

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

Principal Investigator Gene Roberson
Region Director R. M. Seeley
Date of Report 7/ 11/2011
Subject Failure Investigation Report – Mid-Valley Pipeline Internal Corrosion

Operator, Location, & Consequences

Date of Failure 3/1/2010
Commodity Released Crude Oil
City/County & State Longview/Gregg County, TX
OpID & Operator Name 12470 Mid-Valley Pipeline Company
Unit # & Unit Name 9754 Haynesville Area
SMART Activity # 129379
Milepost / Location Mid-Valley Tank Farm, Longview, TX
Type of Failure Internal corrosion in manifold area of tank farm
Fatalities 0
Injuries 0
Description of area impacted Operator's facility only. In HCA for surface water, but no water affected.
Property Damage \$16,018

Executive Summary

On March 1, 2010 Sunoco Pipeline Company made a notification to the National Response Center reporting a crude oil release on their Mid-Valley Pipeline (Mid-Valley) system. Upon review of the information an investigator from the Southwest Region was dispatched to the accident site.

At approximately 8:10 am CST, March 1, 2010, Mid-Valley identified a release of crude oil in the manifold area of the Mid-Valley tank farm in Longview, TX. The header consisted of 8.625" diameter, 0.350" wall, Grade A (24,000 SMYS) pipe. The Mid-Valley facility is manned during normal business hours and all line ups for deliveries are performed manually. Only emergency valves have automatic actuation. Mid-Valley employees had lined up the manifold for the days deliveries and product was being received into the station. At approximately 8:10 am, crude oil was observed "gushing" from the soil in the manifold area. Mid-Valley responded by calling Lion Oil to shut down their pump, stopping the delivery. The flow was stopped at approximately 8:18 am. Observations in the manifold area indicated that a buried section of the manifold piping that delivered crude oil to tanks # 13 and #14 was releasing product due to an unknown reason. The section of manifold piping had an MOP of 275 psig, and was operating at less than 150 psig when the release occurred.

One hundred ninety eight (198) barrels of crude oil were estimated to have been released and 196 barrels were recovered from the secondary containment area with-in Mid-Valley's site. Mid-Valley isolated the underground section of the manifold piping and installed blind flanges to isolate it from the above ground header. Once the spill was controlled, approximately 25 feet of 8" buried header was then excavated for evaluation and/or removal. Upon excavation, it was determined that the release originated from two localized spots of internal corrosion in the header. Mid-Valley has determined that crude oil feed to tanks #13 and #14 is not essential to their operations and has chosen to not replace this section of the header. It was established that the section of piping that failed was subject to pressure as a dead leg with no flow during normal operations.

System Details

Mid-Valley provides Midwest refiners with access to various crude streams available at Longview, Texas, including West Texas intermediate (WTI) and West Texas sour via West Texas Gulf Pipe Line Company and foreign and Gulf of Mexico crude sourced from Beaumont/Nederland, Texas. Mid-Valley includes approximately 1,100 miles of pipe (mostly 20" and 22").

Mid-Valley is 55.3% owned and operated by Sunoco Logistics Partners, L. P., which is a master limited partnership formed to acquire, own and operate refined product and crude oil pipelines and terminal facilities, including those of Sunoco, Inc. Sunoco Logistics, through Sunoco Pipeline and another subsidiary, Sunoco Partners Marketing & Terminals L.P., transport, terminal, and store refined products and crude oil in 12 states.

The unit consists of approximately 228 miles of 20" mainline, a 44 mile 12" lateral, and a 20 mile 8" lateral, eight mainline pump stations, two lateral pump stations and two breakout tank facilities (Longview and Haynesville).

