

DOT US Department of Transportation
PHMSA Pipeline and Hazardous Materials Safety Administration
OPS Office of Pipeline Safety
Eastern Region

Principal Investigator Chris D'Souza
Senior Accident Investigator Michael Yazemboski
Region Director Byron Coy
Date of Report 7/12/2013
Subject Failure Investigation Report – Williams Gas Pipeline-Transco-
North Bergen, NJ, 72nd Street Interstate Trans Lateral Leak

Operator, Location, & Consequences

Date of Failure 4/2/2012
Commodity Released Natural Gas
City/County & State North Bergen, Hudson County, New Jersey
OpID & Operator Name 19570 – Williams Gas Pipeline-Transco
Unit # & Unit Name 181 – Princeton Division Office NJ
SMART Activity # 139107
Milepost / Location MP 2.5, 72nd Street Lateral
Latitude: 40.7981737 Longitude: 74.01659992
Type of Failure Leak Due to Crack in Pipe Caused by Rock Impingement
Fatalities 0
Injuries 0
Description of Area Impacted Class 3, High Consequence Area (HCA)
Total Costs \$295,000—total estimated cost of lost gas is \$5,467

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Failure Date: 4/2/2012

Executive Summary

On April 2, 2012, Transcontinental Gas Pipeline Company, LLC (Transco), owned by Williams Partners, reported a leak on their 72nd Street Interstate Transmission Lateral located in North Bergen, New Jersey (NRC Report #1007578). The leak was discovered by contractor personnel during the process of excavating for an anomaly that was identified during an in-line-inspection tool run conducted on March 3, 2012. The contractor performing the work for Transco was the Napp-Grecco Company. During the excavation process, workers discovered a rock in contact with the bottom of the pipe at the 7-o'clock position. Upon removing the rock, the pipeline began to leak. Upon further investigation, a 1.5 percent dent with a gouge and crack was identified. The pipeline was taken out of service, and the leaking segment was cut out and replaced with new pipe. There was no fire or injuries reported as a result of this incident. There were no service interruptions as a result of this incident.

System Details

The Transcontinental Gas Pipeline Company (Transco) transports natural gas through over 10,000 miles of pipeline extending from South Texas to New York City through 12 states. Transco's 72nd Street Lateral, located in New Jersey, is approximately 2.73 miles in length and interconnects with their Mainline-B (Appendix A-Leak Location Map). This lateral is fed by Transco's main line system and serves Consolidated Edison's distribution system that supplies natural gas to New York City.

The 72nd Street lateral consists of API-5L 36-inch-diameter, 0.5-inch-thick wall, X52 grade pipe that was installed in 1959 and is coated with an asphalt coating material. At the time of the leak, the pressure in the pipeline was approximately 272 psia, which is below the maximum allowable operating pressure (MAOP) of 350 psia. The line is cathodically protected using an impressed current system.

There are no previous operational issues on this lateral, and no system factors contributed to the physical circumstances of the inner wall crack.

Events Leading up to the Failure

On April 2, 2012, at approximately 2:00 p.m., contractor personnel removed a rock that was in contact with the pipe at approximately the 7-o'clock position while excavating an anomaly on the 72nd Street Interstate Lateral Pipeline (Appendix B-Photos). Upon removing the rock, the pipeline began to leak. At the time of the leak, the line was operating at 272, psia which is below the maximum allowable operating pressure (MAOP) of 350 psia for the pipeline. Pressure records for the Central Manhattan metering and regulating station (upstream of the leak) and for the J246 Hudson River Valve Station (downstream) confirmed the 272 psia operating pressure at the time of the incident. According to operating personnel and records reviewed as part of the investigation, the leak did not exist prior to the excavation. Gas detection equipment was used on-site to detect traces of natural gas prior to and during the excavation process. No gas was initially detected prior to or during the excavation process.

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Emergency Response

Upon discovering the leak, Transco notified Consolidated Edison of the need to take their line out of service and adjusted their facilities accordingly to accommodate the line outage needed for the anomaly excavation and cut out.

Date / Time	Action
4/2/2012 7:00 a.m.	North Bergen Police Department shut down 70th St. and Smith St. The contractor, Napp-Grecco Company, began removing rock from under the pipeline in preparation for anomaly inspection.
4/2/2012 9:00 a.m.	Pipeline Integrity showed up on site to evaluate the anomaly.
4/2/2012 2:33 p.m.	While removing rock from under the pipe at the location of the anomaly, the pipe began leaking, work was immediately shut down, and all equipment and ignition sources in the area were shutdown at 2:33p.m. The North Bergen Police Department was notified, shut down the work area to pedestrian traffic, and called in the North Bergen Fire Department as a precaution. The fire department arrived on-site as added precaution.
4/2/2012 2:35 p.m.	The Chief Inspector notified the Station 240 crew of the incident, and key personnel were sent to valve locations in preparation of taking the line out of service. The line was isolated at approximately 6:00 p.m. by closing valves J246 and J249 downstream of the leak and J518 upstream of the leak location. The distance between the upstream and downstream valves is approximately 3.68 miles.
4/2/2012 3:00 p.m.	An Incident Notification was made to the NRC by Transcontinental Gas Pipeline Company, LLC (Appendix C- NRC Report 1007578).
4/2/2012 6:33 p.m.	The line pressure was down to 163 psig, and the leak at the anomaly location could no longer be heard.
4/2/12 7:46 p.m.	The pressure in the line was down to 0 psig. The line was purged of gas. The site was secured for the night.
4/3/2012 7:00 a.m.	The North Bergen Police Department shut down 70th St. and Smith St., and the contractor began removing plates from the street and excavated upstream and downstream of the anomaly to establish bell holes in preparation to cut out the line.
4/4/2012 7:00 a.m.	The North Bergen Police Department shut down 70th St. and Smith Street in preparation for the remediation activities. The contractor checked the pipe for gas using a gas detector and checked for liquids. The contractor cut out 7 feet of pipe where the anomaly was located and an additional 6 feet of pipe downstream of the anomaly in preparation for the tie-in. Temporary caps were welded on the upstream and downstream exposed ends of the pipe. The excavation was covered with steel street plates for the night.

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Summary of Return-to-Service

Approximately 7 feet of pipe containing the dent and crack was removed from the pipeline. An additional 6 feet downstream of this section was also removed to accommodate the tie-in. The final tie-in was made on April 5, 2012, and the line was returned to service.

