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

Principal Investigator	Gery Bauman/Bryan Louque
Senior Accident Investigator	Brian Pierzina/Karen Butler
Region Director	Ivan Huntoon/Allan Beshore
Date of Report	07/01/2015
Subject	Failure Investigation Report—TE Products Pipeline Company, LLC (TEPPCO)—Incorrect Operations

Operator, Location, & Consequences

Date of Failure	April 13, 2010
Commodity Released	Transmix of Refined Products (Diesel and HVL Vapors)
City/County & State	Seymour/Jackson County, IN
OpID & Operator Name	19237 TE Products Pipeline Company, LLC (TEPPCO)[1]
Unit # & Unit Name	2703 Seymour
SMART Activity #	129705
Milepost/Location	Seymour Terminal/P35 Pipeline
Type of Failure	Accidental Ignition, Incorrect Operations During Maintenance Activity
Fatalities	0
Injuries	1 (hospitalization), 3 (additional injuries[2])
Description of area impacted	Seymour Terminal Facility, HCA (drinking water)
Total Costs	$35,229

[1] At the time of the accident, TEPPCO was the operator of PHMSA record for the Seymour Terminal. The assets, however, were owned by Enterprise Products Operating Company, LLC (EPCO), PHMSA Operator ID #31618. The work was being performed at the direction of EPCO employees utilizing EPCO standards and procedures. Subsequent to the accident, the TEPPCO assets in PHMSA records were transferred to the EPCO OP ID (31618), and the TEPPCO OP ID (19237) was de-activated. PHMSA compliance actions resulting from the accident were issued to the parent company, EPCO, while the accident report information remains reported as TEPPCO.

[2] Two contract employees experienced singed hair but no burns to the skin.

Executive Summary[3]

On April 13, 2010, at 12:01 PM EDT[4], a flash fire occurred as a result of incorrect operations while operator and contract employees were conducting planned maintenance at the Seymour Terminal of the Enterprise Products Operating Company, LLC (EPCO) located in Jackson County, Indiana. Two EPCO employees and two contract employees were injured. The EPCO employees received burns and were transported to a local hospital for treatment; the two contract employees experienced singed hair but no burns to the skin. One EPCO employee was treated and released, but the other was transferred to a burn unit.

TE Products Pipeline Company, LLC (TEPPCO) reported the accident, as the Seymour Terminal facility was still identified as a TEPPCO asset in the records of the Pipeline and Hazardous Materials Safety Administration (PHMSA) at the time of the failure. Under TEPPCO operations Seymour Terminal experienced previous product contamination; as a result, the terminal was undergoing a project to remove older piping and valves associated with 14-inch pipe diameter pump and sump systems on the P35 Pipeline. The P35 Pipeline moved diesel fuel prior to being isolated and drained in preparation for this project. At the time of the injuries, operator and contract employees were abandoning pipe replacing and removing valves (2-inch diameter drain valves from the sump system. Hazardous vapors accumulated in the bell hole when valve flange bolts were loosened, and trapped product (diesel) began to drain from the piping. In an effort to stop the product from draining, a flange bolt was tightened using an electric impact wrench not electrically rated for the location, igniting vapors and product. The release occurred in a High Consequence Area (HCA) and was reported as 0.01 barrels. The total cost of the accident was $35,229.

PHMSA investigated the accident on-site and issued enforcement action CPF 3-2012-5023, which cited five violations of 49 CFR Part 195.

System Details

In 2009, EPCO and TEPPCO entered into definitive agreements to merge the two partnerships. PHMSA records indicate that TEPPCO (OPID 19237) was the operator of record for the Seymour Terminal at the time of the flash fire. On August 17, 2010 all of the TEPPCO (OPID 19237) PHMSA asset records were transferred to EPCO (OPID 31618).

EPCO operates a product pipeline system that transports refined and highly volatile liquid (HVL) products from Texas to the midwestern and northeastern United States. The mainlines transport product from Baytown, Texas to Middletown, Ohio. There is a mainline pump station, terminal, and storage facility located near Seymour, Indiana. The Seymour Terminal is the origin of the P35 Pipeline, a 14-inch diameter lateral that moves refined products to the Indianapolis, Indiana area. The maximum operating pressure (MOP) for the pipeline was 1,150 psig.

