

***MOBIL PIPE LINE COMPANY***

**HYDROSTATIC PRESSURE TEST**

**647 Miles / 20" Crude Pipe Line, Patoka, IL to Corsicana, TX**

**Test Section 15**

**Conway, AR.**

**MP 283.64 - MP 299.41**

**February 1, 2006**

# Memorandum

**Date:** 4/14/06

**Subject:** Hydrotest Review & Endorsement

**To:** <Hydrotest Report and HCA  
Baseline Assessment File>

**cc:** <>

**From:** <Chris Gorman>

I've completed the review of the hydrostatic test report for Test Section - 15 (H15) for the Corsicana to Patoka Crude Line. It is consistent with my knowledge of the testing operations and facility and confirms we had a good test. The hydrotest and report documentation are accurate and thorough and will satisfy our needs for Data Integration, Risk & Threat Analysis, and Preventive & Mitigative Measures Analysis needed to comply with the HCA regulations and the testing requirements of DOT CFR Title 49, Part 195, Subpart E.

Metallurgical root cause failure analysis was performed on two ERW seam failures in this section that occurred on 1/29/06, at MP - 298.1, at a calculated failure pressure at the site of 1169 psig, and on 1/31/06, at MP - 294.10, at a calculated failure pressure at the site of 1092 psig. Results of the analysis indicate the failures were caused by original mill defects in the long seam that failed at, or slightly less than, the 1991 test pressures at each site. No fatigue, selective corrosion, or other time dependant defects were observed. However, the results also suggest that the seam toughness was probably reduced by the effects of the Feb 2006 test water temperature (47°F) being much lower than the August 1991 temperatures (74°F).



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# MOBIL PIPE LINE COMPANY

## 647 Miles /20" Crude Line, Patoka, IL to Corsicana, TX

Test Section 15      MP 283.64 - MP 299.4

### Date and Time:

February 1, 2006 from 9:30 AM to 1:00 PM. (Strength Test)

February 1, 2006, from 2:30 PM to 6:30 PM. (Leak Test)

### Facility Tested:

The test section consisted of 15.76 miles of 20" x 0.312" w.t., X-42 ERW pipe

### Personnel Present:

Conducted by: C.J. Carter- Test Engineer - HJ Process & Pipeline Services

Witnessed by: M.R Marshall- Inspector - EMPCO Representative

### Procedure:

On February 1, 2006 the piping was filled with water and the air was bled through 2" valves. The test section was filled with water by moving water from previously hydrotested sections. The test section was pressurized to approximately 750 psig with BJ's positive-displacement pump at a rate of 10 psi / minute. The test manifold, pressure recorder, and deadweight tester were connected to the test section as shown in the attached sketch.

The test section was pressurized at a rate of 10 psi / minute to 839 psi (approximately 80% of strength test pressure) by injecting water at MP 283.64 with a positive-displacement pump. Pressurization was halted for 15 minutes to allow for stabilization and to check for leaks. The test section was then pressurized at a rate of 5 psi/min to test pressure of 955 psi. The pressure stabilized at 09:30 AM at 955 psi at the point of testing and the 4 hour strength test commenced.

### Conclusion:

The strength test started at 9:30 AM on Feb 01, 2006 and was held for 4 hours starting at a pressure of 955 psi. Over the duration of the strength test, there was no pressure drop.

The leak test started at 2:30 PM on February 01, 2006 and was held for 4 hours starting at a pressure of 857 psi. Over the duration of the leak test, there was no pressure change. At this point the leak test was deemed successful.

The pressure trends over the duration of the leak test are within the accuracy of the instrumentation or within calculated fluctuations caused by temperature changes. The tests were deemed successful. Therefore, in my judgment, this constitutes a valid pressure test meeting the requirements of the Department of Transportation Code of Federal Regulations Title 49, Part 195 Subpart E.

Curtis Carter  
Testing Engineer  
BJ Process & Pipeline Services

## CERTIFICATION OF PIPE LINE HYDROSTATIC PRESSURE TEST

CARRIER NAME Mobil Pipeline CompanyTESTING COMPANY NAME BJ Process & Pipeline ServicesPRESSURE TEST NUMBER Test Section 15 Strength Test DATE 2/1/2006

THIS IS TO CERTIFY THAT THE PIPE LINE OR PIPELINE SECTION DESCRIBED BELOW WAS HYDROSTATICALLY PRESSURE TESTED IN ACCORDANCE WITH THE FOLLOWING PROCEDURE:

PIPE LINE 20" Crude FROM Patoka, IL TO Corsicana, TXDESCRIPTION OF FACILITY TESTED Test Section 15 MP 283.64 - MP 299.41SECTION LENGTH 15.76 miles PIPE O.D. 20" WALL THICKNESS 0.312" GR. X-42 TYPE ERWLOCATION OF TEST PRESSURE RECORDER CONNECT MP 283.64 (See attached sketch)LOCATION OF TEMPERATURE RECORDER BULB MP 283.64 (See attached sketch)INITIAL PRESSURE AT POINT OF TEST 955 psig TIME 9:30 AMINITIAL TEMPERATURE OF TEST SECT. 47.0 °F ELEV. AT POINT OF TEST 610 ft MSLINITIAL PRESSURE AT LOWEST ELEVATION POINT IN SECTION 1090.1 PSIG;ELEVATION 298 ft MSL; MP. 298.62 THE PRESSURE WAS  MEASURED  CALCULATEDINITIAL PRESSURE AT HIGHEST ELEVATION POINT IN SECTION 868.4 PSIG;ELEVATION 810 ft MSL; MP. 292.5 THE PRESSURE WAS  MEASURED  CALCULATEDFINAL PRESSURE AT POINT OF TEST 955 PSIG TIME 1:30 PMFINAL TEMPERATURE OF TEST SECT. 47.0 °FTOTAL FLUID INJ. N/A GAL. TOTAL FLUID WITHDRAWN N/A GAL.NET CHANGE IN VOLUME OF THE TEST SECT N/A GAL.LENGTH OF TEST 4 HRS. 0 MIN; TESTING FLUID Water SPEC GVTY. 1.00 TEMP. N/A °FINITIAL PRESSURE 73 % OF SMYS AT THE TEST SITE 66 % AT HIGH POINT 83 % AT LOW POINT.MINIMUM TEST PRESSURE DURING A SELECTED 4 HOUR PERIOD (TEST PRESSURE) 955 PSIGMAXIMUM ALLOWABLE OPERATING PRESSURE 764 PSIG. at test site. BASED ON - % SMYS  
OR 80% of minimum test pressure at test site.WERE THERE ANY LEAKS?  YES  NO; IF YES, EXPLAIN There were previous test breaks at MP 298.01 and MP 294.10 in the ERW seam which were replaced with new pipe.WAS EVERY COMPONENT THAT WILL BE SUBJECTED TO THE SYSTEM WORKING PRESSURE HYDROSTATICALLY TESTED?  YES  NO; IF NO, EXPLAIN \_\_\_\_\_PRESSURE RECORDER MAKE AND SERIAL N Chandler 25602 ITT Barton 242E-47061TEMPERATURE RECORDER MAKE AND SERIAL N ITT Barton 242E-47061 ITT Barton 242E-44857REMARKS: Tested in accordance with D.O.T. CFR Title 49 Part 195 Subpart E.CONDUCTED BY Curtis Carter TITLE BJ PPS Test EngineerCERTIFIED BY Chris Gorman TITLE Risk & Integrity Specialist, EMPCoWITNESSED BY Mark Marshall TITLE EMPCO Test Site InspectorWITNESSED BY Chris Gorman TITLE R&ISNOTE: SEE DOT LIQUIDS MANUAL on site

**CERTIFICATION OF PIPE LINE HYDROSTATIC PRESSURE TEST**

CARRIER NAME Mobil Pipeline Company

TESTING COMPANY NAME BJ Process & Pipeline Services

PRESSURE TEST NUMBER Test Section 15 Leak Test DATE 2/1/06

THIS IS TO CERTIFY THAT THE PIPE LINE OR PIPELINE SECTION DESCRIBED BELOW WAS HYDROSTATICALLY PRESSURE TESTED IN ACCORDANCE WITH THE FOLLOWING PROCEDURE:

PIPE LINE 20" Crude FROM Patoka, IL TO Corsicana, TX

DESCRIPTION OF FACILITY TESTED Test Section 15 MP 283.64 - MP 299.41

SECTION LENGTH 15.76 miles PIPE O.D. 20" WALL THICKNESS 0.312" GR. X-42 TYPE ERW

LOCATION OF TEST PRESSURE RECORDER CONNECTION MP 283.64 (See attached sketch)

LOCATION OF TEMPERATURE RECORDER BULB MP 283.64 (See attached sketch)

INITIAL PRESSURE AT POINT OF TEST 857 psig TIME 2:30 PM

INITIAL TEMPERATURE OF TEST SECT. 47.5 °F ELEV. AT POINT OF TEST N/A MSL

INITIAL PRESSURE AT LOWEST ELEVATION POINT IN SECTION N/A PSIG;

ELEVATION N/A MSL; MP. N/A THE PRESSURE WAS  MEASURED  CALCULATED

INITIAL PRESSURE AT HIGHEST ELEVATION POINT IN SECTION N/A PSIG;

ELEVATION N/A MSL; MP. N/A THE PRESSURE WAS  MEASURED  CALCULATED

FINAL PRESSURE AT POINT OF TEST 857 PSIG TIME 6:30 PM

FINAL TEMPERATURE OF TEST SECT. 47.0 °F

TOTAL FLUID INJ. N/A GAL. TOTAL FLUID WITHDRAWN N/A GAL.

NET CHANGE IN VOLUME OF THE TEST SECT. N/A GAL.

LENGTH OF TEST 4 HRS. 0 MIN; TESTING FLUID Water SPEC GVTY. 1.00 TEMP. N/A °F

INITIAL PRESSURE N/A % OF SMYS AT THE TEST SITE N/A % AT HIGH POINT N/A % AT LOW POINT.

MINIMUM TEST PRESSURE DURING A SELECTED 4 HOUR PERIOD (TEST PRESSURE) 857 PSIG

MAXIMUM ALLOWABLE OPERATING PRESSURE 764 PSIG. at test site BASED ON - % SMYS  
OR 80% of minimum test pressure of 955 psig at the test site during the 4 hour strength test.

WERE THERE ANY LEAKS?  YES  NO; IF YES, EXPLAIN \_\_\_\_\_

WAS EVERY COMPONENT THAT WILL BE SUBJECTED TO THE SYSTEM WORKING PRESSURE HYDROSTATICALLY TESTED?  YES  NO; IF NO, EXPLAIN \_\_\_\_\_

PRESSURE RECORDER MAKE AND SERIAL NO Chandler 25602 ITT Barton 242E-47061

TEMPERATURE RECORDER MAKE AND SERIAL NO. ITT Barton 242E-47061 ITT Barton 242E-44857

REMARKS: Tested in accordance with D.O.T. CFR Title 49 Part 195 Subpart E.

