

Calibration Data

Airtech Environmental Services, Inc.
Meter Box Full Test Calibration

Date: 5/2/2011

Operator: J Burton

Meter Box ID M-16		Meter Box ΔH@				Meter Box Y _d				Barometric Pressure (in. Hg.)				29.55	
Office Data		Meter Box Data											Results		
Time	K'	Vacuum	T _{amb}	V _{or}	V _{initial}	V _{final}	V _d	ΔH	T _i	T _o	T _{avg}	V _{msid}	Q	Y _d	ΔH@
5.0	0.3445	23.0	72	2.207	150.60	152.86	2.26	0.67	68	66	67	2.239	0.441	0.9856	1.901
5.0	0.3445	23.0	72	2.207	152.86	155.13	2.27	0.67	69	66	67.5	2.247	0.441	0.9822	1.886
5.0	0.3445	23.0	72	2.207	155.13	157.40	2.27	0.67	70	67	68.5	2.243	0.441	0.9840	1.890
5.0	0.4436	21.0	72	2.842	157.70	160.62	2.92	1.10	71	67	69.0	2.885	0.568	0.9849	1.877
5.0	0.4436	21.0	72	2.842	160.62	163.55	2.93	1.10	72	68	70.0	2.890	0.568	0.9834	1.867
5.0	0.4436	21.0	72	2.842	163.55	166.46	2.91	1.10	74	69	71.5	2.862	0.568	0.9930	1.899
5.0	0.5885	20.0	72	3.770	167.00	170.87	3.87	1.85	76	70	73.0	3.802	0.754	0.9915	1.810
5.0	0.5885	20.0	72	3.770	170.87	174.73	3.86	1.85	77	70	73.5	3.789	0.754	0.9950	1.822
5.0	0.5885	20.0	72	3.770	174.73	178.61	3.88	1.85	78	71	74.5	3.801	0.754	0.9917	1.806
5.0	0.7954	17.0	72	5.095	179.20	184.41	5.21	3.3	80	72	76.0	5.108	1.019	0.9974	1.792
5.0	0.7954	17.0	72	5.095	184.41	189.62	5.21	3.3	82	72	77.0	5.099	1.019	0.9993	1.795
5.0	0.7954	17.0	72	5.095	189.62	194.84	5.22	3.3	84	73	78.5	5.094	1.019	1.0001	1.793
													Average	0.9907	1.845

Nomenclature	
K'	Critical Orifice Coefficient
T _{amb}	Ambient Temperature (°F)
V _{or}	Volume Through Orifice (scf)
V _d	Gas Meter Volume (ft ³)
ΔH	Orifice Pressure Differential (in. H ₂ O)
T _i	Meter Inlet Temperature (°F)
T _o	Meter Outlet Temperature (°F)
T _{avg}	Average Meter Box Temperature (°F)
V _{msid}	Volume Metered Standardized (scf)
Q	Flow Rate (scfm)
Y _d	Meter Correction Factor (dimensionless)
ΔH@	ΔH yielding 0.75 scfm

Vacuum Gauge (in. Hg.)		Thermometers (°F)			Equations		
Standard	Vacuum Gauge	Ch No	Ch No	Ch No			
5	5.0	32	2	3	$V_{or} = K' \cdot P_b \cdot \theta$ $(T_{amb} + 460) \cdot 0.5$		
10	10.0	50	51	50	$V_{msid} = 12.64 \cdot \frac{V_d \cdot (P_b + (\Delta H \cdot 1.3.6))}{(T_{avg} + 460)}$		
15	15.0	100	101	101	$Q = V_{or} \cdot \theta$		
20	20.0	150	152	152	$Y_d = V_{or} / V_{msid}$		
25	25.0	212	214	214	$\Delta H@ = \frac{203.19 \cdot \Delta H \cdot (T_{avg} + 460) \cdot \theta^2}{P_b \cdot Y_d^2 \cdot V_m^2}$		
		250	251	251			
		300	301	301			
		350	351	351			
		400	401	401			
		500	501	501			
		600	601	601			

Airtech Environmental Services Meter Post Calibration

Average Field Sample Rate (ΔH)	1.500	Date	8/9/2011
Highest Field Vacuum (inches Hg)	10	Client	BREC
Critical Orifice ID	AA-63	Project No.	3648
Orifice Flow Rate (cfm)	0.772	Meter ID	M-16

	Run 1	Run 2	Run 3
Initial Volume (ft ³)	627.50	631.36	635.21
Final Volume (ft ³)	631.36	635.21	639.08
Volume Metered (ft ³)	3.86	3.85	3.87
DGM Inlet Temperature (°F)	86	87	88
DGM Outlet Temperature (°F)	82	82	82
Average DGM Temperature (°F)	84.0	84.5	85.0
Ambient Temperature (°F)	88	87	87
Elapsed Time (min.)	5	5	5
ΔH (inches H ₂ O)	1.80	1.80	1.80
Barometric Pressure (inches Hg)	29.5	29.5	29.5
Pump Vacuum (inches Hg)	20	20	20
K'	0.5885	0.5885	0.5885
V _{cr} (ft ³)	3.708	3.711	3.711
V _{mstd} (ft ³)	3.709	3.696	3.712
Post Test Y _c	0.9998	1.0042	0.9999
Full Test Y _d	0.9907	0.9907	0.9907
% Difference	-0.91	-1.36	-0.93
Average % Difference			-1.07

Airtech Environmental Services, Inc.
Meter Box Full Test Calibration

Date: 12/14/2010

Operator: JHUTTON

Meter Box ID M-17		Meter Box ΔH@		Meter Box Y _d		1.772		1.0141		Barometric Pressure (in. Hg.)		29.50				
Time		Orifice Data					Meter Box Data					Results				
θ (min)	K'	Vacuum	T _{amb}	V _{cr}	V _{initial}	V _{final}	V _d	ΔH	T _i	T _o	T _{avg}	V _{std}	Q	Y _d	ΔH@	
5.0	0.3455	22.0	76	2.201	780.30	782.52	2.22	0.63	72	68	70	2.183	0.440	1.0083	1.781	
5.0	0.3455	22.0	76	2.201	782.52	784.73	2.21	0.63	73	69	71.0	2.169	0.440	1.0147	1.801	
5.0	0.3455	22.0	76	2.201	784.73	786.94	2.21	0.63	73	69	71.0	2.169	0.440	1.0147	1.801	
5.0	0.4434	20.0	75	2.828	787.30	790.15	2.85	1.05	74	69	71.5	2.798	0.566	1.0107	1.806	
5.0	0.4434	20.0	75	2.828	790.15	793.01	2.86	1.05	74	70	72.0	2.805	0.566	1.0081	1.795	
5.0	0.4434	20.0	75	2.828	793.01	795.86	2.85	1.05	75	70	72.5	2.792	0.566	1.0126	1.810	
5.0	0.5926	18.0	76	3.775	796.20	800.01	3.81	1.8	76	70	73.0	3.736	0.755	1.0104	1.737	
5.0	0.5926	18.0	76	3.775	800.01	803.81	3.80	1.8	78	71	74.5	3.716	0.755	1.0159	1.751	
5.0	0.5926	18.0	76	3.775	803.81	807.63	3.82	1.8	79	71	75.0	3.732	0.755	1.0116	1.735	
5.0	0.7965	16.0	78	5.065	808.20	813.27	5.07	3.2	81	72	76.5	4.957	1.013	1.0218	1.756	
5.0	0.7965	16.0	78	5.065	813.27	818.37	5.10	3.2	83	73	78.0	4.972	1.013	1.0187	1.740	
5.0	0.7965	16.0	78	5.065	818.37	823.46	5.09	3.2	84	73	78.5	4.958	1.013	1.0216	1.748	
														Average	1.0141	1.772

