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

Principal Investigator	John McCauley Jr. – NYDPS
Senior Accident Investigator	Michael Yazemboski
Region Director	Byron E. Coy
Date of Report	10/21/2011
Subject	Failure Investigation Report – Enterprise Products Propane Line Crack

Operator, Location, & Consequences

Date of Failure	08/27/2010
Commodity Released	Liquid Propane
City/County & State	Gilboa, Schoharie County, NY
OpID & Operator Name	31618 – Enterprise Products Partners L.P.
Unit # & Unit Name	3041 – Watkins Glen – NY
SMART Activity #	130938
Milepost / Location	7068+66 (survey); Milepost 138.87
	Latitude 42.4687N, Longitude 74.3511W
Type of Failure	Circumferentially-oriented stress corrosion cracking caused the pipe to separate
Fatalities	0
Injuries	0
Description of area impacted	Rural area. Non-HCA.
Property Damage	$1,811,756

Failure Investigation Report Enterprise Products Propane Line Crack
Failure Date 8/27/2010

Executive Summary

On August 27, 2010, an 8-inch diameter steel liquid propane pipeline located on Keyserkill Road in the town of Gilboa, New York, failed in service, resulting in the release of an estimated 3283 barrels of product. There were no fatalities or injuries associated with this event. A total of 23 persons in a 3 mile radius were evacuated by emergency responders. There was no fire or explosion. The pipeline (designated as P-41) is owned and operated by Enterprise Products Partners L.P. (Enterprise – Operator). The pipeline transports liquid propane from Watkins Glen, NY, to the pipeline terminus in Selkirk, NY.

Investigation of the failure site revealed a crack in the bottom quadrant of the pipe, immediately adjacent to a girth weld, in the heat affected zone. The failure point was located 36-inches downstream from a corrosion cluster which had been identified by an inline inspection in 2008 using a high resolution magnetic flux leakage tool. Enterprise records indicate that its contractor had conducted an integrity dig on this anomaly on August 18, 2010, nine days prior to the pipeline failure.

The metallurgic evaluation, performed by Kiefner and Associates, established the cause of the failure as a circumferentially-oriented stress corrosion crack (C-SCC) that had grown to more than 70% through wall before failure. Three other isolated C-SCC cracks were detected adjacent to the failure origin.

Kiefner's evaluation of the likely failure mechanism is that disbonded tape coating shielded the cathodic protection current from the pipe in the vicinity of the failure. In addition, the pipe was likely subjected to stresses caused by bending loads attributed to misalignment of the pipe immediately downstream of the casing combined with pipe settlement from the recent integrity dig.

System Details

The pipeline transports liquid propane from its origin in Watkins Glen, NY, to the pipeline terminus in Selkirk, NY; a distance of approximately 165 miles (Appendix K). The P-41 line was constructed in 1963/1964 with 8-inch API 5L X-42 0.203 inch wall thickness and API 5L Grade B 0.375 inch wall thickness pipe. The pipe has a low frequency electric resistance welded (ERW) longitudinal seam, a coal tar coating, and is cathodically protected by impressed current. The pipeline has a Maximum Operating Pressure (MOP) of 1,359 psig which generates a hoop stress level of 68.7% of the Specified Minimum Yield Strength (SMYS).

The Watkins Glen to Selkirk pipeline represents a critical feed for transport of propane for the Northeastern United States. The pipeline was out of service for five months while testing and repairs took place. During this time, there was a dramatic increase in truck traffic to ensure that customers were supplied with propane.

Events Leading up to the Failure

Including the most recent failure on August 27, 2010, there have been four in-service failures since the line was commissioned. On February 12, 1980, there was a weld failure due to corrosion. On March 19, 1990, there was a circumferential failure due to transverse Stress Corrosion Cracking. On January 25, 2004, there was a branch fitting failure due to front heave.

On August 18, 2010, nine days before the latest failure, Enterprise records (Appendix G) indicate that its contractor had conducted an integrity dig on an anomaly 3 feet upstream of the failure location. An analysis of the corrosion pitting anomaly indicated that no further action was required. The pipe was recoated and backfilled.

On August 27, 2010, product was being pumped from Oneonta to Selkirk, NY. The pumping began at 12:45 at a rate of 260 barrels per hour (bph) and was increased in steps up to 400 bph at a back pressure of 600 psig by 15:26. At 16:24, the pressure at Jefferson was low (240 psig), so Enterprise left the valve at Selkirk closed and reduced the flow rate at Oneonta to build pressure on the line.

Emergency Response

At 16:26, a 9-1-1 call was received by the Schoharie County Sheriff's Department reporting a release from a pipeline. The call was placed by a passing motorist. At this point Enterprise was not yet aware of the leak.

At 16:29 the Conesville Fire Department and Ambulance were dispatched. The Conesville Fire Department requested that Middleburgh and Livingston Fire Departments respond.

At 16:34 EDT the Schoharie County Emergency Management Director called Enterprise to report the emergency. Enterprise responded by running checks of the system.

At 16:49 EDT, after observing a pressure drop in the pipeline, Enterprise opened the valve into Selkirk Terminal in order to draw down product from a possible leak site.

At 16:51, Enterprise bled the pressure off the line, closed in the system at Oneonta and isolated the failed pipe segment by closing block valves at both the Oneonta and Selkirk Terminals.

At 16:52, Middleburgh Fire Department closed Keyserkill Road at the Guinea Road intersection, and began evacuations from north to south. Livingston Fire Department began evacuation of Keyserkill Road from the area of the leak going north until they met up with Middleburgh Fire Department.

At 16:58, Schoharie County Emergency Management requested a reverse 9-1-1 call to the Keyserkill Road residents.

At 17:04, all mainline valves between Jefferson and Selkirk were closed (with the exception of Preston Hollow which had experienced a communication failure earlier in the day). The inability to close in the system at Preston Hollow did not impact the quantity of propane that leaked.

At 17:34 the Incident Commander received notification that the pipeline had been shut down.

At 17:45 the leak was determined to be from Enterprise line 0608.

At 18:52 the incident was reported to the NRC (#952238).

Summary of Return-to-Service

The line was taken out of service pending implementation of action items identified in Corrective Action Order (CAO), CPF No. 1-2010-5008H (Appendix I). As required by the CAO, the company conducted a spike and hydrostatic test of the entire P-41 line. The line was divided into 12 test sections and each section was tested independently. Three failures occurred, repairs were made and the sections were retested. Long seam corrosion or cracking, and corrosion pitting were observed on the failed sections. The sections of pipe that failed were sent out for analysis to determine the failure mechanism. The pipeline was out of service for five months while testing and repairs took place. Following successful spike and hydrostatic tests, as well as the other actions required by the CAO, line P-41 returned to service on February 3, 2011.

Failure Investigation Report Enterprise Products Propane Line Crack
Failure Date 8/27/2010

Investigation Details

Enterprise engineers calculated the operating pressure at Keyserkill Road at the time of failure to be approximately 279 psig.

The failure occurred on the downstream side of the Keyserkill Road crossing approximately 36 inches from the end of the casing (MP133.9). It was a partial circumferential crack in the heat affected zone of the girth weld in the bottom quadrants of the pipe (approximately 4 O'clock to 8 O'clock position). This failure point was located 36 inches downstream from a corrosion cluster which had been identified by an in line inspection in 2008 using a high resolution magnetic flux leakage tool. Enterprise records (Appendix G) indicate that its contractor had conducted an integrity dig on this anomaly on August 18, 2010, nine days prior to the pipeline failure. No issues were identified in either the contractor's operator qualification records or the One Call excavation notification tickets. There was no evidence of mechanical damage to the pipe as a result of the August 18, 2010 excavation.

The pipe, as found, was coated and covered with rock shield, and surrounded by sand padding from the previous excavation. A review of the Maintenance Report record from the previous anomaly excavation indicates that the crew excavated, cleaned out around the pipe, and removed 24-inches of coating before sandblasting and conducting an evaluation of the existing anomalies. Records from the previous excavation indicated that no repair was prescribed, and the pipe was recoated and backfilled.

Findings and Contributing Factors

The metallurgic evaluation of the failed pipe section (Appendix E), conducted by Kiefner & Associates, established the cause of the failure as a circumferentially-oriented stress corrosion crack (C-SCC) measuring 8.25-inches long by 0.134 inches deep adjacent to a circumferential weld. The crack had grown to more than 70% through wall before failure. Three other isolated C-SCC cracks were detected adjacent to the failure origin.

Kiefner's evaluation of the likely failure mechanism is that disbonded tape coating shielded the cathodic protection current from the pipe in the vicinity of the failure. In addition, the pipe was likely subjected to stresses caused by bending loads attributed to misalignment of the pipe immediately downstream of the casing combined with pipe settlement from the recent integrity dig.

Crack on bottom quadrant of pipe – 09/02/2011

Appendices

A Enterprise Accident Investigation Report (Form 7000-1)

B Keyserkill Planimetric

C NRC Report #952328

D Profile of Road Crossing

E Metallurgical Analysis Report, Kiefner & Associates, Inc.

F Line P41 Return to Service Hydrostatic Test Plan (Enterprise)

G Maintenance Report Dig 5 Line P41

H RCS Dig 5 NDE Binder 8in Jefferson to Selkirk

I Amended Corrective Action Order (ACAO) CPF No. 1-2010-5008H

J Photographs

K Incident Location Map

130938 Appendix A - Accident Report Form 7000

NOTICE: This report is required by 49 CFR Part 195. 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: 2137-0047 EXPIRATION DATE: 01/31/2013

U.S Department of Transportation Pipeline and Hazardous Materials Safety Administration	**Report Date:**	10/07/2010
	No.	20100220 - 15823 ---------- (DOT Use Only)

ACCIDENT REPORT - HAZARDOUS LIQUID 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 2137-0047. Public reporting for this collection of information is estimated to be approximately 10 hours per response (5 hours for a small release), 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

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.*

PART A - KEY REPORT INFORMATION

Report Type: *(select all that apply)*	**Original:**	**Supplemental:**	**Final:**
		Yes	**Yes**
Last Revision Date:	05/26/2011		
1. Operator's OPS-issued Operator Identification Number (OPID):	19237		
2. Name of Operator	TE PRODUCTS PIPELINE COMPANY, LLC		
3. Address of Operator:			
3a. Street Address	P.O. BOX 2521		
3b. City	HOUSTON		
3c. State	Texas		
3d. Zip Code	77252-6500		
4. Local time *(24-hr clock)* and date of the Accident:	08/27/2010 16:30		
5. Location of Accident:			
Latitude:	42.46833		
Longitude:	-74.3515		
6. National Response Center Report Number (if applicable):	952328		
7. Local time *(24-hr clock)* and date of initial telephonic report to the National Response Center (if applicable):	08/27/2010 18:52		
8. Commodity released: *(select only one, based on predominant volume released)*	HVL or Other Flammable or Toxic Fluid which is a Gas at Ambient Conditions		
- Specify Commodity Subtype:	LPG (Liquefied Petroleum Gas) / NGL (Natural Gas Liquid)		
- If "Other" Subtype, Describe:			
- If Biofuel/Alternative Fuel and Commodity Subtype is Ethanol Blend, then % Ethanol Blend: %:			
- If Biofuel/Alternative Fuel and Commodity Subtype is Biodiesel, then Biodiesel Blend (e.g. B2, B20, B100): B			
9. Estimated volume of commodity released unintentionally (Barrels):	3,283.00		
10. Estimated volume of intentional and/or controlled release/blowdown (Barrels):			
11. Estimated volume of commodity recovered (Barrels):			
12. Were there fatalities?	No		
- If Yes, specify the number in each category:			
12a. Operator employees			
12b. Contractor employees working for the Operator			
12c. Non-Operator emergency responders			
12d. Workers working on the right-of-way, but NOT associated with this Operator			
12e. General public			
12f. Total fatalities (sum of above)			
13. Were there injuries requiring inpatient hospitalization?	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 injuries (sum of above)	
14. Was the pipeline/facility shut down due to the Accident?	Yes
- If No, Explain:	
- If Yes, complete Questions 14a and 14b: *(use local time, 24-hr clock)*	
14a. Local time and date of shutdown:	08/27/2010 17:00
14b. Local time pipeline/facility restarted:	02/02/2011 13:35
- Still shut down? (* Supplemental Report Required)	
15. Did the commodity ignite?	No
16. Did the commodity explode?	No
17. Number of general public evacuated:	23
18. Time sequence *(use local time, 24-hour clock)*:	
18a. Local time Operator identified Accident:	08/27/2010 16:30
18b. Local time Operator resources arrived on site:	08/27/2010 17:00

