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

Principal Investigator	Richard J. Lopez
Region Director	R. M. Seeley
Date of Report	11/6/2012
Subject	Failure Investigation Report - Magellan Pipeline Company, Orion 20-inch Pipeline, 3012 Tank Line, East Houston Terminal

Operator, Location, & Consequences

Date of Failure	12/01/2011
Commodity Released	Diesel
City/County & State	Galena Park/ Harris County, Texas
OPID & Operator Name	22610 Magellan Pipeline Company
Unit # & Unit Name	2804 Orion Products East
SMART Activity #	136869
Milepost / Location	East Houston Terminal, Harris County, Texas
Type of Failure	Operator Error/Incorrect Operation
Fatalities	None
Injuries	None
Description of area impacted	Spill contained within the facility (non HCA)
Property Damage	$ 95,000

Executive Summary

On December 1, 2011, at 10:00 a.m. (CST) Magellan Pipeline Company reported a spill of approximately 1,800 barrels (75,600 gallons) of diesel fuel at their East Houston Terminal in Galena Park, Texas. The release occurred on their 20-inch Tank 3012 line, and was reported to have occurred at about 3:30 a.m. (CST).

Magellan's scheduling order for that day was to achieve "maximum flow rate," and in order to achieve this maximum flow rate, the Controller attempted to use the tank pump on Tank 3012, the booster pump, the three mainline pumps at the Terminal and two downstream units at Willis Station, approximately thirty miles away from East Houston.

The operator reported that during the shipment of product, a pump at the facility had automatically shut down at about 3:00 a.m. (CST) due to vibration. The pump was restarted. At restart, the pipe started vibrating, shifting, and the system was shut down again. Valves and manifolds were closed to isolate the segment. The terminal operator then noted diesel fuel on the ground.

The vibration/shift caused the Tank 3012 pipe to move approximately 12-15 inches from left to right. The failure occurred when a 1-inch drip hit either a pipe support or the ground when the pipe moved/shifted.

The released product did not result in a fire. There were no injuries or fatalities. The spill was contained within the terminal. No waterway was affected.

System Details

The Orion Refined Products System is a 1,000-mile pipeline system originating at the East Houston Terminal in Houston, Texas with deliveries to a wholly-owned terminal in Odessa, Texas, a third-party terminal in El Paso, Texas, third-party facilities in central Texas, and the mid-continent region of the United States via an interconnect with Magellan Pipeline at Duncan, Oklahoma. The pipe within the East Houston Terminal is above grade and rests on pipe supports.

Picture 1 - Tank 3012

The Tank 3012 pumping and piping system is comprised of the 250,000 barrel tank, 20-inch above ground suction piping, the 'tank booster' pump, a 'yard booster' pump, metering and three main line pumps all located within the East Houston Terminal. The 20-inch line is used to deliver diesel, kerosene, and jet fuel to downstream customers via the Orion system. The pipeline is operated by Controllers utilizing a SCADA system located in Tulsa, Oklahoma.

Picture 2 - 20-inch Tank 3012 Pipeline – looking towards Tank 3012

Tank 3012 and the 20-inch above grade pipe were constructed in 2008. It is comprised of 20-inch, 0.375 wall thickness, Grade X-35, carbon steel pipe. It was installed on pipe supports and is approximately 1000-feet long.

Events leading up to the Failure

The failure occurred on the 20-inch Orion system within the East Houston Terminal, an interstate system.

At the time of accident the 20-inch Orion system had been operating since 1930 hours, 11/30/2011. Approximately 60,000 barrels (bbls) had been shipped to the Frost Terminal. Shipping rate was approximately 6759 barrels/hour (bbls/hr). The Orion system can operate at a maximum flow rate of 11,000 bbls/hr.

At approximately 0300 hours the Booster Pump shut down due to vibration. The terminal operator on duty went to check the Booster Pump to determine the cause of the shut down. The terminal operator was in contact with the Control Room during this time, and he did not find anything wrong. At this time he and the Controller agreed to restart the system.

