DOT U.S. Department of Transportation
PHMSA Pipeline and Hazardous Materials Safety Administration
OPS Office of Pipeline Safety
Central Region

Principal Investigator	Gery Bauman/Karen Butler
Region Director	David Barrett
Date of Report	3/28/2015
Editorial Revision Date	11/8/2016
Subject	Failure Investigation Report—Magellan Pipeline Company, LP—External Corrosion, Crevice and Atmospheric

Operator, Location, & Consequences

Date of Failure	11/25/2012
Commodity Released	Refined Product—Jet Fuel
City/County & State	Kansas City/Wyandotte, Kansas
OpiD & Operator Name	22610 Magellan Pipeline Company, LP
Unit # & Unit Name	3933 (WPL) Kansas City Unit
SMART Activity #	147517
Milepost/Location	41+27/Line 6495, Fairfax West KCI pipeline
Type of Failure	Pinhole leak at bridge pipe support; crevice and atmospheric corrosion
Fatalities	0
Injuries	0
Description of area impacted	Missouri River Crossing, High Consequence Area (HCA), urban
Total Costs	$62,477

Executive Summary

On November 25, 2012, at 1:02 p.m. Central Standard Time (CST)[1], the Magellan Pipeline Company, LP (Magellan), was notified by MVS Services, an inspector working for gas transmission pipeline operator Southern Star, of an active leak on the 6-inch refined products Fairfax West KCI Line 6495 (Line 6495). Magellan employees were dispatched and identified jet fuel dripping from a pipe supported off the west side of the northbound lane of the 7th Street Bridge (U.S. Route 69). The leak was physically located in Kansas City, Kansas, on a portion of the 7th Street Bridge that crossed over the Missouri River. The pipeline was not flowing at the time of notification, and there were no fatalities, injuries, fires, or ignition of the product. All lanes of traffic across the bridge were closed for approximately 2.5 hours, the volume of the leak was 0.1 barrels, and the total costs associated with the accident were reported as $62,477. The leak occurred in a High Consequence Area (HCA) but did not result in any evident sheen on the Missouri River. The pipeline was repaired by cutting out the pipe support and associated carrier pipe and installing new pre-tested carrier pipe supported by a hanger. This repair required permitted traffic control actions that resulted in timed bridge lane closures.

As a result of the leak and discussion with the Pipeline and Hazardous Materials Safety Administration (PHMSA), Magellan agreed to a review of existing in-line inspection (ILI) data, metallurgical evaluation of the carrier pipe, the development and review of a restart plan, a complete inspection of the 7th Street Bridge supports prior to restart, and an examination of records to determine the location of other similar supports in the Magellan system.

A pinhole leak was located at the 10 o'clock position of the pipeline during the course of the investigation. A pipe support at the leak location was unique in design, did not completely encircle the carrier pipe, and was only partially welded to the carrier pipe. Metallurgical analysis conducted on the failed carrier pipe determined that, "external crevice corrosion acted between the pipeline and the pipe support in an area where the support was not welded to the pipeline. This area was exposed to moisture and atmospheric corrosion occurred."[2]

System Details

The Magellan hazardous liquid pipeline system includes approximately 9,400 miles of pipeline and 600 storage tanks in 13 different States, including a reported 83 overhead structure or span locations. The Fairfax West KCI pipeline is approximately 10 miles long and transports jet fuel from Magellan's Kansas City tank farm to the Kansas City International Airport (MCI). The Fairfax West KCI pipeline is comprised of two different lines: Line 6495, which crosses above the Missouri River on the 7th Street Bridge, and Line 6140, located in the Fairfax area south of the leak location. The crossing on the northbound lane of the bridge is approximately 2,600 feet long and supported by 92 hangers including the one at the failure site.

Line 6495 was authorized to cross the 7th Street Bridge by a permitted agreement between the Missouri Highways and Transportation Division, the Secretary of Transportation for the State of Kansas, and the pipeline operator. This particular bridge is also known as the Platt Purchase Bridge, and is scheduled for

[1] All times in the body of this report are in Central Standard Time (CST) unless otherwise noted. The call time given in the NRC Report (Appendix B) was reported in Eastern Standard Time.
[2] Kiefner and Associates, Inc. (January 21, 2013). *Final Report No. 13-015: Evaluation of the Line 6495 Kansas City to Kansas City International Airport 6-inch Jet Fuel Pipeline Leak.* Final metallurgical report.

demolition in the next several years. The latest permit for the span of the pipeline supported from the bridge was renewed in the summer of 2008 with an expiry date of 2033.

The pipeline at the failure location was 6.625 inches in diameter, 0.188 inches in wall thickness, made of American Petroleum Institute (API) 5LX-46 material, and manufactured by Southwestern Steel. The pipeline's seam was low-frequency electric resistance weld, and the line was built and painted in 1966. The pipeline was listed as a refined products pipeline, but exclusively transported jet fuel.

This pipeline was previously operated by Williams Energy Services (Williams) before being sold to Magellan. The Fairfax West KCI pipeline was one of five pipelines (three airport supply lines, including the Fairfax West KCI pipeline, and two railroad supply lines) that were part of a hazardous facility order that resulted in a consent order. This consent order was amended for a second time (CPF 3548-H) on June 26, 1992, at which time the maximum operating pressure (MOP) for the Fairfax West KCI pipeline was established to be 500 pounds per square inch gauge (psig). At the time of the accident, the MOP had been reduced to 462 psig. The pipeline operated at 20 percent specified minimum yield strength (SMYS) or below, had a thicker wall than that of the failure location present at some locations (0.219-inch wall thickness, as an example), and contained some Grade B pipe.

Williams Energy Services contacted PHMSA and the Research and Special Programs Administration (RSPA) in 1999 seeking clarification as to whether five pipelines under CPF 3548-H would be required to receive a hydrotest after the order was closed, or if the pipelines would need to qualify under the risk-based alternative requirements in the regulations. PHMSA and the RSPA responded to the operator in a letter dated July 21, 1999, indicating that if the lines were low stress they would not have to be pressure tested so long as they met the requirements detailed in 49 Code of Federal Regulations 195.302b. In addition, the letter informed the operator that the pipelines under the order would need to be hydrotested if the MOP was raised.

Of the five Magellan-operated pipelines identified in CPF 3548-H and its second amendment, all but the Fairfax West pipeline had been hydrotested at the time of this report.

Events Leading up to the Failure

The Fairfax West KCI pipeline operates intermittently to supply jet fuel to MCI. On the day of the failure, the pipeline had been shut down since 8:48 a.m. at a pressure of 227 psig. Throughout the day the pressure increased gradually as the temperature rose, eventually reaching approximately 235 psig. The Magellan control center was notified at 1:02 p.m. by contract workers from MVS Services, who were performing maintenance on a natural gas transmission pipeline operated by Southern Star, of an active leak on what appeared to be a 6-inch pipeline on the 7th Street Bridge. A pressure drop was not detected by the Supervisory Control and Data Acquisition or leak detection systems located in Tulsa, Oklahoma. The Southern Star personnel who initially noticed the leak reported timing it at approximately one drop every two minutes.

