pounds of sulfur dioxide air pollutants were released.<sup>138</sup>
- 13 Jan 2002 **Broken Valve Seal.** A leak of isobutane caused of an explosion and fire at an unidentified Texas oil refinery. Isobutane was being used to clean a vessel when the leak occurred. The vapor ignited on a nearby heater, causing a vapor explosion. Two days later authorities confirmed that a broken seal on a valve was responsible for the incident.<sup>139</sup>

- 3 April 2002 **Tank Fire.** A fire at Shell's Deer Park, Texas plant burned for five hours after an out-of-service crude oil storage tank that was being cleaned caught fire. No injuries reported.
- 13 May 2002 **Petrochem Fire.** A fire at Shell's Deer Park, Texas chemical plant, in olefins-3 unit sends large plumes of smoke into area, forcing nearby roads, including Texas Highway 225, to be shut temporarily. Residents of Pasadena and Deer Park ordered to shelter-in-place.<sup>140</sup>
- 8 Jul 2002 **Pipe Corrosion.** Shell Pipeline Co. shut down a 250,000 barrels-per-day crude oil pipeline that runs between Jal, New Mexico and Cushing, Oklahoma after a small leak was discovered near Haskell, Texas. A Shell spokesman reported the leak was due to corrosion.<sup>141</sup>
- 24 Jul 2002 **Refinery Fire.** A fire at the hydrotreater unit of Motiva's Port Arthur, Texas refinery shuts the unit down for a few days; unit is taken down for early maintenance & repairs in August.<sup>142</sup>
- 18 Aug 2002 **Tank Blaze.** A huge storage tank containing 30,000 bbls of residual fuel oil located along the Houston Ship Channel in Houston, TX, exploded and burned at the Houston Fuel Oil Terminal Co., a half-owned Shell Oil terminal. The explosion and fire produced a dark, billowing cloud of soot and smoke that rose more than a mile into the air. It took five hours and 20 fire and foam trucks to extinguish the blaze. About a dozen workers were evacuated from the site. Although the tank did not collapse, the roof caved in. "We were very fortunate there were no injuries to our people and that we were able to quickly isolate the fire to one tank," said Willis Rossler, CEO of the company. There were about 80 other tanks in the area. The Houston Ship Channel was shut down to all traffic during the blaze. The cause of the explosion was believed to be a failed joint on a pipe supplying the tank. Property damage was estimated in the "millions of dollars."<sup>143</sup>
- 23 Nov 2003 **Tank Explosions.** A battery of crude oil tanks exploded south of Midland, Texas on a lease held by Perenco LLC. An electrical spark ignited a leak from the "lack unit," which measures how much oil moves through the tanks and checks oil content. Workers had left the lease when the fire first broke out to turn off the 18 wells that sent oil to the tank battery and were about 400m away when the units exploded 45 minutes later. Three stock tanks, three water tanks, and associated equipment were destroyed.<sup>144</sup>
- 20 Dec 2003 **Houston Tank Fire.** An oil tank explosion and fire occurred at an oil plant unit of the Marcus Oil and Chemical Co. in Houston, Texas. Equipment failure was cited in the incident. A Houston Fire Department spokesman reported: "A flange on the south side of the tank broke or cracked and let the hot oil out. When it hit the atmosphere at 700 degrees, it burst into flames." The fire department controlled the blaze and there were no major injuries or evacuations.<sup>145</sup>
- 19 Mar 2004 **Galveston Spill.** U.S. Coast Guard reports that the U.S. tanker barge M 407 grounded and spilled more than 151,000 gallons of petroleum naphtha in Galveston, Texas.<sup>146</sup>
- 27 Mar 2004 refinery fire at BP oil refinery, Texas City, TX
- 30 Mar 2004 refinery fire at Exxon Mobil chemical plant, Baytown TX
- 2 Aug 2004 **Sabine Spill.** U.S. Coast Guard reports that the Danish flag tank ship *Torm Mary* spilled over 26,000 gallons of No. 6 oil in the Sabine waterway of Texas.<sup>147</sup>
- 4 Aug 2004 **Neches River Spill.** A tank vessel anchored at the Sun anchorage near the Sunoco Logistics facility spilled oil in the Neches River near Beaumont, Texas.<sup>148</sup>