PART B - ADDITIONAL LOCATION INFORMATION

1. Was the origin of Accident onshore?	Yes
If Yes, Complete Questions (2-12)	
If No, Complete Questions (13-15)	
- If Onshore:	
2. State:	New York
3. Zip Code:	12131
4. City	Gilboa
5. County or Parish	Schoharie
6. Operator-designated location:	Milepost/Valve Station
Specify:	MP 133.87
7. Pipeline/Facility name:	P-41
8. Segment name/ID:	Watkins Glen to Selkirk
9. Was Accident on Federal land, other than the Outer Continental Shelf (OCS)?	No
10. Location of Accident:	Pipeline Right-of-way
11. Area of Accident (as found):	Underground
Specify:	Under soil
- If Other, Describe:	
Depth-of-Cover (in):	72
12. Did Accident occur in a crossing?	Yes
- If Yes, specify below:	
- If Bridge crossing –	
Cased/ Uncased:	
- If Railroad crossing –	
Cased/ Uncased/ Bored/drilled	
- If Road crossing –	Yes
Cased/ Uncased/ Bored/drilled	Cased
- If Water crossing –	
Cased/ Uncased	
- Name of body of water, if commonly known:	
- Approx. water depth (ft) at the point of the Accident:	
- Select:	
- If Offshore:	
13. Approximate water depth (ft) at the point of the Accident:	
14. Origin of Accident:	
- In State waters - Specify:	
- State:	
- Area:	
- Block/Tract #:	
- Nearest County/Parish:	
- On the Outer Continental Shelf (OCS) - Specify:	
- Area:	
- Block #:	
15. Area of Accident:	

PART C - ADDITIONAL FACILITY INFORMATION

1. Is the pipeline or facility:	Interstate
2. Part of system involved in Accident:	Onshore Pipeline, Including Valve Sites
- If Onshore Breakout Tank or Storage Vessel, Including Attached Appurtenances, specify:	
3. Item involved in Accident:	Pipe

- If Pipe, specify:	Pipe Body
3a. Nominal diameter of pipe (in):	8.625
3b. Wall thickness (in):	.203
3c. SMYS (Specified Minimum Yield Strength) of pipe (psi):	42,000
3d. Pipe specification:	API-5L
3e. Pipe Seam , specify:	Longitudinal ERW - Low Frequency
- If Other, Describe:	
3f. Pipe manufacturer:	Bethlehem Steel
3g. Year of manufacture:	1963
3h. Pipeline coating type at point of Accident, specify:	Coal Tar
- If Other, Describe:	
- If Weld, including heat-affected zone, specify:	
- If Other, Describe:	
- If Valve, specify:	
- If Mainline, specify:	
- If Other, Describe:	
3i. Manufactured by:	
3j. Year of manufacture:	
- If Tank/Vessel, specify:	
- If Other - Describe:	
- If Other, describe:	
4. Year item involved in Accident was installed:	1963
5. Material involved in Accident:	Carbon Steel
- If Material other than Carbon Steel, specify:	
6. Type of Accident Involved:	Other
- If Mechanical Puncture – Specify Approx. size:	
in. (axial) by	
in. (circumferential)	
- If Leak - Select Type:	
- If Other, Describe:	
- If Rupture - Select Orientation:	
- If Other, Describe:	
Approx. size: in. (widest opening) by	
in. (length circumferentially or axially)	
- If Other – Describe:	Crack

PART D - ADDITIONAL CONSEQUENCE INFORMATION

1. Wildlife impact:	No
1a. If Yes, specify all that apply:	
- Fish/aquatic	
- Birds	
- Terrestrial	
2. Soil contamination:	No
3. Long term impact assessment performed or planned:	No
4. Anticipated remediation:	No
4a. If Yes, specify all that apply:	
- Surface water	
- Groundwater	
- Soil	
- Vegetation	
- Wildlife	
5. Water contamination:	No
5a. If Yes, specify all that apply:	
- Ocean/Seawater	
- Surface	
- Groundwater	
- Drinking water: *(Select one or both)*	
- Private Well	
- Public Water Intake	
5b. Estimated amount released in or reaching water (Barrels):	
5c. Name of body of water, if commonly known:	
6. At the location of this Accident, had the pipeline segment or facility been identified as one that "could affect" a High Consequence Area (HCA) as determined in the Operator's Integrity Management Program?	No
7. Did the released commodity reach or occur in one or more High Consequence Area (HCA)?	No
7a. If Yes, specify HCA type(s): *(Select all that apply)*	
- Commercially Navigable Waterway:	
Was this HCA identified in the "could affect"	

determination for this Accident site in the Operator's Integrity Management Program?	
- High Population Area:	
Was this HCA identified in the "could affect" determination for this Accident site in the Operator's Integrity Management Program?	
- Other Populated Area	
Was this HCA identified in the "could affect" determination for this Accident site in the Operator's Integrity Management Program?	
- Unusually Sensitive Area (USA) - Drinking Water	
Was this HCA identified in the "could affect" determination for this Accident site in the Operator's Integrity Management Program?	
- Unusually Sensitive Area (USA) - Ecological	
Was this HCA identified in the "could affect" determination for this Accident site in the Operator's Integrity Management Program?	
8. Estimated cost to Operator :	
8a. Estimated cost of public and non-Operator private property damage paid/reimbursed by the Operator	$ 62,100
8b. Estimated cost of commodity lost	$ 145,332
8c. Estimated cost of Operator's property damage & repairs	$ 1,441,000
8d. Estimated cost of Operator's emergency response	$ 163,324
8e. Estimated cost of Operator's environmental remediation	$ 0
8f. Estimated other costs	$ 0
Describe:	
8g. Estimated total costs (sum of above)	$ 1,811,756

PART E - ADDITIONAL OPERATING INFORMATION

1. Estimated pressure at the point and time of the Accident (psig):	279.00
2. Maximum Operating Pressure (MOP) at the point and time of the Accident (psig):	1,359.00
3. Describe the pressure on the system or facility relating to the Accident (psig):	Pressure did not exceed MOP
4. Not including pressure reductions required by PHMSA regulations (such as for repairs and pipe movement), was the system or facility relating to the Accident operating under an established pressure restriction with pressure limits below those normally allowed by the MOP?	No
- If Yes, Complete 4.a and 4.b below:	
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 - (*Complete 5a. – 5f. below)*	
5a. Type of upstream valve used to initially isolate release source:	Manual
5b. Type of downstream valve used to initially isolate release source:	Manual
5c. Length of segment isolated between valves (ft):	53,986
5d. Is the pipeline configured to accommodate internal inspection tools?	Yes
- If No, Which physical features limit tool accommodation? (*select all that apply)*	
- 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? (*select all that apply*)	
- Excessive debris or scale, wax, or other wall buildup	

- Low operating pressure(s)	
- Low flow or absence of flow	
- Incompatible commodity	
- Other -	
- If Other, Describe:	
5f. Function of pipeline system:	> 20% SMYS Regulated Trunkline/Transmission
6. Was a Supervisory Control and Data Acquisition (SCADA)-based system in place on the pipeline or facility involved in the Accident?	Yes
If Yes -	
6a. Was it operating at the time of the Accident?	Yes
6b. Was it fully functional at the time of the Accident?	Yes
6c. Did SCADA-based information (such as alarm(s), alert(s), event(s), and/or volume calculations) assist with the detection of the Accident?	No
6d. Did SCADA-based information (such as alarm(s), alert(s), event(s), and/or volume calculations) assist with the confirmation of the Accident?	Yes
7. Was a CPM leak detection system in place on the pipeline or facility involved in the Accident?	Yes
- If Yes:	
7a. Was it operating at the time of the Accident?	Yes
7b. Was it fully functional at the time of the Accident?	Yes
7c. Did CPM leak detection system information (such as alarm(s), alert(s), event(s), and/or volume calculations) assist with the detection of the Accident?	No
7d. Did CPM leak detection system information (such as alarm(s), alert(s), event(s), and/or volume calculations) assist with the confirmation of the Accident?	Yes
8. How was the Accident initially identified for the Operator?	Notification From Public
- If Other, Specify:	
8a. If "Controller", "Local Operating Personnel", including contractors", "Air Patrol", or "Guard Patrol by Operator or its contractor" is selected in Question 8, specify the following:	
9. 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 Accident?	Yes, specify investigation result(s): (select all that apply)
- If No, the Operator did not find that an investigation of the controller(s) actions or control room issues was necessary due to: *(provide an explanation for why the operator did not investigate)*	
- If Yes, specify investigation result(s): *(select all that apply)*	
- Investigation reviewed work schedule rotations, continuous hours of service (while working for the Operator), and other factors associated with fatigue	Yes
- 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:	
- Investigation identified no control room issues	Yes
- Investigation identified no controller issues	Yes
- Investigation identified incorrect controller action or controller error	
- Investigation identified that fatigue may have affected the controller(s) involved or impacted the involved controller(s) response	
- Investigation identified incorrect procedures	
- Investigation identified incorrect control room equipment operation	
- Investigation identified maintenance activities that affected control room operations, procedures, and/or controller response	
- Investigation identified areas other than those above:	
Describe:	

PART F - DRUG & ALCOHOL TESTING INFORMATION

1. As a result of this Accident, were any Operator employees tested under the post-accident drug and alcohol testing requirements of DOT's Drug & Alcohol Testing regulations?	Yes
- If Yes:	
1a. Specify how many were tested:	1
1b. Specify how many failed:	0
2. As a result of this Accident, 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. Specify how many were tested:	
2b. Specify how many failed:	

PART G – APPARENT CAUSE

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

Apparent Cause:	G5 - Material Failure of Pipe or Weld
G1 - Corrosion Failure - only one **sub-cause** can be picked from shaded left-hand column	
External Corrosion:	
Internal Corrosion:	
- If External Corrosion:	
1. Results of visual examination:	
- If Other, Describe:	
2. Type of corrosion: *(select all that apply)*	
- 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: *(select all that apply)*	
- 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 Accident?	
If Yes - Year protection started:	
4b. Was shielding, tenting, or disbonding of coating evident at the point of the Accident?	
4c. Has one or more Cathodic Protection Survey been conducted at the point of the Accident?	
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:	
- Other:	
7. Type of corrosion *(select all that apply)*: -	
- 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 *(select all that apply)*: -	
- Field examination	

