

# NTSB Pipeline Incidents & Reports

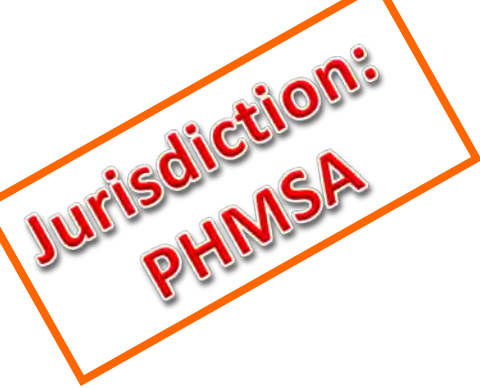
- **11 Completed**
- San Bruno, CA Incident 9/9/2010 **Report 8/30/2011**
- Marshall MI Oil Spill 7/25/2010 **Report 7/10/2012**
- Palm City, FL Incident 5/4/2009 **Report 8/13/2013**
- Cleburne TX Incident 6/7/2010 **Report 9/9/2013**
- Romeoville, IL Oil Spill 9/7/2010 **Report 9/30/2013**
- Sissonville, WV Incident 12/11/2012 **Report 3/10/2014**
- Birmingham, AL Incident 12/17/2013 **Report 3/27/2016**
- Released **Safety Study** on Integrity Management **1/27/2015**
- East Harlem, NY Incident 03/12/2014 **Report 6/9/2015**
- Centreville, VA Gasoline Leak 09/21/2015 **Report 6/5/2017**

# NTSB Pipeline Incidents & Reports

- **11 Completed since 2010**
- **7 Outstanding:**
  1. Canton, IL Incident 2/11/16 – **Expected late 2018?**
  2. Silver Spring, MD Incident 08/11/2016 – **UPDATED NTSB files August 2017**
  3. Firestone, CO Flowline Incident 04/17/2017 – **Expected mid 2019?**
  4. Manor Township, PA Incident 07/02/2017 – **Expected late 2019?**  
**UPDATED NTSB files June 2018**
  5. Minnehaha, MN Incident 8/2/2017 – **Preliminary Report Issued Expected mid 2019?**
  6. Amherst, SD Oil Pipeline Leak 8/2/2017 – **Issued July 5 2018**
  7. Dallas, TX Incident 2/23/2018 – **Preliminary Report Issued 3/23/18 Final Report expected late 2019?**
  8. Lawrence, MA Incident 9/13/2018 – **Preliminary Report Issued expected to be 10/11/18 Final Report expected late 2019?**

# NTSB REPORTS

**First we need to  
recall the  
associated  
incidents**

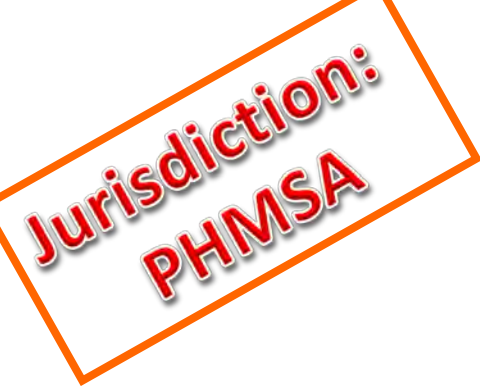


# Keystone Crude Oil Pipeling (TransCanada)

Amherst, SD

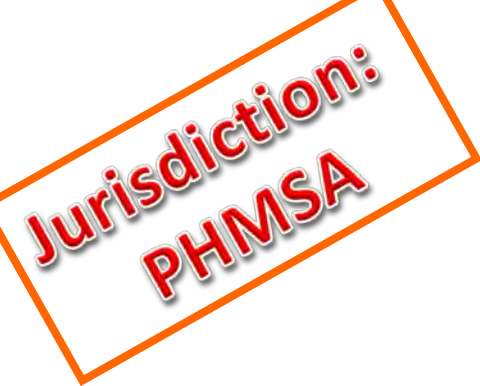
November 17, 2017 @ Rural Area

- 30 inch pipeline ruptured and caused very large oil spill (5,000 barrels or 210,000 gallons)
- X70 GR, 0.386 inch wall, DSAW
- Part of a 1025 mile system from Alberta, Canada to Pakota, IL and then onto Cushing, OK (291 miles with 36 inch) transport ZZ Million Barrels/Day
- MAOP allowed to operate at 80% SMYS based on 2007 Special Permit with 51 extra conditions



Keystone Crude Oil Pipeling  
(TransCanada)  
Amherst, SD  
November 17, 2017 @ Rural Area

- Constructed in 2008, began operating in 2010
- Operating pressure was 1352 psig
- Rupture occurred during an cleaning pig run and acoustic leak detection (SMART BALL) (first since installation)
- Since installation no crack detection tools had been run (ILI)

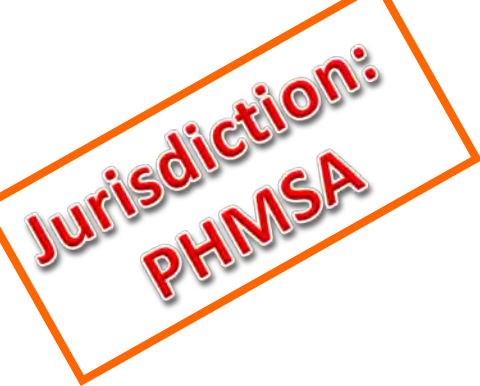


# Keystone Crude Oil Pipeling (TransCanada)

Amherst, SD

November 17, 2017 @ Rural Area

- Pressure drop was noticed by control center in Alberta, CA
- Immediately closed remote valves
- Dispatched operating personnel to area
- Confirmed oil spill about 4.5 hours later when arrived on site
- PHMSA issued a CAO November 28, 2017