- 17 Oct 2004 **Well Site Spill.** Oil and salt water spilled at the Wolsey Well Service, Inc. well site in Bowie, Texas. An unknown quantity of oil was spilled due to a faulty oil and water separator. A float valve in the separator became stuck which caused the overflow of crude oil and salt water. The spill flowed northeast where it entered a dry, unnamed creek bed, from which an estimated 60 barrels of crude were later recovered by vacuum trucks. Two dams were constructed to prevent the crude and salt water from moving further downstream.<sup>149</sup>
- 23 Mar 2005 **15 Killed, 180 Injured.** A series of explosions occurred at the BP Texas City, Texas oil refinery during the restarting of a hydrocarbon isomerization unit. The explosions and fires killed 15 people and injured another 180, alarmed the community, and resulted in financial losses exceeding \$1.5 billion. For the larger community, a shelter-in-place order was issued that required 43,000 people to remain indoors. Houses were damaged as far away as three-quarters of a mile from the refinery. The explosions occurred when a distillation tower flooded with hydrocarbons and was over-pressurized, causing a geyser-like release of flammable liquids from the vent stack, which ignited. The U.S. Chemical Safety Board (CSB) 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. BP targeted budget cuts of 25 percent in 1999 and another 25 percent in 2005, even though much of the refinery's infrastructure and process equipment were in disrepair. Also, operator training and staffing were downsized." CSB Chair Carolyn Meritt noted at an October 31, 2006 press conference: "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 decade."<sup>150</sup>
- 7 Mar 2006 **Refinery Explosion.** Reuters news agency reported an explosion and fire at Shell Oil's 340,000 barrels-per-day refinery in Dear Park, Texas, which according to the company, had no impact on production with the refinery operating at normal levels.<sup>151</sup>
- 1 June 2006 **Storage Tank Leak.** Valero Refining spilled 3,400 barrels of oil into the Corpus Christi Ship Channel at Corpus Christi, TX. 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 the oil. The Corpus Christi Ship Channel flows from Tule Lake into Corpus Christi Bay and then into the Gulf of Mexico. It is heavily utilized by barge and commercial ship traffic. Two years later, Valero paid a Federal pollution fine for the spill. The company also removed the containment berm and the above-ground storage tank from the edge of the Ship Channel in order to prevent future oil discharges.<sup>152</sup>
- 6 Feb 2007 **Refinery Fire.** A massive propane fire erupted at the Valero McKee Refinery in Sunray, Texas, north of Amarillo, seriously burning three workers and injuring 11 others. "This was a significant accident that seriously burned three people, shut down a major oil refinery for two months, and contributed to gasoline shortages hundreds of miles away in Denver," said U.S. Chemical Safety Board (CSB) chairman John Bresland. The fire began after a leak in the propane deasphalting unit and spread quickly, in part because of the rapid collapse of a major pipe rack carrying flammable hydrocarbons. Some of the rack's support columns had not been fireproofed. A CSB investigation later determined water leaked through a valve, froze, and cracked an out-of-service section of piping, causing a release of high-pressure liquid propane. The CSB's final report concluded the root causes of the accident were that the refinery did not have an effective program to identify and freeze-protect piping and equipment that was out of service or infrequently used; that the refinery did not apply the company's policies on emergency isolation valves to control fires; and that current industry and company standards do not recommend sufficient structural steel fireproofing.<sup>153</sup>

