Pipeline System:	Rapid City D	istribution	Operator:	Montana	Dakota Utilities	
Operator ID: <u>31</u>	754	Unit Number:	Valley Market		Activity Number:	747 Timmons Street Rapid City, SD
Location: 747 T	immons Blvd	Ste A, Rapid City, SD	Date of Occu	irrence:	3/5/18	
Material Released	I: Natural C	Jas	Quantity:	Estima	te to Follow	
PHMSA Arrival 7	Fime & Date:	3-18-2018 @10:00 AN MT	1 Total Damag	ges \$:	MDU Estimate \$10,000)
Investigation Res	oonsibility:	x State PH	MSA NT	SB	Other	

Company Reported Apparent Cause:		Company Reported Sub-Cause (from PHMSA Form 7000-1/7100.2):
	Corrosion	
	Natural Force Damage	
	Excavation Damage	
х	Other Outside Force Damage	Car/Trailer Collision
	Material Failure (Pipe, Joint, Weld)	
	Equipment Failure	
	Incorrect Operation	
	Other	

A	ccident/Incident Resulted in (check all that apply):	Comments:
	Rupture	
х	Leak	
х	Fire	
	Explosion	
х	Evacuation	Number of Persons:No Estimate Area:

Narrative Summary

Short summary of the Incident/Accident scenario

A pickup pulling a trailer with a car on it broke loose; rolled down a hill, crashed through a fence and the trailer with vehicle came to rest approximately 10' to the north of the gas riser and meter set, after striking a transformer, the trailer and vehicle never coming into contact with the building. While passing through the wooden fence prior to striking the transformer some unknown object damaged the meter set causing a release of gas. At some point the trailer/car and transformer started on fire eventually igniting the blowing gas.

- 1. Trailer/Car came unhooked from tow vehicle proceeded down the ditch, over a landscaping berm, through a wooden fence striking a transformer and coming to a rest without striking the building.
- 2. The final resting place of the trailer/vehicle was approximately 10' north of the gas riser/meter set.
- 3. During the collision with the fence Some unknown object struck the gas riser and meter set causing damage and a release of gas.
- 4. At some point the Trailer/car caught on fire after striking transformer, and eventually ignited the gas.
- 5. The building was a cinder block building and had minimal damage to the structure itself due to the result of the fire.

Region/State: South Dakota

Reviewed by:

Princip	al Investigator:	Boice Hillmer	Title:	South Dakota Pipeline Inspector
Date:	03/18/2018		Date:	

Failure Location & Response				
Location (City, Township, Range, County/F Rapid City, Pennington County	Parish):		(Acquire Map)	
Address or M.P. on Pipeline: 747 Timmons Blvd Ste A, Rapid City, SD	(1)	Type of Area (Rural, City city	<i>i</i>): (1)	
Coordinates of failure location (Latitude): 4	4.076908	(Longitude) -103.151245		
Date: 3/5/18		Time of Failure: 3:45 N	ſТ	
Time Detected: 3:45 MT		Time Located: 3:45 MT		
How Located: Reported by driver				
NRC Report #:1205947 (Attach Report)	Time Reported to Na called into the Wash	RC: 17:30 Eastern Time ington DC Call Center.	Reported by: Josh Sanders	
Type of Pipeline:				
Gas Distribution	Gas Transmissio	n Hazardous	Liquid LNG	
LP	Interstate Gas	Interstate Lie	quid	
Municipal	Intrastate Gas	Intrastate Lie	quid	
x Public Utility	Gas Gathering	Offshore Lic	luid	
Master Meter	Offshore Gas	Liquid Gath	ering	
	Offshore Gas - High	H_2S _CO ₂		
		Low Stress I	Liquid	
		HVL		
Pipeline Configuration (Regulator Station, I Commercial meter set with rotary meter, o	Pump Station, Pipelino n a 21b system with a	e, etc.): 45lb feed.		