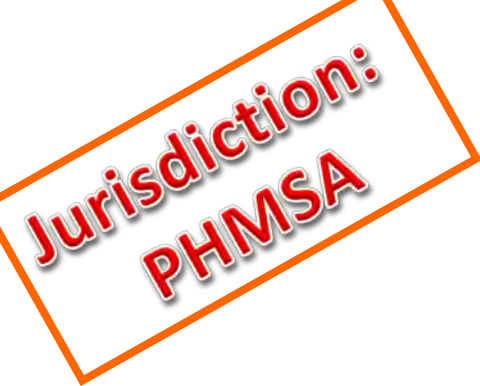


# Keystone Crude Oil Pipeling (TransCanada)

Amherst, SD

November 17, 2017 @ Rural Area

- Concrete weights were found at the rupture site
- 5.5 inch crack was found near the top of the pipe and about 6 inches from the longitudinal seam
- Exposed metal contact showed grooves consistent with a tract machine (mechanical damage)
- NTSB conducted metallurgical testing and found concrete weights were not part of cause



# Keystone Crude Oil Pipeling (TransCanada)

Amherst, SD

November 17, 2017 @ Rural Area

- Spectroscopy found metal that was not consistent with original steel of the pipe (chromium)
- NTSB forwarded all results to PHMSA and issued report July 5 2018



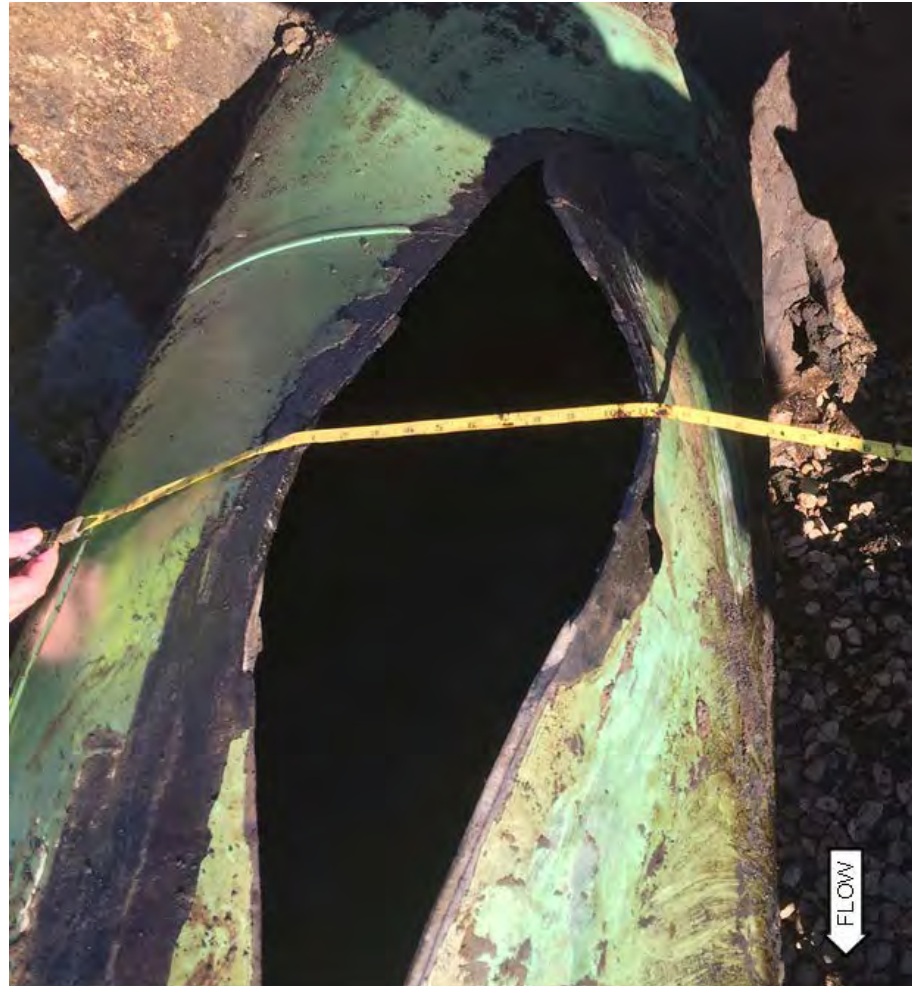
**Jurisdiction:  
PHMSA**

# Keystone Crude Oil Pipeling (TransCanada) Amherst, SD November 17, 2017 @ Rural Area



**Jurisdiction:  
PHMSA**

# Keystone Crude Oil Pipeling (TransCanada) Amherst, SD November 17, 2017 @ Rural Area



**Jurisdiction:  
PHMSA**

# Keystone Crude Oil Pipeling (TransCanada) Amherst, SD November 17, 2017 @ Rural Area





**Jurisdiction:  
PHMSA**

# Keystone Crude Oil Pipeling (TransCanada) Amherst, SD November 17, 2017 @ Rural Area



**Jurisdiction:  
State PUC**

## UGI Utilities

Manor Township, (Millersville Borough), PA  
July 2, 2017 @ Single Family Home

- 3<sup>rd</sup> UGI incident within last 7 years
- Single Family Home in residential neighborhood destroyed, surrounding homes damage from explosion
- 1 Fatality (First Responder from Gas Company)
- 2 other injuries (2 other crew members – one overnight hospitalization)
- 1 municipal employee on site was also injured
- Occupants of home were evacuated
- NTSB launched investigation

**Jurisdiction:  
State PUC**

## UGI Utilities

Manor Township, (Millersville Borough), PA  
July 2, 2017 @ Single Family Home

- 2 other homes were condemned as a result of the explosion
- Property Damage was \$1.3 million
- 2" dia. PE Main installed 1995, 54 psig operating pressure
- 0.5" dia. PE Service installed 1998
- Used Mechanical Tapping Tee with Nylon Bolts

**Jurisdiction:  
State PUC**

## UGI Utilities

Manor Township, (Millersville Borough), PA  
July 2, 2017 @ Single Family Home

### Timeline:

- Odor complaint 10:26 am from next door neighbor (#202) while walking on sidewalk
- Dispatch 11:00 am to #202
- Tech found 98% gas in air at tee, 80% gas in air at sewer main, and unknown % at foundation wall of #206
- 11:18 am call for additional resources

**Jurisdiction:  
State PUC**

## UGI Utilities

Manor Township, (Millersville Borough), PA  
July 2, 2017 @ Single Family Home

- 11:20 am UGI office supervisor contacted One Call Center for emergency leak repair.
- 11:27 am One Call Ctr notified affected utilities
- Between 11:20 am and 11:30 am Technician knocked on door #206 and could not gain entry.
- Between 11:20 am and 11:30 am Technician knocked on door, #202, detected 10% to 11% LEL, did not go to basement
- Advised homeowner #202 okay to remain
- Multiple calls between 11:30 and 11:55 am between personnel of UGI and Gas Field Tech