- 27 Apr 2007 **Tanker Truck Explosion.** An oil tanker truck rolled and exploded on Eastex Freeway and Interstate 10 in Houston, Texas, killing its driver and melting much of the vehicle. Massive flames extended to heights of about three stories, resulting in fire and heat damage to the highways. Sections of U.S. 59 southbound and I-10 eastbound were closed for investigations to determine structural integrity. Nearby residents were shaken by the incident. An amateur photographer at the scene, Stephen Taylor, reported: "The whole sky was black, it was filled with smoke...At one point the fire went underground and they said it was traveling in the sewer system. There was smoke coming up out of the sewer systems and up under the freeway from the grids."<sup>154</sup>
- Dec 2007 **Landowners Sue Exxon.** Owners of a large Texas ranch filed a lawsuit against Exxon and Chevron for oil pollution damages from an old, neglected 1930s oilfield that stretch over thousands of acres with buried oil pits, pipeline leaks, deteriorating equipment, and more.
- Jan 2008 **Worker Killed.** A supervisor was killed at BP's Texas City, Texas oil refinery when a heavy metal lid blew off a unit.
- 9 Jan 2009 **Refinery Flare.** A malfunction of the fluid catalytic cracker at Valero's McKee, Texas oil refinery triggers flaring.<sup>155</sup>
- 19 July 2009 **Explosion, Fire, HF Release.** An explosion, fire and release of hydrogen fluoride (HF), a potentially lethal gas, at Citgo's Corpus Christi, Texas refinery, raised serious safety issues at the refinery by the U.S. Chemical Safety Board (CSB). The explosion and release occurred at the refinery's HF alkylation unit, which makes high-octane blending components for gasoline. After the leaked hydrocarbons ignited, a fire burned for several days. The fire critically burned one worker and another was treated for possible hydrogen fluoride exposure. The CSB later determined that equipment failure caused the incident. The ensuing fire caused multiple additional fires and the release of approximately 42,000 pounds of hydrogen fluoride. Oil refineries using HF in their processing typically use a water spray system to absorb or knock down any release of the dangerous gas. But in the Corpus Christi case there were problems with this system as at least 4,000 pounds of HF likely escaped the refinery, traveling off site and alarming the CSB.<sup>156</sup>
- 5 Nov 2009 **Pipeline Explosion.** A major pipeline explosion occurred near Bushland, Texas on a weekday morning. The explosion, about one mile west of Bushland High School, shook homes, melted window blinds, and shot flames hundreds of feet into the air. Residents in the area were evacuated. Early reports indicated that three structures were damaged and one home near the blast was completely destroyed. Several fire crews came to battle the blaze and initial reports indicated a few minor injuries. Bushland is about 15 miles west of Amarillo.<sup>157</sup>
- 19 Mar 2010 **Tank Battery Blaze.** At least one tank exploded and burned at a natural gas well site in rural Wise County, Texas near Decatur after welding work was being done on the well site tank battery which included several other tanks. Wise County Fire Marshal reported that two workers were burned in the accident, 35 miles northwest of Fort Worth. Additional reports indicated that four tanks at the site burned or suffered damage, with a fifth tank away from the main site also burning/exploding. The workers' suffered minor burns, one transported to a Dallas hospital and the other treated at a nearby medical facility.<sup>158</sup>
- 19 Apr 2010 **Worker Killed.** A contract worker was killed at Motiva's oil refinery in Port Arthur, Texas in a construction crane accident. Motiva is expanding its capacity at the refinery. The worker was employed by Becon Construction Co., a subsidiary of Bechtel Corp.<sup>159</sup>

- 5 May 2010 **Truck/Refinery Fire.** An 18-wheeler being loaded with fuel at a San Antonio refinery exploded and sparked a major fire at the AGE Refining complex in South San Antonio. The explosion and fire prompted the evacuation of a business park with office and retail tenants. Black plumes of smoke were visible across the city's skyline. Two workers were injured.<sup>160</sup>
- 10 May 2010 **Refinery Fire.** A flange fire occurred at Valero's Corpus Christi, Texas, oil refinery.<sup>161</sup>
- 17 May 2010 **Refinery Fire.** A small fire was reported at Shell Oil's Deer Park, Texas, facility.<sup>162</sup>

