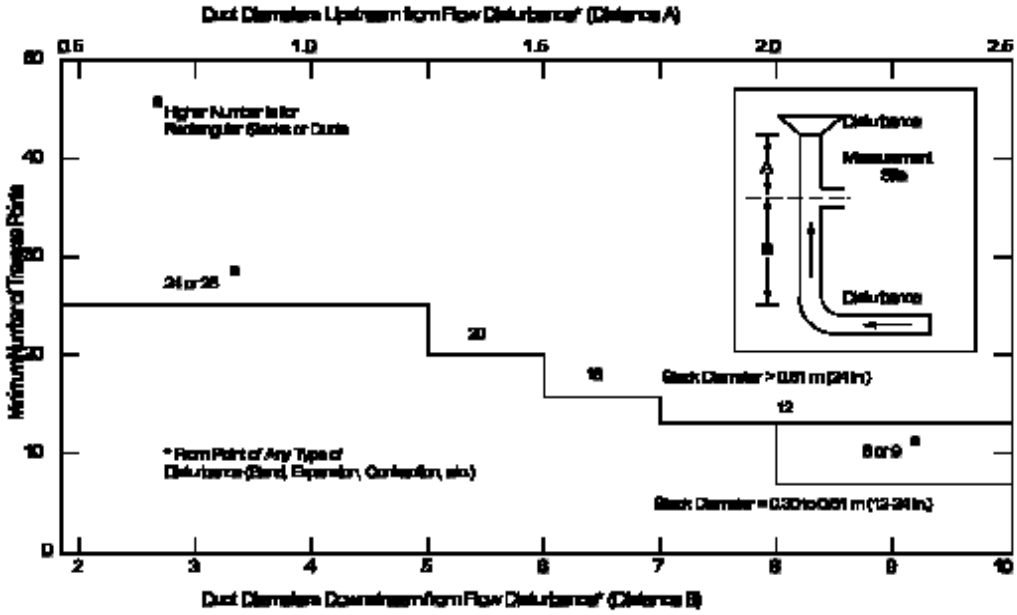
RM 1 - Traverse Points For Velocity & Particulate Traverses

AECOM

Client		Stack Diameter (in)	
Location		Upstream Distance (in)	Diameters
Source		Downstream Distance (in)	Diameters
Operator		Port Depth (in)	
		Port Diameter (in)	

Location of Traverse Points in Circular Stacks

Traverse Point Number	Number of traverse points (% of stack diameter from inside wall)							Distance (in)	Distance with port (in)
	6	8	10	12	16	20	24		
1	4.4	3.2	2.6	2.1	1.6	1.3	1.1		
2	14.5	10.5	8.2	6.7	4.9	2.9	3.2		
3	29.6	19.4	14.6	11.8	8.5	6.7	5.5		
4	70.4	32.3	22.6	17.7	12.5	9.7	7.9		
5	85.4	67.7	34.2	25.0	16.9	12.9	10.5		
6	95.6	80.6	66.8	35.6	22.0	16.5	12.2		
7		89.5	77.4	64.4	28.3	20.4	16.1		
8		96.8	85.4	75.0	37.5	25.0	19.4		
9			91.8	82.3	62.5	30.6	23.0		
10			97.4	88.2	71.7	38.8	27.2		
11				93.3	78.0	61.2	32.3		
12				97.9	83.1	69.4	39.8		
13					87.5	75.0	60.2		
14					91.5	79.6	67.7		
15					95.1	83.5	72.8		
16					98.4	87.1	77.0		
17						90.3	80.6		
18						93.3	83.9		
19						96.1	86.8		
20						98.7	88.6		
21							92.1		
22							94.5		
23							96.8		
24							99.9		



RM 3
MOLECULAR WEIGHT DETERMINATION

Client: _____ **Operator:** _____
Plant Location: _____ **Ambient Temperature:** _____
Test Location: _____

Sample Type (circle one): **Bag** **Integrated** **Continuous** **Other** _____
Has Orsat or Fyrite unit been successfully leak checked? **YES/NO**

Date	Bag ID/Run Number	% O_2			% CO_2		
		Actual Readings		Average	Actual Readings		Average

ANALYZER CALIBRATION

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Client		Cylinder #, Supplier, & Conc.	Analyzer		Model
Location			Full Scale		Serial #
Source ID			Analyzer		Model
Operator			Full Scale		Serial #
Date			Analyzer		Model
Initial Cal Time			Full Scale		Serial #
Final Cal Time			Analyzer		Model
			Full Scale		Serial #
			Analyzer		Model
			Full Scale		Serial #

			Cylinder Value (ppm/%)	Analyzer Response (ppm/%)	Absolute Difference (ppm/%)	Percent Difference (% of span)	Percent Difference (Pass/Fail)
Analyzer _____ Initial Analyzer Response		Zero					
		Mid-Range					
		High-Range					
Final Analyzer Response		Zero					
		Mid-Range					
		High-Range					
Analyzer _____ Initial Analyzer Response		Zero					
		Mid-Range					
		High-Range					
Final Analyzer Response		Zero					
		Mid-Range					
		High-Range					
Analyzer _____ Initial Analyzer Response	Predicted ppm	Zero					
		Mid-Range					
		Mid-Range					
		High-Range					
Final Analyzer Response	Predicted ppm	Zero					
		Mid-Range					
		Mid-Range					
		High-Range					
Analyzer _____ Initial Analyzer Response		Zero					
		Mid-Range					
		High-Range					
Final Analyzer Response		Zero					
		Mid-Range					
		High-Range					
Analyzer _____ Initial Analyzer Response		Zero					
		Mid-Range					
		High-Range					
Final Analyzer Response		Zero					
		Mid-Range					
		High-Range					