**Jurisdiction:  
State PUC**

## UGI Utilities

### Manor Township, (Millersville Borough), PA July 2, 2017 @ Single Family Home

- At 11:55 am homeowner of #206 allows Technician into home
- Field Tech detected 11% gas in air on second floor, asked residents to open doors and windows to ventilate and then to evacuate.
- Duty Supervisor enroute and Engineer in Office decided on squeeze off rather than valve at main 870 feet away
- 12:05 occupants of #202 reassured it was safe to stay
- 12:07 municipal employee arrived on scene smelling strong odor of gas
- 12:09 #206 garage door manually opened, homeowner drove car to end of driveway and ran back in the house to retrieve item

**Jurisdiction:  
State PUC**

## UGI Utilities

### Manor Township, (Millersville Borough), PA July 2, 2017 @ Single Family Home

- 12:11 Duty Supervisor arrived on scene and 3 minutes later requested FD assistance
- 12:14 disassembled meter at #206 to prepare for squeeze off
- 12:27 FD arrived and parked in front of #187
- 12:28 neighbor photographed Field Tech walking toward #206, another gas worker digging at the service tee, Duty Supervisor near Gas Truck in road, 2 FD personnel walking towards scene with hoses
- 12:31 gas explosion occurred at #206, Field Tech was killed, Duty Supervisor and gas worker hand digging near tee were injured with debris, municipal employee also injured with back turned to blast
- Total time line 125 minutes from when leak odor called in.

**Jurisdiction:  
State PUC**

# UGI Utilities Manor Township, (Millersville Borough), PA July 2, 2017 @ Single Family Home



**Jurisdiction:  
State PUC**

# UGI Utilities Manor Township, (Millersville Borough), PA July 2, 2017 @ Single Family Home





**Jurisdiction:  
State PUC**

# UGI Utilities Manor Township, (Millersville Borough), PA July 2, 2017 @ Single Family Home





**Jurisdiction:  
State PUC**

# UGI Utilities Manor Township, (Millersville Borough), PA July 2, 2017 @ Single Family Home



**Jurisdiction:  
State PUC**

# UGI Utilities Manor Township, (Millersville Borough), PA July 2, 2017 @ Single Family Home



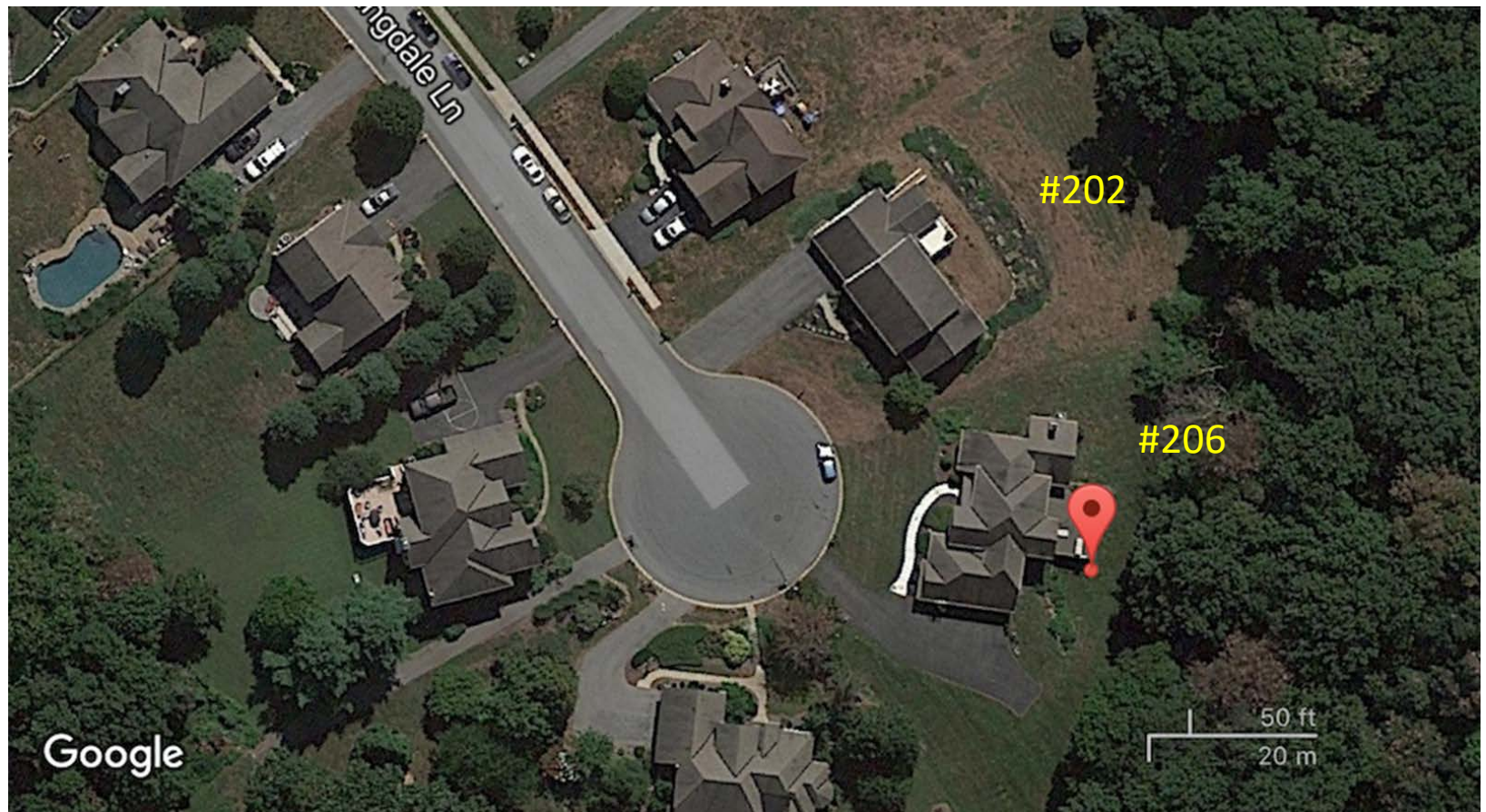


**Jurisdiction:  
State PUC**

# UGI Utilities

## Manor Township, (Millersville Borough), PA

### July 2, 2017 @ Single Family Home





**Jurisdiction:  
State PUC**

# UGI Utilities Manor Township, (Millersville Borough), PA July 2, 2017 @ Single Family Home



**Jurisdiction:  
State PUC**

## UGI Utilities

Manor Township, (Millersville Borough), PA

July 2, 2017 @ Single Family Home

- NTSB issued a recommendation regarding PermaLock Tapping Tees used throughout the industry
- Issued Safety report June 2018
- Final NTSB Accident Report still forthcoming
- PA PUC report still forthcoming and will be coordinated with NTSB