- Determined by metallurgical analysis	
- Other:	
- If Other, Describe:	
9. Location of corrosion *(select all that apply)*: -	
- Low point in pipe	
- Elbow	
- Other:	
- If Other, Describe:	
10. Was the commodity 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 Accident" (from PART C, Question 3) is Tank/Vessel.	
14. List the year of the most recent inspections:	
14a. API Std 653 Out-of-Service Inspection	
- No Out-of-Service Inspection completed	
14b. API Std 653 In-Service Inspection	
- No In-Service Inspection completed	
Complete the following if any Corrosion Failure sub-cause is selected AND the "Item Involved in Accident" (from PART C, Question 3) is Pipe or Weld.	
15. Has one or more internal inspection tool collected data at the point of the Accident?	
15a. 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:	
- Ultrasonic	
Most recent year:	
- Geometry	
Most recent year:	
- Caliper	
Most recent year:	
- Crack	
Most recent year:	
- Hard Spot	
Most recent year:	
- Combination Tool	
Most recent year:	
- Transverse Field/Triaxial	
Most recent year:	
- Other	
Most recent year:	
Describe:	
16. Has one or more hydrotest or other pressure test been conducted since original construction at the point of the Accident?	
If Yes -	
Most recent year tested:	
Test pressure:	
17. Has one or more Direct Assessment been conducted on this segment?	
- If Yes, and an investigative dig was conducted at the point of the Accident::	
Most recent year conducted:	
- If Yes, but the point of the Accident was not identified as a dig site:	
Most recent year conducted:	
18. Has one or more non-destructive examination been conducted at the point of the Accident since January 1, 2002?	
18a. 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:	
G2 - Natural Force Damage - only one **sub-cause** 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 Accident generated in conjunction with an extreme weather event?	
6a. If Yes, specify: *(select all that apply)*	
- Hurricane	
- Tropical Storm	
- Tornado	
- Other	
- If Other, Describe:	
G3 - Excavation Damage - only one **sub-cause** 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 Accident" (from PART C, Question 3) is Pipe or Weld.	
1. Has one or more internal inspection tool collected data at the point of the Accident?	
1a. If Yes, for each tool used, select type of internal inspection tool and indicate most recent year run: -	
- Magnetic Flux Leakage	
Most recent year conducted:	
- Ultrasonic	
Most recent year conducted:	
- Geometry	
Most recent year conducted:	
- Caliper	
Most recent year conducted:	
- Crack	
Most recent year conducted:	
- Hard Spot	
Most recent year conducted:	
- Combination Tool	
Most recent year conducted:	
- Transverse Field/Triaxial	
Most recent year conducted:	
- Other	
Most recent year conducted:	
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 Accident?	
- 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 Accident:	
Most recent year conducted:	
- If Yes, but the point of the Accident 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 Accident 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	
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:	
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: *(select all that apply)* -	
- 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: *(select all that apply)* -	
- 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:	
12. Was the One-Call Center notified?	
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, the one predominant second level CGA-DIRT Root Cause as well):*	
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 Accident" (from PART C, Question 3) is Pipe or Weld.	
3. Has one or more internal inspection tool collected data at the point of the Accident?	
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 conducted:	
- Ultrasonic	
Most recent year conducted:	
- Geometry	
Most recent year conducted:	
- Caliper	
Most recent year conducted:	
- Crack	
Most recent year conducted:	
- Hard Spot	
Most recent year conducted:	
- Combination Tool	
Most recent year conducted:	
- Transverse Field/Triaxial	
Most recent year conducted:	
- Other	
Most recent year conducted:	
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 since original construction at the point of the Accident?	
- 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 Accident:	
Most recent year conducted:	
- If Yes, but the point of the Accident 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 Accident 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 Intentional Damage:	
8. Specify:	
- If Other, Describe:	
- If Other Outside Force Damage:	
9. Describe:	
G5 - Material Failure of Pipe or Weld - only one **sub-cause** can be selected from the shaded left-hand column	
Use this section to report material failures ONLY IF the "Item Involved in Accident" (from PART C, Question 3) is "Pipe" or "Weld."	
Material Failure of Pipe or Weld – Sub-Cause:	Environmental Cracking-related
1. The sub-cause selected below is based on the following: *(select all that apply)*	
- Field Examination	
- Determined by Metallurgical Analysis	Yes
- Other Analysis	
- If "Other Analysis", Describe:	
- Sub-cause is Tentative or Suspected; Still Under Investigation (Supplemental Report required)	
- If Construction, Installation, or Fabrication-related:	
2. List contributing factors: *(select all that apply)*	
- 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: *(select all that apply)*	
- Fatigue or Vibration-related:	
Specify:	
- If Other, Describe:	
- Mechanical Stress:	
- Other	
- If Other, Describe:	
- If Environmental Cracking-related:	
3. Specify:	Stress Corrosion Cracking
- Other - Describe:	
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	Yes
- 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 Accident?	Yes
5a. If Yes, for each tool used, select type of internal inspection tool and indicate most recent year run:	
- Magnetic Flux Leakage	Yes
Most recent year run:	2008
- Ultrasonic	
Most recent year run:	
- Geometry	Yes
Most recent year run:	2008
- 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 Accident?	Yes
- If Yes:	
Most recent year tested:	1990
Test pressure (psig):	1,890.00
7. Has one or more Direct Assessment been conducted on the pipeline segment?	No
- If Yes, and an investigative dig was conducted at the point of the Accident -	
Most recent year conducted:	
- If Yes, but the point of the Accident 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 Accident since January 1, 2002?	No
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:	
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: *(select all that apply)* -	
- Control Valve	
- Instrumentation	
- SCADA	
- Communications	
- Block Valve	
- Check Valve	
- Relief Valve	
- Power Failure	
- Stopple/Control Fitting	
- ESD System Failure	
- Other	
- If Other – Describe:	
- If Pump or Pump-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 Pump), Tank 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: *(select all that apply)*	
- 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 commodity	
- 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:	
Damage by Operator or Operator's Contractor NOT Related to Excavation and NOT due to Motorized Vehicle/Equipment Damage	No
Describe	
Tank, Vessel, or Sump/Separator Allowed or Caused to Overfill or Overflow	No
1. Specify:	
- If Other, Describe:	
Valve Left or Placed in Wrong Position, but NOT Resulting in a Tank, Vessel, or Sump/Separator Overflow or Facility Overpressure	No
Describe	
Pipeline or Equipment Overpressured	No
Describe	
Equipment Not Installed Properly	No
Describe	
Wrong Equipment Specified or Installed	No
Describe	
Other Incorrect Operation	No
2. Describe:	
Complete the following if any Incorrect Operation sub-cause is selected.	
3. Was this Accident related to *(select all that apply)*: -	
- Inadequate procedure	
- No procedure established	
- Failure to follow procedure	
- Other:	
- If Other, Describe:	
4. What category type was the activity that caused the Accident?	
5. Was the task(s) that led to the Accident 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 Accident Cause - only one **sub-cause** can be selected from the shaded left-hand column

Other Accident Cause – Sub-Cause:	
- If Miscellaneous:	
1. Describe:	
- If Unknown:	
2. Specify:	

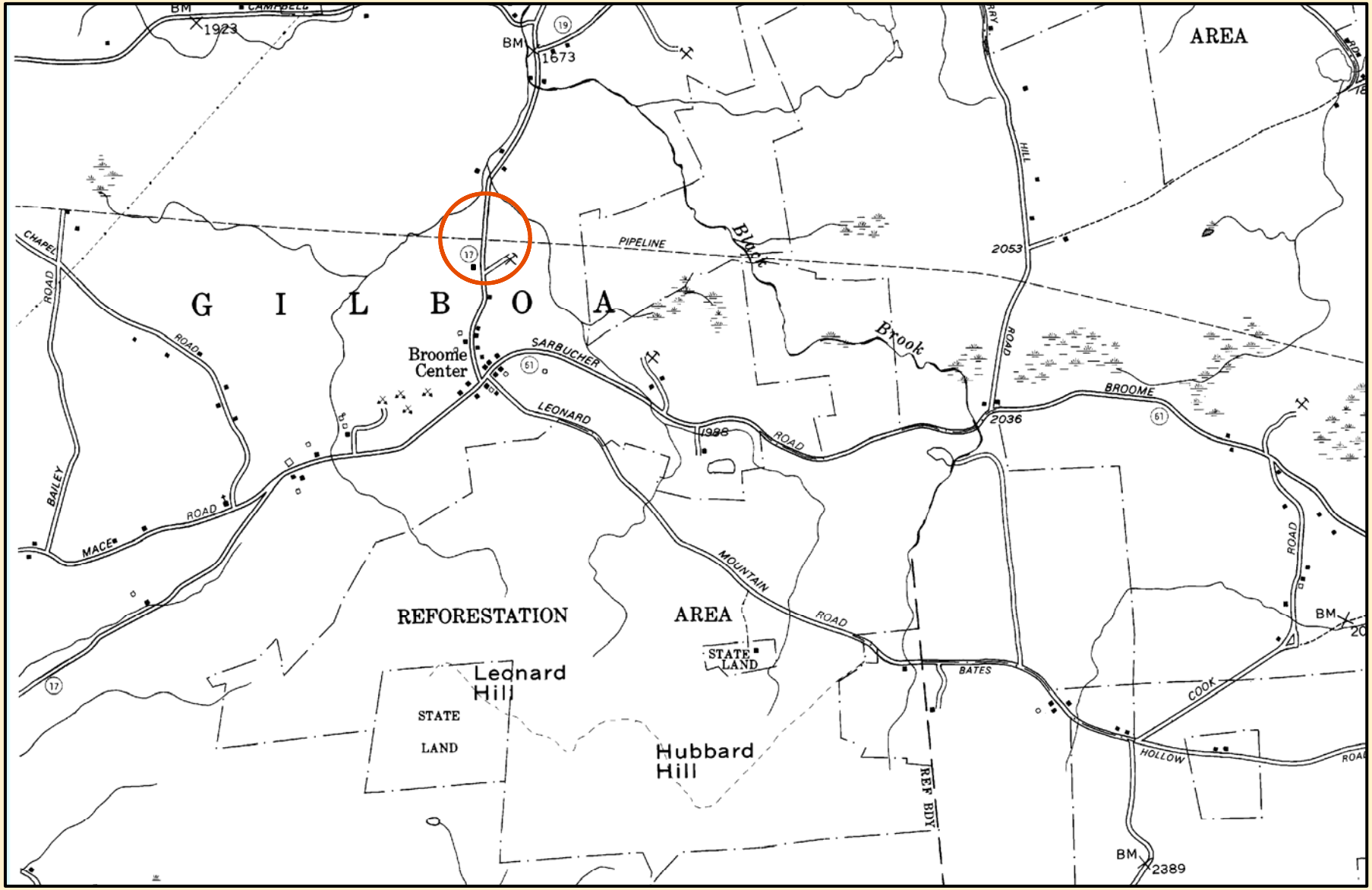
PART H - NARRATIVE DESCRIPTION OF THE ACCIDENT

5/12/2011-The failure occurred as a circumferential leak that originated at a circumferentially-oriented stress corrosion crack (SCC) adjacent to the the toe of a girth weld on the upstream pipe joint.

File Full Name

PART I - PREPARER AND AUTHORIZED SIGNATURE

Preparer's Name	Neal Burrell
Preparer's Title	Sr. Pipeline Compliance Specialist
Preparer's Telephone Number	(713) 381-3536
Preparer's E-mail Address	wnburrell@eprod.com
Preparer's Facsimile Number	(713) 803-1354
Authorized Signature's Name	Neal Burrell
Authorized Signature Title	Sr. Pipeline Compliance Specialist
Authorized Signature Telephone Number	(713) 381-3536
Authorized Signature Email	wnburrell@eprod.com
Date	05/13/2011



TEPPCO P-41 PIPELINE, SCHOHARIE COUNTY, NY
Keyserkill Road Crossing with 660' radius

130938 Appendix C - NRC report 952328

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 # 952328

INCIDENT DESCRIPTION

***Report taken at 18:52 on 27-AUG-10**
Incident Type: PIPELINE
Incident Cause: UNKNOWN
Affected Area:
The incident was discovered on 27-AUG-10 at 17:17 local time.
Affected Medium: AIR ATMOSPHERE

SUSPECTED RESPONSIBLE PARTY

Organization: **EPCO**
HOUSTON, TX

Type of Organization: PRIVATE ENTERPRISE

INCIDENT LOCATION

County: SCHOHARIE
State: NY

3/10 MILES NORTH OFINTERSECTION OF HAZARD SKIL AND FLAT CREEK RD

RELEASED MATERIAL(S)

CHRIS Code: PRP Official Material Name: PROPANE
Also Known As:
Qty Released: 3283 BARREL(S)

DESCRIPTION OF INCIDENT

CALLER IS REPORTING A RELEASE FROM A PIPELINE OF PROPANE, CAUSE IS UNKNOWN.