Events Leading up to the Failure

[3] This Failure Investigation Report is based upon facts and information available to PHMSA at the time of issuance. Any statements, conclusions, appendices, data summaries, or findings stated herein are subject to revision and do not constitute any final determination about the need for further investigation or enforcement action by any government agency.

[4] All times are Eastern Daylight Time (EDT) unless otherwise noted.

The TEPPCO Seymour Terminal historically transported crude oil, but the P35 Pipeline was moving refined products. TEPPCO identified a product quality issue at the Seymour Terminal involving HVL contamination of refined products, which resulted in the development of a project to remove non-essential piping, consolidate piping, and update valves at the pump station. One facet of this project involved a rebuild of the drain system on the 14-inch diameter P35 Pipeline. Non-essential piping was to be removed, and older existing 2-inch valves in the sump system were to be removed and replaced with new or rebuilt valves. Prior to the accident, the P35 Pump moved diesel fuel. In preparation for the planned maintenance project, the pump was shut down, valves were closed to isolate piping, a portion of pump-related piping was partially drained, and Lockout Tag-out (LOTO) was performed.

During the early hours of April 13, 2010, an EPCO employee continued to drain the isolated piping, pumped the sump dry, and closed the sump valves. At the start of the normal workday, two contract employees arrived at the facility. A work permit was developed, LOTO procedures were confirmed, a tailgate meeting was conducted, and work began at approximately 9:00 in the morning. Two work teams were created to complete the work, one comprised of two contract employees and the other comprised of two EPCO employees, with a station operator present at the work site on an intermittent basis.. The work plan for the day was described to the PHMSA investigator as a goal to remove as many 2-inch sump (drain) valves as possible. Prior to the lunch break, the contract team removed one 2-inch valve located in the north end of the excavated area and installed blind flanges. The EPCO team worked on a valve on the south side of the excavation, but progress on was slow as the valve flange bolts were in an awkward position and had corroded. Both work teams had several tools available, including a large pneumatic impact wrench and an electric impact wrench. The electric impact wrench was shared between both teams. The EPCO team was successful in removing the sump side of the valve before lunch, and product did not drain from the valve when the downstream flange was unbolted. Both teams stopped working for lunch and left the area; leaving the atmospheric conditions at the site unmonitored while they were away.

Failure

After returning from lunch, the EPCO team resumed work on the other side of the valve and the contract team started work on a valve located near the center of the bell hole. When the EPCO team began work on removing bolts on the upstream side of the valve the flange started to drain product. At the same time, product began to drain from a valve the contract team unbolted. A station operator, who was making rounds, was also present at the bell hole, and noticed vapors coming from the contract team's valve flange. Simultaneously, the EPCO team decided the flow from their flange was too much to be contained by the materials (adsorbent pads) and equipment (a bucket) used to capture product, and stopped the drain by tightening a flange bolt using an electric impact wrench that was not electrically rated for the location. Vapors and product were ignited by the electric impact wrench and a flash fire ensued. The EPCO employees suffered burns on their hands and faces, while the contract employees sufferedsinged hair during the fire but not burned skin.

Emergency Response

Both crews exited the bell hole. One of the contract employees procured a fire extinguisher from their truck and returned to the bell hole to extinguish the remaining flames. A call was placed to 911 and the EPCO employees went to the office to wait for emergency responders while a contract employee met the ambulance at the gate and directed it to the office. The National Response Center (NRC) was

contacted at 3:43 p.m. (Report #936944), indicating a flash fire had occurred and two employees sent to the hospital with burn injuries.

Summary of Return-to-Service

Other EPCO employees made the area safe by removing the valve worked on by the EPCO team and tightening the valve flange bolts associated with the valve the contract team was working on at the time of the fire. Blind flanges were installed, and EPCO mobilized an accident investigation team that investigated the accident on April 14 and 15, 2010. The accident investigation team issued its investigation report on May 21, 2010. The program to remove non-essential piping, consolidate piping, and update valves at the pump station continued.