# Utah

- 19 July 2004 **Abandoned Pipeline Leak.** A mystery spill into the Jordan River of Davis County, Utah was reported to EPA by the Davis Health Department, the oil coming from a storm drain and ditch leading to the river. An oil sheen on the river stretched for about half a mile. In investigating the source of the oil, samples were taken and analyzed by the U.S. Coast Guard Marine Safety Lab in Groton, Connecticut to confirm the oil's origin. Tests determined that the source was an abandoned crude oil pipeline – part of an abandoned refinery – that ran parallel to the concrete storm drain. A vacuum truck later removed 6,921 gallons of crude oil from the abandoned line, which was then plugged with grout.<sup>163</sup>
- 26 Apr 2006 **Tanker Truck Explosion.** A semitrailer truck hauling two tankers of gasoline rolled and exploded in the Spanish Fork Canyon area along U.S. 6 near Salt Lake City, Utah, badly burning the driver and closing the highway for more than six hours. The semi was hauling a load of fuel from Evanston, Wyoming to New Mexico. The truck was traveling east on U.S. 6 about 12:30 p.m. and speed was believed to have been a factor in the accident. The truck rolled onto its side, crashing through concrete barriers and exploding into a massive fireball. The 39 year old driver was trapped in the burning truck's cab and had to be extricated by emergency crews. He was taken by helicopter to University Hospital and suffered first- to third- degree burns over more than 90 percent of his body. Fire crews were able to extinguish the blaze in about 30 minutes, but the accident blackened the mountainside along U.S. 6 in the area known as the Red Narrows. Lane restrictions on traffic were expected for repair work.<sup>164</sup>
- 7 Jan 2009 **Pipeline Leak.** A Chevron pipeline in Utah spilled approximately 1,400 barrels of oil. A company spokesman at the time was unsure of the line's origin or destination, but said that responders were working to clean up the leak. With the leak, the line was shut down.<sup>165</sup>
- 12 Jan 2009 **Utah Tank Fire.** 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 light naphtha. 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, and had been 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 was listed in critical condition, two serious. Other tanks of flammable material sat nearby in the refinery tank farm. A half-mile radius surrounding the refinery was evacuated with police going door-to-door telling residents near the refinery to leave. In 2004 and 2005, the Silver Eagle refinery had been cited by OSHA for "serious" safety violations.<sup>166</sup>

4 Nov 2009

**Utah Refinery Blast.** A powerful blast wave damaged homes near the Silver Eagle oil refinery in Woods Cross, Utah, after a 10-inch pipe there had a catastrophic failure and hydrogen explosion. There were four workers near the processing unit at the time of the explosion who were blown to the ground but were not seriously injured. Another worker had been taking readings next to the pipe that failed just a few minutes before the release. In addition, there were commuter rail lines that frequently carried passengers on routes immediately adjacent to the refinery, and fortunately did not pass at the moment of the explosion. A U.S. Chemical Safety Board (CSB) analyst later showing surveillance video of the explosion noted: "Clearly this explosion had the potential to cause deaths or serious injuries had it occurred even a few moments earlier or later in the day." The CSB discovered that the blast wave from the hydrogen explosion damaged over 100 homes, one of which was knocked off its foundation. The CSB also determined that the Silver Eagle refinery "was operating with a mechanical integrity program that had serious deficiencies." The company was later fined by the Utah Occupational Safety and Health Administration for 71 violations, citing problems with equipment and safety procedures.<sup>167</sup>

12 Jun 2010

**Chevron Pipe Leak.** A Chevron oil company pipeline running from Colorado to the company's Salt Lake City, Utah oil 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 some 200 birds were found coated with oil. Some of the oil was also found in Salt Lake City's Liberty Park. Neighbors first noticed the smell of petroleum in the air about 6:50 a.m. the day of the spill. Chevron some time later shut off the line east of the rupture. But by then, oil had already contaminated creek banks and some birds. 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." 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. Investigators found a hole in the top of the pipeline where it runs through Red Butte Canyon. The breached section of pipe lies underground near a metal fence post at an electrical substation.<sup>168</sup>

## Virginia

10 Jan 2000

**Jet Fuel Spill.** A jet fuel spill of undetermined quantity occurred at the Plantation Pipeline facility in Newington, Fairfax County, Virginia. Initial reports did not indicate the volume spilled, however, fuel oil did reach Accotink Creek, a tributary of the Potomac River. A ten-acre wetland area was also affected. The cause of the spill appeared to be a leak from faulty equipment. A cleanup contractor installed an earthen underflow dam on Accotink Creek to prevent the spill from reaching the Potomac River.<sup>169</sup>