Investigation Details

The past three in-line inspections (ILI) on the 72nd Street Lateral were performed on April 21, 2005, (Magnetic Flux Leakage (MFL)/Geometric Inspection (GEO) tool), September 30, 2011, (MFL tool), and March 3, 2012 (GEO tool). The 2005 run detected a minor dent; however, there was no metal loss identified and thus further inspection was not needed. The 2011 MFL inspection detected metal loss, and a follow-up run with the GEO tool in 2012 detected a 2.2 percent dent, which triggered the ILI vendor to notify the operator that “Immediate” dig criteria had been met.

The 2005 ILI run resulted in two digs being performed near the current incident location. The first anomaly dig, (dig #12) located 696 feet upstream, resulted in a 2 percent dent with no metal loss. No remediation was necessary, and the exposed section of line was recoated. The second dig (dig #13), located 185 feet downstream, and resulted in a 2.4 percent dent that was cut out due to the sharp geometry of the dent. This section of line that contained the dent was replaced with new pipe.

A visual inspection of the dent and the surrounding area showed no signs of external corrosion. The pipe coating appeared to be in good condition with no disbonding (except where the rock contacted the pipe) (Appendix B-Photos).

Metallurgical analysis of the pipe section was performed by Anderson and Associates, located in Houston, Texas (Appendix E-Lab Analysis Report). The results of the analysis, received on May 24, 2012, indicated the following:

1. A magnetic particle inspection was completed in the dent area, and a tight crack indication was found. No other crack indications were found.
2. The dent/gouge was seen on the outside of the pipe. The crack was not visible on the outside of the pipe until the magnetic particle inspection was performed. On the inside of the pipe, the crack was visible and gaped open slightly.
3. Results concluded the pipe material was proper in all respects.
4. Based on the degree of fracture detail lost due to corrosion, it was concluded the dent and crack were present prior to excavation. The crack was likely caused by impact during installation in 1959 (this is the lab’s opinion, as it is not possible to “date” the crack). The source of the indentation (rock) created a pure shear crack to approximately the centerline. The remainder of the crack was more of a tensile fracture.
5. The crack remained tightly closed in the pure shear area. This fact, along with the tightly packed dirt/soil/fill, and the existence of the rock tightly pressed up against the dent/crack area, would have minimized gas leakage.

Findings and Contributing Factors

As a result of the investigation conducted by PHMSA, no issues were identified regarding the implementation of the operator’s Emergency Plans or coordination with the police or fire department in

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response to this incident. In addition, all applicable Operations and Maintenance procedures, including applicable construction procedures, were followed by the operator during the remediation process.

The cause of the leak was due to a rock impinging against the pipe wall at approximately the 7-o'clock position, which resulted in a 1.5 percent dent measuring 14 inches long and 8 inches wide. The dent contained a slight gouge with a crack.

Root Cause Analysis (Appendix F-WGP Root Cause Analysis Report):

1. The ILI vendor stated that in 2005, the dent was discovered, but the metal loss indication was not reported due to analyst error. Because of this, the indication was never inspected in 2005.
2. Poor construction practices in the 1950s likely allowed for the pipe to be installed in rocky subsoil conditions.
3. The geological movement of Palisades Sill over the past 50 years may have contributed to subsoil rock movement and damage to the pipe.

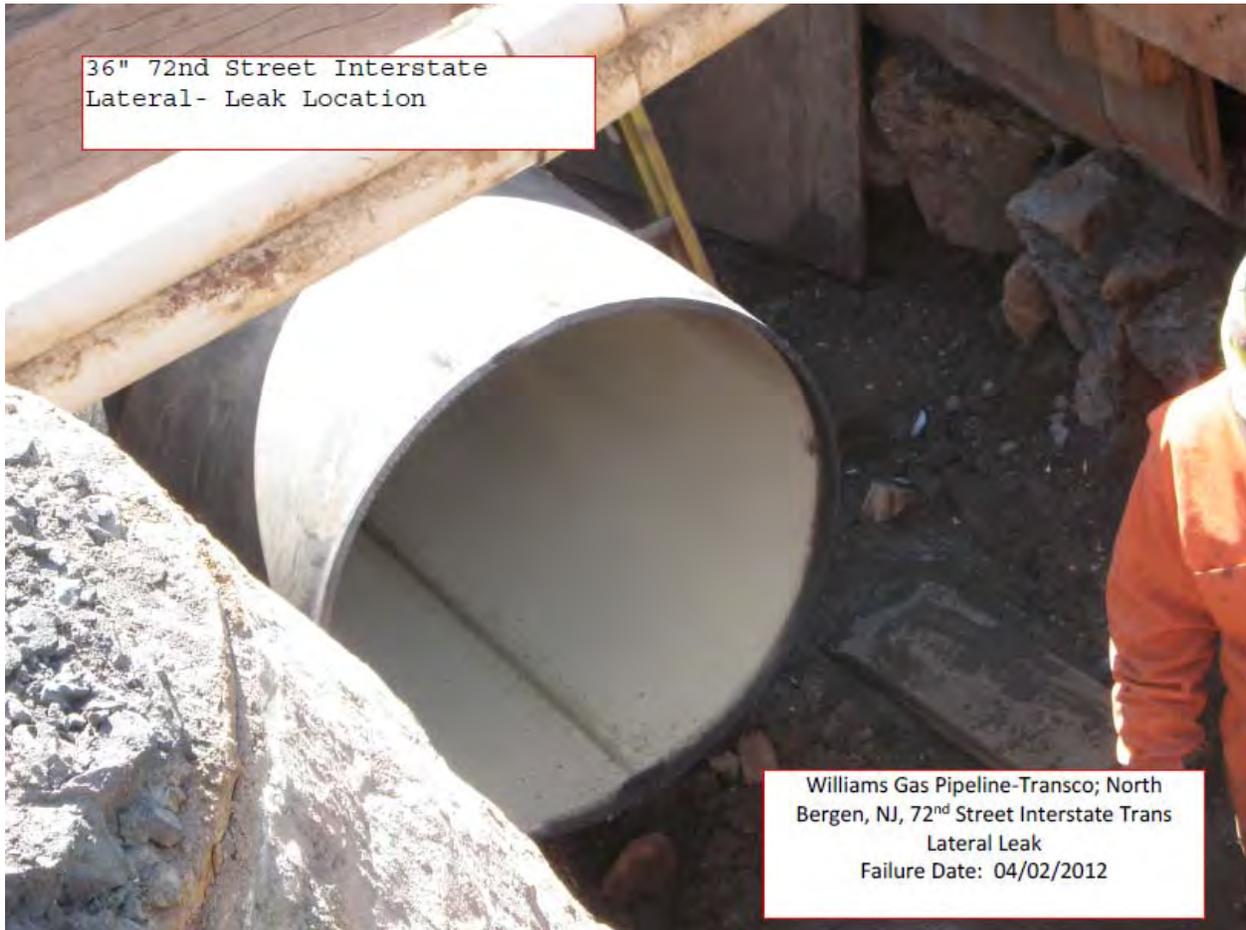
Appendices

- A Leak Location Map
- B Photos
- C NRC Report #1007578
- D Williams Incident Report Form 7100
- E Laboratory Analysis from Anderson and Associates
- F WGP Root-Cause Analysis Report