CONDUCTED BY Curtis Carter

TITLE BJ PPS Test Engineer

CERTIFIED BY Chris Gorman *Chris Gorman*

TITLE Risk & Integrity Specialist, EMPCo

WITNESSED BY Mark Marshall

TITLE EMPCO Test Site Inspector

WITNESSED BY Chris Gorman *Chris Gorman*

TITLE R & I S

NOTE: SEE DOT LIQUIDS MANUAL on site

**MOBIL PIPE LINE COMPANY**

HYDROSTATIC PRESSURE TEST DATA SHEET

DATE: FROM 2/1/2006 TO 2/1/2006

TEST NUMBER: Section 15

TIME: 9:30 AM 1:30 PM

DESCRIPTION: 647 Miles / 20" Crude Pipe Line, Patoka, IL to Corsicana, TX  
 MP 283.64 - MP 299.4  
**Strength Test**

DEADWEIGHT TESTER NO. Chandler 25602

PRESSURE RECORDER NO. ITT Barton 242E-47061

TEMPERATURE RECORDER NO. ITT Barton 242E-44857

TIME	PRESSURE (PSIG)	AMBIENT TEMP (°F)	PIPE TEMP (°F)	GALLONS INJECTED (GAL)	GALLONS BLED OFF (GAL)	COMMENTS
09:30 AM	955.0	45.0	47.0	N/A	N/A	Start 4 Hour Strength Test
09:45 AM	955.0	46.5	47.0	"	"	
10:00 AM	955.0	47.0	47.0	"	"	
10:15 AM	955.0	48.5	47.0	"	"	
10:30 AM	955.0	49.5	47.0	"	"	
10:45 AM	955.0	50.0	47.0	"	"	
11:00 AM	955.0	50.0	47.0	"	"	
11:15 AM	955.0	50.0	47.0	"	"	
11:30 AM	955.0	51.0	47.0	"	"	
11:45 AM	955.0	52.0	47.0	"	"	
12:00 PM	955.0	53.5	47.0	"	"	
12:15 PM	955.0	53.0	47.0	"	"	
12:30 PM	955.0	53.5	47.0	"	"	
12:45 PM	955.0	54.0	47.0	"	"	
01:00 PM	955.0	54.0	47.0	"	"	
01:15 PM	955.0	54.0	47.0	"	"	
01:30 PM	955.0	54.0	47.0	"	"	End 4 Hour Strength Test

**MOBIL PIPE LINE COMPANY**

HYDROSTATIC PRESSURE TEST DATA SHEET

DATE: FROM 2/1/2006 TO 2/1/2006

TEST NUMBER: Section 15

TIME: 2:30 PM 6:30 PM

DESCRIPTION: 647 Miles / 20" Crude Pipe Line, Patoka, IL to Corsicana, TX  
 MP 283.64 - MP 299.4  
**Leak Test**

DEADWEIGHT TESTER NO. Chandler 25602

PRESSURE RECORDER NO. ITT Barton 242E-47061

TEMPERATURE RECORDER NO. ITT Barton 242E-44857

TIME	PRESSURE (PSIG)	AMBIENT TEMP (°F)	PIPE TEMP (°F)	GALLONS INJECTED (GAL)	GALLONS BLED OFF (GAL)	COMMENTS
02:30 PM	857.0	55.0	47.5	N/A	N/A	Start 4 Hour Leak Test
02:45 PM	857.0	55.0	47.5	"	"	
03:00 PM	857.0	55.0	47.5	"	"	
03:15 PM	857.0	55.0	47.5	"	"	
03:30 PM	857.0	55.0	47.5	"	"	
03:45 PM	857.0	54.5	47.5	"	"	
04:00 PM	857.0	54.5	47.5	"	"	
04:15 PM	857.0	54.0	47.5	"	"	
04:30 PM	857.0	54.0	47.5	"	"	
04:45 PM	857.0	54.0	47.5	"	"	
05:00 PM	857.0	54.0	47.0	"	"	
05:15 PM	857.0	53.5	47.0	"	"	
05:30 PM	857.0	53.0	47.0	"	"	
05:45 PM	857.0	55.5	47.0	"	"	
06:00 PM	857.0	57.0	47.0	"	"	
06:15 PM	857.0	56.0	47.0	"	"	
06:30 PM	857.0	55.0	47.0	"	"	End 4 Hour Leak Test

***MOBIL PIPE LINE COMPANY***

**HYDROSTATIC PRESSURE TEST**

**647 Miles / 20" Crude Pipe Line, Patoka, IL to Corsicana, TX**

**Test Section 16**

**Conway, AR.**

**MP 283.64 - MP 257.50**

**January 29, 2006**

# Memorandum

**Date:** 4/14/06

**Subject:** Hydrotest Review & Endorsement

**To:** <Hydrotest Report and HCA  
Baseline Assessment File>

**cc:** <>

**From:** <Chris Gorman>

I've completed the review of the hydrostatic test report for Test Section - 16 (H16) for the Corsicana to Patoka Crude Line. It is consistent with my knowledge of the testing operations and facility and confirms we had a good test. The hydrotest and report documentation are accurate and thorough and will satisfy our needs for Data Integration, Risk & Threat Analysis, and Preventive & Mitigative Measures Analysis needed to comply with the HCA regulations and the testing requirements of DOT CFR Title 49, Part 195, Subpart E.



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# MOBIL PIPE LINE COMPANY

647 Miles /20" Crude Line, Patoka, IL to Corsicana, TX

Test Section 16      MP 283.64 - MP 257.50

**Date and Time:**

January 29, 2006, from 9:30 AM to 1:00 PM. (Strength Test)

January 29, 2006, from 2:30 PM to 6:30 PM. (Leak Test)

**Facility Tested:**

The test section consisted of 26.14 miles of 20" x 0.312" w.t., X-42 ERW pipe

**Personnel Present:**

Conducted by: C.J. Carter- Test Engineer - HJ Process & Pipeline Services

Witnessed by: M.R Marshall- Inspector - EMPCO Representative

**Procedure:**

On January 29, 2006 the piping was filled with water and the air was bled through 2" valves. The test section was filled with water by moving water from previously hydrotested sections. The test section was pressurized to approximately 750 psig with BJ's positive-displacement pump at a rate of 10 psi / minute. The test manifold, pressure recorder, and deadweight tester were connected to the test section as shown in the attached sketch.

The test section was pressurized at a rate of 10 psi / minute to 839 psi (approximately 80% of strength test pressure) by injecting water at MP 283.64 with a positive-displacement pump. Pressurization was halted for 15 minutes to allow for stabilization and to check for leaks. The test section was then pressurized at a rate of 5 psi/min to test pressure of 1052 psi. The section was allowed to stabilize to a pressure of 1052 and at 09:30 AM the 4 hour strength test commenced.

**Conclusion:**

The strength test started at 9:30 AM on January 29, 2006 and was held for 4 hours starting at a pressure of 1052 psi. Over the duration of the strength test, there was a 0.5 psi pressure drop during the first two hours of the strength test, most likely attributed to colder water being injected into the test section during the pressurization stage equalizing with the warmer water already in the test section.

The leak test started at 2:30 PM on January 29, 2006 and was held for 4 hours starting at a pressure of 952 psi. Over the duration of the leak test, there was no pressure change. At this point the leak test was deemed successful.

The pressure trends over the duration of the leak test are within the accuracy of the instrumentation or within calculated fluctuations caused by temperature changes. The tests were deemed successful.

Therefore, in my judgment, this constitutes a valid pressure test meeting the requirements of the Department of Transportation Code of Federal Regulations Title 49, Part 195 Subpart E.

Curtis Carter  
Testing Engineer  
BJ Process & Pipeline Services

CERTIFICATION OF PIPE LINE HYDROSTATIC PRESSURE TEST

CARRIER NAME Mobil Pipeline Company

TESTING COMPANY NAME BJ Process & Pipeline Services

PRESSURE TEST NUMBER Test Section 16 Strength Test DATE 1/29/2006

THIS IS TO CERTIFY THAT THE PIPE LINE OR PIPELINE SECTION DESCRIBED BELOW WAS HYDROSTATICALLY PRESSURE TESTED IN ACCORDANCE WITH THE FOLLOWING PROCEDURE:

PIPE LINE 20" Crude FROM Patoka, IL TO Corsicana, TX

DESCRIPTION OF FACILITY TESTE Test Section 16 MP 283.64 - MP 257.50

SECTION LENGTH 26.14 miles PIPE O.D. 20" WALL THICKNESS 0.312" GR. X-42 TYPE ERW

LOCATION OF TEST PRESSURE RECORDER CONNECT MP 283.64 (See attached sketch)

LOCATION OF TEMPERATURE RECORDER BULB MP 283.64 (See attached sketch)

INITIAL PRESSURE AT POINT OF TEST 1052 psig TIME 9:30 AM

INITIAL TEMPERATURE OF TEST SECT. 51.0 °F ELEV. AT POINT OF TEST 610 ft MSL

INITIAL PRESSURE AT LOWEST ELEVATION POINT IN SECTION 1137.7 PSIG;

ELEVATION 412 ft MSL; MP. 258.61 THE PRESSURE WAS MEASURED X CALCULATED

INITIAL PRESSURE AT HIGHEST ELEVATION POINT IN SECTION 922.1 PSIG;

ELEVATION 910 ft MSL; MP. 270.25 THE PRESSURE WAS MEASURED X CALCULATED

FINAL PRESSURE AT POINT OF TEST 1051.5 PSIG TIME 1:45 PM

FINAL TEMPERATURE OF TEST SECT. 55.0 °F

TOTAL FLUID INJ. N/A GAL. TOTAL FLUID WITHDRAWN N/A GAL.

NET CHANGE IN VOLUME OF THE TEST SECT N/A GAL.

LENGTH OF TEST 4 HRS. 0 MIN; TESTING FLUID Water SPEC GVTY. 1.00 TEMP. N/A °F

INITIAL PRESSURE 80 % OF SMYS AT THE TEST SITE 70 % AT HIGH POINT 87 % AT LOW POINT.

MINIMUM TEST PRESSURE DURING A SELECTED 4 HOUR PERIOD (TEST PRESSURE) 1051.5 PSIG

MAXIMUM ALLOWABLE OPERATING PRESSURE 841 PSIG. at test site. BASED ON % SMYS OR 80% of minimum test pressure at test site

WERE THERE ANY LEAKS? YES X NO; IF YES, EXPLAIN

WAS EVERY COMPONENT THAT WILL BE SUBJECTED TO THE SYSTEM WORKING PRESSURE HYDROSTATICALLY TESTED? X YES NO; IF NO, EXPLAIN

PRESSURE RECORDER MAKE AND SERIAL N Chandler 25602 ITT Barton 242E-47061

TEMPERATURE RECORDER MAKE AND SERIAL N ITT Barton 242E-47061 ITT Barton 242E-44857

REMARKS: Tested in accordance with D.O.T. CFR Title 49 Part 195 Subpart E.