Restart was initiated by the Controller in Tulsa. With the restart of the pump, the Tank 3012 line started vibrating, shifting and making a lot of noise. The system was shut down immediately. The Terminal operator began investigating the cause of the shutdown by walking around the terminal, when he smelled and noticed diesel on the ground. The spill was contained in a drainage ditch within the Terminal.

Picture 4 - Drainage ditch where the release product collected

During this time valves at the tank and a nearby manifold were closed to isolate the segment. Notifications per procedure were initiated soon after.

Picture 5 – Tank Line 3012 showing where it might have hit pipe support

The failure occurred when a 1-inch nipple located in the underside of the line 3012 failed when the pipe moved/shifted. It can be used to drain the line.

Picture 6 - Drain line that was damaged

Emergency Response

It is estimated that approximately 1800 barrels (bbls) of diesel were spilled. The spill was contained in a drainage ditch within the Terminal. The spilled product was picked up by vacuum trucks and the drainage ditch was cleaned up as much as possible.

The 20-inch line from Tank 3012 experienced excessive pipe movement during a surge event on November 30, 2011. Magellan prepared a work plan per API 1117 to reposition the tank line to the original alignment on the existing pipe supports. The work plan was reviewed by PHMSA representatives.

The work included isolating the 20-inch pipeline and displacing any product in order to inspect and realign the pipe back to its supports. The bleeder valve was capped and the fillet welds on the nipple were inspected using magnetic particle inspection methods.

The pipeline was inspected for any coating or pipe damage then pressure tested successfully using nitrogen. A leak test was performed per SIP 7.13-ADM-019 – Integrity Verification the leak test pressure did not exceed 100 psi. The test plan and the test were reviewed and witnessed by PHMSA representatives. No major repairs were necessary after the leak test or after the realignment had been completed. All girth welds that were moved during realignment were inspected using Non-Destructive Tests (NDT) methods prior to realignment of the line.

All work was performed in accordance with all Company Specifications.

Summary of Return-to-Service

The Orion pipeline system, including the yard booster and all three mainline units at East Houston are currently in operation. Magellan completed a hydraulic study and all measures have been implemented.

Investigation Details

The initial focus of the investigation following the event was on the potential for an inadvertent line blockage which could have created the hammer effect. The SCADA forensic analysis and Field verification indicates there were no intended or unintended valve closures that could have contributed or caused a hammer during the time interval when the hammer occurred.

Magellan interviewed local operating personnel and documentation and there were no activities occurring at the time that would support a manual intervention. The prover loop was evaluated to determine if a blockage could occur there, however, it was determined that the prover ball was in fact undersized and showed no signs of damage.

Moreover, there are no valves in the system that could have actuated with a speed that could have impacted the process as fast as at the SCADA data recorded the upset. The strainers located in the meter run and the pressure drop across the meter run does not support any type of meter plug event that could have cause the hydraulic surge.

Magellan has operated the Orion asset for many years out of East Houston without any issue Based on the lack of information to support a line blockage, the focus was shifted to a review of the hydraulic conditions. Magellan conducted an analysis of the recent change of events that may have had an effect on the system. Two predominant items stood out; one that Tank 3012 was put into service in 2010, and the other being that Magellan had not utilized a second mainline pump unit at Willis until very recently.

Magellan concluded after this analysis that running the second unit at Willis at its maximum rate created a condition based that led to the column separation event.

The hydraulic hammer was caused by a vapor column created by high, turbulent flow through a single meter configuration through the meter, prover, and wafer check valve in the meter run area upstream of the three Orion mainline pumping units. It can be seen in the SCADA logs of 11/30/11. The logs registered zero pressure on the upstream segment of the system at 18:49:54 and at 18:53:00 hours.

The collapse of a vapor pocket caused a severe pressure transient on the 20-inch Tank 3012 pipeline. This was triggered by a dramatic drop in the pump suction pressure, which tripped the pump, which raised the pressure again. This caused the rapid formation and collapse of a vapor pocket and the pressure transient.