The Longview breakout tank facility consists of 14 tanks and the manifold system where the accident occurred. Mid-Valley identified this facility as an HCA-could-affect area due to the proximity near the Sabine River. Mid-Valley had constructed secondary on-site containment as preventative and mitigative measure to lessen the impact of any releases in the facility. This containment prevented the spill from leaving the Longview Tank facility and thus mitigating its impact to the associated HCA. (See Appendix C)



Events Leading up to the Failure

The Longview Tank Facility has a common header that interconnects the 14 breakout tanks. The station is aligned manually to deliver product into the appropriate tank. This morning Mid-Valley employees had manually lined up the manifold valves to receive a shipment of crude oil from Lion Oil into the #7 tank. Upon start up at approximately 8:10 am, crude oil was observed gushing from the soil in the manifold area. Mid-Valley responded by calling Lion Oil to shut down their pump, stopping the delivery to Mid-Valley. The flow was stopped at approximately 8:18 am. The release had occurred from one of several buried lines within the manifold area.

Sunoco reported the release to the NRC at approximately 11:41 CDT on March 1, 2010. (See Appendix A)

Emergency Response

Mid-Valley's technician activated the Emergency Response Plan for the local site. All flows into and out of the site were shut down. The rupture resulted in the release of 198 barrels of crude oil, which was contained in secondary containment on Mid-Valley's site. No explosion or fire occurred. Emergency contractors were on site recovering released crude oil within 45 minutes of the release.

Summary of Return-to-service

Following the emergency response, Mid Valley isolated the failed section of manifold pipe from the system. Upon isolation with blind flanges, the manifold was pressured up, monitored and visually inspected for system integrity. The manifold was returned to service the evening of March 1, 2010 when Mid-Valley was confident that all systems were safe.

Investigation Details

At approximately 8:10 am CST, March 1, 2010, Mid-Valley Pipeline Co. (Mid-Valley) reported to the National Response Center a release of crude oil in the manifold area of the Mid-Valley tank farm in Longview, TX. PHMSA's Southwest Region received the incident notification and dispatched an investigator to the site. The investigator arrived on site at 3 pm that afternoon. Vacuum trucks had picked up most of the released product by the time an inspector arrived on site. It was observed that no crude oil had been released beyond Mid-Valley's facility site. Clean up was continuing for a very small amount of crude that remained in the secondary containment area. The operator's written report can be seen in Appendix B.

The MOP of the manifold is 275 psig and the incident occurred at less than 150 psig. The leak was observed at approximately 8:10 am and the station was shut down by 8:18 am. The investigation showed that the incident was initially discovered by the technician on site who observed the release and acted promptly to shut in and secure the manifold.

Through the investigation we learned that there is a common header at this facility and depending on the product movement some sections would see product movement and some sections would not. The entire header does see a common pressure. The investigation was unable to determine why this section leaked when it did. This specific section was not flowing product and it has not for a long time. The pressures were consistent with other times and no other operational anomalies were identified.

The operator removed approximately 25 feet of 8 5/8 inch pipe that contained the failure section to evaluate the cause. According to the operator, this section of line will not be replaced.

The PHMSA Investigator was able to view the release site on the pipe, but close examination was limited due to its location. Further review was to be done after removal was complete. Cause appeared to be from internal corrosion. Photos of the failed section can be seen in Appendix D.

Mid-Valley will monitor the manifold system for conditions conducive to internal corrosion with the installation of internal coupons. To address conditions of Mid-Valley's IMP program, coupon holders had been installed prior to the release for monitoring internal corrosion and local procedures for operation and monitoring were being developed. This coupon monitoring system has since been placed in-service. Additionally, Mid-Valley has completed a facility piping review to identify other potential no flow/low flow areas in the manifold that pose a risk of internal corrosion and developed corrective action plans where appropriate.

Metallurgical Analysis

The section of pipe was not sent to a lab for analysis. Direct observation determined the failure was due to two localized spots of internal corrosion in the buried header. The failed section was a dead leg of pipe that was subject to pressure fluctuations with no flow during normal operations.

Findings and Contributing Factors

The leak occurred at approximately 8:10 on March 1, 2010. The discovery and isolation was prompt and operator's actions were appropriate.

While the leak occurred at a facility that could impact an HCA no product reached the HCA.