CONDUCTED BY Curtis Carter TITLE BJ PPS Test Engineer

CERTIFIED BY Chris Gorman TITLE Risk & Integrity Specialist, EMPCo

WITNESSED BY Mark Marshall TITLE EMPCO Test Site Inspector

WITNESSED BY TITLE R & I

NOTE: SEE DOT LIQUIDS MANUAL via teleconference and on site

## CERTIFICATION OF PIPE LINE HYDROSTATIC PRESSURE TEST

CARRIER NAME Mobil Pipeline CompanyTESTING COMPANY NAME BJ Process & Pipeline ServicesPRESSURE TEST NUMBER Test Section 16 Leak Test DATE 1/29/2006

THIS IS TO CERTIFY THAT THE PIPE LINE OR PIPELINE SECTION DESCRIBED BELOW WAS HYDROSTATICALLY PRESSURE TESTED IN ACCORDANCE WITH THE FOLLOWING PROCEDURE:

PIPE LINE 20" Crude FROM Patoka, IL TO Corsicana, TXDESCRIPTION OF FACILITY TESTED Test Section 16 MP 283.64 - MP 257.50SECTION LENGTH 26.14 miles PIPE O.D. 20" WALL THICKNESS 0.312" GR. X-42 TYPE ERWLOCATION OF TEST PRESSURE RECORDER CONNECTION MP 283.64 (See attached sketch)LOCATION OF TEMPERATURE RECORDER BULB MP 283.64 (See attached sketch)INITIAL PRESSURE AT POINT OF TEST 952 psig TIME 2:15 PMINITIAL TEMPERATURE OF TEST SECT. 54.0 °F ELEV. AT POINT OF TEST N/A MSLINITIAL PRESSURE AT LOWEST ELEVATION POINT IN SECTION N/A PSIG;ELEVATION N/A MSL; MP. N/A THE PRESSURE WAS  MEASURED  CALCULATEDINITIAL PRESSURE AT HIGHEST ELEVATION POINT IN SECTION N/A PSIG;ELEVATION N/A MSL; MP. N/A THE PRESSURE WAS  MEASURED  CALCULATEDFINAL PRESSURE AT POINT OF TEST 952 PSIG TIME 6:15 PMFINAL TEMPERATURE OF TEST SECT. 53.0 °FTOTAL FLUID INJ. N/A GAL. TOTAL FLUID WITHDRAWN N/A GAL.NET CHANGE IN VOLUME OF THE TEST SECT. N/A GAL.LENGTH OF TEST 4 HRS. 0 MIN; TESTING FLUID Water SPEC GVTY. 1.00 TEMP. N/A °FINITIAL PRESSURE N/A % OF SMYS AT THE TEST SITE N/A % AT HIGH POINT N/A % AT LOW POINT.MINIMUM TEST PRESSURE DURING A SELECTED 4 HOUR PERIOD (TEST PRESSURE) 952 PSIGMAXIMUM ALLOWABLE OPERATING PRESSURE 841 PSIG. at test site BASED ON - % SMYS  
OR 80% of minimum test pressure of 1051.5 psig at the test site during the 4 hour strength test.WERE THERE ANY LEAKS?  YES  NO; IF YES, EXPLAIN \_\_\_\_\_

WAS EVERY COMPONENT THAT WILL BE SUBJECTED TO THE SYSTEM WORKING PRESSURE

HYDROSTATICALLY TESTED?  YES  NO; IF NO, EXPLAIN \_\_\_\_\_PRESSURE RECORDER MAKE AND SERIAL NO. Chandler 25602 ITT Barton 242E-47061TEMPERATURE RECORDER MAKE AND SERIAL NO. ITT Barton 242E-47061 ITT Barton 242E-44857REMARKS: Tested in accordance with D.O.T. CFR Title 49 Part 195 Subpart E.CONDUCTED BY Curtis Carter TITLE BJ PPS Test EngineerCERTIFIED BY Chris Gorman *Chris Gorman* TITLE Risk & Integrity Specialist, EMPCoWITNESSED BY Mark Marshall TITLE EMPCO Test Site InspectorWITNESSED BY Chris Gorman TITLE R&INOTE: SEE DOT LIQUIDS MANUAL *via teleconference and on site.*

**MOBIL PIPE LINE COMPANY**

HYDROSTATIC PRESSURE TEST DATA SHEET

DATE: FROM 1/29/2006 TO 1/29/2006

TEST NUMBER: Section 16

TIME: 9:30 AM 1:30 PM

DESCRIPTION: 647 Miles / 20" Crude Pipe Line, Patoka, IL to Corsicana, TX  
 MP 283.64 - MP 257.50  
**Strength Test**

DEADWEIGHT TESTER NO. Chandler 25602  
 PRESSURE RECORDER NO. ITT Barton 242E-47061  
 TEMPERATURE RECORDER NO. ITT Barton 242E-44857

TIME	PRESSURE (PSIG)	AMBIENT TEMP (°F)	PIPE TEMP (°F)	GALLONS INJECTED (GAL)	GALLONS BLED OFF (GAL)	COMMENTS
09:30 AM	1052.0	49.5	51.0	N/A	N/A	Start 4 hour test
09:45 AM	1052.0	50.0	51.0	"	"	
10:00 AM	1052.0	51.0	51.0	"	"	
10:15 AM	1052.0	53.0	51.0	"	"	
10:30 AM	1052.0	54.0	51.0	"	"	
10:45 AM	1051.5	55.5	51.0	"	"	
11:00 AM	1051.5	57.0	51.0	"	"	
11:15 AM	1051.5	58.5	52.0	"	"	The 4 degree increase in pipe temp
11:30 AM	1051.5	58.5	53.0	"	"	believed to be affected by significant
11:45 AM	1051.5	60.0	54.0	"	"	rise in ambient temperature rather than
12:00 PM	1051.5	60.5	54.0	"	"	reflecting actual/true pipe temperature
12:15 PM	1051.5	61.5	54.0	"	"	as demonstrated in previous tests where
12:30 PM	1051.5	61.5	54.0	"	"	pipe wall temperature remained
12:45 PM	1051.5	63.0	54.0	"	"	relatively constant
01:00 PM	1051.5	63.5	55.0	"	"	
01:15 PM	1051.5	64.5	55.0	"	"	
01:30 PM	1051.5	64.5	55.0	"	"	
01:45 PM	1051.5	64.5	55.0	"	"	End 4 Hour Strength Test

**MOBIL PIPE LINE COMPANY**

HYDROSTATIC PRESSURE TEST DATA SHEET

DATE: FROM 1/29/2006 TO 1/29/2006

TEST NUMBER: Section 16

TIME: 2:15 PM 6:15 PM

DESCRIPTION: 647 Miles / 20" Crude Pipe Line, Patoka, IL to Corsicana, TX  
 MP 283.64 - MP 257.50  
**Leak Test**

DEADWEIGHT TESTER NO. Chandler 25602  
 PRESSURE RECORDER NO. ITT Barton 242E-47061  
 TEMPERATURE RECORDER NO. ITT Barton 242E-44857

TIME	PRESSURE (PSIG)	AMBIENT TEMP (°F)	PIPE TEMP (°F)	GALLONS INJECTED (GAL)	GALLONS BLED OFF (GAL)	COMMENTS
02:15 PM	952.0	64.5	54.0	N/A	N/A	Start 4 Hour Leak Test
02:30 PM	952.0	64.5	54.0	"	"	
02:45 PM	952.0	64.5	54.0	"	"	
03:00 PM	952.0	64.5	54.0	"	"	
03:15 PM	952.0	63.5	53.5	"	"	
03:30 PM	952.0	63.5	53.5	"	"	
03:45 PM	952.0	63.0	53.5	"	"	
04:00 PM	952.0	62.5	53.5	"	"	
04:15 PM	952.0	61.5	53.5	"	"	
04:30 PM	952.0	60.5	53.5	"	"	
04:45 PM	952.0	58.5	53.5	"	"	
05:00 PM	952.0	57.0	53.0	"	"	Pipe wall temperature readings again
05:15 PM	952.0	55.5	53.0	"	"	being affected by ambient temps
05:30 PM	952.0	54.0	53.0	"	"	
05:45 PM	952.0	52.5	53.0	"	"	
06:00 PM	952.0	50.0	53.0	"	"	
06:15 PM	952.0	49.5	53.0	"	"	End 4 Hour Leak Test

***MOBIL PIPE LINE COMPANY***

**HYDROSTATIC PRESSURE TEST**

**647 Miles / 20" Crude Pipe Line, Patoka, IL to Corsicana, TX**

**Test Section 17**

**Glenwood, AR**

**MP 238.25 - MP 257.50**

**February 20, 2006**

# Memorandum

**Date:** 4/14/06

**Subject:** Hydrotest Review & Endorsement

**To:** <Hydrotest Report and HCA  
Baseline Assessment File>

**cc:** <>

**From:** <Chris Gorman>

I've completed the review of the hydrostatic test report for Test Section - 17 (H17) for the Corsicana to Patoka Crude Line. It is consistent with my knowledge of the testing operations and facility and confirms we had a good test. The hydrotest and report documentation are accurate and thorough and will satisfy our needs for Data Integration, Risk & Threat Analysis, and Preventive & Mitigative Measures Analysis needed to comply with the HCA regulations and the testing requirements of DOT CFR Title 49, Part 195, Subpart E.

Metallurgical root cause failure analysis was performed on two ERW seam failures in this section that occurred on 2/7/06, at MP - 238.9, at a calculated failure pressure at the site of 1066 psig, and on 2/17/06, at MP - 243.8, at a calculated failure pressure at the site of 1078 psig. Results of the analysis indicate the failures were caused by original mill defects in the long seam that failed at a pressure slightly more than what they had been tested to in 1991. No fatigue, selective corrosion, or other time dependant defects were observed.



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Pipeline Risk & Integrity Specialist  
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# MOBIL PIPE LINE COMPANY

647 Miles /20" Crude Line, Patoka, IL to Corsicana, TX

Test Section 17      MP 238.25 - MP257.5

**Date and Time:**

February 20, 2006 from 7:45 AM to 11:45 AM (Strength Test)

February 20, 2006 from 12:45 PM to 4:45 PM (Leak Test)

**Facility Tested:**

The test section consisted of 19.25 miles of 20" x 0.312" w.t., X-42 ERW pipe

**Personnel Present:**

Conducted by: C.J. Carter - Test Engineer - BJ Process & Pipeline Services

Witnessed by: Ricky Boulware - Inspector - EMPCO Representative

**Procedure:**

On Feb 19, 2006, the piping was filled with water by moving water from previously hydrotested sections; the air was allowed to bleed through 2" valves. The test section was pressurized to approximately 700 psig with BJ's positive-displacement pump at a rate of 15 psi / minute, and was allowed to stabilize over night. The test manifold, pressure recorder, and deadweight tester were connected to the test section as shown in the attached sketch.

The test section was pressurized at a rate of 10 psi / minute to 821 psi (approximately 80% of strength test pressure) by injecting water at 80 gpm with a positive-displacement pump. Pressurization was halted for 15 minutes to allow for stabilization and to check for leaks. The test section was then pressurized at a rate of 5 psi/min to test pressure of 1028 psi. The pressure stabilized at 07:45 at 1028 psi and the 4 hour strength test commenced.

**Conclusion:**

The strength test started at 07:45 on Feb 20, 2006 and was held for 4 hours starting at a pressure of 1028 psi. Over the duration of the strength test, there was a pressure drop of 0.5 psi believed to be attributable to compressed air cooling in the pipeline from the previous test break and colder injection water temperature equalizing with the warmer test water temperature.

The leak test started at 12:45 on Feb 20, 2006 and was held for 4 hours starting at a pressure of 925 psi. Over the duration of the leak test, there was a pressure drop of 0.5 psi, again believed to be attributable to compressed air cooling in the pipeline from the previous test break and colder injection water temperature equalizing with the warmer test water temperature. At this point the leak test was deemed successful.

The pressure trends over the duration of the leak test are within the accuracy of the instrumentation or within calculated fluctuations caused by temperature changes. The tests were deemed successful.

Therefore, in my judgment, this constitutes a valid pressure test meeting the requirements of the Department of Transportation Code of Federal Regulations Title 49, Part 195 Subpart E.

