NOTICE: This report is required by 49 CFR Part 191. Failure to report can result in a civil penalty not to exceed $1,000 for each violation for each day that such violation persists except that the maximum civil penalty shall not exceed $200,000 as provided in 49 USC 1678.

Form Approved
OMB No. 2137-0522

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

INCIDENT REPORT - GAS TRANSMISSION AND GATHERING SYSTEMS

Report Date _____

No. 19880131 (RSPA)

PART 1 - GENERAL REPORT INFORMATION

SEE INSTRUCTIONS

1. a. Operator's 5 digit Identification Number / 3230 /

b. Name of Operator DELHI GAS PIPELINE CORP

c. _____
City, County or Parish, State and ZIP Code

2. Location of incident

a. FT. COBB CADDO
City and County

b. OK 73038
State and Zip Code

c. Mile Post/Valve Station 0

d. Survey Station no. 0+00

e. Class location
Onshore: ● 1 ○ 2 ○ 3 ○ 4

Offshore: _____ Area _____ Block Number

State OK or Outer Continental Shelf _____

f. Incident on Federal land other than Outer Continental shelf
○ Yes ● No

3. Incident type
○ Leak ○ Rupture ● Other

Rupture length (feet) 0

4. Reason for reporting
● Fatality Number / 1 / persons
● Injury requiring inpatient hospitalization Number / 2 / persons
● Property damage/loss Estimated $ 30000
○ Operator judgment
○ Supplemental Report

5. Elapsed time until area was made safe:
/ 2 / hr. / 0 / min.

6. Telephone Report
/ 05 / mo. / 16 / day / 1988 / yr.

7. a. Estimated pressure at point and time of incident:
(PSIG) 240

b. Max. allowable operating pressure (*MAOP*)(PSIG) 939

c. MAOP established by:
(1) Test pressure 1,105 (PSIG)
(2) 49 CFR §192.619 (a)(3) ○

8. Time and date of the incident
/ 2005 / hr. / 05 / mo. / 16 / day / 1988 / year

PART 2 - APPARENT CAUSE

○ Corrosion (Continue in Part A) ○ Damage by Outside Forces (Continue in Part B) ○ Construction/Material defect (Continue in Part C) ● Other _____

PART 3 - NARRATIVE DESCRIPTION OF FACTORS CONTRIBUTING TO THE EVENT (Attach additional sheet(s) as necessary)

PIPELINE WAS BEING DERPESSURED DURING PIGGING OPERATION IN A ONTROLLED AND MONITORED PROCEDURE. AN ACCUMULATION OF NATURAL GAS WAS IGNITED BY AN UNKNOWN SOURCE, RESULTING IN A FLASH FIRE AND SEBSEQUENT EXPLOSION THEREBY CAUSING BOCILY INJURY AND PROPETY DAMAGE.

PART 4 - ORIGIN OF THE INCIDENT

1. Incident occurred on
● Transmission System ○ Gathering System
○ Transmission Line of Distribution System

2. Failure occurred on
○ Body of Pipe ○ Fitting *(Specify)* _____
○ Mechanical Joint ● Other *(Specify)* NO FAILURE
○ Valve ○ Weld *(Specify)* _____
(girth, longitudinal, fillet)

3. Material involved (*pipe, fitting, or other component*)
○ Steel ○ Other (Specify) _____

4. Part of system involved in incident
a. Part
○ Pipeline ○ Regulator/Metering System
○ Compressor Station ● Other: FRAC TANK/SEP. FAC.

b. Year installed / 1968 /

PART 5 - MATERIAL SPECIFICATION *(if applicable)*

1. Nominal pipe size *(NPS)* / _____ / in.
2. Wall thickness _____ / in.
3. Specification _____ SMYS / 0 /
4. Seam type _____
5. Valve type _____
6. *Manufactured by* _____ *in year* / 0 /

PART 6 - ENVIRONMENT

1. Area of incident
○ Under pavement ● Above ground
○ Underground ○ Under water
○ Other _____

PART 7 - PREPARER AND AUTHORIZED SIGNATURE

TIM MURPHY / DIST. SAFETY & ENV. COORD.
(type or print) Preparer's Name and Title

[redacted] _____
Area Code and Telephone Number

_____
Authorized Signature

_____
Date

_____
Area Cod and Telephone Number

Form RSPA F 7100.2 (3-84)

NOTICE: This report is required by 49 CFR Part 191. Failure to report can result in a civil penalty not to exceed $1,000 for each violation for each day that such violation persists except that the maximum civil penalty shall not exceed $200,000 as provided in 49 USC 1678.

Form Approved
OMB No. 2137-0522

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

INCIDENT REPORT - GAS TRANSMISSION AND GATHERING SYSTEMS

Report Date 31-DEC-1998

No. 19990008 (RSPA)

PART 1 - GENERAL REPORT INFORMATION

SEE INSTRUCTIONS

1. a. Operator's 5 digit Identification Number / 31286 /

b. Name of Operator ONEOK GAS TRANSPORTATION, LLC

c. _____
City, County or Parish, State and ZIP Code

2. Location of incident

a. MCCLAIN
City and County

b. OK 73080
State and Zip Code

c. Mile Post/Valve Station _____

d. Survey Station no. _____

e. Class location
Onshore: ● 1 ○ 2 ○ 3 ○ 4

Offshore: _____ (Area) _____ (Block Number)

State OK or Outer Continental Shelf _____

f. Incident on Federal land other than Outer Continental shelf
○ Yes ● No

3. Incident type
○ Leak ○ Rupture ● Other

Rupture length (feet) _____

4. Reason for reporting
○ Fatality Number / 0 / persons
● Injury requiring inpatient hospitalization Number / 1 / persons
○ Property damage/loss Estimated $_____
○ Operator judgment
○ Supplemental Report

5. Elapsed time until area was made safe:
/ _____ / hr. / 1 / min.

6. Telephone Report
/ 12 / mo. / 15 / day / 1998 / yr.

7. a. Estimated pressure at point and time of incident:
(PSIG) _____

b. Max. allowable operating pressure (*MAOP*)(PSIG) 843

c. MAOP established by:
(1) Test pressure 1,402 (PSIG)
(2) 49 CFR §192.619 (a)(3) ○

8. Time and date of the incident
/ 1340 / hr. / 12 / mo. / 02 / day / 1998 / year

PART 2 - APPARENT CAUSE

○ Corrosion (Continue in Part A) ○ Damage by Outside Forces (Continue in Part B) ○ Construction/Material defect (Continue in Part C) ● Other _____

PART 3 - NARRATIVE DESCRIPTION OF FACTORS CONTRIBUTING TO THE EVENT

(Attach additional sheet(s) as necessary)

Refer to ATTACHMENT PART 3 - NARRATIVE DESCRIPTION OF FACTORS CONTRIBUTING TO THE EVENT

PART 4 - ORIGIN OF THE INCIDENT

1. Incident occurred on
● Transmission System ○ Gathering System
○ Transmission Line of Distribution System

2. Failure occurred on
○ Body of Pipe ○ Fitting *(Specify)* _____
○ Mechanical Joint ○ Other *(Specify)* _____
○ Valve ○ Weld *(Specify)* _____
(girth, longitudinal, fillet)

3. Material involved (*pipe, fitting, or other component*)
○ Steel ● Other (Specify) ENDURO PIG

4. Part of system involved in incident
a. Part
○ Pipeline ○ Regulator/Metering System
○ Compressor Station ● Other: PIG RECEIVER

b. Year installed / 1975 /

PART 5 - MATERIAL SPECIFICATION *(if applicable)*

1. Nominal pipe size *(NPS)* / 20 / in.
2. Wall thickness .38 / in.
3. Specification X-52 SMYS / 52000 /
4. Seam type DSAW
5. Valve type ROCKWELL A
6. *Manufactured by* ROCKWELL *in year* / 1975 /

PART 6 - ENVIRONMENT

1. Area of incident
○ Under pavement ● Above ground
○ Underground ○ Under water
○ Other _____

PART 7 - PREPARER AND AUTHORIZED SIGNATURE

GREG PHILLIPS
(type or print) Preparer's Name and Title

[redacted]
Area Code and Telephone Number

Authorized Signature

Date

Area Cod and Telephone Number

Form RSPA F 7100.2 (3-84)

ATTACHMENT PART 3 - NARRATIVE DESCRIPTION OF FACTORS CONTRIBUTING TO THE INCIDENT

AT APPROXIMATELY 1:40PM CST ON DECEMBER 2, 1998, AN EMPLOYEE OF ONEOK GASTRANSPORTATION, LLC. (OGT) WAS INJURED BY A 20" PIPELINE CLEANING PIG THATRAPIDLY EXITED A 20" RECEIVER BARREL ON PIPELINE A-1300, LOCATED NORTWEST OFPURCELL, OKLAHOMA. PLEASE NOTE ATTACHEMENT "A" DESIGNATING ITEM NUMBERSREFERENCED BELOW, AND ATTACHMENT "B" WHICH IS AN ISOMETRIC ENGINEERING DRAWINGOF THE RECEIVER. THREE OGT EMPLOYEES, BOBO RENEGAR, LINDSEY SOUTHWARD, ANDJOHN FRYAR, WERE PIGGING A SECTION OF A-1300 20" FROM MAYSVILLE JUNCTION TOPURCELL JUNCTION. THEY ARRIVED AT PURCELL JUNCTION AND PULLED THE 20" FROMCUP PIG, AN ENDURO ADV-3CC-BL (36" O.A.L.), INTO THE RECEIVER, TRIPPING THEPIG SIGNAL (3) AT ABOUT 1:20PM CST. THE A-1300 SIDE VALVE (1) WAS OPENED, ANDTHE 20"RECEIVER VALVE (2) WAS CLOSED. THE 8" KICKER GAS VALVE (6) WAS ALSOCLOSED. BLOWOFF VALVE (4) WAS OPEN ONE-HALF WAY, AND BLOWOFF VALVE (5) WASOPENED COMPLETELY. THE RECEIVER CLOSURE (7) WAS OPENED AND MOVED TO ONESIDE. AFTER FIVE MINUTES LINDSAY SOUTHWARD LOOKED INTO THE RECEIVER BARRELFROM A DISTANCE OF APPROXIMATELY 12 FEET DIRECTLY AWAY AND 6 FEET TO THE SIDEOF THE RECEIVER CLOSURE. HE NOTED THAT THE PIG WAS VISIBLE IN THE TRAP. WEESTIMATE THE DISTANCE FROM THE RECEIVER CLOSURE THREADS TO THE PIG NOSE TO BE3-4 FEET. BOB RENEGAR LOOKED INTO THE RECEIVER BARREL FROM THE IMMEDIATE EDGEOF THE CLOSURE OPENING, AND PUT HIS HEAD DOWN TO INSPECT THE AMOUNT OF SLUDGE,ETC., THAT THE PIG HAD MOVED. BOB MADE A COMMENT ON THE AMOUNT OF FLUIDS THATHAD BEEN MOVED. BOB MADE A COMMENT ON THE AMOUNT OF FLUIDS THAT HAD BEENMOVED, AND AT THAT TIME THE PIF SHOT OUT OF THE END OF THE RECEIVER HITTINGTHE GROUND AT APPROXIMATELY 23 FEET AND ROLLING TO A STOP AT 57 FEET FROM THERECEIVER. LINDSEY SOUTHWARD DESCRIBED THE NOISE THAT OCCURRED AS A DEEP CORKPOPPING SOUND. BOB RENEGAR FELL ON HIS BACK, HIT ABOVE THE RIGHT EYE BY THEPIG AND BLEEDING SEVERELY. NEITHER LINDSEY SOUTHWARD OR JOHN FRYAR WERESTANDING IN A POSITION TO BE STRUCK BY THE PIG, AND WERE INJURED. LINDSEYSOUTHWARD AND JOHN FRYAR PROVIDED ASSISTANCE TO BOB RENEGAR UNTIL MEDICALPERSONNEL ARRIVED, AND TRAVELED TO THE HOSPITAL WITH HIM, WHERE HE WASADMITTED FOR TREATMENT OF SEVERE HEAD INJURIES WHICH ULTIMATELY REQUIREDCORRECTIVE SURGERY. SCOTT HARDY, AN EMPLOYEE OF ONEOK, INC. ARRIVED AT THESITE TO SECURE THE SITE BY CLOSING THE RECEIVER CLOSURE (7) AND CLOSINGBLOWOFF (4) AND (5). FOLLOWING THE ACCIDENT, OGT HAS PERFORMED ANINVESTIGATION TO DETERMINE THE CAUSE OF THE ACCIDENT. INPUT HAS BEEN SOUGHTFROM THE OKLAHOMA CORPORATION COMMISSION'S PIPELINE SAFETY STAFF, AS SEVERALOF THEIR INSPECTORS HAVE SIGNIFICANT PIPELINE OPERATIONS EXPERIENCE. ALSO,REPRESENTATIVES FROM NORSTROM VALVES, INC AND MYLON C. JACOBS SUPPLY HAVEINSPECTED THE 20" RECEIVER VALVE (2). THE INITIAL REPORT FROM NORSTROMINDICATES THAT THE RECEIVER VALVE (2) DOES HAVE MINIMAL LEAKAGE, BUT ISOPERATING PROPERLY AND EFFECTIVELY CONTROLS GAS FLOW FROM THE PURPOSES OFPIGGING OUR PIPELINES. FURTHER, THE BLOWOFF VALVE (4) WAS STILL COMPLETELYOPEN AND WOULD HAVE VENTED ANY GAS THAT HAD LEAKED PAST THE RECEIVER VALVE (2)IS OPERATING PROPERLY. DESPITE OUR EFFORTS TO DETERMINE THE CAUSE OF THEACCIDENT, WE HAVE NOT FOUND THE ANSWER.