Operator/Owner Information				
Owner: Montana-Dakota Utilities Company	Operator:			
Address: 400 North 4 th Street, Bismarck, ND 58501	Address:			
Company Official: Mr. Patrick Darras, Vice President of Operations	Company Official:			
Phone No.: 701-221-4330 Fax No.:	Phone No.	Fax No.		
Drug and Alcohol Testing Program Contacts N/A				

¹ Photo documentation

Operator/Owner Information

Drug Program Contact & Phone:

Alcohol Program Contact & Phone:

Damages							
Product/Gas Loss or Spill ⁽²⁾ Nat	tural Gas		Estimated Property Damage \$				
Amount Recovered Nor	ne		Asso	ciated Dan	nages ⁽³⁾ \$		
Estimated Amount \$					0		
Description of Property Damage: West River Rural Electric loss an estimated 600 customers as a result of the trailer car striking their transformer and it catching fire. The building structure was cinder block construction and the building sustained minimal damage.							
Transformer Damage from West River Electric \$20,000-\$25,000 MDU estimated damages are \$10,000.00 Building Damages \$5,000.00 Electrical Damages/telecommunications \$5,000.00 New Gas Piping Cost with associated pressure test. \$2,500.00 Store Closure/loss of revenue: \$15,000.00							
Customers out of Service:	_x_YesNo		lo	Nu	mber: 1		
Suppliers out of Service:	Yes	_X_	No	Nu	Number:		
Fatalities and Injuries							
Fatalities:	Yes N	lo C	ompai	ıy:	Co	ontractor:	Public:
Injuries - Hospitalization:	Yes N	lo C	ompai	iy:	Contractor: Public		Public:
Injuries - Non-Hospitalization: Yes No Co		ompai	iy:	Co	ontractor:	Public:	
Total Injuries (including Non-Hospitalization):		ompai	ny:	Contractor: Public:		Public:	
Name	Job Func	tion	_	Yrs. w/ Comp.	Yrs. Exp.		Type of Injury

	Drug/Alcohol Testing		_x N/A
Were all employees that could have the 32 hour time frame for all other of	contributed to the incident, post-accider drugs?	nt tested within	the 2 hour time frame for alcohol or
Yes No			

2 Initial volume lost or spilled 3 Including cleanup cost

Drug/Alcohol Testing _x_					
Job Function	Test Data & Time	Location	Results		T-ma of D-ma
Job Function	Test Date & Time	Location	Pos	Neg	Type of Drug

System Description				
Describe the Operator's System: 4" plastic Main with a 1-1/4" Plastic Service				
MDU's system consists of steel and plastic.				

Pipe Failure Description					
Length of Failure (inches, feet, miles):		(1)			
Position (Top, Bottom, include position on pipe, 6 O'clock): ⁽¹⁾	Description of Failure (Corrosion Gouge, Seam Split):	(1)			
Laboratory Analysis: Yes No Performed by: Yes Yes					
Preservation of Failed Section or Component:YesNo					
If Yes - Method:					
In Custody of:					
Develop a sketch of the area including distances from roads, houses, stress inducing factors, pipe configurations, direction of flow, etc. Bar Hole Test Survey Plot, if included, should be outlined with concentrations at test points.					

Component Failure Description				
Component Failed:	(1)			
Manufacturer:	Model:			
Pressure Rating:	Size:			
Other (Breakout Tank, Underground Storage):				

Pipe Data	
Material: Medium Density Polyethene	Wall Thickness/SDR: SDR 11
Diameter (O.D.): 1-1/4"	Installation Date: 2005
SMYS:	Manufacturer:
Longitudinal Seam:	Type of Coating: Plastic pipe no coating
Pipe Specifications (API 5L, ASTM A53, etc.):	

Joining	
Туре:	Procedure:
NDT Method:	Inspected:YesNo

Pressure @ Time of Failure @ Failure Site					
Pressure @ Failure Site:		Elevation @ Failure Site:			
Pressure Readings @ Various Locations:			Direction from Failure Site		
Location/M.P./Station #	Pressure	(psig)	Elevation (ft msl)	Upstream	Downstream

Upstream Pump	Station Data _x_ N/A
Type of Product:	API Gravity:
Specific Gravity:	Flow Rate:
Pressure @ Time of Failure ⁽⁴⁾	Distance to Failure Site:
High Pressure Set Point:	Low Pressure Set Point:

Upstream Compressor Station Data	
Specific Gravity:	Flow Rate:
Pressure @ Time of Failure ⁽⁴⁾	Distance to Failure Site:
High Pressure Set Point:	Low Pressure Set Point:

Operating Pressure	
Max. Allowable Operating Pressure:	Determination of MAOP:
Actual Operating Pressure:	
Method of Over Pressure Protection:	
Relief Valve Set Point:	Capacity Adequate?YesNo

Integrity	Test After Failure		_x_ N/A
Pressure test conducted in place? (Conducted on Failed Components or Associated Piping): Yes			No
If No, tested after removal?	YesNo		
Method:			
Describe any failures during the test.			