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:	**UNKN**	**Who Evacuated:**	**Radius/Area:**	
Damages:	**NO**			

Closure Type		Description of Closure	Length of Closure	Direction of Closure	
Air:	**N**				
Road:	**N**				**Major Artery: N**
Waterway:	**N**				
Track:	**N**				

130938 Appendix C - NRC report 952328

Passengers Transferred: NO

Environmental Impact: UNKNOWN
Media Interest: NONE Community Impact due to Material:

REMEDIAL ACTIONS

PIPELINE HAS BEEN SHUT IN, THERE ARE EVACUATIONS BUT THE DETAILS ARE UNKNOWN
Release Secured: NO
Release Rate:
Estimated Release Duration:

WEATHER

Weather: CLEAR, ºF Wind speed: 5 MPH Wind direction: NW

ADDITIONAL AGENCIES NOTIFIED

Federal: NONE
State/Local: LOCAL FD, LEPC
State/Local On Scene: LOCAL FD
State Agency Number: NONE

NOTIFICATIONS BY NRC

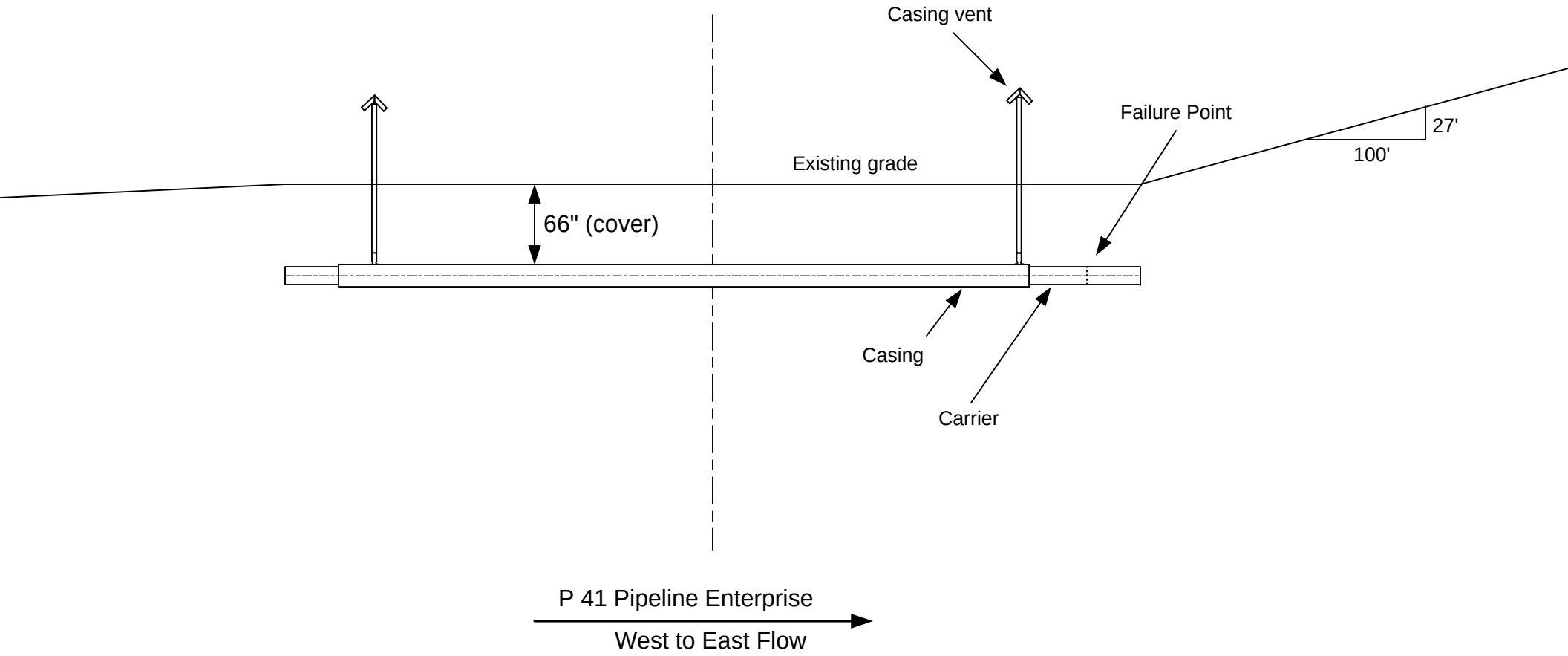
ATLANTIC STRIKE TEAM (MAIN OFFICE)
27-AUG-10 18:58
USCG ICC (ICC ONI)
27-AUG-10 18:58
CT DEPT OF EMERGENCY MGMT (COMMISSIONER)
27-AUG-10 18:58
DHS PROTECTIVE SECURITY ADVISOR (PSA DESK)
27-AUG-10 18:58
DOT CRISIS MANAGEMENT CENTER (MAIN OFFICE)
27-AUG-10 18:58
U.S. EPA II (MAIN OFFICE)
27-AUG-10 19:00
NATIONAL INFRASTRUCTURE COORD CTR (MAIN OFFICE)
27-AUG-10 18:58
NJ OFC HMLND SECURITY & PREPAREDNES (COMMAND CENTER)
27-AUG-10 18:58
NJ STATE POLICE (MARINE SERVICES BUREAU)
27-AUG-10 18:58
NOAA RPTS FOR NY (MAIN OFFICE)
27-AUG-10 18:58
BUREAU TOXIC SUBSTANCE R. WILBURN (MAIN OFFICE)
27-AUG-10 18:58
NY STATE DEC SPILL HOTLINE (MAIN OFFICE)
27-AUG-10 18:58
PIPELINE & HAZMAT SAFETY ADMIN (OFFICE OF PIPELINE SAFETY (AUTO))
27-AUG-10 18:58
USCG DISTRICT 1 (COMMAND CENTER)
27-AUG-10 18:58

ADDITIONAL INFORMATION

NO ADDITIONAL INFORMATION TO REPORT.

***** END INCIDENT REPORT # 952328 *****

130938 Appendix D - Profile of road crossing



Appendix E Metallurgical Analysis Report, Kiefner and Associates, Inc

This document is on file at PHMSA

Appendix F Line P41 Return to Service Hydrostatic Test Plan (Enterprise)

This document is on file at PHMSA

Appendix G - Maint_Rpt_Dig_5_P41_AID_465_NY

This document is on file at PHMSA

Appendix H - RCS_Dig_5_NDE_Binder_8in_Jefferson_to_Selkirk_(LIDP41_AID465)

This document is on file at PHMSA

U.S. DEPARTMENT OF TRANSPORTATION
PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION
OFFICE OF PIPELINE SAFETY
WASHINGTON, DC 20590

In the Matter of	)	
Texas Eastern Products Pipeline Company, LLC ("TEPPCO"),	)	**CPF No. 1-2010-5008H**
a subsidiary of Enterprise Products Partners LP,	)	
Respondent.	)	

AMENDED CORRECTIVE ACTION ORDER

Background and Purpose

At approximately 5:17 p.m. EDT, on August 27, 2010, a failure occurred on TEPPCO's 8-inch Line P-41 at Mile Post (MP) 133.9 along Keyserkill Road in Gilboa, New York (Schoharie County), resulting in a release of propane causing the evacuation of local residents in a three-mile area ("Failure"). Local residents first detected the Failure and phoned the operator. The incident was reported to the National Response Center (NRC Report No. 952328) at 6:52 p.m. EDT on August 27, 2010.

The cause of the Failure has not yet been determined. Pursuant to 49 U.S.C. § 60117, the Pipeline and Hazardous Materials Safety Administration ("PHMSA"), in conjunction with the New York State Department of Public Service Safety Section ("NYS DPS"), has initiated an investigation of the incident.

On September 2, 2010, PHMSA issued TEPPCO a Corrective Action Order ("CAO") under 49 U.S.C. § 60112 and 49 C.F.R. § 190.233, finding that Line P-41 was hazardous to the public, property, and the environment and requiring Respondent to take certain corrective actions.

On September 28, 2010, a hearing was held in Washington, DC. TEPPCO presented evidence and testimony, but did not dispute any of the findings in the CAO or the need for corrective action during that proceeding. The presiding official issued an order later that same day honoring the parties' request to suspend the hearing for the gathering of additional information, subject to the submission of regular reports on the status of those activities.

On November 15, 2010, the parties submitted a joint status report and recommendation for the disposition of this matter. The presiding official ordered the hearing terminated and closed the record shortly thereafter.

I have reviewed the evidence of record and am affirming the finding in the September 2, 2010 CAO that the operation of the section of Line P-41, without corrective measures, would be hazardous to life, property, and the environment.

I am also issuing this Amended CAO ("ACAO") under the authority provided in 49 U.S.C. § 60112 and 49 C.F.R. § 190.233. Consistent with the parties' joint recommendation and the evidence presented at hearing, including additional information about the Failure and the condition of Line P-41, the ACAO requires Respondent to take necessary corrective action to protect the public, property, and the environment from the potential hazards associated with the Failure.

Findings

• TEPPCO is the operator of the 164.76-mile Line P-41 that transports liquid propane through an 8-inch pipe from Watkins Glen, NY, MP 0.00, to Selkirk, NY, MP 164.76 (the "Affected Pipeline Facility"). TEPPCO is owned by Enterprise Products Partners LP.

• TEPPCO operates approximately 9,425 miles of hazardous liquid pipeline consisting of 5,802 miles of interstate hazardous liquid pipelines and 3,623 miles of intrastate hazardous liquid pipelines. The TEPPCO system includes crude oil lines in Texas and Oklahoma, and product pipelines (including propane) that run from south Texas to the northeast United States.

• The section of Line P-41 involved in the Failure was constructed in 1963 and is composed of 8-inch nominal diameter, 0.203-inch wall thickness, Grade X42, pre-1970, Low Frequency – Electric Resistance Welded ("LF-ERW") pipe, manufactured by Bethlehem Steel. It has a tar tape coating and is cathodically protected with an impressed current system.

• The established maximum operating pressure ("MOP") of the Affected Pipeline Facility ranges from 1,320 to 1,423 pounds per square inch gauge ("psig"). The actual operating pressure of the line at the time of the accident was approximately 600 psig at the Selkirk Terminal, with an approximate pressure at the Failure location of 279 psig and a 474 psig pressure at the north Blenheim mainline valve.

• The Failure resulted in the release of an undetermined amount of liquid propane, which did not ignite. The spill resulted in the closure of Keyserkill Road. Emergency responders from Schoharie County and surrounding communities responded to the scene and evacuated an initial 3-mile area which included 15 residences, of which two (2) residences were within 0.25 miles of the Failure location. Twenty-three people were housed in local hotels and later returned to their homes when the area became safe. There were no injuries, fatalities or property damage resulting from the Failure.

• Following the Failure, TEPPCO's personnel initiated an emergency shutdown of Line P-41, including the closure of isolation valves at MP 129.7 (upstream) and MP 139.9 (downstream) of the Failure site. Line P-41 remains out of service from Watkins Glen to Selkirk, NY.

