Part IV:

Pipeline Bursts:

Their Causations, and the

Deaths, Bodily Injuries, & Economic <u>and</u> Ecological Damages they Inflicted

2015 - 2016

As recorded by the U.S. Department of Transportation's Pipeline & Hazardous Materials Safety Administration

(www.phmsa.dot.gov/staticfiles/PHMSA/PipelineFailureReports)

Other sources cited, where applicable.

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2015

- On January 14, during work to free a trapped inline inspection unit, a leak was discovered on the Evangeline Pipeline, near Cameron Parish, Louisiana. This pipeline had been given a Corrective Action Order in October 2014, due to a number of leaks.^{1 2 3}
- Also on January 14, a gas pipeline exploded near the Ross Barnett Reservoir in Brandon, Mississippi, creating a sizable crater in the ground and burning 6 acres of vegetation before the fire was extinguished. The failure was due to a "hard spot" from manufacturing, that already had a repair sleeve on it. There are 788 sleeves on the Index 129 pipeline from Edna, Texas, to Sterlington, Louisiana; and, 726 sleeves on the Index 130 pipeline from Marchand Junction, Louisiana to Kosciusko, Mississippi. Both were built from pipe made in 1952.^{4 5 6}
- On January 16, a transmission pipeline operated by Kinder Morgan subsidiary Southern Natural Gas had an equipment malfunction in Walthall County, Mississippi.⁷
- On January 17, oil from a broken pipeline seeped into the Yellowstone River, and contaminated the water supply 10 miles south of Glendive, Montana. The release was from Bridger Pipeline LLC's 12-inch Poplar line, which can carry 42,000 barrels a day of crude from the Bakken formation & runs from Canada south to Baker, Montana. Bridger Pipeline is a subsidiary of True Cos., a privately held Wyoming-based company. The company said in a statement that the pipeline was shut down within an hour of the leak. About 30,000 gallons of crude was spilled, with about 28,000 gallons of crude being lost. 8 9 10

¹ **ICIS News, 1-14-2015:** http://www.icis.com/resources/news/2015/01/14/9853014/us-evangeline-pipeline-shuts-down-after-leak-discovered/

² Argus Media, 1-14-2015: http://www.argusmedia.com/News/Article/?id=976846

³ U.S. DOT, Pipeline & Hazardous Materials Safety Administration, 10-20-2014: http://primis.phmsa.dot.gov/comm/reports/enforce/documents/420145027H/420145027H_Corrective %20Action%20Order 10202014 text.pdf

⁴ Allie Ware, WAPT 16 News, 1-14-2015: http://www.wapt.com/article/gas-line-explodes-burns-near-reservoir/2091806

⁵ Therese Apel, The Clarion-Ledger, 1-14-2015: http://www.clarionledger.com/story/news/2015/01/14/reservoir-explosion/21740325/

⁶ U.S. DOT, Pipeline & Hazardous Materials Safety Administration, 3-27-2015: http://primis.phmsa.dot.gov/comm/reports/enforce/documents/220151001S/220151001S_nopso_03272015_t ext.pdf

⁷ U.S. DOT, Pipeline & Hazardous Materials Safety Administration: http://primis.phmsa.dot.gov/

⁸ **Alison Sider, The Wall Street Journal, 1-19-2015:** http://www.wsj.com/articles/oil-spills-into-yellowstone-river-after-pipeline-leak-1421688172

⁹ **Tom Lutey, Billings Gazette, 1-21-2015:** http://www.inforum.com/news/accidents/3661267-clean-water-likely-be-restored-glendive-thursday-after-oil-spill-along

¹⁰ U.S. DOT, Pipeline & Hazardous Materials Safety Administration: http://primis.phmsa.dot.gov/comm/reports/operator/OperatorIM_opid_31878.html? nocache=4750# Incidents tab 3

- On January 21, a petroleum products pipeline in Honolulu, Hawaii ruptured, due to external corrosion, spilling about 42,000 gallons of petroleum product, of which about 22,000 gallons was lost.¹¹
- On January 21, a crude oil pipeline pump station caught fire northwest of Texas City, Texas. Texas City fire officials said that company officials reported that there had been issues with the pump station over the weekend.¹²



