

SDG&E, June 14, 2019

Rulemaking (R.) 15-01-008 to Adopt Rules and Procedures Governing Commission Regulated Natural Gas Pipelines and Facilities to Reduce Natural Gas Leaks Consistent with Senate Bill 1371, Leno.
 In Response to Data Request, R15-01-008 2019 June Report
 Appendix 4; Rev. 03/29/19

Notes:
 Definitions in Data Request R15-01-008 2018 June Report
 If highlighted cells are filled in, the other cells will auto-populate

Summary of Data by Pipeline Facility/Material and Results for Annual System Leak Rate and Resulting Number of Unknown Leaks for Each Pipeline Facility/Material

Facility/Material	Total System Miles per material type	Miles on Annual Survey [M _{x,A}]	Miles on Multi-Year Survey Cycles [M _{x,Tot}]	Survey Interval (yrs) [I]	Miles Surveyed Annually from Multi-Year Survey Cycles [M _{x,I}]	Total # of Leaks Detected from Survey [N _{x,I}]	2016 Annual Leak Rate [R _{x,1}]	2017 Annual Leak Rate [R _{x,2}]	2018 Annual Leak Rate [R _{x,3}]	3-year Average Leak Rate [Leaks / Mile / Yr]	# of Unknown Leaks	Total # of Leaks Detected from O&M* [N _{x,o}]
									$R_{x,3} = \frac{N_{x,L}}{M_{x,A} + (I \times M_{x,I})}$	$\bar{R}_x = \frac{1}{3} \sum_{i=1}^3 R_{x,i}$	$N_{x,unk} = \bar{R}_x \times (M_{x,Tot} - M_{x,I}) \times \frac{I}{2}$	
Main/Vintage* Plastic	1,747	1,747	0	1	0	16	N/A	N/A	0.009	0.00916	-	47
Main/Plastic	N/A	N/A	N/A	3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Main/Plastic	N/A	N/A	N/A	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Main/Plastic	2,849	237	2,612	5	534	1	0.0017	0.0019	0.000	0.00034	2	9
Main/Unprotected Steel	N/A	N/A	N/A	3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Main/Unprotected Steel	N/A	N/A	N/A	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Main/Unprotected Steel	N/A	N/A	N/A	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Main/Vintage* Protected Steel**	455			1			N/A	N/A	-	-	-	N/A
Main/Protected Steel	N/A	N/A	N/A	3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Main/Protected Steel	N/A	N/A	N/A	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Main/Protected Steel	3,571	1,076	2,495	5	426	18	0.030	0.006	0.006	0.00591	31	116
Service/Vintage* Plastic	1,348	1,348	0	1	0	16	N/A	N/A	0.01	0.01187	-	54
Service/Plastic	N/A	N/A	N/A	3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Service/Plastic	N/A	N/A	N/A	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Service/Plastic	2,400	56	2,344	5	349	0	0.017	0.010	-	-	-	12
Service/Unprotected Steel	N/A	N/A	N/A	3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Service/Unprotected Steel	N/A	N/A	N/A	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Service/Unprotected Steel	N/A	N/A	N/A	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Service/Vintage* Protected Steel**	320			1			N/A	N/A	-	-	-	N/A
Service/Protected Steel	N/A	N/A	N/A	3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Service/Protected Steel	N/A	N/A	N/A	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Service/Protected Steel	2,628	985	1,643	5	244	20	0.0820	0.0179	0.00907	0.01349	47	220
Service/Copper	N/A	N/A	N/A	3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Service/Copper	N/A	N/A	N/A	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Service/Copper	N/A	N/A	N/A	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	11,448	5,449	9,094	N/A	1,552	71				N/A	80	458

*Definitions for "vintage" materials:

Vintage Plastic: Pipe installed before 1986
 Vintage Protected Steel: Pipe installed before 1950
 Total System Miles of Main & Service/ Vintage Protected Steel is included in the Total Miles of Main/Service Protected Steel due to the fact that there was no leakage associated with Vintage Protected steel material in 2018. the Total System Miles listed for Main & service/ Vintage Protected Steel is for informational purpose.