Despite extensive investigation, the root cause of the dramatic drop in suction pressure could not be identified.

Picture 3 - Tank Line 3012 moved to the left – looking away from Tank 3012

Findings and Contributing Factors

In searching for a root cause, GL Noble Denton found four events that occurred in 2010 and 2011 from which could provide clues to understanding the severe pressure transient. These events were not severe enough to cause pipe movement, and there was no indication that they presented a risk to the facility. However, these four events had sharp (less than 2 seconds) suction pressure drops following the same pattern as the current incident.

The following clues were determined from analyzing the events:

- The root cause originated somewhere between the meter inlet and the pump suction.
- The suction pressure dropped below vapor pressure.
- The events occurred when the flow was going through meter 4 in the range of 6280 to 7100 bph.

GL Noble Denton analyzed SCADA data and noticed that dozens of low-low suction trips had occurred in 2010 and 2011. They found that these trips were more than is typical for this type of facility. However they also found that none of these posed any risk of overpressure or pipe movement.

This is primarily due to the 1000-feet straight section of pipe installed on pipe supports. GL Noble Denton concludes that it doesn't appear possible to anchor this segment in a way that would prevent movement and/or damage. Thus to avoid pipe movement in the future they find that it is necessary to avoid severe pressure transients in this piping.

GL Noble Denton recommended consideration of the following factors to reduce the number of trips:

- Tank switches: Not enough pressure to maintain the original flow after switchover.
- Tank switches: Switched over too quickly
- Too much pressure drop between the tank and the pump suction, probably due to the flow rates being higher than in the past.
- Too much pressure drop through the meters.

GL Noble Denton also observed that the geometry of the Tank 3012 pipe segment makes it more vulnerable to pressure transients than other pipe segments in the facility.

- The collapse of a vapor pocket was caused the severe pressure transient.
- The collapse of the vapor pocket was triggered by a dramatic drop in the pump suction pressure
- The booster pump shut down due to low suction pressure.
- With the booster pump shut down the pressure increased again.
- This caused the rapid formation and collapse of a vapor pocket.
- The rapid formation and collapse created a pressure transient that caused the pipe to move.
- The construction configuration of Tank 3012 pipe segment – 1000 - feet straight section of pipe installed on pipe supports - makes it more vulnerable to pressure transients.

Conclusions

As a result of this release and the results of the hydraulic analysis and investigation, Magellan has implemented changes within the facility to prevent similar occurrences. Magellan has completed the following:

- Management of Change to always have product flow through the dual, two meter configuration. This change in operation eliminates the potential for any upsets caused by opening/closing the second meter;
- Unit suction control programming has been implemented;
- Installed an additional pressure transmitter on the suction side of the yard booster; and
- Surge relief has been installed between the manifold and the pump suction.

Appendices

A Telephonic Notice Report - NRC # 996897
B Magellan Incident Report to PHMSA – 20110460
C Hydraulic Report
D Metallurgical Evaluation Report
E Map of Magellan's facilities

Appendices

A Telephonic Notice Report - NRC # 996897

From: HQS-PF-fldr-NRC@uscg.mil [mailto:HQS-PF-fldr-NRC@uscg.mil]
Sent: Thursday, December 01, 2011 10:22 AM
To: PHP Accident/Incident Cadre <PHMSA>; CMC-01 (OST)
Subject: NRC#996897

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 # 996897

INCIDENT DESCRIPTION

*Report taken by: E4 BRANDON WEATHERLY at 11:13 on 01-DEC-11
Incident Type: PIPELINE
Incident Cause: EQUIPMENT FAILURE
Affected Area:
Incident occurred on 01-DEC-11 at 03:30 local incident time.
Affected Medium: SOIL LAND

REPORTING PARTY
Name: STEVEN MOYER
Organization: MAGELLAN
Address: 12901 AMERICAN PETROLEUM RD
GALENA PARK, TX 74172
MAGELLAN reported for the responsible party.
PRIMARY Phone: (918)5747040
Type of Organization: PRIVATE ENTERPRISE

