TRAVERSE POINT LOCATION FOR CIRCULAR DUCTS

PLANT
DATE
SAMPLING LOCATION
INSIDE OF FAR WALL TO
OUTSIDE OF NIPPLE, (DISTANCE A)
INSIDE OF NEAR WALL TO
OUTSIDE OF NIPPLE, (DISTANCE B)
STACK I.D., (DISTANCE A - DISTANCE B)
NEAREST UPSTREAM DISTURBANCE
NEAREST DOWNSTREAM DISTURBANCE
CALCULATOR

SCHEMATIC OF SAMPLING LOCATION

TRAVERSE POINT NUMBER	FRACTION OF STACK I.D.	STACK I.D.	PRODUCT OF COLUMNS 2 AND 3 (TO NEAREST 1/8 INCH)	DISTANCE B	TRAVERSE POINT LOCATION FROM OUTSIDE OF NIPPLE (SUM OF COLUMNS 4 & 5)

METHOD 2 GAS VELOCITY AND VOLUME DATA

	PLANT AND CITY	RUN DATE
1.		

SAMPLING LOCATION	CLOCK TIME

	RUN NUMBER	OPERATOR	AMB. TEMP. (°F)	BAR. PRESS (in. Hg)	STATIC PRESS (in. H_2O)
2.					

MOLECULAR WT.	STACK INSIDE DIMENSION (in.)		PITOT TUBE Cp
	DIAM OR SIDE 1	SIDE 2	

FIELD DATA

TRAVERSE POINT NUMBER	POSITION (in.)	VELOCITY HEAD $(\Delta p_s)'$, in. H_2O	STACK TEMP., °F	CYCLONIC FLOW DETERMINATION	
				Δp_s at 0° REFERENCE	ANGLE (α) WHICH YIELDS A NULL Δp
				AVERAGE ANGLE (α)	

Average of (α) must be less than 10 degrees to be acceptable.

METHOD 2 PITOT TUBE CALIBRATION

PITOT TUBE IDENTIFICATION NUMBER:__________ DATE:__________

CALIBRATED BY:__________________________________

	"A" SIDE CALIBRATION			
RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_p(S)$	DEV.
1				
2				
3				
		AVERAGE		

	"B" SIDE CALIBRATION"			
RUN NO.	Δp_{std} cm H_2O (in. H_2O)	$\Delta p_{(s)}$ cm H_2O (in. H_2O)	$C_p(S)$	DEV.
1				
2				
3				
		AVERAGE		

DEV. = $\underline{C_p(S) - C_p(S)(avg.)}$ (MUST BE $\leq$ 0.01)
C_p DIFFERENCE: $A_{avg} - B_{avg}$ =__________ (MUST BE $\leq$ 0.01)

NOTE: Not required if pitot tube meets geometry standards.

Integrated Bag Sampling Field Data

Run No. __________

Date ____________________ Plant ________________________________

Sampling location ____

Barometric pressure ______________________ " Hg.

Ambient temp. °F _______________ Stack temp. °F ______________

Operator ____________________________________

Sample bag leak checked _____ Sample train leak checked _____

Time	Traverse point	Rate meter flow rate, Q cm^3/min.	% Dev.[a]	Fyrite,	
				O_2	CO_2
		Average			

[a] % Dev. = $\left(\frac{Q - Q_{avg.}}{Q_{avg.}}\right)100$ (Must be $\leq 10\%$)

DRY MOLECULAR WEIGHT DETERMINATION

PLANT ____________________
DATE ____________ TEST NO. ____________
SAMPLING TIME (24-hr CLOCK) ____________
SAMPLING LOCATION ____________
SAMPLE TYPE (BAG, INTEGRATED, CONTINUOUS) ____________
ANALYTICAL METHOD ____________
AMBIENT TEMPERATURE ____________
OPERATOR ____________
ORSAT LEAK CHECKED ____________

COMMENTS:

RUN / GAS	1		2		3		AVERAGE NET VOLUME	MULTIPLIER	MOLECULAR WEIGHT OF STACK GAS (DRY BASIS) M_d, lb lb-mole
	ACTUAL READING	NET	ACTUAL READING	NET	ACTUAL READING	NET			
CO_2								44/100	
O_2 (NET IS ACTUAL O_2 READING MINUS ACTUAL CO_2 READING)								32/100	
CO (NET IS ACTUAL CO READING MINUS ACTUAL O_2 READING)								28/100	
N_2 (NET IS 100 MINUS ACTUAL CO READING)								28/100	
								TOTAL	

PLANT ____________________
LOCATION ____________________
OPERATOR ____________________
DATE ____________________
RUN NO. ____________________
AMBIENT TEMPERATURE ____________________
BAROMETRIC PRESSURE ____________________
PROBE LENGTH m(ft) ____________________

PROBE MATERIAL ____________________
SAMPLE BOX NO. ____________________
METER BOX NO. ____________________
METER ΔH@ ____________________
METER CAL. (Y) ____________________
FINAL LEAK RATE ____________________
VACUUM DURING LEAK CHECK ____________________

	IMPINGER VOLUME, ml	SILICA GEL WEIGHT, g
FINAL		
INITIAL		

TRAVERSE POINT NUMBER	SAMPLING TIME, (θ) MIN.	STACK TEMPERATURE, °C(°F)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔM), mm(in.)H_2O	METER READING GAS SAMPLE VOLUME, $m^3(ft^3)$	ΔV_m* $m^3(ft^3)$	GAS SAMPLE TEMPERATURE AT DRY GAS METER		TEMPERATURE OF GAS LEAVING CONDENSER OR LAST IMPINGER, °C(°F)
						INLET (T_{min})°C(°F)	OUTLET (Tm_{out})°C(°F)	
TOTAL								
AVERAGE								

* Acceptable $\Delta V_m = 0.9 < \frac{(V\ final - V\ initial)}{(number\ of\ pts.)} < 1.1$ ______ to ______.

Method 4 Field Data and Sample Recovery Data Sheet

Plant _____
City _____
Location _____
Operator _____
Date _____
Run No. _____
Stack diam. mm (in.) _____
_____
Sample Box No. _____
Meter Box No. _____
Meter ΔH@ _____

Meter Calibration (Y) _____
Pitot Tube (C_p) _____
Probe Length _____
Probe Liner Material _____
Probe Heater Setting _____
Ambient Temperature _____
Barometric Pressure (P_b) _____ mm Hg (in. Hg)
Assumed Moisture _____
Static Pressure (P_s) _____ mm H_2O (in. H_2O)
C Factor _____
Reference ΔP _____ mm H_2O (in. H_2O)

Sheet _____ of _____
Nozzle Identification No. _____
Nozzle Diameter _____ mm (in.)
Therm. No. _____
Final Leak Rate _____ M^3/min. (cfm)
Vacuum During Leak Check _____
_____ mm Hg (in. Hg)
Filter No. _____
Remarks: _____

Traverse point number	Sampling time, (θ), min.	Clock time, (24 hr)	Vacuum mm Hg (in. Hg)	Stack temperature (T_S), °C (°F)	Velocity head (ΔP_S), mm H_2O (in. H_2O)	Pressure differential across orifice meter (ΔH) mm H_2O (in. H_2O)	Gas sample volume (V_m) m^3 (ft^3)	Gas sample temperature at dry gas meter		Temperature of gas leaving condenser or last impinger, °C (°F)	Filter temp., °C (°F)
								Inlet, °C (°F)	Outlet, °C (°F)		
	Total		Max.	Avg.			Total	Avg.	Avg.	Max.	

Method 5 field test data form.