Curtis Carter  
Testing Engineer  
BJ Process & Pipeline Services

## CERTIFICATION OF PIPE LINE HYDROSTATIC PRESSURE TEST

CARRIER NAME Mobil Pipeline CompanyTESTING COMPANY NAME BJ Process & Pipeline ServicesPRESSURE TEST NUMBER Test Section 17 Strength Test DATE 2/20/2006

THIS IS TO CERTIFY THAT THE PIPE LINE OR PIPELINE SECTION DESCRIBED BELOW WAS HYDROSTATICALLY PRESSURE TESTED IN ACCORDANCE WITH THE FOLLOWING PROCEDURE:

PIPE LINE 20" Crude FROM Patoka IL TO Corsicana, TXDESCRIPTION OF FACILITY TESTED Test Section 17 MP 238.25 - MP 257.50SECTION LENGTH 19.25 miles PIPE O.D. 20" WALL THICKNESS 0.312" GR. X-42 TYPE ERWLOCATION OF TEST PRESSURE RECORDER CONNECT MP 238.25 (See attached sketch)LOCATION OF TEMPERATURE RECORDER BULB MP 238.25 (See attached sketch)INITIAL PRESSURE AT POINT OF TEST 1028 psig TIME 7:45 AMINITIAL TEMPERATURE OF TEST SECT. 46.0 °F ELEV. AT POINT OF TEST 625 ft MSLINITIAL PRESSURE AT LOWEST ELEVATION POINT IN SECTION 1118.5 PSIG;ELEVATION 416 ft MSL; MP. 257.22 THE PRESSURE WAS  MEASURED  CALCULATEDINITIAL PRESSURE AT HIGHEST ELEVATION POINT IN SECTION 948.8 PSIG;ELEVATION 808 ft MSL; MP. 243.2 THE PRESSURE WAS  MEASURED  CALCULATEDFINAL PRESSURE AT POINT OF TEST 1027.5 PSIG TIME 11:45 AMFINAL TEMPERATURE OF TEST SECT. 46.0 °FTOTAL FLUID INJ. N/A GAL. TOTAL FLUID WITHDRAWN N/A GAL.NET CHANGE IN VOLUME OF THE TEST SECT. N/A GAL.LENGTH OF TEST 4 HRS. 0 MIN; TESTING FLUID Water SPEC GVTY. 1.00 TEMP. N/A °FINITIAL PRESSURE 78 % OF SMYS AT THE TEST SITE 72 % AT HIGH POINT 85 % AT LOW POINT.MINIMUM TEST PRESSURE DURING A SELECTED 4 HOUR PERIOD (TEST PRESSURE) 1027.5 PSIGMAXIMUM ALLOWABLE OPERATING PRESSURE 822 PSIG. at test site. BASED ON - % SMYS  
OR 80% of minimum test pressure at test site.WERE THERE ANY LEAKS?  YES  NO; IF YES, EXPLAIN There was a previous test break and a test leak at MP 244.6 and MP 238.9 respectfully in the ERW seam, both of which were replaced with new pipeWAS EVERY COMPONENT THAT WILL BE SUBJECTED TO THE SYSTEM WORKING PRESSURE HYDROSTATICALLY TESTED?  YES  NO; IF NO, EXPLAIN \_\_\_\_\_PRESSURE RECORDER MAKE AND SERIAL N Chandler 25602 ITT Barton 242E-47061TEMPERATURE RECORDER MAKE AND SERIAL N ITT Barton 242E-47061 ITT Barton 242E-55357REMARKS: Tested in accordance with D.O.T. CFR Title 49 Part 195 Subpart E.CONDUCTED BY Curtis Carter TITLE BJ PPS Test EngineerCERTIFIED BY Chris Gorman Chris Gorman TITLE Risk & Integrity Specialist, EMPCoWITNESSED BY Ricky Boulware TITLE EMPCO Test Site InspectorWITNESSED BY Chris Gorman TITLE R&INOTE: SEE DOT LIQUIDS MANUAL with additional information

**CERTIFICATION OF PIPE LINE HYDROSTATIC PRESSURE TEST**

CARRIER NAME Mobil Pipeline Company

TESTING COMPANY NAME BJ Process & Pipeline Services

PRESSURE TEST NUMBER Test Section 17 Leak Test DATE 2/20/2006

THIS IS TO CERTIFY THAT THE PIPE LINE OR PIPELINE SECTION DESCRIBED BELOW WAS HYDROSTATICALLY PRESSURE TESTED IN ACCORDANCE WITH THE FOLLOWING PROCEDURE:

PIPE LINE 20" Crude FROM Patoka, IL TO Corsicana, TX

DESCRIPTION OF FACILITY TESTED Test Section 17 MP 238.25 - MP 257.50

SECTION LENGTH 19.25 miles PIPE O.D. 20" WALL THICKNESS 0.312" GR. X-42 TYPE ERW

LOCATION OF TEST PRESSURE RECORDER CONNECTION MP 238.25 (See attached sketch)

LOCATION OF TEMPERATURE RECORDER BULB MP 238.25 (See attached sketch)

INITIAL PRESSURE AT POINT OF TEST 925 psig TIME 12:45 PM

INITIAL TEMPERATURE OF TEST SECT. 46.0 °F ELEV. AT POINT OF TEST N/A MSL

INITIAL PRESSURE AT LOWEST ELEVATION POINT IN SECTION N/A PSIG;

ELEVATION N/A MSL; MP. N/A THE PRESSURE WAS  MEASURED  CALCULATED

INITIAL PRESSURE AT HIGHEST ELEVATION POINT IN SECTION N/A PSIG;

ELEVATION N/A MSL; MP. N/A THE PRESSURE WAS  MEASURED  CALCULATED

FINAL PRESSURE AT POINT OF TEST 924.5 PSIG TIME 4:45 PM

FINAL TEMPERATURE OF TEST SECT. 46.0 °F

TOTAL FLUID INJ. N/A GAL. TOTAL FLUID WITHDRAWN N/A GAL.

NET CHANGE IN VOLUME OF THE TEST SECT. N/A GAL.

LENGTH OF TEST 4 HRS. 0 MIN; TESTING FLUID Water SPEC GVTY. 1.00 TEMP. N/A °F

INITIAL PRESSURE N/A % OF SMYS AT THE TEST SITE N/A % AT HIGH POINT N/A % AT LOW POINT.

MINIMUM TEST PRESSURE DURING A SELECTED 4 HOUR PERIOD (TEST PRESSURE) 924.5 PSIG

MAXIMUM ALLOWABLE OPERATING PRESSURE 822 PSIG. at test site BASED ON - % SMYS  
OR 80% of minimum test pressure of 1027.5 psig at the test site during the 4 hour strength test.

WERE THERE ANY LEAKS?  YES  NO; IF YES, EXPLAIN \_\_\_\_\_

WAS EVERY COMPONENT THAT WILL BE SUBJECTED TO THE SYSTEM WORKING PRESSURE

HYDROSTATICALLY TESTED?  YES  NO; IF NO, EXPLAIN \_\_\_\_\_

PRESSURE RECORDER MAKE AND SERIAL NO. Chandler 25602 ITT Barton 242E-47061

TEMPERATURE RECORDER MAKE AND SERIAL NO. ITT Barton 242E-47061 ITT Barton 242E-55357

REMARKS: Tested in accordance with D.O.T. CFR Title 49 Part 195 Subpart E

CONDUCTED BY Curtis Carter TITLE BJ PPS Test Engineer

CERTIFIED BY Chris Gorman *Chris Gorman* TITLE Risk & Integrity Specialist EMPCo

WITNESSED BY Ricky Boulware TITLE EMPCO Test Site Inspector

WITNESSED BY Chris Gorman TITLE R+I

NOTE: SEE DOT LIQUIDS MANUAL *via teleconference*

**MOBIL PIPE LINE COMPANY**

HYDROSTATIC PRESSURE TEST DATA SHEET      DATE: 2/20/2006      FROM 2/20/2006 TO 2/20/2006

TEST NUMBER: Section 17      TIME: 7:45 AM      11:45 AM

DESCRIPTION: 647 Miles / 20" Crude Pipe Line, Patoka, IL to Corsicana, TX  
MP 238.25 - MP 257.50  
Strength Test

DEADWEIGHT TESTER NO. Chandler      25602  
 PRESSURE RECORDER NO. ITT Barton      242E-47061  
 TEMPERATURE RECORDER NO. ITT Barton      242E-55357

TIME	PRESSURE (PSIG)	AMBIENT TEMP (°F)	PIPE TEMP (°F)	GALLONS INJECTED (GAL)	GALLONS BLED OFF (GAL)	COMMENTS
07:45 AM	1028.0	24.0	46.0	N/A	N/A	Start 4 hour test
08:00 AM	1027.5	24.0	46.0	"	"	The drop in pressure 0.5 psi is believed
08:15 AM	1027.5	24.0	46.0	"	"	to be attributable to compressed air
08:30 AM	1027.5	25.0	46.0	"	"	cooling in the pipeline from the previous
08:45 AM	1027.5	25.5	46.0	"	"	test break and colder injection water
09:00 AM	1027.5	25.5	46.0	"	"	temperature equalizing with the
09:15 AM	1027.5	25.5	46.0	"	"	warmer test water temperature.
09:30 AM	1027.5	25.5	46.0	"	"	
09:45 AM	1027.5	25.5	46.0	"	"	
10:00 AM	1027.5	26.0	46.0	"	"	
10:15 AM	1027.5	26.0	46.0	"	"	
10:30 AM	1027.5	26.0	46.0	"	"	
10:45 AM	1027.5	26.0	46.0	"	"	
11:00 AM	1027.5	27.0	46.0	"	"	
11:15 AM	1027.5	27.0	46.0	"	"	
11:30 AM	1027.5	28.0	46.0	"	"	
11:45 AM	1027.5	28.0	46.0	"	"	End 4 Hour Strength Test

**MOBIL PIPE LINE COMPANY**

HYDROSTATIC PRESSURE TEST DATA SHEET      DATE: 2/20/2006      FROM 2/20/2006 TO 2/20/2006

TEST NUMBER: Section 17      TIME: 12:45 PM      4:45 PM

DESCRIPTION: 647 Miles / 20" Crude Pipe Line, Patoka, IL to Corsicana, TX  
MP 238.25 - MP 257.50  
Leak Test

DEADWEIGHT TESTER NO. Chandler      25602  
 PRESSURE RECORDER NO. ITT Barton      242E-47061  
 TEMPERATURE RECORDER NO. ITT Barton      242E-55357

TIME	PRESSURE (PSIG)	AMBIENT TEMP (°F)	PIPE TEMP (°F)	GALLONS INJECTED (GAL)	GALLONS BLED OFF (GAL)	COMMENTS
12:45 PM	925.0	29.0	46.0	N/A	N/A	Start 4 Hour Leak Test
01:00 PM	925.0	30.0	46.0	"	"	
01:15 PM	925.0	30.0	46.0	"	"	
01:30 PM	925.0	30.0	46.0	"	"	
01:45 PM	925.0	30.5	46.0	"	"	
02:00 PM	925.0	31.5	46.0	"	"	
02:15 PM	925.0	31.5	46.0	"	"	
02:30 PM	925.0	32.0	46.0	"	"	
02:45 PM	925.0	32.5	46.0	"	"	
03:00 PM	925.0	32.5	46.0	"	"	
03:15 PM	924.5	32.5	46.0	"	"	
03:30 PM	924.5	33.0	46.0	"	"	
03:45 PM	924.5	33.0	46.0	"	"	
04:00 PM	924.5	33.0	46.0	"	"	
04:15 PM	924.5	33.5	46.0	"	"	
04:30 PM	924.5	33.0	46.0	"	"	
04:45 PM	924.5	33.5	46.0	"	"	End 4 Hour Leak Test

***MOBIL PIPE LINE COMPANY***

**HYDROSTATIC PRESSURE TEST**

**647 Miles / 20" Crude Pipe Line, Patoka, IL to Corsicana, TX**

**Test Section 18**

**Glenwood, AR**

**MP 238.16 - MP 217.06**

**February 7, 2006**

# Memorandum

**Date:** 4/14/06

**Subject:** Hydrotest Review & Endorsement

**To:** <Hydrotest Report and HCA  
Baseline Assessment File>

**cc:** <>

**From:** <Chris Gorman>

I've completed the review of the hydrostatic test report for Test Section - 18 (H18) for the Corsicana to Patoka Crude Line. It is consistent with my knowledge of the testing operations and facility and confirms we had a good test. The hydrotest and report documentation are accurate and thorough and will satisfy our needs for Data Integration, Risk & Threat Analysis, and Preventive & Mitigative Measures Analysis needed to comply with the HCA regulations and the testing requirements of DOT CFR Title 49, Part 195, Subpart E.