PHOTO: 1-14-2015: "Metropolitan Engineering Consulting & Forensics - Expert Engineers" RANKIN COUNTY, MISSISSIPPI NATURAL GAS LINE EXPLOSION AND FIRE. GULF SOUTH PIPELINE IS THE OPERATOR, RANKIN COUNTY, MISSISSIPPI NATURAL GAS LINE EXPLOSION AND FIRE":

 ${\it http://metroforensics.blogspot.com/2015/01/rankin-county-mississippi-natural-gas.html}$

¹¹ **U.S. DOT, Pipeline & Hazardous Materials Safety Administration:** http://primis.phmsa.dot.gov/comm/reports/operator/OperatorIM_opid_31056.html? nocache=5782# Incidents tab 3

¹² T.J. Aulds & Shannon Daughtry, Galveston County The Daily News, 1-14-2015: http://www.galvnews.com/free/article_699f91e8-9c22-11e4-97c3-63576ec5ef16.html

- On January 26, a 20-inch ATEX pipeline carrying ethane exploded & burned in Brooke County, West Virginia. Despite snow in the area, five acres of woodlands burned, and 24,000 gallons of ethane were consumed. The fireball melted siding on nearby homes and damaged power lines; it is believed that day's snowy weather lessened the damage. Initial reports suspect a girth weld failure, with the pipeline being less than two years old. 13 14
- On January 29, near Bowling Green, Missouri, a rupture in a Rockies Express 42-inch natural gas pipeline blew a 20 by 20-foot crater and forced a six-hour evacuation of 50 families. The rupture occurred in a vacant field a few yards east of Pike County Road 43. Strong winds helped dissipate gas until a temporary cap was put in place. This explosion caused \$2,672,345 in property damage and was due to a fault in the pipe's fabrication or construction.
- On February 10 in Hopkinton, Massachusetts, the temperature caused "natural force (rupture) damage" to a Kinder Morgan Tennessee Gas Pipeline, causing \$55,150 worth of property damage. 18
- On February 17, a suspected electrical arc made a hole in a Marathon Petroleum pipeline in Shively, Kentucky, spilling about 6,700 gallons of jet fuel. More than 2,500 tons of soil were removed to clean up the area. 19 20
- On February 25, a 26-inch crude oil pipeline in Navarro County near the Town of Dawson, Texas, failed, spilling about 50 barrels of crude oil. Near the failure, investigation showed that the pipe had lost about 80% of its thickness, due to external corrosion. This anomaly was not seen in a 2011 test of this pipeline.²¹
- On March 2, a Kinder Morgan Tennessee Gas Pipeline leaked due to equipment failure, causing \$281,890 of property damage in Marshall, Mississippi.²²

¹³ **The Intelligencer. Wheeling News-Register:** http://www.theintelligencer.net/news/top-headlines/2015/01/24-000-ethane-barrels-burned/

¹⁴ Renee Lewis, Aljazeera America, 1-31-2015: http://america.aljazeera.com/blogs/scrutineer/2015/1/31/january-sees-five-major-pipeline-leaks.html

¹⁵ April M. Fronick, The People's Tribune, 2-3-2015: http://thepeoplestribune.com/?p=25397

¹⁶ **Ross Green, KHQA 7 News, 1-29-2015**: http://khqa.com/news/local/emergency-crews-respond-to-pipeline-break?id=1156557

¹⁷ U.S. DOT, Pipeline & Hazardous Materials Safety Administration: http://primis.phmsa.dot.gov/

¹⁸ U.S. DOT, Pipeline & Hazardous Materials Safety Administration: http://primis.phmsa.dot.gov/

¹⁹ **Marcus Green, WDRB, 4-8-2015:** http://www.wdrb.com/story/28752694/jet-fuel-remains-in-shively-soil-months-after-pipeline-spill

²⁰ Marcus Green, WDRB, 11-4-2015: http://www.wdrb.com/story/30439304/more-than-2500-tons-of-soil-removed-from-shively-neighborhood-after-pipeline-spill

²¹ **Sunoco Logistics**, **5-22-2015**: https://primis.phmsa.dot.gov/comm/reports/enforce/documents/420155012/420155012_Operator %20Response%20and%20Request%20for%20Hearing 05222015.pdf

²² U.S. DOT, Pipeline & Hazardous Materials Safety Administration: http://primis.phmsa.dot.gov/