** Estimated Emissions by Pipeline Facility/Material for Each Leakage Category

Leakage Category	Emission Factor (Mscf/day/leak)	2018 Emissions from Leaks detected Prior to 2018 (Mscf)	2018 Emissions from Leaks Detected from 2018 Survey (Mscf)	2018 Emissions from O&M* Leaks Detected (Mscf)	2018 Estimated Emissions from Unknown Leaks (Mscf)	Total Estimated 2018 Emissions from Distribution Pipelines (Mscf)
Main/Vintage* Plastic	0.2988	0	2,063	19	0	2,082
Main/Plastic	0.2988	N/A	N/A	N/A	N/A	N/A
Main/Plastic	0.2988	N/A	N/A	N/A	N/A	N/A
Main/Plastic	0.2988	0	199	5	195	399
Main/Unprotected Steel	0.1548	N/A	N/A	N/A	N/A	N/A
Main/Unprotected Steel	0.1548	N/A	N/A	N/A	N/A	N/A
Main/Unprotected Steel	0.1548	0	0	0	N/A	0
Main/Vintage* Protected Steel	0.0612	N/A	N/A	N/A	N/A	N/A
Main/Protected Steel	0.0612	N/A	N/A	N/A	N/A	N/A
Main/Protected Steel	0.0612	N/A	N/A	N/A	N/A	N/A
Main/Protected Steel	0.0612	0	159	11	683	853

Leakage Category	Emission Factor (Mscf/day/leak)	2018 Emissions from Leaks detected Prior to 2018 (Mscf)	2018 Emissions from Leaks Detected from 2018 Survey (Mscf)	2018 Emissions from O&M* Leaks Detected in 2018 (Mscf)	2018 Estimated Emissions from Unknown Leaks (Mscf)	Total Estimated 2018 Emissions from Distribution Pipelines (Mscf)
Facility/Material						
Service/Vintage* Plastic	0.0089	0	25	1	0	25
Main/Unknown	0.2988	0	0	2	0	2
Service/Plastic	0.0089	N/A	N/A	N/A	N/A	N/A
Service/Plastic	0.0089	N/A	N/A	N/A	N/A	N/A
Service/Plastic	0.0089	0	1	0	0	1
Service/Unprotected Steel	0.0600	N/A	N/A	N/A	N/A	N/A
Service/Unprotected Steel	0.0600	N/A	N/A	N/A	N/A	N/A
Service/Unprotected Steel	0.0600	N/A	N/A	N/A	N/A	N/A
Service/Vintage* Protected Steel	0.0276	N/A	N/A	N/A	N/A	N/A
Service/Protected Steel	0.0276	N/A	N/A	N/A	N/A	N/A
Service/Protected Steel	0.0276	N/A	N/A	N/A	N/A	N/A
Service/Protected Steel	0.0276	0	89	10	475	574
Service/Copper	0.0226	N/A	N/A	N/A	N/A	N/A
Service/Copper	0.0226	N/A	N/A	N/A	N/A	N/A
Service/Copper	0.0226	N/A	N/A	N/A	N/A	N/A
Service/Unknown	0.0600	0	0	1	0	1
Total	N/A	0	2,535	49	1,353	3,937

O&M leaks include any other pipeline leaks that are discovered during the year from operations and maintenance activity, third party and gas odor reports, etc. that are not accounted for in other categories of this worksheet.

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This summary purposefully should exclude damages, blowdowns, component emissions and component leaks.

	Count of Leaks Carried over from Prior Year	Count of Leaks Discovered in the Year of Interest	Count of Leaks Repaired in the Year of Interest	Average Days to Repair Leaks	Count of Estimated Unsurveyed Leaks in the Year of Interest	Count of Remaining Known Leaks at final day of the Year of Interest (12/31/18)	Emissions from Leaks Carried over from Prior Year.	Emissions from Leaks Discovered in the Year of Interest.	Emissions from Estimated Unsurveyed Leaks in the Year of Interest	Total Emissions in the Year of Interest [Mscf of Natural Gas]	Explanatory Notes / Comments
Grade 1	0	419	419	1	N/A*	0	0	1329	N/A	N/A	Column E - The duration of Grade 1 leaks is estimated based on company policy.
Grade 2	0	121	119	4	N/A*	2	0	1250	N/A	N/A	
Grade 3	0	5	5	8	N/A*	0	0	5	N/A	N/A	
Graded Leak Total	0	545	543	N/A**	N/A*	2	0	2584	N/A*	N/A	
Above Ground Hazardous	0	0	0	N/A**	N/A*	0	0	0	N/A*	N/A	
Above Ground Non-Hazardous	0	0	0	N/A**	N/A*	0	0	0	N/A*	N/A	
Above Ground Non-Hazardous Minor	0	0	0	N/A**	N/A*	0	0	0	N/A*	N/A	
AG Total	0	0	0	N/A**	N/A*	0	0	0	N/A*	N/A	
Total of All Leaks	0	545	543	N/A**	N/A*	2	0	2584	N/A*	N/A	
Main/Plastic	0	19	19	16	2	0	0	204	195	399	
Main/Vintage* Plastic	0	72	71	2	0	1	0	2082	0	2082	
Main/Unprotected Steel	0	0	0	0	0	0	0	0	0	0	
Main/Protected Steel	0	134	134	2	31	0	0	170	683	853	
Main/Vintage* Protected Steel	0	0	0	0	0	0	0	0	0	0	
Main/Unknown	0	2	2	0	0	0	0	2	0	2	
Service/Plastic	0	11	11	13	0	0	0	1	0	1	
Service/Vintage* Plastic	0	63	63	2	0	0	0	25	0	25	
Service/Unprotected Steel	0	0	0	0	0	0	0	0	0	0	
Service/Protected Steel	0	240	240	2	47	0	0	99	475	574	
Service/Vintage* Protected Steel	0	0	0	0	0	0	0	0	0	0	
Service/Copper	0	0	0	0	0	0	0	0	0	0	
Service/Unknown	0	4	3	0	0	1	0	0	0	0	
Total	0	545	543	N/A**	80	6	0	2584	1,353	3,937	

