

Pipeline Failure Investigation Report

Pipeline System: _____ Operator: _____

Location: _____ Date of Occurrence: _____

Medium Released: _____ Quantity: _____

OPS Arrival Time & Date: _____ Total Damages \$ _____

Investigation Responsibility: State OPS NTSB Other _____

Company Reported Apparent Cause: Corrosion Damage by Outside Force

Damage by Natural Forces Accidentally Caused by the Operator

Construction/Material Defect Equipment Malfunction Other _____

Explosion?: Yes No

Evacuation? Yes No Number of Persons? _____ Area? _____

Photo Documentation - ☒

Narrative Summary

One paragraph summary description of the Incident/Accident which will give interested persons sufficient information to make them aware of the basic scenario and facts.

Region/State: New Mexico

Reviewed By:

Principle Investigator: Joe Johnson , Pipeline Safety Engr. Spec. Title:

Date: _____ Date:

Failure Location & Response

Location: (City, Township, Range, Parish)

(Acquire Map)

☒ Address or M.P. on Pipeline:

☒ Type of Area: (Rural, City)

Date:

Time of Failure:

Time Detected:

Time Located:

How Located:

NRC Report #: _____
(Attach Report)

Time Reported to NRC:

Reported By:

Type of Pipeline:

- | | | | |
|---|---|--|---------------------------------------|
| Gas Distribution | Gas Transmission | Hazardous Liquid | LNG |
| <input type="checkbox"/> LP | <input type="checkbox"/> Interstate Gas | <input type="checkbox"/> Interstate Liquid | <input type="checkbox"/> LNG Facility |
| <input type="checkbox"/> Municipal | <input type="checkbox"/> Intrastate Gas | <input checked="" type="checkbox"/> Intrastate Liquid | |
| <input type="checkbox"/> Public Utility | <input type="checkbox"/> Jurisdictional Gas | <input type="checkbox"/> Offshore Liquid | |
| <input type="checkbox"/> Master Meter | <input type="checkbox"/> Gathering | <input type="checkbox"/> Jurisdictional Liquid Gathering | |
| | <input type="checkbox"/> Offshore Gas | <input type="checkbox"/> CO ₂ | |
| | <input type="checkbox"/> Offshore Gas-High HS | | |

Pipeline Configuration: (Regulator Station, Pump Station, Pipeline)
Split tee on line pipe.

<i>Operator Information</i>	
Owner:	Operator:
Contact:	Company Official:
Address:	Title:
	Address:
City: State:	Drug Testing <input type="checkbox"/> N/A
Fax Number:	Contact:
Phone Number:	Phone Number:

<i>Damages</i>	
Product/Gas Loss or Spill - (Initial Loss): Amount Recovered: Estimated Amount: \$	Estimated Property & Associated Damages (Include Cleanup): \$
Description of Property Damage:	
Customers out of Service: <input type="checkbox"/> Yes <input type="checkbox"/> No	Number:
Suppliers out of Service: <input type="checkbox"/> Yes <input type="checkbox"/> No	Number:

<i>Fatalities and Injuries</i>						
Fatalities: <input type="checkbox"/> Yes <input type="checkbox"/> No Company Employees: Public:			Injuries Requiring Hospitalization: <input type="checkbox"/> Yes <input type="checkbox"/> No Company Employees: Public: Contractor: Total Injuries: (Including Non-Hospitalization)			
Name	Age	m/f	Job Function	Yrs. w/ Comp.	Yrs. Exp.	Type of Injury

<i>Drug Testing</i>		<input type="checkbox"/> N/A
Were all employees that could have contributed to the incident Post Accident Tested within the 32 hour time frame . <input type="checkbox"/> Yes <input type="checkbox"/> No		
Job Function:		
Time of Test:	Location:	
Results: <input type="checkbox"/> Positive <input type="checkbox"/> Negative	Type of Drug:	
Job Function:		
Time of Test:	Location:	
Results: <input type="checkbox"/> Positive <input type="checkbox"/> Negative	Type of Drug:	
Job Function:		
Time of Test:	Location:	
Results: <input type="checkbox"/> Positive <input type="checkbox"/> Negative	Type of Drug:	

<i>System Description</i>
Describe the Operator's System:

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<i>Pipe Failure Description</i>	<input type="checkbox"/> N/A
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⊗ Length of Failure: (inches, feet, miles)	
⊗ Position: (Top, Bottom, include position on pipe, 6 O'clock)	⊗ Description of Failure: (Corrosion, Gouge, Seam Split)
Labratory Analysis: <input type="checkbox"/> Yes <input type="checkbox"/> No	Performed By:
Preservation of Failed Section or Component: <input type="checkbox"/> Yes <input type="checkbox"/> No (If Yes - Method)	
In Custody of:	
Develop a sketch of the area including distances from roads, houses, stress inducing factors, pipe configurations, etc. Bar Hole Test Survey Plot should be outlined with concentrations at test points. Direction of Flow.	

<i>Component Failure Description</i>	<input type="checkbox"/> N/A
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⊗ Component Failed:	
Manufacturer:	Model:
Pressure Rating:	Size:
⊗ Other: (Breakout Tank, Underground Storage) N/A	

<i>Pipe Data</i>	<input type="checkbox"/> N/A
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Material:	
Diameter (O. D.):	Wall Thickness/SDR:
SMYS:	Installation Date:
Longitudinal Seam Type:	Manufacturer:
Pipe Specifications (API 5L, ASTM D2513)	Type of Coating:

<i>Joining</i>	<input type="checkbox"/> N/A
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Type:	Procedure:
N. D. T. Method:	Inspected: <input type="checkbox"/> Yes <input type="checkbox"/> No

<i>Pressure @ Time of Failure @ Failure Site</i>	<input type="checkbox"/> N/A
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Pressure @ Failure Site:		Elevation:		
Location/M.P./Station #	Pressure	Elevation	Upstream or	Downstream
			<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>

<i>Upstream Pump Station Data</i>	<input type="checkbox"/> N/A
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Type of Product:

Specific Gravity:	API:	Flow Rate:
Pressure @ Time of Failure: (Obtain Event Logs and Pressure Recording Charts)		Distance to Failure Site:
High Pressure Set Point:	Low Pressure Set Point:	

<i>Upstream Compressor Station Data</i>		<input type="checkbox"/> N/A
Specific Gravity:	Flow Rate:	
Pressure @ Time of Failure: (Obtain Event Logs and Pressure Recording Charts)		Distance to Failure Site:
High Pressure Set Point:	Low Pressure Set Point:	

<i>Operating Pressure</i>		<input type="checkbox"/> N/A
MAOP:	Determination:	
Actual Operating Pressure:		
Method of Over Pressure Protection:	Relief Valve Set Point::	
	Capacity Adequate? <input type="checkbox"/> Yes <input type="checkbox"/> No	

<i>Integrity Test After Failure</i>		<input type="checkbox"/> N/A
Pressure Test Conducted in place? (Conducted on Failed Components or Associated Piping) <input type="checkbox"/> Yes <input type="checkbox"/> No		
If NO, Tested after removal? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Method? Describe any failures during the test.		

<i>Pressure Test History</i>					<input type="checkbox"/> N/A
Date	Test Medium	Pressure	Duration	% SMYS	
Installation:					
Last:					
Other:					
Any Problems Occur During any of the Pressure Tests:					

<i>Soil/Water Conditions @ Failure Site</i>		<input type="checkbox"/> N/A
⊗ Condition of and type of Soil around Failure: (Color, Wet, Dry, Frost Depth)		
⊗ Type of Backfill: (Size and Description)		
Type of Water: (Salt, Brackish)	Analysis: <input type="checkbox"/> Yes <input type="checkbox"/> No (Attach Report)	

<i>External Pipe or Component Examination</i>		<input type="checkbox"/> N/A
⊗ External Corrosion?: <input type="checkbox"/> Yes <input type="checkbox"/> No	⊗ Coating Condition: (Disbonded, non-existent)	
⊗ Description of Corrosion:		
Description of Failure Surface: (Gouges, Arc Burns, Wrinkle Bends, Cracks, Stress Cracks, Chevrons, Fracture Mode, Point of Origin)		
Comments:		
⊗ Above ground: <input type="checkbox"/> Yes <input type="checkbox"/> No	⊗ Buried: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
⊗ Stress Inducing Factors:	⊗ Depth of Cover:	