Appendix A

Map Removed

File Available at PHMSA







139107 Appendix B - Photos







Williams Gas Pipeline-Transco; North Bergen, NJ,
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Failure Date: 04/02/2012

139107 Appendix C - NRC Report 1007578

NATIONAL RESPONSE CENTER 1-800-424-8802

*** For Public Use ***

Information released to a third party shall comply with any applicable federal and/or state Freedom of Information and Privacy Laws

Incident Report # 1007578

INCIDENT DESCRIPTION

*Report taken at 16:38 on 02-APR-12

Incident Type: PIPELINE

Incident Cause: EQUIPMENT FAILURE

Affected Area:

The incident was discovered on 02-APR-12 at 14:00 local time.

Affected Medium: AIR ATMOSPHERE

SUSPECTED RESPONSIBLE PARTY

Organization: WILLIAMS GAS PIPELINE TRANSCO
HOUSTON, TX 77056

Type of Organization: PRIVATE ENTERPRISE

INCIDENT LOCATION

INTERSECTION OF 70TH AND SMITH AVE County: HUDSON
City: N. BERGEN State: NJ

RELEASED MATERIAL(S)

CHRIS Code: ONG Official Material Name: NATURAL GAS

Also Known As:

Qty Released: 0 UNKNOWN AMOUNT

DESCRIPTION OF INCIDENT

THE CALLER REPORTED THAT A LEAKING PIPELINE WAS DISCOVERED WHILE INVESTIGATING AN ANOMALY.

INCIDENT DETAILS

Pipeline Type: TRANSMISSION

DOT Regulated: YES

Pipeline Above/Below Ground: BELOW

Exposed or Under Water: NO

Pipeline Covered: UNKNOWN

DAMAGES

Fire Involved: NO Fire Extinguished: UNKNOWN

INJURIES: NO Hospitalized: Empl/Crew: Passenger:

FATALITIES: NO Empl/Crew: Passenger: Occupant:

EVACUATIONS: NO Who Evacuated: Radius/Area:

Damages: NO

<u>Closure Type</u>	<u>Description of Closure</u>	<u>Length of Closure</u>	<u>Direction of Closure</u>	<u>Major Artery:</u>
Air:	N			
Road:	Y PORTION OF 70TH ST.			N
Waterway:	N			
Track:	N			

Passengers Transferred: NO
Environmental Impact: UNKNOWN

Media Interest: NONE Community Impact due to Material:

REMEDIAL ACTIONS

REDUCTION OF PRESSURE ON THE LINE/ THE LEAKING SECTION IS BEING ISOLATED AND WILL BE BLOWN DOWN

Release Secured: UNKNOWN

Release Rate:

Estimated Release Duration:

WEATHER

Weather: UNKNOWN, °F

ADDITIONAL AGENCIES NOTIFIED

Federal: PHMSA
 State/Local: NONE
 State/Local On Scene: NONE
 State Agency Number: NONE

NOTIFICATIONS BY NRC

ATLANTIC STRIKE TEAM (MAIN OFFICE)
 02-APR-12 16:43
 USCG ICC (ICC ONI)
 02-APR-12 16:43
 DOT CRISIS MANAGEMENT CENTER (MAIN OFFICE)
 02-APR-12 16:43
 U.S. EPA II (MAIN OFFICE)
 02-APR-12 17:10
 NATIONAL INFRASTRUCTURE COORD CTR (MAIN OFFICE)
 02-APR-12 16:43
 NJ DEPT OF HEALTH & SENIOR SVC (COMMAND CENTER)
 02-APR-12 16:43
 NJ OFC HMLND SECURITY & PREPAREDNES (COMMAND CENTER)
 02-APR-12 16:43
 NJ STATE POLICE (MARINE SERVICES BUREAU)
 02-APR-12 16:43
 NOAA RPTS FOR NJ (MAIN OFFICE)
 02-APR-12 16:43
 BUREAU TOXIC SUBSTANCE (MAIN OFFICE)
 02-APR-12 16:43
 PIPELINE & HAZMAT SAFETY ADMIN (OFFICE OF PIPELINE SAFETY (AUTO))
 02-APR-12 16:43
 NJ DEP POC: DUTY OFFICER (MAIN OFFICE)
 02-APR-12 16:43
 USCG DISTRICT 1 (COMMAND CENTER)
 02-APR-12 16:43

ADDITIONAL INFORMATION

NONE.