The failure initiated from 2 isolated incidences of internal spot corrosion, at the 6:00 o'clock position in the header. No other indications of internal corrosion were found in the header after it was removed and investigated.

Appendices

- A Telephonic Notice Report – NRC #932647
- B Written Accident Report 20100014
- C Operator and System Maps
- D Failure Site Photos

Appendix A Telephonic Notice Report - NRC#932647

-----Original Message-----

From: HQS-PF-flidr-NRC@uscg.mil [mailto:HQS-PF-flidr-NRC@uscg.mil]
Sent: Monday, March 01, 2010 10:49 AM
To: PHP Accident/Incident Cadre <PHMSA>; CMC-01 (OST)
Subject: NRC#932647

NATIONAL RESPONSE CENTER 1-800-424-8802
GOVERNMENT USE ONLYGOVERNMENT USE ONLY***

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

Incident Report # 932647

INCIDENT DESCRIPTION

*Report taken by: CIV NYDIA RAWLS at 11:41 on 01-MAR-10
Incident Type: FIXED
Incident Cause: UNKNOWN
Affected Area:
Incident occurred on 01-MAR-10 at 08:15 local incident time.
Affected Medium: LAND GROUND

REPORTING PARTY

Name: DAVID BORN
Organization: SUNOCO PIPELINE CO.
Address: ONE FLOUR DANIEL DRIVE
BLDG A, LEVEL 3
SUGARLAND, TX 77478
SUNOCO PIPELINE CO. reported for the responsible party.
PRIMARY Phone: (281)6376497
Type of Organization: PRIVATE ENTERPRISE

SUSPECTED RESPONSIBLE PARTY

Name: DAVID BORN
Organization: MID-VALLEY PIPELINC CO.
Address: 1010 COX DAIRY ROAD
LONGVIEW, TX 75604
PRIMARY Phone: (281)6376497 CELLULAR Phone: (713)7022091

INCIDENT LOCATION

1010 COX DAIRY ROAD County: GREGG
City: LONGVIEW State: TX Zip: 75604
PUMP STATION

RELEASED MATERIAL(S)

CHRIS Code: OIL Official Material Name: OIL: CRUDE
Also Known As:
Qty Released: 190 BARREL(S)

DESCRIPTION OF INCIDENT

CALLER IS REPORTING A RELEASE OF CRUDE OIL FROM AN ON SHORE PIPELINE DUE TO UNKNOWN CAUSES. MATERIAL RELEASED ONTO LAND AT THE LONGVIEW STATION.

SENSITIVE INFORMATION

INCIDENT DETAILS

Package: N/A
Building ID:
Type of Fixed Object: OTHER
Power Generating Facility: NO
Generating Capacity:
Type of Fuel:
NPDES:
NPDES Compliance: UNKNOWN

IMPACT

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

Closure Type	Description of Closure	Hours Closed	Direction of Closure
Air:	N		
Road:	N		Major Artery:N
Waterway:	N		
Track:	N		

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

REMEDIAL ACTIONS

PIPELINE WAS SHUT DOWN, RELEASE WAS CONTAINED TO THE PROPERTY AND THE RETENTION DEPRESSION (POND AREA).
Release Secured: YES
Release Rate:
Estimated Release Duration:

WEATHER

Weather: PARTLY CLOUDY, 58°F Wind speed: 5 MPH Wind directi

ADDITIONAL AGENCIES NOTIFIED

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

NOTIFICATIONS BY NRC

DHS PROTECTIVE SECURITY ADVISOR (PSA DESK)
01-MAR-10 11:49 (703)2355724
DOT CRISIS MANAGEMENT CENTER (MAIN OFFICE)
01-MAR-10 11:49 (202)3661863
U.S. EPA VI (MAIN OFFICE)
(866)3727745
GULF STRIKE TEAM (MAIN OFFICE)
01-MAR-10 11:49 (251)4416601
JFO-LA (COMMAND CENTER)
01-MAR-10 11:49 (225)3366513
NATIONAL INFRASTRUCTURE COORD CTR (MAIN OFFICE)
01-MAR-10 11:49 (202)2829201
NOAA RPTS FOR TX (MAIN OFFICE)
01-MAR-10 11:49 (206)5264911
PIPELINE & HAZMAT SAFETY ADMIN (OFFICE OF PIPELINE SAFETY (AUTO))
01-MAR-10 11:49 (202)3660568
TCEQ (MAIN OFFICE)
01-MAR-10 11:49 (512)2392507
TEXAS STATE OPERATIONS CENTER (COMMAND CENTER)
01-MAR-10 11:49 (512)4242208