**Jurisdiction:  
State PUC**

## UGI Utilities

Manor Township, (Millersville Borough), PA

July 2, 2017 @ Single Family Home

- 2006 residential house explosion involving Permalock Tees in West Lampster, PA
- 2009 explosion involving a fatality and 2 bodily injuries in Knoxville, TN involving Permalock Tees
- 2017 gas leak in WilsonBoro, PA, no incident but again failure of Permalock Tees

**Jurisdiction:  
State PUC**

## UGI Utilities

Manor Township, (Millersville Borough), PA

July 2, 2017 @ Single Family Home

- NTSB issued 2 safety recommendations of importance for those operating pipelines using these types of tees:
- 1) The depth of the tool is critical to ensure the locking device is activated. Enhanced training needs to be incorporated to emphasize this tool depth.
- 2) The nylon bolts should be checked with a torque wrench to ensure they are not over torqued.

**Jurisdiction:  
State PUC**

## UGI Utilities

Manor Township, (Millersville Borough), PA  
July 2, 2017 @ Single Family Home

- NTSB issued 2 safety Recommendations to **PHMSA**
- Work with state regulators to ensure manufacturers instructions are followed regarding tool instructions
- Operators' DIMP plans should incorporate these potential threats associated with these fittings.

**Jurisdiction:  
State PUC**

## UGI Utilities

Manor Township, (Millersville Borough), PA

July 2, 2017 @ Single Family Home

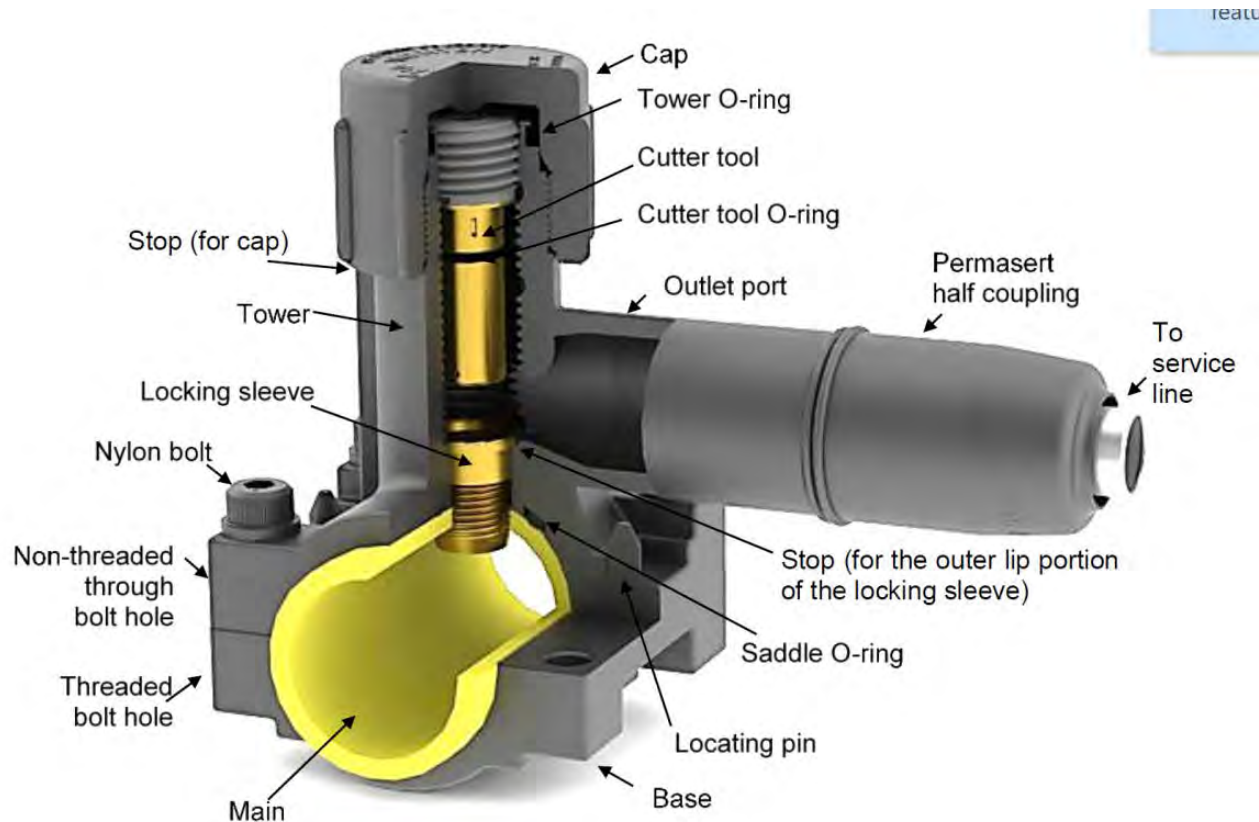
- NTSB issued 2 safety Recommendations to **Honeywell**
- Update instruction manuals of torque wrench use.
- Give exact specifications for tools to be used in instruction manuals.

**Jurisdiction:  
State PUC**

# UGI Utilities

## Manor Township, (Millersville Borough), PA

July 2, 2017 @ Single Family Home





**Jurisdiction:  
State PUC**

## UGI Utilities

Manor Township, (Millersville Borough), PA

July 2, 2017 @ Single Family Home

- October 4 2018 PA PUC issued a \$2 million civil penalty (maximum under PA PUC law) although would have been \$ 3.9 million absent a cap.
- 192.605, 192.615, 192.13 cited dozens of places where not following procedures.