Nomenclature	
K'	Critical Orifice Coefficient
T _{amb}	Ambient Temperature (°F)
V _{cr}	Volume Through Orifice (scf)
V _d	Gas Meter Volume (ft ³)
ΔH	Orifice Pressure Differential (in. H ₂ O)
T _i	Meter Inlet Temperature (°F)
T _o	Meter Outlet Temperature (°F)
T _{avg}	Average Meter Box Temperature (°F)
V _{std}	Volume Metered Standardized (scf)
Q	Flow Rate (scfm)
Y _d	Meter Correction Factor (dimensionless)
ΔH@	ΔH yielding 0.75 scfm

Vacuum Gauge (in. Hg.)		Thermometers (°F)			Equations		
Standard	Vacuum Gauge	Ch No	Ch No	Ch No			
5	5.0	33	2	3	$V_{cr} = K' \cdot P_b \cdot \theta$ $(T_{amb} + 460)^{0.5}$		
10	10.0	51	33	33	$V_{min} = 17.64 \cdot V_d \cdot (P_b \pm (\Delta H / 13.6))$ $(T_{avg} + 460)$		
15	15.0	101	51	51	$Q = V_{cr} \cdot \theta$		
20	20.0	151	101	101	$Y_d = V_{cr} / V_{std}$		
25	25.0	213	151	152	$\Delta H@ = .0319 \cdot \Delta H \cdot (T_{amb} + 460) \cdot \theta^2$ $P_b \cdot Y_d^2 \cdot V_m^2$		
		251	213	214			
		301	251	252			
		351	301	303			
		401	351	353			
		501	401	403			
		601	501	503			
			601	602			
				603			

Airtech Environmental Services Meter Post Calibration

Average Field Sample Rate (ΔH)	1.500	Date	8/8/2011
Highest Field Vacuum (inches Hg)	10	Client	BREC
Critical Orifice ID	AA-63	Project No.	3648
Orifice Flow Rate (cfm)	0.754	Meter ID	M-17

	Run 1	Run 2	Run 3
Initial Volume (ft ³)	267.50	271.27	275.05
Final Volume (ft ³)	271.27	275.05	278.81
Volume Metered (ft ³)	3.77	3.78	3.76
DGM Inlet Temperature (°F)	93	93	94
DGM Outlet Temperature (°F)	86	86	87
Average DGM Temperature (°F)	89.5	89.5	90.5
Ambient Temperature (°F)	85	85	86
Elapsed Time (min.)	5	5	5
ΔH (inches H ₂ O)	1.80	1.80	1.80
Barometric Pressure (inches Hg)	29.5	29.5	29.5
Pump Vacuum (inches Hg)	19	19	19
K'	0.5885	0.5885	0.5885
V _{cr} (ft ³)	3.718	3.718	3.715
V _{mstd} (ft ³)	3.586	3.596	3.570
Post Test Y _c	1.0368	1.0341	1.0405
Full Test Y _d	1.0141	1.0141	1.0141
% Difference	-2.24	-1.97	-2.60
Average % Difference			-2.27

Airtech Environmental Services, Inc.
 Meter Box Full Test Calibration

Date: 11/1/2010

Operator: j_burton

Meter Box ID M-20		Meter Box ΔH@		Meter Box Y _d		0.9952		Barometric Pressure (In. Hg.)		29.50						
		1.785														
Time	Meter Box Data															
	Orifice Data						Results									
θ (min)	K'	Vacuum	T _{amb}	V _r	V _{initial}	V _{final}	V _d	ΔH	T ₁	T ₀	T _{avg}	V _{meas}	Q	Y _d	ΔH@	
5.0	0.3455	22.0	67	2.220	956.60	956.89	2.29	0.64	73	67	70	2.252	0.444	0.9857	1.766	
5.0	0.3455	22.0	67	2.220	958.89	961.17	2.28	0.64	75	69	72.0	2.234	0.444	0.9938	1.788	
5.0	0.3455	22.0	67	2.220	961.17	963.46	2.29	0.64	77	70	73.5	2.237	0.444	0.9922	1.777	
5.0	0.4434	20.0	67	2.849	963.70	966.67	2.97	1.05	79	72	75.5	2.894	0.570	0.9845	1.740	
5.0	0.4434	20.0	67	2.849	966.67	969.63	2.96	1.05	80	72	76.0	2.881	0.570	0.9888	1.753	
5.0	0.4434	20.0	67	2.849	969.63	972.59	2.96	1.05	82	74	78.0	2.871	0.570	0.9925	1.760	
5.0	0.5926	15.0	68	3.804	993.00	997.01	4.01	1.9	90	81	85.5	3.843	0.761	0.9897	1.759	
5.0	0.5926	18.0	68	3.804	997.01	1001.01	4.00	1.9	93	82	87.5	3.820	0.761	0.9968	1.775	
5.0	0.5926	18.0	68	3.804	1001.01	1005.05	4.04	1.9	94	83	88.5	3.851	0.761	0.9878	1.743	
5.0	0.7995	16.0	68	5.132	1005.70	1011.05	5.35	3.5	95	84	89.5	5.111	1.026	1.0042	1.834	
5.0	0.7995	16.0	69	5.127	1011.05	1016.36	5.31	3.5	98	85	91.5	5.054	1.025	1.0145	1.869	
5.0	0.7995	16.0	69	5.127	1016.36	1021.69	5.33	3.5	99	86	92.5	5.064	1.025	1.0125	1.858	
														Average	0.9952	1.785

Nomenclature	
K'	Critical Orifice Coefficient
T _{amb}	Ambient Temperature (°F)
V _r	Volume Through Orifice (scf)
V _d	Gas Meter Volume (ft ³)
ΔH	Orifice Pressure Differential (In. H ₂ O)
T ₁	Meter Inlet Temperature (°F)
T ₀	Meter Outlet Temperature (°F)
T _{avg}	Average Meter Box Temperature (°F)
V _{meas}	Volume Metered Standardized (scf)
Q	Flow Rate (scfm)
Y _d	Meter Correction Factor (dimensionless)
ΔH@	ΔH yielding 0.75 scfm

Vacuum Gauge (In. Hg.)		Thermometers (°F)		
Standard	Vacuum Gauge	Ch. No	Ch. No	Ch. No
5	5.0	33	31	3
10	10.0	51	50	31
15	15.0	101	100	49
20	20.0	151	151	100
25	25.0	213	213	150
		251	251	213
		300	301	251
		350	352	301
		400	402	351
		500	501	402
		600	601	501
			602	602