METHOD 5

PARTICULATE SAMPLE RECOVERY AND INTEGRITY SHEET

Plant: ______________________ Sample date: ______________

Sample location: ______________________ Run no.: __________

Sample recovery person: ____________ Recovery date: ________

Filter(s) no.: ____________________

MOISTURE

Impingers			Silica gel		
Final volume (wt)	________	ml(gm)	Final wt.	______g	______g
Initial volume (wt)	______	ml(gm)	Initial wt.	_____g	_____g
Net volume (wt)	________	ml(gm)	Net wt.	______g	______g

Total moisture _______g

Color of silica gel __________________

Description of impinger water ____________________________

____

RECOVERED SAMPLE

Filter container no. _____________ sealed _______________

Description of particulate on filter _______________________

____

Acetone rinse container no. _______________ Liquid level marked _______________

Acetone blank container no. _______________ Liquid level marked _______________

Samples stored and locked ______________________________

Remarks: ____

____

Date of laboratory custody _____________

Laboratory personnel taking custody _______________________

Remarks: ____

____

BLANK ANALYTICAL DATA

Plant ________________________________

Sample location ____________________________

Relative humidity ___________________________

Type of blank ______________________________

Liquid level at mark and container sealed __________

Density of blank (ρa) ______________ g/ml

Blank volume (Va) ________________ ml

Date and time of wt. ______________ Gross wt. _______ mg

Date and time of wt. ______________ Gross wt. _______ mg

Average gross wt. _______ mg

Tare wt. _______ mg

Weight of blank (ma) _______ mg

$$Ca = \frac{ma}{Va\ \rho a} = \frac{(\qquad)}{(\qquad)(\qquad)} = \underline{\qquad\qquad} \text{ mg/g}$$

Note: In no case shall a blank residue greater than (0.01 mg/g) or 0.001% of the weight of blank used be subtracted from the sample weight.

Remarks: ____________________________________

____

Signature of analyst ____________________

Signature of reviewer ___________________

METHOD 5 TRAIN ANALYTICAL PARTICULATE DATA

Plant ____________________ Run No. ________

Sample location ____________________

Relative humidity ____________________

Density of acetone (ρa) ____________________ g/ml

Sample type	Sample identifiable	Liquid level marked and/or container sealed
Acetone rinse		
filter(s)		

Acetone rinse container no. ____________

Acetone rinse volume (Vaw) ____________ ml

Acetone blank residue concentration (Ca) ____________ mg/g

$Wa = Ca\ Vaw\ \rho a = (\quad)(\quad)(\quad) =$ ____________ mg

Date and time of wt ____________ Gross wt ________ mg

Date and time of wt ____________ Gross wt ________ mg

Average gross wt ________ mg

Tare wt ________ mg

Less acetone blank wt (Wa) ________ mg

Weight of particulate in acetone rinse ________ mg

Filter(s) container no. ____________

Date and time of wt ____________ Gross wt ________ mg

Date and time of wt ____________ Gross wt ________ mg

Average gross wt ________ mg

Tare wt ________ mg

Weight of particulate on filter(s) ________ mg

Weight of particulate in acetone rinse ________ mg

Total weight of particulate ________ mg

Note: In no case shall a blank residue greater than (.01 mg/g) or .001% of the weight of acetone used be subtracted from the sample weight.

Remarks: ____________________

____

Signature of analyst ____________________

Signature of reviewer ____________________

NOZZLE CALIBRATION

Date_______________ Calibrated by_______________

Nozzle identification number	D_1, in.	D_2, in.	D_3, in.	ΔD, in.	D_{avg}

where:

$D_{1,2,3,}$ = nozzle diameter measured on a different diameter, in. Tolerance = measure within 0.001 in.

ΔD = maximum difference in any two measurements, in. Tolerance = 0.004 in.

D_{avg} = average of D_1, D_2, and D_3.

Nozzle calibration data.