SUSPECTED RESPONSIBLE PARTY
Name: STEVEN MOYER
Organization: MAGELLAN
Address: 12901 AMERICAN PETROLEUM RD
GALENA PARK, TX 74172
PRIMARY Phone: (918)5747040

INCIDENT LOCATION

7901 WALLACEVILLE RD. County: HARRIS

City: HOUSTON State: TX

RELEASED MATERIAL(S)

CHRIS Code: ODS Official Material Name: OIL: DIESEL

Also Known As:

Qty Released: 1800 BARREL(S)

DESCRIPTION OF INCIDENT

CALLER IS REPORTING A DISCHARGE OF APPROXIMATELY 1800 BARRELS ONTO THE SOIL. CALLER STATED THAT A NIPPLE ON A LATERAL LINE BROKE RESULTING IN THE DISCHARGE.

SENSITIVE INFORMATION

TCEQ ON SITE: MIKE DAVIS 713-767-3662

INCIDENT DETAILS

Pipeline Type: LATERAL

DOT Regulated: YES

Pipeline Above/Below Ground: ABOVE

Exposed or Under Water: NO

Pipeline Covered: 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

Hours Direction of

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

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

REMEDIAL ACTIONS

SHUTDOWN SYSTEM, CLEAN UP CREW ON-SITE (USES), CALLER STATED CONTRACTORS PUMPING MATERIAL INTO ANOTHER STORAGE TANK.
Release Secured: YES
Release Rate:
Estimated Release Duration:

WEATHER

Weather: CLEAR, ºF

ADDITIONAL AGENCIES NOTIFIED

Federal: NONE
State/Local: TCEQ, TGLO, SERC
State/Local On Scene: TCEQ
State Agency Number: NONE

NOTIFICATIONS BY NRC

CALCASIEU PARISH SHERIFF'S DEPT (CRIMINAL INTELLIGENCE UNIT)
01-DEC-11 11:21 (337)4913778
USCG ICC (ICC ONI)
01-DEC-11 11:21 (301)6693363
DHS PROTECTIVE SECURITY ADVISOR (PSA DESK)
01-DEC-11 11:21 (703)2355724
DHS TEXAS FUSION CENTER (INTELLIGENCE OFFICERS)

01-DEC-11 11:21 (202)3068204
DOT CRISIS MANAGEMENT CENTER (MAIN OFFICE)
01-DEC-11 11:21 (202)3661863
U.S. EPA VI (MAIN OFFICE)
(866)3727745
GULF STRIKE TEAM (MAIN OFFICE)
01-DEC-11 11:21 (251)4416601
JFO-LA (COMMAND CENTER)
01-DEC-11 11:21 (225)3366513
NATIONAL INFRASTRUCTURE COORD CTR (MAIN OFFICE)
01-DEC-11 11:21 (202)2829201
NOAA RPTS FOR TX (MAIN OFFICE)
01-DEC-11 11:21 (206)5264911
NTSB PIPELINE (MAIN OFFICE)
01-DEC-11 11:21 (202)3146293
PIPELINE & HAZMAT SAFETY ADMIN (OFFICE OF PIPELINE SAFETY (AUTO))
01-DEC-11 11:21 (202)3660568
TCEQ (MAIN OFFICE)
01-DEC-11 11:21 (512)2392507
TCEQ (REGION 12)
01-DEC-11 11:21 (512)2392507
TX DEPT OF STATE HEALTH SERVICES (COMMAND CENTER)
01-DEC-11 11:21 (512)4587220
TX GENERAL LAND OFFICE (MAIN OFFICE)
01-DEC-11 11:21 (281)4706597
TX GENERAL LAND OFFICE (TXGLO REGION 2)
01-DEC-11 11:21 (281)4706597
TEXAS STATE OPERATIONS CENTER (COMMAND CENTER)
01-DEC-11 11:21 (512)4242208
USCG DISTRICT 8 (MAIN OFFICE)
01-DEC-11 11:21 (504)5896225

ADDITIONAL INFORMATION

NONE.