Chris D. Gorman  
Pipeline Risk & Integrity Specialist  
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# MOBIL PIPE LINE COMPANY

647 Miles /20" Crude Line, Patoka, IL to Corsicana, TX

Test Section 18      MP 238.16 - MP 217.06

**Date and Time:**

February 7, 2006, from 8:15 AM to 12:15 PM, (Strength Test)

February 7, 2006, from 1:30 PM to 5:30 PM. (Leak Test)

**Facility Tested:**

The test section consisted of 21.19 miles of 20" x 0.312" w.t., X-42 ERW pipe

**Personnel Present:**

Conducted by: Curtis Carter - Test Engineer - BJ process & Pipeline Services

Witnessed by: M.E. Marshall - Inspector - EMPCO Representative

**Procedure:**

On- February 7, 2006 the piping was filled with water and the air was allowed to bleed through 2" valves. The test section was filled with water by moving water from previously hydrotested sections. The test section was pressurized to approximately 700 psig with BJ's positive-displacement pump at a rate of 15 psi/minute, and was allowed to stabilize over night. The test manifold, pressure recorder, and deadweight tester were connected to the test section as shown in the attached sketch.

The test section was pressurized at a rate of 10 psi/minute to 875 psi (approximately 80% of strength test pressure) by injecting water with a positive-displacement pump. Pressurization was halted for 15 minutes to allow for stabilization and to check for leaks. The test section was then pressurized at a rate of 5 psi/min to test pressure of 993Psi. The pressure stabilized at 08:45 and the 4 hour strength test commenced.

**Conclusion:**

The strength test started at 08:15 AM on February 7, 2006 and was held for 4 hours starting at a pressure of 993 psi. Over the duration of the strength test, there was no pressure drop.

The leak test started at 1:30 PM on February 7, 2006 and was held for 4 hours starting at a pressure of 894 psi. Over the duration of the leak test, there was a pressure drop of 0.50-psi. At this point the leak test was deemed successful.

The pressure trends over the duration of the leak test are within the accuracy of the instrumentation or within calculated fluctuations caused by temperature changes. The tests were deemed successful.

Therefore, in my judgment, this constitutes a valid pressure test meeting the requirements of the Department of Transportation Code of Federal Regulations Title 49, Part 195 Subpart E.

Curtis Carter -- Testing Engineer  
BJ Process & Pipeline Services

## CERTIFICATION OF PIPE LINE HYDROSTATIC PRESSURE TEST

CARRIER NAME Mobil Pipeline CompanyTESTING COMPANY NAME BJ Process & Pipeline ServicesPRESSURE TEST NUMBER Test Section 18 Strength Test DATE 2/7/2006

THIS IS TO CERTIFY THAT THE PIPE LINE OR PIPELINE SECTION DESCRIBED BELOW WAS HYDROSTATICALLY PRESSURE TESTED IN ACCORDANCE WITH THE FOLLOWING PROCEDURE:

PIPE LINE 20" Crude FROM Patoka, IL TO Corsicana, TXDESCRIPTION OF FACILITY TESTED Test Section 18 MP 238.16 - MP 217.06SECTION LENGTH 21.19 miles PIPE O.D. 20" WALL THICKNESS 0.312" GR. X-42 TYPE ERWLOCATION OF TEST PRESSURE RECORDER CONNECT MP 238.16 (See attached sketch)LOCATION OF TEMPERATURE RECORDER BULB MP 238.16 (See attached sketch)INITIAL PRESSURE AT POINT OF TEST 993 psig TIME 8:15 AMINITIAL TEMPERATURE OF TEST SECT. 49.0 °F ELEV. AT POINT OF TEST 625 ft MSLINITIAL PRESSURE AT LOWEST ELEVATION POINT IN SECTION 1083.1 PSIG;ELEVATION 417 ft MSL; MP. 217.08 THE PRESSURE WAS  MEASURED  CALCULATEDINITIAL PRESSURE AT HIGHEST ELEVATION POINT IN SECTION 885.2 PSIG;ELEVATION 874 ft MSL; MP. 225.15 THE PRESSURE WAS  MEASURED  CALCULATEDFINAL PRESSURE AT POINT OF TEST 993 PSIG TIME 12:15 PMFINAL TEMPERATURE OF TEST SECT. 48.5 °FTOTAL FLUID INJ. N/A GAL. TOTAL FLUID WITHDRAWN N/A GAL.NET CHANGE IN VOLUME OF THE TEST SECT. N/A GAL.LENGTH OF TEST 4 HRS. 0 MIN; TESTING FLUID Water SPEC GVTY. 1.00 TEMP. N/A °FINITIAL PRESSURE 76 % OF SMYS AT THE TEST SITE 68 % AT HIGH POINT 83 % AT LOW POINT.MINIMUM TEST PRESSURE DURING A SELECTED 4 HOUR PERIOD (TEST PRESSURE) 993 PSIGMAXIMUM ALLOWABLE OPERATING PRESSURE 794 PSIG. at test site. BASED ON - % SMYS  
OR 80% of minimum test pressure at test siteWERE THERE ANY LEAKS?  YES  NO; IF YES, EXPLAIN \_\_\_\_\_

WAS EVERY COMPONENT THAT WILL BE SUBJECTED TO THE SYSTEM WORKING PRESSURE

HYDROSTATICALLY TESTED?  YES  NO; IF NO, EXPLAIN \_\_\_\_\_PRESSURE RECORDER MAKE AND SERIAL N Chandler 25602 ITT Barton 242E-51492TEMPERATURE RECORDER MAKE AND SERIAL N ITT Barton 242E-51492 ITT Barton 242E-41526REMARKS: Tested in accordance with D.O.T. CFR Title 49 Part 195 Subpart ECONDUCTED BY Curtis Carter TITLE BJ PPS Test EngineerCERTIFIED BY Chris Gorman *Chris Gorman* TITLE Risk & Integrity Specialist, EMPCoWITNESSED BY Mark Marshall TITLE EMPCo Test Site InspectorWITNESSED BY Chris Gorman *Chris Gorman* TITLE R&INOTE: SEE DOT LIQUIDS MANUAL via teleconference

## CERTIFICATION OF PIPE LINE HYDROSTATIC PRESSURE TEST

CARRIER NAME Mobil Pipeline CompanyTESTING COMPANY NAME BJ Process & Pipeline ServicesPRESSURE TEST NUMBER Test Section 18 Leak Test DATE 2/7/2006

THIS IS TO CERTIFY THAT THE PIPE LINE OR PIPELINE SECTION DESCRIBED BELOW WAS HYDROSTATICALLY PRESSURE TESTED IN ACCORDANCE WITH THE FOLLOWING PROCEDURE:

PIPE LINE 20" Crude FROM Patoka, IL TO Corsicana, TXDESCRIPTION OF FACILITY TESTED Test Section 18 MP 238.16 - MP 217.06SECTION LENGTH 21.19 miles PIPE O.D. 20" WALL THICKNESS 0.312" GR. X-42 TYPE ERWLOCATION OF TEST PRESSURE RECORDER CONNECTION MP 238.16 (See attached sketch)LOCATION OF TEMPERATURE RECORDER BULB MP 238.16 (See attached sketch)INITIAL PRESSURE AT POINT OF TEST 894 psig TIME 1:30 PMINITIAL TEMPERATURE OF TEST SECT. 48.5 °F ELEV. AT POINT OF TEST N/A MSLINITIAL PRESSURE AT LOWEST ELEVATION POINT IN SECTION N/A PSIG;ELEVATION N/A MSL; MP. N/A THE PRESSURE WAS  MEASURED  CALCULATEDINITIAL PRESSURE AT HIGHEST ELEVATION POINT IN SECTION N/A PSIG;ELEVATION N/A MSL; MP. N/A THE PRESSURE WAS  MEASURED  CALCULATEDFINAL PRESSURE AT POINT OF TEST 893.5 PSIG TIME 5:30 PMFINAL TEMPERATURE OF TEST SECT. 48.0 °FTOTAL FLUID INJ. N/A GAL. TOTAL FLUID WITHDRAWN N/A GAL.NET CHANGE IN VOLUME OF THE TEST SECT. N/A GAL.LENGTH OF TEST 4 HRS. 0 MIN; TESTING FLUID Water SPEC GVTY. 1.00 TEMP. N/A °FINITIAL PRESSURE N/A % OF SMYS AT THE TEST SITE N/A % AT HIGH POINT N/A % AT LOW POINT.MINIMUM TEST PRESSURE DURING A SELECTED 4 HOUR PERIOD (TEST PRESSURE) 893.5 PSIGMAXIMUM ALLOWABLE OPERATING PRESSURE 794 PSIG. at test site BASED ON 80% SMYS  
OR 80% of minimum test pressure of 993.0 psig at the test site during the 4 hour strength test.WERE THERE ANY LEAKS?  YES  NO; IF YES, EXPLAIN \_\_\_\_\_

WAS EVERY COMPONENT THAT WILL BE SUBJECTED TO THE SYSTEM WORKING PRESSURE

HYDROSTATICALLY TESTED?  YES  NO; IF NO, EXPLAIN \_\_\_\_\_PRESSURE RECORDER MAKE AND SERIAL NO. Chandler 25602 ITT Barton 242E-51492TEMPERATURE RECORDER MAKE AND SERIAL NO. ITT Barton 242E-51492 ITT Barton 242E-41526REMARKS: Tested in accordance with D.O.T. CFR Title 49 Part 195 Subpart ECONDUCTED BY Curtis Carter TITLE BJ PPS Test EngineerCERTIFIED BY Chris Gorman *Chris Gorman* TITLE Risk & Integrity Specialist EMPCoWITNESSED BY Mark Marshall TITLE EMPCO Test Site InspectorWITNESSED BY Chris Gorman *Chris Gorman* TITLE R+I

NOTE: SEE DOT LIQUIDS MANUAL

**MOBIL PIPE LINE COMPANY**

HYDROSTATIC PRESSURE TEST DATA SHEET

DATE: FROM 2/7/2006 TO 2/7/2006

TEST NUMBER: Section 18 TIME: 8:15 AM 12:15 PM

DESCRIPTION: 647 Miles / 20" Crude Pipe Line, Patoka, IL to Corsicana, TX  
 MP 238.16 - MP 217.06  
Strength Test

DEADWEIGHT TESTER NO. Chandler 12403  
 PRESSURE RECORDER NO. ITT Barton 242E-51492  
 TEMPERATURE RECORDER NO. ITT Barton 242E-41526