NOTICE: This report is required by 49 CFR Part 191. Failure to report can result in a civil penalty not to exceed $1,000 for each violation for each day that such violation persists except that the maximum civil penalty shall not exceed $200,000 as provided in 49 USC 1678.

Form Approved
OMB No. 2137-0522

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

INCIDENT REPORT - GAS TRANSMISSION AND GATHERING SYSTEMS

Report Date 18-JAN-2002

No. 20020013 (RSPA)

PART 1 - GENERAL REPORT INFORMATION

SEE INSTRUCTIONS

1. a. Operator's 5 digit Identification Number / 602 /

b. Name of Operator RELIANT ENERGY GAS TRANSMISSION

c. SHREVEPORT CADDO LA -7-1151
City, County or Parish, State and ZIP Code

2. Location of incident

a. BLUE SPRING GARLAND
City and County

b. AR -7-1909
State and Zip Code

c. Mile Post/Valve Station 38

d. Survey Station no. 1587+76

e. Class location
Onshore: ● 1 ○ 2 ○ 3 ○ 4

Offshore: _____ Area _____ Block Number

State _____ or Outer Continental Shelf _____

f. Incident on Federal land other than Outer Continental shelf
○ Yes ● No

3. Incident type
○ Leak ○ Rupture ● Other

Rupture length (feet) _____

4. Reason for reporting
○ Fatality Number / 0 / persons
● Injury requiring inpatient hospitalization Number / 1 / persons
○ Property damage/loss Estimated $_____
○ Operator judgment
○ Supplemental Report

5. Elapsed time until area was made safe:
/ 1 / hr. / 30 / min.

6. Telephone Report
/ 11 / mo. / 05 / day / 2001 / yr.

7. a. Estimated pressure at point and time of incident:
(PSIG) 25

b. Max. allowable operating pressure (*MAOP*)(PSIG) 1,000

c. MAOP established by:
(1) Test pressure 1,294 (PSIG)
(2) 49 CFR §192.619 (a)(3) ○

8. Time and date of the incident
/ 1000 / hr. / 11 / mo. / 05 / day / 2001 / year

PART 2 - APPARENT CAUSE

○ Corrosion (Continue in Part A) ○ Damage by Outside Forces (Continue in Part B) ○ Construction/Material defect (Continue in Part C) ● Other SEE PART 3

PART 3 - NARRATIVE DESCRIPTION OF FACTORS CONTRIBUTING TO THE EVENT

(Attach additional sheet(s) as necessary)

Refer to ATTACHMENT PART 3 - NARRATIVE DESCRIPTION OF FACTORS CONTRIBUTING TO THE EVENT

PART 4 - ORIGIN OF THE INCIDENT

1. Incident occurred on
● Transmission System ○ Gathering System
○ Transmission Line of Distribution System

2. Failure occurred on
○ Body of Pipe ○ Fitting *(Specify)* _____
○ Mechanical Joint ● Other *(Specify)* PIG LAUNCHER
○ Valve ○ Weld *(Specify)* _____
(girth, longitudinal, fillet)

3. Material involved (*pipe, fitting, or other component*)
● Steel ○ Other (Specify) _____

4. Part of system involved in incident
a. Part
○ Pipeline ○ Regulator/Metering System
○ Compressor Station ● Other: PIG LAUNCHER

b. Year installed / 1959 /

PART 5 - MATERIAL SPECIFICATION *(if applicable)*

1. Nominal pipe size *(NPS)* / 16 / in.
2. Wall thickness .25 / in.
3. Specification API 5LX X46 SMYS / 46000 /
4. Seam type ERW
5. Valve type GATE
6. *Manufactured by* GROVE *in year* / _____ /

PART 6 - ENVIRONMENT

1. Area of incident
○ Under pavement ● Above ground
○ Underground ○ Under water
○ Other _____

PART 7 - PREPARER AND AUTHORIZED SIGNATURE

TED VANDE KAMP
(type or print) Preparer's Name and Title

[redacted]
Area Code and Telephone Number

Authorized Signature

Date

Area Cod and Telephone Number

Form RSPA F 7100.2 (3-84)

ATTACHMENT PART 3 - NARRATIVE DESCRIPTION OF FACTORS CONTRIBUTING TO THE INCIDENT

COMPANY EMPLOYEE AND TWO CONTRACT EMPLOYEES WERE AT THE JESSIEVILLE SCRAPER TRAP YARD TO INSERT AND RUN A 16" CLEANING PIG IN COMPANYS 16" PIPELINE, BT-1-AS, LOCATED IN RURAL GARLAND COUNTY, ARKANSAS ON NOVEMBER 5, 2001. COMPANYS EMPLOYEE REMOVED THE 16" LAUNCHER FROM SERVICE BY CLOSING ALL ASSOCIATED VALVES AND BLOWING DOWN THE LAUNCHER. AFTER THE BLOWDOWN WAS COMPLETED COMPANY EMPLOYEE NOTICED UNRELATED LEAKAGE FROM A 4" KICKER LINE VALVE, AND USING A HIGH-PRESSURE GREASE GUN, GREASED THE 4" VALVE. COMPANYS EMPLOYEE AND THE TWO CONTRACT EMPLOYEES OPENED THE SCRAPER TRAP DOOR AND INSERTED THE PIG. BEFORE THE LAUNCHER DOOR COULD BE SHUT THE PIG WAS EJECTED FROM THE OPEN END OF THE LAUNCHER STRIKING BOTH CONTRACT EMPLOYEES. BOTH CONTRACT EMPLOYEES WERE TAKEN TO ST. JOSEPH HOSPITAL IN HOT SPRINGS, ARKANSAS. ONE BEING TREATED IN THE EMERGENCY ROOM AND RELEASED AND THE OTHER ADMITTED WITH A BROKEN LEG.

U.S Department of Transportation
Pipeline and Hazardous Materials
Safety Administration

INCIDENT REPORT – GAS TRANSMISSION AND GATHERING SYSTEMS

Report format corresponds to Form PHMSA F 7100.2 (01-2002)

Original Report Date April 14, 2004

No. 20040030 - 1288

PART A – GENERAL INFORMATION					
N	**Original Report**	**Y**	**Supplemental Report**	**Y**	**Final Report**
Last revision Date			04/13/2005		
1. Operator Name and Address					
a. Operator's 5-digit Identification Number			30826		
b. If Operator does not own the pipeline, enter Owner's 5-digit Identification Number (when known)					
c. Name of Operator			WILLIAMS FIELD SERVICES		
d. Operator street address			ONE WILLIAMS CENTER		
e. Operator address City			TULSA		
County or Parish			TULSA		
State			OK		
Zip code			74101		
2. Time and date of the incident					
Hour			12:30		
Date of the incident			02/26/2004		
3. Location of incident					
a. Street or nearest street or road			COUNTY ROAD 3536		
b. City					
County or Parish			SAN JUAN		
c. State			NM		
Zip Code					
d. Mile Post/Valve Station					
e. Survey Station No			N/A		
f. Latitude			[redacted]		
Longitude			[redacted]		
g. Class location description					
Onshore (Class Location)			1		
Offshore			N		
Area					
Block #					
State					
Outer Continental Shelf					
h. Accident on Federal Land other than Outer Continental Shelf			N		
i. Is pipeline Interstate			N		
4. Type of leak or rupture					
Leak or Rupture			N/A		
Type of Leak					
- Puncture, diameter *(inches)*					
Type of Rupture					
- Tear/Crack, length *(inches)*					
- Propagation Length, total, both sides *(feet)*					
Other (specify)					
5. Consequences					
a. Fatality			No		
Total number of people			0		
Employees			0		
General Public			0		
Non-employee Contractors			0		
b. Injury requiring inpatient hospitalization			Yes		

Total number of people	1
Employees	1
General Public	0
Non-employee Contractors	0
c. Property damage/loss (estimated)	Yes
Total $	20,000
Gas loss $	0
Operator damage $	20,000
Public/private property damage $	0
d. Release Occurred in a 'High Consequence Area'	N
e. Gas Ignited / Gas did not ignite	Gas did not Ignite
f. Explosion / No Explosion	EXPLOSION
g. Evacuation *(general public only)*	N
Number of people	0
Evacuation Reason	
6. Elapsed time until area was made safe	
Hours	0
Minutes	15
7. Telephone Report	
NRC Report Number	N/A
Date	
8. Pressure	
a. Estimated pressure at point and time of incident (*PSIG)*	440.00
b. Max. allowable operating pressure (MAOP) (*PSIG)*	497.00
c. MAOP established by 49 CFR section	49 CFR 192.619(a)(1)
d. Did an over pressurization occur relating to the incident?	N
PART B – PREPARER AND AUTHORIZED SIGNATURE	
Preparer's Name	JOE FREISBERG
Preparer's Title	
Area Code and Telephone Number	[redacted]
Preparer's E-mail Address	[redacted]
Area Code and Facsimile Number	[redacted]
PART C – ORIGIN OF THE INCIDENT	
1. Incident occurred on	
2. Failure occurred on	OTHER
Other (specify)	CLOSURE ON PIG TRAP
3. Material involved *(pipe, fitting, or other component)*	STEEL
Plastic failure was	
a. ductile	N
b. brittle	N
c. joint failure	N
Material other than plastic or steel	
4. Part of the system involved in incident	OTHER
Other (specify)	PIG TRAP
5. Year the pipe or component which failed was installed	1976
PART D – MATERIAL SPECIFICATION	
1.Nominal pipe size (NPS) (inches)	16.00
2. Wall thickness inches	0.00
3. Specification	0
SMYS	0
4. Seam type	0
5. Valve type	0
6. Pipe or valve manufactured by	TUBE TURN
in year	1976
PART E - ENVIRONMENT	
1. Area of incident	ABOVE GROUND