ADDITIONAL INFORMATION

CALLER WILL NOTIFY THE TX RAILROAD COMMISSION (TRRC) AND THE OIL
AND GAS DIVISION NEXT.

*** END INCIDENT REPORT #932647 ***

Report any problems by calling 1-800-424-8802
PLEASE VISIT OUR WEB SITE AT <http://www.nrc.uscg.mil>

Appendix B Written Accident Report - 20100014

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:

No.

20100014 - 15090

(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
Report Status:	Submitted		
Create Date:	05/12/2010		
1. Operator's OPS-issued Operator Identification Number (OPID):	12470		
2. Name of Operator	MID - VALLEY PIPELINE CO		
3. Address of Operator:			
3a. Street Address	525 FRITZTOWN ROAD		
3b. City	SINKING SPRING		
3c. State	Pennsylvania		
3d. Zip Code	19608		
4. Local time (24-hr clock) and date of the Accident:	03/01/2010 08:10		
5. Location of Accident:			
Latitude:	32.48325		
Longitude:	-94.83034		
6. National Response Center Report Number (if applicable):	932647		
7. Local time (24-hr clock) and date of initial telephonic report to the National Response Center (if applicable):	03/01/2010 11:41		
8. Commodity released: (select only one, based on predominant volume released)	Crude Oil		
- Specify Commodity Subtype:			
- 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):	198.00		
10. Estimated volume of intentional and/or controlled release/blowdown (Barrels):			
11. Estimated volume of commodity recovered (Barrels):	196.00		
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:	03/01/2010 08:12
14b. Local time pipeline/facility restarted:	03/01/2010 14:00
- Still shut down? (* Supplemental Report Required)	
15. Did the commodity ignite?	No
16. Did the commodity explode?	No
17. Number of general public evacuated:	0
18. Time sequence (use local time, 24-hour clock):	
18a. Local time Operator identified Accident:	03/01/2010 08:10
18b. Local time Operator resources arrived on site:	03/01/2010 08:10
PART B - ADDITIONAL LOCATION INFORMATION	
1. Was the origin of Accident onshore?	Yes
<i>If Yes, Complete Questions (2-12)</i>	
<i>If No, Complete Questions (13-15)</i>	
- If Onshore:	
2. State:	Texas
3. Zip Code:	75604
4. City:	Longview
5. County or Parish:	Gregg
6. Operator-designated location:	Milepost/Valve Station
Specify:	MP 0
7. Pipeline/Facility name:	Longview Station
8. Segment name/ID:	Lion Oil Manifold Header
9. Was Accident on Federal land, other than the Outer Continental Shelf (OCS)?	No
10. Location of Accident:	Totally contained on Operator-controlled property
11. Area of Accident (as found):	Underground
Specify:	Under soil
- If Other, Describe:	
Depth-of-Cover (in):	18
12. Did Accident occur in a crossing?	No
- If Yes, specify below:	
- If Bridge crossing –	
Cased/ Uncased:	
- If Railroad crossing –	
Cased/ Uncased/ Bored/drilled	
- If Road crossing –	
Cased/ Uncased/ Bored/drilled	
- 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 Pump/Meter Station Equipment and Piping
- 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):	.35
3c. SMYS (Specified Minimum Yield Strength) of pipe (psi):	25,000
3d. Pipe specification:	Grade A
3e. Pipe Seam, specify:	Longitudinal ERW - Unknown Frequency
- If Other, Describe:	
3f. Pipe manufacturer:	Unknown
3g. Year of manufacture:	1976
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:	1976
5. Material involved in Accident:	Carbon Steel
- If Material other than Carbon Steel, specify:	
6. Type of Accident Involved:	Rupture
- If Mechanical Puncture – Specify Approx. size:	
in. (axial) by	
in. (circumferential)	
- If Leak - Select Type:	
- If Other, Describe:	
- If Rupture - Select Orientation:	Circumferential
- If Other, Describe:	
Approx. size: in. (widest opening) by	2
in. (length circumferentially or axially)	2
- If Other – Describe:	
PART D - ADDITIONAL CONSEQUENCE INFORMATION	
1. Wildlife impact:	No
1a. If Yes, specify all that apply:	
- Fish/aquatic	
- Birds	
- Terrestrial	
2. Soil contamination:	Yes
3. Long term impact assessment performed or planned:	No
4. Anticipated remediation:	Yes
4a. If Yes, specify all that apply:	
- Surface water	
- Groundwater	
- Soil	Yes
- 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?	Yes
7. Did the released commodity reach or occur in one or more High Consequence Area (HCA)?	Yes
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	Yes
Was this HCA identified in the "could affect" determination for this Accident site in the Operator's Integrity Management Program?	Yes
- 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	\$
8b. Estimated cost of commodity lost	\$ 150
8c. Estimated cost of Operator's property damage & repairs	\$ 1,134
8d. Estimated cost of Operator's emergency response	\$ 11,470
8e. Estimated cost of Operator's environmental remediation	\$ 3,264
8f. Estimated other costs	\$
Describe:	
