TIMELINE

It didn't begin with the fracking but the crack just grew...

1825 In Chautauqua County, New York, William Hart discovers natural gas reserves. Uses gas to light buildings in Fredonia; town's official seal features five burners representing those lights.

1908 An early form of hydraulic fracturing is used to separate granite from bedrock.

APRIL 1930 On April 4, gas leaked into the sewer system in New York City, New York, and later exploded. 6 people were injured, 5,000 were evacuated from nearby buildings, and telephone cables were damaged.

MAY 1930 A runaway horse smashed a wagon of lumber against a crude oil pipeline in Ripon, Wisconsin on May 24. The oil ignited and spread to nearby oil tanks, causing a blaze that destroyed a number of buildings.

JULY 1930 Excavation in Fairport, New York caused a major gas explosion on July 30. 3 people were killed, 10 were injured, and a 4 family house was damaged by the blast and following fire.

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1940'S Worried about German subs targeting tankers, government supports construction of oil pipelines from Texas to East Coast; after war, pipelines approved for gas transport as well.

APRIL 1940 A gas compressor plant exploded in Braintree, Massachusetts on April 4, killing four people and injuring 12 others.

AUGUST 1943 On August 14, the recently built "Big Inch" crude oil pipeline developed a leak near Lancaster, Pennsylvania, delaying the first batch of crude oil from that pipeline from reaching Philadelphia, Pennsylvania.

1944 The "Big Inch" crude oil pipeline ruptured in Connellsville, Pennsylvania, with the crude spill killing fish along a 12-mile (19 km) stretch of the Laurel Hill creek.

1946 A crew working to connect a new gas main in Peru, Illinois on July 4, when the old gas main exploded, killing 5 of the work crew, and injuring 7 others.

1947 Hydraulic fracturing is used for the first time to extract natural gas.

1948 The Federal Water Pollution Act of 1948 was the first major U.S. law to address water pollution. Made it unlawful for any person to discharge any pollutant from a point source into navigable waters (Post WWII). [1]

OCTOBER 1948 On October 18, vapors from a leaking butane pipeline at a refinery in Texas City, Texas spread out along a nearby highway, causing a number of cars to stall. The gas then exploded, killing 4 people, and seriously burning 17 others.

NOVEMBER 1948 On November 19, a "Big Inch" pipeline pumping station exploded and caught fire near Seymour, Indiana, causing $3,000,000 in damage, and injuring 17 workers at the station.

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MARCH 1949 A section of the "Little Big Inch" exploded and burned in North Vernon, Indiana on March 4, burning a mother and her infant. It was the fourth explosion on that pipeline in Indiana that year.

1949 Halliburton becomes the first company to use hydraulic fracturing to extract natural gas at an industrial magnitude.3 The technology used then bears little resemblance to what is used in contemporary fracking procedures. Drilling operations could not use the same pressures or magnitudes that they can today, so they could only extract natural gas present in loose geological formations.

1950 Natural gas use begins steady climb, will nearly double over next two decades.

1954 Federal government establishes price controls for interstate gas sales, making it more lucrative to sell in states where it's produced. Shortages ensue across Midwest and East Coast.

1970 Gas' share of US energy consumption peaks at 30 percent (25 percent today).

1972 The Clean Water Act (CWA) is the primary federal law in the United States governing water pollution. Its objective is to restore and maintain the chemical, physical, and biological integrity of the nation's waters.[1]

1974 Congress passes the Safe Drinking Water Act to protect underground sources of drinking water. The Environmental Protection Agency requires Underground Injection Control permits under the SDWA for any injection of a fluid (42 U.S.C. Sections 300h to 300h-8). The EPA also bans the injection of most hazardous materials and mandates regulation of all injected materials.4 But this same year the EPA rules that hydraulic fracturing does not fall under the regulatory power of the SDWA because its primary purpose is the extraction of natural gas, rather than the injection of hazardous material. Because of this, fracking operations are able to proceed unhindered by the new regulations.

1976 Resource Conservation and Recovery Act passed to regulate hazardous waste; gas will be made exempt.

1977 Facing record cold, Pennsylvania Gov. Milton Shapp orders schools closed for three days because of gas shortage. On the same day, Carter proposes Emergency Natural Gas Act, deregulating the industry.