• Preliminary excavations on September 1, 2010, and visual examinations of the pipe at the Failure location, MP 133.9, indicate that the failure was in the bottom portion of a pipe girth weld. The girth weld is located approximately five (5) feet outside from the end of the casing pipe. The failed section of pipe and girth weld will be transported to a metallurgist for failure analysis. A preliminary evaluation of available data from the June 2008 ILI indicates that metal loss anomalies were present on Line P-41 in the vicinity of the rupture. TEPPCO's records indicate that the operator performed an integrity dig, associated with 49 CFR § 195.452, at the Failure location, Mile Post 133.9 in Schoharie County, New York, to examine the anomalies just days before the incident occurred. TEPPCO's pipe inspection determined that no defect repair was necessary and upon which time the pipe was re-coated. A preliminary analysis has indicated that the Failure was caused by stress corrosion cracking, combined with the overburden pressure from the soil placed atop the pipeline at the completion of the pipe inspection.

• Line P-41, approximately 164.76 miles long, was internally inspected in June 2008 with a high resolution ID/OD magnetic flux leakage ("MFL") tool. Anomalies identified resulted in a pressure restriction on four (4) segments of Line P-41 in May of 2010. The MOP in the section of line that includes the failure location was reduced from 1359 psi to 1208 psi.

• TEPPCO informed PHMSA that anomalies in two (2) segments, identified above from the 2008 inline inspection ("ILI"), have not been remediated as of August 27, 2010. PHMSA has requested additional information from TEPPCO regarding these anomalies.

Determination of Necessity for Corrective Action Order

The bases for determining whether a pipeline facility requires corrective action are specified in 49 U.S.C. § 60112 and 49 C.F.R. § 190.233. The Associate Administrator found in the September 2, 2010 CAO that the operation of the section of Line P-41, without corrective measures, would be hazardous to life, property, and the environment. He also issued the CAO without notice and the opportunity for a hearing, based on his finding that a failure to do so expeditiously would likely result in serious harm to life, property or the environment. TEPPCO has not disputed any of these findings and was afforded a hearing after the issuance of the CAO.

After reviewing the evidence of record, I am affirming the determinations in the CAO that the operation of the section of Line P-41, without corrective measures, would be hazardous to life, property, and the environment; and that the failure to issue the CAO expeditiously would likely have resulted in serious harm to life, property, or the environment.

Required Corrective Action

Pursuant to 49 U.S.C. § 60112, I hereby order TEPPCO to immediately take the following corrective actions with respect to the Affected Pipeline Facility:

1. Immediately cease all transportation of hazardous liquid through the Affected Pipeline Facility.

2. Prior to resuming operation of the Affected Pipeline Facility, develop and submit a written repair and re-start plan ("Repair and Restart Plan") for approval to the Director, Eastern Region, Office of Pipeline Safety, Pipeline and Hazardous Materials Safety Administration, 820 Bear Tavern Road, Suite 103, West Trenton, New Jersey 08628 ("Director"). Following the Director's receipt of the Repair and Restart Plan, the Director shall issue an approval or identify to TEPPCO specific deficiencies in the Repair and Restart Plan that must be addressed before the Repair and Restart Plan will be approved. The terms of that Repair and Restart Plan must, at a minimum, include the following provisions:

    A. Exposing of Line P-41, for a total of 40-feet and include a minimum of 3-feet beyond a girth weld on the upstream casing side of the Failure and a minimum of 3-feet on the downstream side of the Failure to examine for corrosion, coating condition, collateral damage, girth weld cracking, pipe buckling, and other issues. Exposing the pipe, removing all of the casing, and transporting the failed carrier pipe including the failed girth weld and an additional acceptable girth weld for mechanical and metallurgical testing. The carrier pipe shall be removed from the casing and the casing discarded. Repair or replace pipe and coating as necessary. Upon completion of pipe replacement and repairs, ensure proper coating, pipe support, backfill, and protection from stones and rocks. PHMSA recognizes that TEPPCO has satisfactorily completed the work required by this Item 2(A);

    B. Making all additional excavations and repairs on the Affected Pipeline Facility that are required to ensure safe operations based upon the findings of the excavation and repair of the failure at Mile Post 133.9 and submit any findings to the Director. TEPPCO must repair the MOP-impacting anomalies on the two (2) segments from the 2008 ILI inspection, as described above, that have not yet been remediated and submit findings of their condition and all repairs to the Director. All excavations and repairs required by this Item 2(B) shall include non-destructive examination in accordance with 49 C.F.R. § 195.228 of the nearest girth weld on either side of the anomaly excavated and all girth welds exposed during the excavation. TEPPCO must evaluate the five (5) excavations performed in 2010 prior to the Failure to determine if the pipe supports implemented were consistent with the support placement requirements in the attached "Supplement to Excavation and Backfill for the P41 Pipeline" (Appendix B). Where it is determined that pipe supports were not implemented as noted above, the location(s) shall be re-excavated and action taken to ensure the pipe on either side of exposed girth welds is supported and no unsupported pipe span exceeds 10 feet. All re-excavations required to address pipe support for this Item 2(B) shall include non-destructive examination in accordance with 49 C.F.R. § 195.228 of all girth welds exposed during the excavation and the nearest accessible girth weld on either side of the excavation. The results of the evaluation and any re-excavations shall be submitted to the Director.

C. Conducting a 125 percent Maximum Operating Pressure ("MOP") hydrostatic test of each segment of the entire Affected Pipeline facility (Line P-41 from Watkins Glen, NY, MP 0.00 to Selkirk, New York MP 164.76), in accordance with 49 C.F.R. Part 195, Subpart E and the Hydrostatic Test Plan attached hereto as Appendix A of this ACAO.

D. Ensuring adequate cathodic protection for the area where the Failure, occurred by establishing a new, permanent electrical test station with an above-grade test point in a protected location. Once backfill and land settling has occurred, ensuring pipe-to-soil readings are within applicable criteria.

E. Completing mechanical and metallurgical testing and failure analysis of the failed pipe, including analysis of soil samples and any foreign materials. The testing and analysis must be completed as follows:

i. Prior to commencing the mechanical and metallurgical testing, provide the Director with the scheduled date, time, and location of the testing, in order to provide an opportunity for a PHMSA representative to witness the testing;

ii. Document the chain-of-custody when handling and transporting the failed pipe section and other evidence from the Failure site;

iii. Utilize the mechanical and metallurgical testing protocols, including the testing laboratory approved by the Director and include the below in the testing protocol for the failed weld, acceptable (non-failed) girth weld, and pipe:

a. Test weld metal (WM), Heat Affected Zone ("HAZ"), and base metal ("BM") toughness, using either Charpy V-Notch or CTOD SENB 2x2B with the notch orientated across the thickness, (i.e., toughness test specimens must be evaluated to ensure that the test specimens are located in the applicable area identified for testing.)
b. WM & BM chemistries,

c. WM, HAZ, and BM Vickers hardness including the WM root, fill & cap pass regions,

d. Weld and pipe misalignment,

e. Weld stress concentration factor due to actual measured weld geometry and misalignment to the pipe,

f. Pipe wall thickness, and

g. Pipe and acceptable weld mechanical and chemical properties

iv. TEPPCO must perform the above Item 2(E)(iii)(a) through (g) on the following new welds and compare the results to the failed weld, acceptable (non-failed) girth weld, and pipe:

a. An "acceptable" girth weld, which has been completed using the Weld Procedure Specification ("WPS") and line pipe, and

b. Weld a new girth weld, new weldolet, and new Type B sleeve installation using current TEPPCO WPS.

v. Ensure that the testing laboratory distributes all resulting reports in their entirety (including all media), whether draft or final, to the Director at the same time as they are made available to Respondent. After TEPPCO has completed the actions set forth in Item 2(A), (B), (D), and (E), and has successfully completed the hydrostatic test on one or more individual segments of Line P-41, pursuant to the Hydrostatic Test Plan, incorporated by reference as Appendix A to the ACAO, TEPPCO shall submit a review of the work performed and notify the Director of its intent to return that segment(s) to service. Following the Director's receipt of TEPPCO's notification, the Director shall issue an approval for the resumption of service or identify to TEPPCO specific deficiencies that must be addressed before the resumption of service will be approved.

3. All imperfections and anomalies, including those in both high consequence areas and non-high consequence areas on the Affected Pipeline Facility that are: equal to or greater than 50-percent wall loss, or have a failure pressure ratio (FPR) of less than 1.39, or do not meet 49 C.F.R. § 195.452(h)(4)(i), (ii), and (iii) must be excavated, remediated and/or repaired within 180 days of receipt of the ACAO, unless a shorter excavation, remediation, and/or repair time is required under 49 C.F.R. Part 195. Unity charts, confirmation excavations of ILI results, and corrosion growth rates must be used to determine the quality and integrity of the excavations, evaluations, and repairs. The results of the excavations and repairs shall be submitted to the Director.

4. Within 60 days of the receipt of the ACAO, submit the following information to the Director.

A. All ILI, excavation, repair, and backfill procedures and findings regarding the condition of the pipe at Mile Post 133.9 prior to the Failure, including all safe pressure calculations and reports, corrosion survey reports, dig reports and operator qualification ("OQ") reports for all TEPPCO personnel involved in the recent work at Mile Post 133.9.

B. All ILI results, excavations, excavation findings, repairs, procedures used in excavations and repairs, list of findings and all anomalies unexcavated, excavated or repaired, ILI interaction criteria used to evaluate findings, repair procedures

used to evaluate findings and used to determine safe pressures of the findings, safe pressures calculations of all findings, or any other information received from the ILI runs performed in 2008 on the Affected Pipeline Facility.

C. The most recent close interval survey finding and annual test site survey readings and casing survey readings for the years 2007, 2008, 2009 and 2010 (if related 2010 activities have already been performed) showing the date of each survey reading on the Affected Pipeline Facility.

D. For the 2008 ILI data, unity charts, and confirmation excavations of ILI results, close interval survey results, test station survey results, excavation results, and identification of all integrity threats on the Affected Pipeline Facility, including integrity threat data integration.

E. Findings from a review of all O&M Plan procedures used for the excavation, evaluation, repair, pipe support, backfilling, and personnel training of the pipeline at the site of the Failure.

F. Any procedural changes resulting from a review of the findings from past failures on the Affected Pipeline Facility from 1980 until the issuance of this ACAO designed to ensure that the O&M Plan procedures are technically sound to ensure safety.

G. The results of a comparative analysis of the 2003 ILI results, the 2008 ILI results, and the 2010 excavation findings to substantiate and adopt a corrosion growth rate, and to help validate the 2008 ILI results of the portion of the Affected Pipeline Facility from Oneonta Terminal (MP 95) to the Selkirk Terminal (MP 164.76).

H. TEPPCO's program documentation and evaluation results of an analysis of the entire Affected Pipeline Facility for public awareness of the pipeline as required in 49 C.F.R. § 195.440 for the years 2007, 2008, 2009, and 2010.

I. Any results or information received from the ILI tool runs performed in 2008 on the Affected Pipeline Facility, including information obtained from the resulting excavations and all associated re-coats and repairs, to the Director. Make any ILI results or information from these tool runs not yet received from the ILI tool vendor available to PHMSA at the same time as the ILI vendor makes them available to Respondent. Within 60 days of receipt of this ACAO, re-analyze all of this information, using the conservative ILI interaction criteria, for the purpose of determining whether any anomalies were present that could have contributed to the Failure and whether any other anomalies of a similar magnitude or similar characteristics are present elsewhere on the Affected Pipeline Facility. Make the results of the ILI analysis available to the Director.

5. Within 60 days of its receipt of the ACAO, TEPPCO shall submit to the Director a written plan to determine the presence of circumferentially-oriented defects ("CO Defect Detection Plan") within the Affected Pipeline Facility, for the Director's approval. Following the Director's receipt of TEPPCO's CO Defect Detection Plan, the Director shall issue an approval of the written plan or identify to TEPPCO specific deficiencies that must be addressed before the written plan will be approved.