*** END INCIDENT REPORT #996897 ***

Report any problems by calling 1-800-424-8802

PLEASE VISIT OUR WEB SITE AT http://www.nrc.uscg.mil

B Magellan Incident Report to PHMSA – 20110460

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:** 12/29/2011 **No.** 20110460 - 16292 (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: Yes	Supplemental:	Final:
Last Revision Date:			

1. Operator's OPS-issued Operator Identification Number (OPID):	22610
2. Name of Operator	MAGELLAN PIPELINE COMPANY, LP
3. Address of Operator:	
3a. Street Address	MAGELLAN MIDSTREAM PARTNERS, L.P., ONE WILLIAMS CENTER, MAIL DROP 27
3b. City	TULSA
3c. State	Oklahoma
3d. Zip Code	74172
4. Local time *(24-hr clock)* and date of the Accident:	11/30/2011 06:49
5. Location of Accident:	
Latitude:	29.79444
Longitude:	-95.28137
6. National Response Center Report Number (if applicable):	996897
7. Local time *(24-hr clock)* and date of initial telephonic report to the National Response Center (if applicable):	12/01/2011 10:10
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:	Diesel, Fuel Oil, Kerosene, Jet Fuel
- 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):	1,855.00
10. Estimated volume of intentional and/or controlled release/blowdown (Barrels):	
11. Estimated volume of commodity recovered (Barrels):	1,855.00
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	

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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:	12/01/2011 03:15
14b. Local time pipeline/facility restarted:	
- Still shut down? (* Supplemental Report Required)	Yes
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:	12/01/2011 03:12
18b. Local time Operator resources arrived on site:	12/01/2011 03:12
PART B - ADDITIONAL LOCATION INFORMATION	
1. Was the origin of Accident onshore?	Yes
If Yes, Complete Questions (2-12)	
If No, Complete Questions (13-15)	
- If Onshore:	
2. State:	Texas
3. Zip Code:	77029
4. City	HOUSTON
5. County or Parish	HARRIS
6. Operator-designated location:	Milepost/Valve Station
Specify:	0
7. Pipeline/Facility name:	East Houston
8. Segment name/ID:	3012 Tank Line
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):	Aboveground
Specify:	Typical aboveground facility piping or appurtenance
- If Other, Describe:	
Depth-of-Cover (in):	
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 Terminal/Tank Farm Equipment and Piping
- If Onshore Breakout Tank or Storage Vessel, Including Attached Appurtenances, specify:	
3. Item involved in Accident:	Auxiliary Piping (e.g. drain lines)

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- 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 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:	2008
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:	Connection Failure
- If Other, Describe:	
- If Rupture - Select Orientation:	
- If Other, Describe:	
Approx. size: in. (widest opening) by	
in. (length circumferentially or axially)	
- If Other – Describe:	

PART D - ADDITIONAL CONSEQUENCE INFORMATION

1. 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:	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)?	No
7a. If Yes, specify HCA type(s): *(Select all that apply)*	
- Commercially Navigable Waterway:	
Was this HCA identified in the "could affect"	

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determination for this Accident site in the Operator's Integrity Management Program?	
- High Population Area:	
Was this HCA identified in the "could affect" determination for this Accident site in the Operator's Integrity Management Program?	
- Other Populated Area	
Was this HCA identified in the "could affect" determination for this Accident site in the Operator's Integrity Management Program?	
- Unusually Sensitive Area (USA) - Drinking Water	
Was this HCA identified in the "could affect" determination for this Accident site in the Operator's Integrity Management Program?	
- Unusually Sensitive Area (USA) - Ecological	
Was this HCA identified in the "could affect" determination for this Accident site in the Operator's Integrity Management Program?	
8. Estimated Property Damage:	
8a. Estimated cost of public and non-Operator private property damage	$ 0
8b. Estimated cost of commodity lost	$ 0
8c. Estimated cost of Operator's property damage & repairs	$ 50,000
8d. Estimated cost of Operator's emergency response	$ 26,500
8e. Estimated cost of Operator's environmental remediation	$ 18,500
8f. Estimated other costs	$ 0
Describe:	
8g. Total estimated property damage (sum of above)	$ 95,000