**Jurisdiction:  
State PUC**

## UGI Utilities

Manor Township, (Millersville Borough), PA

July 2, 2017 @ Single Family Home

### Lessons learned

- Are Emergency Procedures explicit enough for persistence of odors or strength of readings? When do you need to call for assistance? How do you identify and classify the hazard level to others?
- Why wouldn't power have been cut off by power company immediately? (this didn't happen until 37 minutes after the explosion)
- Why would you allow homeowner to start car?
- Why waste time squeezing off when can turn valves? (this occurred on a holiday weekend, and do personnel subconsciously factor in time it takes to complete relights)
- Why not first focus on emergency actions and repair of leak as secondary actions?
- Evacuations should have occurred immediately to #202 and #206 and others in immediate vicinity of leak

**Jurisdiction:  
State PUC**

UGI Utilities

Manor Township, (Millersville Borough), PA  
July 2, 2017 @ Single Family Home

**Was This Preventable?**

**YES**

## Some Recent Incidents

**Disclaimer: The following slides are often preliminary based on limited information and should not be substituted for actual reports**

**Jurisdiction:  
State RRC**

## Atmos Energy Dallas, TX

Feb 23, 2018 @ Single Family Home

- Single Family Home in residential neighborhood destroyed, surrounding homes damage from explosion
- 1 Fatality (12 year old girl)
- 4 other injuries (4 other family members expected to recover)
- Occupants of home were sleeping
- NTSB has launched investigation
- TX RRC is a party to investigation

**Jurisdiction:  
State RRC**

# Atmos Energy Dallas, TX Feb 23, 2018 @ Single Family Home



**Jurisdiction:  
State RRC**

# Atmos Energy Dallas, TX Feb 23, 2018 @ Single Family Home



**Jurisdiction:  
State RRC**

# Atmos Energy Dallas, TX Feb 23, 2018 @ Single Family Home





**Jurisdiction:  
State RRC**

# Atmos Energy Dallas, TX Feb 23, 2018 @ Single Family Home



**Crack in 2  
inch steel  
main.**



**Jurisdiction:  
State RRC**

Atmos Energy  
Dallas, TX

Feb 23, 2018 @ Single Family Home

- Circumferential crack found on a 2 inch diameter wrapped steel pipeline
- Possible cause
- Two Days Prior to the incident on several other events in the neighborhood form nexus of 2 other indicators involving a larger problem

**Jurisdiction:  
State RRC**

# Atmos Energy Dallas, TX Feb 23, 2018 @ Single Family Home



**Jurisdiction:  
State RRC**

Atmos Energy  
Dallas, TX

Feb 23, 2018 @ Single Family Home

- Gas main fed houses with Espanola Drive addresses and Durango Drive addresses
- # 3534 Espanola Drive shown in yellow site of Incident
- 2 other homes on Durango Drive shown in green had explosions and fires in the days leading to the explosion

**Jurisdiction:  
State RRC**

# Atmos Energy Dallas, TX Feb 23, 2018 @ Single Family Home



20 hours earlier this home approximately 415 feet away had explosion while cooking on stove. Bodily injury involved second degree burns

49 hours earlier this home approximately 310 feet away had explosion while noticing HVAC unit was improperly working. Bodily injury involved second degree burns.



**Jurisdiction:  
State RRC**

Atmos Energy  
Dallas, TX

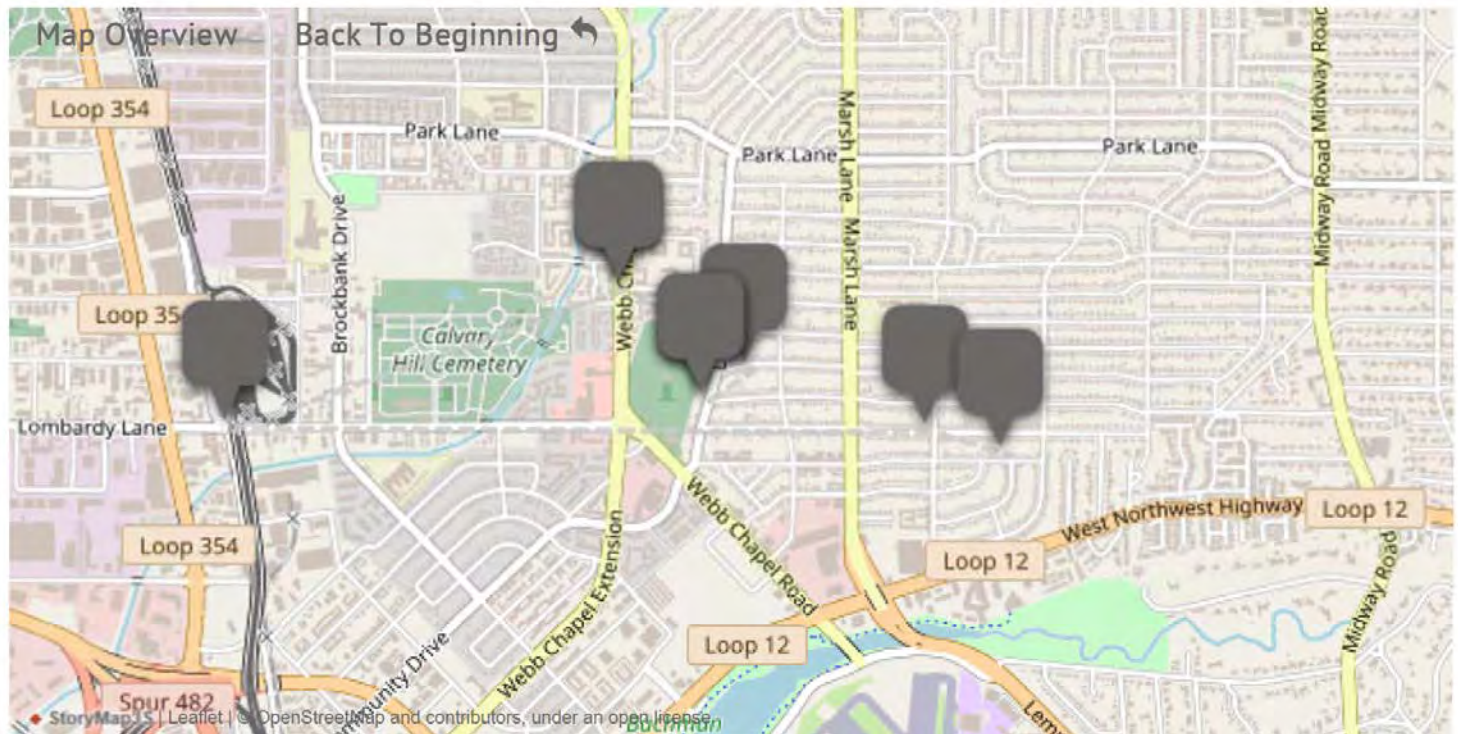
Feb 23, 2018 @ Single Family Home

- Atmos Energy had been working on gas mains in the neighborhood within previous 50 days
- On Feb 23 Atmos Energy leak surveyed the neighborhood and found more than 28 other leaks.
- Atmos Energy immediately made decision to replace mains of entire neighborhood