   The CO Defect Detection Plan must address all known factors that caused the Failure, conditions which are likely to cause the formation of circumferentially-oriented defects, the investigation for circumferentially-oriented defects that may already be present, and information developed from the actions required by the Required Corrective Action Items 2B, 2C, and 3 of this ACAO. The CO Defect Detection Plan shall require the excavation of locations along the entire Affected Pipeline Facility where conditions exist which are likely to cause the formation of circumferentially-oriented defects and the remediation of defects as per Item 3 above (the "Excavation Project").

   Weather permitting, TEPPCO shall begin work on the Excavation Project within 30 days of the Director's approval of the plan, and its work shall proceed in a professionally reasonable manner, taking into consideration weather conditions and other relevant factors. TEPPCO shall complete the Excavation Project in accordance with the CO Defect Detection Plan within 12 months of the receipt of this ACAO. The results of the Excavation Project shall be submitted to the Director.

   If a viable and commercially available 8" in-line inspection tool that addresses circumferentially-oriented defects become available, TEPPCO must successfully complete an in-line inspection using this tool on the Affected Pipeline Facility from Watkins Glen Pump station (MP 0.00) to the Selkirk Terminal (MP 164.76) as set forth in this Item 5. TEPPCO shall make any ILI results from these tool runs from the ILI tool vendor available to PHMSA at the same time they are made available to TEPPCO.

   For any anomalies (including both circumferential cracking of the pipe and girth weld cracking) identified in an ILI tool run, as described above, TEPPCO shall develop a plan to evaluate and, as appropriate, remediate those anomalies (the "Tool Data Plan"). In developing the Tool Data Plan, TEPPCO shall consider information developed from the ILI tool run and prior ILI tool runs, and from the actions required by Items 2B, 2C, 3 and 5 above. TEPPCO shall submit the Tool Data Plan to the Director for approval.

   Following the Director's receipt of the Tool Data Plan, the Director shall issue an approval of the plan or identify to TEPPCO specific deficiencies that must be addressed before the plan will be approved. Upon approval of the Tool Data Plan, TEPPCO shall implement the plan.

   If TEPPCO has not completed a Successful Tool Run on a segment within 12 months of TEPPCO's receipt of this ACAO, TEPPCO must implement a pressure reduction of 10% of the current MOP for that segment. If TEPPCO has not completed a Successful Tool Run within 26 months of TEPPCO's receipt of this ACAO, TEPPCO must implement an additional pressure reduction of 10% for that segment. For purposes of this ACAO, a

Successful Tool Run of a segment of the Affected Pipeline Facility is completed when TEPPCO's ILI tool vendor certifies that the overall volume of data collected approaches the volume expected, the difference between the length of the pipe segment and the tool measured length is within the specified range, the speed of the tool was within the specified speed limits throughout the run, and spot checks of the ILI raw data verifies data signals are within expected ranges.

If TEPPCO must implement a pressure reduction for failure to complete a Successful Tool Run, TEPPCO will be allowed to increase the pressure back to the MOP for that segment only upon its completion of the Tool Data Plan for any anomalies identified in a Successful Tool Run, as set forth above. In addition, TEPPCO's failure to perform an in-line inspection within 26 months may result in additional compliance actions being imposed by PHMSA. In that event, TEPPCO will be notified of any additional measures PHMSA believes are required and an amendment of this ACAO will be considered.

TEPPCO shall inspect the surface conditions on the right-of-way of the Affected Pipeline at intervals not exceeding 3 weeks, but at least 37 times each calendar year, until the plan to address circumferentially-oriented defects or ~~the~~ implementation of the Tool Data Plan has been completed.

6. Within 180 days of receipt of this ACAO, for the portion of the Affected Pipeline Facility from Watkins Glen Pump Station ("MP 0") to Oneonta Terminal ("MP 95"), TEPPCO must:

    A. perform a comparative analysis of the 2003 ILI results to the 2008 ILI results to substantiate and adopt a corrosion growth rate, and to help validate the 2008 ILI results of that section,

    B. and submit these results of ILI analysis to the Director.

7. Within 180 days of receipt of this ACAO, based upon failure findings, TEPPCO must:

    A. re-evaluate its integrity management assessment schedule and provide documentation for the revised interval length, depth and ILI interaction criteria;

    B. re-evaluate its anomaly assessment process by analyzing and providing related documentation about anomaly growth rate, interval length, depth and interaction criteria;

    C. and submit the results of these analyses and evaluations to the Director.

8. Within 90 days of receipt of this ACAO, TEPPCO must:

    A. perform a close interval survey, conduct a review of annual test site survey readings and casing survey readings for the years 2007, 2008, 2009 and 2010 (if related 2010 activities have already been performed) showing the date of each survey reading and evaluation of the Affected Pipeline Facility for inadequate

corrosion control, and remediate pipe coatings and cathodic protection as necessary; and

B. submit data from these cathodic protection surveys and remediation plans based upon findings, including the running of direct current voltage ("DCVG") surveys or equivalent surveys to find damaged pipe coatings, to the Director prior to performing remediation.

9. Within 90 days of receipt of this ACAO, develop and submit a written remedial work plan ("Remedial Work Plan") to the Director for prior approval. The Remedial Work Plan must fully address all known or suspected factors that caused or contributed to the Failure and must include:

A. The integration of the available information developed from the actions required by Items 2-8 above with relevant pipeline system information, including: previous failure investigations, leak history, repair records, corrosion control/cathodic protection records, in-line inspections, hydrostatic testing, changes in pressure cycling, O&M Procedures for excavation, repairs including girth weld, pipe support, pipe stress analysis during excavations, backfill, and other relevant operating data for the purpose of performing a comprehensive analysis of the available information associated with the factors that caused or contributed to the failure. The analysis of the in-line inspection data must include overlaying the results from previous data from 2003 to present, collected including any and all electrical surveys;

B. The performance of additional field testing, inspections, and evaluations to determine whether and to what extent the conditions associated with the Failure, or any other integrity threatening conditions, are present along the remainder of the Affected Pipeline Facility. Include a detailed description of the criteria to be used for the evaluation and prioritization of any integrity threats/anomalies that are identified. TEPPCO must submit the results of the inspections, field excavations, evaluations, and monitoring to the Director or his representative;

C. The performance of repairs, pipe replacement or other corrective measures that fully remediate the condition(s) associated with the Failure, along the entire Affected Pipeline Facility including HCAs and non-HCAs, or any other integrity-threatening conditions, are identified through the evaluation process. Include a detailed description of the repair criteria and methods to be used in undertaking any repairs or other remedial actions, taking into account engineering repair methods and design factors for permanent repair of imperfections, damages and dents. All anomalies with a pipe wall thickness loss of 50 percent or greater or a failure pressure ratio ("FPR") of less than 1.39, or that do not meet 49 C.F.R. § 195.452(h)(4)(i), (ii), and (iii) must be excavated, remediated and/or repaired on the Affected Pipeline Facility, whether in a high consequence area or non-high consequence area. TEPPCO must develop and conduct a program based upon the Failure and the findings from Items 2-8 above for the entire Affected Pipeline Facility, whether in a high consequence area or non-high consequence area, that

includes usage of ILI or a hydrostatic test program to evaluate all threats, including corrosion, LF-ERW pipe seam, girth weld cracking, pipe buckling and weld failure due to overstressing, and stress corrosion cracking, and submit details of the program and the results to the Director.

D. Provisions for scheduling periodic testing and integrity verification measures to ensure the ongoing safe operation of the Affected Pipeline Facility considering the results of the analyses, inspections, and corrective measures undertaken pursuant to this ACAO. The development of the provisions for periodic testing and integrity verification must consider measures up to and including pipe replacement for the Oneonta to Selkirk section of the Affected Pipeline Facility. Include a process for monitoring metal loss, assessing corrosion procedures, evaluating pipe coating surveys and other field survey results, and how remedial actions are reported and implemented throughout the TEPPCO organization to ensure appropriate resources are allocated and remedial actions are taken in a timely manner when need is identified by field surveys; and

E. A proposed schedule for the actions required by paragraphs (A) through (D) of Item 9 above to be completed within 1-year of this ACAO, include a schedule for excavating and remediating all findings of inadequate corrosion, metal loss (high resolution MFL) and deformation ILI tool surveys for the Affected Pipeline Facility.

10. The Remedial Work Plan will be incorporated into this ACAO and shall be revised by TEPPCO as necessary to include the results of the ILI tool run (metal loss and deformation) evaluations required by Item 4(I) above including re-analyzing all of the June 2008 ILI information using past ILI interaction criteria; and when the results become available and whenever necessary to incorporate new information obtained during the failure investigation and remedial activities undertaken pursuant to this ACAO. Submit any such revisions to the Remedial Work Plan to the Director for prior approval. The Director may approve the Remedial Work Plan elements incrementally.

11. Implement the Remedial Work Plan as it is approved by the Director, including any revisions to the plan.

12. Submit quarterly reports to the Director that: (l) include all available data and results of the testing and evaluations required by this ACAO; and (2) describe the progress of the repairs or other remedial actions being undertaken. The first quarterly report for the period from August 27, 2010, through December 31, 2010, is due by January 15, 2011, and these quarterly reports must continue while this ACAO is in effect.

13. Maintain documentation of the costs associated with implementation of this ACAO. Include in each quarterly report submitted pursuant to Required Corrective Action Item 12, the to-date total costs associated with: (1) testing, evaluations and information analysis; (2) revisions of procedures and additional monitoring and inspections; and (3) physical changes to pipeline infrastructure, including repairs, replacements and other modifications.

14. When providing or making related information available to the Director, annotate each submission to reference the origin of such individual requirement noted above.

15. When providing or making related information available to the Director, TEPPCO must provide the identical information to the Chief – Safety Section of NYS DPS.

16. Label all related documents and electronic correspondence with CPF No. 1-2010-5008H.

The Director may approve each submission required under this ACAO in whole or in part and with or without modifications or conditions. TEPPCO must take all action required by the submission as approved or modified by the Director. If the Director disapproves all or any portion of a submission, TEPPCO must correct all deficiencies within the time specified by the Director, and resubmit it for approval.

The Director may grant an extension of time for compliance with any of the terms of this ACAO upon a timely written request submitted demonstrating good cause for an extension.

The actions required by this ACAO are in addition to, and do not waive, any requirements that apply to Respondent's pipeline system under the Pipeline Safety Laws and Regulations or any other provision of Federal or State law.

Respondent may appeal any decision of the Director to the Associate Administrator for Pipeline Safety. Decisions of the Associate Administrator are final. Decisions of the Associate Administrator constitute a final agency order.

In accordance with 49 U.S.C. § 60122 and 49 C.F.R. § 190.223, failure to comply with this ACAO may result in the administrative assessment of civil penalties and referral to the Attorney General for appropriate relief in a district court of the United States pursuant to 49 U.S.C. § 60120.

The terms and conditions of this ACAO are effective upon service in accordance with 49 C.F.R. § 190.5.