<i>Cathodic Protection</i>		<input type="checkbox"/> N/A
⊗ P/S (Surface):	⊗ P/S (Interface):	
Soil Resistivity: pH:	Date of Installation:	
Method of Protection?:		
Did the Operator have knowledge of Corrosion before the Incident? <input type="checkbox"/> Yes <input type="checkbox"/> No How Discovered? (Close Interval Survey, Instrumented Pig, Annual Survey, Rectifier Readings)		

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<i>Internal Pipe or Component Examination</i>		<input type="checkbox"/> <i>N/A</i>
⊗ Internal Corrosion: <input type="checkbox"/> Yes <input type="checkbox"/> No	Injected Inhibitors: <input type="checkbox"/> Yes <input type="checkbox"/> No	
Type of Inhibitors:	Testing: <input type="checkbox"/> Yes <input type="checkbox"/> No	
Results (Coupon Test, Corrosion resistance Probe)		
⊗ Description of Failure Surface: (MIC, Pitting, Wall Thinning, Chevrons, Fracture Mode, Point of Origin)		
Cleaning Pig Program: <input type="checkbox"/> Yes <input type="checkbox"/> No	Gas or Liquid Analysis <input type="checkbox"/> Yes <input type="checkbox"/> No	
Results from Analysis: (Obtain Copy)		
Internal Inspection Tool: <input type="checkbox"/> Yes <input type="checkbox"/> No	Results:(Attach Report)	
Did the Operator have knowledge of Corrosion before the Incident? <input type="checkbox"/> Yes <input type="checkbox"/> No		
How Discovered? (Instrumented Pig, Coupon Testing)		
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<i>Outside Force Damage</i>		<input type="checkbox"/> <i>N/A</i>
Responsible Party:	Telephone:	
Address:		
Work Being Performed:		
⊗ Equipment:	Called One Call System: <input type="checkbox"/> Yes <input type="checkbox"/> No	
One Call Name:	One Call Report #: (obtain Report)	
Notice Date:	Time:	
Response Date:	Time:	
Details of Response:		
Was Location Marked According to Procedures: <input type="checkbox"/> Yes <input type="checkbox"/> No		

⊗ Pipeline Marking Type:		⊗ Location:	
State Law Damage Prevention Program Requirements Followed?		<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No State Law	
Notice Required: <input type="checkbox"/> Yes <input type="checkbox"/> No		Response Required: <input type="checkbox"/> Yes <input type="checkbox"/> No	
Was Operator member of State One Call? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Was Operator on Site? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Is OSHA Notification Required? <input type="checkbox"/> Yes <input type="checkbox"/> No			

<i>Natural Forces</i>		<input type="checkbox"/> <i>N/A</i>
⊗ Description: (Earthquake, Tornado, Flooding, Erosion)		

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<i>Failure Isolation</i>		<input type="checkbox"/> N/A
⊗ Squeeze Off/Stopple Location and Method:		
Valve Closed - Upstream: Time:	I.D. M.P.	
Valve Closed - Downstream: Time:	I.D. M.P.	
Pipeline Shutdown Method: <input type="checkbox"/> Manual <input type="checkbox"/> Automatic <input type="checkbox"/> SCADA <input type="checkbox"/> Controller <input type="checkbox"/> ESD		
Failed Section Bypassed or Isolated:		
Performed By:	Valve Spacing:	

<i>Odorization</i>		<input type="checkbox"/> N/A
Gas Odorized: <input type="checkbox"/> Yes <input type="checkbox"/> No	Concentration of Odorant: (Post Incident at Failure Site) % LEL? % Gas in Air?	
Method of Determination:	Time Taken:	
Was Odorizer Working Prior to the Incident: <input type="checkbox"/> Yes <input type="checkbox"/> No	Type of Odorizer: (Wick, By-pass)	
Odorant Manufacturer: Model:	Type of Odorant:	
Amount Injected:	Interval of Monitoring: (Weekly)	
Odorization History: (Leak Complaints, Low Odorant Levels, Location of Monitoring, Distance from Failure Site)		