Equations

$$V_r = K' \cdot P_b \cdot \theta \cdot (T_{amb} + 460)^{0.5}$$

$$V_{meas} = 17.64 \cdot V_d \cdot (P_b + (ΔH \cdot 13.6)) / (T_{avg} + 460)$$

$$Q = V_r / \theta$$

$$Y_d = V_{meas} / V_{std}$$

$$\Delta H(\theta) = 0.0319 \cdot \Delta H \cdot (T_{avg} + 460)^{0.2} \cdot \theta^{-2}$$

$$P_b \cdot Y_d^2 \cdot V_{meas}^{-2}$$

Airtech Environmental Services Meter Post Calibration

Average Field Sample Rate (ΔH)	1.500	Date	8/8/2011
Highest Field Vacuum (inches Hg)	5	Client	BREC
Critical Orifice ID	AA-63	Project No.	3648
Orifice Flow Rate (cfm)	0.766	Meter ID	M-20

	Run 1	Run 2	Run 3
Initial Volume (ft ³)	825.60	829.43	833.26
Final Volume (ft ³)	829.43	833.26	837.08
Volume Metered (ft ³)	3.83	3.83	3.82
DGM Inlet Temperature (°F)	90	90	90
DGM Outlet Temperature (°F)	84	84	84
Average DGM Temperature (°F)	87.0	87.0	87.0
Ambient Temperature (°F)	90	89	88
Elapsed Time (min.)	5	5	5
ΔH (inches H ₂ O)	1.80	1.80	1.80
Barometric Pressure (inches Hg)	29.5	29.5	29.5
Pump Vacuum (inches Hg)	18	18	18
K'	0.5885	0.5885	0.5885
V _{cr} (ft ³)	3.701	3.705	3.708
V _{mstd} (ft ³)	3.660	3.660	3.650
Post Test Y _c	1.0113	1.0122	1.0158
Full Test Y _d	0.9952	0.9952	0.9952
% Difference	-1.62	-1.71	-2.07
Average % Difference			-1.80

Meter Box Full Test Calibration

DATE: 7/15/2011

Operator: Joe Ward

Meter Box No: 2142		M-27		Meter Box H@: 1.9109		Meter Box Yd 1.0034		Barometric Pressure: 29.82										
Standard Meter Gas Volume				Meter Box Gas Volume (ft ³)				Std. Meter Temperature (PF)		Meter Box Temperature (PF)								
Q	P	H	Yds	Initial	Final	Vf	Inlet	Outlet	Avg.	Inlet	Outlet	Avg.	Time	Yd	H@			
0.93	-0.60	3.00	1.0000	0.0	5.000	5.000	59.042	64.130	5.088	74.0	74.0	74.0	86.0	80.0	83.0	5.32	1.0082	1.9186
0.92	-0.60	3.00	1.0000	0.0	5.005	5.005	64.130	69.231	5.101	74.0	74.0	74.0	86.0	80.0	83.0	5.35	1.0066	1.9364
0.38	-0.30	0.50	1.0000	0.0	5.000	5.000	72.320	77.390	5.070	74.0	74.0	74.0	82.0	79.0	80.5	13.01	1.0002	1.9158
0.38	-0.30	0.50	1.0000	0.0	5.005	5.005	77.390	82.471	5.081	74.0	74.0	74.0	82.0	79.0	80.5	13.09	0.9990	1.9356
0.66	-0.40	1.50	1.0000	0.0	5.000	5.000	93.758	98.850	5.092	74.0	74.0	74.0	86.0	79.0	82.5	7.45	1.0022	1.8847
0.66	-0.40	1.50	1.0000	0.0	6.965	6.965	98.850	105.929	7.079	74.0	74.0	74.0	86.0	79.0	82.5	10.35	1.0042	1.8746
AVERAGE													1.0034	1.9109				

Millennium Instruments Inc.
 2402 Springridge Drive unit A
 Spring Grove IL. 60081
 PHONE#(815)675-3225
 FAX#(815)675-6965
 E-mail millennium@millinst.com
 www.millinst.com

Vacuum Gauge

(in. Hg)	Gauge
5.0	5.0
10.0	10.0
15.0	15.0
20.0	20.0
25.0	25.0

Pyrometer Calibration Sheet

Pyrometer No.:001

Office: Spring Grove

Client: Airtech Environmental

Job or Reference No.:2142

M-27

Temperature Scale Used Fahrenheit

Full Test

Celsius

Post Test

Calibration Reference Settings for Fahrenheit Scale	Pyrometer Reading	Calibration Reference Settings for Celsius Scale
50° F	50° F	10°C
100° F	100° F	38°C
150° F	150° F	66°C
200° F	200° F	93°C
250° F	250° F	121°C
300° F	300° F	149°C
350° F	350° F	177°C
400° F	400° F	204°C
450° F	450° F	232°C
500° F	500° F	260°C
550° F	550° F	288°C
600° F	600° F	316°C

Airtech Environmental Services Meter Post Calibration

Average Field Sample Rate (ΔH)	1.750	Date	8/2/2011
Highest Field Vacuum (inches Hg)	13	Client	BREC
Critical Orifice ID	AA-63	Project No.	3648
Orifice Flow Rate (cfm)	0.792	Meter ID	M-27

	Run 1	Run 2	Run 3
Initial Volume (ft ³)	534.00	537.96	541.91
Final Volume (ft ³)	537.96	541.91	545.87
Volume Metered (ft ³)	3.96	3.95	3.96
DGM Inlet Temperature (°F)	87	88	89
DGM Outlet Temperature (°F)	85	85	86
Average DGM Temperature (°F)	86.0	86.5	87.5
Ambient Temperature (°F)	88	88	89
Elapsed Time (min.)	5	5	5
ΔH (inches H ₂ O)	2.00	2.00	2.00
Barometric Pressure (inches Hg)	29.5	29.5	29.5
Pump Vacuum (inches Hg)	20	20	20
K'	0.5885	0.5885	0.5885
V _{cr} (ft ³)	3.708	3.708	3.705
V _{mstd} (ft ³)	3.793	3.780	3.783
Post Test Yc	0.9776	0.9810	0.9794
Full Test Yd	1.0034	1.0034	1.0034
% Difference	2.57	2.23	2.39
Average % Difference			2.40

Meter Box Full Test Calibration

DATE: 7/15/2011

Operator: Joe Ward

Meter Box No: 2143		Meter Box H@: M-2B		Meter Box Gas Volume (ft ³)		Meter Box Yd		Meter Box Temperature (pF)		Barometric Pressure:							
		1.8295		0.9976		29.79											
Standard Meter Gas Volume		Meter Box Gas Volume (ft ³)		Std. Meter Temperature (pF)		Meter Box Temperature (pF)											
Q	P	H	Yds	Initial	Final	Vf	Inlet	Outlet	Avg.	Time	Yd	H@					
0.96	-0.70	3.00	1.0000	0.0	5.000	5.000	71.639	76.825	5.186	74.0	74.0	91.0	86.0	91.0	5.15	1.0039	1.7799
0.95	-0.70	3.00	1.0000	0.0	5.000	5.000	76.825	82.002	5.177	74.0	74.0	96.0	86.0	91.0	5.18	1.0057	1.8007
0.67	-0.60	1.50	1.0000	0.0	5.005	5.005	88.458	93.637	5.179	74.0	74.0	91.0	86.0	88.5	7.32	0.9978	1.7944
0.68	-0.60	1.50	1.0000	0.0	5.005	5.005	93.637	98.827	5.190	74.0	74.0	91.0	86.0	88.5	7.28	0.9957	1.7748
0.38	-0.40	0.50	1.0000	0.0	5.000	5.000	102.295	107.455	5.160	74.0	74.0	86.0	83.0	84.5	13.07	0.9902	1.9213
0.38	-0.40	0.50	1.0000	0.0	5.005	5.005	107.455	112.609	5.154	74.0	74.0	86.0	83.0	84.5	13.03	0.9924	1.9057
AVERAGE											0.9976	1.8295					