*** END INCIDENT REPORT # 1007578 ***

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NOTICE: This report is required by 49 CFR Part 191. Failure to report can result in a civil penalty not to exceed 100,000 for each violation for each day that such violation persists except that the maximum civil penalty shall not exceed \$1,000,000 as provided in 49 USC 60122.		OMB NO: 2137-0522 EXPIRATION DATE: 01/31/2014	
 <p>U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration</p>	Report Date:	04/18/2012	
	No.	20120040 - 15568 ----- (DOT Use Only)	
INCIDENT REPORT - GAS TRANSMISSION AND GATHERING PIPELINE SYSTEMS			
A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB Control Number. The OMB Control Number for this information collection is 2137-0522. Public reporting for this collection of information is estimated to be approximately 10 hours per response, including the time for reviewing instructions, gathering the data needed, and completing and reviewing the collection of information. All responses to this collection of information are mandatory. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to: Information Collection Clearance Officer, PHMSA, Office of Pipeline Safety (PHP-30) 1200 New Jersey Avenue, SE, Washington, D.C. 20590.			
INSTRUCTIONS			
<i>Important: Please read the separate instructions for completing this form before you begin. They clarify the information requested and provide specific examples. If you do not have a copy of the instructions, you can obtain one from the PHMSA Pipeline Safety Community Web Page at http://www.phmsa.dot.gov/pipeline.</i>			
PART A - KEY REPORT INFORMATION			
Report Type: <i>(select all that apply)</i>	Original:	Supplemental:	Final:
		Yes	Yes
Last Revision Date:	07/25/2012		
1. Operator's OPS-issued Operator Identification Number (OPID):	19570		
2. Name of Operator	TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC		
3. Address of Operator:			
3a. Street Address	2800 POST OAK BOULEVARD		
3b. City	HOUSTON		
3c. State	Texas		
3d. Zip Code:	77056		
4. Local time (24-hr clock) and date of the Incident:	04/02/2012 02:00		
5. Location of Incident:			
Latitude:	40.79801737		
Longitude:	-74.01659992		
6. National Response Center Report Number (if applicable):	1007578		
7. Local time (24-hr clock) and date of initial telephonic report to the National Response Center (if applicable):	04/02/2012 03:00		
8. Incident resulted from:	Reasons other than release of gas		
9. Gas released: (select only one, based on predominant volume released)			
- Other Gas Released Name:			
10. Estimated volume of commodity released unintentionally - Thousand Cubic Feet (MCF):			
11. Estimated volume of intentional and controlled release/blowdown - Thousand Cubic Feet (MCF)	2,677.00		
12. Estimated volume of accompanying liquid release (Barrels):			
13. Were there fatalities?	No		
- If Yes, specify the number in each category:			
13a. Operator employees			
13b. Contractor employees working for the Operator			
13c. Non-Operator emergency responders			
13d. Workers working on the right-of-way, but NOT associated with this Operator			
13e. General public			
13f. Total fatalities (sum of above)			
14. Were there injuries requiring inpatient hospitalization?	No		
- If Yes, specify the number in each category:			
14a. Operator employees			
14b. Contractor employees working for the Operator			
14c. Non-Operator emergency responders			
14d. Workers working on the right-of-way, but NOT associated with this Operator			
14e. General public			
14f. Total injuries (sum of above)			
15. Was the pipeline/facility shut down due to the incident?	Yes		

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- If No, Explain:	
- If Yes, complete Questions 15a and 15b: <i>(use local time, 24-hr clock)</i>	
15a. Local time and date of shutdown	
15b. Local time pipeline/facility restarted	
- Still shut down? (* Supplemental Report Required)	
16. Did the gas ignite?	No
17. Did the gas explode?	No
18. Number of general public evacuated:	0
19. Time sequence <i>(use local time, 24-hour clock)</i> :	
19a. Local time operator identified Incident	04/02/2012 02:00
19b. Local time operator resources arrived on site	04/02/2012 02:00
PART B - ADDITIONAL LOCATION INFORMATION	
1. Was the origin of the Incident onshore?	Yes
- Yes <i>(Complete Questions 2-12)</i>	
- No <i>(Complete Questions 13-15)</i>	
If Onshore:	
2. State:	New Jersey
3. Zip Code:	07047
4. City:	North Bergen
5. County or Parish:	Hudson
6. Operator designated location	Milepost/Valve Station
Specify:	2.5
7. Pipeline/Facility name:	72 nd Street lateral
8. Segment name/ID:	72 nd Street lateral
9. Was Incident on Federal land, other than the Outer Continental Shelf (OCS)?	No
10. Location of Incident :	Pipeline Right-of-way
11. Area of Incident (as found) :	Underground
Specify:	Under pavement
Other – Describe:	
Depth-of-Cover (in):	48
12. Did Incident occur in a crossing?	Yes
- If Yes, specify type below:	
- If Bridge crossing –	
Cased/ Uncased:	
- If Railroad crossing –	
Cased/ Uncased/ Bored/drilled	
- If Road crossing –	
Cased/ Uncased/ Bored/drilled	Yes
- If Water crossing –	
Cased/ Uncased	
Name of body of water (If commonly known):	
Approx. water depth (ft) at the point of the Incident:	
Select:	
If Offshore:	
13. Approx. water depth (ft) at the point of the Incident:	
14. Origin of Incident:	
- If "In State waters":	
- State:	
- Area:	
- Block/Tract #:	
- Nearest County/Parish:	
- If "On the Outer Continental Shelf (OCS)":	
- Area:	
- Block #:	
15. Area of Incident:	
PART C - ADDITIONAL FACILITY INFORMATION	
1. Is the pipeline or facility: - Interstate - Intrastate	Interstate
2. Part of system involved in Incident:	Onshore Pipeline, Including Valve Sites
3. Item involved in Incident:	Pipe
- If Pipe – Specify:	
3a. Nominal diameter of pipe (in):	36
3b. Wall thickness (in):	.5
3c. SMYS (Specified Minimum Yield Strength) of pipe (psi):	52,000

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3d. Pipe specification:	API5L
3e. Pipe Seam – Specify:	DSAW
- If Other, Describe:	
3f. Pipe manufacturer:	Bethlehem Corp.
3g. Year of manufacture:	1959
3h. Pipeline coating type at point of Incident – Specify:	Asphalt
- If Other, Describe:	
- If Weld, including heat-affected zone – Specify:	
- If Other, Describe:	
- If Valve – Specify:	
- If Mainline – Specify:	
- If Other, Describe:	
3i. Mainline valve manufacturer:	
3j. Year of manufacture:	
- If Other, Describe:	
4. Year item involved in Incident was installed:	2012
5. Material involved in Incident:	Carbon Steel
- If Material other than Steel or Plastic – Specify:	
6. Type of Incident involved:	Leak
- If Mechanical Puncture – Specify Approx. size:	
Approx. size: in. (in axial) by	
in. (circumferential)	
- If Leak - Select Type:	Crack
- If Other – Describe:	
- If Rupture - Select Orientation:	
- If Other – Describe:	
Approx. size: in. (widest opening):	
by in. (length circumferentially or axially):	
- If Other – Describe:	
PART D - ADDITIONAL CONSEQUENCE INFORMATION	
1. Class Location of Incident:	Class 3 Location
2. Did this Incident occur in a High Consequence Area (HCA)?	Yes
- If Yes:	
2a. Specify the Method used to identify the HCA:	Method2
3. What is the PIR (Potential Impact Radius) for the location of this Incident? Feet:	647
4. Were any structures outside the PIR impacted or otherwise damaged due to heat/fire resulting from the Incident?	No
5. Were any structures outside the PIR impacted or otherwise damaged NOT by heat/fire resulting from the Incident?	No
6. Were any of the fatalities or injuries reported for persons located outside the PIR?	No
7. Estimated Property Damage :	
7a. Estimated cost of public and non-Operator private property damage	\$ 0
7b. Estimated cost of Operator's property damage & repairs	\$ 280,000
7c. Estimated cost of Operator's emergency response	\$ 0
7d. Estimated other costs	\$ 15,000
Describe:	Final costs updated 7-25-12
7e. Total estimated property damage (sum of above)	\$ 295,000
Cost of Gas Released	
7f. Estimated cost of gas released unintentionally	\$ 0
7g. Estimated cost of gas released during intentional and controlled blowdown	\$ 5,467
7h. Total estimated cost of gas released (sum of 7.f & 7.g above)	\$ 5,467
PART E - ADDITIONAL OPERATING INFORMATION	
1. Estimated pressure at the point and time of the Incident (psig):_	273.00
2. Maximum Allowable Operating Pressure (MAOP) at the point and time of the Incident (psig):	350.00
3. Describe the pressure on the system or facility relating to the Incident:	Pressure did not exceed MAOP