- On March 13 a pipeline Patrol pilot identified an oil sheen on a pond near Tehuacana Creek, Texas which was then linked to a leaking 10 inch petroleum products pipeline. About 50 barrels of diesel fuel were spilled.²³
- On March 20, a pipe owned by Kinder Morgan subsidiary Southern Natural Gas failed in Rolling Fork, Mississippi, & on March 23, another of that subsidiary's pipes failed due to equipment malfunction in Augusta, Georgia, causing \$311,785 in property damage.²⁴
- On April 9, 2 Williams Companies pipelines broke within hours of each other in Marshall County, West Virginia. A 4-inch condensate pipeline broke at 8 pm local time, spilling about 132 barrels of condensate into a creek. Around 10:50 pm local time, a 12-inch gas pipeline ruptured. Heavy rains were said to be the cause of the failures.²⁵



Thursday, January 29th 2015": Omnoncommon on the common of the common of

²³ **J.B. Smith, Wacotrib, 3-13-2015:** http://www.wacotrib.com/news/environment/cleanup-begins-on-diesel-pipeline-spill-near-tehuacana-creek/article 20e9cb1d-75ad-5b17-90a5-374c35f6876a.html

²⁴ U.S. DOT, Pipeline & Hazardous Materials Safety Administration: http://primis.phmsa.dot.gov/

²⁵ **The Intelligencer. Wheeling News-Register:** http://www.theintelligencer.net/news/top-headlines/2015/04/dep-132-barrels-spilled-into-marshall-county-creek/

- On April 13, a Kinder Morgan/Natural Gas Pipeline Co. of America pipeline exploded & burned near Borger, Texas. The explosion, caused by equipment failure due to environmental cracking, caused \$455,000 in property damage.²⁶
- On April 17, a 12-inch natural gas pipeline near Fresno, California operated by Pacific Gas and Electric Corp was ruptured by a backhoe. The resulting explosion killed 1 person and injured 12 others.²⁷
- On May 15, Kinder Morgan's Tennessee **Gas Pipeline leaked** in Powell County, Kentucky causing \$23,400 in property damage.²⁸



Borger, Texas incident. PHOTO: News Channel 10, "Natural gas pipeline fire near Borger extinguished": http://www.newschannel10.com/story/28788786/natural-gas-pipeline-fire-near-borger-extinguished

²⁶ **News Channel 10, 4-13-2015:** http://www.newschannel10.com/story/28788786/natural-gas-pipeline-fire-near-borger-extinguished

²⁷ The Fresno Bee, 7-6-2015: http://www.fresnobee.com/news/local/article26618077.html

²⁸ U.S. DOT, Pipeline & Hazardous Materials Safety Administration: http://primis.phmsa.dot.gov/

- On May 19, a Plains All American Pipeline oil pipeline ruptured near Refugio State Beach, near Goleta, California, spilling about 124,000 gallons of crude oil. It is referred to as the Refugio Oil Spill.²⁹
- On May 31, a 24-inch natural gas back-up pipeline that runs under the Arkansas River in Little Rock, Arkansas ruptured releasing 3.9 million cubic feet of natural gas. The pipeline was not currently in use. A tugboat was damaged & the ecosystem was heavily damaged.^{30 31}



Refugio Beach Oil Spill. PHOTO: "Channel 7 Eyewitness News, PIPELINE COMPANY INDICTED IN REFUGIO OIL SPILL": http://abc7.com/news/pipeline-company-indicted-in-refugio-oil-spill/1342313/

nttp://aoc/.com/news/piperine-company-indicted-in-rerugio-on-spin/1342313/

²⁹ Paul Vercammen & Pat St. Claire, CNN, 5-21-2015: http://edition.cnn.com/2015/05/20/us/california-oil-spill/

³⁰ **Benjamin Hardy, Arkansas Times, 6-3-2015:** http://www.arktimes.com/ArkansasBlog/archives/2015/06/03/arkansas-river-pipeline-blowout-occurred-on-sunday-morning-cause-still-unknown

³¹ **Benjamin Hardy, Arkansas Times, 6-2-2015:** http://www.arktimes.com/ArkansasBlog/archives/2015/06/02/natural-gas-pipeline-ruptures-east-of-i-30-bridge-closing-two-miles-of-arkansas-river