⁴ Obtain event logs and pressure recording charts

Soil/water Conditions @ Failure Site		I/A
Condition of and Type of Soil around Failure Site (Color, Wet, Dry, Frost Depth):		
Type of Backfill (Size and Description):		
Type of Water (Salt, Brackish):	Water Analysis ⁽⁵⁾ Yes No	

External Pipe or Component Examination		
External Corrosion?YesNo (1)	Coating Condition (Disbonded, Non-existent): (1)	
Description of Corrosion:		
Description of Failure Surface (Gouges, Arc Burns, Wrinkle Bends, Cracks, Stress Cracks, Chevrons, Fracture Mode, Point of Origin):		
Above Ground:YesNo (1)	Buried: Yes No (1)	
Stress Inducing Factors: (1)	Depth of Cover: (1)	

Cathodic Protection			_x 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? Yes No			
How Discovered? (Close Interval Survey, Instrumented Pig, Annual Survey, Rectifier Readings, ECDA, etc):			

Internal Pipe or Component Examination			
Internal Corrosion: Yes No (1)	Injected Inhibitors: Yes No		
Type of Inhibitors:	Testing: Yes No		
Results (Coupon Test, Corrosion Resistance Probe):			
Description of Failure Surface (MIC, Pitting, Wall Thinning, Chevrons, Fracture Mode, Point of Origin):			

⁵ Attach copy of water analysis report

Internal Pipe or Component Examination		
Cleaning Pig Program: Yes No	Gas and/or Liquid Analysis: Yes No	
Results of Gas and/or Liquid Analysis ⁽⁶⁾		
Internal Inspection Survey: Yes No	Results ⁽⁷⁾	
Did the Operator have knowledge of Corrosion before the Incident? Yes No		
How Discovered? (Instrumented Pig, Coupon Testing, ICDA, etc.):		

Outside Fo	orce DamageN/A			
Responsible Party: Derek Johnson	Telephone No.: 605-718-0315			
Address: 809 Polaris Court Rapid City, SD 57701				
Work Being Performed: Car/Trailer came un hooked and struck	transformer/fence.			
Equipment Involved: Car/Trailer (non excavation)	(1) Called One Call System?Yes x_N/ANo			
One Call Name:	One Call Report # ⁽⁸⁾			
Notice Date:	Time:			
Response Date:	Time:			
Was Location Marked According to Procedures? Var	N/A No			
Pipeline Marking Type:	Location:			
State Law Damage Prevention Program Followed? Yes	No No State Law			
Notice Required: Yes No Response Required: Yes				
Was Operator Member of State One Call? Yes No	Was Operator on Site? Yes No			
Did a deficiency in the Public Awareness Program contribute to the accident?YesNo				
Is OSHA Notification Required? Yes No				

Natural Forces

x N/A

⁶ Attach copy of gas and/or liquid analysis report

⁷ Attach copy of internal inspection survey report

⁸ Attach copy of one-call report

Natural Force	s _x_N/A
Description (Earthquake, Tornado, Flooding, Erosion):	

Failur	e Isolation
Squeeze Off/Stopple Location and Method: Squeezed of 4" main One customer with out service.	n in two directions approximately 100' in both directions, ⁽¹⁾
Valve Closed - Upstream:	I.D.:
Time:	M.P.:
Valve Closed - Downstream:	I.D.:
Time:	M.P.:
Pipeline Shutdown Method: _x_ Manual _ Autor	natic SCADA Controller ESD
Failed Section Bypassed or Isolated: Isolated	
Performed By: Kevin Morris First Responder, Two working leads were Andrew Morse and Jamie Overby, and supervisor Jim Lien.	Valve Spacing: NA

Odorization						
Gas Odorized: Yes No	Concentration of Odorant (Post Incident at Failure Site):					
Method of Determination: Yes No	% LEL: Yes No % Gas In Air: Yes No					
	Time Taken: Yes No					
Was Odorizer Working Prior to the Incident?	Type of Odorizer (Wick, By-Pass):					
YesNo						
Odorant Manufacturer:	Type of Odorant:					
Model:						
Amount Injected:	Monitoring Interval (Weekly):					
Oderization History (Leaks Complaints Low Oderent Levels M	Ionitaring Lagations Distances from Failure Site):					

Odorization History (Leaks Complaints, Low Odorant Levels, Monitoring Locations, Distances from Failure Site):

Weather Conditions				
Temperature: Around 32 degrees	Wind (Direction & Speed): 50 MPH wind out of the North			
Climate (Snow, Rain): Cloudy with No Precipitation	Humidity:			
Was Incident preceded by a rapid weather change?Yes	_X_No			

Page **9** of **18** Form -11 Pipeline Failure Investigation Report (Rev. 03/17/2011 through Amdt. 192-116 & 195-95).