Investigation Details

An investigator from PHMSA's Central Region arrived at the Seymour Terminal on April 14, 2010. PHMSA conducted interviews, examined the accident site, photographed the accident location, reviewed procedures, and requested company records. EPCO completed a separate internal investigation of the accident. The pipeline moved diesel fuel prior to being taken out of service, and an attempt had been made to drain the sump system and pump the sump dry. Product remained in the sump system, however, as evidenced by product draining into the area when workers cracked the flanges. The results of the internal company investigation revealed that the employees were burned when hazardous vapors and product, which had accumulated in the bell hole, were ignited by the use of an electric impact wrench that was not intrinsically safe.

EPCO identified several additional elements in their review of the accident, including:

- The operator at the site was trying to coordinate too many events on the morning of the accident;
- A non-intrinsically safe tool was introduced into the job area without an additional hazard evaluation being conducted;
- The potential for the presence of light end products in the work area was not accounted for in the drainage activities;
- Lower Explosive Level (LEL) readings were not taken or documented when the flanges were opened or tightened;
- One of the contractors reported having heard indications of pressure in the system (burps) but did not relay this information to the other workers.

Due to the potential of contamination in the facility—and the fact that various refined products were present at Seymour Terminal—the operator reported the hazardous vapors and diesel product that ignited as a mixture of refined products (transmix or other mixture). The amount released was reported as 0.01 barrels.

PHMSA identified two concerns during its investigation that were later eliminated as contributory factors. First, a review of the valve list used in the LOTO procedure was compared to the field condition of the valves and revealed that not all the valves identified in the LOTO procedure were locked out to isolate the drain piping. Second, the pipe diagram of the work area did not accurately identify the location of buried piping associated with the project (as determined when the piping was uncovered).

Drug and alcohol testing was performed during the investigation and was ruled out as a contributing factor. Operator Qualification (OQ) records and applicable procedures were also reviewed.

Findings & Contributing Factors

PHMSA's investigation revealed that the accident was the result of incorrect operations associated with planned maintenance activities. Several contributory causes of the flash fire were identified:

- Although one of the contractors heard indications of pressure in the system (burps), the contractor failed to relay this information to the other three workers;
- Workers did not follow procedures that required continuous atmospheric monitoring for the presence of flammable vapors;
- Workers had a monitor at the job site to measure hazardous atmosphere and provide warning, but it was improperly used—the monitor was placed on the ditch bank without a hose installed to sample air at the bottom of the ditch where the work was to take place;
    - Workers would have had difficulty hearing a warning from the atmospheric monitor above the work site noise level;
- Workers initially developed a hot work permit, but failed to follow procedures that required the development of a new hot work permit when the work project circumstances changed with the introduction of an electric impact wrench that was not electrically rated for the location;
- The hot work permit was not documented as clearly as it could have been.

Although not a contributing cause of the accident, workers failed to post a fire watch as required=, which delayed extinguishing the fire.

The operator also identified several additional recommendations:

- Potential safety manual revisions to improve employee recognition of equipment and associated hazards;
- Consideration of a job site alarm system where work noise could be overcome;
- Evaluation of other drain systems within the terminal for similar segregation concerns;
- Updating Piping and Instrumentation Diagrams (P&IDs) with the drain line projects red-lined;
- Pointing cameras at the work sites whenever possible;
- Preparing work as if piping contained the most volatile product possible when working on process piping and/or drain piping that transports multiple products with different densities;
- A management review with employees at the terminal regarding the potential for products other than those expected to be present in piping and the hazards associated with working around environmentally sensitive and/or volatile products;
- A management review with employees at the terminal regarding the hazards associated with leaving process piping open and unattended.

As a result of the investigation, PHMSA issued CPF 3-2012-5023, citing five violations of 49 CFR Part 195.