- On June 9 in Moorehouse Parish, Louisiana, Kinder Morgan's Tennessee Gas Pipeline equipment failed, due to environmental cracking, and leaked, causing \$73,395 in property damage.³²
- On June 9, a 24-inch natural gas pipeline ruptured in Lycoming County, Pennsylvania. About 130 individuals were evacuated from their homes. The cause was Stress corrosion cracking.³³ ³⁴
- On June 10, Kinder Morgan's El Paso Natural Gas control/relief equipment failed and leaked in Gray County, Texas.³⁵
- On June 13, a 42-inch gas gathering pipeline exploded & burned near Cuero, Texas.³⁶
- On June 15, Kinder Morgan's Natural Gas Pipeline Co. of America **equipment failed for unknown causes, with \$260,555 of property damage** in Marshall, Texas (that area's third documented Kinder Morgan leak).³⁷
- On June 18, in Victoria Texas, Kinder Morgan's Tennessee Gas Pipeline pipe failed due to external corrosion and caused \$159,346 in property damage.³⁸
- On June 22, a truck driver was killed when his rig veered off a highway and broke above ground facilities for a propylene pipeline in Houston, Texas. The highway was closed for several hours while the gas dissipated.³⁹
- Four workers were hurt on June 25, when a 4-inch gas pipeline exploded at a gas pipeline facility, near White Deer, Texas. 2 of the workers were critically injured. The cause of the explosion was not known.⁴⁰

³² U.S. DOT, Pipeline & Hazardous Materials Safety Administration: http://primis.phmsa.dot.gov/

³³ **Reuters Global Energy News, 6-11-2015:** http://www.reuters.com/article/us-natgas-williams-transco-idUSKBN0OR1R720150611

³⁴ U.S. DOT, Pipeline & Hazardous Materials Safety Administration:
http://www.phmsa.dot.gov/staticfiles//PHMSA/PipelineFailureReports/150663_Transcontinental_Unityville_
PA June 9 2015.pdf

³⁵ U.S. DOT, Pipeline & Hazardous Materials Safety Administration: http://primis.phmsa.dot.gov/

³⁶ **Sara Sneath, Victoria Advocate, 6-17-2015:** https://www.victoriaadvocate.com/news/2015/jun/17/pipeline-rupture-released-thousands-of-pounds-of-g/

³⁷ U.S. DOT, Pipeline & Hazardous Materials Safety Administration: http://primis.phmsa.dot.gov/

³⁸ U.S. DOT, Pipeline & Hazardous Materials Safety Administration: http://primis.phmsa.dot.gov/

³⁹ **Houston Chronicle**, **6-23-2015**: http://www.chron.com/houston/article/Truck-collision-with-pipeline-backs-up-traffic-on-6342233.php

⁴⁰ **NBCDFW 5 Texas News, 6-27-2015:** http://www.nbcdfw.com/news/local/4-Injured-in-White-Deer-Gas-Line-Explosion-310324841.html

 On July 10, a fitting on a 20-inch Plains All American Pipeline crude oil pipeline broke, spilling 4200 gallons of crude oil near Grantfork, Illinois. Much of the crude contaminated a nearby creek..⁴¹



PHOTO: "Workers cleaning oil spilled from Plains All American pump station near St. Louis. Posted by Jennifer A. Dlouhy Date: July 13, 2015": http://fuelfix.com/blog/2015/07/13/workers-cleaning-oil-spilled-from-plains-all-american-pump-station-near-st-louis/#photo-663276

⁴¹ Elizabeth Donald, Belleville News-Democrat, 7-16-2015:

- On July 15, two workers were hurt by an explosion, when a bulldozer hit a 4-inch gas pipeline, at an EQT gas compressor station in Worthington, Pennsylvania.⁴²
- On August 3, two individuals were injured in Falfurrias, Texas when a natural gas pipeline operated by Kinder Morgan ruptured and exploded due to external corrosion, with \$191.498 in property damage. Later investigation showed that the pipe split along an ERW seam.⁴³ 44
- On August 7, a natural gas liquids pipeline in Weld County, Colorado burned, after being struck by a third party. 45
- On August 13, crew working for Colonial Pipeline damaged one of Colonial's lines in Kannapolis, North Carolina, spilling about 6,000 gallons of petroleum product. About 1,000 gallons of product was lost & contaminated the ecosystem.⁴⁶
- On August 13, a natural gas pipeline in Cypress, Texas ruptured and leaked while a contract crew worked in the area. The pipeline was owned by Gulfsouth Pipeline.⁴⁷
- On August 26, two maintenance divers were injured while working on a pipeline owned by Boardwalk/Gulf South Pipeline Co. 25 miles offshore of Louisiana when the pipeline ruptured, & the gas ignited.⁴⁸
- On September 21, a Colonial Pipeline 32 inch main line was discovered to be leaking in Centreville, Virginia. At least 7,000 gallons of gasoline were spilled, forcing several nearby businesses to close.^{49 50}
- On October 8, an explosion occurred at a Williams Companies pipeline facility in Gibson, Louisiana. 4 employees were killed, and, one other injured. The cause of the explosion was from procedure not being followed during welding work. 51 52 53
- 42 **Sheldon Ingram, WTAE Pittsburg, 7-15-2015:** http://www.wtae.com/news/worker-injured-in-pipeline-accident/34188004
- 43 **Nicole Hickl, Valley Central 4, 8-4-2015:** http://valleycentral.com/news/local/sheriffs-office-natural-gas-pipeline-explosion-forced-150-falfurrias-families-from-their-homes?id=1239109
- 44 U.S. DOT, Pipeline & Hazardous Materials Safety Administration:
 http://primis.phmsa.dot.gov/comm/reports/enforce/documents/420151009H/420151009H_Corrective%20Action %20Order 08062015.pdf
- 45 **Reuters, Upstream, 8-7-2015:** http://www.upstreamonline.com/live/1408027/fire-on-williams-pipeline
- 46 U.S. DOT, Pipeline & Hazardous Materials Safety Administration:
 http://primis.phmsa.dot.gov/comm/reports/operator/OperatorIM opid 2552.html?nocache=7343# Incidents tab 3
- 47 **Keith Garvin, KPRC Houston, 8-13-2015:** http://www.click2houston.com/news/all-clear-given-to-cypress-residents-evacuated-after-gas-leak 20151123152931429
- 48 The Maritime Executive, 8-27-2015: http://maritime-executive.com/article/two-injured-in-louisiana-pipeline-fire
- 49 **John Aaron, WTOP, 9-24-2015:** http://wtop.com/fairfax-county/2015/09/gas-leak-forces-fairfax-co-business-closures/slide/1/
- 50 **The Connection to your community, 10-5-2015:** http://www.connectionnewspapers.com/news/2015/oct/07/centreville-brief-colonial-issues-cleanup-update/
- 51 Clint Durrett, WDSU 6 News, 10-8-2015: http://www.wdsu.com/article/police-3-dead-2-in-serious-condition-after-gibson-plant-explosion/3380374
- 52 U.S. DOT, Pipeline & Hazardous Materials Safety Administration: http://primis.phmsa.dot.gov/comm/reports/operator/OperatorIM_opid_19570.html?nocache=8429#_Incidents_tab_4
- 53 U.S. DOT, Pipeline & Hazardous Materials Safety Administration:
 http://www.phmsa.dot.gov/staticfiles/PHMSA/DownloadableFiles/Files/Pipeline/420161008_NOPV_PCP_PCO_07292
 016.pdf

- On November 30, about 11,000 gallons of gasoline, butane & propane leaked from a pipeline in eastern Summit County, Utah.⁵⁴
- On December 8, a contractor drilled into an 8-inch buried oil line (200 mm) that transports oil from a holding station in Ventura to a Wilmington refinery near Long Beach while setting new poles for Southern California Edison along State Route 118 near Somis that spilled about 7,980 U.S. gallons (190 barrels).⁵⁵



Worthington, PA. PHOTO: "News: WPXI, "2 workers hurt in gas line explosion in Armstrong County": http://www.wpxi.com/news/local/crews-rush-reported-gas-line-explosion-armstrong-c/32124124)

⁵⁴ **Desert News Utah, 11-30-2015:** http://www.deseretnews.com/article/865642766/11000-gallons-of-gasoline-butane-and-propane-leak-from-pipeline-in-Summit-County.html?pg=all

⁵⁵ Cindy Von Quednow & Cheri Carlson, Ventura County Star: http://archive.vcstar.com/topstories/Oil-spill-reported-in-Somis-360929811.html