Emergency Response

Magellan employees were dispatched to the bridge and identified jet fuel dripping from a pipe support that secured the pipeline to the bridge structure. Magellan's operations control center initiated shutdowns of their #3, #4S, and #6S pipelines at 1:07 p.m., followed by a shutdown of all pipelines (both incoming and outgoing) of the Magellan Kansas City tank farm and facility at 1:11 p.m. Block valves on

both sides of the river were closed ([redacted], and at 1:47 p.m. Magellan notified National Response Center (NRC) #1031477 with a reported estimated volume of product release of 250 barrels. The product had stopped leaking from the pipe as of the report to PHMSA at 2:48 p.m., and both the northbound and southbound lanes on the 7th Street Bridges were blocked by the local county sheriff. Absorbent material was used to prevent more jet fuel from dripping into the Missouri River. A hazardous materials crew completed a review of the river water surface by 3:56 p.m. and found no indications of a product sheen or release on the water. At 4:13 p.m. Magellan reported making a second notification to the NRC, revising the volume released to one barrel. This report update was not issued to PHMSA, but communication from Magellan regarding the revised volume did occur. By approximately 5 p.m. on Sunday, November 25, 2012, the 7th Street Bridges were reopened, initial pipeline drain-up was completed, and the incident command phase was over.

Magellan began to focus on future traffic control activities for the northbound bridge, including obtaining the associated permits in order to perform repair activities. One lane over the bridge would have to be periodically closed to have enough space to complete the repair activities safely. On Monday and Tuesday (November 26 and 27), restart plans were discussed with PHMSA, traffic control permits were obtained, the condition of other bridge supports was assessed, and materials and equipment were located and staged.

Summary of Return-To-Service

Magellan developed and discussed the restart plan (including the repair aspect) with PHMSA multiple times between Monday, November 26-Wednesday, November 28, 2012. A third-party contractor, HDR, Inc., performed visual inspection of the existing 91 pipeline hangers on the northbound span of the 7th Street Bridge and found that no immediate actions were required. The existing pipe and pipe supports were reported to be in adequate condition to support the pipe through the repair actions. Prior to performing the repairs, the contractor recommended installing temporary braced supports on either side of the pipe cut locations in order to prevent the pipeline from moving out of horizontal or vertical alignment. This recommendation was implemented.

On Wednesday, November 28, 2012, a nitrogen push using a cup pig was initiated to prevent any residual product from being released during repair operations. The final restart plan included provisions for a review with PHMSA of the contractor's report on the visual inspection of hangers and the pipeline, verification that the pipeline was secured and stable before pipe cuts were made, visual inspection of everything possible on the upstream and downstream sides of the failure (including internal pipe condition), continuous atmospheric monitoring, nondestructive evaluation (NDE) of new welds, installation of a non-conductive hanger, a daylight restart, visual inspection for leaks after re-pressurization, and a 90-minute hold test at approximately 280 psig.

The pipeline was repaired on Friday, November 30, 2012, by cutting out the pipe support and associated carrier pipe and installing 7.25 feet of pre-tested 6-inch pipe on a supporting nonconductive hanger. The supply of jet fuel to the airport was continually monitored, and one lane of the bridge was closed to traffic under a permit restriction from 8:00 a.m. until 4:30 p.m. After the replacement was completed, the pipeline successfully passed a 90-minute hold test and was returned to service at 4:13 p.m. on Friday, November 30, 2012.

Investigation Details

Magellan's final report stated a released volume of less than 0.1 barrel of jet fuel, which evaporated before reaching the Missouri River. Although Magellan contacted the NRC a second time in order to reduce the original volume amount of 250 barrels to 1 barrel, this NRC report update was never formalized and no change in reported volume was received by PHMSA from the NRC. However, Magellan did inform PHMSA of this volume revision during follow-up communications associated with the investigation. There were no injuries, fires, or evacuations as a result of the leak.

Magellan agreed to a review of the existing ILI data, a metallurgical evaluation of the carrier pipe, a comprehensive review of the remaining bridge supports for signs of corrosion on the carrier pipe, and an examination of records to determine the location of other similar supports on the Magellan system.

As agreed, Magellan performed a review of the ILI data. A TDW EGP/MFL tool was run in 2006, and in 2011—the last ILI inspection prior to the release—a Quest InVista ultrasonic tool was utilized. The 2011 tool run identified 77 reported metal loss anomalies on the pipe across the river, which resulted in review and mitigation for 5 specific areas of suspended pipe located on the north end of the bridge and addressed 15 of the metal loss anomalies, all of which were in the vicinity of a support hanger. Magellan reported that the worst remaining anomaly that was not investigated had a predicted peak depth of 21 percent wall thickness. The tool run in the location of the release did not show any anomaly in the immediate area associated with metal loss. The nearest anomalies to the release site were located approximately 4.2 feet upstream of the support (14 to 17 percent deep).

Kiefner and Associates, Inc., conducted the metallurgical analysis and determined that: "external crevice corrosion acted between the pipeline and the pipe support in an area where the support was not welded to the pipeline. This area was exposed to moisture and atmospheric corrosion occurred."[3] This report also noted the following significant details:

> A pinhole sized leak was oriented at 10:00 o'clock and located under the pipe support.
>
> Neither the 2006 MFL nor the 2011 UT ILI tools reported metal loss at this pipe support. Each of the tools reported the pipe support as a sleeve.
>
> The corrosion products found on the pipe were a layered, dark magnetic oxide product. The presence of magnetic oxides in the corrosion areas has been shown to interfere with the accurate correlation of depths using magnetic-flux-leakage tools. The magnetic oxide normally causes the inspection tool to predict the corrosion depth to be less than the depth that is measured upon excavation. Magnetite commonly forms under anaerobic conditions such as within crevices or under insulation where oxygen is not readily refreshed. Moisture trapped between the bridge support and the pipeline formed corrosion products that built up and reduced the availability of oxygen.
>
> The 2006 MFL tool run clearly captured the fillet welds between the support bracket and the pipeline. The absence of these signals indicates the portions of the pipe circumference that were not welded. The area of the leak was reported as a sleeve. The design of the bridge support and the magnetite corrosion byproducts interfered with the magnetic flux signals to an extent that the MFL tool was not able to detect the metal loss. The partial

[3] Kiefner and Associates, Inc. (January 21, 2013). *Final Report No. 13-015: Evaluation of the Line 6495 Kansas City to Kansas City International Airport 6-inch Jet Fuel Pipeline Leak.* Final metallurgical report.

> sleeve provided additional magnetic material and the magnetite corrosion byproducts would have caused the metal loss depth to be underreported.
>
> The 2011 ultrasonic ILI vendor provided the following explanation for the loss of data within the corrosion area: There are two factors that affected the ultrasonic signal return and the data quality. First, the fillet weld of the sleeve is affecting the signal quality by scattering the sound waves. Second, the geometric change in the pipe due to welding the sleeve is producing off-angle returns resulting in complete data loss through the length of the sleeve.