Appendices

A Map and Photographs

B NRC Report

C Operator's Report

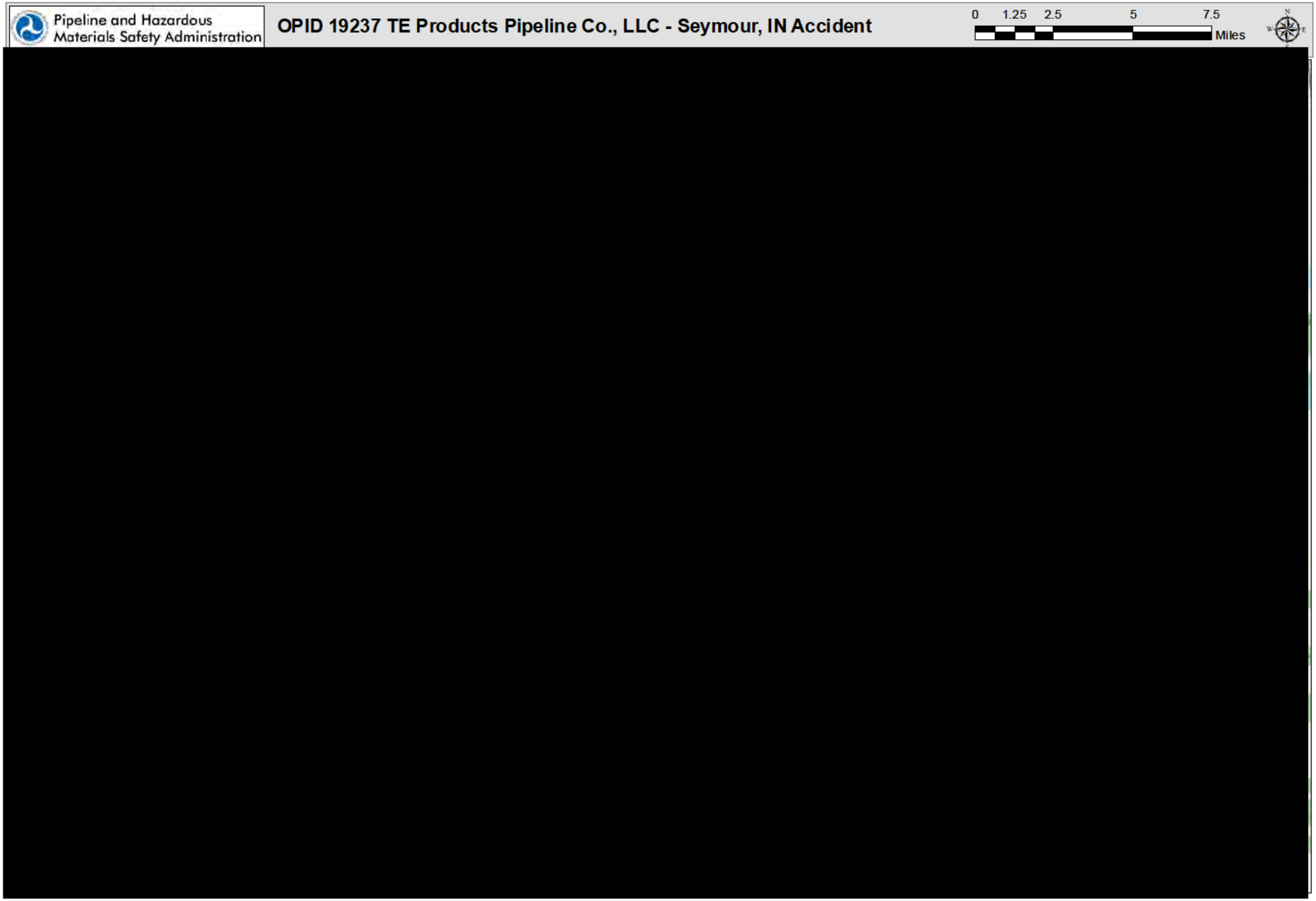
Pipeline and Hazardous Materials Safety Administration
OPID 19237 TE Products Pipeline Co., LLC - Seymour, IN Accident
0 1.25 2.5 5 7.5
Miles

Photo 1 – Aerial Photo of EPCO Seymour Pump Station. Arrow points to P35 pump. Photo from Google Maps.

Photo 2 – Photo shows the sump system. Arrows point to the locations of valves which were being worked on at the time of the flash fire. Photo taken by PHMSA.