		Weather Co	onditions			<i>N/A</i>
Weather Conditions Prior t	o Incident (Cloud Cover	, Ceiling Height	ts, Snow, Rain, Fog	g): Cloudy w	ith no precipita	
		Gas Migration	n Survey			_x_ N/A
Bar Hole Test of Area:	Yes No	H	Equipment Used:			
Method of Survey (Foundations, Curbs, Manholes, Driveways, Mains, Services) ⁽⁹⁾ ⁽¹⁾						(1)
	Env	vironment Sen	sitivity Impact			x N/A
Location (Nearest Rivers, I	Body of Water, Marshlar	nds, Wildlife Re	fuge, City Water S	upplies that c	could be or wer	e affected ⁽¹⁾
by the medium loss):						
OPA Contingency Plan Av	ailable? Yes	No F	Followed? Yes	No		
	Class Lo	cation/High C	onsequence Are	a		_x_N/A
Class Location: 1 2_ Determination:	34	F L	ICA Area? Determination:	Yes	No N	/A
Odorization Required?	YesNo	N/A				
		Duassina Tas	4 Histom			14 N/A
		(Expand List as	l History Necessary)			\underline{x} N/A
	Req'd ⁽¹⁰⁾ Assessment Deadline Date	Test Date	Test Medium	Pressure (psig)	Duration (hrs)	% SMYS
Installation	N/A					
Next						
Next						
Most Recent						
Describe any problems exp	erienced during the press	sure tests.				
	Internal Line	Inspection/Ot	ther Assessment	History		<i>x</i> N/A

	<i>x</i> N/A				
	Req'd ⁽¹⁰⁾ Assessment	Assessment	Type of ILI	Other Assessment	Indicated Anomaly
	Deadline Date	Date	Tool ⁽¹¹⁾	Method ⁽¹²⁾	If yes, describe below

⁹ Plot on site description page

¹⁰ As required of Pipeline Integrity Management regulations in 49CFR Parts 192 and 195

¹¹ MFL, TFI, UT, Combination, Geometry, etc.

¹² ECDA, ICDA, SCCDA, "other technology," etc.

Internal Line Inspection/Other Assessment History (Expand List as Necessary)					<i>x</i> N/A	
Initial					Yes	No
Next					Yes	No
Next					Yes	No
Most Recent					Yes	No
Describe any previously indicated anomalies at the failed pipe, and any subsequent pipe inspections (anomaly digs) and remedial actions.						

Pre-Failure Conditions and Actions	x	N/A
Was there a known pre-failure condition requiring ⁽¹⁰⁾ the operator to schedule evaluation and remediation? Yes (describe below or on attachment)No		
If there was such a known pre-failure condition, had the operator established and adhered to a required $^{(10)}$ evaluation and remediation schedule? Describe below or on attachmentYesNoN/A	1	
Prior to the failure, had the operator performed the required ⁽¹⁰⁾ actions to address the threats that are now known to be re the cause of this failure? <u>Yes</u> No <u>N/A</u> List below or on an attachment such operator-identified threats, and operator actions taken prior to the accident.	lateo	1 to
Describe any previously indicated anomalies at the failed pipe, and any subsequent pipe inspections (anomaly digs) and a actions.	reme	edial

Maps & Records				
Are Maps and Records Current? ⁽¹³⁾ Comments:	_X Yes No			
	Leak Survey History	x N/A		

Leak Survey History (Trend Analysis, Leak Plots):

Pipeline Operation History

N/A

Description (Repair or Leak Reports, Exposed Pipe Reports):