8g. Estimated total costs (sum of above)	\$ 16,018
PART E - ADDITIONAL OPERATING INFORMATION	
1. Estimated pressure at the point and time of the Accident (psig):	140.00
2. Maximum Operating Pressure (MOP) at the point and time of the Accident (psig):	150.00
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?	No
- If Yes - (Complete 5a. - 5f. below)	
5a. Type of upstream valve used to initially isolate release source:	
5b. Type of downstream valve used to initially isolate release source:	
5c. Length of segment isolated between valves (ft):	
5d. Is the pipeline configured to accommodate internal inspection tools?	
- 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?	
- 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:	
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?	No
7. Was a CPM leak detection system in place on the pipeline or facility involved in the Accident?	No
- If Yes:	
7a. Was it operating at the time of the Accident?	
7b. Was it fully functional at the time of the Accident?	
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?	
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?	
8. How was the Accident initially identified for the Operator? - If Other, Specify:	Local Operating Personnel, including contractors
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:	Operator employee
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? - 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> - If Yes, specify investigation result(s): <i>(select all that apply)</i>	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? - If Yes:	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? - If Yes:	No
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:	G1 - Corrosion Failure
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 :	
<input type="checkbox"/> 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:	Localized Pitting
7. Type of corrosion <i>(select all that apply):</i> -	
- Corrosive Commodity	
- Water drop-out/Acid	
- Microbiological	Yes
- 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	Yes
- Determined by metallurgical analysis	
- Other:	

- If Other, Describe:	
9. Location of corrosion (select all that apply): -	
- Low point in pipe	Yes
- Elbow	
- Other:	
- If Other, Describe:	
10. Was the commodity treated with corrosion inhibitors or biocides?	Yes
11. Was the interior coated or lined with protective coating?	No
12. Were cleaning/dewatering pigs (or other operations) routinely utilized?	Not applicable - Not mainline pipe
13. Were corrosion coupons routinely utilized?	Not applicable - Not mainline pipe
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?	No
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?	No
If Yes -	
Most recent year tested:	
Test pressure:	
17. Has one or more Direct Assessment been conducted on this 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:	
18. Has one or more non-destructive examination been conducted at the point of the Accident since January 1, 2002?	No
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 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: <i>(select all that apply)</i>	
- 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 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: <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:	
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 <i>(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):</i>	
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 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 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:	
1. The sub-cause 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 (Supplemental Report required)	
- If Construction, Installation, or Fabrication-related:	
2. List contributing factors: <i>(select all that apply)</i>	
- 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>	
- Fatigue or Vibration-related:	
Specify:	
- If Other, Describe:	
- Mechanical Stress:	
- Other	
- If Other, Describe:	
- If Environmental Cracking-related:	
3. Specify:	
- Other - Describe:	
Complete the following if any Material Failure of Pipe or Weld sub-cause is selected.	
4. Additional factors: <i>(select all that apply)</i> :	
- 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 Accident?	
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 Accident?	
- 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 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?	
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: <i>(select all that apply)</i> -	
- 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:	
- 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 commodity	
- Valve vault or valve can contributed to the release	
- Alarm/status failure	
- Misalignment	
- Thermal stress	