TIME	PRESSURE (PSIG)	AMBIENT TEMP (°F)	PIPE TEMP (°F)	GALLONS INJECTED (GAL)	GALLONS BLED OFF (GAL)	COMMENTS
08:15 AM	993.0	31.5	49.0	N/A	N/A	Start 4 Hour Strength Test
08:30 AM	993.0	32.5	49.0	"	"	
08:45 AM	993.0	34.0	49.0	"	"	
09:00 AM	993.0	35.5	49.0	"	"	
09:15 AM	993.0	37.5	49.0	"	"	
09:30 AM	993.0	40.0	49.0	"	"	
09:45 AM	993.0	43.0	49.0	"	"	
10:00 AM	993.0	45.0	49.0	"	"	
10:15 AM	993.0	47.5	49.0	"	"	
10:30 AM	993.0	49.0	49.0	"	"	
10:45 AM	993.0	51.0	49.0	"	"	
11:00 AM	993.0	52.5	49.0	"	"	
11:15 AM	993.0	53.0	48.5	"	"	
11:30 AM	993.0	54.0	48.5	"	"	
11:45 AM	993.0	54.0	48.5	"	"	
12:00 PM	993.0	55.5	48.5	"	"	
12:15 PM	993.0	55.5	48.5	"	"	End 4 Hour Strength Test

**MOBIL PIPE LINE COMPANY**

HYDROSTATIC PRESSURE TEST DATA SHEET

DATE: FROM 2/7/2006 TO 2/7/2006

TEST NUMBER: Section 18 TIME: 1:30 PM 5:30 PM

DESCRIPTION: 647 Miles / 20" Crude Pipe Line, Patoka, IL to Corsicana, TX  
 MP 238.16 - MP 217.06  
Leak Test

DEADWEIGHT TESTER NO. Chandler 12403  
 PRESSURE RECORDER NO. ITT Barton 242E-51492  
 TEMPERATURE RECORDER NO. ITT Barton 242E-41526

TIME	PRESSURE (PSIG)	AMBIENT TEMP (°F)	PIPE TEMP (°F)	GALLONS INJECTED (GAL)	GALLONS BLED OFF (GAL)	COMMENTS
01:30 PM	894.0	58.5	48.5	N/A	N/A	Start 4 Hour Leak Test
01:45 PM	894.0	58.5	48.5	"	"	
02:00 PM	894.0	58.5	48.5	"	"	
02:15 PM	894.0	59.0	48.5	"	"	
02:30 PM	894.0	59.5	48.5	"	"	
02:45 PM	894.0	59.5	48.5	"	"	
03:00 PM	894.0	60.0	48.5	"	"	
03:15 PM	894.0	60.0	48.5	"	"	
03:30 PM	894.0	59.5	48.5	"	"	
03:45 PM	894.0	60.0	48.5	"	"	
04:00 PM	893.5	59.5	48.5	"	"	
04:15 PM	893.5	59.0	48.5	"	"	
04:30 PM	893.5	58.5	48.5	"	"	
04:45 PM	893.5	57.0	48.5	"	"	
05:00 PM	893.5	56.5	48.5	"	"	
05:15 PM	893.5	55.0	48.0	"	"	
05:30 PM	893.5	52.5	48.0	"	"	End 4 Hour Leak Test

***MOBIL PIPE LINE COMPANY***

**HYDROSTATIC PRESSURE TEST**

**647 Miles / 20" Crude Pipe Line, Patoka, IL to Corsicana, TX**

**Test Section 19**

**Foreman, AR**

**MP 182.99 - MP 217.06**

**February 24, 2006**

## Memorandum

**Date:** 4/14/06

**Subject:** Hydrotest Review & Endorsement

**To:** <Hydrotest Report and HCA  
Baseline Assessment File>

**cc:** <>

**From:** <Chris Gorman>

I've completed the review of the hydrostatic test report for Test Section - 19 (H19) for the Corsicana to Patoka Crude Line. It is consistent with my knowledge of the testing operations and facility and confirms we had a good test. The hydrotest and report documentation are accurate and thorough and will satisfy our needs for Data Integration, Risk & Threat Analysis, and Preventive & Mitigative Measures Analysis needed to comply with the HCA regulations and the testing requirements of DOT CFR Title 49, Part 195, Subpart E.

Metallurgical root cause failure analysis was performed on two ERW seam failures in this section that occurred on 2/13/06, at MP - 188.2, at a calculated failure pressure at the site of 1088 psig, and on 2/22/06, at MP - 190.3, at a calculated failure pressure at the site of 1122 psig. Results of the analysis indicate the failures were caused by original mill defects in the long seam that failed at, or slightly less than, the 1991 test pressures at each site. No fatigue, selective corrosion, or other time dependant defects were observed. However, the results also suggest that the seam toughness was probably reduced by the effects of the Feb 2006 test water temperature (49°F) being much lower than the August 1991 temperatures (82°F).



Chris D. Gorman  
Pipeline Risk & Integrity Specialist  
ExxonMobil Pipeline Company  
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# MOBIL PIPE LINE COMPANY

647 Miles /20" Crude Line, Patoka, IL to Corsicana, TX

Test Section 19

182.99 - MP 217.06

**Date and Time:**

February 24, 2006 from 10:30 AM to 2:30 PM. (Strength Test)

February 24, 2006 from 4:00 PM to 8:00 PM. (Leak Test)

**Facility Tested:**

The test section consisted of 34.07 miles of 20" x 0.312" w.t., X-42 ERW pipe

**Personnel Present:**

Conducted by: C Carter - Test Engineer - BJ Process & Pipeline Services

Witnessed by: R. Baulware - Inspector - EMPCO Representative

**Procedure:**

On February 23, 2006 the piping was filled with water and the air was allowed to bleed through 2" valves. The test section was filled with water by moving water from previously hydrotested sections. The test section was pressurized to approximately 700 psig with BJ's positive-displacement pump at a rate of 15 psi/minute, and was allowed to stabilize over night. The test manifold, pressure recorder, and deadweight tester were connected to the test section as shown in the attached sketch.

The test section was pressurized at a rate of 10 psi/minute to 824 psi (approximately 80% of strength test pressure) by injecting water at with a positive-displacement pump. Pressurization was halted for 15 minutes to allow for stabilization and to check for leaks. The test section was then pressurized at a rate of 5 psi/min to a pressure of 1031 Psi. The pressure stabilized at 10:30 AM at 1031.5 psi and the 4 hour strength test commenced.

**Conclusion:**

The strength test started at 10:30 AM on February 24, 2006 and was held for 4 hours starting at a pressure of 1031.5 psi. Over the duration of the strength test, there was no pressure change. The leak test started at 2:00 PM on February 24, 2006 and was held for 4 hours starting at a pressure of 932 psi. Over the duration of the leak test, there was no pressure change. At this point the leak test was deemed successful.

The pressure trends over the duration of the leak test are within the accuracy of the instrumentation or within calculated fluctuations caused by temperature changes. The tests were deemed successful.

Therefore, in my judgment, this constitutes a valid pressure test meeting the requirements of the Department of Transportation Code of Federal Regulations Title 49, Part 195 Subpart E.

Curtis Carter  
Testing Engineer  
BJ Process & Pipeline Services

**CERTIFICATION OF PIPE LINE HYDROSTATIC PRESSURE TEST**

CARRIER NAME Mobil Pipeline Company

TESTING COMPANY NAME BJ Process & Pipeline Services

PRESSURE TEST NUMBER Test Section 19 Strength Test DATE 2/24/2006

THIS IS TO CERTIFY THAT THE PIPE LINE OR PIPELINE SECTION DESCRIBED BELOW WAS HYDROSTATICALLY PRESSURE TESTED IN ACCORDANCE WITH THE FOLLOWING PROCEDURE:

PIPE LINE 20" Crude FROM Patoka IL TO Corsicana, TX

DESCRIPTION OF FACILITY TESTED Test Section 19 MP 182.99 - MP 217.06

SECTION LENGTH 34.07 miles PIPE O.D. 20" WALL THICKNESS 0.312" GR. X-42 TYPE ERW

LOCATION OF TEST PRESSURE RECORDER CONNECT MP 182.99 (See attached sketch)

LOCATION OF TEMPERATURE RECORDER BULB MP 182.99 (See attached sketch)

INITIAL PRESSURE AT POINT OF TEST 1031.5 psig TIME 10:30 AM

INITIAL TEMPERATURE OF TEST SECT. 49.0 °F ELEV. AT POINT OF TEST 464 ft MSL

INITIAL PRESSURE AT LOWEST ELEVATION POINT IN SECTION 1106.8 PSIG;

ELEVATION 290 ft MSL; MP. 191.87 THE PRESSURE WAS  MEASURED  CALCULATED

INITIAL PRESSURE AT HIGHEST ELEVATION POINT IN SECTION 929.3 PSIG;

ELEVATION 700 ft MSL; MP. 202.78 THE PRESSURE WAS  MEASURED  CALCULATED

FINAL PRESSURE AT POINT OF TEST 1031.5 PSIG TIME 2:30 PM

FINAL TEMPERATURE OF TEST SECT. 49.0 °F

TOTAL FLUID INJ. N/A GAL. TOTAL FLUID WITHDRAWN N/A GAL.

NET CHANGE IN VOLUME OF THE TEST SECT N/A GAL.

LENGTH OF TEST 4 HRS. 0 MIN; TESTING FLUID Water SPEC GVTY. 1.00 TEMP. N/A °F

INITIAL PRESSURE 79 % OF SMYS AT THE TEST SITE 71 % AT HIGH POINT 84 % AT LOW POINT.

MINIMUM TEST PRESSURE DURING A SELECTED 4 HOUR PERIOD (TEST PRESSURE) 1031.5 PSIG

MAXIMUM ALLOWABLE OPERATING PRESSURE 825 PSIG. at test site. BASED ON - % SMYS  
OR 80% of minimum test pressure at test site.

WERE THERE ANY LEAKS?  YES  NO; IF YES, EXPLAIN There were previous test breaks at MP 188.20 and 190.30 in the ERW seam which were replaced with new pipe.

WAS EVERY COMPONENT THAT WILL BE SUBJECTED TO THE SYSTEM WORKING PRESSURE HYDROSTATICALLY TESTED?  YES  NO; IF NO, EXPLAIN \_\_\_\_\_

PRESSURE RECORDER MAKE AND SERIAL N Chandler 25602 ITT Barton 242E-47061

TEMPERATURE RECORDER MAKE AND SERIAL N ITT Barton 242E-47061 ITT Barton 242E-55357

REMARKS: Tested in accordance with D.O.T. CFR Title 49 Part 195 Subpart E.