PART E - ADDITIONAL OPERATING INFORMATION

1. Estimated pressure at the point and time of the Accident (psig):	272.00
2. Maximum Operating Pressure (MOP) at the point and time of the Accident (psig):	275.00
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	

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- 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?	Yes
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 "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?	Yes, but the investigation of the control room and/or controller actions has not yet been completed by the operator (Supplemental Report Required)
- 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

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1. As a result of this Accident, were any Operator employees tested under the post-accident drug and alcohol testing requirements of DOT's Drug & Alcohol Testing regulations?	Yes
- If Yes:	
1a. Specify how many were tested:	1
1b. Specify how many failed:	0
2. As a result of this Accident, were any Operator contractor employees tested under the post-accident drug and alcohol testing requirements of DOT's Drug & Alcohol Testing regulations?	No
- If Yes:	
2a. Specify how many were tested:	
2b. Specify how many failed:	

PART G – APPARENT CAUSE

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

Apparent Cause:	G6 - Equipment Failure
G1 - Corrosion Failure - only one **sub-cause** can be picked from shaded left-hand column	
External Corrosion:	
Internal Corrosion:	
- If External Corrosion:	
1. Results of visual examination:	
- If Other, Describe:	
2. Type of corrosion: *(select all that apply)*	
- Galvanic	
- Atmospheric	
- Stray Current	
- Microbiological	
- Selective Seam	
- Other:	
- If Other, Describe:	
3. The type(s) of corrosion selected in Question 2 is based on the following: *(select all that apply)*	
- Field examination	
- Determined by metallurgical analysis	
- Other:	
- If Other, Describe:	
4. Was the failed item buried under the ground?	
- If Yes :	
□4a. Was failed item considered to be under cathodic protection at the time of the Accident?	
If Yes - Year protection started:	
4b. Was shielding, tenting, or disbonding of coating evident at the point of the Accident?	
4c. Has one or more Cathodic Protection Survey been conducted at the point of the Accident?	
If "Yes, CP Annual Survey" – Most recent year conducted:	
If "Yes, Close Interval Survey" – Most recent year conducted:	
If "Yes, Other CP Survey" – Most recent year conducted:	
- If No:	
4d. Was the failed item externally coated or painted?	
5. Was there observable damage to the coating or paint in the vicinity of the corrosion?	
- If Internal Corrosion:	
6. Results of visual examination:	
- Other:	
7. Type of corrosion *(select all that apply)*: -	
- Corrosive Commodity	
- Water drop-out/Acid	
- Microbiological	
- Erosion	
- Other:	
- If Other, Describe:	
8. The cause(s) of corrosion selected in Question 7 is based on the following *(select all that apply)*: -	
- Field examination	

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- 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:	

