

NOTICE: This report is required by 49 CFR Part 195. Failure to report can result in a civil penalty as provided in 49 USC 60122.		OMB NO: 2137-0047 EXPIRATION DATE: 4/30/2026	
 U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration	Original Report Date:	06/05/2020	
	No.	20200166 -34084 ----- (DOT Use Only)	
ACCIDENT REPORT - HAZARDOUS LIQUID AND CARBON DIOXIDE PIPELINE SYSTEMS			
<p>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 12 hours per response, including the time for reviewing instructions, gathering the data needed, and completing and reviewing the collection of information. All responses to the collection of information are mandatory. Send comments regarding this burden or any other aspect of this collection of information, including suggestions for reducing the burden to: Information Collection Clearance Officer, PHMSA, Office of Pipeline Safety (PHP-30) 1200 New Jersey Avenue, SE, Washington, D.C. 20590.</p>			
INSTRUCTIONS			
<p>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.</p>			
PART A - KEY REPORT INFORMATION			
Report Type: <i>(select all that apply)</i>	Original:	Supplemental:	Final:
		Yes	Yes
Last Revision Date:	07/30/2020		
1. Operator's OPS-issued Operator Identification Number (OPID):	32334		
2. Name of Operator	SOUTH BOW INFRASTRUCTURE OPERATIONS INC.		
3. Address of Operator:			
3a. Street Address	920 MEMORIAL CITY WAY SUITE 800		
3b. City	Houston		
3c. State	Texas		
3d. Zip Code	77024		
4. Local time (24-hr clock) and date of accident:	05/07/2020 11:33		
4a. Time Zone for local time			
4b. Daylight Saving in effect?			
5. Location of Accident:			
Latitude / Longitude	29.991468, -94.080399		
6. Commodity released: <i>(select only one, based on predominant volume released)</i>	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	
7. Estimated volume of commodity released unintentionally (Barrels):	442.00
8. Estimated volume of intentional and/or controlled release/blowdown (Barrels):	
9. Estimated volume of commodity recovered (Barrels):	442.00
10. Were there fatalities?	No
- If Yes, specify the number in each category:	
10a. Operator employees	
10b. Contractor employees working for the Operator	
10c. Non-Operator emergency responders	
10d. Workers working on the right-of-way, but NOT associated with this Operator	
10e. General public	
10f. Total fatalities (sum of above)	0
11. Were there injuries requiring inpatient hospitalization?	No
- If Yes, specify the number in each category:	
11a. Operator employees	
11b. Contractor employees working for the Operator	
11c. Non-Operator emergency responders	
11d. Workers working on the right-of-way, but NOT associated with this Operator	
11e. General public	
11f. Total injuries (sum of above)	0
12. What was the Operator's initial indication of the Failure? <i>(select only one)</i>	Local Operating Personnel, including contractors
Other	
12a. If "Controller", "Local Operating Personnel, including contractors", "Air Patrol", or "Ground Patrol by Operator or its contractor" is selected in Question 12, specify the following: <i>(select only one)</i>	
	Operator employee
13. Local time Operator identified failure	05/07/2020 11:33
14. formerly C2 Part of system involved in Accident: <i>(select only one)</i>	Onshore Terminal/Tank Farm Equipment and Piping
15. formerly B1 <i>Auto-populated based on A14</i> Was the origin of the Accident onshore?	Yes
Yes <i>(Complete Questions B3-B12)</i>	
No <i>(Complete Questions B13-B15)</i>	
16. Operational Status at time Operator identified failure:	
17. If Operational Status = Routine Start-Up or Normal Operation, was the pipeline/facility shut down due to the Accident?	Yes
Explain:	