Millennium Instruments Inc.
 2402 Springridge Drive unit A
 Spring Grove IL. 60081
 PHONE#(815)675-3225
 FAX#(815)675-6965
 E-mail millennium@millinst.com
 www.millinst.com

Vacuum Gauge

(in. Hg)	Gauge
5.0	5.0
10.0	10.0
15.0	15.0
20.0	20.0
25.0	25.0

Pyrometer Calibration Sheet

Pyrometer No.:001

Office: Spring Grove

Client: Airtech Environmental

Job or Reference No. :2143

Temperature Scale Used Fahrenheit

Full Test

Celsius

Post Test

Calibration Reference Settings for Fahrenheit Scale	Pyrometer Reading	Calibration Reference Settings for Celsius Scale
50° F	50° F	10°C
100° F	100° F	38°C
150° F	150° F	66°C
200° F	200° F	93°C
250° F	250° F	121°C
300° F	300° F	149°C
350° F	350° F	177°C
400° F	400° F	204°C
450° F	450° F	232°C
500° F	500° F	260°C
550° F	550° F	288°C
600° F	600° F	316°C

Airtech Environmental Services Meter Post Calibration

Average Field Sample Rate (ΔH)	2.250	Date	8/2/2011
Highest Field Vacuum (inches Hg)	9	Client	BREC
Critical Orifice ID	AA-63	Project No.	3648
Orifice Flow Rate (cfm)	0.8	Meter ID	M-28

	Run 1	Run 2	Run 3
Initial Volume (ft ³)	281.00	285.00	289.00
Final Volume (ft ³)	285.00	289.00	293.00
Volume Metered (ft ³)	4.00	4.00	4.00
DGM Inlet Temperature (°F)	88	89	90
DGM Outlet Temperature (°F)	85	86	86
Average DGM Temperature (°F)	86.5	87.5	88.0
Ambient Temperature (°F)	91	91	91
Elapsed Time (min.)	5	5	5
ΔH (inches H ₂ O)	1.90	1.90	1.90
Barometric Pressure (inches Hg)	29.5	29.5	29.5
Pump Vacuum (inches Hg)	20	20	20
K'	0.5885	0.5885	0.5885
V _{cr} (ft ³)	3.698	3.698	3.698
V _{mstd} (ft ³)	3.827	3.820	3.816
Post Test Y _c	0.9663	0.9681	0.9690
Full Test Y _d	0.9976	0.9976	0.9976
% Difference	3.14	2.96	2.87
Average % Difference			2.99

Airtech Environmental Services, Inc.
30B Meter Box Full Test Calibration

Date: 1/5/2011

Operator: S. Behenish

Meter Box	M-25 A	Meter Box Y _d	0.9994		Barometric Pressure (in. Hg.)		24.57					
Time	Orifice Data				Meter Box Data				Results			
	K'	Vacuum	T _{amb}	V _{cr}	V _{final}	V _d	LPM	T _m	V _{meas}	Q	Y _d	ΔH@
10.0	0.012	15.0	75	3.610	4.84	4.84	0.48	115	3.654	0.361	0.9880	1.544
10.0	0.012	15.0	75	3.610	4.84	4.79	0.48	115	3.616	0.361	0.9983	1.560
10.0	0.012	15.0	75	3.610	9.63	14.47	0.48	116	3.647	0.361	0.9897	1.547
10.0	0.028	14.0	75	8.422	10.95	10.95	1.10	115	8.281	0.842	1.0171	0.683
10.0	0.028	14.0	75	8.422	22.03	11.08	1.11	115	8.379	0.842	1.0051	0.675
10.0	0.028	14.0	75	8.422	33.00	10.97	1.10	116	8.282	0.842	1.0170	0.683
10.0	0.051	12.5	76	15.326	20.30	20.30	2.03	116	15.368	1.533	0.9973	0.369
10.0	0.051	12.5	77	15.312	20.30	40.68	2.04	116	15.429	1.531	0.9925	0.367
10.0	0.051	12.5	78	15.298	40.68	61.10	2.04	116	15.459	1.530	0.9896	0.367
										Average	0.9994	0.866

Nomenclature	
K'	Critical Orifice Coefficient
T _{amb}	Ambient Temperature (°F)
V _{cr}	Volume Through Orifice (L)
V _d	Gas Meter Volume (L)
ΔH	Orifice Pressure Differential (in. H ₂ O)
T _i	Meter Inlet Temperature (°F)
T _o	Meter Outlet Temperature (°F)
T _{avg}	Average Meter Box Temperature (°F)
V _{meas}	Volume Metered Standardized (L)
Q	Flow Rate (scfm)
Y _d	Meter Correction Factor (dimensionless)
ΔH@	ΔH yielding 0.75 scfm

Vacuum Gauge (in. Hg.)		Thermometers (°F)				Equations	
Standard	Vacuum Gauge	Standard	Ch No	Aux 1	Aux 2	Ch No	Aux 2
5	5.0	32	33	34	34	34	
10	10.0	50	50	51	51	51	
15	15.0	100	101	102	102	102	
20	20.0	150	151	152	152	152	
25	25.0	212	213	214	214	214	
		250	251	252	252	252	
		300	300	302	302	302	
		350	350	352	352	352	
		400	401	402	402	402	
		500	502	502	502	502	
		600	601	602	602	602	

$V_{cr} = K' * P_b * \theta$
 $(T_{amb} + 460) * 0.5$
 $V_{meas} = 17.64 * V_d * \frac{(P_b * (T_m + \Delta H * 1.36))}{(T_{avg} + 460)}$
 $Q = V_{cr} / \theta$
 $Y_d = V_{cr} / V_{meas}$
 $\Delta H@ = .0319 * \Delta H * (T_{amb} + 460) * \theta^2$
 $P_b * Y_d^2 * V_m^2$

Airtech Environmental Services Meter Post Calibration

Average Field Sample Rate (lpm)	0.500	Date	8/12/2011
Highest Field Vacuum (inches Hg)	10	Client	BREC
Critical Orifice ID	.5LPM	Project No.	3648
Orifice Flow Rate (lpm)	0.4486	Meter ID	M-25-A