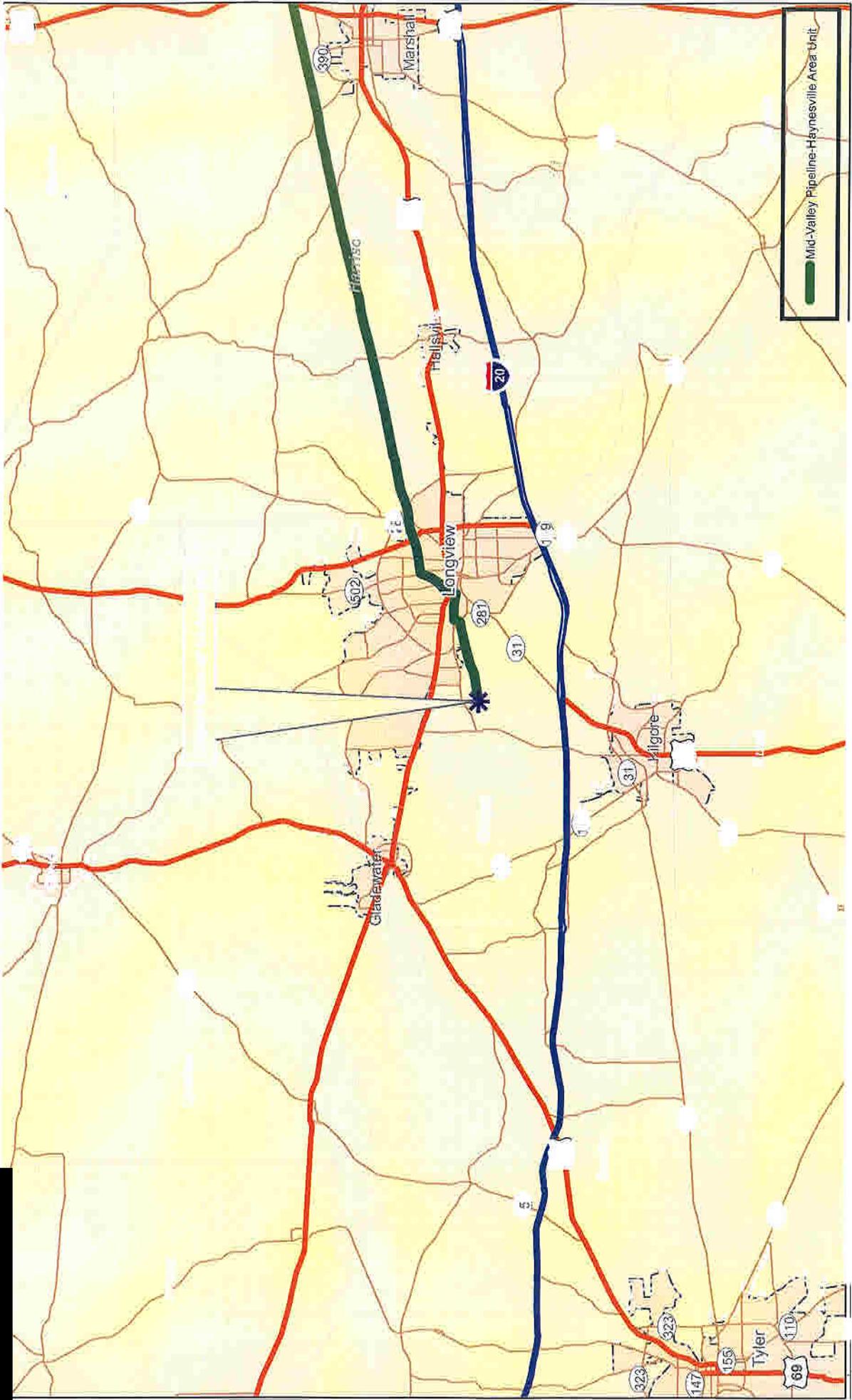
- Other	
- If Other, Describe:	
G7 - Incorrect Operation - only one sub-cause can be selected from the shaded left-hand column	
Incorrect Operation – Sub-Cause:	
- If Tank, Vessel, or Sump/Separator Allowed or Caused to Overfill or Overflow:	
1. Specify:	
- If Other, Describe:	
- If Other Incorrect Operation:	
2. Describe:	
Complete the following if any Incorrect Operation sub-cause is selected.	
3. Was this Accident 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 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	
<p>Lion Oil called Sunoco Control Room to initiate a delivery to Mid-Valley Pipeline at Longview Station. Sunoco Control Center advised Lion that when MVPL personnel completed the line up for delivery, Sunoco CC would advise Lion to start delivery.</p> <p>Lion appears to have started actions for the delivery prior to being notified by Sunoco CC that line up was complete.</p> <p>This resulted in a higher than normal line pressure at the Longview Station manifold yet the pressure was within the design limits. This higher pressure appears to have caused the failure at the point where internal corrosion had occurred.</p>	
File Full Name	
PART I - PREPARER AND AUTHORIZED SIGNATURE	
Preparer's Name	Kenneth David Born
Preparer's Title	Area DOT Compliance Supervisor
Preparer's Telephone Number	281-637-6497
Preparer's E-mail Address	kdborn@sunocologistics.com
Preparer's Facsimile Number	281-637-6425
Authorized Signature's Name	Kenneth David Born
Authorized Signature Title	Area DOT Compliance Supervisor
Authorized Signature Telephone Number	281-637-6497
Authorized Signature Email	kdborn@sunocologistics.com
Date	05/12/2010