* Since the estimated number of Unknown Leaks occurs at various points in time during the leak survey cycle, estimation of the number of leaks by leak grade, and whether or not the leaks are Below Ground or Above Ground may be misleading using the suggested methodology. The wording in the column headers is also misleading since these numbers would be an estimation rather than a "Count". The estimated emissions in these categories can not be provided since they are dependent on an estimated number of leaks.
** Totals are not applicable in these columns.

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Notes:

Use a formula-derived value with the formula used in the Annual Emissions column. Do not use a copy and paste-as-value.

At the end of Annual Emissions Column, add a summation total in a cell for a column total, and then highlight orange.

Distribution Main & Service Pipeline Blowdowns:

ID	Geographic Location	Number of Blowdown Events	Pipe Size (nominal) (in)	Length of Pipe (ft)	Pressure (psi)	Annual Emissions (Mscf)	Explanatory Notes / Comments
N/A	SDG&E Territory	248	N/A	N/A	N/A	0.666	Distribution Odor Intensity Tests
N/A	SDG&E Territory	N/A	16	15.5	320	0.525	Abandoned HP Pipe
N/A	SDG&E Territory	N/A	2	2.067	320	0.001	Abandoned HP Pipe
N/A	SDG&E Territory	N/A	20	19.5	320	1.031	Abandoned HP Pipe
N/A	SDG&E Territory	N/A	3	3.124	320	0.004	Abandoned HP Pipe
N/A	SDG&E Territory	N/A	4	4.124	320	0.009	Abandoned HP Pipe
N/A	SDG&E Territory	N/A	6	6.249	320	0.030	Abandoned HP Pipe
N/A	SDG&E Territory	N/A	8	8.125	320	0.069	Abandoned HP Pipe
N/A	SDG&E Territory	N/A	4	4.124	55	0.002	Abandoned HP Pipe
N/A	SDG&E Territory	N/A	1 1/4	1.318	55	0.000	Abandoned HP Pipe
N/A	SDG&E Territory	N/A	1/2	0.437	55	0.000	Abandoned HP Pipe
N/A	SDG&E Territory	N/A	2.00	1.931	55	0.000	Abandoned HP Pipe
N/A	SDG&E Territory	N/A	3	2.876	55	0.001	Abandoned HP Pipe
N/A	SDG&E Territory	N/A	4	3.816	55	0.002	Abandoned HP Pipe
N/A	SDG&E Territory	N/A	6	5.621	55	0.005	Abandoned HP Pipe
N/A	SDG&E Territory	N/A	1 1/2	1.61	55	0.000	Abandoned HP Pipe
N/A	SDG&E Territory	N/A	1 1/4	1.372	55	0.000	Abandoned HP Pipe
N/A	SDG&E Territory	N/A	1	1.049	55	0.000	Abandoned HP Pipe
N/A	SDG&E Territory	N/A	10	10.25	55	0.026	Abandoned HP Pipe
N/A	SDG&E Territory	N/A	2	2.067	55	0.000	Abandoned HP Pipe
N/A	SDG&E Territory	N/A	3	3.124	55	0.001	Abandoned HP Pipe
N/A	SDG&E Territory	N/A	30	29.376	55	0.683	Abandoned HP Pipe
N/A	SDG&E Territory	N/A	4	4.124	55	0.002	Abandoned HP Pipe
N/A	SDG&E Territory	N/A	6	6.249	55	0.006	Abandoned HP Pipe
N/A	SDG&E Territory	N/A	1 1/2	1.533	55	0.000	Abandoned HP Pipe
N/A	SDG&E Territory	N/A	1 1/4	1.318	55	0.000	Abandoned HP Pipe
N/A	SDG&E Territory	N/A	1	1.067	55	0.000	Abandoned HP Pipe
N/A	SDG&E Territory	N/A	1/2	0.437	55	0.000	Abandoned HP Pipe
N/A	SDG&E Territory	N/A	2	1.931	55	0.000	Abandoned HP Pipe
N/A	SDG&E Territory	N/A	3	2.876	55	0.001	Abandoned HP Pipe
N/A	SDG&E Territory	N/A	1 1/2	1.61	55	0.000	Abandoned HP Pipe
N/A	SDG&E Territory	N/A	1 1/4	1.372	55	0.000	Abandoned HP Pipe
N/A	SDG&E Territory	N/A	1	1.049	55	0.000	Abandoned HP Pipe