Other (specify)	
16. Joint	
Description	
Other (specify)	
Weld	
17. Butt	
Description	
Other (specify)	
18. Fillet	
Description	
Other (specify)	
19. Pipe Seam	
Description	
Other (specify)	
Complete a-g if you indicate any cause in part F5	
a. Type of failure	
Construction Defect	NO DATA
Description	
Material Defect	NO DATA
b. Was failure due to pipe damage sustained in transportation to the construction or fabrication site?	
c. Was part which leaked pressure tested before incident occurred?	
d. Date of test	
Month	
Day	
Year	
e. Test medium	
Other (specify)	
f. Time held at test pressure hr	
g. Estimated test pressure at point of incident (PSIG)	
F6 – EQUIPMENT AND OPERATIONS	
20. Malfunction of Control/Relief Equipment	
Description	
Other (specify)	
21. Threads Stripped, Broken Pipe Coupling	
Description	
Other (specify)	
22. Ruptured or Leaking Seal/Pump Packing	
23. Incorrect Operation	Yes
a. Type	FAILURE TO FOLLOW PROPER PROCEDURES
Other (specify)	
b. Number of employees involved who failed post-incident test	
Drug test	0
Alcohol test	0
c. Were most senior employee(s) involved qualified?	Y
d. Hours on duty	6
F7 – OTHER	
24. Miscellaneous	
Description	
25. Unknown	
Description	
PART G – NARRATIVE DESCRIPTION OF FACTORS CONTRIBUTING TO THE EVENT	
EMPLOYEE ATTEMPTED TO OPEN A 12-INCH PIG LAUNCHER AT THE THOMPSON COMPRESSOR STATION WITHOUT FIRST RELIEVING THE PRESSURE. EMPLOYEE SUSTAINED INJURIES TO JAWBONE, RIBS, AND MULTIPLE LACERATIONS. EMPLOYEE WAS ADMITTED TO A LOCAL HOSPITAL AND TREATED AND RELEASED AFTER 1-1/2 DAYS.	

U.S Department of Transportation
Pipeline and Hazardous Materials
Safety Administration

INCIDENT REPORT – GAS TRANSMISSION AND GATHERING SYSTEMS

Report format corresponds to Form PHMSA F 7100.2 (01-2002)

Original Report Date November 28, 2007

No. 20070138 - 5821

PART A – GENERAL INFORMATION					
N	**Original Report**	**Y**	**Supplemental Report**	**Y**	**Final Report**

Last revision Date	06/16/2009
1. Operator Name and Address	
a. Operator's 5-digit Identification Number	19270
b. If Operator does not own the pipeline, enter Owner's 5-digit Identification Number (when known)	
c. Name of Operator	TEXAS GAS TRANSMISSION LLC
d. Operator street address	3800 FREDERICA STREET
e. Operator address City	OWENSBORO
County or Parish	DAVIESS
State	KY
Zip code	42301
2. Time and date of the incident	
Hour	08:40
Date of the incident	10/29/2007
3. Location of incident	
a. Street or nearest street or road	3562STATE RT 1405
b. City	SLAUGHTERS
County or Parish	WEBSTER
c. State	KY
Zip Code	42456
d. Mile Post/Valve Station	MP 470.6778
e. Survey Station No	
f. Latitude	[redacted]
Longitude	[redacted]
g. Class location description	
Onshore (Class Location)	1
Offshore	N
Area	
Block #	
State	
Outer Continental Shelf	
h. Accident on Federal Land other than Outer Continental Shelf	N
i. Is pipeline Interstate	Y
4. Type of leak or rupture	
Leak or Rupture	OTHER
Type of Leak	
- Puncture, diameter *(inches)*	
Type of Rupture	
- Tear/Crack, length *(inches)*	
- Propagation Length, total, both sides *(feet)*	
Other (specify)	SEE PART G.
5. Consequences	
a. Fatality	No
Total number of people	0
Employees	0
General Public	0
Non-employee Contractors	0
b. Injury requiring inpatient hospitalization	Yes

Total number of people	1
Employees	1
General Public	0
Non-employee Contractors	0
c. Property damage/loss (estimated)	Yes
Total $	288,000
Gas loss $	0
Operator damage $	288,000
Public/private property damage $	0
d. Release Occurred in a 'High Consequence Area'	N
e. Gas Ignited / Gas did not ignite	Gas did not Ignite
f. Explosion / No Explosion	NO EXPLOSION
g. Evacuation *(general public only)*	N
Number of people	0
Evacuation Reason	
6. Elapsed time until area was made safe	
Hours	
Minutes	0
7. Telephone Report	
NRC Report Number	852967
Date	10/29/2007
8. Pressure	
a. Estimated pressure at point and time of incident (*PSIG)*	738.00
b. Max. allowable operating pressure (MAOP) (*PSIG)*	840.00
c. MAOP established by 49 CFR section	
d. Did an over pressurization occur relating to the incident?	N
PART B – PREPARER AND AUTHORIZED SIGNATURE	
Preparer's Name	JACK L. ADAMS
Preparer's Title	
Area Code and Telephone Number	[redacted]
Preparer's E-mail Address	[redacted]
Area Code and Facsimile Number	[redacted]
PART C – ORIGIN OF THE INCIDENT	
1. Incident occurred on	
2. Failure occurred on	OTHER
Other (specify)	PIG TRAP DOOR
3. Material involved *(pipe, fitting, or other component)*	STEEL
Plastic failure was	
a. ductile	N
b. brittle	N
c. joint failure	N
Material other than plastic or steel	
4. Part of the system involved in incident	OTHER
Other (specify)	PIG TRAP
5. Year the pipe or component which failed was installed	1959
PART D – MATERIAL SPECIFICATION	
1.Nominal pipe size (NPS) (inches)	30.00
2. Wall thickness inches	0.50
3. Specification	X-52
SMYS	
4. Seam type	
5. Valve type	
6. Pipe or valve manufactured by	
in year	
PART E - ENVIRONMENT	
1. Area of incident	ABOVE GROUND

Other (specify)	
16. Joint	
Description	
Other (specify)	
Weld	
17. Butt	
Description	
Other (specify)	
18. Fillet	
Description	
Other (specify)	
19. Pipe Seam	
Description	
Other (specify)	
Complete a-g if you indicate any cause in part F5	
a. Type of failure	
Construction Defect	NO DATA
Description	
Material Defect	NO DATA
b. Was failure due to pipe damage sustained in transportation to the construction or fabrication site?	
c. Was part which leaked pressure tested before incident occurred?	
d. Date of test	
Month	
Day	
Year	
e. Test medium	
Other (specify)	
f. Time held at test pressure hr	
g. Estimated test pressure at point of incident (PSIG)	
F6 – EQUIPMENT AND OPERATIONS	
20. Malfunction of Control/Relief Equipment	
Description	
Other (specify)	
21. Threads Stripped, Broken Pipe Coupling	
Description	
Other (specify)	
22. Ruptured or Leaking Seal/Pump Packing	
23. Incorrect Operation	
a. Type	
Other (specify)	
b. Number of employees involved who failed post-incident test	
Drug test	
Alcohol test	
c. Were most senior employee(s) involved qualified?	
d. Hours on duty	
F7 – OTHER	
24. Miscellaneous	Yes
Description	PIG TRAP VALVE WAS LEAKING CAUSING BUILDUP OF PRESSURE BEHIND PIG. INVESTIGATION COMPLETE.
25. Unknown	
Description	
PART G – NARRATIVE DESCRIPTION OF FACTORS CONTRIBUTING TO THE EVENT	
INCIDENT OCCURRED DURING LAUNCH OF PIG AFTER BLOWING DOWN PIPING AND OPENING PIG TRAP DOOR TO CHECK POSITION OF PIG. PIG DISLODGED AND BROKE OFF DOOR WHILE EXITING LAUNCHER PINNING EMPLOYEE BETWEEN DOOR AND BACKHOE LOCATED APPROXIMATELY 4 FEET BEHIND LAUNCHER. INVESTIGATION COMPLETE	

UNITED STATES DEPARTMENT OF THE INTERIOR
MINERALS MANAGEMENT SERVICE
GULF OF MEXICO REGION

ACCIDENT INVESTIGATION REPORT

1. OCCURRED
   DATE: **23-OCT-2008** TIME: **1730** HOURS

2. OPERATOR: **Energy Resource Technology GOM, In**
   REPRESENTATIVE: **Wendy Braddock**
   TELEPHONE: [redacted]
   CONTRACTOR:
   REPRESENTATIVE:
   TELEPHONE:

3. OPERATOR/CONTRACTOR REPRESENTATIVE/SUPERVISOR ON SITE AT TIME OF INCIDENT:

4. LEASE: **G02280**
   AREA: **SM** LATITUDE:
   BLOCK: **130** LONGITUDE:

5. PLATFORM: **A**
   RIG NAME:

6. ACTIVITY:
- [ ] EXPLORATION(POE)
- [X] DEVELOPMENT/PRODUCTION (DOCD/POD)

7. TYPE:
- [ ] HISTORIC INJURY
- [X] REQUIRED EVACUATION **1**
- [ ] LTA (1-3 days)
- [ ] LTA (>3 days
- [ ] RW/JT (1-3 days)
- [ ] RW/JT (>3 days)
- [ ] Other Injury
- [ ] FATALITY
- [ ] POLLUTION
- [ ] FIRE
- [ ] EXPLOSION

LWC
- [ ] HISTORIC BLOWOUT
- [ ] UNDERGROUND
- [ ] SURFACE
- [ ] DEVERTER
- [ ] SURFACE EQUIPMENT FAILURE OR PROCEDURES

COLLISION [ ] HISTORIC [ ] >$25K [ ] <=$25K

- [ ] STRUCTURAL DAMAGE
- [ ] CRANE
- [ ] OTHER LIFTING DEVICE
- [ ] DAMAGED/DISABLED SAFETY SYS.
- [ ] INCIDENT >$25K
- [ ] H2S/15MIN./20PPM
- [ ] REQUIRED MUSTER
- [ ] SHUTDOWN FROM GAS RELEASE
- [X] OTHER **Injury to person**

6. OPERATION:
- [X] PRODUCTION
- [ ] DRILLING
- [ ] WORKOVER
- [ ] COMPLETION
- [ ] HELICOPTER
- [ ] MOTOR VESSEL
- [ ] PIPELINE SEGMENT NO.
- [X] OTHER **Pigging Operation**

8. CAUSE:
- [X] EQUIPMENT FAILURE
- [X] HUMAN ERROR
- [ ] EXTERNAL DAMAGE
- [ ] SLIP/TRIP/FALL
- [ ] WEATHER RELATED
- [X] LEAK
- [ ] UPSET H2O TREATING
- [ ] OVERBOARD DRILLING FLUID
- [ ] OTHER _____

9. WATER DEPTH: **215** FT.

10. DISTANCE FROM SHORE: **82** MI.

11. WIND DIRECTION:
    SPEED: M.P.H.

12. CURRENT DIRECTION:
    SPEED: M.P.H.

13. SEA STATE: FT.

17. DESCRIBE IN SEQUENCE HOW ACCIDENT HAPPENED:

On October 23, 2008, at approximately 1730 hrs, a Lead Operator (LO) sustained a break to his right arm just above his wrist during a pipeline pigging operation. All valves leading to the pig launcher were closed/isolated, and the pig launcher was depressurized in preparation for the pig's insertion. Subsequent to loading the pig into the launcher/receiver, the pig prematurely ejected backwards striking the LO on his right arm before he could remove his arm and securely close the trap door cover. The LO was evacuated by helicopter and flown to the Houma Terrebonne General Hospital for treatment. The LO was released to restricted work duty until November 10, 2008.