**Jurisdiction:  
State RRC**

# Atmos Energy Dallas, TX Feb 23, 2018 @ Single Family Home



**Jurisdiction:  
State RRC**

## Atmos Energy Dallas, TX

Feb 23, 2018 @ Single Family Home

- Within a week Atmos Energy expanded the replacement to a larger area involving 2,800 customer interruptions.
- This lasted for more than 3 weeks working dawn to dusk involving 120 contractor crews. Approximately 27 miles of piping being replaced.
- Heavy amounts of rain in Dallas at the time were a factor. 3x the normal amount of rainfall occurred in February



**Jurisdiction:  
State RRC**

# Atmos Energy Dallas, TX Feb 23, 2018 @ Single Family Home



**Jurisdiction:  
State RRC**

# Atmos Energy Dallas, TX Feb 23, 2018 @ Single Family Home





**Jurisdiction:  
State RRC**

# Atmos Energy Dallas, TX Feb 23, 2018 @ Single Family Home



**Jurisdiction:**  
**State RRC**

# Atmos Energy Dallas, TX Feb 23, 2018 @ Single Family Home



**Jurisdiction:  
State RRC**

Atmos Energy  
Dallas, TX

Feb 23, 2018 @ Single Family Home

- Service connection at the main is being investigated
- Collection of evidence hampered by the continual rain that occurred
- Investigation involves review of 911 tapes, E311 calls, interviews of employees, residents, as well as metallurgical testing of pipes, reviewing history of high number of leaks, examination of emergency protocols and evacuation procedures



**Jurisdiction:  
State RRC**

## Atmos Energy Dallas, TX

Feb 23, 2018 @ Single Family Home

- Communication and coordination of that many families proved to be challenging as customers affected wanted to know particulars of completion schedule and want to feel safe.
- School schedules are affected, relocation from evacuated areas, hotlines set up for information - all need to have an immediate action plan and information disseminated

Atmos Energy  
Dallas, TX  
Feb 23, 2018 @ Single Family Home

# Was This Preventable?

**YES**

**Jurisdiction:  
State PUC**

**Jurisdiction:**  
**PHMSA**

Columbia Gas Transmission  
(TransCanada)  
Marshall County, WV  
June 7, 2018 @ Rural Area

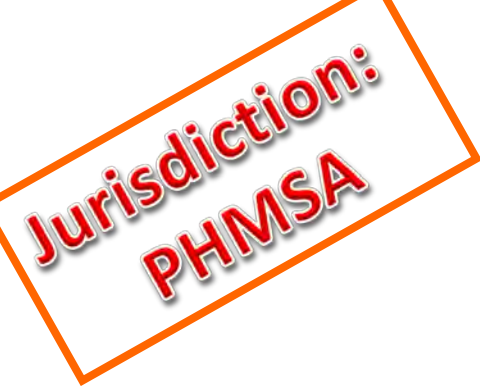
- NO Fatalities
- No bodily injury
- 2017 installation
- Started Jan 2018
- Pipeline Rupture
- 165 MMCF Release



**Jurisdiction:  
PHMSA**

# Columbia Gas Transmission (TransCanada) Marshall County, WV June 7, 2018 @ Rural Area

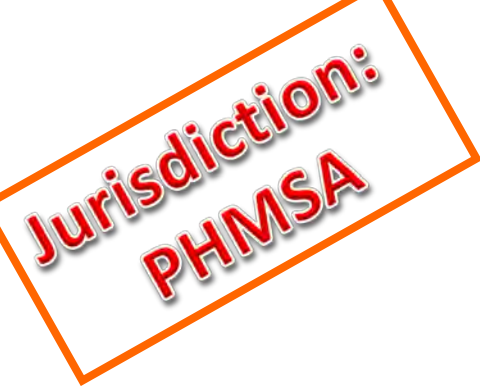




Columbia Gas Transmission  
(TransCanada)  
Marshall Cty, WV  
June 7, 2018 @ Rural Area

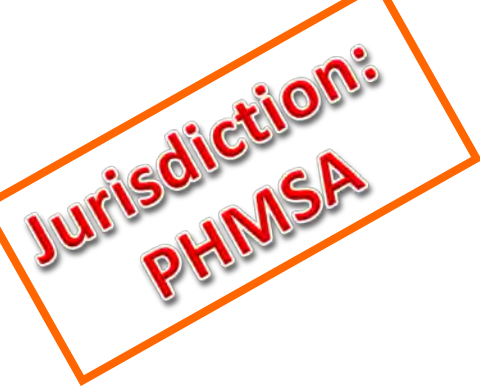
- 36 inch pipeline ruptured and ignited causing fire
- X70 GR, 0.515 inch wall, DSAW
- Part of a 160 mile system from OH to WV transport 1.5 BCF/Day
- MAOP 1440 psig, operating at approximately 1260 psig (88%)





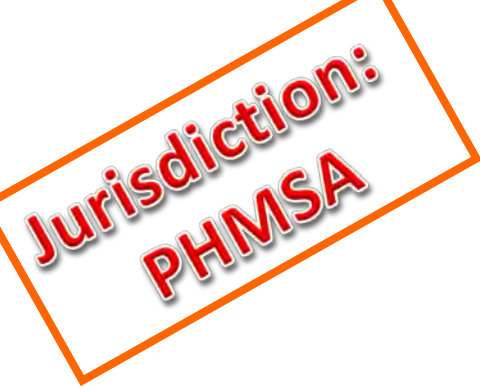
Columbia Gas Transmission  
(TransCanada)  
Marshall Cty, WV  
June 7, 2018 @ Rural Area