If Yes, complete Questions 17.a and 17.b: <i>(use local time, 24-hr clock)</i>	
17a. Local time and date of shutdown	05/07/2020 11:35
17b. Local time pipeline/facility restarted	05/15/2020 02:05
Still shut down*	
18. If A12 = Notification from Emergency Responder, skip A18.a through A18.c.	
18a. Did the operator communicate with Local, State, or Federal Emergency Responders about the accident?	
If No, skip 18b. and 18c	
18b. Which party initiated communication about the accident?	
18c. Local time of initial Operator and Local/State/Federal Emergency Responder communication	
19. Local time Operator responders arrived on site	05/07/2020 11:33
20. Local time of confirmed discovery	
21a. Local time (24-hr clock) and date of initial operator report to the National Response Center :	05/07/2020 13:10
21b. Initial Operator National Response Center Report Number OR	1276821
21c. Additional NRC Report numbers submitted by the operator:	
22. Did the commodity ignite?	No
If Yes, answer 22.a through d:	
22a. Local time of ignition	
22b. How was the fire extinguished?	
specify:	
22c. Estimated volume of commodity consumed by fire (barrels): (must be less than or equal to A7)	
22d. formerly A16. Did the commodity explode?	No
23. If 14. is "Onshore Pipeline, Including Valve Sites" OR "Offshore Pipeline, Including Riser and Riser Bend", answer A23a through f:	
23a. Initial action taken to control flow upstream of failure location	
- If Operational Control	
If Valve Closure, answer A23b and c:	
23b. Local time of valve closure	
23c. Type of upstream valve used to initially isolate release source:	
23d. Initial action taken to control flow downstream of failure location	
- If Operational Control	
If Valve Closure, answer A23.e and f:	
23e. Local time of valve closure	
23f. Type of downstream valve used to initially isolate release source	

24. If A6 = Crude Oil , Refined and/or Petroleum Product (non-HVL) which is a Liquid at Ambient Conditions, or Biofuel / Alternative Fuel (including ethanol blends) AND A15. is Onshore, answer questions A24a and c	
24a. Did the operator notify a “qualified individual” in the Onshore Oil Spill Response Plan?	
If Yes, answer A24b.	
24b. Local time the “qualified individual” was notified.	
24c. Did the operator activate an Oil Spill Removal Organization (OSRO)?	
If Yes, answer A24d and e:	
24d. Local time operator activated OSRO	
24e. Local time OSRO arrived on site	
25. Number of general public evacuated:	0
PART B - ADDITIONAL LOCATION INFORMATION	
1. Pipeline/Facility name:	Keystone Pipeline
2. Segment name/ID:	Lucas Terminal
<i>If Yes, Complete Questions (2-12)</i>	
<i>If No, Complete Questions (13-15)</i>	
- If Onshore:	
3. State:	Texas
4. Zip Code:	77705
5. City	Beaumont
6. County or Parish	Jefferson
7. Operator-designated location:	Milepost/Valve Station
8. Specify:	station
9. Was this onshore Accident on Federal land?	No
10. Location of Accident:	Originated on Operator-controlled property, but then flowed or migrated off the property
11. Area of Accident (as found):	Aboveground
Specify:	Typical aboveground facility piping or appurtenance
- If Other, Describe:	
11a. Depth-of-Cover (in):	
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/ / Bored/drilled	
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:	
Is this water crossing 100 feet or more in length from high water mark to high water mark?	
- 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) :	
- Area:	
- Block/Tract #:	
15. Area of Accident:	
PART C - ADDITIONAL FACILITY INFORMATION	
1. Is the pipeline or facility:	Interstate
2. reserved	
3. Item involved in Accident: <i>When A14 is "Onshore Breakout Tank or Storage Vessel, Including Attached Appurtenances" C3 will default to "Tank/Vessel"</i>	Pipe
- If Pipe, specify:	Pipe Body
If Pipe Body: Was this a puddle/spot weld?	
3a. Nominal Pipe Size:	30
3b. Wall thickness (in):	.500
3c. SMYS (Specified Minimum Yield Strength) of pipe (psi):	65,000
3d. Pipe specification:	API 5L PSL2
3e. Pipe Seam , specify:	DSAW
- If Other, Describe:	
3f. Pipe manufacturer:	Berg Steel Pipe Corporation
3g. Pipeline coating type at point of Accident, specify:	Paint
- If Other, Describe:	
3h. Coating field applied?	
- If Weld, including heat-affected zone, specify	
- If Other, Describe:	