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 # 936944

INCIDENT DESCRIPTION
****** THIS IS A POTENTIAL RELEASE ******
***Report taken at 15:43 on 13-APR-10**
Incident Type: PIPELINE
Incident Cause: UNKNOWN
Affected Area:
The incident occurred on 13-APR-10 at 13:30 local time.
Affected Medium: OTHER

SUSPECTED RESPONSIBLE PARTY

XX

Type of Organization: UNKNOWN

INCIDENT LOCATION
10197 EAST COUNTY RD 1000 County: JACKSON
NORTH
State: IN
Latitude: 39° 33' 06" N

Longitude: 085° 51' 05" W
NONE

POTENTIALLY RELEASED MATERIAL(S)
CHRIS Code: NCC Official Material Name: NO CHRIS CODE
Also Known As:
Qty Released: 0 UNKNOWN AMOUNT

DESCRIPTION OF INCIDENT

CALLER STATED THAT THERE WAS A FLASH FIRE WHICH IS UNDER INVESTIGATION. TWO EMPLOYEES WERE HURT, AND SENT TO THE HOSPITAL WITH BURN INJURIES. THE EMPLOYEES WERE WORKING ON THE PIPELINE .

INCIDENT DETAILS
Pipeline Type: TRANSMISSION
DOT Regulated: UNKNOWN
Pipeline Above/Below Ground: ABOVE
Exposed or Under Water: NO
Pipeline Covered: UNKNOWN

DAMAGES

Fire Involved:	**YES**	**Fire Extinguished:**	**YES**		
INJURIES:	**YES**	**Hospitalized:**	**2**	**Empl/Crew:**	**Passenger:**
FATALITIES:	**NO**	**Empl/Crew:**		**Passenger:**	**Occupant:**
EVACUATIONS:	**NO**	**Who Evacuated:**		**Radius/Area:**	
Damages:	**NO**				

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

Major Artery: N

Track: N

Passengers Transferred: NO
Environmental Impact: UNKNOWN

Media Interest: NONE Community Impact due to Material:

REMEDIAL ACTIONS

INVESTIGATION UNDERWAY.
Release Secured: YES
Release Rate:
Estimated Release Duration:

WEATHER

Weather: CLEAR, 81ºF

ADDITIONAL AGENCIES NOTIFIED

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

NOTIFICATIONS BY NRC

ATLANTIC STRIKE TEAM (MAIN OFFICE)
13-APR-10 15:58
USCG ICC (ICC ONI)
13-APR-10 15:58
CG INVESTIGATIVE SVC CHICAGO (CGIS RAO CHICAGO)
13-APR-10 15:58
DHS PROTECTIVE SECURITY ADVISOR (PSA DESK)
13-APR-10 15:58
DOT CRISIS MANAGEMENT CENTER (MAIN OFFICE)
13-APR-10 15:58
EPA CRIMINAL INVESTIGATION DIVISION (CID REGION V)
13-APR-10 15:58
U.S. EPA V (MAIN OFFICE)
13-APR-10 16:00
USCG NATIONAL COMMAND CENTER (MAIN OFFICE)
13-APR-10 16:01
INFO ANALYSIS & INFRA PROTECTION (MAIN OFFICE)
13-APR-10 15:58
IN STATE DEPT OF HOMELAND SECURITY (SITUATIONAL AWARENESS)
13-APR-10 15:58
IN STATE INTEL FUSION CENTER (INTEL FUSION CENTER)
13-APR-10 15:58
NATIONAL INFRASTRUCTURE COORD CTR (MAIN OFFICE)
13-APR-10 15:58
NATIONAL INFRASTRUCTURE COORD CTR (INFRASTRUCTURE PROTECTION)
13-APR-10 15:58
NOAA RPTS FOR IN (MAIN OFFICE)
13-APR-10 15:58
NATIONAL RESPONSE CENTER HQ (MAIN OFFICE)
13-APR-10 16:01
NTSB PIPELINE (MAIN OFFICE)
13-APR-10 15:58
PIPELINE & HAZMAT SAFETY ADMIN (OFFICE OF PIPELINE SAFETY (AUTO))
13-APR-10 15:58
IN DEPT ENV MNGMT (MAIN OFFICE)
13-APR-10 15:58

ADDITIONAL INFORMATION

CALLER HAD NO ADDITIONAL INFORMATION.