- 86 foot long ruptured segment was ejected
- TransCanada able to shutdown with remote valve downstream (-12.5) and manual valve upstream (1.6) within 25 minutes
- Fire lasted approximately 4 hours
- No evacuations necessary as no homes were within the rural area
- 10 acres of woods were burned



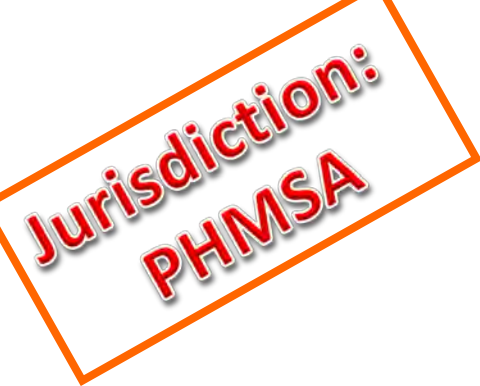
Columbia Gas Transmission  
(TransCanada)  
Marshall Cty, WV  
June 7, 2018 @ Rural Area

- Found crack in girth weld is suspected because of landslides.
- PHMSA issued proposed Safety Order July 9, 2018 and proposed 13 conditions be applied to affected segment.
- 6 other sections on the 130 mile pipeline have been identified as also be subject to same conditions as slip areas, steep slopes, and large areas of spoils.



Columbia Gas Transmission  
(TransCanada)  
Marshall Cty, WV  
June 7, 2018 @ Rural Area

- PHMSA had previously issued Advisory Bulletins in 1997 and again in 2012 which cautioned operators regarding subsidence and affects on pipelines
- CEO of TransCanada had previously described pipeline as "*best in class*". Pipeline opponents have seized on the statement.
- Pipeline is expected to be returned to service by end of July 2018



Columbia Gas Transmission  
(TransCanada)  
Marshall Cty, WV  
June 7, 2018 @ Rural Area

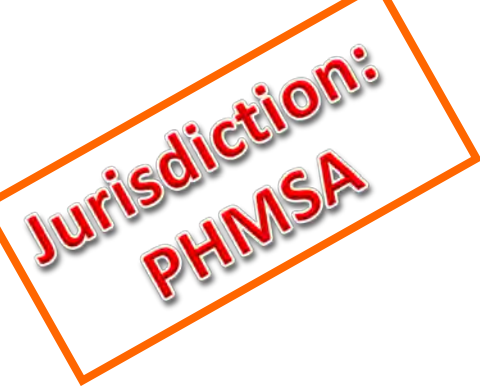
- Rupture occurred over steep area known as Nixon Ridge, approx 7 miles south of Mounds Hill, WV
- Pipe had been pressure tested to 1,880 psig (1.3 x) December 2017. Caliper Pig run at that time.
- Had combination Geo Pig & ILI runs conducted as typical. Those runs (May 2018) had not been fully analyzed by TransCanda at the time of rupture.

**Jurisdiction:  
PHMSA**

Columbia Gas Transmission  
(TransCanada)  
Marshall County, WV  
June 7, 2018 @ Rural Area







Columbia Gas Transmission  
(TransCanada)  
Marshall Cty, WV  
June 7, 2018 @ Rural Area

**Was This  
Preventable?**

**PHMSA?**

**Jurisdiction:  
State PUC**

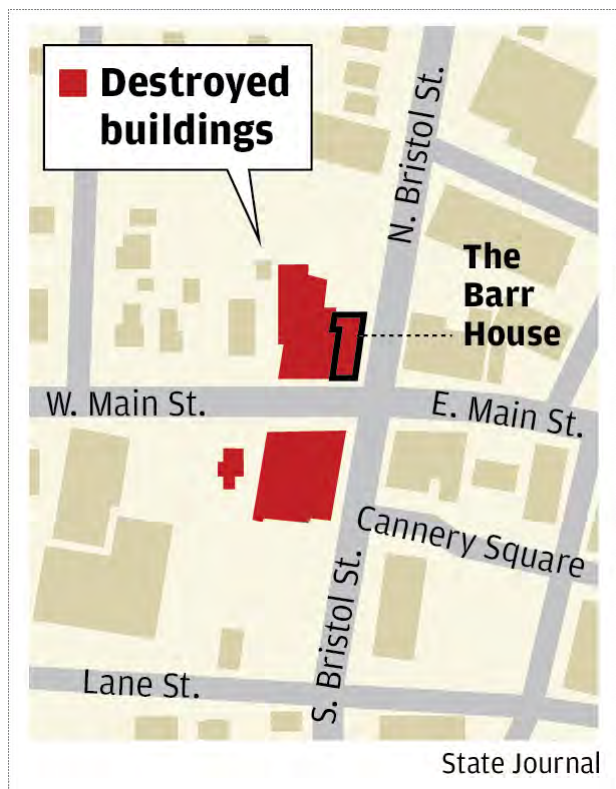
WE Energies  
Sun Prairie, WI

July 10, 2018 @ Commercial Business

- 1 Fatality (captain of fire department)
- 9 other injuries including 4 other fire fighters.
- All released after hospital overnight, 1 fire fighter was in critical condition but later upgraded
- Excavation Damage by 3<sup>rd</sup> party contractor working in a downtown area.

**Jurisdiction:  
State PUC**

# WE Energies, Sun Prairie, WI July 10, 2018 @ Commercial Business



- Sun Prairie a suburb of Madison which is directly west of Milwaukee
- Approximately a city of 30,000
- WE Energies is a combination electric and gas serves approximately 770K customers in WI

**Jurisdiction:  
State PUC**

WE Energies,  
Sun Prairie, WI  
July 10, 2018 @ Commercial Business



**Jurisdiction:  
State PUC**

WE Energies,  
Sun Prairie, WI  
July 10, 2018 @ Commercial Business

- 4 inch diameter gas main ruptured during a directional drilling operation
- gas escaped and entered into the sewer system
- 40 minutes from damage to explosion



**Jurisdiction:  
State PUC**

WE Energies,  
Sun Prairie, WI  
July 10, 2018 @ Commercial Business



**Jurisdiction:  
State PUC**

WE Energies,  
Sun Prairie, WI  
July 10, 2018 @ Commercial Business



**Jurisdiction:  
State PUC**

WE Energies,  
Sun Prairie, WI

July 10, 2018 @ Commercial Business

- 3 buildings destroyed including a tavern owned by the deceased firefighter.
- 65 people evacuated by teams of 2 firefighters. Over 200 firefighters assisted with evacuations.
- Captain was exiting the building with other critically injured firefighter.
- Building collapsed on both men.