1980 Superfund Act 1980. The Superfund law is officially known as the comprehensive environmental response, compensation, and liability Act. The federal Superfund program, administered by the Environment Protection Agency is designed to investigate and clean up sites contaminated with hazardous substances. [2]

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NOVEMBER 1984 A Williams Companies 6 inch pipeline ruptured on November 18 in New Brighton, Minnesota, causing a spill of 40,000 to 50,000 gallons of jet fuel in an industrial area. There were no injuries.

On November 25, a 30-inch gas transmission pipeline, constructed in 1955 and operating at 1,000 psig pressure, ruptured at a location about three miles (5 km) west of Jackson, Louisiana. Within this sparsely populated area, five persons involved with the pipeline construction work were killed, and 23 persons were injured. Additionally, several pieces of construction equipment were damaged extensively. Lack of proper ground support under the pipeline when a nearby section of that pipeline was upgraded and replaced was identified as a factor in the failure.

1986 Congress passes Community Right to Know Act requiring companies to report toxic releases; pleading trade secrets for fracking fluids, gas drillers get exemption.

MARCH 1986 A backhoe snagged a natural gas distribution line in Fort Worth, Texas, causing a break that leaked gas into an unoccupied building. Later, that building exploded, injuring 22 people, destroying the unoccupied building, and damaging 40 other buildings. 57 automobiles in the unoccupied building were damaged or destroyed.

1987 Gas industry granted exemption from Clean Water Act amendments designed to keep pollution out of storm water.

An EPA report indicates water contamination in Jackson County, WV. The report shows that frack fluid had leaked from fractures in a well drilled by Kaiser Exploration and Mining Company and into the private water well of James Parson.

1987 Water Quality Act, 100th congress, enacted April 2, 1987 provided Pollution Control Act, also know as the Clean Water Act. Provisions include: authority to continue the Chesapeake Bay Program. [1]

DECEMBER 1989 On December 29, shock waves from an explosion ruptured a 30 inch gas transmission pipeline operating at 350 psi in the Hell Gate section of New York City, New York. The rupture was 11 feet long, and escaping gas ignited, killing 2 people, injuring one other person, and destroying 2 buildings and 50 automobiles.

1990 Gas drillers given de facto exemption from Clean Air Act.[3]

JANUARY 1990 On January 2, an Exxon underwater pipeline located at the mouth of Morse Creek discharged approximately 13,500 barrels (2,150 m3) of No. 2 heating oil into the Arthur Kill waterway between New Jersey and Staten Island, New York.

1990 Oil Pollution Act, was passed by the 100th U.S. Congress. It works to avoid oil spills from vessles and facilities by enforcing removal of spilled oil and assigning liability for cost of cleanup and damage.[4]

MARCH 1990 On March 30, a Buckeye Partners 10-inch pipeline ruptured from overstress, due to a landslide in Freeport, Pennsylvania, resulting in the release of approximately 1,300 barrels (210 m3) of mixed petroleum products. Spilled petroleum products entered Knapp's Run, a small creek emptying into the Allegheny River and, eventually, the Ohio River. The product release resulted in extensive ground and water pollution and interrupted the use of the Allegheny River as a water supply for several communities. Damage to the pipeline and environmental cleanup and restoration costs exceeded $12 million.

MAY 1990 On May 6, a spool on a pipeline ruptured off of the Louisiana coast. 13,600 barrels (2,160 m3) of crude oil were estimated to have spilled.

AUGUST 1990 On August 29, a private contractor laying conduit for underground power lines ruptured a pipeline that fouled a Western Branch creek with diesel fuel in Chesapeake, Virginia. Over 67,000 US gallons (250,000 L) of fuel were spilled.[253]

On August 29, a natural gas explosion and fire destroyed two row houses and damaged two adjacent houses and three parked cars in Allentown, Pennsylvania. One person was killed, and nine people, including two firefighters, were injured. A cracked gas main, that was stressed by soil erosion from a nearby broken water line, was the cause of the gas leak.

1991 International Gas Union releases report declaring that gas is "trump card" in the fight against destruction of the environment.