Cal Error % =abs(CEM-Cylinder)/Span Value X 100
Allowable Calibration Error % = 2.0

ANALYZER BIAS

AECOM

Client:		**Analyzer:**		**Span Value:**	
Location:		**Analyzer:**		**Span Value:**	
Source ID:		**Analyzer:**		**Span Value:**	
Operator:		**Analyzer:**		**Span Value:**	
Date:		**Analyzer:**		**Span Value:**	

Run No.	Monitor ID	Analyzer Response (ppm)	Initial Values				Final Values				Calibration Drift	
			Initial Time (military)	System Response (ppm)	Calibration Bias (%)	(Pass/Fail)	Final Time (military)	System Response (ppm)	Calibration Bias (%)	(Pass/Fail)	(%)	(Pass/Fail)
Run 1 Zero												
Run 1 Span												
Run 2 Zero												
Run 2 Span												
Run 3 Zero												
Run 3 Span												
Run 1 Zero												
Run 1 Span												
Run 2 Zero												
Run 2 Span												
Run 3 Zero												
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Run 3 Zero												
Run 3 Span												
Run 1 Zero												
Run 1 Span												
Run 2 Zero												
Run 2 Span												
Run 3 Zero												
Run 3 Span												

System Cal Bias % = (System Cal Response - Analyzer Response) / Span X 100 **% Allowable = 5.0**
Calibration Drift = (Final System Response - Initial System Response) / Span X 100 **% Allowable = 3.0**

ISOKINETIC SAMPLE DATA FORM

Plant:	Filter ID:
Location:	Ambient Temp. (^oF):
Source I.D.:	Baro. Press. (in. Hg):
Date:	Static Press. (in H_2O):
Flow Traverse Time:	O_2 (%):
Run No.:	CO_2 (%):
Operators:	Duct Dia. (in):
Meter Box I.D.:	B_{ws} (assumed):
Meter Y:	Nozzle Dia. (in):
Meter Delta H@:	K Factor:
Probe I.D./ Impinger outlet I.D.:	Leak Check:
Probe Length/Type:	Pre: _____ acf _____ in. Hg Vac.
Pitot Coeff. (Cp):	Post: _____ acf _____ in. Hg Vac.

Moisture

Imp.	Initial	Final
1		
2		
3		
4		
5		
	Net Gain	

Pitot: Impact Static

Pre: _____ in. H_20/15 sec.

Post: _____ in. H_20/15 sec.

DGM Clock Time	Port/Point I.D.	Sample Time (min.)	DGM Reading (DACF)	ΔP (in. H_2O)	ΔH (in. H_20)	Stack Temp. (F)	Probe Temp. (^oF)	Filter Temp. (^oF)	Imp. Outlet Temp. (^oF)	DGM Temp. (^oF)		Vacuum (in. Hg)
		Total Time	Vol. (DACF)	Avg. $\sqrt{\Delta P}$	Avg. ΔH	Avg. t_s				Average DGM Temp.		Max. Vac.

Gravimetric Data Form

AECOM

Client _____ Location _____

Filter ID	Run Number	Date	Time	Tare (1)	Date	Time	Tare(2)	Date	Time	Final (1)	Date	Time	Final(2)	Probe Wash Vol. (ml)

Particulate Sample Gravimetric Data Form

AECOM

Client: _____
Location: _____
Sample Location: _____
Run Number: _____

Sample Identification-Probe Wash: Yes/No
Liquid Level Marked - Probe Wash: Yes/No
Sample Identification-Filter: Yes/No
Petri Dish Sealed-Filter: Yes/No

Sample Probe Wash

Beaker I.D.: _____
Density of Rinse (d): _____ mg/ml

Date & Time: _____
Date & Time: _____

Date & Time: _____
Date & Time: _____

Blank Mass Concentration (Ca): _____ mg/mg
Sample Volume (Va): _____ ml

Beaker Final Weight: _____ g
Beaker Final Weight: _____ g
Average Beaker Final Weight: _____ g
Beaker Tare: _____ g
Beaker Tare: _____ g
Average Beaker Tare: _____ g
Blank Residue Weight (Wa): _____ mg
Mass of Residue (Ma): _____ mg

Rinse Mass Gain = _____ mg

Sample Filter

Filter I.D.: _____

Date & Time: _____
Date & Time: _____

Date & Time: _____
Date & Time: _____

Filter Final Weight: _____ g
Filter Final Weight: _____ g
Average Filter Final Weight: _____ g
Filter Tare: _____ g
Filter Tare: _____ g
Average Filter Tare: _____ g
Filter Mass Gain: _____ mg

Filter Mass Gain = _____ mg

Remarks: _____

Signature of Analyst: _____

Signature of Reviewer: _____