**Jurisdiction:  
State PUC**

WE Energies,  
Sun Prairie, WI  
July 10, 2018 @ Commercial Business

- Criminal charges not ruled out as of yet
- 40 minutes from report of damage to explosion
- 500 customers interrupted and took a lengthy time to shut down the gas main

**Jurisdiction:  
State PUC**

WE Energies,  
Sun Prairie, WI

July 10, 2018 @ Commercial Business

- Appears no contact was made with the Diggers Hotline (WI 811 call center) but not official yet
- Fiber optic installation subcontractor working in the area has been confirmed
- Contractor did assist with evacuations



**Jurisdiction:  
State PUC**

WE Energies,  
Sun Prairie, WI  
July 10, 2018 @ Commercial Business

- 33 year old fire captain was killed
- Second firefighter suffered burns to his face, a broken jaw, lost teeth and injuries to both hands
- He has since been released from hospital



**Jurisdiction:  
State PUC**

WE Energies,  
Sun Prairie, WI  
July 10, 2018 @ Commercial Business





**Jurisdiction:  
State PUC**

WE Energies,  
Sun Prairie, WI  
July 10, 2018 @ Commercial Business





**Jurisdiction:  
State PUC**

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Sun Prairie, WI  
July 10, 2018 @ Commercial Business





**Jurisdiction:  
State PUC**

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Sun Prairie, WI  
July 10, 2018 @ Commercial Business





**Jurisdiction:  
State PUC**

WE Energies,  
Sun Prairie, WI  
July 10, 2018 @ Commercial Business





**Jurisdiction:  
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WE Energies,  
Sun Prairie, WI  
July 10, 2018 @ Commercial Business





**Jurisdiction:  
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WE Energies,  
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State PUC**

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July 10, 2018 @ Commercial Business





**Jurisdiction:  
State PUC**

WE Energies,  
Sun Prairie, WI  
July 10, 2018 @ Commercial Business





**Jurisdiction:  
State PUC**

WE Energies,  
Sun Prairie, WI  
July 10, 2018 @ Commercial Business



**Jurisdiction:  
State PUC**

WE Energies,  
Sun Prairie, WI  
July 10, 2018 @ Commercial Business







WE Energies,  
Sun Prairie, WI  
July 10, 2018 @ Commercial Business

- Effective **July 9, 2018** the 2018 PSC Reform Bill allowed complaints of violations of Diggers Hotline to be referred to WI PSC.
- This only applies to NG or Haz Liquid Lines
- Panel of Stakeholders will do peer review
- Possible outcomes are: Education or referral to WI PSC.
- WI PSC has authority to dismiss, issue penalties up to \$25,000 or consent agreement

**Jurisdiction:  
State PUC**

WE Energies,  
Sun Prairie, WI  
July 10, 2018 @ Commercial Business

- Examine state specific excavation damage prevention laws/rules
- Is language specific enough that would have helped minimize possible occurrence?
- Do you specify how many potholes are dug, provide for depth and clearance requirements?
- Do you have rules differentiating trenchless technologies such as directional drilling from conventional trenching?

WE Energies,  
Sun Prairie, WI  
July 10, 2018 @ Commercial Business

# Was This Preventable?

**YES**

**Jurisdiction:  
State PUC**



**Jurisdiction:  
State PUC  
and PHMSA**

## Sunoco NGL Pipeline, Mariner 1, 2 and 2EX Sinkhole Issue Whiteland Township, PA

- The eastern counties of PA have been opposed to a new expansion of a 350 mile NGL pipeline that goes through 4 counties heavily populated and 16 counties total
- Multiple environmental fines were issued to Mariner 2 pipeline on a recent expansion, including suspension of installation to correct deficiencies.
- Sunoco has dual status as public utility and operates as both interstate pipelines and intrastate pipelines
- The expansion of the additional pipeline parallels existing ROW established with 2 other existing Sunoco pipelines.

**Jurisdiction:  
State PUC  
and PHMSA**

## Sunoco NGL Pipeline, Mariner 1, 2 and 2EX Sinkhole Issue Whiteland Township, PA

- ME1 is an 8" diameter 1440 psig NGL line installed in 1931 that runs west to east and is a public utility.
- A new 16" pipeline is being installed called ME2X. A portion is through a directional drill with 24" casing.
- Sunoco is installing a 20" diameter NGL line called ME2

**Jurisdiction:  
State PUC  
and PHMSA**

## Sunoco NGL Pipeline, Mariner 1, 2 and 2EX Sinkhole Issue Whiteland Township, PA

- A sinkhole developed in December 2017 8 feet x 3 feet deep.
- A second one developed after the directional drill of ME2 that 8 feet by 15 feet deep
- A third sinkhole developed in March 2018 and was 15 feet x 20 feet approximately 10 feet from a house in Whiteland Township

**Jurisdiction:  
State PUC  
and PHMSA**

## Sunoco NGL Pipeline, Mariner 1, 2 and 2EX Sinkhole Issue Whiteland Township, PA

- Once the sinkholes began to effect ME1 the PA PUC Safety Bureau performed an emergency inspection in early March 2018
- Out of concern for vicinity of a nearby Amtrak line and proximity to residents, the PA PUC issued an emergency order. This is a rare event for the PA PUC and has drawn a lot of attention
- Certain conditions were required for Sunoco including geo physical and ILI tests.

**Jurisdiction:  
State PUC  
and PHMSA**

# Sunoco NGL Pipeline, Mariner 1, 2 and 2EX Sinkhole Issue Whiteland Township, PA





**Jurisdiction:  
State PUC  
and PHMSA**

# Sunoco NGL Pipeline, Mariner 1, 2 and 2EX Sinkhole Issue Whiteland Townshin. PA



Sunoco NGL Pipeline,  
Mariner 1, 2 and 2EX Sinkhole Issue  
Whiteland Township, PA