As the investigation progressed, it was noted that the MOP listed in the metallurgical report did not agree with the 30-day report (500 psig versus 462 psig). The value quoted in the metallurgical report was determined to be the value identified in the hazardous facility order CPF 3548-H, 2nd Amendment. A review concluded that the metallurgical report MOP of 500 psig was an error and that the correct MOP was 462 psig. The MOP review also determined that portions of this pipeline had not been hydrostatically tested since installation and that the pipeline typically operated below 20 percent of SMYS. A small portion of heavy-walled pipe north of the Missouri River, located underneath (or through) the river dike and an adjacent ditch, was hydrotested in 2011 (167+35 to 172+64).

The other 91 pipe supports located on the 7th Street Bridge were hangers spaced along the 2,600-foot-long span. The hangers were bolted to steel bridge brackets that were riveted to the bridge and predominately consisted of a single yoke with a cast iron or non-conductive roller supporting the pipe. As part of the restart plan requirement, a contractor performed a visual inspection for Magellan consisting of a review of each pipe roller hanger that could be seen from the bridge deck surface near the outside of the roadway. The top of each hanger, hanger connection, and the condition of the 6-inch pipe was observed and photographed from the top of the bridge deck. The contractor reported that numerous hangers and rollers had surface rust and that some of the rollers could not be turned due to paint and rust at the roller/hanger connections. No fractures or yielding of the hangers was found, and the anchor bolts for the brackets appeared to be tight. No other visual evidence of pipe defects was observed from the top of the bridge deck. The leak was located in the center of the river in Span 9, Truss Panel Point L16. While the outcome of the visual inspection was that existing pipe and pipe support hangers appeared to be in adequate condition for repair to proceed, the contractor recommended that a more in-depth inspection focused specifically on a review of the functionality of the roller and hanger connections take place in the near future.

Magellan conducted separate overhead pipeline structure inspections in addition to the inspections designed to review atmospheric corrosion. The last overhead structure inspection occurred in 2008, while the last inspection for atmospheric corrosion was conducted in 2012. It was thought that scheduling these inspections for the same time could lead to a better understanding of the condition of the pipeline and any supporting structure. As a result, the operator determined that the Magellan Overhead Pipeline Crossing integrity procedure should be revised to require the structural support inspection to be conducted every 3 years (versus 10 years as previously written), and that the structural inspection would coincide with the required atmospheric inspections on this new 3-year cycle. According to the last atmospheric inspection, conducted in October 2012, this area did not appear to be noted as a concern (other than the identification of “Adequate 4-9G <16% rusted”). PHMSA performed a review of this procedure, related operator qualification records, and associated training.

Magellan reviewed the complete pipeline system for similarly designed pipe supports and talked to internal subject matter experts and third-party contractors responsible for performing overhead

structure inspections. Magellan uses a contract company called HDR to complete overhead inspections, sending a Magellan employee to accompany the contractor on these inspections. The overhead records review identified 83 overhead support or span locations on the Magellan system, with only one other support found to have a welded design structure similar to the support at the point of failure.

The other welded pipe support is located on the 4-inch pipeline that runs from the Offutt Air Force Base to the Amoco Council Bluff. Kinley Corporation originally owned this pipeline, but sold it in the late 1990s to Williams, which then sold it to Magellan. While Magellan does still own this asset, the line has been out of service since the original Williams purchase and throughout the subsequent Magellan ownership. Various sections of the pipeline have been removed by Magellan through the years due to encroachment projects, and Magellan has no plans to reactivate this pipeline.

Since the 7th Street Bridge will be demolished in the next several years, plans are already in progress between the operator and those controlling the river crossing to install a bored pipeline crossing. The pipeline will be hydrotested after the installation of a horizontal direction drill (HDD).

The costs reported as a result of this accident totaled $62,477, which was the sum of repair costs, emergency response activities, and estimated minimal product loss.

Findings & Contributing Factors

Magellan informed PHMSA of the revised volume after PHMSA requested clarification and updates.

There are advantages to conducting concurrent corrosion and structural inspections of bridge hangers. Accordingly, Magellan changed the timing of these inspections in the relevant procedures.

Pipe supports from a bridge structure typically involve a hanger and roller assembly, allowing for some flexibility between the bridge structure and the pipeline. In this case, however, the pipeline was rigidly affixed to the bridge. The pipe support was of a unique U–shaped design in which the curved area was fillet-welded to the pipe and the straight portions of the U-shape were welded to a plate that was bolted to the bridge. The design created crevices and did not shield the carrier pipe from the elements or road salt applied to the bridge. In addition to the poor design of the pipe hanger, its location on the bridge did not allow convenient atmospheric corrosion inspections.

Construction involving the 7th Street Bridge is expected to commence in 2015. It is anticipated that Magellan will replace the above-ground river crossing on the existing structure with an HDD crossing of the Missouri River. In conjunction with this work, the new section of pipeline will be hydrotested. The replacement project is currently in the design phase.