18. LIST THE PROBABLE CAUSE(S) OF ACCIDENT:

Pipeline system pressure slowly leaked through two closed main 8" manual isolation block valves located on the vertical run of the pig launcher. This allowed pressure to build up inside the launching/receiving trap behind the pig once it was placed in the launcher. The pig, being new, allowed for a complete seal with no blow-by. After initially bleeding down the pig launcher system, the LO failed to ensure the pig launcher remained depressurized while being isolated from all pressure sources.

19. LIST THE CONTRIBUTING CAUSE(S) OF ACCIDENT:

Although a Job Safety Analysis (JSA) was conducted prior to the operation, the LO failed to follow the JSA guidelines secondary to the LO's upper body and right arm being exposed to pig loading operation. This bodily exposure violated the JSA recommended procedure, as well as the ERT pig launching procedure, of not standing in front of the launcher/receiver during pigging operations.

20. LIST THE ADDITIONAL INFORMATION:

MMS recommends the following:

***Pig launching Standards of Operating Procedures (SOPs) should be discussed during the JSA, and followed by all personnel during the pig launching operation.**

***All safety precautions and procedures should be followed while performing pig launching operations on the depressurized/pressurized piece of equipment. As per the ERT pig launching procedures, a wooden pig loading pole or rod should be used to safely insert the pig into the launcher to prevent unnecessary personnel exposure.**

***Contingency procedures, including Stop Work Authority (SWA), should be in place to deal with faulty or inadequate safety systems or devices; e.g., leaking block valves and/or insufficient venting.**

21. PROPERTY DAMAGED:

None

NATURE OF DAMAGE:

None

ESTIMATED AMOUNT (TOTAL):

22. RECOMMENDATIONS TO PREVENT RECURRANCE NARRATIVE:

The MMS Lafayette District has no recommendations to the MMS Region Office of Safety Management (OSM).

23. POSSIBLE OCS VIOLATIONS RELATED TO ACCIDENT: **YES**

24. SPECIFY VIOLATIONS DIRECTLY OR INDIRECTLY CONTRIBUTING. NARRATIVE:

Incident of Noncompliance (INC) G-110 is issued "After the Fact" to document that Energy Resource Technology GOM (ERT) failed to protect health, safety, and the environment by not performing operations in a safe and workmanlike manner as follows:

ERT failed to ensure personnel follow all written procedures including the JSA and SOP recommendations. Specifically, the LO failed to ensure that the pig launcher sustained a zero pressure prior to loading the pig into the launcher. In addition, the LO failed to stay clear of the pig launcher while inserting the pig.

ERT is advised to submit a letter of explanation to the Lafayette District Manager addressing the above INC, and ERT's plans for eliminating future incidents of this nature.

25. DATE OF ONSITE INVESTIGATION:

27-OCT-2008

26. ONSITE TEAM MEMBERS:

Douglas Frerich / Mark Shuff / Jason Abshire /

29. ACCIDENT INVESTIGATION PANEL FORMED: **NO**

OCS REPORT:

30. DISTRICT SUPERVISOR:

Elliott S Smith

APPROVED

DATE: **22-DEC-2008**

NOTICE: This report is required by 49 CFR Parts 191 and 195. Failure to report may result in a civil penalty as provided in 49 USC 60122.	Form Approved: 4/30/2019 OMB No. 2137-0635 Expiration Date: 4/30/2022
U.S Department of Transportation Pipeline and Hazardous Materials Safety Administration	**Original Report Date:** 04/22/2020 **No.** 20200036 - 34060 (DOT Use Only)

INCIDENT REPORT - GAS TRANSMISSION AND GATHERING 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 2137-0635. Public reporting for this collection of information is estimated to be approximately 12 hours per response, including the time for reviewing instructions, gathering the data needed, and completing and reviewing the collection of information. All responses to this collection of information are mandatory. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to: Information Collection Clearance Officer, PHMSA, Office of Pipeline Safety (PHP-30) 1200 New Jersey Avenue, SE, Washington, D.C. 20590

INSTRUCTIONS

Important: *Please read the separate instructions for completing this form before you begin. They clarify the information requested and provide specific examples. If you do not have a copy of the instructions, you can obtain one from the PHMSA Pipeline Safety Community Web Page at http://www.phmsa.dot.gov/pipeline/library/forms.*

PART A - KEY REPORT INFORMATION

Report Type: *(select all that apply)*	**Original:**	**Supplemental:**	**Final:**
		Yes	**Yes**

Last Revision Date:	07/22/2020
A1. Operator's OPS-issued Operator Identification Number (OPID):	15105
A2. Name of Operator	PANHANDLE EASTERN PIPELINE CO
A3. Address of Operator:	
A3a. Street Address	1300 MAIN STREET
A3b. City	HOUSTON
A3c. State	Texas
A3d. Zip Code:	77002
A4. Earliest local time *(24-hr clock)* and date an incident reporting criteria was met:	03/26/2020 14:00
A4a. Time Zone for local time (select only one)	Central
A4b. Daylight Saving in effect?	Yes
A5. Location of Incident:	
Latitude / Longitude	[redacted]
A6. Gas released: (select only one, based on predominant volume released)	Natural Gas
- Other Gas Released Name:	
A7. Estimated volume of commodity released unintentionally - thousand standard cubic feet (mcf)	.30
A8. Estimated volume of intentional and controlled release/blowdown - thousand standard cubic feet (mcf))	285.00
A9. Estimated volume of accompanying liquid release (Barrels):	
A10. Were there fatalities?	Yes
- If Yes, specify the number in each category:	
A10a. Operator employees	1
A10b. Contractor employees working for the Operator	0
A10c. Non-Operator emergency responders	0
A10d. Workers working on the right-of-way, but NOT associated with this Operator	0
A10e. General public	0
A10f. Total fatalities (sum of above)	1
A11. Were there injuries requiring inpatient hospitalization?	No
- If Yes, specify the number in each category:	
A11a. Operator employees	
A11b. Contractor employees working for the Operator	
A11c. Non-Operator emergency responders	
A11d. Workers working on the right-of-way, but NOT associated with this Operator	
A11e. General public	
11f. Total injuries (sum of above)	
A12. What was the Operator's initial indication of the Failure? *(select only one)*	Local Operating Personnel, including contractors
Other - Describe	

A12a. If "Controller", "Local Operating Personnel, including contractors", "Air Patrol", or "Ground Patrol by Operator or its contractor" is selected in Question 12, specify the following: *(select only one)*	Operator employee
A13. Local time Operator identified failure	03/26/2020 14:00
A14. Part of system involved in Incident: *(select only one)*	Onshore Pipeline, Including Valve Sites
A15. Operational Status at time Operator identified failure *(select only one)*	Normal Operation, includes pauses during maintenance
A16. If A15 = Routine Start-Up or Normal Operation, was the pipeline/facility shut down due to the incident?	Yes
- If No, Explain:	
- If Yes, complete Questions 16a and 16b: *(use local time, 24-hr clock)*	
A16a. Local time and date of shutdown	03/27/2020 07:00
A16b. Local time pipeline/facility restarted	07/15/2020 13:00
- Still shut down? (* Supplemental Report Required)	
If A12. = *Notification from Emergency Responder, skip A17.*	
A17a. Did the operator communicate with Local, State, or Federal Emergency Responders about the incident?	Yes
If No, skip A17b and c.	
A17b. Which party initiated communication about the incident?	Operator
A17c. Local time of initial Operator and Local/State/Federal Emergency Responder communication	03/26/2020 14:09
A18. Local time operator resources arrived on site	03/26/2020 14:00
A19. Reserved	
A20a. Local time (24-hr clock) and date of initial operator report to the National Response Center	03/26/2020 16:04
A20b. Initial Operator National Response Center Report Number	1274304
NRC Notification Required But Not Made	
A20c. Additional NRC Report numbers submitted by the operator	1274395
A21. Did the gas ignite?	No
A21 = Yes, then answer A21a through d:	
A21a. Local time of ignition:	
A21b. How was the fire extinguished?	
Specify:	
A21c. Estimated volume of gas consumed by fire (mcf): (must be less than or equal to A7.)	
A21d. Did the gas explode?	
If A14. is "Onshore Pipeline, Including Valve Sites" OR "Offshore Pipeline, Including Riser and Riser Bend", answer A22a through f	
A22a. Initial action taken to control flow upstream of failure location	Operational Control
	No failure therefore no action taken.
If Valve Closure, answer A22.b and c:	
A22b. Local time of final upstream valve closure	
A22c. Type of upstream valve used to complete upstream isolation of release source:	
A22d. Initial action taken to control flow downstream of failure location	Operational Control
	No failure therefore no action taken.
If Valve Closure, answer A22e and f.:	
A22e. Local time of final downstream valve closure	
A22f. Type of downstream valve used to complete downstream isolation of release source	
A23. Number of general public evacuated:	0

PART B - ADDITIONAL LOCATION INFORMATION

B1. Was the origin of the Incident onshore? Auto-populated based on A14	Yes
Yes (Complete Questions B2-B11)	
No (Complete Questions B12-B14)	
B1a. Pipeline/Facility name:	Borchers Storage Field
B1b. Segment name/ID:	East 10" Lateral - Receiver
If Onshore:	
B2. State:	Kansas
B3. Zip Code:	67864
B4. City	Meade
Not within a Municipality	
B5. County or Parish	Meade

Not within a County or Parish	
B6. Operator designated location: *(select only one)*	Not Applicable
B7. Describe:	
B8. Was Incident on Federal land, other than the Outer Continental Shelf (OCS)?	No
B9. Location of Incident :	Operator-controlled property
B10. Area of Incident: *(select only one)*	Aboveground
Specify:	Typical aboveground facility piping or appurtenance
Other – Describe:	
B10a. Depth-of-Cover (in):	
B10b. Were other underground facilities found within 12 inches of the failure location?	
B11. Did Incident occur in a crossing?	No
- If Yes, specify type below:	
- If Bridge crossing –	
Cased/ Uncased:	
- If Railroad crossing –	
Cased	
Uncased	
Bored/drilled	
- If Road crossing –	
Cased	
Uncased	
Bored/drilled	
- If Water crossing –	
Cased/ Uncased:	
Name of body of water (If commonly known):	
Approx. water depth (ft) at the point of the Incident:	
Select:	
Is this water crossing 100 feet or more in length from high water mark to high water mark?	
If Offshore:	
B12. Approx. water depth (ft) at the point of the Incident:	
B13. Origin of Incident:	
- If "In State waters":	
- State:	
- Area:	
- Block/Tract #:	
- Nearest County/Parish:	
- If "On the Outer Continental Shelf (OCS)":	
(select only one)	
- Area:	
- Block/Tract #:	
B14. Area of Incident:	
PART C - ADDITIONAL FACILITY INFORMATION	
C1. Is the pipeline or facility: - Interstate - Intrastate	Interstate
C2. Material involved in Incident: (select only one)	Carbon Steel
- If Material other than Carbon Steel or Plastic – Specify:	
C3. Item involved in Incident:	Scraper/Pig Trap
- If Pipe – Specify:	
C3a. Nominal Pipe Size:	
If Pipe Body: Was this a Puddle/Spot Weld?	
If C2. is Carbon Steel	
C3b. Wall thickness (in):	
C3c. SMYS (Specified Minimum Yield Strength) of pipe (psi):	
C3d. Pipe specification:	
Unknown	
C3e. Pipe Seam – Specify:	
- If Other, Describe:	
C3f. Pipe manufacturer:	
Unknown	
C3g. Pipeline coating type at point of Incident – Specify:	
- If Other, Describe:	
C3h. Coating field applied?	
If C2. is Plastic	
C3i. Specify type:	
- If Other, Describe	