	Run 1	Run 2	Run 3
Initial Volume (l)	0.00	4.486	9.072
Final Volume (l)	4.486	9.072	13.869
Volume Metered (l)	4.486	4.586	4.797
DGM Inlet Temperature (°F)	94	99	104
DGM Outlet Temperature (°F)	94	99	104
Average DGM Temperature (°F)	94.0	99.0	104.0
Ambient Temperature (°F)	79	78	79
Elapsed Time (min.)	10	10	10
ΔH (inches H₂O)	0.40	0.40	0.40
Barometric Pressure (inches Hg)	29.5	29.5	29.5
Pump Vacuum (inches Hg)	18	18	18
K'	0.0120	0.0120	0.0120
Vcr (l)	4.318	4.322	4.318
Vmstd (l)	4.218	4.273	4.430
Post Test Yc	1.0237	1.0113	0.9746
Full Test Yd	0.9994	0.9994	0.9994
% Difference	-2.43	-1.19	2.48
Average % Difference			-0.38

Airtech Environmental Services, Inc.
30B Meter Box Full Test Calibration

Date: 3/29/2011

Operator: jburton

Meter Box	M-25B	Meter Box Y _d	1.0017	Barometric Pressure (in. Hg.)	29.50								
Time	Orifice Data					Results							
θ (min)	K'	Vacuum	T _{amb}	V _{cr}	V _{initial}	V _{final}	V _d	LPM	T _m	V _{msid}	Q	Y _d	ΔH@
10.0	0.012	21.0	70	4.354	0.000	4.634	4.634	0.46	100	4.311	0.435	1.0100	1.293
10.0	0.012	21.0	70	4.354	4.634	9.253	4.619	0.46	99	4.305	0.435	1.0115	1.299
10.0	0.012	21.0	70	4.354	0.253	13.827	4.574	0.46	98	4.271	0.435	1.0196	1.322
10.0	0.019	20.0	68	6.907	0.000	7.530	7.530	0.75	97	7.048	0.691	0.9800	0.794
10.0	0.019	20.0	69	6.901	7.530	14.961	7.431	0.74	96	6.968	0.690	0.9904	0.803
10.0	0.019	20.0	70	6.894	14.961	22.428	7.467	0.75	96	7.002	0.689	0.9846	0.806
10.0	0.028	20.0	69	10.169	0.000	10.753	10.753	1.08	96	10.091	1.017	1.0078	0.560
10.0	0.028	20.0	69	10.169	10.753	21.576	10.823	1.08	96	10.157	1.017	1.0012	0.552
10.0	0.028	20.0	68	10.179	21.576	32.297	10.721	1.07	95	10.079	1.018	1.0099	0.557
10.0	0.041	19.0	68	14.905	0.000	15.482	15.482	1.55	95	14.572	1.491	1.0228	0.387
10.0	0.041	19.0	68	14.905	15.482	30.965	15.483	1.55	95	14.573	1.491	1.0228	0.387
10.0	0.041	19.0	68	14.905	30.965	46.450	15.465	1.55	95	14.556	1.491	1.0240	0.388
											Average	1.0017	0.887

Nomenclature	
K'	Critical Orifice Coefficient
T _{amb}	Ambient Temperature (°F)
V _{cr}	Volume Through Orifice (L)
V _d	Gas Meter Volume (L)
ΔH	Orifice Pressure Differential (in. H ₂ O)
T _i	Meter Inlet Temperature (°F)
T _o	Meter Outlet Temperature (°F)
T _{avg}	Average Meter Box Temperature (°F)
V _{msid}	Volume Metered Standardized (L)
Q	Flow Rate (scfm)
Y _d	Meter Correction Factor (dimensionless)
ΔH@	ΔH yielding 0.75 scfm

Vacuum Gauge (in. Hg.)		Thermometers (°F)			Equations	
Standard	Vacuum Gauge	Ch. No.	Standard	Ch. No.	Ch. No.	
5	5.0	1	32	probe		$V_{cr} = K' * P_b * \theta$ $(T_{amb} + 460)^{0.5}$
10	10.0		50	32		$V_{msid} = 17.64 * V_d * (P_b + \Delta H / 13.6)$ $(T_{o,s} + 460)$
15	15.0		100	49		$Q = V_{cr} * \theta$
20	20.0		152	101		$Y_d = V_{cr} / V_{msid}$
25	25.0		213	152		$\Delta H@ = .0319 * \Delta H * (T_{avg} + 460) * \theta / 2$ $P_b * Y_d^2 * V_{cr}^2$
			250	213		
			300	251		
			350	301		
			400	351		
			500	401		
			600	501		
			601	599		

Airtech Environmental Services Meter Post Calibration

Average Field Sample Rate (lpm)	0.500	Date	8/12/2011
Highest Field Vacuum (inches Hg)	10	Client	BREC
Critical Orifice ID	.5LPM	Project No	3648
Orifice Flow Rate (lpm)	0.4864	Meter ID	M-25-B

	Run 1	Run 2	Run 3
Initial Volume (l)	0.00	4.864	9.786
Final Volume (l)	4.864	9.786	14.644
Volume Metered (l)	4.864	4.922	4.858
DGM Inlet Temperature (°F)	113	115	116
DGM Outlet Temperature (°F)	113	115	116
Average DGM Temperature (°F)	113.0	115.0	116.0
Ambient Temperature (°F)	82	81	81
Elapsed Time (min.)	10	10	10
ΔH (inches H ₂ O)	0.40	0.40	0.40
Barometric Pressure (inches Hg)	29.5	29.5	29.5
Pump Vacuum (inches Hg)	19	19	19
K'	0.0120	0.0120	0.0120
V _{cr} (l)	4.306	4.310	4.310
V _{mstd} (l)	4.422	4.459	4.393
Post Test Y _c	0.9738	0.9666	0.9810
Full Test Y _d	1.0017	1.0017	1.0017
% Difference	2.79	3.51	2.07
Average % Difference			2.79

Meter Box Full Test Calibration

DATE: 7/8/2011

M26-

Operator: Joe Ward

Meter Box No. DB30B-0711-2018		Meter Box H@:		Meter Box Gas		Meter Box Yd		Meter Box		Barometric Pressure:								
		0.0000		0.9958		0.9958		29.78										
#1	Standard Meter Gas Volume		Meter Box Gas Volume (ft ³)		Std. Meter Temperature (pF)		Meter Box Temperature (pF)		Time	Yd	H@							
	Q	P	H	Yds	Initial	Final	Vf	Inlet				Outlet	Avg.	Inlet	Outlet	Avg.		
0.04	-0.30	0.00	1.0000	0.0	1.000	1.000	1.015	1.015	76.0	76.0	76.0	81.0	81.0	81.0	27.04	0.9951	0.0000	
0.04	-0.30	0.00	1.0000	0.0	1.000	1.000	1.014	1.014	76.0	76.0	76.0	80.0	80.0	80.0	27.06	0.9943	0.0000	
0.02	-0.30	0.00	1.0000	0.0	.500	.500	.503	.503	77.0	77.0	77.0	80.0	80.0	80.0	29.91	1.0003	0.0000	
0.02	-0.30	0.00	1.0000	0.0	.500	.500	.502	.502	77.0	77.0	77.0	80.0	80.0	80.0	29.52	1.0023	0.0000	
0.03	-0.30	0.00	1.0000	0.0	.500	.500	.507	.507	78.0	78.0	78.0	81.0	81.0	81.0	17.92	0.9924	0.0000	
0.03	-0.30	0.00	1.0000	0.0	.500	.500	.508	.508	78.0	78.0	78.0	81.0	81.0	81.0	17.79	0.9905	0.0000	
AVERAGE																		
AVERAGE											0.9958	0.0000						