Appendices

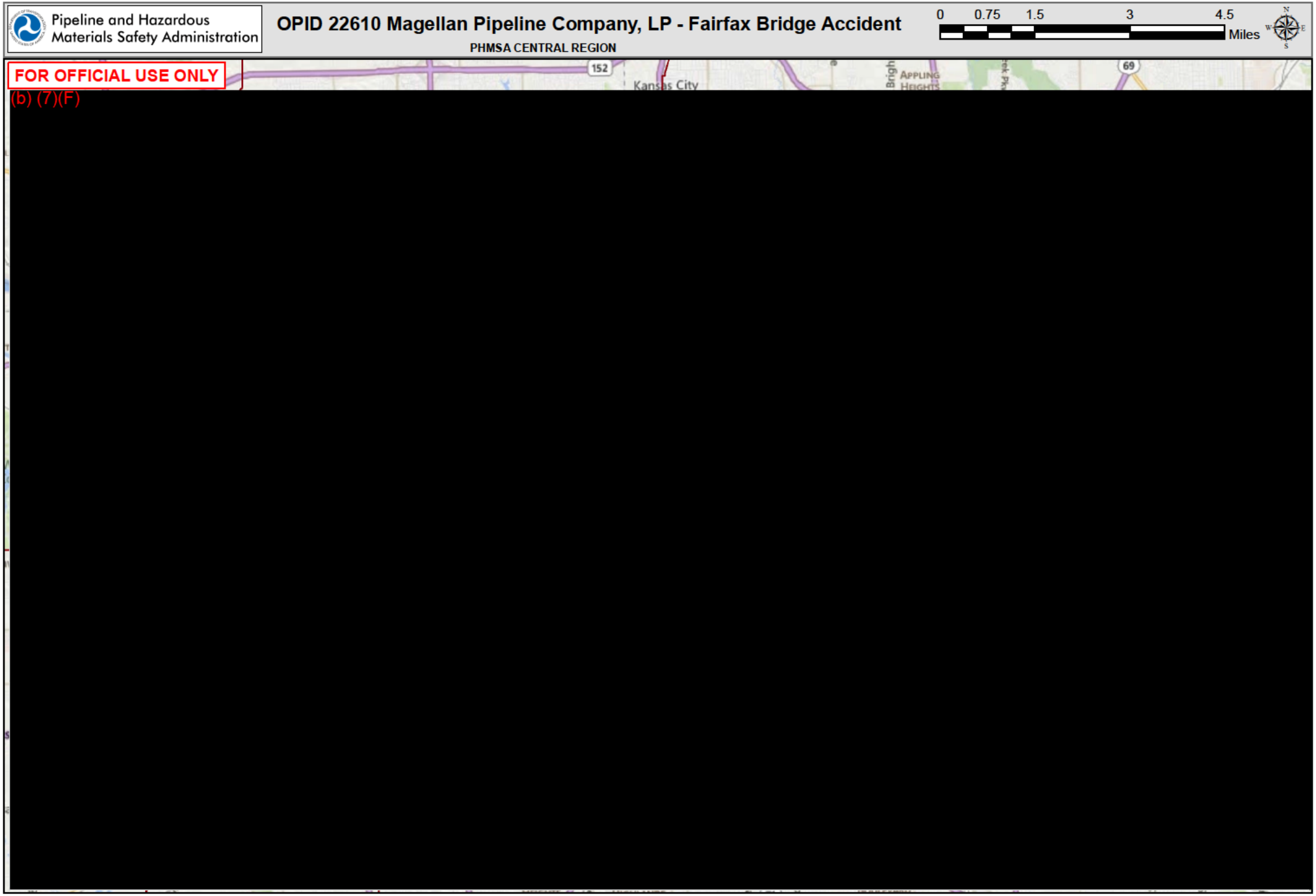
A Map and Photographs

B NRC Report

C Operator's Accident Report

D Metallurgical Analysis

E MOP Letter and 2nd Amendment to Consent Order


Pipeline and Hazardous Materials Safety Administration
OPID 22610 Magellan Pipeline Company, LP - Fairfax Bridge Accident
PHMSA CENTRAL REGION
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FOR OFFICIAL USE ONLY
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Kansas City
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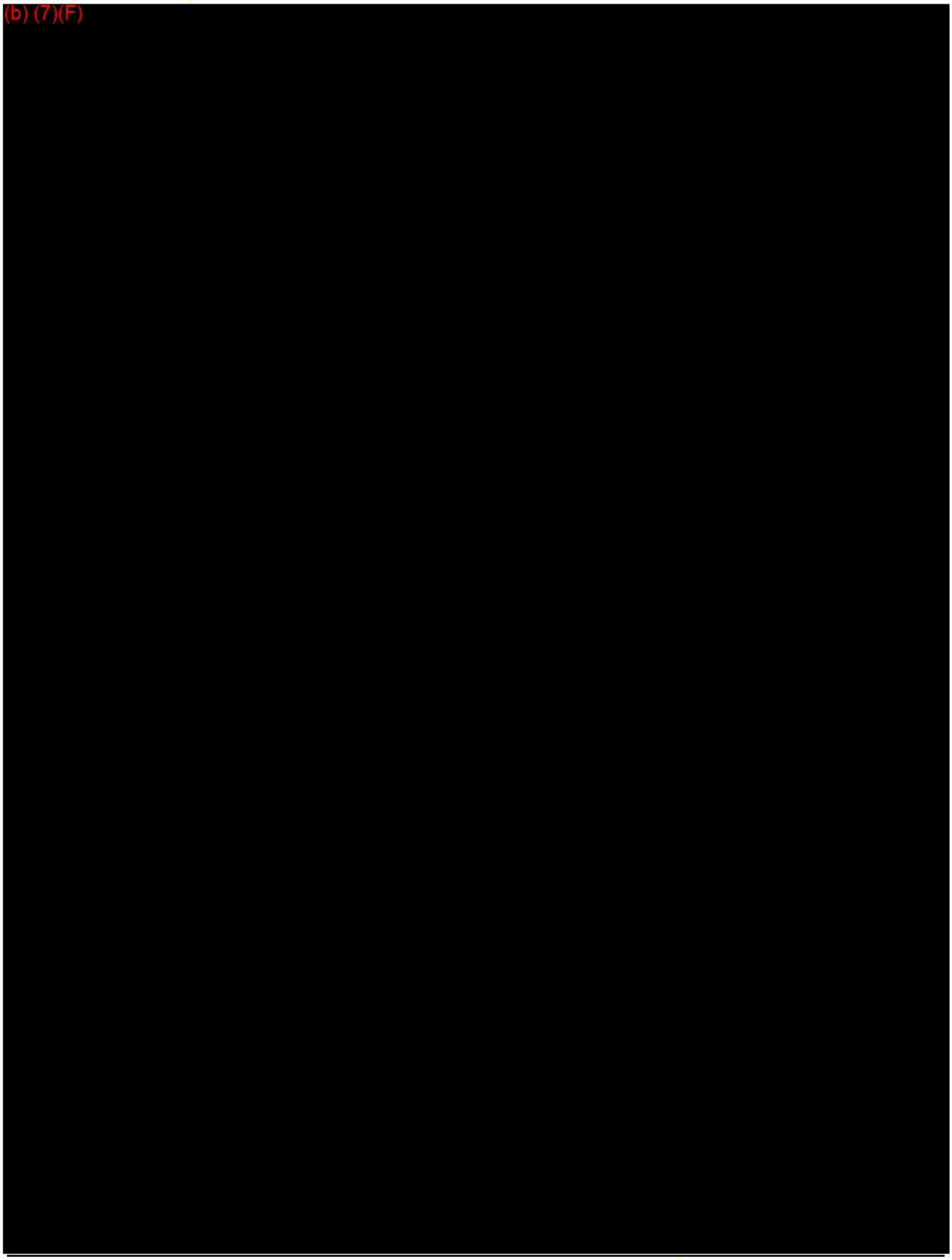
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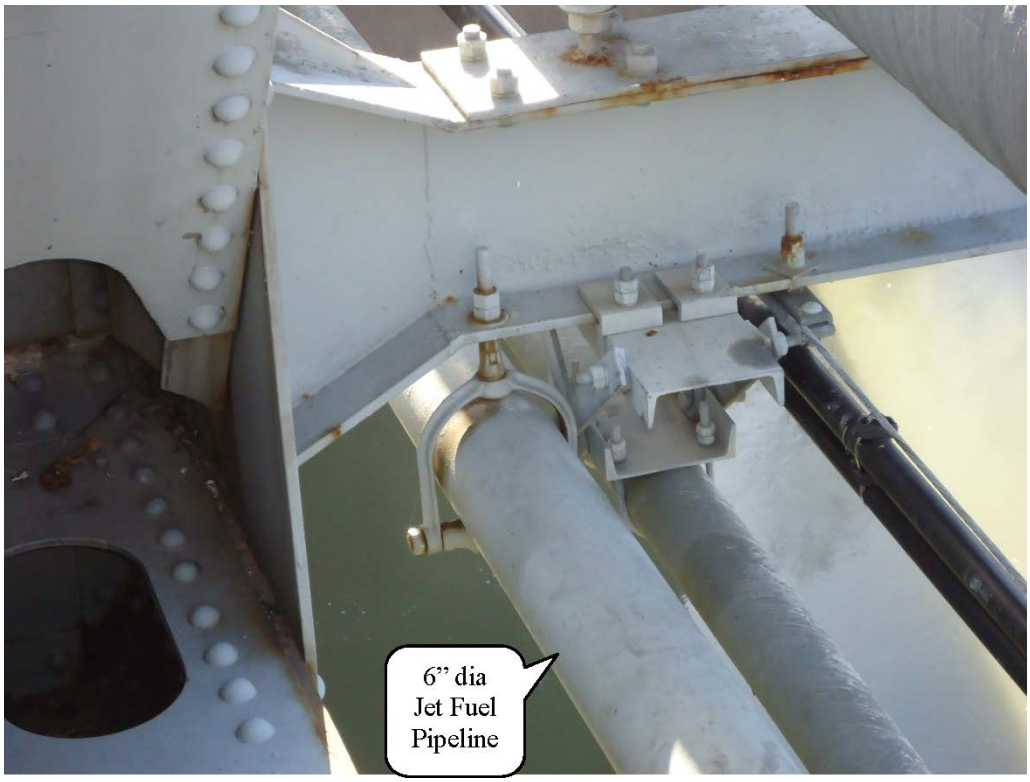
View of External Corrosion on Pipe/Support Assembly