## Washington

2002

**Dirtier Refining.** In company literature, the Tesoro Petroleum Corp explained in 2002 that at its Anacortes, Washington oil refinery, which it acquired in 1998, it added new refining equipment that allowed the company to acquire and process dirtier crude oil. Stated the company in one of its reports: "In 2002, we completed a heavy-oil conversion project, which allows the refinery to process a larger

proportion of lower-cost heavy crude oils, while producing a larger proportion of higher-value products.” Communities living near or downwind of such refineries bear the “health-effects” cost of this dirtier refining.<sup>170</sup>

- 27 Nov 2003 **Tanker Truck Explosion.** A tanker truck carrying 11,000 gallons of gasoline swerved off a highway, rolled over and exploded near Elma, Washington, resulting in a fire that burned for hours. The truck driver was killed, but there were no other injuries and no other vehicles involved. The crash occurred near the Grays Harbor County fairgrounds, about 25 miles west of Olympia.<sup>171</sup>
- 14 May 2004 **Pipeline Fire.** A pipeline fire occurred near or in Olympic, WA
- 14 Oct 2004 **Puget Sound Mystery Spill.** A tugboat captain on Puget Sound, Washington, noticed an expanding oil slick in the channel between Tacoma and Vashon, Washington known as the Dalco Passage. He reported it to the U.S. Coast Guard. Once the fog lifted and a more thorough investigation could be made, state investigators found an oily sheen had grown beyond the originally reported spill size of one acre of oiled surface. The oil came from an unknown source. As of the end of October 2004, an extensive cleanup effort had gathered 59 tons of oily debris from the shores and 6,842 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 has been identified, but then Governor Gary Locke vowed to find the culprit to pay the clean-up bill. In December 2004, 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.<sup>172</sup>
- 14 Oct 2008 **Mystery Spill.** Emergency crews scrambled to control a massive South Sound oil spill that soiled portions of Tacoma's Commencement Bay and stretched for miles in a bluish-black sheen, threatening pristine beaches and wildlife on Maury and Vashon islands. "We have a major oil spill on our hands," said a spokesman for the Washington Department of Ecology. "This is a very large, very complex spill." Officials didn't know where it came from, who was responsible or exactly how much oil had been spilled.
- 18 Nov 2008 **Gasoline Leaks.** Shell Oil entered an agreement with the Washington Department of Ecology to clean up contamination at 83 current and former gas stations in Western Washington state. Shell agreed to clean up all of its former and current gas stations that have soil or groundwater contamination in seven Washington counties, including King, Snohomish, Skagit and Whatcom counties. Most of the Shell stations are likely equipped with single-walled steel underground tanks and piping that corrode over time, often contaminating soil and groundwater. Shell's initiative in Washington state was initially aided with a \$200,000 grant from the U.S. EPA. "We value the communities where we live and work and are committed to meeting environmental standards," Kevin Autin, general manager of retail for Shell Oil Products USA, said in a statement.<sup>173</sup>
- 2 Apr 2010 **Seven Dead.** 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 investigating.<sup>174</sup>

24 Jan 2003 **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. The spill occurred during the transfer of oil from pipeline to storage tank. Approximately 18,000 gallons migrated to the frozen Nemadji River, about a half mile away. An operator at the terminal was alerted of the spill by alarm and the pipeline was shut down. A company crew was sent to begin cleanup. Enbridge resumed oil transport on the day after the spill by bypassing the ruptured line.<sup>175</sup>

# Wyoming

19 Dec 2001 **Two Workers Hurt.** Two workers at a Frontier oil refinery in Wyoming were burned in an explosion and fire at the refinery resulting from a leaking hydrogen compressor. The explosive gas ignited. Plant officials reported at the time that the plant was still running except for the explosion area.<sup>176</sup>

19 Jan 2004 **Wyoming Blast & Fire.** 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. No injuries were reported. The fire broke out in the plant's coking unit, where asphalt is made into coke. Refinery fire-fighting crews were joined by the Cheyenne Fire Department in battling the blaze, which was extinguished within a couple hours. The refinery has been operating in Cheyenne since 1949 and it employs about 260 people. It is owned by Houston-based Frontier Oil Corp. and produces gasoline, diesel, liquefied petroleum gas, asphalt and coke. The plant was the scene of an explosion in 1992 that killed an employee and injured five others and another explosion in 2001 of a hydrogen gas compressor that injured two workers.<sup>177</sup>