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Describe:	
G2 - Natural Force Damage - only one **sub-cause** can be picked from shaded left-handed column	
Natural Force Damage – Sub-Cause:	
- If Earth Movement, NOT due to Heavy Rains/Floods:	
1. Specify:	
- If Other, Describe:	
- If Heavy Rains/Floods:	
2. Specify:	
- If Other, Describe:	
- If Lightning:	
3. Specify:	
- If Temperature:	
4. Specify:	
- If Other, Describe:	
- If High Winds:	
- If Other Natural Force Damage:	
5. Describe:	
Complete the following if any Natural Force Damage sub-cause is selected.	
6. Were the natural forces causing the Accident generated in conjunction with an extreme weather event?	
6a. If Yes, specify: *(select all that apply)*	
- Hurricane	
- Tropical Storm	
- Tornado	
- Other	
- If Other, Describe:	
G3 - Excavation Damage - only one **sub-cause** can be picked from shaded left-hand column	
Excavation Damage – Sub-Cause:	
- If Excavation Damage by Operator (First Party):	
- If Excavation Damage by Operator's Contractor (Second Party):	
- If Excavation Damage by Third Party:	
- If Previous Damage due to Excavation Activity:	
Complete Questions 1-5 ONLY IF the "Item Involved in Accident" (from PART C, Question 3) is Pipe or Weld.	
1. Has one or more internal inspection tool collected data at the point of the Accident?	
1a. If Yes, for each tool used, select type of internal inspection tool and indicate most recent year run: -	
- Magnetic Flux Leakage	
Most recent year conducted:	
- Ultrasonic	
Most recent year conducted:	
- Geometry	
Most recent year conducted:	
- Caliper	
Most recent year conducted:	
- Crack	
Most recent year conducted:	
- Hard Spot	
Most recent year conducted:	
- Combination Tool	
Most recent year conducted:	
- Transverse Field/Triaxial	
Most recent year conducted:	
- Other	
Most recent year conducted:	
Describe:	
2. Do you have reason to believe that the internal inspection was completed BEFORE the damage was sustained?	
3. Has one or more hydrotest or other pressure test been conducted since original construction at the point of the Accident?	
- If Yes:	

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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*	

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Other Outside Force Damage – Sub-Cause:	
- If Nearby Industrial, Man-made, or Other Fire/Explosion as Primary Cause of Incident:	
- If Damage by Car, Truck, or Other Motorized Vehicle/Equipment NOT Engaged in Excavation:	
1. Vehicle/Equipment operated by:	
- If Damage by Boats, Barges, Drilling Rigs, or Other Maritime Equipment or Vessels Set Adrift or Which Have Otherwise Lost Their Mooring:	
2. Select one or more of the following IF an extreme weather event was a factor:	
- Hurricane	
- Tropical Storm	
- Tornado	
- Heavy Rains/Flood	
- Other	
- If Other, Describe:	
- If Routine or Normal Fishing or Other Maritime Activity NOT Engaged in Excavation:	
- If Electrical Arcing from Other Equipment or Facility:	
- If Previous Mechanical Damage NOT Related to Excavation:	
Complete Questions 3-7 ONLY IF the "Item Involved in Accident" (from PART C, Question 3) is Pipe or Weld.	
3. Has one or more internal inspection tool collected data at the point of the Accident?	
3a. If Yes, for each tool used, select type of internal inspection tool and indicate most recent year run:	
- Magnetic Flux Leakage	
Most recent year conducted:	
- Ultrasonic	
Most recent year conducted:	
- Geometry	
Most recent year conducted:	
- Caliper	
Most recent year conducted:	
- Crack	
Most recent year conducted:	
- Hard Spot	
Most recent year conducted:	
- Combination Tool	
Most recent year conducted:	
- Transverse Field/Triaxial	
Most recent year conducted:	
- Other	
Most recent year conducted:	
Describe:	
4. Do you have reason to believe that the internal inspection was completed BEFORE the damage was sustained?	
5. Has one or more hydrotest or other pressure test been conducted since original construction at the point of the Accident?	
- If Yes:	
Most recent year tested:	
Test pressure (psig):	
6. Has one or more Direct Assessment been conducted on the pipeline segment?	
- If Yes, and an investigative dig was conducted at the point of the Accident:	
Most recent year conducted:	
- If Yes, but the point of the Accident was not identified as a dig site:	
Most recent year conducted:	
7. Has one or more non-destructive examination been conducted at the point of the Accident since January 1, 2002?	
7a. If Yes, for each examination conducted since January 1, 2002, select type of non-destructive examination and indicate most recent year the examination was conducted:	
- Radiography	
Most recent year conducted:	
- Guided Wave Ultrasonic	
Most recent year conducted:	
- Handheld Ultrasonic Tool	
Most recent year conducted:	
- Wet Magnetic Particle Test	
Most recent year conducted:	
- Dry Magnetic Particle Test	
Most recent year conducted:	

