

Orifice Plate Gas Volume Calculation Worksheet

Well/Facility: _____

Integrate from: _____ (time) on _____ (date), to: _____ (time) on _____ (date)

Location Data

(a) Elevation: _____ (feet MSL) (b) Atmospheric Pressure: _____ (psi)
 (c) Gravity: _____

$$14.73 - \frac{0.496x(a)}{1000}$$

Orifice Data

(d) Orifice Plate ID: _____ (inches) (e) Meter Tube ID: _____ (inches)
 (f) Beta Ratio: _____ ($d \div e$)
 (g) Static Pressure taken from which tap? ___ upstream (Y_1) ___ downstream (Y_2)
 (h) ___ Flange Taps ___ Pipe Taps -----> (use Tables in Appendix C to calculate factors)

Chart Recorder Data:			Chart Type:			
DP Range	(i)	(inches water)	Scale:	_____ Sq. Root	_____ Percent	_____ Direct*
LP Range	(j)	(psi)	Scale:	_____ Sq. Root	_____ Percent	_____ Direct*
Temp. Range	(k)	(°F)	Scale:	_____ Sq. Root	_____ Percent	_____ Direct*

Chart Readings:	Roots	Squared =	Percent	x Range =	Direct	
Average DP (red)		Squared =		x (i) _____ =	(m) (in)	h_w
Average LP (blue)		Squared =		x (j) _____ =	(n) (psi)	
Average Temp. (grn)		Squared =		x (k) _____ =	(p) (°F)	T_f

Is atmospheric pressure included in LP reading?

_____ Yes ---> Absolute LP = Average LP (n) = ----->

_____ No ---> Absolute LP = Average LP (n) = _____ + atmos. press. (b) _____ = (q) (psia) P_f

$psig = (q) - (b)$

AGA Calculations:

$b = \frac{h_w}{P_f}$

$psig =$ _____

	F_b x	F_r x	$Y_{(1 \text{ or } 2)}$ x	F_{pb} x	F_{tb} x	F_{tf}	F_{gr} x	F_{pv} x (Psig!)	= C'
$C' =$				1.000	1.000				(s)
Table:	B1	B2	B3-B4	D1	D2	D3	D4	D5	

$$Q_{sc} = C' \sqrt{h_w p_f} = (s) \text{ --- } x \sqrt{(m) \text{ --- } \text{in.} (q) \text{ --- } \text{psia}} = (t) \text{ --- } \frac{\text{scf}}{\text{Hr}}$$

(r) Flowing time: _____ hours

$$V = Q_{sc} \times t = (t) \text{ --- } \frac{\text{scf}}{\text{hr}} \times \frac{(r) \text{ --- } \text{hours}}{1000} = \text{ --- } \text{Mscf}$$

*Do the chart ranges match the element range(s)? _____ Yes _____ No -----> Calculate %

Elevation (feet msl)	Atmospheric Pressure (psia)	Elevation (feet msl)	Atmospheric Pressure (psia)	Elevation (feet msl)	Atmospheric Pressure (psia)
0	14.73	4,000	12.75	8,000	10.76
100	14.68	4,100	12.70	8,100	10.71
200	14.63	4,200	12.65	8,200	10.66
300	14.58	4,300	12.60	8,300	10.61
400	14.53	4,400	12.55	8,400	10.56
500	14.48	4,500	12.50	8,500	10.51
600	14.43	4,600	12.45	8,600	10.46
700	14.38	4,700	12.40	8,700	10.41
800	14.33	4,800	12.35	8,800	10.37
900	14.28	4,900	12.30	8,900	10.32
1,000	14.23	5,000	12.25	9,000	10.27
1,100	14.18	5,100	12.20	9,100	10.22
1,200	14.13	5,200	12.15	9,200	10.17
1,300	14.09	5,300	12.10	9,300	10.12
1,400	14.04	5,400	12.05	9,400	10.07
1,500	13.99	5,500	12.00	9,500	10.02
1,600	13.94	5,600	11.95	9,600	9.97
1,700	13.89	5,700	11.90	9,700	9.92
1,800	13.84	5,800	11.85	9,800	9.87
1,900	13.79	5,900	11.80	9,900	9.82
2,000	13.74	6,000	11.75	10,000	9.77
2,100	13.69	6,100	11.70	10,100	9.72
2,200	13.64	6,200	11.65	10,200	9.67
2,300	13.59	6,300	11.61	10,300	9.62
2,400	13.54	6,400	11.56	10,400	9.57
2,500	13.49	6,500	11.51	10,500	9.52
2,600	13.44	6,600	11.46	10,600	9.47
2,700	13.39	6,700	11.41	10,700	9.42
2,800	13.34	6,800	11.36	10,800	9.37
2,900	13.29	6,900	11.31	10,900	9.32
3,000	13.24	7,000	11.26	11,000	9.27
3,100	13.19	7,100	11.21	11,100	9.22
3,200	13.14	7,200	11.16	11,200	9.17
3,300	13.09	7,300	11.11	11,300	9.13
3,400	13.04	7,400	11.06	11,400	9.08
3,500	12.99	7,500	11.01	11,500	9.03
3,600	12.94	7,600	10.96	11,600	8.98
3,700	12.89	7,700	10.91	11,700	8.93
3,800	12.85	7,800	10.86	11,800	8.88
3,900	12.80	7,900	10.81	11,900	8.83