If Pipe Girth Weld is selected, complete items C3a through h above. Are any of the C3b through h values different on either side of the girth weld?	
If Yes, enter the different value(s) below:	
3i. Wall thickness (in):	
3j. SMYS (Specified Minimum Yield Strength) of pipe (psi):	
3k. Pipe specification:	
Unknown	
3l. Pipe Seam	
- If Other, Describe:	
3m. Pipe manufacturer:	
Unknown	
3n. Pipeline coating type at point of Accident	
- If Other, Describe:	
3o. Coating field applied?	
- If Valve, specify:	
- Valve type	
- If Mainline, Valve Mainline type	
- If Other, Describe:	
3p. Mainline valve manufacturer:	
3q. Type of pump	
- If Other, Describe:	
3r. Type of Service	
- If Other, Describe:	
3s. Tubing material	
3t. Type of tubing	
3u. Specify failure path	
- If Other, Describe:	
3v. Tank Type	
If 3v. = Pressurized:	
3v1. Tank Maximum Operating Pressure	
3v2. What is the set point of the primary pressure relief device on the tank	
3v3. Did the thermal or pressure relief valve activate?	
3v4. Was the MOP of the tank exceeded?	
If 3v = Atmospheric or Low Pressure:	
3v5. Safe-Fill-Level (in feet) at the time of the accident?	
3v6. Was the Safe Fill-Level exceeded?	
3v7. Year of most recent API Std 653 Out-of-Service Inspection	

3v8. API Std 653 In-Service Inspection	
4. Year item involved in Accident was installed:	2014
4a. Year item involved in Accident was manufactured:	2014
5. Material involved in Accident:	Carbon Steel
- If Material other than Carbon Steel, specify:	
6. Type of Accident Involved:	Leak
- If Mechanical Puncture – Specify Approx. size:	
in. (axial) by	
in. (circumferential)	
- If Leak - Select Type:	Other
- If Other, Describe:	larger than pinhole
- If Rupture - Select Orientation:	
- If Other, Describe:	
Approx. size: in. (widest opening) by	
in. (length circumferentially or axially)	
- If Other – Describe:	
PART D - ADDITIONAL CONSEQUENCE INFORMATION	
1. Wildlife impact:	Yes
1a. If Yes, specify all that apply:	
- Fish/aquatic	
- Birds	
- Terrestrial	Yes
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	Yes
- Groundwater	
- Soil	Yes
- Vegetation	Yes
- Wildlife	
5. Water contamination:	Yes
5a. If Yes, specify all that apply:	
- Ocean/Seawater	
- Surface	Yes
- Groundwater	
- Drinking water: <i>(Select one or both)</i>	
- Private Well	
- Public Water Intake	
5b. Estimated amount released in or reaching water (Barrels):	50.00

5c. Name of body of water, if commonly known:	facility containment pond
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): <i>(Select all that apply)</i>	
- 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:	Yes
Was this HCA identified in the “could affect” determination for this Accident site in the Operator’s Integrity Management Program?	Yes
- Other Populated Area	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) - Drinking Water	
Was this HCA identified in the “could affect” determination for this Accident site in the Operator’s Integrity Management Program?	
- Unusually Sensitive Area (USA) - Ecological	
Was this HCA identified in the “could affect” determination for this Accident site in the Operator’s Integrity Management Program?	
8. Estimated cost to Operator – 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	1,459
8c. Estimated cost of Operator’s property damage & repairs	220,782
8d. Estimated cost of emergency response	989,456
8e. Estimated cost of environmental remediation	2,424,681
8f. Estimated other costs	0
Describe:	
8g. Total estimated property damage (sum of above)	3,636,378
Injured Persons not included in A11 The number of persons injured, admitted to a hospital, and remaining in the hospital for at least one overnight are reported in A11. <i>If a person is included in A11, do not include them in D9.</i>	
9. Estimated number of persons with injuries requiring treatment in a medical facility but not requiring overnight in-patient hospitalization:	