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MARCH 1992 On March 4, a gas distribution pipeline failed in Utica, New York, killing 2 people

1992 President George H.W. Bush's EPA chief, Bill Reilly, meets with industry execs including Enron CEO Ken Lay, praises gas' "relative environmental cleanliness."

DECEMBER 1992 On December 3, pipeline company workers ruptured a natural gas liquid (NGL) pipeline, causing a vapor cloud to drift across I-70 near Aurora, Colorado. The Cloud later ignited, burning 6 motorists.

JUNE 1993 On June 9, a cinder block duplex at in Cliffwood Beach, New Jersey, exploded as a New Jersey Natural Gas Company (NJNG) contractor was trenching in front of the building. The gas explosion killed 3 residents of the duplex, and seriously injured 3 others.

1993 Ford develops natural-gas-powered Crown Victoria that ends up in cab fleets in NYC, LA, and other cities. Project partially funded by gas industry.

OCTOBER 1994 In October, record high flooding along the San Jacinto River in Texas lead to the failure of 8 pipelines crossing that river. Due to the flooding many other pipelines were also undermined. More than 35,000 barrels (5,600 m3) of petroleum and petroleum products were released into the river. Ignition of the released products resulted in 547 people receiving (mostly minor) burn and inhalation injuries. Spill response costs exceeded $7 million, and estimated property damage losses were about $16 million.

1996 Fracking in Alabama results in a lawsuit against the EPA by the Legal Environmental Assistance Foundation, alleging that injection of fluids for hydraulic fracturing must be regulated by the EPA under the SDWA.

1997 The U.S. Court of Appeals for the 11th Circuit, in Atlanta, flatly rejects the EPA's legal position in LEAF v. EPA. The federal district court stated: "[We] conclude that hydraulic fracturing activities constitute underground injection under Part C of the SDWA. Since EPA's contrary interpretation could not be squared with the plain language of the statute, we granted LEAF's petition. ... As LEAF correctly notes, wells used for the injection of hydraulic fracturing fluids fit squarely within the definition of Class II wells. Accordingly, they must be regulated as such."

1999 The present day form of hydraulic fracturing, which uses much higher pressures than earlier processes, is first used in the Barnett Shale in Texas. Formerly inaccessible gas reservoirs are now open for fracking.

JUNE 1999 A pipeline in a Bellingham, Washington park ruptured and leaked gasoline, and later vapor from the leak exploded and burned, killing two 10 year old boys and an 18 year old man on June 10, 1999. Issues causing the rupture were found to be previous pipe damage by excavation, an incorrectly set up pressure relief valve, unexpected repeated remote valve closures, and new software tests on the live controlling computer.

AUGUST 1999 On August 10, an auger being used to install utility poles hit a 14 inch ethane-propane pipeline, causing an explosion & fire that killed the auger operator, and forcing evacuations near Liberty Hill, Texas.

NOVEMBER 1999 A Lakehead Pipeline was damaged by outside force on November 2, near Meridian, Michigan. Of about 2v23,000 gallons of NGL's spilled, about 115,000 gallons were recovered.

On November 19, 2 men were injured in Salt Flat, Texas, when a leaking 8-inch propane pipeline exploded. 2 school buses had passed through the area moments before the explosion.

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2000 President-elect George W. Bush: "Natural gas is hemispheric. I like to call it hemispheric in nature because it is a product that we can find in our own neighborhoods."

FEBRUARY 2000 On February 5, a pipeline failed and spilled over 192,000 US gallons (730,000 L) of crude oil in the John Heinz National Wildlife Refuge in Pennsylvania. The source of the spill was a break in a miter bend in the pipe, which was estimated to be at least 50 years old.

2001 The EPA begins a study of the impacts of fracking on drinking water, stating: "As a result of the ... lawsuit on hydraulic fracturing of coal bed methane wells, the EPA recognizes this issue raises concerns and is conducting an investigation to evaluate the potential risks to ... drinking water."

Shortly after taking office, VP Dick Cheney (previously CEO of oil and gas firm Halliburton) forms energy task force. Its report incorporates much of gas industry's lobbying wish list, including drilling in Arctic National Wildlife Refuge.

Vice President Dick Cheney's Energy Task Force urges the EPA to conclude that it should not regulate fracking under the SDWA.