NOV 24 2010

Jeffrey D. Wiese
Associate Administrator
for Pipeline Safety

Date Issued

PHOTO 1: FACING NORTH ON KEYSERKILL ROAD (AIR MOVER @ 3:30 POSITION)

PHOTO 2: EXPOSING PIPE ON DOWNSTREAM DIG 8/29/10

PHOTO 3: FINISHED EXCAVATION DOWNSTREAM DIG 8/29/10

PHOTO 4: DOWNSTREAM LOOKING UPSTREAM 8/29/10

PHOTO 5: SUSPECTED LEAK IS LOCATED NEAR MARKER (UNDER STRAW)
8/29/10

PHOTO 6: ROCKY SOIL AROUND PIPE UPSTREAM DIG 8/29/10

PHOTO 7: STAGING AREA (APPROXIMATELY 1000’ SOUTH OF PIPELINE) 8/29/10

PHOTO 8: COATING REMOVAL DOWNSTREAM DIG 8/30/10

PHOTO 9: WELDING OF DOWNSTREAM STOPPLE 8/30/10

PHOTO 10: COMPLETED STOPPLE FITTING DOWNSTREAM 8/30/10

PHOTO 11: EXPOSED PIPE UPSTREAM DIG 8/30/10

PHOTO 12: PIPE DATA ON TOP OF PIPE UPSTREAM DIG 8/30/10

PHOTO 13: WELDING OF STOPPLE FITTING UPSTREAM DIG 8/30/10

PHOTO 14: FLARE SET UP 8/30/10

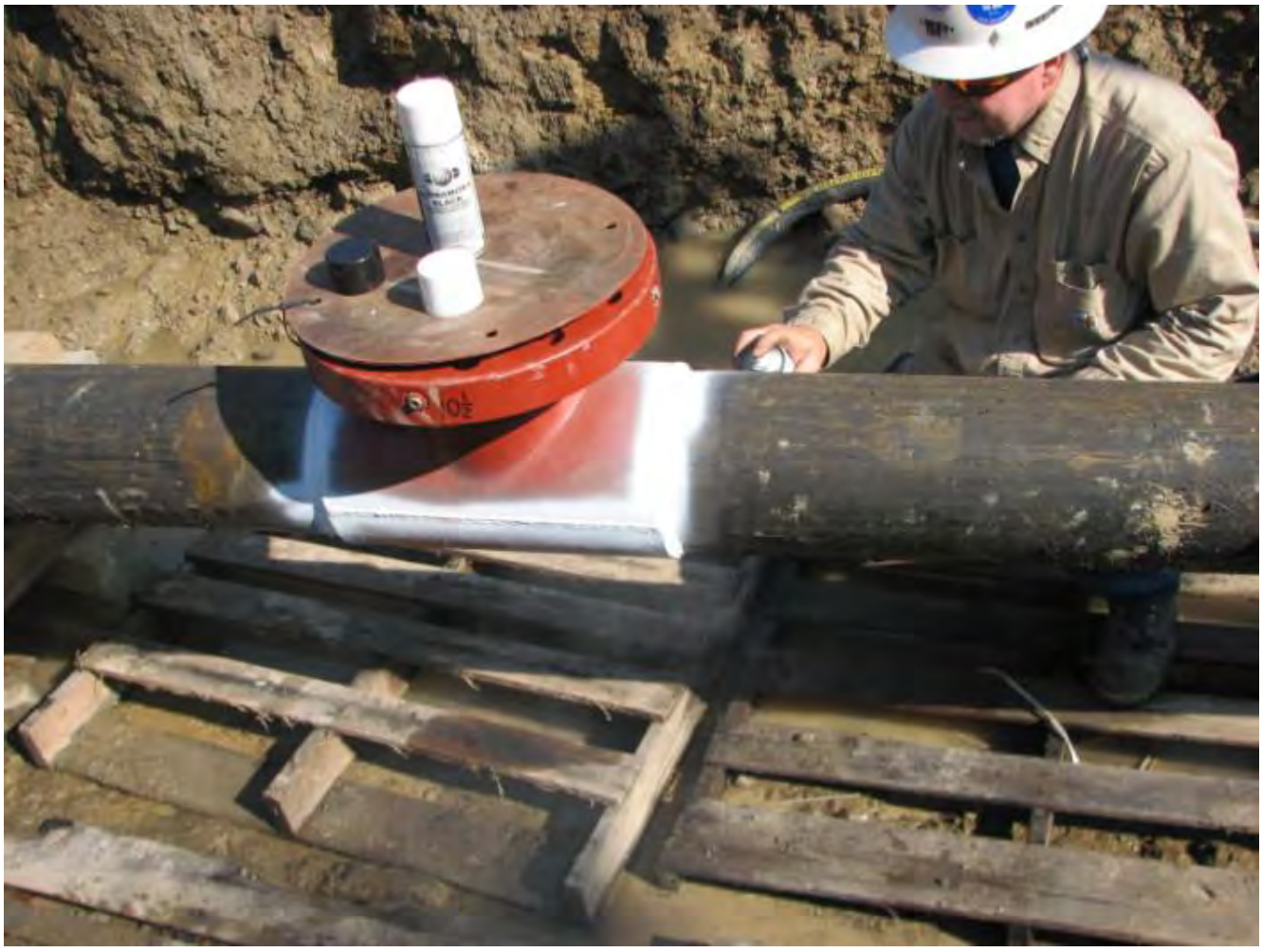


PHOTO 15: MAG PARTICLE INSPECTION UPSTREAM STOPPLE 8/31/10

PHOTO 16: MAG PARTICLE 2 UPSTREAM DIG 8/31/10

PHOTO 17: TAPPING PIPELINE UPSTREAM DIG 8/31/10

PHOTO 18: COUPON REMOVED FROM DOWNSTREAM TAP 8/31/10

PHOTO 19: EXCAVATING FROST BALL AROUND PIPE 09/01/10

PHOTO 20: CASING, CARRIER PIPE AND VENT STACK EXPOSED, DOWNSTREAM SIDE 09/01/10

PHOTO 21: EXAMINING PIPE IN AREA OF SUSPECTED LEAK 09/01/10

PHOTO 22: CRACK PARTIALLY EXPOSED 09/01/10

PHOTO 23: CRACK ON BOTTOM QUADRANT'S OF PIPE 09/02/10

PHOTO 24: PIPE SPECIMEN PREPARED FOR REMOVAL 09/02/10

PHOTO 25: PIPE SPECIMEN REMOVED 09/02/10

PHOTO 26: INTERNAL VIEW OF PIPE (WD 40 & PLASTIC WRAP VISIBLE) 09/02/10

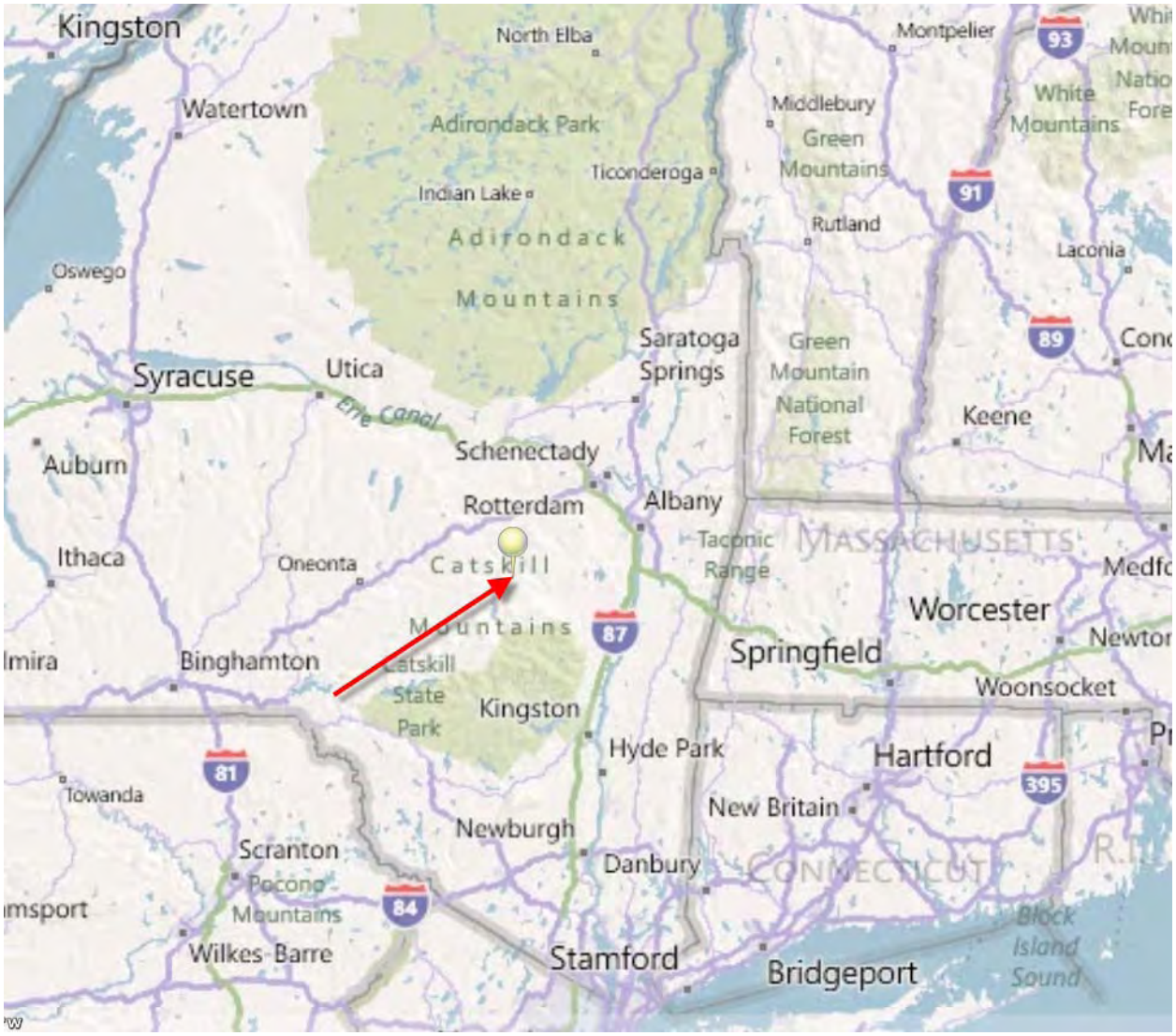
PHOTO 27: PIPE SPECIMEN PREPARED FOR SHIPPING 09/02/10

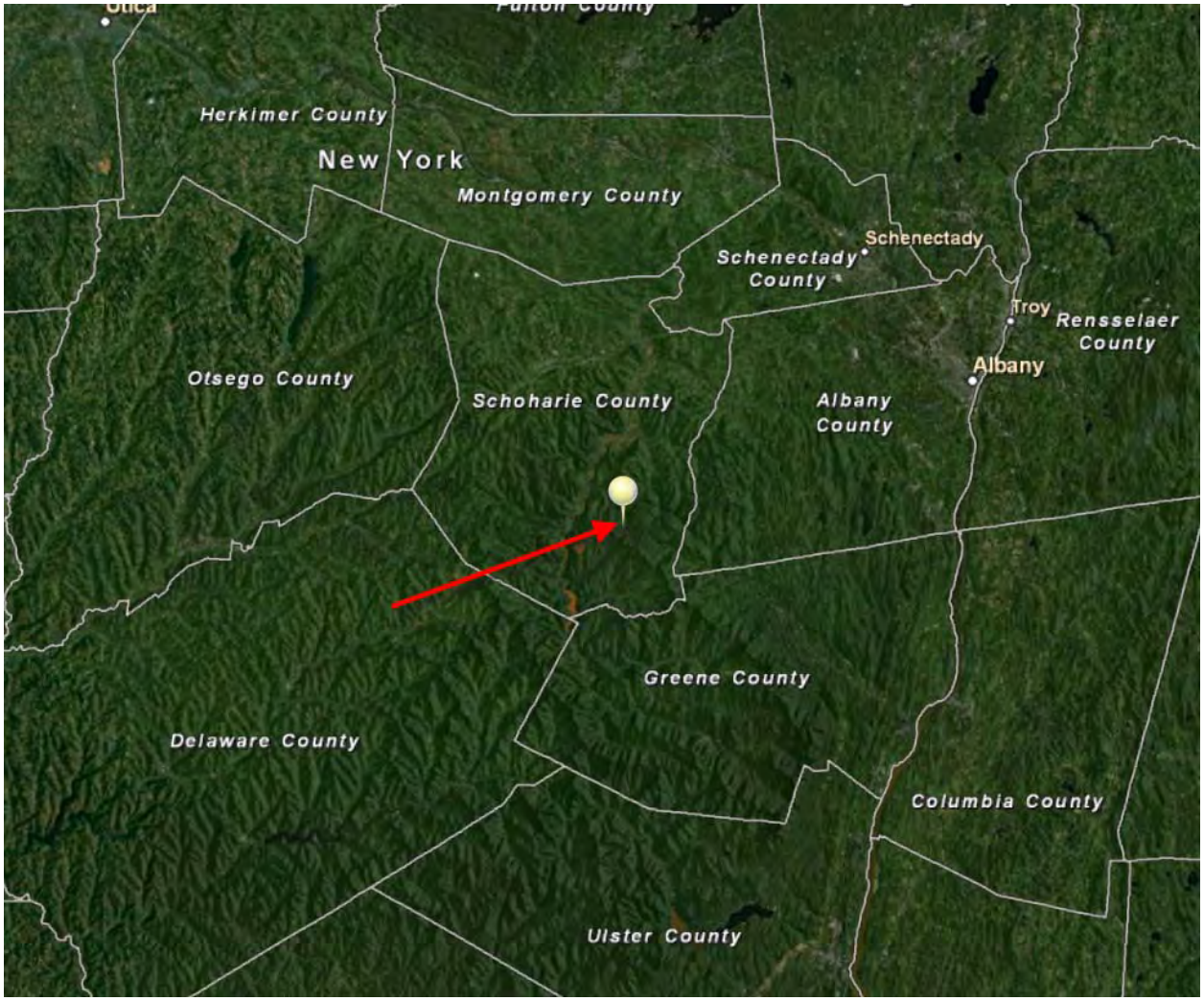
PHOTO 28: NEW PIPE BEING SPOOLED IN UNDER ROAD CROSSING 09/02/10