<i>If a person is included in D9, do not include them in D10.</i>	
10. Estimated number of persons with injuries requiring treatment by EMTs at the site of accident:	
Buildings Affected	
11. Number of residential buildings affected (evacuated or required repair):	
12. Number of business buildings affected (evacuated or required repair):	
PART E - ADDITIONAL OPERATING INFORMATION	
1. Estimated pressure at the point and time of the Accident (psig):	17.70
If C3. Is Tank/Vessel and C3v. is Atmospheric, do not answer E2. and E3	
2. Maximum Operating Pressure (MOP) at the point and time of the Accident (psig):	276.00
2a. Limiting factor establishing MOP (select only one):	
describe:	
2b. Date MOP established	
2c. Was the MOP established in conjunction with a reversal of flow direction?	
If E2c = Yes, E2d. What is the date of the most recent surge analysis performed at the point of the Accident?	
3. Describe the pressure on the system or facility relating to the Accident (psig):	Pressure did not exceed MOP
4. 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?	
If A14. is "Onshore Pipeline, Including Valve Sites" OR "Offshore Pipeline, Including Riser and Riser Bend", complete E5 through E7	
5. Answer E5 only when both A23a and A23d are Valve Closure	
Length of segment initially isolated between valves (ft):	
6. Is the pipeline configured to accommodate internal inspection tools?	
- If No, Which physical features limit tool accommodation? (<i>select all that apply</i>)	
- Changes in line pipe diameter	
- Presence of unsuitable mainline valves	
- Tight or mitered pipe bends	
- Other passage restrictions (i.e. unbarred tee's, projecting instrumentation, etc.)	

- Extra thick pipe wall (applicable only for magnetic flux leakage internal inspection tools)	
- Other -	
- If Other, Describe:	
7. 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:	
8. Function of pipeline system:	< 20% SMYS Regulated Transmission
9. Was a Supervisory Control and Data Acquisition (SCADA)-based system in place on the pipeline or facility involved in the Accident?	Yes
If Yes -	
9a. Was it operating at the time of the Accident?	Yes
9b. Was it fully functional at the time of the Accident?	Yes
9c. Did SCADA-based information (such as alarm(s), alert(s), event(s), and/or volume calculations) assist with the detection of the Accident?	No
9d. Did SCADA-based information (such as alarm(s), alert(s), event(s), and/or volume calculations) assist with the confirmation of the Accident?	No
10. Was a CPM leak detection system in place on the pipeline or facility involved in the Accident?	Yes
- If Yes:	
10a. Was it operating at the time of the Accident?	Yes
10b. Was it fully functional at the time of the Accident?	Yes
10c. Did CPM leak detection system information (such as alarm(s), alert(s), event(s), and/or volume calculations) assist with the detection of the Accident?	No
10d. 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?	No
11. Was an investigation initiated into whether or not the controller(s) or control room issues were the cause of or a contributing factor to the Accident?	Yes, specify investigation result(s): (select all that apply)

- If No, the Operator did not find that an investigation of the controller(s) actions or control room issues was necessary due to: (provide an explanation for why the operator did not investigate)	
- If Yes, specify investigation result(s): (select all that apply)	
- Investigation reviewed work schedule rotations, continuous hours of service (while working for the Operator), and other factors associated with fatigue	
- 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?	No
- If Yes:	
1a. Specify how many were tested:	
1b. Specify how many failed:	
2. As a result of this Accident, were any Operator contractor employees tested under the post-accident drug and alcohol testing requirements of DOT's Drug & Alcohol Testing regulations?	No
- If Yes:	
2a. Specify how many were tested:	
2b. Specify how many failed:	
PART G – APPARENT CAUSE	
<i>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).</i>	
Apparent Cause:	G1 - Corrosion Failure