CONDUCTED BY Curtis Carter TITLE BJ PPS Test Engineer

CERTIFIED BY Chris Gorman TITLE Risk & Integrity Specialist, EMPCo

WITNESSED BY Ricky Boulware TITLE EMPCo Test Site Inspector

WITNESSED BY Chris Gorman TITLE R&IS

NOTE: SEE DOT LIQUIDS MANUAL v. 7 + references

## CERTIFICATION OF PIPE LINE HYDROSTATIC PRESSURE TEST

CARRIER NAME Mobil Pipeline CompanyTESTING COMPANY NAME BJ Process & Pipeline ServicesPRESSURE TEST NUMBER Test Section 19 Leak Test DATE 2/24/2006

THIS IS TO CERTIFY THAT THE PIPE LINE OR PIPELINE SECTION DESCRIBED BELOW WAS HYDROSTATICALLY PRESSURE TESTED IN ACCORDANCE WITH THE FOLLOWING PROCEDURE:

PIPE LINE 20" Crude FROM Patoka, IL TO Corsicana, TXDESCRIPTION OF FACILITY TESTED Test Section 19 MP 182.99 - MP 217.06SECTION LENGTH 34.07 miles PIPE O.D. 20" WALL THICKNESS 0.312" GR. X-42 TYPE ERWLOCATION OF TEST PRESSURE RECORDER CONNECTION MP 182.99 (See attached sketch)LOCATION OF TEMPERATURE RECORDER BULB MP 182.99 (See attached sketch)INITIAL PRESSURE AT POINT OF TEST 932 psig TIME 4:00 PMINITIAL TEMPERATURE OF TEST SECT. 49.0 °F ELEV. AT POINT OF TEST N/A MSLINITIAL PRESSURE AT LOWEST ELEVATION POINT IN SECTION N/A PSIG;ELEVATION N/A MSL; MP. N/A THE PRESSURE WAS  MEASURED  CALCULATEDINITIAL PRESSURE AT HIGHEST ELEVATION POINT IN SECTION N/A PSIG;ELEVATION N/A MSL; MP. N/A THE PRESSURE WAS  MEASURED  CALCULATEDFINAL PRESSURE AT POINT OF TEST 932 PSIG TIME 8:00 PMFINAL TEMPERATURE OF TEST SECT. 49.5 °FTOTAL FLUID INJ. N/A GAL. TOTAL FLUID WITHDRAWN N/A GAL.NET CHANGE IN VOLUME OF THE TEST SECT. N/A GAL.LENGTH OF TEST 4 HRS. 0 MIN; TESTING FLUID Water SPEC GVTY. 1.00 TEMP. N/A °FINITIAL PRESSURE N/A % OF SMYS AT THE TEST SITE N/A % AT HIGH POINT N/A % AT LOW POINT.MINIMUM TEST PRESSURE DURING A SELECTED 4 HOUR PERIOD (TEST PRESSURE) 932 PSIGMAXIMUM ALLOWABLE OPERATING PRESSURE 825 PSIG. at test site BASED ON - % SMYS  
OR 80% of minimum test pressure of 1031.5 psig at the test site during the 4 hour strength testWERE THERE ANY LEAKS?  YES  NO; IF YES, EXPLAIN \_\_\_\_\_

WAS EVERY COMPONENT THAT WILL BE SUBJECTED TO THE SYSTEM WORKING PRESSURE

HYDROSTATICALLY TESTED?  YES  NO; IF NO, EXPLAIN \_\_\_\_\_PRESSURE RECORDER MAKE AND SERIAL NO. Chandler 25602 ITT Barton 242E-47061TEMPERATURE RECORDER MAKE AND SERIAL NO. ITT Barton 242E-47061 ITT Barton 242E-55357REMARKS: Tested in accordance with D.O.T. CFR Title 49 Part 195 Subpart E.CONDUCTED BY Curtis Carter TITLE BJ PPS Test EngineerCERTIFIED BY Chris Gorman *Chris Gorman* TITLE Risk & Integrity Specialist, EMPCoWITNESSED BY Ricky Boulware TITLE EMPCo Test Site InspectorWITNESSED BY Chris Gorman TITLE R & I SNOTE: SEE DOT LIQUIDS MANUAL *with telephone number*

MOBIL PIPE LINE COMPANY						
HYDROSTATIC PRESSURE TEST DATA SHEET				DATE:	FROM 2/24/2006	TO 2/24/2006
TEST NUMBER: Section 19				TIME:	10:30 AM	2:30 PM
DESCRIPTION: 647 Miles / 20" Crude Pipe Line, Patoka, IL to Corsicana, TX						
MP 182.99 - MP 217.06						
Strength Test						
DEADWEIGHT TESTER NO. Chandler				25602		
PRESSURE RECORDER NO. ITT Barton				242E-47061		
TEMPERATURE RECORDER NO. ITT Barton				242E-55357		
TIME	PRESSURE (PSIG)	AMBIENT TEMP (°F)	PIPE TEMP (°F)	GALLONS INJECTED (GAL)	GALLONS BLED OFF (GAL)	COMMENTS
10:30 AM	1031.5	55.5	49.0	N/A	N/A	Start 4 Hour Strength Test
10:45 AM	1031.5	57.0	49.0	"	"	
11:00 AM	1031.5	59.5	49.0	"	"	
11:15 AM	1031.5	60.0	49.0	"	"	
11:30 AM	1031.5	61.0	49.0	"	"	
11:45 AM	1031.5	62.0	49.0	"	"	
12:00 PM	1031.5	62.5	49.0	"	"	
12:15 PM	1031.5	63.0	49.0	"	"	
12:30 PM	1031.5	64.5	49.0	"	"	
12:45 PM	1031.5	65.0	49.0	"	"	
01:00 PM	1031.5	65.0	49.0	"	"	
01:15 PM	1031.5	65.0	49.0	"	"	
01:30 PM	1031.5	64.0	49.0	"	"	
01:45 PM	1031.5	64.0	49.0	"	"	
02:00 PM	1031.5	64.0	49.0	"	"	
02:15 PM	1031.5	64.0	49.0	"	"	
02:30 PM	1031.5	64.5	49.0	"	"	End 4 Hour Strength Test

MOBIL PIPE LINE COMPANY						
HYDROSTATIC PRESSURE TEST DATA SHEET				DATE:	FROM 2/24/2006	TO 2/24/2006
TEST NUMBER: Section 19				TIME:	4:00 PM	8:00 PM
DESCRIPTION: 647 Miles / 20" Crude Pipe Line, Patoka, IL to Corsicana, TX						
MP 182.99 - MP 217.06						
Leak Test						
DEADWEIGHT TESTER NO. Chandler				25602		
PRESSURE RECORDER NO. ITT Barton				242E-47061		
TEMPERATURE RECORDER NO. ITT Barton				242E-55357		
TIME	PRESSURE (PSIG)	AMBIENT TEMP (°F)	PIPE TEMP (°F)	GALLONS INJECTED (GAL)	GALLONS BLED OFF (GAL)	COMMENTS
04:00 PM	932.0	62.0	49.0	N/A	N/A	Start 4 Hour Leak Test
04:15 PM	932.0	61.5	49.0	"	"	
04:30 PM	932.0	61.0	49.0	"	"	
04:45 PM	932.0	60.5	49.0	"	"	
05:00 PM	932.0	60.0	49.0	"	"	
05:15 PM	932.0	60.0	49.0	"	"	
05:30 PM	932.0	59.5	49.0	"	"	
05:45 PM	932.0	59.0	49.5	"	"	
06:00 PM	932.0	59.0	49.5	"	"	
06:15 PM	932.0	58.5	49.5	"	"	
06:30 PM	932.0	58.0	49.5	"	"	
06:45 PM	932.0	57.0	49.5	"	"	
07:00 PM	932.0	56.5	49.5	"	"	
07:15 PM	932.0	55.0	49.5	"	"	
07:30 PM	932.0	54.5	49.5	"	"	
07:45 PM	932.0	54.0	49.5	"	"	
08:00 PM	932.0	54.0	49.5	"	"	End 4 Hour Leak Test



***MOBIL PIPE LINE COMPANY***

**HYDROSTATIC PRESSURE TEST**

**647 Miles / 20" Crude Pipe Line, Patoka, IL to Corsicana, TX**

**Test Section 20**

**Foreman, AR**



**MP 182.99 - MP 166.62**



**February 13, 2006**

# MOBIL PIPE LINE COMPANY

647 Miles /20"CrudeLine, Patoka, IL to Corsicana, TX  
Test Section 20 MP 182.99 - MP 166.54

**Date and Time:**

February 13, 2006, from 12:30 PM to 4:30 PM - (Strength Test)  
February 13, 2006, from 5:30 PM to 9:30 PM - (Leak Test)

**Facility Tested:**

The test section consisted of 16.45 miles of 20" x 0312" w.t., X-42 ERW pipe

**Personnel Present:**

Conducted by: Curtis Carter - Test Engineer - BJ Process & Pipeline Services  
Witnessed by: M. E. Marshall- Inspector -EMPCO Representative

**Procedure:**

On February 12, 2006 the piping was filled with water and the air was allowed to bleed through 2" valves. The test section was filled with water by moving water from previously hydrotested sections. The test section was pressurized to approximately 700 psig with BJ's positive-displacement pump at a rate of 15 psi /minute, and was allowed to stabilize. The test manifold, pressure recorder, and deadweight tester were connected to the test section as shown in the attached sketch.

The test section was pressurized at a rate of 10 psi /minute to 876 psi (approximately 80% of strength test pressure) by injecting water at with a positive-displacement pump. Pressurization was halted for 15 minutes to allow for stabilization and to check for leaks. During this hold period, it was determined that the pipeline segment was losing pressure at a very slow rate (approximately 1.0 psi/hour). It was then determined to reduce the pressure back down to 750 psi, block in the segment and investigate this pressure loss further. Inspection of the block valve and associated fittings at MP 177.1 revealed a leaking 2" fitting near this valve. Due to the nature of the leak, it was then determined to pressure up the test section and capture and measure the volume of the small drip at this location during the duration the test. The test section was then pressurized at a rate of 10 psi/min to 875 psi, held for 30 minutes and then pressurized at a rate of 5 psi/minute to the test pressure of 1090 psig. The pressure stabilized at 1091 psig and a 12:30 PM the 4 hour strength test commenced.

**Conclusion:**

The strength test started at 12:30 PM on Feb 13, 2006 and was held for 4 hours starting at a pressure of 1091 psi. Over the duration of the strength test, there was a pressure drop of 3.5 psi to a final pressure of 1087.5 psi. The leak test started at 5:50 PM on February 13, 2006 and was held for 4 hours starting at a pressure of 988.5 psi. Over the duration of the leak test, there was a pressure loss of 1.5 psi to a final pressure of 987 psi. During both of these tests, water was collected and measured at the leaking 2" fitting at a rate of 1.0 oz every two (2) minutes, or a total of 120 ounces during each 4 hour period. At this point the strength test and leak test were deemed successful. The pressure trends over the duration of the leak test are within the accuracy of the instrumentation or within calculated fluctuations caused by temperature changes and captured test median. The tests were deemed successful. Therefore, in my judgment, this constitutes a valid pressure test meeting the requirements of the Department of Transportation Code of Federal Regulations Title 49, Part 195 Subpart E.

Curtis Carter Testing Engineer  
BJ Process & Pipeline Services

# Memorandum

**Date:** 4/28/06

**Subject:** Hydrotest Review & Endorsement

**To:** <Hydrotest Report and HCA  
Baseline Assessment File>

**cc:** <>

**From:** <Chris Gorman>

I've completed the review of the hydrostatic test report for Test Section - 20 (H20) for the Corsicana to Patoka Crude Line. It is consistent with my knowledge of the testing operations and facility and confirms we had a good test. The hydrotest and report documentation are accurate and thorough and will satisfy our needs for Data Integration, Risk & Threat Analysis, and Preventive & Mitigative Measures Analysis needed to comply with the HCA regulations and the testing requirements of DOT CFR Title 49, Part 195, Subpart E.