APRIL 2001 On April 1, a Dome Pipeline in North Dakota carrying gasoline ruptured and burst into flames a few miles west of Bottineau, North Dakota. An estimated 1.1 million US gallons (4,200 m3) of gasoline burned before the pipeline could be shut down. The company attributed the break to damage by an "outside force." which A Bottineau County Sheriff said appeared to be frost that melted at uneven rates, twisting and breaking the pipeline.

JUNE 2001 On June 13, in Pensacola, Florida, at least ten persons were injured when two natural gas lines ruptured and exploded after a parking lot gave way beneath a cement truck at a car dealership. The blast sent chunks of concrete flying across a four-lane road, and several employees and customers at neighboring businesses were evacuated. About 25 cars at the dealership and 10 boats at a neighboring business were damaged or destroyed.

2003 President George W. Bush and Vice President Cheney back a sweeping national energy bill that includes a provision to exempt hydraulic fracturing from EPA drinking water regulation.[3]

MARCH 2004 Gas seeps into the home of 64-year-old Charles Harper and his 53-year-old wife, Dorothy, from several several frack wells next to their property near Pittsburgh, PA. The gas collects until it explodes and, according to court records, the news reports at the time, reduces the house to a pile of rubble. The bodies of the Harpers and their grandson, Baelee, are discovered under piles of debris across the yard.

JUNE 2004 An EPA report on fracking says fracking fluids are toxic and that some portion of these toxic fluids remain in the ground after a frack job. However, the report concludes that "injection of hydraulic fracturing fluids into coal bed methane wells poses little or no threat" to drinking water supplies and "does not justify additional study at this time."

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2005 Cheney-backed energy bill contains "Halliburton loophole," which exempts frackers from the Safe Drinking Water Act.

JULY 2005 The U.S. Congress passes the Energy Policy Act of 2005, signed in August by President Bush, which includes a provision codifying that Congress never intended for hydraulic fracturing to be regulated under the SDWA.

JULY – AUGUST 2005 Citing the EPA's 2004 study, Congress passes and President Bush signs the Energy Policy Act of 2005, exempting fracking from the SDWA. Prior to this, the EPA had the authority to investigate and regulate fracking, but the 2005 law retracts the EPA's authority over fracking operations. This exemption for fracking is known as the "Halliburton loophole."

SEPTEMBER 2005 EPA Inspector General Nikki Tinsley stops the investigation into the mishandling of a hydraulic fracturing study, stating that the question of the EPA conducting a fraudulent study is no longer relevant since Congress had exempted fracking from the law.

2006 Drilling fluids and methane begin bubbling from the ground near a gas well in Clark, WY. A total of eight million cubic feet of methane is released into the atmosphere, a nearby shallow water well is contaminated with fracking chemicals.

2007 [illegible] while driving east in a pickup truck on Interstate 20 Near Delhi, Louisiana, hits a 30-inch gas transmission pipeline exploded. One of the men were killed, and the other injured. External corrosion was later identified as the cause of the failure.

2007 Sierra Club director Carl Pope chooses to accept funding for Beyond Coal campaign from natural gas company Chesapeake Energy, does not tell his board or members. Chesapeake will give club more than $25 million over three years.

NOVEMBER – DECEMBER 2007 At least 22 water wells in Bainbridge, Ohio, are contaminated with drilling chemicals, one of which explodes due to the methane released from the well water.

2008 Researchers release estimate that there's up to 250 times more gas in Marcellus Shale formation, which runs from New York to West Virginia, than previously thought.

FEBRUARY 2008 A natural gas pipeline compressor station exploded and caught fire on February 5, near Hartsville, Tennessee, and was believed to have been caused by a tornado hitting the facility.

2009 Robert F. Kennedy Jr. writes in Financial Times that US is "awash with natural gas," which "has made it possible to eliminate most of our dependence on deadly, destructive coal."

Former Sen. Timothy Wirth and John Podesta of the Center for American Progress call gas "a bridge fuel to a 21st-century energy economy."