G1 - Corrosion Failure - only one sub-cause can be picked from shaded left-hand column	
Corrosion Failure – Sub-Cause:	Internal Corrosion
- 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:	
2a. If 2 is Stray Current, specify	
2b. Describe the stray current source:	
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 or submerged?	
- If Yes :	
4a. Was failed item considered to be under cathodic protection at the time of the Accident?	
If Yes - Year protection started:	
4b. Was shielding, tenting, or disbonding of coating evident at the point of the Accident?	
4c. Has one or more Cathodic Protection Survey been conducted at the point of the Accident?	
If "Yes, CP Annual Survey" – Most recent year conducted:	
If "Yes, Close Interval Survey" – Most recent year conducted:	
If "Yes, Other CP Survey" – Most recent year conducted:	
Describe other CP survey	
- 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:	Localized Pitting
- Other:	
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	
- Determined by metallurgical analysis	Yes
- Other:	
- If Other, Describe:	
9. Location of corrosion <i>(select all that apply):</i> -	
- Low point in pipe	Yes
- Elbow	
- Dead-Leg	
- Other:	
- If Other, Describe:	
10. Was the commodity treated with corrosion inhibitors or biocides?	No
11. Was the interior coated or lined with protective coating?	No
12. Were cleaning/dewatering pigs (or other operations) routinely utilized?	No
13. Were corrosion coupons routinely utilized?	No
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:	
Complete the following if any Excavation Damage sub-cause is selected.	
1. Did the operator get prior notification of the excavation activity?	
1a. If Yes, Notification received from: <i>(select all that apply)</i> -	
- One-Call System	
- Excavator	
- Contractor	
- Landowner	
1b. Per the primary Accident Investigator results, did State law exempt the excavator from notifying the one-call center?	
If yes, answer 1c through 1e.	
1c. select one of the following:	
	Describe
1d. Exempting authority:	
1e. Exempting criteria:	
2. Do you want PHMSA to upload the following information to CGA-DIRT (www.cga-dirt.com)?	
3. 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	
- Unknown/Other	
4 Was the facility part of a Joint Trench?	
5. Did this event involve a Cross Bore?	
6. Measured Depth from Grade	
	Measured depth From Grade
7. Type of excavator:	
8. Type of excavation equipment:	
9. Type of work performed:	
10. Was the One-Call Center notified?	
If No, skip to question 11	

10a. If Yes, specify ticket number:	
10b. If this is a State where more than a single One-Call Center exists, list the name of the One-Call Center notified:	
10 c. Was work area white lined?	
11. Type of Locator:	
12. Were facility locate marks visible in the area of excavation?	
13. Did the damage cause an interruption in service?	
13a. If Yes, specify duration of the interruption (hours)	
14. 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 Category	
Root Cause Type	
(comment required)	
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 this sub-section is picked, please complete questions 5-11 below	
- 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.	
- If Intentional Damage:	
3. Specify:	
- If Other, Describe:	
- If Other Outside Force Damage:	
4. Describe:	
Complete the following if Damage by Car, Truck, or Other Motorized Vehicle/Equipment NOT Engaged in Excavation sub-cause is selected.	
5. Was the driver of the vehicle or equipment issued one or more citations related to the accident?	
If 5 is Yes, what was the nature of the citations (select all that apply)	
5a. Excessive Speed	
5b. Reckless Driving	

5c. Driving Under the Influence	
5e. Other	
If Other, Describe	
6. Was the driver under control of the vehicle at the time of the collision?	
7. Estimated speed of the vehicle at the time of impact (miles per hour)?	
- Unknown	
8. Type of vehicle? (select only one)	
9. Where did the vehicle travel from to hit the pipeline facility? (select only one)	
10. Shortest distance from answer in 9. to the damaged pipeline facility (in feet):	
11. At the time of the accident, were protections installed to protect the damaged pipeline facility from vehicular damage?	
If 11 is Yes, specify type of protection (select all that apply):	
11a. Bollards/Guard Posts	
11b. Barricades – include Jersey barriers and fences in instructions	
11c. Guard Rails	
If Other, 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”, “Weld” or “Tank/Vessel”.	
Material Failure of Pipe or Weld – Sub-Cause:	
1. The sub-cause shown above 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 Design-, 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)	
- 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: <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:	
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:	
- If Other Equipment Failure:	
5. Describe:	
Complete the following if any Equipment Failure sub-cause is selected.	
6. Additional factors that contributed to the equipment failure: <i>(select all that apply)</i>	
- Excessive vibration	
- Overpressurization	
- No support or loss of support	
- Manufacturing defect	
- Loss of electricity	
- Improper installation	
- Improper maintenance	
- 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	
- Erosion/Abnormal Wear	
- 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:	
Mandatory comment field:	
PART J – COMPLETED INTEGRITY INSPECTIONS	
Complete the following if the “Item Involved in Accident” (from PART C, Question 3) is Pipe or Weld and the “Cause” (from Part G) is:	
Corrosion (any subCause in Part G1); or	
Previous Damage due to Excavation Activity (subCause in Part G3); or	
Previous Mechanical Damage NOT Related to Excavation (subCause in Part G4); or	
Material Failure of Pipe or Weld (any subCause in Part G5)	
J1. Have internal inspection tools collected data at the point of the Accident?	No
J1a. If Yes, for each tool and technology used provide the information below for the most recent and previous tool runs:	
Axial Magnetic Flux Leakage	
Most recent run Year:	
Most recent run Propulsion Method (select only one):	
Most recent run Attuned to Detect (select only one):	
Other Describe	
If Metal Loss, specify (select only one):	
Other Describe	
Previous run Year:	
Previous run Propulsion Method (select only one):	
Previous run Attuned to Detect (select only one):	
Other Describe	
If Metal Loss, specify (select only one):	
Other Describe	
Circumferential/Transverse Wave Magnetic Flux Leakage	
Most recent run Year:	
Most recent run Propulsion Method (select only one):	
Most recent run Resolution (select only one):	
Other Describe	
Previous run Year:	
Previous run Propulsion Method (select only one):	
Previous run Resolution (select only one):	