Chris D. Gorman  
Pipeline Risk & Integrity Specialist  
ExxonMobil Pipeline Company  
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Corsicana, TX 75110  
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903-654-1324 cell

## CERTIFICATION OF PIPE LINE HYDROSTATIC PRESSURE TEST

CARRIER NAME Mobil Pipeline CompanyTESTING COMPANY NAME BJ Process & Pipeline ServicesPRESSURE TEST NUMBER Test Section 20 Strength Test DATE 2/13/2006

THIS IS TO CERTIFY THAT THE PIPE LINE OR PIPELINE SECTION DESCRIBED BELOW WAS HYDROSTATICALLY PRESSURE TESTED IN ACCORDANCE WITH THE FOLLOWING PROCEDURE:

PIPE LINE 20" Crude FROM Patoka, IL TO Corsicana, TXDESCRIPTION OF FACILITY TESTED Test Section 20 MP 182.99 - MP 166.54SECTION LENGTH 16.45 miles PIPE O.D. 20" WALL THICKNESS 0.312" GR. X-42 TYPE ERWLOCATION OF TEST PRESSURE RECORDER CONNECT MP 182.99 (See attached sketch)LOCATION OF TEMPERATURE RECORDER BULB MP 182.99 (See attached sketch)INITIAL PRESSURE AT POINT OF TEST 1091 PSIG TIME 12:30 PMINITIAL TEMPERATURE OF TEST SECT. 48.0 °F ELEV. AT POINT OF TEST 464 ft MSLINITIAL PRESSURE AT LOWEST ELEVATION POINT IN SECTION 1174.1 PSIG;ELEVATION 272 ft MSL; MP. 181.91 THE PRESSURE WAS  MEASURED  CALCULATEDINITIAL PRESSURE AT HIGHEST ELEVATION POINT IN SECTION 1091.0 PSIG;ELEVATION 464 ft MSL; MP. 202.78 THE PRESSURE WAS  MEASURED  CALCULATEDFINAL PRESSURE AT POINT OF TEST 1087.5 PSIG TIME 4:30 PMFINAL TEMPERATURE OF TEST SECT. 48.5 °FTOTAL FLUID INJ. N/A GAL. TOTAL FLUID WITHDRAWN ~~N/A~~ 0.94 GAL.NET CHANGE IN VOLUME OF THE TEST SECT. N/A GAL.LENGTH OF TEST 4 HRS. 0 MIN; TESTING FLUID Water SPEC GVTY. 1.00 TEMP. N/A °FINITIAL PRESSURE 83 % OF SMYS AT THE TEST SITE 83 % AT HIGH POINT 90 % AT LOW POINTMINIMUM TEST PRESSURE DURING A SELECTED 4 HOUR PERIOD (TEST PRESSURE) 1087.5 PSIGMAXIMUM ALLOWABLE OPERATING PRESSURE 870 PSIG. at test site. BASED ON - % SMYS  
OR 80% of minimum test pressure at test siteWERE THERE ANY LEAKS?  YES  NO; IF YES, EXPLAIN There was a leak on a 2" fitting at MP 177.1 at a rate of 1oz/2 minutes.WAS EVERY COMPONENT THAT WILL BE SUBJECTED TO THE SYSTEM WORKING PRESSURE HYDROSTATICALLY TESTED?  YES  NO; IF NO, EXPLAIN \_\_\_\_\_PRESSURE RECORDER MAKE AND SERIAL N Chandler 25602 ITT Barton 242E-47061TEMPERATURE RECORDER MAKE AND SERIAL N ITT Barton 242E-47061 ITT Barton 242E-55357REMARKS: It is believed that some of the pressure drop in the segment was due to the cooling of compressed air in the line from the previous test breaks in Section #19 as evidenced from the PV graph/chart.Tested in accordance with D.O.T. CFR Title 49 Part 195 Subpart E.CONDUCTED BY Curtis Carter TITLE BJ PPS Test EngineerCERTIFIED BY Chris Gorman *Chris Gorman* TITLE Risk & Integrity Specialist, EMPCoWITNESSED BY Mark Marshall TITLE EMPCO Test Site InspectorWITNESSED BY Chris Gorman - via Teleconference *Chris Gorman* TITLE Risk & Integrity Specialist, EMPCo

NOTE: SEE DOT LIQUIDS MANUAL

## CERTIFICATION OF PIPE LINE HYDROSTATIC PRESSURE TEST

CARRIER NAME Mobil Pipeline CompanyTESTING COMPANY NAME BJ Process & Pipeline ServicesPRESSURE TEST NUMBER Test Section 20 Leak Test DATE 2/13/2006

THIS IS TO CERTIFY THAT THE PIPE LINE OR PIPELINE SECTION DESCRIBED BELOW WAS HYDROSTATICALLY PRESSURE TESTED IN ACCORDANCE WITH THE FOLLOWING PROCEDURE:

PIPE LINE 20" Crude FROM Patoka, IL TO Corsicana, TXDESCRIPTION OF FACILITY TESTED Test Section 20 MP 182.99 - MP 166.54SECTION LENGTH 16.45 miles PIPE O.D. 20" WALL THICKNESS 0.312" GR. X-42 TYPE ERWLOCATION OF TEST PRESSURE RECORDER CONNECTION MP 182.99 (See attached sketch)LOCATION OF TEMPERATURE RECORDER BULB MP 182.99 (See attached sketch)INITIAL PRESSURE AT POINT OF TEST 988.5 psig TIME 5:30 PMINITIAL TEMPERATURE OF TEST SECT. 48.5 °F ELEV. AT POINT OF TEST N/A MSLINITIAL PRESSURE AT LOWEST ELEVATION POINT IN SECTION N/A PSIG;ELEVATION N/A MSL; MP. N/A THE PRESSURE WAS  MEASURED  CALCULATEDINITIAL PRESSURE AT HIGHEST ELEVATION POINT IN SECTION N/A PSIG;ELEVATION N/A MSL; MP. N/A THE PRESSURE WAS  MEASURED  CALCULATEDFINAL PRESSURE AT POINT OF TEST 987 PSIG TIME 9:30 PMFINAL TEMPERATURE OF TEST SECT. 48.5 °FTOTAL FLUID INJ. N/A GAL. TOTAL FLUID WITHDRAWN N/A 2.9 GAL.NET CHANGE IN VOLUME OF THE TEST SECT. N/A GAL.LENGTH OF TEST 4 HRS. 0 MIN; TESTING FLUID Water SPEC GVTY. 1.00 TEMP. N/A °FINITIAL PRESSURE N/A % OF SMYS AT THE TEST SITE N/A % AT HIGH POINT N/A % AT LOW POINT.MINIMUM TEST PRESSURE DURING A SELECTED 4 HOUR PERIOD (TEST PRESSURE) 987 PSIGMAXIMUM ALLOWABLE OPERATING PRESSURE 870 PSIG. at test site BASED ON 80% SMYS  
OR 80% of minimum test pressure of 1087.5 psig at the test site during the 4 hour strength testWERE THERE ANY LEAKS?  YES  NO; IF YES, EXPLAIN There was a leak on a 2" fitting at MP 177.1 at a rate of 1oz/2 minutesWAS EVERY COMPONENT THAT WILL BE SUBJECTED TO THE SYSTEM WORKING PRESSURE HYDROSTATICALLY TESTED?  YES  NO; IF NO, EXPLAIN \_\_\_\_\_PRESSURE RECORDER MAKE AND SERIAL NO. Chandler 25602 ITT Barton 242E-47061TEMPERATURE RECORDER MAKE AND SERIAL NO. ITT Barton 242E-47061 ITT Barton 242E-55357REMARKS: It is believed that some of the pressure drop in the segment was due to the cooling of compressed air in the line from the previous test breaks in Section #19 as evidenced from the PV graph/chart  
Tested in accordance with D.O.T. CFR Title 49 Part 195 Subpart ECONDUCTED BY Curtis Carter TITLE BJ PPS Test EngineerCERTIFIED BY Chris Gorman TITLE Risk & Integrity Specialist, EMPCoWITNESSED BY Mark Marshall TITLE EMPCO Test Site InspectorWITNESSED BY Chris Gorman via Teleconference TITLE Risk & Integrity Specialist, EMPCo

NOTE: SEE DOT LIQUIDS MANUAL

MOBIL PIPE LINE COMPANY						
HYDROSTATIC PRESSURE TEST DATA SHEET				DATE:	FROM 2/13/2006	TO 2/13/2006
TEST NUMBER: Section 20				TIME:	12:30 PM	4:30 PM
DESCRIPTION: 647 Miles / 20" Crude Pipe Line, Patoka, IL to Corsicana, TX MP 182.99 - MP 217.06 <u>Strength Test</u>						
DEADWEIGHT TESTER NO. Chandler 25602						
PRESSURE RECORDER NO. ITT Barton 242E-47061						
TEMPERATURE RECORDER NO. ITT Barton 242E-41526						
TIME	PRESSURE (PSIG)	AMBIENT TEMP (°F)	PIPE TEMP (°F)	GALLONS INJECTED (GAL)	GALLONS BLED OFF (GAL)	COMMENTS
12:30 PM	1091.0	46.0	48.0	N/A	N/A	Start 4 Hour Strength Test
12:45 PM	1091.0	47.0	48.0	"	"	
01:00 PM	1091.0	47.0	48.0	"	"	
01:15 PM	1090.5	48.0	48.0	"	"	Pressure drop attributed to a leaking
01:30 PM	1090.0	48.0	48.0	"	"	2" fitting at MP 177.4 at a rate of
01:45 PM	1090.0	48.5	48.0	"	"	1 ounce every 2 minutes
02:00 PM	1090.0	49.0	48.0	"	"	
02:15 PM	1089.5	49.0	48.0	"	"	PV graph indicates large amount of
02:30 PM	1089.5	50.0	48.0	"	"	compressed air in the pipeline that
02:45 PM	1089.0	50.5	48.0	"	"	can be coming off and contributing
03:00 PM	1089.0	51.0	48.0	"	"	to the pressure drop
03:15 PM	1088.5	50.0	48.0	"	"	
03:30 PM	1088.5	50.0	48.0	"	"	
03:45 PM	1088.5	50.0	48.5	"	"	
04:00 PM	1088.0	50.5	48.5	"	"	
04:15 PM	1088.0	50.5	48.5	"	"	
04:30 PM	1087.5	50.5	48.5	"	"	End 4 Hour Strength Test

MOBIL PIPE LINE COMPANY						
HYDROSTATIC PRESSURE TEST DATA SHEET				DATE:	FROM 2/13/2006	TO 2/13/2006
TEST NUMBER: Section 20				TIME:	5:30 PM	9:30 PM
DESCRIPTION: 647 Miles / 20" Crude Pipe Line, Patoka, IL to Corsicana, TX MP 182.99 - MP 217.06 <u>Leak Test</u>						
DEADWEIGHT TESTER NO. Chandler 25602						
PRESSURE RECORDER NO. ITT Barton 242E-47061						
TEMPERATURE RECORDER NO. ITT Barton 242E-41526						
TIME	PRESSURE (PSIG)	AMBIENT TEMP (°F)	PIPE TEMP (°F)	GALLONS INJECTED (GAL)	GALLONS BLED OFF (GAL)	COMMENTS
05:30 PM	988.5	48.0	48.5	N/A	N/A	Start 4 Hour Leak Test
05:45 PM	988.5	47.5	48.5	"	"	
06:00 PM	988.0	46.5	48.5	"	"	
06:15 PM	988.0	46.0	48.5	"	"	
06:30 PM	988.0	46.0	48.5	"	"	
06:45 PM	987.5	46.0	48.5	"	"	Pressure drop attributed to a leaking
07:00 PM	987.5	45.0	48.5	"	"	2" fitting at MP 177.4 at a rate of
07:15 PM	987.5	45.0	48.5	"	"	1 ounce every 2 minutes
07:30 PM	987.5	44.5	48.5	"	"	
07:45 PM	987.5	43.5	48.5	"	"	Cooling of the compressed air in the
08:00 PM	987.5	43.5	48.5	"	"	pipeline could be contributing to the
08:15 PM	987.5	43.5	48.5	"	"	pressure drop
08:30 PM	987.0	43.5	48.5	"	"	
08:45 PM	987.0	43.5	48.5	"	"	
09:00 PM	987.0	43.0	48.5	"	"	
09:15 PM	987.0	42.0	48.5	"	"	
09:30 PM	987.0	42.0	48.5	"	"	End 4 Hour Leak Test