11 Jun 2008 **Exxon's Greenhouse.** The Wyoming Oil and Gas Conservation Commission ordered Exxon Mobil to curb CO-2 venting at its Shute Creek natural gas operation and redirect the greenhouse gas into pipelines for enhanced oil recovery. For more than a decade, the Exxon Mobil plant had been venting a sizeable portion of the global warming gas – as much as 180 million cubic feet per day in 2007 – directly into the atmosphere.<sup>178</sup>

July-Sept 2008 **Oil Pit Bird Kill.** U.S. Fish and Wildlife Service scientists documented a large occurrence of bird mortality at one Wyoming drilling operation's reserve pit in Carbon County where 77 dead birds, primarily puddle ducks, were discovered. The dead birds were found between July and September 2008. Birds commonly use the pits as water ponds. The pit involved in the Wyoming incident – containing oil and sludges – remained in operation at the well site for over a year.<sup>179</sup>

5 Apr 2010 **Pipeline Rupture.** A pipeline owned by Bridger Lake LLC of Louisiana operating near Green River, Wyoming ruptured and spilled 84,000 gallons of crude oil into the Bridger Valley. According to Wyoming Department of Environmental Quality Emergency Response coordinator Joe Hunter, the break was caused by pressure in a corroded segment of the pipeline. Some of the oil leaked into an irrigation ditch and contaminated soil in the area, but no waterways were affected. The spill occurred near Robertson, Wyoming in southwest Uinta County.<sup>180</sup>

5 Jun 2010 **Gas Plant Blast.** An explosion and fire destroyed a portion of the Conoco-Phillips Lost Cabin natural gas processing plant near Lysite, Wyoming. Computerized telephone calls went out to area residents at about 5:30 a.m. advising them to evacuate. The incident originated in the Train II unit and caused "significant damage" there, according to initial reports. A fuel source for the blaze was shut off by workers and the fire was contained. The Lost Cabin operation includes several deep natural gas wells, and the plant removes sulfur and other by-products from the "sour" natural gas. The plant is operated by Burlington Resources.<sup>181</sup>

## Other

21 Jan 2000 **Gulf of Mexico Spill.** Equilon Pipeline Co., while towing a drilling rig with a failed motor, ripped up an undersea 24" crude oil pipeline with an anchor cable, causing it to spill 2,240 barrels of crude oil. The incident occurred in the Gulf of Mexico about 75 miles from shore near area block Ship Shoal 332.<sup>182</sup>

1 Aug 2000 **Canadian Pipe Leak.** A pipeline in northeastern British Columbia, Canada ruptured and spilled about 6,300 barrels (449,400 gallons) of crude oil into the Pine River, which supplies the region's water. The spill occurred about 60 miles from Chetwynd, a community of about 3,000 people some 435 miles northeast of Vancouver. The cause of the rupture was initially undetermined. An oil slick about 13 miles long occurred on the Pine River, according to the B.C. Environment Ministry. The pipeline, operated by Federated Pipe Lines Ltd., was shut down after the incident. Pembina Pipeline took the lead in the clean up. Although booms on the river contained much of the spill, 20 percent or more headed downstream where municipal water officials at Chetwynd planned to shut their intakes.<sup>183</sup>

1 Nov 2000 **Mexican Pipe Spill.** An oil pipeline belonging to Mexican state oil company, Pemex, ruptured as a result of flood damage and leaked 980 barrels of oil into two rivers in the state of Veracruz, Mexico. The rivers feed into a system of lagoons. The spill contaminated a 10 km stretch of water and took two weeks to clean up. Pemex officials said at the time it was "a very complicated, large spill" but claimed it was under control and that its effects would be minimal.<sup>184</sup>

March 2001 **Shell Gas Well.** The Alberta Energy Utilities Board (EUB) rejected Shell Canada's application for its Ferrier Well 7-7, a sour gas well proposed near Rocky Mountain House, Alberta, on grounds that public safety could not reasonably be assured by Shell's emergency response plan.

May 2001 **Gas Station Leak.** Puerto Rico's Environmental Quality Board proposed a \$75.9 million fine on ExxonMobil for a gas station leaking gasoline and diesel fuel.