C3j.Specify Standard Dimension Ratio (SDR):	
wall thickness	
Unknown	
C3k. If Polyethylene (PE) is selected as the type of plastic in C3j, specify PE Pipe Material Designation Code (i.e., 2406, 3408, etc.)	
Unknown	
- If Weld/Fusion, including heat-affected zone – Specify:	
If Pipe Girth Weld is selected, complete items C3.a through h above	
Are any of the C3b through h values different on either side of the girth weld?	
If Yes, enter the different value(s) below:	
C3l. Wall thickness (in):	
C3m. SMYS (Specified Minimum Yield Strength) of pipe (psi):	
C3n. Pipe specification	
Unknown	
C3o. Pipe Seam	
Describe:	
C3p. Pipe manufacturer	
Unknown	
C3q. Pipeline coating type at point of Accident	
Describe:	
C3r. Coating field applied?	
If Plastic Pipe Fusion is selected, complete items C3.a and c3.i through k above	
- If Valve, excluding Regulator/Control Valves – Specify:	
- If Mainline – Specify:	
- If Other, Describe:	
C3s. Mainline valve manufacturer:	
Unknown	
C3t. Tubing material (select only one):	
C3u. Type of tubing (select only one):	
- If Other, Describe:	
C4. Year item involved in Incident was installed:	1981
Unknown	
C5. Year item involved in Incident was manufactured:	1981
Unknown	
C6. Type of release involved (select only one):	Other
- If Mechanical Puncture – Specify Approx. size:	
in. (axial) by	
in. (circumferential)	
- If Leak - Select Type:	
- If Other – Describe:	
- If Rupture - Select Orientation:	
- If Other – Describe:	
Approx. size: in. (widest opening):	
by in. (length circumferentially or axially):	
- If Other – Describe:	Incident was result of release of stored energy during pigging receipt operations

PART D - ADDITIONAL CONSEQUENCE INFORMATION

D1. Class Location of Incident:	Class 1 Location
D2. Did this Incident occur in a High Consequence Area (HCA)?	No
- If Yes:	
D2a. Specify the Method used to identify the HCA:	
D3. What is the PIR (Potential Impact Radius) for the location of this Incident? Feet:	381
Not Flammable	
D4. Were any structures outside the PIR impacted or otherwise damaged due to heat/fire resulting from the Incident?	No
D5. Were any structures outside the PIR impacted or otherwise damaged NOT by heat/fire resulting from the Incident?	No
D6. Were any of the fatalities or injuries (A11 only) reported for persons located outside the PIR?	No
If Yes, Describe the cause of the fatalities or injuries	
D7. Estimated Property Damage :	
D7a. Estimated cost of public and non-Operator private property damage paid/reimbursed by the Operator – effective 6-2011, "paid/reimbursed by the Operator" removed	$ 0
D7b. Estimated cost of Operator's property damage & repairs	$ 0

D7c. Estimated cost of emergency response	$ 305
D7d. Estimated other costs	$ 20,640
Describe:	Incident investigation.
D7e. Property damage subtotal (sum of above)	$ 20,945
Cost of Gas Released	
Cost of Gas in $ per thousand standard cubic feet (mcf):	.6800
D7f. Estimated cost of gas released unintentionally	$ 0
D7g. Estimated cost of gas released during intentional and controlled blowdown	$ 194
D7h. Total estimated cost of gas released (sum of 7.f & 7.g above)	$ 194
D7i. Estimated Total Cost (sum of D7e and D7h)	$ 21,139
Injured Persons not included in A11 The number of persons injured, admitted to a hospital, and remaining in the hospital for at least one overnight are reported in A11. ***If a person is included in A11, do not include them in D8.***	
D8. Estimated number of persons with injuries requiring treatment in a medical facility but not requiring overnight in-patient hospitalization:	0
If a person is included in D8, do not include them in D9.	
D9. Estimated number of persons with injuries requiring treatment by EMTs at the site of incident	1
Buildings Affected	
D10. Number of residential buildings affected (evacuated or required repair or gas service interrupted):	0
D11. Number of business buildings affected (evacuated or required repair or gas service interrupted):	0
D12. Wildlife impact:	No
12a. If Yes, specify all that apply:	
Fish/aquatic	
Birds	
Terrestrial	
PART E - ADDITIONAL OPERATING INFORMATION	
E1. Estimated pressure at the point and time of the Incident (psig):	936.00
E1a. Estimated gas flow in pipe segment at the point and time of the incident (MSCF/D):	50,000.00
E2. Maximum Allowable Operating Pressure (MAOP) at the point and time of the Incident (psig):	1,875.00
E2a. MAOP established by 49 CFR section:	192.619(a)(2)
- If Other, specify:	
E2b. Date MAOP established:	11/17/1981
E2c. Was the MAOP in E2a and b established in conjunction with a reversal of flow direction?	No
E3. Describe the pressure on the system or facility relating to the Incident:	Pressure did not exceed MAOP
E4. Was the system or facility relating to the Incident operating under an "established pressure restriction" with pressure limits below those normally allowed by the MAOP ?	No
- If Yes - (*Complete 4a and 4b below)*	
E4a. Did the pressure exceed this established pressure restriction?	
E4b. Was this pressure restriction mandated by PHMSA or the State?	
E5. Was the gas at the point of failure required to be odorized in accordance with §192.625?	No
If yes, Was the gas at the point of failure odorized in accordance with §192.625?	
If A14 is "Onshore Pipeline, Including Valve Sites" or "Offshore Pipeline, Including Riser and Riser Bend", complete E6 through E8	
E6. Length of segment between upstream and downstream shut-off valves closest to failure location (ft):	14
E7. 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:	
E8. 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 build-up	
- Low operating pressure(s)	
- Low flow or absence of flow	
- Incompatible commodity	
- Other	
- If Other, Describe:	
E9. Function of pipeline system: (select only one)	Transmission System
E10. Was a Supervisory Control and Data Acquisition (SCADA)-based system in place on the pipeline or facility involved in the Incident?	Yes
- If Yes:	
E10a. Was it operating at the time of the Incident?	Yes
E10b. Was it fully functional at the time of the Incident?	Yes
E10c. Did SCADA-based information (such as alarm(s), alert(s), event(s), and/or volume or pack calculations) assist with the initial indication of the Incident?	No
E10d. Did SCADA-based information (such as alarm(s), alert(s), event(s), and/or volume calculations) assist with the confirmed discovery of the Incident?	No
E11. Was an investigation initiated into whether or not the controller(s) or control room issues were the cause of or a contr buting factor to the Incident?	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 pigging operation is a manual operation; therefore, it would not generate an actionable response from the Control Center. Nothing would be observable within SCADA for the Control Center to see as it pertains to pulling the pig cleaner from the pig receiver.
- If Yes, Descr be 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

F1. As a result of this Incident, were any Operator employees tested under the post-accident drug and alcohol testing requirements of DOT's Drug & Alcohol Testing regulations?	Yes
- If Yes:	
F1a. How many were tested:	6
F1b. How many failed:	0
F2. As a result of this Incident, 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:	
F2a. How many were tested:	
F2b. How many failed:	

PART G - APPARENT CAUSE

Select only one box from PART G in the shaded column on the left representing the APPARENT Cause of the Incident, and answer the questions on the right. Enter secondary, contributing, or root causes of the Incident in Part K – Contributing Factors.

Apparent Cause:	G7 - Incorrect Operation

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

- Overpressurization	
- No support or loss of support	
- Manufacturing defect	
- Loss of electricity	
- Improper installation	
- Improper maintenance	
- Mismatched items (different manufacturer for tubing and tubing fittings)	
- Dissimilar metals	
- Breakdown of soft goods due to compatibility issues with transported gas/fluid	
- Valve vault or valve can contributed to the release	
- Alarm/status failure	
- Misalignment	
- Thermal stress	
- Erosion/abnormal wear	
- Other	
- If Other, Describe:	
G7 – Incorrect Operation - only one **sub-cause** can be selected from the shaded left-hand column	
Incorrect Operation – Sub-Cause:	Other Incorrect Operation
- If Underground Gas Storage, Pressure Vessel, or Cavern Allowed or Caused to Overpressure:	
1. Specify:	
- If Other, Describe:	
- If Other Incorrect Operation:	
2. Describe:	Although the trap door was open, Employee positioned himself in front of the open receiver in the projected path of the pig without verifying that the pressure behind the pig had been relieved. SOP I.13 Pigging and Pig Trap Operation warns of the dangers of standing in front of the receiver door and instructs employees to ensure that the trap is depressurized. As part of on the job training, employees are taught the dangers of standing in front of the receiver.
Complete the following if any Incorrect Operation sub-cause is selected.	
3. Was this Incident related to: *(select all that apply)*	
- Inadequate procedure	
- No procedure established	
- Failure to follow procedure	Yes
- Other:	
- If Other, Describe:	
4. What category type was the activity that caused the Incident:	Routine Maintenance
5. Was the task(s) that led to the Incident identified as a covered task in your Operator Qualification Program?	No
5a. If Yes, were the individuals performing the task(s) qualified for the task(s)?	
G8 - Other Incident Cause - only one **sub-cause** can be selected from the shaded left-hand column	
Other Incident Cause – Sub-Cause:	
- If Miscellaneous:	
1. Describe:	
- If Unknown:	
2. Specify:	
Unknown	
PART - H NARRATIVE DESCRIPTION OF THE INCIDENT	

On March 26, 2020, Employee was receiving a cleaning pig on the ten-inch east line at Borchers Station when the pig became lodged in the receiver. The door to the receiver was opened, and Employee had positioned himself in front of the pig receiver in an attempt to dislodge the stuck pig. Suddenly, the pig became dislodged and discharged out of the barrel, striking Employee. Another employee called 911 and assisted injured Employee until medical assistance arrived. Highway Patrol arrived and assisted with first aid until the ambulance arrived. Employee was transported to Meade County Hospital where the employee passed away.

Please refer to Part G (APPARENT CAUSE). As it applies to Part K (CONTRIBUTING FACTORS), SOP I.13 Pigging and Pig Trap Operation requires a Site Specific Pigging Procedure. However, at the time of the incident, a site specific pigging procedure was not located. It has not been determined that the presence of a site specific pigging procedure at Borchers Station would have prevented this incident.

In terms of process improvement, we have created a site specific pigging plan for Borchers East 10" trap. A safety alert has been distributed company-wide in order to reinforce our current pigging procedures and stress the importance of proper safety protocols when engaging in pigging activities. We have worked with local field personnel to reinforce our pigging procedures. Also, we have developed a team to review and assess current pigging procedures.