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4. Not including pressure reductions required by PHMSA regulations (such as for repairs and pipe movement), was the system or facility relating to the Incident operating under an established pressure restriction with pressure limits below those normally allowed by the MAOP?	No
- If Yes - <i>(Complete 4a and 4b below)</i>	
4a. Did the pressure exceed this established pressure restriction?	
4b. Was this pressure restriction mandated by PHMSA or the State?	
5. Was "Onshore Pipeline, Including Valve Sites" OR "Offshore Pipeline, Including Riser and Riser Bend" selected in PART C, Question 2?	Yes
- If Yes - <i>(Complete 5a. - 5f. below):</i>	
5a. Type of upstream valve used to initially isolate release source:	Remotely Controlled
5b. Type of downstream valve used to initially isolate release source:	Automatic
5c. Length of segment isolated between valves (ft):	19,430
5d. Is the pipeline configured to accommodate internal inspection tools?	Yes
- If No – Which physical features limit tool accommodation? <i>(select all that apply)</i>	
- Changes in line pipe diameter	
- Presence of unsuitable mainline valves	
- Tight or mitered pipe bends	
- Other passage restrictions (i.e. unbarred tee's, projecting instrumentation, etc.)	
- Extra thick pipe wall (applicable only for magnetic flux leakage internal inspection tools)	
- Other	
- If Other, Describe:	
5e. For this pipeline, are there operational factors which significantly complicate the execution of an internal inspection tool run?	No
- If Yes, which operational factors complicate execution? <i>(select all that apply)</i>	
- Excessive debris or scale, wax, or other wall build-up	
- Low operating pressure(s)	
- Low flow or absence of flow	
- Incompatible commodity	
- Other	
- If Other, Describe:	
5f. Function of pipeline system:	Transmission System
6. Was a Supervisory Control and Data Acquisition (SCADA)-based system in place on the pipeline or facility involved in the Incident?	Yes
- If Yes:	
6a. Was it operating at the time of the Incident?	Yes
6b. Was it fully functional at the time of the Incident?	Yes
6c. Did SCADA-based information (such as alarm(s), alert(s), event(s), and/or volume or pack calculations) assist with the detection of the Incident?	No
6d. Did SCADA-based information (such as alarm(s), alert(s), event(s), and/or volume calculations) assist with the confirmation of the Incident?	No
7. How was the Incident initially identified for the Operator?	Local Operating Personnel, including contractors
- If Other – Describe:	
7a. If "Controller", "Local Operating Personnel, including contractors", "Air Patrol", or "Ground Patrol by Operator or its contractor" is selected in Question 7, specify the following:	Operator employee
8. Was an investigation initiated into whether or not the controller(s) or control room issues were the cause of or a contributing factor to the Incident?	No, the Operator did not find that an investigation of the controller(s) actions or control room issues was necessary due to: <i>(provide an explanation for why the Operator did not investigate)</i>
- If No, the operator did not find that an investigation of the controller(s) actions or control room issues was necessary due to: <i>(provide an explanation for why the operator did not investigate)</i>	Operator employees were on site of an investigative anomaly dig, as the soil around the pipe was being removed the leak was discovered. The leak prompted the operator to take the pipeline out of service for repair.
- If Yes, Describe investigation result(s) <i>(select all that apply):</i>	
- Investigation reviewed work schedule rotations, continuous hours of service (while working for the operator), and other factors associated with fatigue	

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<ul style="list-style-type: none"> - Investigation did NOT review work schedule rotations, continuous hours of service (while working for the Operator) and other factors associated with fatigue 	
- Provide an explanation for why not:	
<ul style="list-style-type: none"> - Investigation identified no control room issues 	
<ul style="list-style-type: none"> - Investigation identified no controller issues 	
<ul style="list-style-type: none"> - Investigation identified incorrect controller action or controller error 	
<ul style="list-style-type: none"> - Investigation identified that fatigue may have affected the controller(s) involved or impacted the involved controller(s) response 	
<ul style="list-style-type: none"> - Investigation identified incorrect procedures 	
<ul style="list-style-type: none"> - Investigation identified incorrect control room equipment operation 	
<ul style="list-style-type: none"> - Investigation identified maintenance activities that affected control room operations, procedures, and/or controller response 	
<ul style="list-style-type: none"> - Investigation identified areas other than those above – 	
Describe:	

PART F - DRUG & ALCOHOL TESTING INFORMATION

1. As a result of this Incident, were any Operator employees tested under the post-accident drug and alcohol testing requirements of DOT's Drug & Alcohol Testing regulations?	No
- If Yes:	
1a. Describe how many were tested:	
1b. Describe how many failed:	
2. As a result of this Incident, were any Operator contractor employees tested under the post-accident drug and alcohol testing requirements of DOT's Drug & Alcohol Testing regulations?	No
- If Yes:	
2a. Describe how many were tested:	
2b. Describe how many failed:	

PART G - APPARENT CAUSE

Select only one box from PART G in the shaded column on the left representing the APPARENT Cause of the Incident, and answer the questions on the right. Describe secondary, contributing, or root causes of the Incident in the narrative (PART H).