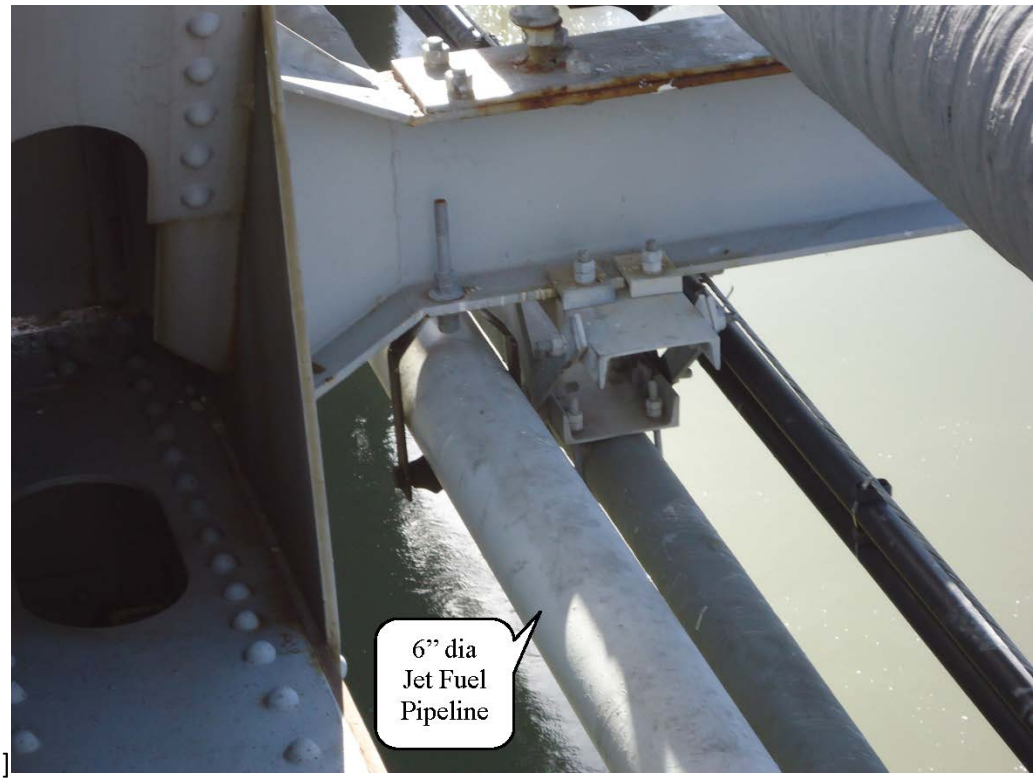
Atmospheric Corrosion - After Cutting Assembly Apart

Typical Pipe Roller Hanger Support with cast iron roller. Note surface rust. (Operator-provided photo)

Same as above. Note surface rust. (Operator-provided photo)



Pipe Roller Hanger Support with a non-conductive roller. (Operator-provided photo)



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Pipe Roller Hanger Support at welded sleeve with a non-conductive roller. (Operator-provided photo)

Welded Pipe Support Hanger near center of Bridge – Span 9 Truss Panel Point L16.
Short section of pipe along with hanger was removed due to leak at this location.
(Operator-provided photo)

PHMSA Pipeline & Hazardous Materials Safety Administration (Version 4.0.0 PROD)

HMIS->INCIDENTS->TELEPHONICS

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NRC Number: 1031477
Call Date: 11/25/2012 **Call Time:** 14:56:26

Caller Information

First Name:		Last Name:	LINNELL
Company Name:	MAGELLAN		
Address:			
City:		State:	OK
Country:	USA	Zip:	
Phone 1:	9185747802	Phone 2:	
Organization Type:	PRIVAT	Is caller the spiller?	Yes (No) No Response
Confidential:	Yes (No) No Response		

Discharger Information

First Name:		Last Name:	MAGELLAN
Company Name:	MAGELLAN		
Address:			
City:		State:	OK
Country:	USA	Zip:	
Phone 1:		Phone 2:	
Organization Type:	PRIVAT		

Spill Information

State:	KS	County:	WYANDOTTE
Nearest City:	KANSAS CITY	Zip Code:	

Location

7TH STREET TRAFFICWAY

Spill Date:	11/25/2012 (mm/dd/yyyy)	Spill Time:	13:04:00 (24hh:mm:ss)
DTG Type:	<- Select DTG Type ->		
Incident Type	ALL	Reported Incident Type	PIPELINE

Description

****WEB REPORT********* PERSON CALLED THE MAGELLAN CONTROL CENTER AND REPORTED A PIPELINE LEAKING PRODUCT. THE LOCATION OF THE RELEASE WAS IN KANSAS CITY ON THE FAIRFAX BRIDGE.

Materials Involved

Material / Chris Name	Chris Code	Total Qty.	Water Qty.
JET FUEL: JP-1 (KEROSENE)	JPO	0 UNKNOWN AMOUNT	0 UNKNOWN AMOUNT

Medium Type: <- Select Medium Type

Additional Medium Information:

Injuries: Fatalites:

Evacuations: Yes No Unknown No. of Evacuations:

Damages: Yes No Unknown Damage Amount:

Federal Agency Notified: Yes No Unknown State Agency Notified: Yes No Unknown

Other Agency Notified: Yes No Unknown

Remedial Actions

Additional Info

******WEB REPORT******** WORST CASE SCENARIO, THERE WILL BE A 250 BBL LOSE.

Latitude

Degrees: Minutes: Seconds: Quadrant:

Longitude

Degrees: Minutes: Seconds: Quadrant:

Distance from City: Direction:

Section: Township:

Range: Milepost:

REPORTABLE NON - REPORTABLE

Non Reportable Reasons

Non Reportable Comments

Last Updated By: Last Updated Date:

<< Previous 1..1 of 1 << Save >>

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:**	12/19/2012
	No.	20120366 - 20222 --- (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. All responses to the collection of information are mandatory. Send comments regarding this burden or any other aspect of his 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.