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- On January 2, **3 people were injured**, & numerous homes were damaged in Oklahoma City, Oklahoma, when a leak gas from a gas main entered a home. Preliminary results indicate that a leak occurred at a weld seam on the gas main. ⁵⁶
- On January 9, a 30-inch Atmos Energy gas transmission pipeline exploded & burned in Robertson County, Texas. 4 families nearby were evacuated.⁵⁷
- On January 11, **butane leaking from a pipeline storage facility**, in Conway, Kansas, forced a closure of a nearby highway for a time.⁵⁸
- On February 14, a 6-inch crude oil pipeline broke near Rozet, Wyoming, spilling about 1,500 gallons of crude oil into a creek bed.⁵⁹
- On February 16, an explosion and fire occurred at a gas plant in Frio County, Texas. 2 employees at the plant were injured.⁶⁰
- On February 24, a 10-inch propane pipeline exploded & burned, near Sulphur, Louisiana. About 208,000 gallons of propane contaminated the local ecosystem & was not recovered, and, the cause of the failure was not found. 61 62
- On March 11, about 30,000 gallons of gasoline spilled from a leaking plug on a pipeline, at a tank farm in Sioux City, Iowa. 63
- On March 22, about 4,000 gallons of gasoline spilled from a 6-inch petroleum products pipeline in Harwood, North Dakota.⁶⁴
- On April 2, the TransCanada Corporation Keystone Pipeline was observed by a local resident to be leaking, near Freeman, South Dakota. The cause was a crack in a girth weld, & amount of tar sands spill was about 16,800 gallons. 65 66
- 56 **Sarah Stewart, KFOR News Channel 4, 8-10-2016:** http://kfor.com/2016/08/10/oklahoma-corporation-commission-releases-report-on-house-explosion/
- 57 KBTX 3, 1-9-2016: http://www.kbtx.com/content/news/Gas-line-explosion-in-Leon-County--364750381.html
- 58 KSN TV, 1-11-2016: http://ksn.com/2016/01/11/gas-leak-closes-highway-56-west-of-mcpherson/
- 59 **Scott Hansen, Gillette News Record, 2-16-2016:** http://www.gillettenewsrecord.com/news/local/article a584a743-70fa-52f9-b82c-00816a698e0d.html
- 60 **NBCDFW 5, 2-16-2016:** http://www.nbcdfw.com/news/local/Officials-2-Hurt-After-Gas-Plant-Blast-Fire-in-South-Texas-368983581.html? osource=SocialFlowFB DFWBrand
- 61 **Shireen Santhanasamy, KPLC 7, 2-24-2016:** http://www.kplctv.com/story/31300076/breaking-authorities-have-confirmed-a-pipeline-fire-seen-north-of-sulphur
- 62 U.S. DOT, Pipeline & Hazardous Materials Safety Administration:
 http://primis.phmsa.dot.gov/comm/reports/operator/OperatorIM_opid_3445.html?nocache=1113#_Incidents_tab_3
- 63 **Jessica Plue, Siouxland Matters, 3-14-2016:** http://www.siouxlandmatters.com/news/local-news/update-the-gas-spill-at-magellan-pipeline-company-has-been-contained-from-reaching-the-floyd-river
- 64 **Al Aamodt, Valley News, 3-22-2016:** http://www.valleynewslive.com/home/headlines/Pipeline-leak-being-repaired-near-Harwood-373097491.html
- 65 **Mike De Souza, National Observer, 4-4-2016:** http://www.nationalobserver.com/2016/04/04/news/transcanada-shuts-down-keystone-after-oil-seeps-surface
- 66 U.S. DOT, Pipeline & Hazardous Materials Safety Administration, 4-9-2016: http://primis.phmsa.dot.gov/comm/reports/enforce/documents/320165003H/320165003H_Corrective%20Action %20Order 04092016.pdf