Apparent Cause:	G8 - Other Incident Cause
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G1 - Corrosion Failure - only one sub-cause can be picked from shaded left-hand column

Corrosion Failure – Sub-cause:	
- If External Corrosion:	
1. Results of visual examination:	
- If Other, Describe:	
2. Type of corrosion: <i>(select all that apply)</i>	
- Galvanic	
- Atmospheric	
- Stray Current	
- Microbiological	
- Selective Seam	
- Other	
- If Other – Describe:	
3. The type(s) of corrosion selected in Question 2 is based on the following: <i>(select all that apply)</i>	
- Field examination	
- Determined by metallurgical analysis	
- Other	
- If Other – Describe:	
4. Was the failed item buried under the ground?	
- If Yes:	
4a. Was failed item considered to be under cathodic protection at the time of the incident?	
- If Yes, Year protection started:	
4b. Was shielding, tenting, or disbonding of coating evident at the point of the incident?	
4c. Has one or more Cathodic Protection Survey been conducted	

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at the point of the incident?	
If "Yes, CP Annual Survey" – Most recent year conducted:	
If "Yes, Close Interval Survey" – Most recent year conducted:	
If "Yes, Other CP Survey" – Most recent year conducted:	
- If No:	
4d. Was the failed item externally coated or painted?	
5. Was there observable damage to the coating or paint in the vicinity of the corrosion?	
- If Internal Corrosion:	
6. Results of visual examination:	
- If Other, Describe:	
7. Cause of corrosion <i>(select all that apply)</i> :	
- Corrosive Commodity	
- Water drop-out/Acid	
- Microbiological	
- Erosion	
- Other	
- If Other, Describe:	
8. The cause(s) of corrosion selected in Question 7 is based on the following <i>(select all that apply)</i> :	
- Field examination	
- Determined by metallurgical analysis	
- Other	
- If Other, Describe:	
9. Location of corrosion <i>(select all that apply)</i> :	
- Low point in pipe	
- Elbow	
- Drop-out	
- Other	
- If Other, Describe:	
10. Was the gas/fluid treated with corrosion inhibitors or biocides?	
11. Was the interior coated or lined with protective coating?	
12. Were cleaning/dewatering pigs (or other operations) routinely utilized?	
13. Were corrosion coupons routinely utilized?	
Complete the following if any Corrosion Failure sub-cause is selected AND the "Item Involved in Incident" (from PART C, Question 3) is Pipe or Weld.	
14. Has one or more internal inspection tool collected data at the point of the Incident?	
14a. If Yes, for each tool used, select type of internal inspection tool and indicate most recent year run:	
- Magnetic Flux Leakage Tool	Most recent year run:
- Ultrasonic	Most recent year run:
- Geometry	Most recent year run:
- Caliper	Most recent year run:
- Crack	Most recent year run:
- Hard Spot	Most recent year run:
- Combination Tool	Most recent year run:
- Transverse Field/Triaxial	Most recent year run:
- Other	Most recent year run:
If Other, Describe:	
15. Has one or more hydrotest or other pressure test been conducted since original construction at the point of the Incident?	
- If Yes,	Most recent year tested:
	Test pressure (psig):
16. Has one or more Direct Assessment been conducted on this segment?	
- If Yes, and an investigative dig was conducted at the point of the Incident:	Most recent year conducted:
- If Yes, but the point of the Incident was not identified as a dig site:	

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Most recent year conducted:	
17. Has one or more non-destructive examination been conducted at the point of the Incident since January 1, 2002?	
17a. If Yes, for each examination conducted since January 1, 2002, select type of non-destructive examination and indicate most recent year the examination was conducted:	
- Radiography	Most recent year examined:
- Guided Wave Ultrasonic	Most recent year examined:
- Handheld Ultrasonic Tool	Most recent year examined:
- Wet Magnetic Particle Test	Most recent year examined:
- Dry Magnetic Particle Test	Most recent year examined:
- Other	Most recent year examined:
	If Other, Describe:
G2 - Natural Force Damage - only one <i>sub-cause</i> can be picked from shaded left-handed column	
Natural Force Damage – Sub-Cause:	
- If Earth Movement, NOT due to Heavy Rains/Floods:	
1. Specify:	- If Other, Describe:
- If Heavy Rains/Floods:	
2. Specify:	- If Other, Describe:
- If Lightning:	
3. Specify:	
- If Temperature:	
4. Specify:	- If Other, Describe:
- If High Winds:	
- If Other Natural Force Damage:	
5. Describe:	
Complete the following if any Natural Force Damage sub-cause is selected.	
6. Were the natural forces causing the Incident generated in conjunction with an extreme weather event?	
6a. If yes, specify: <i>(select all that apply)</i> :	
- Hurricane	
- Tropical Storm	
- Tornado	
- Other	
	- If Other, Describe:
G3 - Excavation Damage only one <i>sub-cause</i> can be picked from shaded left-hand column	
Excavation Damage – Sub-Cause:	
- If Excavation Damage by Operator (First Party):	
- If Excavation Damage by Operator's Contractor (Second Party):	
- If Excavation Damage by Third Party:	
- If Previous Damage Due to Excavation Activity:	
Complete Questions 1-5 ONLY IF the "Item Involved in Incident" (From Part C, Question 3) is Pipe or Weld.	
1. Has one or more internal inspection tool collected data at the point of the Incident?	
1a. If Yes, for each tool used, select type of internal inspection tool and indicate most recent year run:	
- Magnetic Flux Leakage	Year:
- Ultrasonic	Year:
- Geometry	Year:

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- Caliper	
Year:	
- Crack	
Year:	
- Hard Spot	
Year:	
- Combination Tool	
Year:	
- Transverse Field/Triaxial	
Year:	
- Other:	
Year:	
Describe:	
2. Do you have reason to believe that the internal inspection was completed BEFORE the damage was sustained?	
3. Has one or more hydrotest or other pressure test been conducted since original construction at the point of the Incident?	
- If Yes:	
Most recent year tested:	
Test pressure (psig):	
4. Has one or more Direct Assessment been conducted on the pipeline segment?	
- If Yes, and an investigative dig was conducted at the point of the Incident:	
Most recent year conducted:	
- If Yes, but the point of the Incident was not identified as a dig site:	
Most recent year conducted:	
5. Has one or more non-destructive examination been conducted at the point of the Incident since January 1, 2002?	
5a. If Yes, for each examination conducted since January 1, 2002, select type of non-destructive examination and indicate most recent year the examination was conducted:	
- Radiography	
Year:	
- Guided Wave Ultrasonic	
Year:	
- Handheld Ultrasonic Tool	
Year:	
- Wet Magnetic Particle Test	
Year:	
- Dry Magnetic Particle Test	
Year:	
- Other	
Year:	
Describe:	
Complete the following if Excavation Damage by Third Party is selected as the sub-cause.	
6. Did the operator get prior notification of the excavation activity?	
6a. If Yes, Notification received from <i>(select all that apply)</i> :	
- One-Call System	
- Excavator	
- Contractor	
- Landowner	
Complete the following mandatory CGA-DIRT Program questions if any Excavation Damage sub-cause is selected.	
7. Do you want PHMSA to upload the following information to CGA-DIRT (www.cga-dirt.com)?	
8. Right-of-Way where event occurred <i>(select all that apply)</i> :	
- Public	
- If Public, Specify:	
- Private	
- If Private, Specify:	
- Pipeline Property/Easement	
- Power/Transmission Line	
- Railroad	
- Dedicated Public Utility Easement	
- Federal Land	
- Data not collected	
- Unknown/Other	
9. Type of excavator :	
10. Type of excavation equipment :	
11. Type of work performed :	

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12. Was the One-Call Center notified? - Yes - No	
12a. If Yes, specify ticket number:	
12b. If this is a State where more than a single One-Call Center exists, list the name of the One-Call Center notified:	
13. Type of Locator:	
14. Were facility locate marks visible in the area of excavation?	
15. Were facilities marked correctly?	
16. Did the damage cause an interruption in service?	
16a. If Yes, specify duration of the interruption: (hours)	
17. Description of the CGA-DIRT Root Cause (select only the one predominant first level CGA-DIRT Root Cause and then, where available as a choice, then one predominant second level CGA-DIRT Root Cause as well):	
- Predominant first level CGA-DIRT Root Cause:	
- If One-Call Notification Practices Not Sufficient, Specify:	
- If Locating Practices Not Sufficient, Specify:	
- If Excavation Practices Not Sufficient, Specify:	
- If Other/None of the Above, Explain:	
G4 - Other Outside Force Damage - only one sub-cause can be selected from the shaded left-hand column	
Other Outside Force Damage – Sub-Cause:	
- If Nearby Industrial, Man-made, or Other Fire/Explosion as Primary Cause of Incident:	
- If Damage by Car, Truck, or Other Motorized Vehicle/Equipment NOT Engaged in Excavation:	
1. Vehicle/Equipment operated by:	
- If Damage by Boats, Barges, Drilling Rigs, or Other Maritime Equipment or Vessels Set Adrift or Which Have Otherwise Lost Their Mooring:	
2. Select one or more of the following IF an extreme weather event was a factor:	
- Hurricane	
- Tropical Storm	
- Tornado	
- Heavy Rains/Flood	
- Other	
- If Other, Describe:	
- If Routine or Normal Fishing or Other Maritime Activity NOT Engaged in Excavation:	
- If Electrical Arcing from Other Equipment or Facility:	
- If Previous Mechanical Damage NOT Related to Excavation:	
Complete Questions 3-7 ONLY IF the "Item Involved in Incident" (from PART C, Question 3) is Pipe or Weld.	
3. Has one or more internal inspection tool collected data at the point of the Incident?	
3a. If Yes, for each tool used, select type of internal inspection tool and indicate most recent year run:	
- Magnetic Flux Leakage	Most recent year run:
- Ultrasonic	Most recent year run:
- Geometry	Most recent year run:
- Caliper	Most recent year run:
- Crack	Most recent year run:
- Hard Spot	Most recent year run:
- Combination Tool	Most recent year run:
- Transverse Field/Triaxial	Most recent year run:
- Other:	Most recent year run:
	Describe:
4. Do you have reason to believe that the internal inspection was completed BEFORE the damage was sustained?	
5. Has one or more hydrotest or other pressure test been conducted	

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since original construction at the point of the Incident?	
- If Yes:	
Most recent year tested:	
Test pressure (psig):	
6. Has one or more Direct Assessment been conducted on the pipeline segment?	
- If Yes, and an investigative dig was conducted at the point of the Incident :	
Most recent year conducted:	
- If Yes, but the point of the Incident was not identified as a dig site:	
Most recent year conducted:	
7. Has one or more non-destructive examination been conducted at the point of the Incident since January 1, 2002?	
7a. If Yes, for each examination conducted since January 1, 2002, select type of non-destructive examination and indicate most recent year the examination was conducted:	
- Radiography	
Most recent year conducted:	
- Guided Wave Ultrasonic	
Most recent year conducted:	
- Handheld Ultrasonic Tool	
Most recent year conducted:	
- Wet Magnetic Particle Test	
Most recent year conducted:	
- Dry Magnetic Particle Test	
Most recent year conducted:	
- Other	
Most recent year conducted:	
Describe:	
If - If Intentional Damage:	
8. Specify:	
- If Other, Describe:	
- If Other Outside Force Damage:	
9. Describe:	
G5 – Material Failure of Pipe or Weld	Use this section to report material failures ONLY IF the "Item Involved in Incident" (from PART C, Question 3) is "Pipe" or "Weld."
	*Only one sub-cause can be selected from the shaded left-hand column
Material Failure of Pipe or Weld – Sub-Cause:	
1. The sub-case selected below is based on the following <i>(select all that apply)</i> :	
- Field Examination	
- Determined by Metallurgical Analysis	
- Other Analysis	
- If "Other Analysis", Describe	
- Sub-cause is Tentative or Suspected; Still Under Investigation <i>(Supplemental Report required)</i>	
- If Construction-, Installation- or Fabrication- related:	
2. List contributing factors: <i>(select all that apply)</i>	
- If Fatigue or Vibration related:	
Specify:	
- If Other, Describe:	
- Mechanical Stress	
- Other	
- If Other, Describe:	
- If Original Manufacturing-related (NOT girth weld or other welds formed in the field):	
2. List contributing factors: <i>(select all that apply)</i>	
- If Fatigue or Vibration related:	
Specify:	
- If Other, Describe:	
- Mechanical Stress	
- Other	
- If Other, Describe:	
- If Environmental Cracking-related:	
3. Specify:	
- If Other, Describe:	