ID	Geographic Location	Number of Blowdown Events	Pipe Size (nominal) (in)	Length of Pipe (ft)	Pressure (psi)	Annual Emissions (Mscf)	Explanatory Notes / Comments
N/A	SDG&E Territory	N/A	2	2.067	55	0.000	Abandoned HP Pipe
N/A	SDG&E Territory	N/A	3	3.124	55	0.001	Abandoned HP Pipe
N/A	SDG&E Territory	N/A	3/4	0.76	55	0.000	Abandoned HP Pipe
N/A	91902	1	N/A	N/A	N/A	128.000	Blowdown & Purged
N/A	91902	1	N/A	N/A	N/A	169.000	Blowdown & Purged
N/A	SDG&E Territory	1	N/A	N/A	N/A	9.210	Tie-In Project
N/A	SDG&E Territory	1	N/A	N/A	N/A	136.000	Line removal

Sum Total 445

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Notes:

Use a formula-derived value with the formula used in the Annual Emissions column. Do not use a copy and paste-as-value.

At the end of Annual Emissions Column, add a summation total in a cell for a column total, and then highlight orange.

The emissions captured on this tab represent the emissions associated with the operational design and function of the component. Any intentional release of natural gas for safety or maintenance purposes should be included on the Blowdowns worksheet.

Distribution Main & Service Pipeline Component Vented Emissions (see note above):

Total Number of Devices	Device Type	Bleed Rate	Manufacturer	Engineering or Manufacturer's based Estimate of Emissions	Annual Emissions (Mscf)	Explanatory Notes / Comments
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Note: No devices

Sum Total **0**

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Notes:
Use a formula-derived value with the formula used in the Annual Emissions column. Do not use a copy and paste-as-value.
At the end of Annual Emissions Column, add a summation total in a cell for a column total, and then highlight orange.
The emissions captured on this tab represent the emissions associated unintentional leaks that if repaired would not leaking. If the component is releasing gas or "bleeding" as a result of its design or function then it is not to be

Distribution Main & Service Pipeline Component Fugitive Leaks (see note above):

Total Number of Devices	Device Type	Bleed Rate	Manufacturer	Discovery Date (MM/DD/YY)	Repair Date (MM/DD/YY)	Number of Days Leaking	Emission Factor (Mscf/day)	Annual Emission (Mscf)	Explanatory Notes / Comments
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Note: No Component Leaks

Sum total 0

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Header column "Comment" boxes displayed below for reference.	
Column Heading	Description and Definition of Required Contents (IF not self-explanatory)
Pipeline Leaks	
ID	
Geographic Location	GIS, zip code, or equivalent
Pipe Classification	MA = distribution main, above ground MB = distribution main, below ground DA = distribution service, above ground DB = distribution service, below ground
Pipe Material	C = copper CI = cast iron P = plastics (Acetyl, ABS, PE, PVC, etc.) PB = cathodically protected steel, bare PC = cathodically protected steel, coated UB = unprotected steel, bare UC = unprotected steel, coated
Pipe Size (nominal)	
Pipe Age (months)	
Pressure (psi)	MOP = maximum operating pressure over the past year