JUNE 2009 U.S. House Representatives Diana DeGette (D-CO) and Maurice Hinchey (D-NY) and U.S. Senators Robert P. Casey, Jr. (D-PA) and Chuck Schumer (D-NY) introduce the Fracking Disclosure and Awareness of Chemicals Act (FDACA). The act would repeal fracking's exemption from the SDWA. The act does not passed.

[illegible] 2009 Records show roughly 58,000 active gas wells in Pennsylvania.

SEPTEMBER 2009 13 wells in Dimock, PA, are contaminated with methane, causing one to explode. The gas company responsible for the faulty drilling project is forced to compensate residents and build a pipeline to supply safe drinking water to those affected.

NOVEMBER 2009 A fracking wastewater impoundment catches fire and explodes in Avella, PA. Flames shoot 200 feet into the air, burn for six hours and produce a thick, black smoke cloud visible 10 miles away. Soil tests conducted at the site find arsenic at 6,430 times the permissible level and benzo(b)-naethene (a carcinogen and central-nervous-system suppressant) at 1,417 times the permissible level.

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2010 By request of the US Congress, the EPA issues a Plan to Study the Potential Impacts of Hydraulic Fracturing on Drinking Water Resources, to be completed by 2014.

2010 Dean Phillips, Minnesota premiere, introduces Energy Fracking Tax Act, nominated for 2011 Worst Bill Award.

2010 Congressional investigation reveals fracking companies are injecting diesel fuel and other toxic chemicals underground.

2010 Senate Democrats seek to compel disclosure of chemicals in fracking fluid. Bill fails.

2010 Obama EPA asks frackers for information about fluids. Only Halliburton refuses.

2010 Natural gas pipeline explodes in San Bruno, California, killing eight.

FEBRUARY 2010 The House Committee on Energy and Commerce, chaired by Henry A. Waxman (D-CA), launches an investigation into potential environmental impacts from hydraulic fracturing. Citizen reports from numerous communities are filed with Waxman claiming that hydraulic fracturing has led to ground water contamination and public health risks.

FEBRUARY 2010 When speaking about federal regulation of hydraulic fracturing, Steve Hearn, director of the EPA's Drinking Water Protection Division, says: "I have no information that states aren't doing a good job already."

APRIL 2010 BP Deepwater Horizon blowout. Considered to be the largest marine oil spill in the history of the oil and gas industry. 4.9 million barrels spilled over 5 months (including methane gas).

DECEMBER 2010 Law of the Right of Mother Earth is a Bolivian law was passed by Bolivia's Plurinational Legislative Assembly. The law defines Mother Earth as "A collective subject of public interest, and declares both Mother Earth and life systems as titleholder of inherent rights specified in the law.

2011 In State of the Union, Obama rolls out clean energy plan that includes major expansion in natural gas.

2011 Study in journal Climatic Change suggests cumulative greenhouse impact of natural gas may be at least 20 percent higher than coal's because of methane leakage from wells.

2011 US Geological Survey reduces estimate of undiscovered gas in Marcellus Shale by 80 percent.

2011 Robert F. Kennedy Jr. retracts support for gas, credits New York Times reporting for alerting him to risks.

2011 EPA moves toward regulating toxic fracking discharges, industry pushes back.

MAY 2011 Gas drilling platform accident in Symma, NY claims life of Charles "C.J." Beans

MAY 2011 The Pennsylvania Agriculture Department quarantines 28 head of cattle on a farm in central Pennsylvania after they came in contact with wastewater leaking from a natural gas well holding pond. Farmers contacted the state after noticing that grass had died in the area. Tests find chloride, iron and other chemicals in the wastewater.

JUNE 2011 A well blowout in Clearwater County, PA, results in a gas explosion and a 16-hour uncontrolled spill of about a million gallons of toxic wastewater into a creek in Moshannon State Park. As a result campers are warned about drinking the water.

NOVEMBER 2011 By request of the U.S. Congress, the EPA issues a Plan to Study the Potential Impacts of Hydraulic Fracturing on Drinking Water Resources, to be completed by 2014.