Appendix C Operator and System Maps

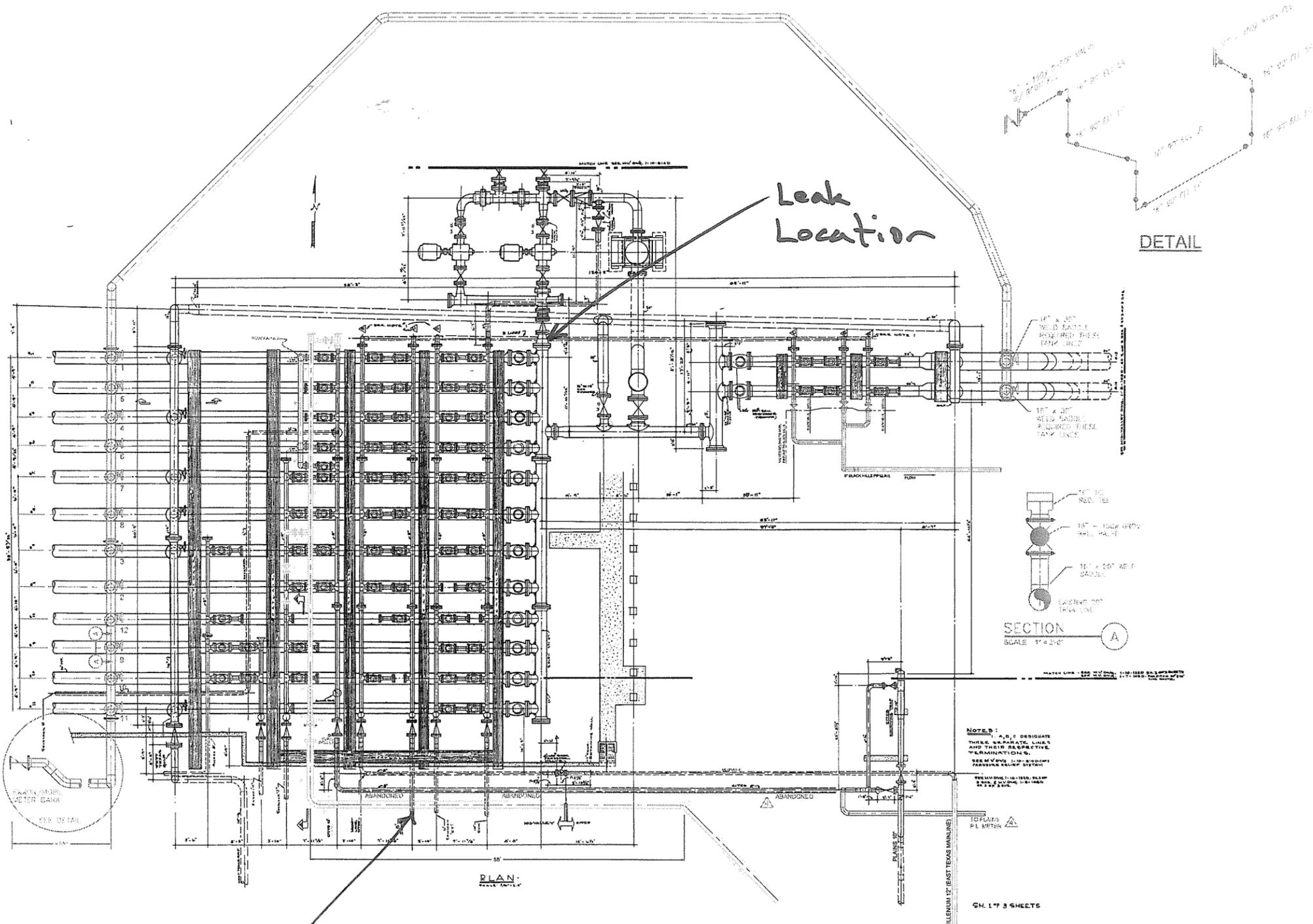


MID-VALLEY PIPELINE COMPANY FAILURE SITE

PHMSA



Mid-Valley Pipeline-Haynesville Area Unit



In from Lion Oil

01-10-132D1

LAYOUT MAIN OIL PIPING

LONGVIEW			
REVISIONS			
NO.	DATE	DESCRIPTION	BY / CHK
10			
9			
8			
7			
6			
5			
4	8/4/04	ABANDONED P PIPELINE	RFG
3	7/1/00	REVISED PER FIELD MARK-UP	RFG
2	3/15/00	REVISED PER FIELD AS-BUILTS	RFG
1	2/9/01	ADD EXCHN / MOBIL HEADER	JM

MID-VALLEY PIPELINE COMPANY

LAYOUT
MAIN OIL PIPING AT LONGVIEW TEXAS

DRAWN	RAC	10/10/2001	AFC
CHECKED			CAD
APPROVED			

SCALE 24 x 36: 1/8" = 1'0" NO. 01-10-132D1

NOTES:
 1. A.D. DESIGNER
 THREE SEPARATE LINES
 AND THEIR RESPECTIVE
 TERMINATIONS.
 SEE M.V.P.C. (P.P. GROUP)
 PARKING LOT OF SITE.
 MILLERUM ST. (EAST TEXAS MAINLINE)
 TO FALLS PL. METER

DETAIL

SECTION A
 SCALE: 1" = 2'-0"

PLAN

CH. 1" x 3 SHEETS

Appendix D Failure Site Photos



Figure 1 Leak site



Figure 2 Exposed view of leak site



Figure 3 Close up View of Internal Corrosion



Figure 4 Removed pipe split open Internal and External Views