***** END INCIDENT REPORT # 936944 *****

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 hat the maximum civil penalty shall not exceed $1,000,000 as provided in 49 USC 60122.		OMB NO: 2137-0047 EXPIRATION DATE: 07/31/2015
U.S Department of Transportation Pipeline and Hazardous Materials Safety Administration	**Original Report Date:**	05/06/2010
	No.	20100070 - 20491 ---------- (DOT Use Only)

ACCIDENT REPORT - HAZARDOUS LIQUID PIPELINE SYSTEMS

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/library/forms.*

PART A - KEY REPORT INFORMATION

Report Type: *(select all that apply)*	**Original:**	**Supplemental:**	**Final:**
		Yes	**Yes**
Last Revision Date:	06/04/2015		
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	10197 EAST COUNTY ROAD 1000 NORTH		
3b. City	SEYMOUR		
3c. State	Indiana		
3d. Zip Code	47274		
4. Local time *(24-hr clock)* and date of the Accident:	04/13/2010 12:01		
5. Location of Accident:			
Latitude:	39.02601		
Longitude:	-85.85146		
6. National Response Center Report Number (if applicable):	936944		
7. Local time *(24-hr clock)* and date of initial telephonic report to the National Response Center (if applicable):	04/13/2010 15:43		
8. Commodity released: *(select only one, based on predominant volume released)*	Refined and/or Petroleum Product (non-HVL) which is a Liquid at Ambient Conditions		
- Specify Commodity Subtype:	Mixture of Refined Products (transmix or other mixture)		
- If "Other" Subtype, Descr be:			
- 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			
9. Estimated volume of commodity released unintentionally (Barrels):	.01		
10. Estimated volume of intentional and/or controlled release/blowdown (Barrels):			
11. Estimated volume of commodity recovered (Barrels):	.01		
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?	Yes		
- If Yes, specify the number in each category:			
13a. Operator employees	1		
13b. Contractor employees working for the Operator	0		
13c. Non-Operator emergency responders	0		
13d. Workers working on the right-of-way, but NOT associated with this Operator	0		
13e. General public	0		

13f. Total injuries (sum of above)	1
14. Was the pipeline/facility shut down due to the Accident?	No
- If No, Explain:	Pipeline was already down for scheduled maintenance work
- If Yes, complete Questions 14a and 14b: *(use local time, 24-hr clock)*	
14a. Local time and date of shutdown:	
14b. Local time pipeline/facility restarted:	
- Still shut down? (* Supplemental Report Required)	
15. Did the commodity ignite?	Yes
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 - effective 7- 2014 changed to "Local time Operator identified failure":	04/13/2010 12:01
18b. Local time Operator resources arrived on site:	04/13/2010 12:01

PART B - ADDITIONAL LOCATION INFORMATION

1. Was the origin of the Accident onshore?	Yes
If Yes, Complete Questions (2-12)	
If No, Complete Questions (13-15)	
- If Onshore:	
2. State:	Indiana
3. Zip Code:	47274
4. City	Seymour
5. County or Parish	Jackson
6. Operator-designated location:	Milepost/Valve Station
Specify:	SEYMOUR TERMI
7. Pipeline/Facility name:	P35 PUMP STATION
8. Segment name/ID:	Intraplant piping
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:	Exposed due to excavation
- If Other, Describe:	
Depth-of-Cover (in):	48
12. Did Accident occur in a crossing?	No
- If Yes, specify type 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 Terminal/Tank Farm Equipment and Piping
- If Onshore Breakout Tank or Storage Vessel, Including Attached Appurtenances, specify:	
3. Item involved in Accident:	Valve
- If Pipe, specify:	
3a. Nominal diameter of pipe (in):	

3b. Wall thickness (in):	
3c. SMYS (Specified Minimum Yield Strength) of pipe (psi):	
3d. Pipe specification:	
3e. Pipe Seam , specify:	
- If Other, Describe:	
3f. Pipe manufacturer:	
3g. Year of manufacture:	
3h. Pipeline coating type at point of Accident, specify:	
- If Other, Describe:	
- If Weld, including heat-affected zone, specify. If Pipe Girth Weld, 3a through 3h above are required:	
- If Other, Describe:	
- If Valve, specify:	Auxiliary or Other Valve
- If Mainline, specify:	
- If Other, Describe:	
3i. Manufactured by:	
3j. Year of manufacture:	
- If Tank/Vessel, specify:	
- If Other - Describe:	
- If Other, descr be:	
4. Year item involved in Accident was installed:	Unknown
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:	Removing 2" drain valve during maintenance to install a blind when a flash fire occurred.