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Complete the following if any Material Failure of Pipe or Weld sub-cause is selected.	
4. Additional Factors (select all that apply):	
- Dent	
- Gouge	
- Pipe Bend	
- Arc Burn	
- Crack	
- Lack of Fusion	
- Lamination	
- Buckle	
- Wrinkle	
- Misalignment	
- Burnt Steel	
- Other	
- If Other, Describe:	
5. Has one or more internal inspection tool collected data at the point of the Incident?	
5a. If Yes, for each tool used, select type of internal inspection tool and indicate most recent year run:	
- Magnetic Flux Leakage	Most recent year run:
- Ultrasonic	Most recent year run:
- Geometry	Most recent year run:
- Caliper	Most recent year run:
- Crack	Most recent year run:
- Hard Spot	Most recent year run:
- Combination Tool	Most recent year run:
- Transverse Field/Triaxial	Most recent year run:
- Other	Most recent year run:
Describe:	
6. Has one or more hydrotest or other pressure test been conducted since original construction at the point of the Incident?	
- If Yes:	
	Most recent year tested:
	Test pressure (psig):
7. Has one or more Direct Assessment been conducted on the pipeline segment?	
- If Yes, and an investigative dig was conducted at the point of the Incident:	
	Most recent year conducted:
- If Yes, but the point of the Incident was not identified as a dig site:	
	Most recent year conducted:
8. Has one or more non-destructive examination(s) been conducted at the point of the Incident since January 1, 2002?	
8a. If Yes, for each examination conducted since January 1, 2002, select type of non-destructive examination and indicate most recent year the examination was conducted:	
- Radiography	Most recent year conducted:
- Guided Wave Ultrasonic	Most recent year conducted:
- Handheld Ultrasonic Tool	Most recent year conducted:
- Wet Magnetic Particle Test	Most recent year conducted:
- Dry Magnetic Particle Test	Most recent year conducted:
- Other	Most recent year conducted:

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Describe:	
G6 - Equipment Failure - only one sub-cause can be selected from the shaded left-hand column	
Equipment Failure – Sub-Cause:	
- If Malfunction of Control/Relief Equipment:	
1. Specify:	
- Control Valve	
- Instrumentation	
- SCADA	
- Communications	
- Block Valve	
- Check Valve	
- Relief Valve	
- Power Failure	
- Stopp/Control Fitting	
- Pressure Regulator	
- ESD System Failure	
- Other	
- If Other, Describe:	
- If Compressor or Compressor-related Equipment:	
2. Specify:	
- If Other, Describe:	
- If Threaded Connection/Coupling Failure:	
3. Specify:	
- If Other, Describe:	
- If Non-threaded Connection Failure:	
4. Specify:	
- If Other, Describe:	
- If Defective or Loose Tubing or Fitting:	
- If Failure of Equipment Body (except Compressor), Vessel Plate, or other Material:	
- If Other Equipment Failure:	
5. Describe:	
Complete the following if any Equipment Failure sub-cause is selected.	
6. Additional factors that contributed to the equipment failure <i>(select all that apply)</i>	
- Excessive vibration	
- Overpressurization	
- No support or loss of support	
- Manufacturing defect	
- Loss of electricity	
- Improper installation	
- Mismatched items (different manufacturer for tubing and tubing fittings)	
- Dissimilar metals	
- Breakdown of soft goods due to compatibility issues with transported gas/fluid	
- Valve vault or valve can contributed to the release	
- Alarm/status failure	
- Misalignment	
- Thermal stress	
- Other	
- If Other, Describe:	
G7 – Incorrect Operation - only one sub-cause can be selected from the shaded left-hand column	
Incorrect Operation – Sub-Cause:	
- If Damage by Operator or Operator's Contractor NOT Related to Excavation and NOT due to Motorized Vehicle/Equipment Damage:	
- If Underground Gas Storage, Pressure Vessel, or Cavern Allowed or Caused to Overpressure:	
1. Specify:	

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- If Other, Describe:	
- If Valve Left or Placed in Wrong Position, but NOT Resulting in an Overpressure:	
- If Pipeline or Equipment Overpressured:	
- If Equipment Not Installed Properly:	
- If Wrong Equipment Specified or Installed:	
- If Other Incorrect Operation:	
2. Describe:	
Complete the following if any Incorrect Operation sub-cause is selected.	
3. Was this Incident related to: <i>(select all that apply)</i>	
- Inadequate procedure	
- No procedure established	
- Failure to follow procedure	
- Other:	
- If Other, Describe:	
4. What category type was the activity that caused the Incident:	
5. Was the task(s) that led to the Incident identified as a covered task in your Operator Qualification Program?	
5a. If Yes, were the individuals performing the task(s) qualified for the task(s)?	
G8 - Other Incident Cause - only one sub-cause can be selected from the shaded left-hand column	
Other Incident Cause – Sub-Cause:	Miscellaneous
- If Miscellaneous:	
1. Describe:	During an anomaly investigation dig, operator employees removed a large rock from underneath the pipeline and this is when the pipe began to leak. This prompted the operator personnel to take the pipeline out of service. The pipe segment was cutout and replaced with new pipe.
- If Unknown:	
2. Specify:	
PART - H NARRATIVE DESCRIPTION OF THE INCIDENT	
Operator employees and third party contractors were on site of an anomaly investigation dig, Operator employees were removing soil around the pipeline when operator employees smelled an odor coming from the anomaly pie. The pipeline was taken out of service and an investigation was initiated . The results of the leak investigation showed a dent on the pipe due to a rock underneath the pipe. The rock underneath the pipe was the cause of a small crack where the leak initiated. The pipe anomaly segment was cutout and replaced with new pipe.	
File Full Name	
PART I - PREPARER AND AUTHORIZED SIGNATURE	
Preparer's Name	Johnny Lopez
Preparer's Title	Pipeline Safety Specialist
Preparer's Telephone Number	7132152995
Preparer's E-mail Address	johnny.lopez@williams.com
Preparer's Facsimile Number	7132152222
Authorized Signature's Name	Marie Sotak
Authorized Signature Title	Pipeline Safety Manager
Authorized Signature Telephone Number	7132152111
Authorized Signature Email	marie.sotak@williams.com
Date	07/25/2012

Appendix E
Lab Analysis
Removed

File Available at PHMSA

Appendix F
Root Cause Analysis
Removed

File Available at PHMSA