PART I - PREPARER AND AUTHORIZED SIGNATURE

Preparer's Name	Kathryn Harryman
Preparer's Title	Senior Specialist Regulatory Compliance
Preparer's Telephone Number	[redacted]
Preparer's E-mail Address	[redacted]
Preparer's Facsimile Number	
Local Contact Name	
Optional Local Contact Email	
Optional Local Contact Phone	
Authorized Signer Name	Danny Nichols
Authorized Signer Title	Senior Director Regulatory Compliance
Authorized Signer Telephone Number	[redacted]
Authorized Signer Email	[redacted]
Date	07/22/2020

PART J - INTEGRITY INSPECTIONS

Complete the following if the "Item Involved in Accident" (from PART C, Question 3) is Pipe or Weld and the "Cause" (from Part G) is:	
Corrosion (any subCause in Part G1); or	
Previous Damage due to Excavation Activity (subCause in Part G3); or	
Previous Mechanical Damage NOT Related to Excavation (subCause in Part G4); or	
Material Failure of Pipe or Weld (any subCause in Part G5)	
J1. Have internal inspection tools collected data at the point of the Incident?	
J1a. If Yes, for each tool and technology used provide the information below for the most recent and previous tool runs:	
Axial Magnetic Flux Leakage	
Most recent run Year:	
Most recent run Propulsion Method (select only one):	
Most recent run Attuned to Detect (select only one):	
Describe	
If Metal Loss, specify (select only one):	
Describe	
Previous run Year:	
Previous run Propulsion Method (select only one):	
Previous run Attuned to Detect (select only one):	
Describe	
If Metal Loss, specify (select only one):	
Describe	
Circumferential/Transverse Wave Magnetic Flux Leakag	
Most recent run Year:	
Most recent run Propulsion Method (select only one):	
Most recent run Resolution (select only one):	
Describe:	
Previous run Year:	
Previous run Propulsion Method (select only one):	
Previous run Resolution (select only one):	
Describe:	

Defective or Loose Tubing or Fitting	
Failure of Equipment Body (except Compressor), Vessel Plate, or other Material	
Incorrect Operation	
Damage by Operator or Operator's Contractor NOT Excavation and NOT Vehicle/Equipment Damage	
Valve Left or Placed in Wrong Position, but NOT Resulting in Overpressure	
Pipeline or Equipment Overpressured	
Equipment Not Installed Properly	
Wrong Equipment Specified or Installed	
Inadequate Procedure	
No procedure established	
Failure to follow procedures	Yes

DOT	US Department of Transportation
PHMSA	Pipeline and Hazardous Materials Safety Administration
OPS	Office of Pipeline Safety – Accident Investigation Division

Principal Investigators	Alvaro Rodriguez
Senior Accident Investigator	Gregory Ochs
Accident Investigation Director	Peter Katchmar
Date of Report	November 10, 2020
Subject	Failure Investigation Report: Panhandle Eastern Pipeline Co., Incorrect Operation

Operator, Location & Consequences

Date of Failure	March 26, 2020
Commodity Released	Natural Gas
City, County, State	Meade, Meade, Kansas
OpID and Operator Name	15105, Panhandle Eastern Pipeline Co.
Unit # & Unit Name	1083, Liberal
WMS Activity ID	20-178587
Milepost (MP) / Location	Borchers – North Station
Type of Failure	Incorrect Operation
Fatalities	One
Injuries	None
Description of Impacted Area	Class 1, Rural Area
Total Costs	$21,139

Executive Summary

On March 26, 2020, at approximately 2:00 p.m. Central Daylight Time (CDT)[1], a Panhandle Eastern Pipeline Co. (PEPL) technician at the Borchers Station in Meade, Kansas was attempting to retrieve a T.D. Williamson 10-inch PitBoss™ Cleaning Pig that was stuck in the receiving barrel due to ice accumulation. The pig trap is used for removing fluids from a 1.8-mile-long pipeline connecting the compressor station to storage wells. When the incident occurred, the technician was using a stainless-steel rod within the receiver barrel to break the ice. The pig abruptly became dislodged and traveled out of the receiving end and struck him in the abdomen. The employee later died at the hospital due to his injuries.

Two investigators were deployed from the Pipeline and Hazardous Material Safety Administration's (PHMSA's) Accident Investigation Division (AID), and the Central Region Office (CRO) to investigate the incident.

PHMSA's investigation determined the key contributing causes for this incident were PEPL had a lack of adequate site-specific procedures, failed to follow procedures (failure to monitor gauge, relieve pressure, contact supervisor when ice was found), had insufficiently placed pressure gauges and had leaking valves. Additionally, PEPL does not consider "launching and receiving pigs" a covered task (CT) under operator qualification (OQ). Despite supervision's awareness of ice accumulating in the line for years, PEPL failed to address it with specific procedures, design or operational changes.

System Details

PEPL is a subsidiary operator of the parent operator,[2] Energy Transfer. The PEPL System operates more than 6,000 miles of natural gas transmission pipeline extending from northern Texas to southern Michigan. The incident occurred at PEPL Borchers Compressor Station in Meade, Kansas on the East 10" receiver.

The Borchers Compressor Station is part of the Liberal Unit, a segment that runs from the Liberal Compressor Station to the Liberal 5 Gate (northeast of Fowler, Kansas). The Liberal Unit has 193.44 miles of pipeline involving two compressor stations (Borchers and Liberal), and one underground natural gas storage field (Borchers North). The Borchers Compressor Station has four 24-inch and two 10-inch receivers for pigging operations.[3]

The East 10" Line is bidirectional and is utilized to facilitate movements to and from the storage wells. The incident occurred at the East 10" pig receiver barrel which is connected to a 1.8-mile section of the interconnected storage well system.

The receiver on this line was fabricated in 1981 utilizing 10-inch and 12-inch diameter steel pipe grade API 5L X52 with 0.5-inch wall thickness. This line was put in-service at the end of 1981. There is no previous incident history in the East 10" Line.

[1] All times are reported in CDT unless otherwise noted.

[2] Parent operators and subsidiaries have a common safety program relationship (SPR) for PHMSA's Office of Pipeline Safety (OPS) inspected assets only.

[3] Pigging operations involve pig launching and receiving. A pig launcher is a vessel used for launching of a pig into the pipeline for cleaning or inspection purposes. After being launched into the pipeline, the pig is pushed through the pipeline by a driving fluid. The pipeline is cleaned along the way by brushing action from the pig. On the other end, the pig is received by a pig receiver. A pig receiver is a vessel used for receiving a pig. The frequency of launching and receiving cleaning pigs in this facility is performed on a weekly basis to remove any dirt, water and contaminates from the system and to maintain high flow efficiency.

The maximum operating pressure (MAOP) of the East 10" Line is 1,875 pounds per square inch in gauge (psig). Normal operating pressures vary dependent upon the storage volumes. The pressure on the day and time of the incident was 937 psig.

Events Leading up to the Failure

A records review of the cleaning pig runs on the East 10" revealed 5 instances in 2019 and 2020 where ice was found. Records indicate that PEPL failed to address this abnormal operating condition (AOC) with procedures or remedial measures despite supervision's awareness of the ice buildup within the line. A summary of the cleaning pig run records review is shown below:

- In 2018, there were 12 runs where a T.D. Williamson Batching Pig was used for all the runs during the year, except for one using a T.D. Williamson PitBoss™ Cleaning Pig. All the runs removed liquids, except for the one on December 20, which encountered a large amount of liquids and ice.
- In 2019, there were eight runs with the Batching Pig, and one with the PitBoss™. Five of those runs contained liquids and the rest had ice. Although the cleaning pig was damaged in two instances, comments in the form do not help to identify AOCs or safety issues.
- In 2020, there were two runs with the Batching Pig and one with the PitBoss™. All the runs removed ice from the line, but comments in the form did not indicate encountering AOCs such as the pig getting stuck on March 26.

PEPL indicated that the East 10" Line is not utilized to the extent as the other lines in the field. Not as much gas is injected/withdrawn from the storage field because there are other wells in other areas in the field that perform better. Therefore, business efficiency does not require the use of this line as much as others since the wells connected to the East 10" Line typically produce at a lower volume.

The pressure differential with the other lines and leaking interconnect valves with the presence of hydrates resulted in ice commonly forming in this pipeline. There are no drips[4] in the entire storage field.

Pigging operations are carried out by a two-person crew alternating every three weeks. On March 26, 2020, at approximately 8:45 am, a T.D. Williamson 10-inch PitBoss™ Cleaning Pig was launched 1.8 miles east from the storage field to the East 10" receiver. The cleaning pig arrived around noon into the receiving barrel at Borchers Station. The crew planned to remove the pig after lunch and delayed the process to wait for the corrosion technician to inspect the pig and residue; however, he notified the technicians to proceed with the retrieval without him being present.

At approximately 2:00 pm after removing two other pigs from adjacent receivers, the crew began to remove the pig from the East 10" receiving barrel. Once the pressure was thought to be relieved, the barrel door was opened, the pig became lodged in the receiver with ice (approximately 92 inches away from the barrel door).

Technician 1[5] had positioned himself in front of the barrel to remove ice chunks with the aid of a 10-foot 6-inch long stainless steel pulling rod. Technician 2[6] was standing on the other side a few feet away to help carry the pig out of the barrel. After performing this operation for less than five minutes, ice chunks and the pig became dislodged and discharged out of the barrel striking Technician 1. Technician 1 was

[4] Drips are small vessels in a pipeline to receive water and heavy hydrocarbons that drop out of a gas stream. Drips are normally installed in the lower points of flow lines and are blown periodically to remove liquids.

[5] Technician 1 was the injured individual.

[6] Technician 2 was the witness of the incident and individual assisting during receiving pig operations.

struck in the abdomen by the pig which threw him approximately 22 feet away from the barrel, landing on the ground. Technician 1 was conscious and interacting with the other technician despite the blunt force trauma to his abdomen. Technician 1 also suffered from a cut over his eye.

The storage field was on withdrawal and no sensors or alarms were on the isolated East 10" receiver; therefore, nothing regarding this incident generated an actionable response by the control room. The pressure on the day and time of the incident was 937 psig.

Emergency Response

Immediately after the incident, Technician 1 was conscious and asked for an ambulance.

Technician 2 drove to the station, located 1/6 of a mile, to gather towels and water, and asked someone else to call an ambulance. As he returned to the incident site to attend the injured technician, a State Highway Patrol Officer arrived and aided by placing a gauze pad to the wound above the eye of the injured technician.

While waiting for medical assistance to arrive, Technician 1 complained about having difficulty breathing. The officer suggested the technician remain on the ground until medical assistance arrived. The ambulance arrived at the scene at approximately 2:30 p.m. and took him to the Meade District Hospital.

Technician 2 placed the cap back on the receiver and closed down the blowdown valves, returning the receiver back to normal operations. The cleaning pig and pulling rod were left undisturbed. Afterwards, two other technicians cordoned the area with a yellow caution tape.

At approximately 3:15 p.m., Technician 1 died from his injuries.

Technician 2 and Technician 3[7] were sent to post-incident drug and alcohol screening[8]. Results from the tests came back negative.

PEPL called the National Response Center (NRC) at 4:04 pm to report the incident. The initial NRC Incident Report was No. 1274304. The 48-hour update, NRC Incident Report No. 1274395, stated that the employee was struck in the stomach and not in the chest.

On the morning of March 27, 2020, the East 10" Line was placed out of service.

Summary of Return-to-Service

On April 6, 2020, PEPL requested the restart of the line involved in the incident as part of their investigation for testing purposes. There was a conference call on April 8th at 10:00 a.m. with PEPL representatives, PHMSA Southwest Regional Director, and the two on-scene PHMSA investigators to clarify the objective of this activity. That afternoon, PHMSA Southwest Regional Director approved the activity with the following changes: modify title to "Shut Out and Return to Service East 10" Line," continuously monitor the 1" vent to prevent any hazardous situation from occurring, include provisions for monitoring the pressures during the process, and provide email notifications when the process was initiated and completed.