DECEMBER 2011 The EPA releases its draft report on Pavillion, WY. The report says that "detections of high concentrations of benzenes, xylenes, gasoline range organics, diesel range organics and ... hydrocarbons in ground water samples from ... wells near pits indicates that [frack] pits are a source of shallow ground water contamination." At some wells the researchers found "water near-saturated in methane," and in deep water wells, they also found chemicals used during the fracking process: gasoline, diesel fuel, BTEX (benzene, toluene, ethylbenzene, xylene), naphthalenes and isopropanol. The report continues: "Detections of organic chemicals are more numerous and exhibit higher concentrations in the deeper of the two monitoring wells ... (which along with trends in methane, potassium, chloride and pH, suggest a deep source of contamination." Investigators also found that the reports oil and gas companies filed detailing frack jobs listed chemicals used as "proprietary, ... rendering identification of constituents impossible."

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2012 Geologists link fracking to earthquakes in Ohio and Oklahoma.

2012 Cornell University veterinarian publishes study on cats, dogs, horses, and cows having seizures and dying after exposure to fracking chemicals.

JANUARY 2012 NYDC, Catskill Mountainkeeper, Delaware Riverkeeper, Earth Justice and Riverkeeper submit comments on SGEIS setting up the Southern Tier of New York as a "sacrifice" zone for a fracking experiment.

JANUARY 2012 Youngstown, Ohio, is hit by its 12th earthquake of the year. The most recent earthquake is rocked, like the others, very near a D&L fracking injection well where millions of gallons of fracking brine have been injected below the earth's surface.

JANUARY 2012 Records show that there are over 64,000 fracking wells in Ohio. [5]

JANUARY 2012 After thousands of reported cases of water contamination and millions of accidents associated with fracking, President Obama insists his support for natural gas extraction during his State of the Union address.

NOVEMBER 2012 Fracking: 632 chemicals. 25% are linked with cancer or mutations. 37% affect hormones, 40-50% affect biological nervous, immune, and cardiovascular systems. 75% affect sensory organs and respiratory and gastrointestinal systems. (6)

MARCH 2013 Andrew Cuomo meeting with Robert F. Kennedy Jr. Governor Cuomo may delay the fracking decision with the encouragement of RFK Jr. For as many as 40 gas wells (Southern Tier), before changing course to await the findings, Cuomo said he's unsure what the Geisinger Report will conclude. (7)

MAY 2013 Fracking PA to death. Epidemic of children with cancer. An act of ecological violence around which gas infrastructures—compressor stations that compact the gas for pipeline transport, ponds of contaminated freshwater, flare stacks that burn off gas impurities, diesel trucks in quantity, thousands of miles of pipelines, and more—have metastasized across rural America, pumping carcinogens and toxins into water, air, and soil. (8)

SEPTEMBER 2013 Northern Colorado Fresh, National Weather Service called the flooding "Biblical." Colorado Oil and Gas Conservation Commission estimates losing 43,000 gallons of crude oil to surface water. Also large amounts of hydrofracking gas wastewater overflow a big concern.

APRIL 2014 A Texas family claiming they were sickened because of pollution from hydraulic fracturing operations near their home should be awarded $2.95 million for their troubles, a jury ruled on Tuesday.
The Parr family had sued Aruba Petroleum Inc. in 2011, alleging the oil and gas producer exposed them to hazardous gases, chemicals and industrial waste that seeped into the air from 22 wells drilled near the family's 40-acre plot of land, which sits atop the Barnett Shale. (9)

2014 Hundreds of offshore fracking wells dump billions of gallons of oil waste into Gulf. In 2014 alone the frack industry was allowed to dump a staggering 76 billion gallons of waste fluid into the sea.

DECEMBER 2014 New York State bans fracking.

2015 Wetlands Protection Act. The 2015 rule gave the federal government authority to oversee a wide array of lakes, streams, wetlands, storm-water controls and ditches feeding into large waterways that are clearly protected under the 1972 Clean Water Act. [10]

JUNE 2015 After a long awaited six year study DEC officially states hydrofracking poisons residential and municipal water sources.

2015 Suburb of LA Porter Ranch, CA, largest gas leak in US history. Methane gas has been burning for over 6 months. SoCalGas Company.

MARCH 2016 Dimock, PA, A family farm wins 4.25 million against Cabot Oil and Gas Company for contaminated water source.

APRIL 2016 Constitution Pipeline banned, 125 miles Southern Tier NYS.