14 May 2001 **Pollution Fine.** Shell Canada fined \$240,000 after pleading guilty to discharging pollutants into the environment from company's Sarnia Manufacturing Center in Corunna, Ontario.<sup>185</sup>

5 Jul 2002 **Waste Oil Spill.** U.S. Coast Guard reports: "The U.S. flag tank barge *USNS Swob28* spilled approximately 105,000 gallons of waste oil in Guam."<sup>186</sup>

July 2002 **Sick Cattle.** Canadian courts upheld a case of an Alberta, Canada rancher whose cattle were sickened by Exxon's Imperial Chemical Co. Imperial repaired a pipeline on a piece of crown land leased by the ranch family since 1948, but did not notify the rancher. Contaminated soil was piled up on pastureland and water laced with hydrocarbons was dumped onto the land. The rancher's cattle became sick and died while others had difficulty calving and became infertile.<sup>187</sup>

- Jan 2003 **Oil Sands Blasts.** Explosions and fire occur at Shell's Muskeg River oil sands mine north of Fort McMurray, Alberta, halting production. The incidents, characterized as minor blasts, occurred eight days after the new project began operations. The blasts occurred shortly after midnight in the froth treatment unit, which processes diluted bitumen. The fire was extinguished after slightly more than two hours. A few workers experienced minor injuries. The Athabasca Oil Sands Project had started pumping tar-like bitumen extracted from the mine's sands on December 29<sup>th</sup>, 2002.<sup>188</sup>
- 1 Dec 2003 **2 Leaks Same Day, Same Line.** A rupture in a TransCanada pipeline occurred about 62 miles south of Grande Prairie, Alberta. Some 14 hours later, another rupture and fire occurred 15 km downstream from the initial incident. According to TransCanada at the time the breaks were immediately isolated and the escaped gas was allowed to burn off. Preliminary investigations found external corrosion as the likely cause of the two pipeline breaks.<sup>189</sup>
- 18 Dec 2003 **Pemex Fire Kills Worker.** A fire at a Pemex oil refinery at Tula, Mexico, about 80 km. 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/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.<sup>190</sup>
- 21 Nov 2004 **Offshore Canada.** Scientists warned that a 44,000 gallon oil spill from a malfunction on the Terra Nova offshore oil platform off Newfoundland could kill up to 100,000 seabirds. The spill – generating a slick that covered at least 14 square miles – was coming at bad time, especially for some migrating birds. The birds then at risk, according to the scientists, included terns, dovekeys, black-legged kittiwakes, and shearwaters.
- 2005 **Spills in 2005.** Calgary-based Enbridge, Inc., a large North American pipeline operator, reported that it spilled 412,650 gallons in its operations during 2005; spills which the company says were largely contained within its facilities.<sup>191</sup>
- 15 Aug 2006 **Pipeline Fines.** 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 and Ohio rivers. That spill affected a 16-mile stretch of the Kentucky River, and also eventually entered the Ohio River. The spill resulted from a girth weld failure in a 22-inch-diameter pipe that had been laid in 1950. Mid-Valley Pipeline Co. is the pipeline owner and Sunoco Pipeline LP is the pipeline operator. Both are affiliates of Sunoco Logistics, of Philadelphia.<sup>192</sup>
- 12 Sept 2006 **Shell Gas Leak #2.** A hydrogen sulfide gas leak occurred from a valve at a hydrogen cracking unit at Shell's Scotford oil sands upgrader south of Edmonton, Alberta. A plume of gas was visible over the plant area for more than an hour. About 120 residences and businesses within a five-kilometer radius of the plant were called and told to stay indoors. Some 1,400 workers from the plant and surrounding chemical plants were evacuated to safe locations. Residents northeast of Edmonton were told to stay indoors for nearly five hours. The leaky unit had to be depressurized as Shell workmen sprayed the unit with water to keep it cool to prevent highly flammable hydrogen sulfide from catching fire.<sup>193</sup>
- 24 Dec 2006 **Pipeline Break.** A pipeline segment on the Gulf of Mexico's High Island Pipeline System operated by BP Pipelines North America, was severed by a vessel anchor, resulting in the release of 870 barrels of light sweet crude oil to the Gulf of Mexico. U.S. Minerals Management Service reported that a panel investigation and report on the incident was expected in March 2008.<sup>194</sup>