[7] Technician 3 was working at the Borchers Station on the day of the incident.
[8] Drug and alcohol testing is required post-incident per Title 49 of the Code of Federal Regulations parts §199.105(b) and §199.225(a) respectively

On April 15, 2020, PEPL notified PHMSA by email that they would be purging and packing the East 10" Line. This restart was only intended for testing purposes. Once the testing was completed on April 16, 2020, the line was taken back out of service and locked out.

The line remained out of service for 110 days before returning to service on July 15, 2020, at 1:00 pm.

Investigation Details

Two investigators were deployed from the PHMSA's AID and the CRO to investigate the incident. Both investigators arrived at the Borchers Compressor Station at approximately 8:30 am on March 27, 2020.

Upon arrival, the investigators were briefed about the incident by PEPL's Regulatory Compliance Specialist, Director of Technical Operations, Senior Manager of Operations, and the Operations Manager. They relayed that the incident occurred at the East 10" receiver in the Borchers Compressor Yard south of the building. An aerial view map and a schematic diagram of the station was provided.

They informed the investigators with the name and title of the two technicians involved in the incident. Technician 1 started working for PEPL on December 2, 2013, and had always been at either the Liberal or Borchers Compressor Stations. Technician 2 was not injured.

During the entrance interview, the PHMSA lead investigator explained they would be gathering facts of the incident including a timeline, conducting interviews of staff involved, and requesting pertinent information. Three individuals were interviewed on March 27, 2020, with the Regulatory Compliance Specialist and the Director of Technical Operations present in the room. The first interview was with the Senior Manager of Operations, the second interview was with the witness technician, and the third interviewee was the Operations Manager. The incident site was photographed in the afternoon.

A questionnaire was used for each of the interviews, and the following documents were requested to support evidence for the investigation:

- A narrative description of the incident
- OQ records for the technicians involved in the incident detailing 1) the CTs each is qualified for, 2) evaluation methods with the knowledge, skills and abilities evaluations for each CT being performed when the incident occurred, 3) AOCs associated with the CTs being performed when the incident occurred (including recognition and reaction to AOCs)
- Records of pigging for the East 10" Line from 2018 to 2020
- Borchers North pressure data – including 24 hours prior to the incident
- Drug and alcohol testing results
- Schematic drawing of the Borchers Storage Field
- Energy transfer procedures for activities performed at the PEPL Borchers East 10" by the crew on March 26, 2020, or pertinent to the issues identified during this investigation
- Site specific launching and receiving procedures for PEPL Borchers East 10" Line (1.8 miles)

The Senior Manager of Operations has worked for the company for 14 years, 1 year in his current position, 11 months as Operations Manager, and approximately 12 years as an Instrumentation and Electrical (I&E) Technician.

Technician 2 has been working for the company for 19 years, in his current position for 15 years with duties such as operating and maintaining cleaning pigs, and operating equipment such dehydrators, engines, valves, etc. and previously, 4 years as a technician with engine maintenance

The Operations Manager has been working for the company for approximately 11 years, with 7 months in his current position, and previously as a pipeline welder; his duties involve administrative tasks, arranging crews and scheduling

On March 28, 2020, Technician 3 was interviewed; he has worked for the company for 12 years in his current position with duties involving operation of cleaning pigs, locating pipelines, operating valves, etc.

The outcome of the interviews and investigation of the incident site unveiled the following information:

- Pressure gauges had not been installed and used during the operation. Technician 2 indicated that he was unaware of company procedures in place for the cleaning pig operation and stated that the East 10" receiver valve and other storage valves have leaked as long as he has been at Borchers (19 years).
- Technicians 2 and 3 confirmed that they had experienced ice blocking the removal of pigs on the East 10" receiver prior to the incident.
- "Launching and receiving a pig" was not identified by Energy Transfer as an OQ CT for this facility.
- Technicians 1 and 2 failed to notify the Operations Manager to discuss the procedure to handle and clear freezes in a launcher/receiver per Energy Transfer's Best Practices BP I.17 – Clearing Freezes requirements.
- None of the interviewees had previously seen the site-specific procedures referenced in Energy Transfer's Standard Operating Procedure (SOP) I.13 - Pigging and Pig Trap Operations. No site-specific procedures had been developed for this location prior to this incident.
- The cleaning pig was approximately 92 inches into the receiver barrel.
- On March 28, 2020, the following was also noted:
    - → The blow off stacks and the 1-inch blowdown valve were relieving gas
    - → The 10-inch isolation valve was leaking
    - → The pig signals were not functioning
    - → The stainless steel pulling rod measured 10 feet 6 inches long. The T.D Williamson 10-inch PitBoss™ Cleaning Pig measured 19 inches long and landed approximately 22 feet south and 10 feet east of the receiver door
    - → Valves supplying the East 10" receiver were observed leaking by PHMSA during the on-site investigation
    - → A sketch (Figure 1) of the positioning of the cleaning pig was produced with the following measurements (please see Figure 2Figure *4* for reference).
- Per Energy Transfer Incident Investigation Report, the following was observed:
    - → Technicians 1 and 2 failed to perform "lockout tag out" (LOTO) in compliance with Energy Transfer's S-230 (Hazardous Energy Control Lockout Tag Out). The LOTO would have required confirmation that the system was de-energized before the beginning of work.

→ No work permit was issued for this task in compliance with Energy Transfer's S-370 (Work Permits).

→ None of these two items had been determined to be contributing factors.

- Review of records and evidence revealed the following:

  → The East 10" Line is not used much because gas leaching from this portion of the storage well resulted in lower pressures than other lines also drawing from the storage well. The pressure differential with the other lines, leaking interconnect valves with the presence of hydrates resulted in ice commonly forming in this line (confirmed by pigging records from 2018 to 2020) also lead to the lower use of this line.

  → Maintenance records and field testing results from the Energy Transfer investigation did not indicate historical leaks from storage field valves, receiver valves or any of the receiver barrel appurtenances.

  → No effectiveness reviews regarding work done by operator personnel at the Borchers' Storage facility were provided by Energy Transfer. Local supervision did not have knowledge of any effectiveness reviews or documentation.

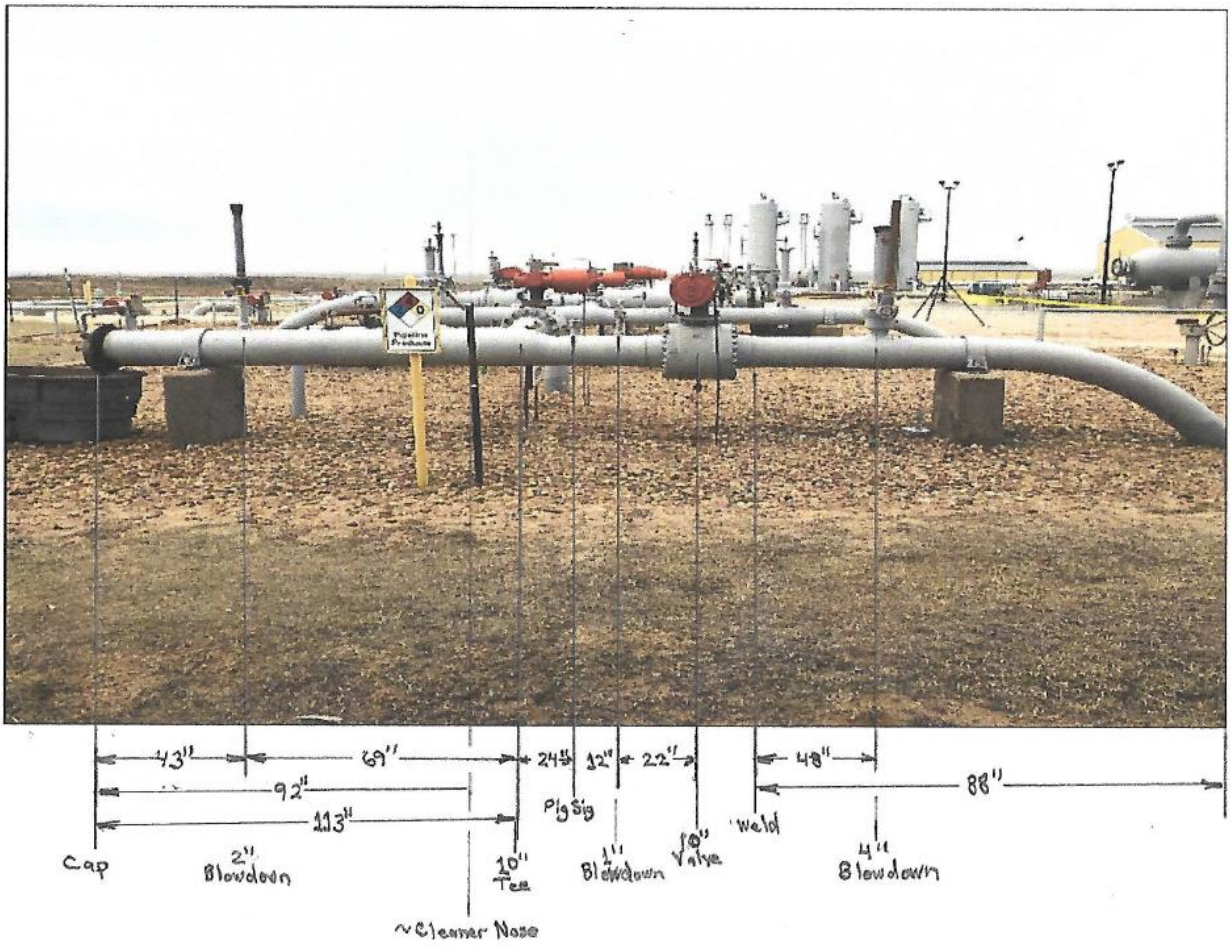

Figure 1. East 10” Pig Receiver Sketch, G. Ochs (04/03/2020) Photograph Taken on March 28, 2020

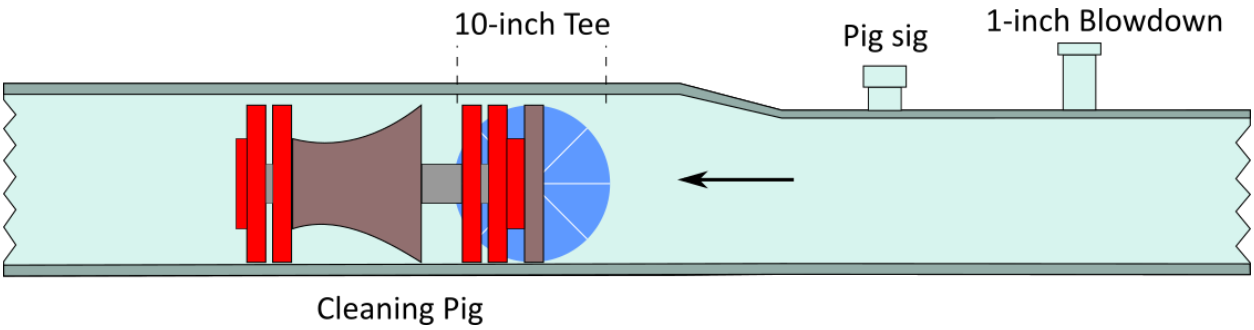

Figure 2. Sketch of Approximate Location of Stuck Cleaning Pig Inside the East 10” Receiving Barrel