<i>Weather Conditions</i>		<input type="checkbox"/> N/A
Temperature:	Wind: (Direction and Speed)	
Climate: (Snow, Rain)	Humidity:	
Was Incident preceded by a rapid weather change: <input type="checkbox"/> Yes <input type="checkbox"/> No		
Weather Conditions Prior to Incident: (Cloud Cover, Ceiling Heights, Snow, Rain, Fog)		

<i>Gas Migration Survey</i>		<input type="checkbox"/> N/A
Bar Hole Test of Area: <input type="checkbox"/> Yes <input type="checkbox"/> No	Equipment Used:	

⊗ Method of Survey: (Foundations, curbs, manholes, driveways, Mains, Services) - Plot on Site Description Page .

Environment Sensitivity Impact

N/A

⊗ Location: Nearest rivers, body of water, marshlands, wildlife refuge, city water supplies that could be or were affected by the medium loss.

OPA Contingency Plan Available? Yes No Followed? Yes No

Class Location

N/A

Class: 2

Determination: Visual inspection

Odorization Required?: Yes No

Maps & Records

N/A

Are Maps and Records Current? Yes No (Acquire Copies)

Leak Survey History

N/A

Leak Survey History of Area: (Trend analysis, Leak plots)

Pipeline Operation History

N/A

Description: (Repair or Leak Reports, Exposed Pipe Reports)	
Did a Safety Related Condition Exist Prior to the Failure? <input type="checkbox"/> Yes <input type="checkbox"/> No Reported? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Unaccounted For Gas: %	
Over & Short/Line Balance (24 hr., weekly, monthly/Trend)	

<i>Operator/Contractor Error</i>		<input type="checkbox"/> <i>N/A</i>
Name:	Job Function:	
Title:	Years of Experience:	
Training: (Type of Training, Background)		
Type of Error: (Inadvertent Operation of a Valve)		
Procedures that are required:		
Actions that were taken:		
Pre-Job Meeting: (Construction, Maintenance, Blow Down, Purging, Isolation)		
Prevention of Accidental Ignition: (Tag & Lock Out, Hot Weld Permit)		
Procedures conducted for Accidental Ignition:		
Was a Company Inspector on the Job? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Was an Inspection conducted on this portion of the Job? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Additional Actions: (Contributing factors may include number of hours at work prior to failure or time of day work being conducted)		
<i>Control Center Operations</i>		<input type="checkbox"/> <i>N/A</i>
Training Procedures:		
Operation Procedures:		

Controller Activities:	
Name:	Title:
Years Experience:	Hours on Duty Prior to Failure:Shift:
Name:	Title:
Years Experience:	Hours on Duty Prior to Failure:Shift:
Name:	Title:
Years Experience:	Hours on Duty Prior to Failure:Shift:
Alarm Parameters:	
High/Low Pressure Shutdown:	
Flow Rate:	
Procedures for Clearing Alarms:	
Type of Alarm:	
Company Response Procedures for Abnormal Operations:	
Over/Short Line Balance Procedures:	
Frequency of Over/Short Line Balance:	
Additional Actions:	

Photo Documentation ⊗

Overall Area from best possible view.
 Pictures from the four points of the compass.
 Failed Component.
 Operator Actions.
 Damages in Area.
 Address Markings.

Photo #	Description	Roll #	Photo #	Description	Roll #
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1 Pipe on workboat	1	1
2 Deformation of pipe looking toward stern	1	2
3 Failure Area (underside of pipe)	1	3
4 Marine growth on pipe in failure area	1	4
5 Pipe failure (pipe cut and rolled over)	2	5
6		6
7		7
8		8
9		9
10		10
11		11
12		12
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27		27
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30		30
31		31
32		32
33		33
34		34
35		35
36		36

Type of Camera:
Film ASA:
Video Counter Log (Attach)

<i>Additional Information Sources</i>	
Phone Number	Name
Police:	Contact:
Fire Dept.:	Contact:
State Fire Marshal:	Contact:
State Agency:	Contact:
NTSB:	Contact:

Event Log

Sequence of events prior, during and after the incident by time. (Consider the events of all parties involved in the incident, Fire Department and Police reports, Operator Logs and other government agencies)

Investigation Contact Log

Time	Date	Contact	Description