<p>Leak Grade</p>	<p>If the utility uses grades for above ground leaks, it is unnecessary to use the AH,AN, or AM designations.</p> <p>1 = grade 1 2 = grade 2 2+ = grade 2+ 3 = grade 3</p> <p>AH = Above Ground Hazardous synonymous with Grade 1. AN = Above Ground Non-Hazardous, synonymous with Grade 2 and 2+. AM = Above Ground Non-Hazardous Minor (akin to grade 3 below ground leak). N = non-graded or ungraded</p>
<p>Upgraded Leak Grade or Downgraded Leak Grade</p>	<p>U: Upgraded Leak such as a grade 2 or 3 leak that was surveyed again and changed designation to grade 1 or 2.</p> <p>D: downgraded leak, such as a grade 1 or 2 leak that was surveyed again and changed designation to grade 2 or 3.</p>
<p>Above Ground or Below Ground</p>	<p>A = Above Ground B = below ground</p>
<p>Leak Discovery Method</p>	<p>S = Routine Leak Survey (This discovery method should be parsed and the emissions summarized into leaks carried over from before 2016, and those detected in 2016. The totals for these subcategories should be carried over to column C43 through D63 on the Unsurveyed Pipeline Leaks tab.)</p> <p>M = O&M (E.G. O&M Activities, Third party reports, customer odor reports etc.)</p> <p>O = Other (This will be grouped with M in the summary categorization of leaks.)</p>
<p>Discovery Date (MM/DD/YY)</p>	

New Column

Re-Grade Date (MM/DD/YY)	
Repair Date (MM/DD/YY)	Date that the pipeline repair stopped the leak. Any associated blowdowns resulting from the repair should be included in the blowdowns tab.
Scheduled Repair Date (MM/DD/YY)	If leak is open, specify the scheduled date of repair; Otherwise type "M," signifying that the leak is being monitored with no scheduled date of repair; Then, provide the reason for not scheduling a repair in Column P.
Reason for Not Scheduling a Repair	If Repair Date is blank, and Scheduled Repair Date (Column O) = "M", then provide the reason for not scheduling a repair.
Number of Days Leaking	If the leak was discovered by survey in the year of interest, then assume leaking from January 1st of subject year <u>thru</u> repair date or December 31st of subject year, which ever is earlier. (E.G. Days Leaking = Repair - Jan 1st + 1 day.) (For days leaking for leaks carried over use January 1st as start date for emissions calculations.) For O&M discovered leaks, assume that the leak begins with the discovery date <u>thru</u> repair date or December 31st of subject year, whichever is earlier.

New Column

Number of Days to Repair	Use only Repair-Discovery +1. Do not use January 1st for time to repair. For regraded leaks, use Repair Date - Regrade Date +1.
Emission Factor (Mscf/Day)	
Annual Emissions (Mscf)	
Explanatory Notes / Comments	

Unsurveyed Pipeline Leaks	
2017 Emissions from O&M* Leaks Detected in 2016 (Mscf)	O&M Sources Include: O&M Activities Customer Odor Reports Third Party Reports and other
2017 Estimated Emissions from Unknown Leaks (Mscf)	Calculation based on the input from column J above.

Pipeline Leaks Summary	
Count of Leaks Carried over from Prior Year	Based on a leak start date prior to the first day of the year of interest.
Count of Leaks Discovered in the Year of Interest	The total number of leaks by grade or category discovered in the year of interest. If a leak is downgraded to not leaking, do not count it.
Count of Leaks Repaired in the Year of Interest	
Average Days to Repair Leaks	The average days to repair leaks should be baase on the formula: (Repair Date/Time minus Discovery Date/Time) plus (one day, unless using a discrete time stamp for leak repairs), then take the sum and divide by number of leaks repaired by grade to get the average days to repair.