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	

Last Revision Date:	03/10/2015
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	ONE WILLIAMS CENTER, MD 27 P.O. BOX 22186
3b. City	TULSA
3c. State	Oklahoma
3d. Zip Code	74172
4. Local time *(24-hr clock)* and date of the Accident:	11/25/2012 13:02
5. Location of Accident:	
Latitude:	39.15386
Longitude:	-94.62234
6. National Response Center Report Number (if applicable):	1031477
7. Local time *(24-hr clock)* and date of initial telephonic report to the National Response Center (if applicable):	11/25/2012 13:47
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, 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):	.10
10. Estimated volume of intentional and/or controlled release/blowdown (Barrels):	
11. Estimated volume of commodity recovered (Barrels):	
12. Were there fatalities?	No
- If Yes, specify the number in each category:	
12a. Operator employees	
12b. Contractor employees working for the Operator	
12c. Non-Operator emergency responders	
12d. Workers working on the right-of-way, but NOT associated with this Operator	
12e. General public	
12f. Total fatalities (sum of above)	
13. Were there injuries requiring inpatient hospitalization?	No
- If Yes, specify the number in each category:	
13a. Operator employees	
13b. Contractor employees working for the Operator	
13c. Non-Operator emergency responders	
13d. Workers working on the right-of-way, but NOT associated with this Operator	
13e. General public	

13f. Total injuries (sum of above)	
14. Was the pipeline/facility shut down due to the Accident?	Yes
- If No, Explain:	
- If Yes, complete Questions 14a and 14b: *(use local time, 24-hr clock)*	
14a. Local time and date of shutdown:	11/25/2012 13:02
14b. Local time pipeline/facility restarted:	11/30/2012 16:13
- Still shut down? (* Supplemental Report Required)	
15. Did the commodity ignite?	No
16. Did the commodity explode?	No
17. Number of general public evacuated:	0
18. Time sequence *(use local time, 24-hour clock)*:	
18a. Local time Operator identified Accident - effective 7- 2014 changed to "Local time Operator identified failure":	11/25/2012 13:02
18b. Local time Operator resources arrived on site:	11/25/2012 13:02

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:	Kansas
3. Zip Code:	66115
4. City	Kansas City
5. County or Parish	Wyandotte
6. Operator-designated location*:*	Survey Station No.
Specify:	41+27
7. Pipeline/Facility name:	Fairfax West KCI 6" Line #6495
8. Segment name/ID:	KC International Line
9. Was Accident on Federal land, other than the Outer Continental Shelf (OCS)?	No
10. Location of Accident:	Pipeline Right-of-way
11. Area of Accident (as found):	Aboveground
Specify:	Overhead crossing
- If Other, Describe:	
Depth-of-Cover (in):	
12. Did Accident occur in a crossing?	Yes
- If Yes, specify type below:	
- If Bridge crossing –	Yes
Cased/ Uncased:	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 Pipeline, Including Valve Sites
- If Onshore Breakout Tank or Storage Vessel, Including Attached Appurtenances, specify:	
3. Item involved in Accident:	Pipe
- If Pipe, specify:	Pipe Body
3a. Nominal diameter of pipe (in):	6.625

3b. Wall thickness (in):	0
3c. SMYS (Specified Minimum Yield Strength) of pipe (psi):	46,000
3d. Pipe specification:	API 5LX-46
3e. Pipe Seam , specify:	Longitudinal ERW - Low Frequency
- If Other, Describe:	
3f. Pipe manufacturer:	Southwestern Steel
3g. Year of manufacture:	1966
3h. Pipeline coating type at point of Accident, specify:	Paint
- 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:	
- 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:	1966
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:	Pinhole
- 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:	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:	Yes
5a. If Yes, specify all that apply:	
- Ocean/Seawater	
- Surface	Yes
- Groundwater	
- Drinking water: *(Select one or both)*	
- Private Well	
- Public Water Intake	
5b. Estimated amount released in or reaching water (Barrels):	.10
5c. Name of body of water, if commonly known:	Missouri River
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:	Yes
Was this HCA identified in the "could affect" determination for this Accident site in the Operator's	Yes

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	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	Yes
Was this HCA identified in the "could affect" determination for this Accident site in the Operator's Integrity Management Program?	Yes
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	$ 3
8c. Estimated cost of Operator's property damage & repairs	$ 52,529
8d. Estimated cost of Operator's emergency response	$ 9,945
8e. Estimated cost of Operator's environmental remediation	$ 0
8f. Estimated other costs	$ 0
Describe:	
8g. Estimated total costs (sum of above) – effective 12-2012, changed to "Total estimated property damage (sum of above)"	$ 62,477

PART E - ADDITIONAL OPERATING INFORMATION

1. Estimated pressure at the point and time of the Accident (psig):	235.00
2. Maximum Operating Pressure (MOP) at the point and time of the Accident (psig):	462.00
3. Describe the pressure on the system or facility relating to the Accident (psig):	Pressure did not exceed MOP
4. Not including pressure reductions required by PHMSA regulations (such as for repairs and pipe movement), was the system or facility relating to the Accident operating under an established pressure restriction with pressure limits below those normally allowed by the MOP?	No
- If Yes, Complete 4.a and 4.b below:	
4a. Did the pressure exceed this established pressure restriction?	
4b. Was this pressure restriction mandated by PHMSA or the State?	
5. Was "Onshore Pipeline, Including Valve Sites" OR "Offshore Pipeline, Including Riser and Riser Bend" selected in PART C, Question 2?	Yes
- If Yes - (*Complete 5a. – 5f below)* effective 12-2012, changed to *"(Complete 5.a – 5.e below)"*	
5a. Type of upstream valve used to initially isolate release source:	Manual
5b. Type of downstream valve used to initially isolate release source:	Manual
5c. Length of segment isolated between valves (ft):	2,680
5d. Is the pipeline configured to accommodate internal inspection tools?	Yes
- If No, Which physical features limit tool accommodation? (*select all that apply)*	
- Changes in line pipe diameter	
- Presence of unsuitable mainline valves	
- Tight or mitered pipe bends	
- Other passage restrictions (i.e. unbarred tee's, projecting instrumentation, etc.)	
- Extra thick pipe wall (applicable only for magnetic flux leakage internal inspection tools)	
- Other -	
- If Other, Describe:	
5e. For this pipeline, are there operational factors which significantly complicate the execution of an internal inspection tool run?	No
- If Yes, Which operational factors complicate execution? (*select all that apply*)	