Millennium Instruments Inc.
 2402 Springridge Drive unit A
 Spring Grove IL. 60081
 PHONE#(815)675-3225
 FAX#(815)675-6965
 E-mail millennium@millinst.com
 www.millinst.com

Vacuum Gauge

(in. Hg)	Gauge
5.0	5.5
10.0	10.5
15.0	16.0
20.0	21.0
25.0	26.0

Meter Box Full Test Calibration

DATE: 7/10/2011

M-26

Operator: Joe Ward

Meter Box No DB30B-0711-2018		Meter Box H@:		Meter Box Yd		0.9902		Barometric Pressure:		29.75																																			
#2	Standard Meter Gas		Volume		Meter Box Gas		Volume (ft ³)		Std. Meter		Temperature (PF)		Meter Box		Temperature (PF)		Inlet		Outlet		Avg.		Time		Yd		H@																		
	Q	P	H	Yds	Initial	Final	Vf	Initial	Final	Vf	Inlet	Outlet	Avg.	Inlet	Outlet	Avg.	Time	Yd	H@																										
0.01	-0.30	0.00	1.0000	0.0	.280	.280	.280	.294	.294	.294	75.0	75.0	75.0	92.0	92.0	92.0	18.66	0.9834	0.0000																										
0.01	-0.30	0.00	1.0000	0.0	.285	.285	.285	.299	.299	.299	75.0	75.0	75.0	92.0	92.0	92.0	18.64	0.9842	0.0000																										
0.03	-0.30	0.00	1.0000	0.0	1.000	1.000	1.000	1.033	1.033	1.033	75.0	75.0	75.0	93.0	93.0	93.0	29.14	1.0014	0.0000																										
0.03	-0.30	0.00	1.0000	0.0	1.000	1.000	1.000	1.032	1.032	1.032	75.0	75.0	75.0	93.0	93.0	93.0	29.10	1.0023	0.0000																										
0.02	-0.30	0.00	1.0000	0.0	.500	.500	.500	.527	.527	.527	75.0	75.0	75.0	95.0	95.0	95.0	22.89	0.9850	0.0000																										
0.02	-0.30	0.00	1.0000	0.0	.500	.500	.500	.527	.527	.527	75.0	75.0	75.0	95.0	95.0	95.0	22.80	0.9850	0.0000																										
AVERAGE																						0.9902		0.0000		0.0000		0.0000		0.0000		0.0000		0.0000		0.0000		0.0000		0.0000		0.0000		0.0000	

Millennium Instruments Inc.
 2402 Springridge Drive unit A
 Spring Grove IL. 60081
 PHONE#(815)675-3225
 FAX#(815)675-6965
 E-mail millenium@millinst.com
 www.millinst.com

Vacuum Gauge

(in. Hg)	Gauge
5.0	5.0
10.0	10.0
15.0	15.0
20.0	20.0

Pyrometer Calibration Sheet

Pyrometer No.:001

Office: Spring Grove

Client: Airtech Environmental

Job or Reference No.:DB30B-0711-2018

Temperature Scale Used

- Fahrenheit
 Celsius

- Full Test
 Post Test

Calibration Reference Settings for Fahrenheit Scale	Pyrometer Reading	Calibration Reference Settings for Celsius Scale
50° F	50° F	10°C
100° F	100° F	38°C
150° F	150° F	66°C
200° F	200° F	93°C
250° F	250° F	121°C
300° F	300° F	149°C
350° F	350° F	177°C
400° F	400° F	204°C
450° F	450° F	232°C
500° F	500° F	260°C
550° F	550° F	288°C
600° F	600° F	316°C

Method 30B Post-Test Meter Calibration

Average Field Sample Rate (lpm)	0.5	Date	8/8/2011
Highest Field Vacuum (inches Hg)	10.0	Client	BREC
Critical Orifice ID	.5LPM	Project No.	3648
Orifice Flow Rate (lpm)	0.479	Meter ID	M-26 A

	Run 1	Run 2	Run 3	
Initial Volume (l³)	0.000	4.798	9.564	
Final Volume (l³)	4.798	9.564	14.362	
Volume Metered (l³)	4.798	4.766	4.798	
DGM Temperature (°F)	104	105	107	
Ambient Temperature (°F)	88	87	88	
Elapsed Time (min.)	10.0	10.0	10.0	
Setting (l/min)	0.4	0.4	0.4	
Barometric Pressure (inches Hg)	29.50	29.50	29.50	
Pump Vacuum (inches Hg)	19.0	19.0	19.0	
K'	0.012	0.012	0.012	
Vcr (l³)	4.281	4.285	4.281	
Vmstd (l³)	4.431	4.394	4.408	
Post Test Yc	0.96609	0.97519	0.97123	
Full Test Yd	0.9958	0.9958	0.9958	
% Difference	2.98	2.07	2.47	
	Average Difference		2.51	

Method 30B Post-Test Meter Calibration

Average Field Sample Rate (lpm)	0.5	Date	8/8/2011
Highest Field Vacuum (inches Hg)	10.0	Client	BREC
Critical Orifice ID	.5LPM	Project No.	3648
Orifice Flow Rate (lpm)	0.480	Meter ID	M-26 B

	Run 1	Run 2	Run 3	
Initial Volume (l³)	0.000	4.802	9.592	
Final Volume (l³)	4.802	9.592	14.401	
Volume Metered (l³)	4.802	4.790	4.809	
DGM Temperature (°F)	106	108	107	
Ambient Temperature (°F)	88	87	88	
Elapsed Time (min.)	10.0	10.0	10.0	
Setting (l/min)	0.4	0.4	0.4	
Barometric Pressure (inches Hg)	29.50	29.50	29.50	
Pump Vacuum (inches Hg)	20.0	20.0	20.0	
K'	0.012	0.012	0.012	
Vcr (l³)	4.281	4.285	4.281	
Vmstd (l³)	4.419	4.393	4.418	
Post Test Yc	0.96871	0.97546	0.96901	
Full Test Yd	0.9902	0.9902	0.9902	
% Difference	2.17	1.49	2.14	
	Average Difference		1.93	

Meter Box Full Test Calibration

R-2009

Operator: Joe Ward

DATE: 7/10/2011

Meter Box No. DB30B-0711-2019		Meter Box H@:		Meter Box Gas		Meter Box Yd		Meter Box Pressure:			
		0.0000		0.0000		1.0072		29.79			
#1	Standard Meter Gas		Volume (ft ³)		Std. Meter Temperature (PF)		Meter Box Temperature (PF)		Yd	H@	
	Initial	Final	Initial	Final	Inlet	Outlet	Inlet	Outlet			
0.04	0.0	1.000	1.000	.000	1.018	75.0	75.0	91.0	91.0	26.40	1.0124
0.04	0.0	1.000	1.000	0.000	1.019	75.0	75.0	91.0	91.0	26.38	1.0115
0.02	0.0	0.520	0.520	.000	.536	75.0	75.0	93.0	93.0	22.14	1.0035
0.02	0.0	0.500	0.500	.000	.516	75.0	75.0	94.0	94.0	22.09	1.0041
0.02	0.0	0.500	0.500	.000	.523	76.0	76.0	104.0	104.0	32.22	1.0067
0.02	0.0	0.500	0.500	.000	.524	76.0	76.0	104.0	104.0	32.20	1.0048
AVERAGE										1.0072	0.0000