Other Describe	
Ultrasonic	
Most recent run Year:	
Most recent run Propulsion Method (select only one):	
Most recent run Attuned (select only one):	
Other Describe	
Previous run Year:	
Previous run Propulsion Method (select only one):	
Most recent run Attuned to (select only one)	
Other Describe	
If Attuned to Wall Measurement, most recent run Metal Loss Resolution (select only one):	
Other Describe	
Geometry/Deformation	
Most recent run Year:	
Most recent run Propulsion Method (select only one):	
Most recent run Resolution (select only one):	
Other Describe	
Most recent run Measurement Cups (select only one):	
Previous run Year:	
Previous run Propulsion Method (select only one):	
Other Describe	
Previous run Resolution (select only one):	
Other Describe	
Previous run Measurement Cups (select only one):	
Electromagnetic Acoustic Transducer (EMAT)	
Most recent run Year:	
Most recent run Propulsion Method (select only one):	
Previous run Year:	
Previous run Propulsion Method (select only one):	
Cathodic Protection Current Measurement (CPCM)	
Most recent run Year:	
Most recent run Propulsion Method (select only one):	
Previous run Year:	
Previous run Propulsion Method (select only one):	
Other, specify tool	
Most recent run Year:	
Most recent run Propulsion Method (select only one):	
Previous run Year:	
Previous run Propulsion Method (select only one):	
Answer J1.b only when the cause is:	

Answer J1.b only when the cause is:	
Previous Damage due to Excavation Activity (subCause in Part G3); or	
Previous Mechanical Damage NOT Related to Excavation (subCause in Part G4)	
J1b. Do you have reason to believe that the internal inspection was completed BEFORE the damage was sustained	
J2. Has one or more hydrotest or other pressure test been conducted since original construction at the point of the Accident? (initial post construction pressure test is NOT reported here)	No
Most recent year tested:	
Test pressure (psig):	
J3. Has Direct Assessment been conducted on the pipeline segment?	No
Most recent year conducted:	
Most recent year conducted:	
If J3 is Yes, J3a. For each type, indicate the year of the most recent assessment	
External Corrosion Direct Assessment (ECDA)	
Other, specify type	
J4. Has one or more non-destructive examination been conducted prior to the Accident at the point of the Accident since January 1, 2002?	No
4a. If Yes, for each examination conducted, select type of non-destructive examination and indicate most recent year the examination was conducted:	
Radiography	
Guided Wave Ultrasonic	
Handheld Ultrasonic Tool	
Wet Magnetic Particle Test	
Dry Magnetic Particle Test	
Other	
- If Other, specify type	
PART K – CONTRIBUTING FACTORS	
The Apparent Cause of the accident is contained in Part G. Do not report the Apparent Cause again in this Part K. If Contributing Factors were identified during a root cause analysis, select all that apply below and explain each in the Narrative:	
External Corrosion	
External Corrosion, Galvanic	
External Corrosion, Atmospheric	
External Corrosion, Stray Current Induced	
External Corrosion, Microbiologically Induced	
External Corrosion, Selective Seam	
Internal Corrosion	
Internal Corrosion, Corrosive Commodity	
Internal Corrosion, Water drop-out/Acid	
Internal Corrosion, Microbiological	
Internal Corrosion, Erosion	
Natural Forces	
Earth Movement, NOT due to Heavy Rains/Floods	