¹³ Obtain copies of maps and records

	Pipelin	e Operation	n History			N
Did a Safety Related Condition Exist Pr Unaccounted For Gas: 11-26-2015 Odd	rior to Failure? orant Call, Nothing	Yes	_XNo ered, it was dee	Reported? cided that ove	Yes en probably just	_N/ANo
11-26-2017 Survey leak was repaired.						
Over & Short/Line Balance (24 hr., We	ekly, Monthly/Tre	nd):				
	Operator/C	Contractor 1	Error			x_N
Name:			Job Funct	ion:		
Title:			Years of I	Experience:		
Training (Type of Training, Background	d):					
Was the person "Operator Qualified" as	applicable to a pro	ecursor abno	ormal operating	g condition?	Yes N	loN/A
Was qualified individual suspended from	m performing cove	ered task	_YesN	o N/A		
Type of Error (Inadvertent Operation of	f a Valve):					
Procedures that are required:						
Actions that were taken:						
Pre-Job Meeting (Construction, Mainten	nance, Blow Dowr	n, Purging, Is	solation):			
Prevention of Accidental Ignition (Tag	& Lock Out, Hot V	Weld Permit):			
Procedures conducted for Accidental Ig	nition:					
Was a Company Inspector on the Job?	YesN	No				
Was an Inspection conducted on this po	ortion of the job?	Yes	No			
Additional Actions (Contributing factor conducted):	rs may include nun	nber of hours	s at work prior	to failure or t	ime of day worl	c being
Training Procedures:						
Operation Procedures:						
Controller Activities:						
Name	Titl	e	Yea Experi	rs H ence P	lours on Duty rior to Failure	Shift
	1					

High/Low Pressure Shutdown:

Alarm Parameters:

Page **12** of **18** Form -11 Pipeline Failure Investigation Report (Rev. 03/17/2011 through Amdt. 192-116 & 195-95).

x N/A

Additional Actions Taken by the Operator

N/A

Make notes regarding the emergency and Failure Investigation Procedures (Pressure reduction, Reinforced Squeeze Off, Clean Up, Use of Evacuators, Line Purging, closing Additional Valves, Double Block and Bleed, Continue Operating downstream Pumps):

Photo Documentation ⁽¹⁾

Overall Area from best possible view. Pictures from the four points of the compass. Failed Component, Operator Action, Damages in Area,

Address Markings, etc.

Photo No.	Description	Photo No.	Description			
1		16				
2		17				
3		18				
4		19				
5		20				
6		21				
7		22				
8		23				
9		24				
10		25				
11		26				
12		27				
13		28				
14		29				
15		30				
Camera	Туре:					

Additional Information Sources							
Agency	Nan	ne	Title		Phone Number		
Police:	volice: Rapid City Police Department						
Fire Dept.: Rapid City Fire Depart		epartment					
State Fire Marshall:							
State Agency:	South Dakota Pub	lic Utilities					
NTSB:							
EPA:							
USCG:							
FBI:							
ATF:							
OSHA:							
Insurance Co.: Western United L AAA AUI 0036878		ife Policy # 354					
FRA:							
MMS:							
Television:							
Newspaper:							
Other:							
		Perso	ons Interviewed	_			
Nai	me		Title		Phone Number		
Ron Blum		Region Director			605-355-4004		
Jim Lien		Construction Supervisor					
Mark Knodel		Operation Supe	ervisor				
Mike Letcher		Operations Manager/West River Electric			605-393-1500		

Event Log					
Sequence of events Department and Po	s prior, during, and after the incident by time. (Consider the events of all parties involved in the incident, Fire blice reports, Operator Logs and other government agencies.)				
Time / Date Event					
5/3/18 ~2:45	Trailer hauling car detached from truck hitch and crashed into Market a. Gas was released from damaged meter set and ignited				
~3:00	MDU first responder, Kevin Morris, arrived on scene				
~3:00	RC Fire Department arrived on scene				
~3:15	MDU supervisors, Jim Lien and Mark Knodel, arrived on scene				
~3:15 - 3:30	MDU repair crew, (leads Jamie Overby and Andrew Morse) arrived on scene				
~4:05	remote holes and squeezed off of 4" MDPE main were completed: gas supply to fire was eliminated and the fire extinguished				

Investigation Contact Log					
Time	Date	Name Description			

Failure Investigation Documentation Log							
Operator:		Unit #:	CPF	#:		Date	:
Appendix Docum		entation Description			Date	FOIA	
					Received	Yes	No

Site Description

Provide 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. Photos should be taken from all angles with each photo documented. Additional areas may be needed in any area of this guideline.