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 2402 Springridge Drive unit A
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Vacuum Gauge

(in. Hg)	Gauge
5.0	5.5
10.0	10.5
15.0	16.0
20.0	21.0

New Ashtead

R-20078

Meter Box Full Test Calibration

Operator: Joe Ward

DATE: 7/11/2011

Meter Box No. DB30B-0711-2019		Meter Box H@:		Meter Box Gas		Meter Box Yd		0.9985		Barometric Pressure:		29.69											
#2	Q	P	H	Yds	Standard Meter Gas		Volume		Meter Box Gas		Volume (ft ³)		Std. Meter		Temperature (PF)		Meter Box		Temperature (PF)		Time	Yd	H@
					Initial	Final	Vf	Initial	Final	Vf	Inlet	Outlet	Avg.	Inlet	Outlet	Avg.	Inlet	Outlet	Avg.				
0.03	-0.30	0.00	1.0000	0.0	1.000	1.000	0.0	1.024	1.024	1.024	1.024	75.0	75.0	75.0	92.0	92.0	92.0	92.0	92.0	92.0	30.56	1.0083	0.0000
0.03	-0.30	0.00	1.0000	0.0	1.000	1.000	0.0	1.025	1.025	1.025	1.025	75.0	75.0	75.0	92.0	92.0	92.0	92.0	92.0	92.0	30.48	1.0074	0.0000
0.02	-0.30	0.00	1.0000	0.0	.500	.500	0.0	.518	.518	.518	.518	75.0	75.0	75.0	94.0	94.0	94.0	94.0	94.0	94.0	22.10	1.0003	0.0000
0.02	-0.30	0.00	1.0000	0.0	.500	.500	0.0	.518	.518	.518	.518	75.0	75.0	75.0	94.0	94.0	94.0	94.0	94.0	94.0	21.90	1.0003	0.0000
0.01	-0.30	0.00	1.0000	0.0	.500	.500	0.0	.528	.528	.528	.528	76.0	76.0	76.0	98.0	98.0	98.0	98.0	98.0	98.0	38.94	0.9866	0.0000
0.01	-0.30	0.00	1.0000	0.0	.500	.500	0.0	.527	.527	.527	.527	76.0	76.0	76.0	98.0	98.0	98.0	98.0	98.0	98.0	38.85	0.9884	0.0000
AVERAGE																							
0.9985 0.0000 0.0000 0.9985 0.0000																							

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Vacuum Gauge

(in. Hg.)	Gauge
5.0	5.0
10.0	10.0
15.0	15.0
20.0	20.0

R-20078

Pyrometer Calibration Sheet

Pyrometer No.:001

Office: Spring Grove

Client: Ashtead Technology Rentals

Job or Reference No.:DB30B-0711-2019

Temperature Scale Used

Fahrenheit
 Celsius

Full Test
 Post Test

Calibration Reference Settings for Fahrenheit Scale	Pyrometer Reading	Calibration Reference Settings for Celsius Scale
50° F	50° F	10°C
100° F	100° F	38°C
150° F	150° F	66°C
200° F	200° F	93°C
250° F	250° F	121°C
300° F	300° F	149°C
350° F	350° F	177°C
400° F	400° F	204°C
450° F	450° F	232°C
500° F	500° F	260°C
550° F	550° F	288°C
600° F	600° F	316°C

Method 30B Post-Test Meter Calibration

Average Field Sample Rate (lpm)	0.5	Date	8/8/2011
Highest Field Vacuum (inches Hg)	10.0	Client	BREC
Critical Orifice ID	.5LPM	Project No.	3648
Orifice Flow Rate (lpm)	0.473	Meter ID	R-20078A

	Run 1	Run 2	Run 3	
Initial Volume (l³)	0.000	4.676	9.411	
Final Volume (l³)	4.676	9.411	14.181	
Volume Metered (l³)	4.676	4.735	4.770	
DGM Temperature (°F)	106	108	112	
Ambient Temperature (°F)	87	88	88	
Elapsed Time (min.)	10.0	10.0	10.0	
Setting (l/min)	0.4	0.4	0.4	
Barometric Pressure (inches Hg)	29.50	29.50	29.50	
Pump Vacuum (inches Hg)	20.0	20.0	20.0	
K'	0.012	0.012	0.012	
Vcr (l³)	4.285	4.281	4.281	
Vmstd (l³)	4.303	4.342	4.344	
Post Test Yc	0.99572	0.98589	0.98555	
Full Test Yd	1.0072	1.0072	1.0072	
% Difference	1.14	2.12	2.15	
	Average Difference		1.80	

Method 30B Post-Test Meter Calibration

Average Field Sample Rate (lpm)	0.5	Date	8/8/2011
Highest Field Vacuum (inches Hg)	10.0	Client	BREC
Critical Orifice ID	.5LPM	Project No.	3648
Orifice Flow Rate (lpm)	0.487	Meter ID	R-20078B

	Run 1	Run 2	Run 3	
Initial Volume (l³)	0.000	4.891	9.779	
Final Volume (l³)	4.891	9.779	14.623	
Volume Metered (l³)	4.891	4.888	4.844	
DGM Temperature (°F)	116	116	115	
Ambient Temperature (°F)	87	87	86	
Elapsed Time (min.)	10.0	10.0	10.0	
Setting (l/min)	0.5	0.5	0.5	
Barometric Pressure (inches Hg)	29.50	29.50	29.50	
Pump Vacuum (inches Hg)	18.0	18.0	18.0	
K'	0.012	0.012	0.012	
Vcr (l³)	4.285	4.285	4.289	
Vmstd (l³)	4.424	4.422	4.389	
Post Test Yc	0.96853	0.96912	0.97712	
Full Test Yd	0.9985	0.9985	0.9985	
% Difference	3.00	2.94	2.14	
	Average Difference		2.69	

Airtech Environmental Services, Inc.
S-Type Pitot Tube Inspection Form

Date 1/25/11
Pitot ID AE5-6-2
Operator EA

	Measured	Allowed
Outside Tube Diameter - Dt (inches)	0.250	NA
Base To Opening Distance - Pa (inches)	0.356	NA
Base To Opening Distance - Pb (inches)	0.356	NA
Pa/Dt	1.42	1.05-1.50
Pb/Dt	1.42	1.05-1.50
Angle $\alpha 1$ (°)	2.7	10
Angle $\alpha 2$ (°)	2.6	10
Angle B1 (°)	4	5
Angle B1 (°)	0.6	5
Opening to Opening Distance Pa+Pb (inches)	0.712	NA
Angle Z (°)	0.4	NA
z (inches)	0.0050	0.125
Angle W (°)	0	NA
w (inches)	0.000	0.031

Note Any Damage, Nicks or Dents to the Pitot Tube

Is the Pitot Tube Part of an Assembly Yes
If Yes, Complete the Section Below

Pitot	Measured	Minimum
Distance From Nozzle (inches)	0.75	0.75 in.
Pitot to Thermocouple Distance (inches)	2	2 in.
Pitot to Sample Probe Distance (inches)	6.25	3 in.