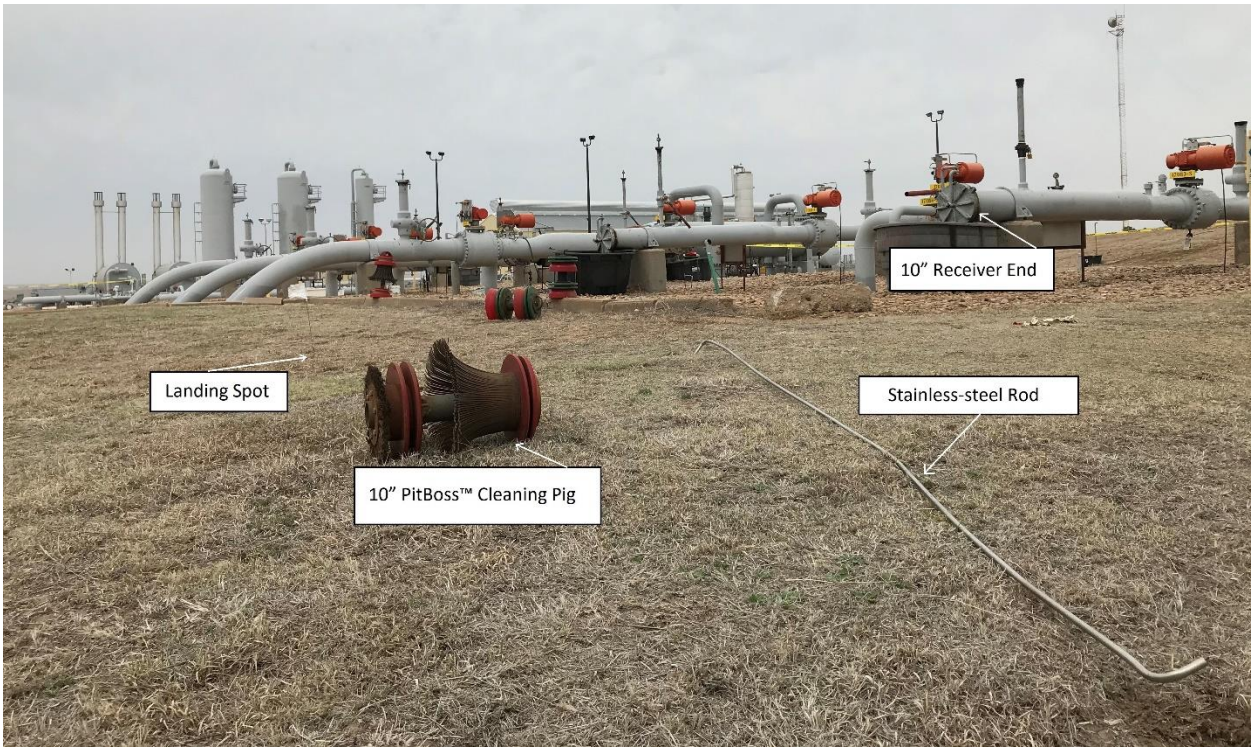

Figure 3. Photograph of the Incident Scene as it was Left - The Landing Spot of Technician 1 is Marked with a White Flag (Approximately 22 Feet from the 10” Receiver End) Rodriguez, March 28, 2020

Figure 4. Photograph of the 10-inch PitBoss™ Cleaning Pig that Impacted Technician 1 Rodriguez, March 28, 2020

Findings and Contributing Factors

PHMSA investigators determined that the cause of the incident at Borchers Compressor Station was due to the lack of adequate site-specific procedures, failure to follow procedures (failure to monitor gauge, relieve pressure, contact supervisor when ice was found), insufficiently placed pressure gauges and leaking valves.

Contributory causes to this event are as follows:

1. PEPL does not consider “launching and receiving pigs” an OQ CT and, therefore, technicians were not qualified, per the requirements of 192, subpart O, to launch and receive pigs.
2. Despite supervision knowing of the ice accumulating in the line for years, PEPL failed to address it with specific procedures, design or operational changes.
3. Although interviews with the technician indicated valves supplying the East 10” receiver trap leaked and were observed leaking by PHMSA during the on-site investigation, maintenance records and field testing results from the Energy Transfer investigation did not indicate historical leaks from storage field valves, receiver valves or any of the receiver barrel appurtenances.

4. No effectiveness reviews regarding work done by operator personnel at the Borchers' Storage Facility were provided by Energy Transfer. Local supervision did not have knowledge of any effectiveness reviews or documentation.

Appendices

A. Map and Photographs
B. NRC Reports
    1. NRC#1274304 (Original)
    2. NRC#1274395 (48-hour Update)
C. Operator Incident Report to PHMSA
D. Operator Failure Investigation Report

Appendix A. Additional Photographs

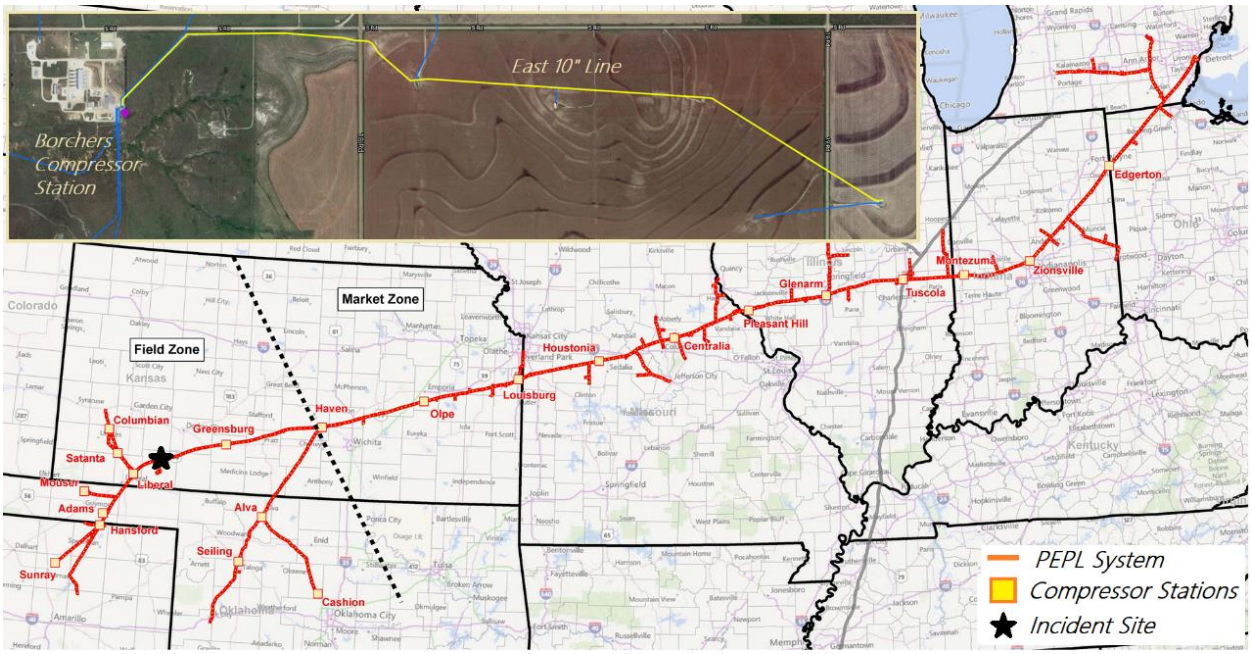

Figure 5. PEPL System Map Depicting the Site of the Incident in Meade, Kansas with a Black Star
(Map obtained from PEPL's Website Accessed on April 8, 2020)
The Top Left-hand Corner Shows the Zoomed-in View of the Site
(Image Obtained from PIMMA Plus on April 8, 2020)

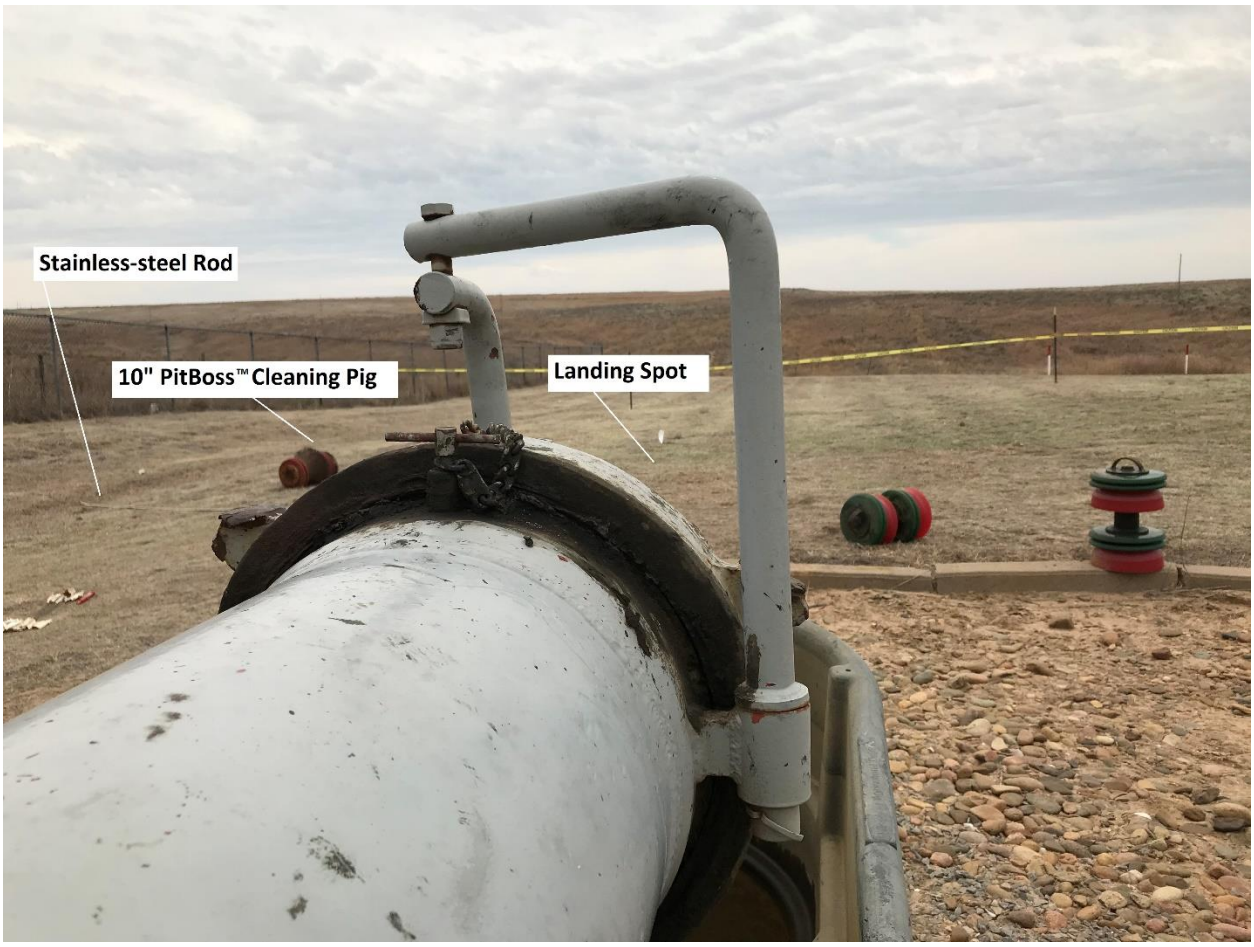

Figure 6. Photograph of End of East 10” Receiver Facing South
Please Note the Flag where Technician 1 Landed and the Position of the 10-inch PitBoss™ Cleaning Pig
Rodriguez, March 28, 2020

Figure 7. Photograph of the Re-enacted Incident at the East 10" Receiver Facing North Rodriguez, March 28, 2020