Heavy Rains/Floods	
Lightning	
Temperature	
High Winds	
Tree/Vegetation Root	
Excavation Damage	
Excavation Damage by Operator (First Party)	
Excavation Damage by Operator's Contractor (Second Party)	
Excavation Damage by Third Party	
Previous Damage due to Excavation Activity	
Other Outside Force	
Nearby Industrial, Man-made, or Other Fire/Explosion	
Damage by Car, Truck, or Other Motorized Vehicle/Equipment NOT Engaged in Excavation	
Damage by Boats, Barges, Drilling Rigs, or Other Adrift Maritime Equipment	
Routine or Normal Fishing or Other Maritime Activity NOT Engaged in Excavation	
Electrical Arcing from Other Equipment or Facility	
Previous Mechanical Damage NOT Related to Excavation	
Intentional Damage	
Pipe/Weld Failure	
Design-related	
Construction-related	
Installation-related	
Fabrication-related	
Original Manufacturing-related	
Environmental Cracking-related, Stress Corrosion Cracking	
Environmental Cracking-related, Sulfide Stress Cracking	
Environmental Cracking-related, Hydrogen Stress Cracking	
Environmental Cracking-related, Hard Spot	
Equipment Failure	
Malfunction of Control/Relief Equipment	
Pump or Pump-related Equipment	
Threaded Connection/Coupling Failure	
Non-threaded Connection Failure	
Defective or Loose Tubing or Fitting	
Failure of Equipment Body (except Compressor), Vessel Plate, or other Material	
Incorrect Operation	

Damage by Operator or Operator's Contractor NOT Excavation and NOT Vehicle/Equipment Damage	
Tank, Vessel, or Sump/Separator Allowed or Caused to Overfill or Overflow	
Valve Left or Placed in Wrong Position, but NOT Resulting in Overpressure	
Pipeline or Equipment Over pressured	
Equipment Not Installed Properly	
Wrong Equipment Specified or Installed	
Inadequate Procedure	
No procedure established	
Failure to follow procedures	
PART H - NARRATIVE DESCRIPTION OF THE ACCIDENT	
<p>On 7 May 2020, at 11:33 hrs CDT, an employee was performing routine inspections at the Lucas Terminal and discovered a release in progress on the relief line while the station was shutdown.</p> <p>At 13:10 hrs CDT, the NRC was called, and a report generated (1276821) and distributed at 13:43 hrs CDT. Contact with PHMSA Accident Investigation Division was made at 13:32 hrs CDT. PHMSA Southwest Region was on site May 12-13 for repairs. Pipeline was subsequently restarted on May 15 after replacement of failed section. Mechanical and metallurgical testing are being performed by an independent testing facility, and a root cause failure analysis is to be performed.</p> <p>A 48-hr update to the NRC generated report 1276967.</p> <p>20200730 Update: Total costs have been updated, and failure investigation indicated internal corrosion likely occurred due to microbiologically influenced corrosion.</p>	
PART I - PREPARER AND AUTHORIZED SIGNATURE	
Preparer's Name	John Barrett
Preparer's Title	Compliance Specialist
Preparer's Telephone Number	5312137945
Preparer's E-mail Address	john_barrett@tcenergy.com
Preparer's Facsimile Number	4024927491
Local Contact Name	
Local Contact Email	
Local Contact Phone	
Authorized Signer Name	Erik Hughes
Authorized Signer Title	Senior Manager - US Regulatory Compliance
Authorized Signer Telephone Number	4024907253
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Date	07/30/2020