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- 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: *(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 Original Manufacturing-related (NOT girth weld or other welds formed in the field):	
2. List contributing factors: *(select all that apply)*	
- Fatigue or Vibration-related:	
Specify:	
- If Other, Describe:	
- Mechanical Stress:	
- Other	
- If Other, Describe:	
- If Environmental Cracking-related:	
3. Specify:	
- 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:	

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- 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:	Threaded Connection/Coupling Failure
- 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:	Threaded Fitting
- If Other – Describe:	
- If Non-threaded Connection Failure:	
4. Specify:	
- If Other – Describe:	
- If Defective or Loose Tubing or Fitting:	
- If Failure of Equipment Body (except Pump), Tank Plate, or other Material:	
- If Other Equipment Failure:	

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5. Describe:	
Complete the following if any Equipment Failure sub-cause is selected.	
6. Additional factors that contributed to the equipment failure: *(select all that apply)*	
- Excessive vibration	Yes
- Overpressurization	
- No support or loss of support	
- Manufacturing defect	
- Loss of electricity	
- Improper installation	
- Mismatched items (different manufacturer for tubing and tubing fittings)	
- Dissimilar metals	
- Breakdown of soft goods due to compatibility issues with transported commodity	
- Valve vault or valve can contributed to the release	
- Alarm/status failure	
- Misalignment	
- Thermal stress	
- Other	
- If Other, Describe:	
G7 - Incorrect Operation - only one **sub-cause** can be selected from the shaded left-hand column	
Incorrect Operation – Sub-Cause:	
Damage by Operator or Operator's Contractor NOT Related to Excavation and NOT due to Motorized Vehicle/Equipment Damage	No
Tank, Vessel, or Sump/Separator Allowed or Caused to Overfill or Overflow	No
1. Specify:	
- If Other, Describe:	
Valve Left or Placed in Wrong Position, but NOT Resulting in a Tank, Vessel, or Sump/Separator Overflow or Facility Overpressure	No
Pipeline or Equipment Overpressured	No
Equipment Not Installed Properly	No
Wrong Equipment Specified or Installed	No
Other Incorrect Operation	No
2. Describe:	
Complete the following if any Incorrect Operation sub-cause is selected.	
3. Was this Accident related to *(select all that apply)*: -	
- Inadequate procedure	
- No procedure established	
- Failure to follow procedure	
- Other:	
- If Other, Describe:	
4. What category type was the activity that caused the Accident?	
5. Was the task(s) that led to the Accident identified as a covered task in your Operator Qualification Program?	
5a. If Yes, were the individuals performing the task(s) qualified for the task(s)?	
G8 - Other Accident Cause - only one **sub-cause** can be selected from the shaded left-hand column	
Other Accident Cause – Sub-Cause:	
- If Miscellaneous:	
1. Describe:	

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- If Unknown:	
2. Specify:	

PART H - NARRATIVE DESCRIPTION OF THE ACCIDENT

The lateral line from tank 3012 shifted due to excessive vibration during a slack line condition. The shift of the pipe caused a 1 inch nipple located on the bottom of the pipe to come in contact with a concrete pipe support causing the nipple to break off allowing product to be released into a drainage swale within the terminal facility. Product was contained in the drainage swale and did not leave the facility.

*File Full Name

PART I - PREPARER AND AUTHORIZED SIGNATURE

Preparer's Name	Deaundra Chancellor
Preparer's Title	
Preparer's Telephone Number	
Preparer's E-mail Address	
Preparer's Facsimile Number	
Authorized Signature's Name	Deaundra Chancellor
Authorized Signature Title	Sr. Compliance Coordinator
Authorized Signature Telephone Number	918-574-7386
Authorized Signature Email	deaundra.chancellor@magellanlp.com
Date	12/29/2011

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Appendix C

Magellan Pipeline Company – Orion Products East

Hydraulic Report

This document is on file at PHMSA

Appendix D

Magellan Pipeline Company – Orion Products East

Metallurgical Evaluation Report

This document is on file at PHMSA

Appendix E

Magellan Pipeline Company – Orion Products East

Map of Facilities

This document is on file at PHMSA