Does the Pitot Tube Meet the Above Requirements Yes
Is the Pitot Tube Free of Damage Yes

If Yes to Both, a Pitot Tube Coefficient of 0.84 is Assigned
If No to Either, then the Pitot Tube Must be Calibrated

Airtech Environmental Services, Inc.
S-Type Pitot Tube Inspection Form

Date 1/25/11
Pitot ID AE-5-6-4WC
Operator EA

	Measured	Allowed
Outside Tube Diameter - Dt (inches)	0.250	NA
Base To Opening Distance - Pa (inches)	0.329	NA
Base To Opening Distance - Pb (inches)	0.329	NA
Pa/Dt	1.32	1.05-1.50
Pb/Dt	1.32	1.05-1.50
Angle $\alpha 1(^{\circ})$	2.3	10
Angle $\alpha 2(^{\circ})$	1.7	10
Angle B1($^{\circ}$)	3.9	5
Angle B1($^{\circ}$)	3.5	5
Opening to Opening Distance Pa+Pb (inches)	0.658	NA
Angle Z ($^{\circ}$)	2.5	NA
z (inches)	0.0287	0.125
Angle W ($^{\circ}$)	0.3	NA
w (inches)	0.003	0.031

Note Any Damage, Nicks or Dents to the Pitot Tube

Is the Pitot Tube Part of an Assembly Yes
If Yes, Complete the Section Below

Pitot	Measured	Minimum
Distance From Nozzle (inches)	0.75	0.75 in.
Pitot to Thermocouple Distance (inches)	2	2 in.
Pitot to Sample Probe Distance (inches)	5	3 in.

Does the Pitot Tube Meet the Above Requirements Yes
Is the Pitot Tube Free of Damage Yes

If Yes to Both, a Pitot Tube Coefficient of 0.84 is Assigned
If No to Either, then the Pitot Tube Must be Calibrated

Airtech Environmental Services, Inc. S-Type Pitot Tube Inspection Form

Date 1/25/11
 Pitot ID AE5-6-11
 Operator EA

	Measured	Allowed
Outside Tube Diameter - Dt (inches)	0.250	NA
Base To Opening Distance - Pa (inches)	0.37	NA
Base To Opening Distance - Pb (inches)	0.37	NA
Pa/Dt	1.48	1.05-1.50
Pb/Dt	1.48	1.05-1.50
Angle $\alpha 1$ (°)	0.7	10
Angle $\alpha 2$ (°)	1	10
Angle B1 (°)	2.2	5
Angle B1 (°)	1	5
Opening to Opening Distance Pa+Pb (inches)	0.740	NA
Angle Z (°)	1.3	NA
z (inches)	0.017	0.125
Angle W (")	0.6	NA
w (inches)	0.008	0.031

Note Any Damage, Nicks or Dents to the Pitot Tube

Is the Pitot Tube Part of an Assembly?

If Yes, Complete the Section Below

Pitot	Measured	Minimum
Distance From Nozzle (inches)	0.75	0.75 in.
Pitot to Thermocouple Distance (inches)	2.5	2 in.
Pitot to Sample Probe Distance (inches)	6.25	3 in.

Does the Pitot Tube Meet the Above Requirements?

Is the Pitot Tube Free of Damage?

If Yes to Both, a Pitot Tube Coefficient of 0.84 is Assigned
 If No to Either, then the Pitot Tube Must be Calibrated

Airtech Environmental Services, Inc. S-Type Pitot Tube Inspection Form

Date January 26, 2011
 Pitot ID AE5-12-3
 Operator EA

	Measured	Allowed
Outside Tube Diameter - Dt (inches)	0.250	NA
Base To Opening Distance - Pa (inches)	0.338	NA
Base To Opening Distance - Pb (inches)	0.338	NA
Pa/Dt	1.35	1.05-1.50
Pb/Dt	1.35	1.05-1.50
Angle $\alpha 1(^{\circ})$	1.1	10
Angle $\alpha 2(^{\circ})$	1.1	10
Angle B1($^{\circ}$)	2.1	5
Angle B2($^{\circ}$)	3.5	5
Opening to Opening Distance Pa+Pb (inches)	0.676	NA
Angle Z ($^{\circ}$)	4.3	NA
z (inches)	0.05	0.125
Angle W ($^{\circ}$)	0.9	NA
w (inches)	0.01	0.031

Note Any Damage, Nicks or Dents to the Pitot Tube

Is the Pitot Tube Part of an Assembly **Yes**
 If Yes, Complete the Section Below

	Measured	Allowed
Distance From Nozzle X (inches)	0.75	0.75 in.
Pitot to Thermocouple Distance, W (inches)	2.25	2 in.
Pitot to Sample Probe Distance, Y (inches)	3.500	3 in.

Does the Pitot Tube Meet the Above Requirements **Yes**
 Is the Pitot Tube Free of Damage **Yes**

If Yes to Both, a Pitot Tube Coefficient of 0.84 is Assigned
 If No to Either, then the Pitot Tube Must be Calibrated

Airtech Environmental Services, Inc.
S-Type Pitot Tube Inspection Form

Date January 17, 2011
 Pitot ID AE5-12-4
 Operator A. Kienitz

	Measured	Allowed
Outside Tube Diameter - Dt (inches)	0.250	NA
Base To Opening Distance - Pa (inches)	0.356	NA
Base To Opening Distance - Pb (inches)	0.356	NA
Pa/Dt	1.424	1.05-1.50
Pb/Dt	1.424	1.05-1.50
Angle, $\alpha 1(^{\circ})$	1	10
Angle, $\alpha 2(^{\circ})$	0	10
Angle, B1($^{\circ}$)	0	5
Angle, B1($^{\circ}$)	3	5
Opening to Opening Distance Pa+Pb (inches)	0.712	NA
Angle, Z ($^{\circ}$)	89	NA
z (inches)	0.030	0.125
Angle, W ($^{\circ}$)	90	NA
w (inches)	0.003	0.031
Pitot to Thermocouple Distance, W (inches)	2.50	≥ 2

Note Any Damage, Nicks or Dents to the Pitot Tube

Is the Pitot Tube Part of an Assembly **Yes**
 If Yes, Complete the Section Below

Pitot	Measured	Minimum
Distance From Nozzle, X (inches)	0.75	0.75
Pitot to Sample Probe Distance, Y (inches)	4.50	3

Does the Pitot Tube Meet the Above Requirements **Yes**
 Is the Pitot Tube Free of Damage **Yes**

If Yes to Both, a Pitot Tube Coefficient of 0.84 is Assigned
 If No to Either, then the Pitot Tube Must be Calibrated