

Facility : B-6 500 Leak

Date : 9/9/2019

Enter data in shaded fields to calculate gas volumes released due to leak and/or blowdown of system.

|                             |             |
|-----------------------------|-------------|
| Hours of leak               | 0.5         |
| Diameter of hole (inches)   | 0.0625      |
| Line Pressure at Leak       | 300         |
| <b>Volume of Gas Leaked</b> | <b>0.61</b> |

NOTE: Enter Components on the Gas Leak or Gas Blowdown sheet as needed.

Hourly Basis

Rectangle or Line Crack

0.61 MSCF

|                    |         |
|--------------------|---------|
| Length, in.        | 0       |
| Width, in.         | 0       |
| Eqv. Diameter, in. | #DIV/0! |

Calculations:

Volume of Gas Leaked (MSCF) = Diameter\*Diameter\*(Upstream Gauge Pressure + Atmospheric Pressure)\*Hours of Leak

\*\*Reference: Pipeline Rules of Thumb Handbook, 3rd Edition, McAllister. Page 260. Assuming Standard Temperature and Pressure (14.7 psi and 60 F)

|                                 |             |
|---------------------------------|-------------|
| Footage of Pipe blowdown        | 47520       |
| Initial line pressure           | 437         |
| Diameter of Pipe (inches)       | 14          |
| <b>Volume of Gas Blown Down</b> | <b>1809</b> |

MSCF

Calculations:

Volume of Gas Blown Down (MSCF) = Volume at pipeline conditions (ft3)\*(Gauge Pressure (psig)+Atmospheric Pressure 13.7 psi)\*Standard Temperature (60F) / (1000 scf/mscf)\*Standard Pressure (14.7psi)\*Temperature(F)\*Z Factor

Volume at pipeline conditions (scf) = Diameter/12 (ft)\*Diameter/12 (ft)\*PI/4\*Length of pipe (ft)

\*\*Reference: Gas Pipeline Hydraulics, Menon (2005) Pages 132-134. Assuming the Ideal Gas Law and Tpipeline = Tatm.

|                       |                  |                    |
|-----------------------|------------------|--------------------|
| <b>Total Gas Loss</b> | <b>1809 MSCF</b> | <b>1.809 MMSCF</b> |
|-----------------------|------------------|--------------------|

Cause/ Reason: Unknown

Corrective Action: Isolated and blew down

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