- 1 Jan 2007 **Canadian Pipe Leak.** An Enbridge Inc., pipeline moving Canadian crude oil through Wisconsin to Chicago leaked 50,000 gallons of crude leaked onto farmland and into drainage ditches. Company officials reported that the line cracked open and released crude until an operator could shut it down from an operations center in Canada.<sup>195</sup>
- April 2007 **Enbridge Spill.** Enbridge pipeline No. 3 from Alberta, Canada to Superior, Wisconsin ruptured in Saskatchewan, spilling more than 3,700 barrels.<sup>196</sup>
- 23 Jul 2007 **Oil Geyser Spray.** Near the Kinder Morgan oil tank farm east of Vancouver, B.C., some 234,000 litres of oil shot into the air like a geyser for about 25 minutes after a construction crew ruptured a Kinder Morgan pipeline. The pipeline was carrying crude from the tank farm to an ocean tanker facility on Burrard Inlet down the hillside not far away. The oil spray covered some nearby homes, puddled in the streets, and eventually oozed into Burrard Inlet where a rainbow sheen appeared on the water. The Transportation Safety Board eventually concluded the line was improperly marked on outdated drawings used by the contractor and blamed the spill on inadequate communication between Kinder Morgan and the contractor.<sup>197</sup>
- April 2008 **Tar Sands Dead Ducks.** At least 1,600 ducks died in a toxic tailings pond at Syncrude tar sands operation in Alberta, Canada on its tailings pond north of Fort McMurray.<sup>198</sup>
- 3 Jan 2009 **Syncrude Tank Leak.** A leak of approximately 4,000 barrels of oil occurs at Syncrude's Enbridge Cheechan Terminal tank farm south of Anzac, Alberta. A pipe valve leak occurred at the unmanned facility and spewed oil into the air undetected for two to three hours. Most of the oil flowed into a containment area, but some was blown off-site, into adjacent forest and wildlife habitat.<sup>199</sup>
- 7 May 2009 **Tank Farm Leak.** A storage tank leak occurred at 10 pm at the Kinder Morgan oil storage tank farm, east of Vancouver, B.C. An estimated 53,000 gallons spilled from a tank at the 13-tank storage facility on Burnaby Mountain. Burnaby, B.C. residents awoke next day to the strong smell of oil fumes. The oil was captured in a lined containment area surrounding the tank. There were no leaks into the surrounding environment, according to the company. Haz-mat crews and firefighters sprayed the leaked oil with foam to keep down the smell.<sup>200</sup>
- 12 Sept 2009 **Pipeline Explosion.** An explosion rocked a TransCanada natural gas pipeline after a gas leak in northern Ontario. "It was just devastating," said Robert Foulem, 46, a resident of nearby Englehart, Ontario, close to the location of the blast.<sup>201</sup>
- 23 Oct 2009 **Tank Farm Catastrophe.** Multiple storage tanks burned at the Caribbean Petroleum Corp. tank farm near San Juan, Puerto Rico following an initial explosion and spreading fire. At 12:23 a.m. on October 23rd, a large vapor cloud ignited at the facility. The blast damaged homes and businesses over a mile from the facility. At the time of the incident a tank was being filled with gasoline from a ship docked in San Juan harbor. Investigators have determined that a likely scenario leading to the release was an accidental overfilling of the tank. Gasoline spilled from the tank without detection, vaporized, and spread across the facility. U.S. Chemical Safety Board (CSB) investigators estimated that the vapor cloud spread out to a 2,000-foot diameter until it reached an ignition source in the northwest section of the facility. The resulting explosion and pressure wave damaged surrounding buildings and impacted moving vehicles. The tank farm stored gasoline, diesel fuel, jet fuel, and fuel oil in approximately 30 operational aboveground storage tanks. The CSB found that on the evening of the incident, the liquid level in the tank could not be determined because the facility's computerized level monitoring system was not fully operational. In order to monitor the level in the tank, operators used a mechanical gauge on the tank's

exterior wall. As the gasoline level in the tank rose and eventually overflowed, employees located in the facility's control room were unaware of the emergency. A final CSB report on the incident is still being prepared.<sup>202</sup>

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