APRIL 2016 Dakota Access Pipeline, Standing Rock Indian Reservation, "Water Protectors", protecting water as a sacred duty. [11]

DECEMBER 2016 Trump names Scott Pruitt head of EPA

FEBRUARY 2017 Trump's EPA deregulated coal companies from dumping waste ash into rivers and streams.

2017 Maryland becomes the third state to ban fracking.

2018 Recent CA droughts. Gas companies selling waste water to water their fruits and vegetables.

DECEMBER 2018 Trump auctions off 150,000 acres of public lands for fracking near Utah National Parks [12]

MAY 2019 Trump's Energy Department unveils new rule/waiver for natural gas, "Freedom Gas", "Molecules of U.S. Freedom" [13]

APRIL 2016 Dakota Access Pipeline, Standing Rock Indian Reservation, "Water Protectors", protecting water as a sacred duty. [11]

AUGUST 2019 River Cancer accuses children South western P.A.
The fracking process involves carcinogenic chemicals, academic studies have linked low birth rates, birth defects and asthma to fracking. [14]

DECEMBER 2019 Immense amounts of methane are escaping from oil and gas rides nationwide, worsening global warming, as the Trump administration weakens restrictions on offenders. If methane is not burned off when released, it can warm the planet more than 80 times as much as carbon dioxide over a 20-year period. Methane levels have soared since 2007, with fracking natural gas production, which accelerated just as atmospheric methane levels jumped, fracking is the prime suspect. [15]

JANUARY 2020 The White House announced Tuesday that it plans to veto the PFAS Action Act of 2019, which aims to keep harmful forever chemicals out of groundwater. [16]

2020 "The Long Fight to Clean Up Our Water"
1948 Federal Water Pollution Act
1972 Clean Water Act
1980 Water Quality Act
1990 Oil Pollution Act
2015 Wetlands Protections Act
2020 Trump administration rolls it all back [17]

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(1) Technically the name of the law is the Federal Water Control Act. The first FWPCA was inacted in 1948, but took on it's modern form when completely written in 1972. In an act entitled the Federal Water Pollution Control Act Amendements of 1972. Major changes have subsequently been introduced via amendatory legislation including the Clean Water Act of 1977 and the Water Quality Act of 1987.

(2) Superfund Act, Dec. 11, 1980. EPA's Superfund program has helped protect human health and the environment by managing the cleanup of the nation's worst hazardous waste sites.

(3) The science was suppressed to protect industry interests, services company once run by Bush's Vice President Dick Cheney, longtime alma of the oil industry, introduced a bill exempt fracking from the Safe Drinking Water Act of1974. The final version of the report omits mention of public health.

(4) Oil Pollution Act of 1990 public law 101-380 August 18, 1990.

(5) "Golden Rules for a Golden Age of Gas", World Energy Outlook Special 2012 Report.

(6) The Nation, "Fracking Our Food Supply" (632 Chemicals) November 26, 2012

(7) March 2, 2013 Besides enormous pressure from NY Fracktivists, Gov. Cuomo meets with RFK Jr. This is a major turning point of the Governor's decision to ban fracking in NYS.

(8) "Fracking PA to Death" Ellen Cantarow, Mother Jones, 11 May 2013.

(9) "In Landmark Ruling, Jury Says Fracking Company Must Pay $3 Million To Sickened Family" ThinkProgress, 24 Apr. 2014. Web. 07 May 2016.

(10) Section 404 of the Clean Water Act (CWA) establishes a program to regulate the discharge of dredged or fill material into waters of the U.S. including wetlands (U.S. Army Corps of Engineers)

(11) "Water Protectors" are distinguished from other forms of environmental activists by a philosophy and approach that is rooted in an Indigenous cultural perspective that sees water and the land as sacred.

(12) ecowatch.com 12.12.18

(13) Time Magazine 5.29.19

(14) Pittsburg Post-Gazette 8.4.19

(15) "It's a fact. Invisible Climate Menace: We Made It Visible." NY Times December 12, 2019

(16) Newsweek 1.8.20

(17) "The Long Fight to Clean Up Our Water" 1948-2019, M. Wuerker, Andrew McMeel, Politico 1.25.20

Timeline: Andrew Castrucci, Annie Lenihahn