- Excessive debris or scale, wax, or other wall buildup	
- Low operating pressure(s)	
- Low flow or absence of flow	
- Incompatible commodity	
- Other -	
- If Other, Describe:	
5f. Function of pipeline system:	=< 20% SMYS Regulated Trunkline/Transmission
6. Was a Supervisory Control and Data Acquisition (SCADA)-based system in place on the pipeline or facility involved in the Accident?	Yes
If Yes -	
6a. Was it operating at the time of the Accident?	Yes
6b. Was it fully functional at the time of the Accident?	Yes
6c. Did SCADA-based information (such as alarm(s), alert(s), event(s), and/or volume calculations) assist with the detection of the Accident?	No
6d. Did SCADA-based information (such as alarm(s), alert(s), event(s), and/or volume calculations) assist with the confirmation of the Accident?	No
7. Was a CPM leak detection system in place on the pipeline or facility involved in the Accident?	Yes
- If Yes:	
7a. Was it operating at the time of the Accident?	Yes
7b. Was it fully functional at the time of the Accident?	Yes
7c. Did CPM leak detection system information (such as alarm(s), alert(s), event(s), and/or volume calculations) assist with the detection of the Accident?	No
7d. Did CPM leak detection system information (such as alarm(s), alert(s), event(s), and/or volume calculations) assist with the confirmation of the Accident?	No
8. How was the Accident initially identified for the Operator?	Notification From Public
- If Other, Specify:	
8a. If "Controller", "Local Operating Personnel", including contractors", "Air Patrol", or "Ground Patrol by Operator or its contractor" is selected in Question 8, specify:	
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?	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 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)*	The amount released and the rate of the release were below the limits detected by SCADA & CPM at the time the release was discovered. There were NO indications that either the Control Room or the Controller on duty caused or contr buted to the release.
- 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?	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

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

Apparent Cause:	G1 - Corrosion Failure

G1 - Corrosion Failure - only one **sub-cause** can be picked from shaded left-hand column

External Corrosion:	Yes
Internal Corrosion:	
- If External Corrosion:	
1. Results of visual examination:	Localized Pitting
- If Other, Descr be:	
2. Type of corrosion: *(select all that apply)*	
- Galvanic	
- Atmospheric	Yes
- Stray Current	
- Microbiological	
- Selective Seam	
- Other:	Yes
- If Other, Descr be:	Crevice Corrosion
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	Yes
- Other:	
- If Other, Descr be:	
4. Was the failed item buried under the ground?	No
- 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?	Yes
5. Was there observable damage to the coating or paint in the vicinity of the corrosion?	Yes
- 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?	Yes
15a. If Yes, for each tool used, select type of internal inspection tool and indicate most recent year run: -	
- Magnetic Flux Leakage Tool	Yes
Most recent year:	2006
- Ultrasonic	Yes
Most recent year:	2011
- Geometry	Yes
Most recent year:	2011
- Caliper	
Most recent year:	
- Crack	
Most recent year:	
- Hard Spot	
Most recent year:	
- Combination Tool	
Most recent year:	
- Transverse Field/Triaxial	
Most recent year:	
- Other	
Most recent year:	
Describe:	
16. Has one or more hydrotest or other pressure test been conducted since original construction at the point of the Accident?	No
If Yes -	
Most recent year tested:	
Test pressure:	
17. Has one or more Direct Assessment been conducted on this segment?	No
- If Yes, and an investigative dig was conducted at the point of the Accident::	
Most recent year conducted:	
- If Yes, but the point of the Accident was not identified as a dig site:	
Most recent year conducted:	
18. Has one or more non-destructive examination been conducted at the point of the Accident since January 1, 2002?	No
18a. If Yes, for each examination conducted since January 1, 2002, select type of non-destructive examination and indicate most recent year the examination was conducted:	
- Radiography	
Most recent year conducted:	
- Guided Wave Ultrasonic	
Most recent year conducted:	
- Handheld Ultrasonic Tool	
Most recent year conducted:	
- Wet Magnetic Particle Test	
Most recent year conducted:	
- Dry Magnetic Particle Test	
Most recent year conducted:	
- Other	
Most recent year conducted:	
Describe:	

G2 - Natural Force Damage - only one **sub-cause** can be picked from shaded left-handed column	
Natural Force Damage – Sub-Cause:	
- If Earth Movement, NOT due to Heavy Rains/Floods:	
1. Specify:	
- If Other, Describe:	
- If Heavy Rains/Floods:	
2. Specify:	
- If Other, Describe:	
- If Lightning:	
3. Specify:	
- If Temperature:	
4. Specify:	
- If Other, Describe:	
- If Other Natural Force Damage:	
5. Describe:	
Complete the following if any Natural Force Damage sub-cause is selected.	
6. Were the natural forces causing the Accident generated in conjunction with an extreme weather event?	
6a. If Yes, specify: *(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 OR Original Manufacturing-related (NOT girth weld or other welds formed in the field):	
2. List contributing factors: *(select all that apply)*	
- Fatigue or V bration-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, Descr be:	
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:	
Descr be:	
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:	
Complete the following if any Incorrect Operation sub-cause is selected.	
3. Was this Accident related to *(select all that apply)*: -	
- Inadequate procedure	
- No procedure established	
- Failure to follow procedure	
- Other:	
- If Other, Describe:	
4. What category type was the activity that caused the Accident?	
5. Was the task(s) that led to the Accident identified as a covered task in your Operator Qualification Program?	
5a. If Yes, were the individuals performing the task(s) qualified for the task(s)?	

G8 - Other Accident Cause - only one **sub-cause** can be selected from the shaded left-hand column

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

PART H - NARRATIVE DESCRIPTION OF THE ACCIDENT

Magellan Operations Control Center received a call from an inspector working for another pipeline company stating that Magellan had a leak on what appeared to be a 6-inch pipeline located on the Kansas City/Fairfax Northbound Bridge. No pressure drop was detected by Magellan Pipeline Control SCADA (SUPERVISORY CONTROL AND DATA ACQUISITION) located in Tulsa, OK. The KCI 6-inch line was inactive at the time of the call. As a precuation, Operations Control ini iated the shutdown of all incoming and outgoing pipeline operations at the Magellan Kansas City facility. Field personnel were sent to the bridge to investigate. A subsequent investigation discovered a small drip coming from the line. The final amount determined to be released was 1 Gallon. There was NO confirmed trace of released product identified in the Missouri River waters, as any product that reached the River would have quickly been dissipated.

The National Response Center was called at 13:47 to report the initial release with an estimated worst case poten ial release of 250 BBls. A second call to the NRC was made at 16:13 to inform them the released quantity had been revised downward to an estimated 1 BBl. It was later determined that the actual quantity released was One (1) Gallon, which is the amount reflected in his report.

The line segment containing the feature was removed and sent to a laboratory for metallurgical analysis, and a piece of new, pre-tested pipe was installed.

The metallurgical analysis determined hat the leak occurred due to external corrosion between the pipeline and the bridge support which consisted of a partial encirclement bracket fillet welded to the pipe. This area was exposed to the atmosphere and crevice corrosion occurred along wi h atmospheric corrosion.

PART I - PREPARER AND AUTHORIZED SIGNATURE

Preparer's Name	Kenneth L. Lybarger
Preparer's Title	Sr. Compliance Coordinator
Preparer's Telephone Number	918-574-7315
Preparer's E-mail Address	ken.lybarger@magellanlp.com
Preparer's Facsimile Number	918-574-7246
Authorized Signer Name	Kenneth L. Lybarger
Authorized Signer Title	Sr. Compliance Coordinator
Authorized Signer Telephone Number	918-574-7315
Authorized Signer Email	ken.lybarger@magellanlp.com
Date	03/10/2015

Appendix D

Metallurgical Analysis

This document is on file at PHMSA

U.S. Department
of Transportation
**Research and
Special Programs
Administration**

Central Region,
Pipeline Safety

1100 Main Street, Suite 1120
Kansas City, MO 64105

July 21, 1999

Mr. Ken Lybarger
Sr. Compliance Specialist
Williams Energy Services
One William Center
P. O. Box 3448
Tulsa, Oklahoma 74101

RE: CPF 3548-H - Second Amendment

Dear Mr. Lybarger:

In your letter dated June 9, 1999, you inquired whether the terms of the Second Amendment, which waived conducting hydrostatic tests on five pipelines, continue to apply when the CPF is closed or would Williams be required to hydrostatic test them, or as the only alternative to hydrotesting them, try to qualify them under the new risk-based alternative?