<p>Count of Estimated Unsurveyed Leaks in the Year of Interest</p>	<p>For leaks identified in Unsurveyed areas extrapolate the proportion of leak counts by grade that were found in the respective areas based on the year or periods used to estimate the unsurveyed leak count.</p> <p>If the unsurveyed leak count was based on the current year leak count by grade detected then use the current proportion of graded leak count applied to the unsurveyed leaks.</p>
<p>Count of Remaining Leaks at final day of the Year of Interest (12/31/xx)</p>	<p>This count is only of the actual leaks detected in the operator's system that have not been repaired as of 12/31 of the year of interest.</p>
<p>Emissions from Leaks Carried over from Prior Year.</p>	<p>Based on a leak start date prior to the first day of the year of interest.</p> <p>This includes leaks discovered through O&M and survey activities.</p>
<p>Emissions from Leaks Discovered in the Year of Interest.</p>	<p>The total number of leaks by grade or category discovered in the year of interest.</p> <p>This includes leaks discovered through O&M and survey activities.</p>
<p>Emissions from Estimated Unsurveyed Leaks in the Year of Interest</p>	<p>The emissions by grade would be on the same basis that used to extrapolate the count of leaks in the unsurveyed areas.</p> <p>For example: For leaks identified in Unsurveyed areas extrapolate the proportion of leak emissions by grade that were found in the respective areas based on the year or periods used to estimate the unsurveyed leak count.</p> <p>If the unsurveyed leak count was based on the current year leaks detected then use the current proportion of graded leaks applied to the unsurveyed leak emissions.</p>
<p>Total Emissions in the Year of Interest [Mscf of Natural Gas]</p>	

All Damages	
ID	

Geographic Location	GIS, zip code, or equivalent
Damage Type	E = excavation damage N = natural force damage O = other outside force damage
Pipe Classification	MA = distribution main, above ground MB = distribution main, below ground DA = distribution service, above ground DB = distribution service, below ground
Pipe Material	C = copper CI = cast iron P = plastics (Acetal, ABS, PE, PVC, etc.) PB = cathodically protected steel, bare PC = cathodically protected steel, coated UB = unprotected steel, bare UC = unptotected steel, coated
Pipe Size (nominal)	
Pipe Age (months)	
Pressure (psi)	MOP = maximum operating pressure over the past year
Leak Grade	1 = grade 1 2 = grade 2 2+ = grade 2+ 3 = grade 3 N = Non-Graded
Above Ground or Below Ground	AH = above ground, hazardous AN = above ground, non-hazardous B = below ground
Discovery Date (MM/DD/YY)	
Repair Date (MM/DD/YY)	

Number of Days Leaking	<p>If date and time stamp are reliable and used consistently by respondent, then emissions may be calculated based on actual time leaking. E.G. Repair time - damage event time = duration of event.</p> <p>If respondent has average or historical leak duration based on the nature and circumstances of damages, then these may be applied to like damage events. The emissions factors should be adequately supported and explained in the filing.</p> <p>If actual time stamps and historical averages are not available, then whole days should be used in the engineering calculation. The leak begins with the damage event date thru repair date or December 31st of subject year, whichever is later. E.G. Days Leaking = Repair date - date of damage + 1 day.</p>
Emission Factor or Engineering Estimate (Mscf/Day)	
Annual Emissions (Mscf)	
Explanatory Notes / Comments	

Blowdowns	
ID	
Geographic Location	GIS, zip code, or equivalent
Number of Blowdown Events	If counting a series of small blowdowns associated with services such as MSA replacement, or Service pipe of small diameter or section length then enter total and the formula in the explanation column.
Pipe Size (nominal)	
Length of Pipe	

Pressure (psi)	MOP = maximum operating pressure over the past year
Annual Emissions (Mscf)	
Explanatory Notes / Comments	

Component Vented Emissions	
Total Number of Devices	
Device Type	P = pneumatic device H = hydraulic valve operator T = turbine valve operator PR = pressure relief valve O = other devices
Bleed Rate	L = low bleed I = intermittent bleed H = high bleed NA = not applicable
Manufacturer	
Engineering or Manufacturer's based Estimate of Emissions	
Annual Emissions (Mscf)	
Explanatory Notes / Comments	

Component Leaks	
Total Number of Devices	
Device Type	P = pneumatic device H = hydraulic valve operator T = turbine valve operator PR = pressure relief valve O = other devices

Bleed Rate	L = low bleed I = intermittent bleed H = high bleed NA = not applicable
Manufacturer	
Discovery Date (MM/DD/YY)	List the actual discovery date. If the leak was discovered in the year of interest, then we will assume the component was leaking from the beginning of the year for emissions reporting purposes.
Repair Date (MM/DD/YY)	Date that the component repair stopped the leak. Any associated blowdowns as a result of the repair should be included in the blowdowns tab.
Number of Days Leaking	Assume Leaking from January 1 of subject year or prior survey date, whichever is later, thru the repair date (if repaired in year of interest) or December 31 of subject year, whichever is earlier. For O&M discovered leaks, assume that the leak begins with the discovery date <u>thru</u> repair date or December 31st of subject year, whichever is earlier.
Emission Factor (Mscf/day)	
Annual Emission (Mscf)	
Explanatory Notes / Comments	