- On April 12, a pipeline at a gas plant in Woodsboro, Texas exploded, killing 2 men, & injured another worker.⁶⁷
- On April 17, a 10 petroleum products pipeline failed in Wabash County, Illinois, resulting in a sheen on the Wabash River. About 48,000 gallons of diesel fuel was spilled & contaminated the local ecosystem, killing wildlife. 68
- On April 29, a 30-inch Texas Eastern/Spectra Energy pipeline exploded, injuring one man, destroying his home & damaging several others. The incident was reported at 8:17 a.m., near the intersection of Routes 819 and 22 in Salem Township, Westmoreland County, Pennsylvania. Later, Spectra Energy Corp. announced plans to dig up and assess 263 miles of that pipeline, from Pennsylvania to New Jersey. Corrosion had been detected at the failed seam 4 years before the rupture.^{69 70 71}
- On May 20, a Shell Oil Company pipeline leaked near Tracy, California, spilling & contaminating the local ecosystem with approximately 21,000 gallons of crude oil. 72
- On June 23, a Crimson Pipeline crude oil line leaked in Ventura County, California. Initial reports said the spill size was from 25,200 gallons to 29,000 gallons, but, later reports estimate 45,000 gallons of crude were spilled, contaminating the local ecocystem.^{73 74}
- On July 6, a Plantation Pipeline line was noticed to be leaking in Goochland County, Virginia.⁷⁵

⁶⁷ **Jonathan Munson, KIII 3 TV South Texas, 4-18-2016:** http://www.kiiitv.com/news/two-killed-one-injured-ingas-plant-explosion-near-woodsboro/270491830

⁶⁸ U.S. DOT, Pipeline & Hazardous Materials Safety Administration, 4-22-2016: http://primis.phmsa.dot.gov/comm/reports/enforce/documents/220165003H/220165003H_Corrective%20Action %20Order 04222016.pdf

⁶⁹ **The Tribune Review, 4-29-2016:** http://triblive.com/news/westmoreland/10391146-74/819-fire-gas? fb_comment_id=fbc_1010377968997980_1010524192316691_1010524192316691#f1324664a15cc3c

⁷⁰ Patty Tascarella, Pittsburgh Business Times, 6-27-2016: http://www.bizjournals.com/pittsburgh/blog/morning-edition/2016/06/energy-company-assessing-pipeline.html

⁷¹ Anya Litvak, Pittsburgh Post-Gazette, 9-13-2016: http://powersource.post-gazette.com/powersource/companies/2016/09/13/Pipe-that-burst-showed-defect-four-years-ago-Spectra-investigation-found/stories/201609130202

⁷² **Kurtis Alexander, SF Gate, 5-23-2016**: http://www.sfgate.com/bayarea/article/Oil-pipeline-near-Tracy-spills-thousands-of-7940489.php

⁷³ **Ada Carr, The Weather Channel, 6-24-2016:** https://weather.com/news/news/ventura-county-california-pipeline-oil-spill-pacific-ocean-crimson-pipeline

⁷⁴ **Arlene Martinez, Ventura County Star, 7-8-2016:** http://archive.vcstar.com/news/local/ventura/more-oil-spilled-in-ventura-barranca-than-initially-believed-3728a273-59cc-1271-e053-0100007f587a-386083421.html

⁷⁵ **Elliott Robinson, Richmond Times-Dispatch, 7-7-2016:** http://www.richmond.com/news/local/central-virginia/goochland/article d75750d5-424f-591c-8da6-1c9b8673423e.html

- On August 12, contractors were working on one of the main lines in Sunoco Pipeline LP's Nederland, Texas terminal when crude oil burst through a plug that was supposed to hold the oil back in the pipeline & ignited. The contractors were knocked off the platform to the ground, suffering injuries from the fall and severe burns. 7 contractors were injured. 76
- On September 4, a pipeline broke in Kern County, California, spilling reclaimed water & oil.⁷⁷
- On September 5, a pipeline in Bay Long, Louisiana was hit by dredging operations, resulting in a spill of about 5,300 gallons of crude oil into the water.⁷⁸
- On September 9, a Colonial Pipeline mainline leak was noticed by workers on another project, in Shelby County, Alabama. At least 252,000 gallons of gasoline leaked from line. One person was killed & five were injured in an explosion that occurred one month later. 79 80 81
- On September 10, a Sunoco pipeline ruptured near Sweetwater, Texas. About 33,000 gallons of crude oil were spilled. The pipeline was just over a year old. 82

⁷⁶ **Dianna Wray, Houston Press, 9-2-2016:** http://www.houstonpress.com/news/sunoco-sued-after-august-pipeline-fire-has-a-history-of-safety-violations-8721539

⁷⁷ Bakersfield, 9-4-2016: http://www.bakersfield.com/news/2016/09/04/pipeline-break-spews-oil-over-highway-33.html

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