If the lines are low stress pipelines, they do not have to be pressure tested under the new pressure testing rule if they meet the criteria of Part 195.302(b). If Williams wants to raise the "Maximum Operating Pressure" of these five lines, you would have to pressure test them.

If you have any questions or comments regarding this matter I can be reached at (816) 426-2654.

Sincerely,

Ivan A. Huntoon

Ivan A. Huntoon
Director, Central Region
Office of Pipeline Safety

RECEIVED → KAHarkeway
JUL 2 1992
David P. Batow
FILE COPY IN 703.1 TAB CPF 3548-H

U.S. Department of Transportation
Research and Special Programs Administration

400 Seventh Street, S.W.
Washington, D.C. 20590

JUN 26 1992

File: 3548-H

Mr. David P. Batow
General Counsel
Williams Pipe Line Company
P. O. Box 3448
Tulsa, Oklahoma 74101

Re: CPF NO. 3548-H

Dear Mr. Batow:

Enclosed is the Second Amendment to the Consent Order originally issued on October 7, 1987 in the above-referenced case. The Amendment deletes certain pipelines from the Consent Order's Hydrostatic Test Schedule (Attachment "A", dated September 17, 1987; amended January 22, 1990) subject to certain conditions. Your receipt of this document constitutes service under 49 C.F.R. § 190.5.

Sincerely,

Gwendolyn M. Hill

Gwendolyn M. Hill
Pipeline Compliance Registry
Office of Pipeline Safety

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

DEPARTMENT OF TRANSPORTATION
RESEARCH AND SPECIAL PROGRAMS ADMINISTRATION
WASHINGTON, D.C.

In the Matter of	
WILLIAMS PIPE LINE CO.,	CPF No. 3548-H
Respondent.	

SECOND AMENDMENT OF
CONSENT ORDER

On October 9, 1987, pursuant to Section 209(b) of the Hazardous Liquid Pipeline Safety Act of 1979 (HLPSA), 49 U.S.C. App. § 2006(b)(1) and 49 C.F.R. § 190.219, the Director, Office of Pipeline Safety (OPS) issued Williams Pipe Line Company a Consent Order incorporating an Agreement between OPS and Respondent (as amended on January 22, 1990; redesignating Respondent's #3-8" Kansas City-Nebraska City pipeline from a category "C" pipeline to a category "B."). The Consent Order applies to several hazardous liquid pipelines operated by Respondent. The Consent Order limits the operating pressure on several of Respondent's pipelines until Respondent completes a hydrostatic test of each pipeline.

Respondent submitted a February 25, 1992 letter requesting the Consent Order be amended to allow internal inspections and repairs on five of Respondent's pipelines listed in the Consent Order's Attachment "A" (Hydrostatic Test Schedule, dated September 17, 1987, amended January 22, 1990) rather than hydrostatically testing each pipeline.

Respondent requested OPS waive the hydrostatic testing requirement for the following pipelines[1]:

1- Since the issuance of the original Consent Order Respondent has changed the designations for several of its pipelines. Therefore, where applicable, the pipeline's original designation and new designation are provided.

1) #4-8" Kansas City to Argentine line (originally designated as "Argentine-Kansas City #1-8); 2) #7-8" Rosemount to Minneapolis/St. Paul International Airport line (originally designated as "Rosemount-World Chamberlin #3-8"); 3) #1-6" Lincoln to Burlington Northern line; 4) #7-6" Kansas City to KCI Airport line (originally designated as "Fairfax - KCI Airport #7-6"); and 5) #2-6" Omaha - Eppley Field line.

In its request, Respondent noted that these pipelines operated at below 20% of Specified Minimum Yield Strength (SMYS). Respondent claimed that "[s]ince these lines operate at very low pressure ... there is a much greater likelihood of a leak due to [overall] corrosion or third party damage than there is due to an ERW seam failure." Respondent supported this claim by citing the fact that these pipelines had never experienced a seam failure. In addition, Respondent argued that internal inspections would provide greater insights into the condition of these pipelines than would hydrostatic testing. The Respondent also expressed concern that the hydrostatic testing would lead to water contamination in the two pipelines transporting jet fuel.

Central Region, OPS has reviewed Respondent's request and agrees that based on these pipelines operating at below 20% of SMYS there is little likelihood of a seam failure. This Amendment is issued with understanding that Respondent does not, in the immediate future, intend to increase the MOPs for these pipelines.

Accordingly, based on the recommendation of the Chief, Central Region, OPS, pursuant to the authority of the HLPSA and 49 C.F.R. Part 190, I hereby amend the Consent Order by deleting the above listed pipelines from Attachment "A" (Hydrostatic Test Schedule, dated September 17, 1987, amended January 22, 1990) and by allowing the Respondent to internally inspect these pipelines subject to the following conditions:

1. Respondent will run an in-line internal inspection tool through each of the above listed pipelines in order to detect possible corrosion problems, third party damage or other metal loss conditions on the pipe wall.

2. Respondent will repair, based on accepted industry practices, any pipe anomalies or deficiencies detected during the internal inspections. After inspecting and repairing these pipelines, Respondent will conduct a "pressure test" as described in its February 25, 1992 letter.

3. Respondent will, upon completing inspection, repair and testing for each pipeline, notify the Chief, Central Region. This notification will include a brief summary of the inspection results, repair actions taken, and pressure test results.

4. In accordance with Part 195, Respondent will maintain adequate records which will allow OPS to independently review the internal inspection results, repairs made and pressure test results.

5. Respondent will not exceed the new Maximum Operating Pressures (MOPs) for each pipeline (see below) without first receiving written permission from the Chief, Central Region, OPS.

PIPELINE	NEW MOP	% of SMYS	NORMAL OPERATING PRESSURE
#4-8" KGE - ARK.	340 psig	19.1	340 psig
#7-8" MINN.	400 psig	16.3	235 psig
#1-6" LIN.-SW	350 psig	16.3	150 psig
#7-6" KGI	500 psig	19.2	450 psig
#2-6" OMA KPP	200 psig	10.1	150 psig

Other than as specifically provided in this Second Amendment, the terms of the Consent Order and the incorporated Agreement, and the Amendment of Consent Order remain the same. Failure to comply with the terms of the Consent Order and incorporated Agreement, including both amendments, may result in the assessment of civil penalties of not more than $10,000 per day and in referral to the Attorney General for appropriate relief in United States District Court.

The terms and conditions of this Amendment are effective upon receipt.

George W. Tenley, Jr.
Associate Administrator
for Pipeline Safety

Date Issued: JUN 26 1992