Belleville
Kingston
Watertown
Montpelier
Vermont
Rutland
Lebanon
Hamps
Rochester
Syracuse
Utica
Keene
New York
Albany
Massachus
Worcester
Springfield
Binghamton
Incident Location
Hartford
Connecticut
Beacon
Danbury
New
Haven
Bridgeport
Scranton
Williamsport
Newton

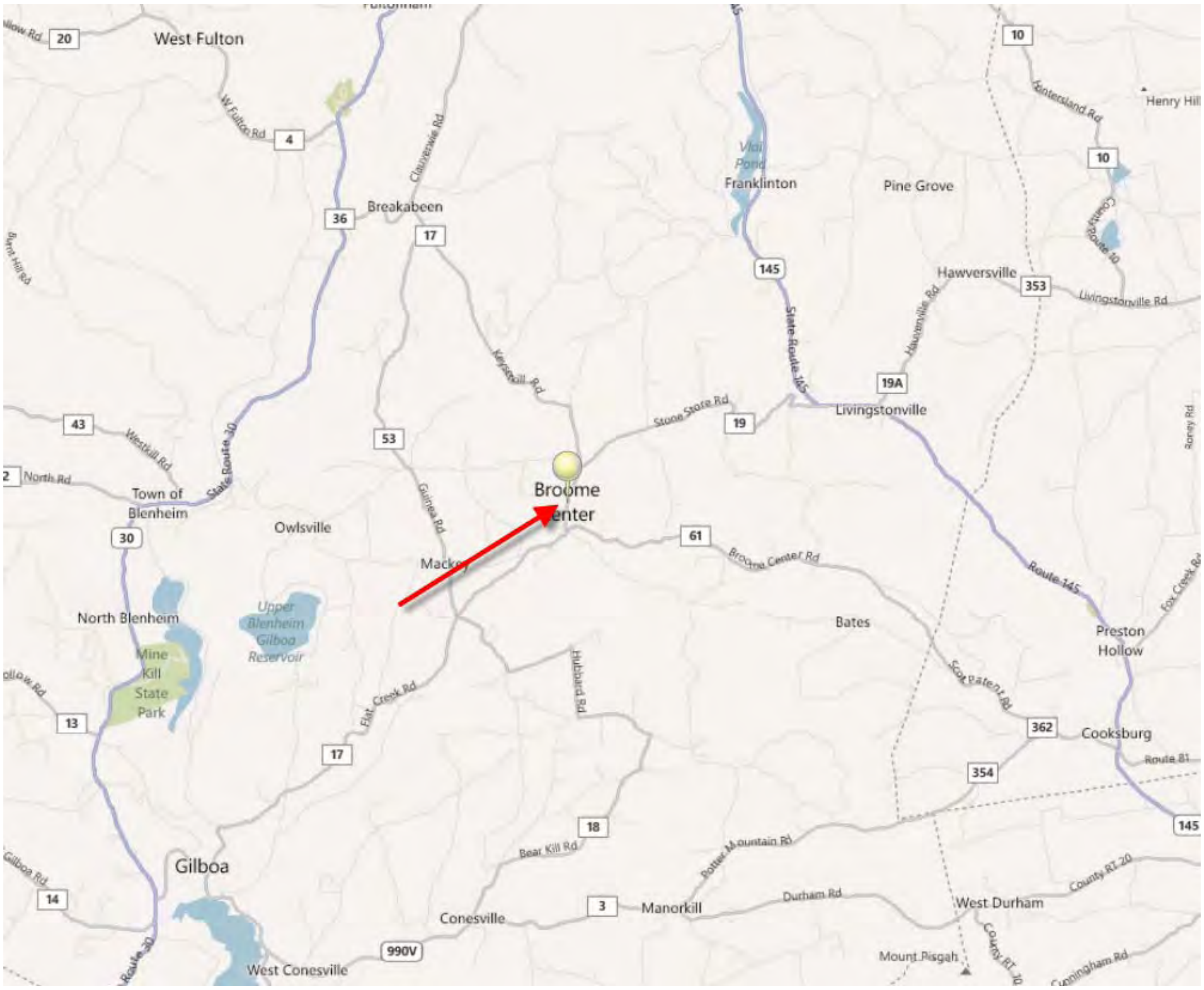

Pipeline transports west to east
Watkins Glen
Oneonta
Leak Location
Selkirk
Binghamton
Albany
Poughkeepsie

[redacted]

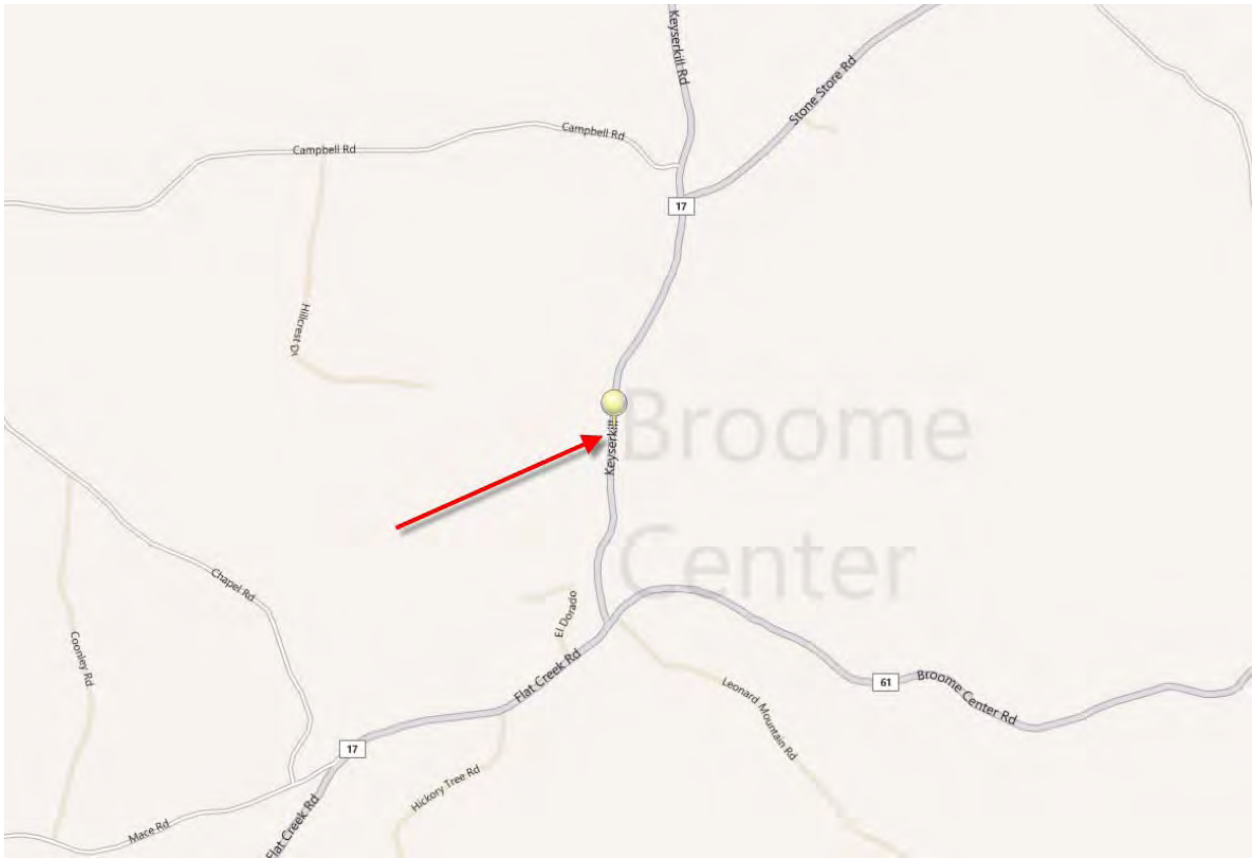

Kingston
North Elba
Montpelier
93
Watertown
Adirondack Park
Middlebury
Green Mountains
White Mountains
Ticonderoga
Indian Lake
91
Rutland
Adirondack Mountains
Laconia
Oswego
89
Saratoga Springs
Green Mountain National Forest
Syracuse
Utica
Erie Canal
Keene
Auburn
Schenectady
Rotterdam
Albany
Taconic Range
MASSACHUSETTS
Ithaca
Oneonta
Catskill Mountains
Worcester
87
Springfield
Binghamton
Catskill State Park
Kingston
Woonsocket
Hyde Park
Hartford
81
395
Towanda
New Britain
Newburgh
Scranton
Danbury
CONNECTICUT
Pocono Mountains
84
Wilkes-Barre
Stamford
Bridgeport
Block Island Sound


Herkimer County
New York
Montgomery County
Schenectady
Schenectady County
Troy
Rensselaer County
Albany
Otsego County
Schoharie County
Albany County
Greene County
Delaware County
Columbia County
Ulster County


Broome
Center
Owlsville
Mackey
Livingstonville
Bates
Blenheim Gilboa
Reservoir
30
17
53
19
145
19A
61
18
362
Keyserkill Rd
Gates Hill Rd
Zach Hill Rd
Stone Store Rd
Federal City Rd
Blueberry Hill Rd
Gumaer Rd
Chapel Rd
Hillcrest Dr
Brenner Rd
Harrington Rd
Mace Rd
Leonard Mountain Rd
Broome Center Rd
Knowles Rd
Flat Creek Rd
Hubbard Rd
Bull Hill Rd
Pucker St
Peaceful Rd
Rock Rd
Maple Rd
Kingsley Rd
State Route 145


West Fulton
Breakabeen
Franklinton
Pine Grove
Hawversville
Livingstonville
Broome Center
Town of Blenheim
Owlsville
North Blenheim
Upper Blenheim Gilboa Reservoir
Mine Kill State Park
Bates
Preston Hollow
Cooksburg
Gilboa
Conesville
Manorkill
West Durham
Mount Pisgah
West Conesville
Stone Store Rd
Broome Center Rd
Route 145
State Route 30
Bear Kill Rd
Durham Rd
Hubbard Rd
Flat Creek Rd
Keyserkill Rd
Henry Hill

130938 Appendix K - Incident Location Map




Hillcrest Dr
17
Keyser Rd
El Dorado
61
17
Creek Rd
Broome Ce