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?	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 – effective 12-2012, changed to "Estimated Property Damage":	
8a. Estimated cost of public and non-Operator private property damage paid/reimbursed by the Operator – effective 12-2012, "paid/reimbursed by the Operator" removed	$ 0
8b. Estimated cost of commodity lost	$ 37
8c. Estimated cost of Operator's property damage & repairs	$ 0
8d. Estimated cost of Operator's emergency response	$ 75
8e. Estimated cost of Operator's environmental remediation	$ 0
8f. Estimated other costs	$ 35,117
Describe:	Cost of workmen's compensation for the two employees involved.
8g. Estimated total costs (sum of above) – effective 12-2012, changed to "Total estimated property damage (sum of above)"	$ 35,229
PART E - ADDITIONAL OPERATING INFORMATION	
1. Estimated pressure at the point and time of the Accident (psig):	.00
2. Maximum Operating Pressure (MOP) at the point and time of the Accident (psig):	1,150.00
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)* effective 12-2012, changed to *"(Complete 5.a – 5.e 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:	> 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?	No
If Yes -	
6a. Was it operating at the time of the Accident?	
6b. Was it fully functional at the time of the Accident?	
6c. Did SCADA-based information (such as alarm(s), alert(s), event(s), and/or volume calculations) assist with the detection of the Accident?	
6d. Did SCADA-based information (such as alarm(s), alert(s), event(s), and/or volume calculations) assist with the confirmation of the Accident?	
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?	Local Operating Personnel, including contractors
- If Other, Specify:	
8a. If "Controller", "Local Operating Personnel", including contractors", "Air Patrol", or "Ground Patrol by Operator or its contractor" is selected in Question 8, specify:	Operator employee
9. Was an investigation initiated into whether or not the controller(s) or control room issues were the cause of or a contr buting factor to the Accident?	No, the facility was not monitored by a controller(s) at the time of 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: *(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	
- 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	
- Investigation identified no controller issues	
- 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:	2
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?	Yes
- If Yes:	
2a. Specify how many were tested:	2
2b. Specify how many failed:	0

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:	G7 - Incorrect Operation

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, Descr be:	
2. Type of corrosion: *(select all that apply)*	
- Galvanic	
- Atmospheric	
- Stray Current	
- Microbiological	
- Selective Seam	
- Other:	
- If Other, Descr be:	
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, Descr be:	
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 - ear 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, Descr be:	
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 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 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 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 shown above is based on the following: *(select all that apply)*	

- 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: *(select all that apply)*	
- Fatigue or Vibration-related	
Specify:	
- If Other, Describe:	
- Mechanical Stress:	
- Other	
- If Other, Describe:	
- If Environmental Cracking-related:	
3. Specify:	
- If 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	
- 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: *(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 Other Equipment Failure:	
5. Describe:	
Complete the following if any Equipment Failure sub-cause is selected.	
6. Additional factors that contr buted 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 contr buted 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:	When returning from a break, employees did not adequately monitor atmospheric conditions in the work area before using non-intrinsically safe equipment in a classified area.
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	Yes
- Other:	
- If Other, Describe:	
4. What category type was the activity that caused the Accident?	Other maintenance
5. Was the task(s) that led to the Accident identified as a covered task in your Operator Qualification Program?	No
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

When returning from a break, employees did not adequately monitor atmospheric conditions in the work area before using non-intrinsically safe equipment in a classified area.
Facility management to review with Seymour Terminal employees the hazards associated with:
Working around environmentally sensitive and/or volatile products at the Terminal.
The potential for hazardous atmosphere to exist after purging pipes of hydrocarbons.
Leaving process piping open and unattended.

Supplemental/Final report updated by PHMSA on 6/4/2015.

PART I - PREPARER AND AUTHORIZED SIGNATURE

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