CALIBRATION

DRY GAS METER & ORIFICE

DATE____________________ METER BOX NO.____________________

BAROMETRIC PRESSURE, P_b =__________in. Hg. DRY GAS METER NO.____________________

Orifice manometer setting ΔH in. H_2O	Gas volume wet test meter V_w, ft^3	Gas volume dry gas meter V_d, ft^3	Wet test Meter t_w, °F	Dry gas meter Inlet t_{di}, °F	Dry gas meter Outlet t_{do}, °F	Dry gas meter Average t_d, °F	Time θ, min.	γ	$\Delta H@$
0.5	5								
1.0	5								
1.5	10								
2.0	10								
3.0	10								
4.0	10								

Average ____________

ΔH	$\frac{\Delta H}{13.6}$	γ $\frac{V_w P_b (t_d + 460)}{V_d \left(P_b + \frac{\Delta H}{13.6}\right)(t_w + 460)}$	$\Delta H@$ $\frac{0.0317\,\Delta H}{P_b (t_d + 460)} \left[\frac{(t_w + 460)\,\theta}{V_w}\right]^2$
0.5	0.0368		
1.0	0.0737		
1.5	0.110		
2.0	0.147		
3.0	0.221		
4.0	0.294		

γ = Ratio of accuracy of wet test meter to dry test meter.

$\Delta H@$ = Orifice of pressure differential that gives 0.75 cfm of air at 70°F and 29.92 inches of mercury, in. H_2O.

POST TEST METER CALIBRATION

Date ______________

Barometric pressure, P_b = ________ "Hg

Meter Box No. ______________

Dry Gas Meter No. ______________

Plant ______________

P/N ______________

Project Manager ______________

Pretest Y ______________

				Temperature							Yi
					Dry gas meter						
Test No.	Orifice manometer setting, ΔH, in H_2O	Gas volume wet test meter V_w, ft^3	Gas volume dry gas meter V_d, ft^3	Wet test Meter t_w, °F	Inlet t_{di}, °F	Outlet t_{do}, °F	Average[a] t_d, °F	Time Θ, min.	Vacuum setting in Hg	Yi	$\frac{V_w P_b (t_d + 460)}{V_d\left(P_b + \frac{\Delta H}{13.6}\right)(t_w + 460)}$
		10									
		10									
		10									

Post-test y =

Calibrated by ______________
Signature

[a] If there is only one therometer on the dry gas meter record the temperature under t_d.

where:

V_w = Gas volume passing through the wet test meter, ft^3.

V_d = Gas volume passing through the dry test meter, ft^3.

t_w = Temperature of the gas in the wet test meter, °F.

t_{d_i} = Temperature of the inlet gas of the dry test meter, °F.

t_{d_o} = Temperature of the outlet gas of the dry test meter, °F.

t_d = Average temperature of the gas in the dry test meter, obtained by the average of t_{d_i} and t_{d_o}, °F.

ΔH = Pressure differential across orifice, in H_2O.

Y_i = Ratio of accuracy of wet test meter to dry test meter for each run.

Y = Average ratio of accuracy of wet test meter to dry test meter for all three runs.
Tolerance = Pretest Y ±0.05 Y.

P_b = Barometric pressure, in. Hg.

Θ = Time of calibration run, minutes.

Date: ____________________ Thermocouple No.: ____________

Ambient Temperature: __________ °C Barometric pressure: __________" Hg

Calibrator: ______________ Reference: Mercury-in-glass: ________

Other: ________

Reference point No.[a]	Source[b] (specify)	Reference thermometer temperature, °C	Thermocouple potentiometer temperature, °C	Difference,[c] %

[a] Every 30°C (50°F) for each reference point

[b] Type of Calibration system used

[c] $$\frac{(\text{Ref. temp: °C} + 273) - (\text{Test therm. temp. °C} + 273)}{\text{Ref. temp. °C} + 273} \times 100 \le 1.5\%$$

Stack Temperature Sensor Calibration Data Sheet

PLANT NAME ____________________

SAMPLE LOCATION ____________________

OPERATOR ____________________

BAROMETRIC PRESSURE ____ mm Hg (in Hg) ____

PROBE MATERIAL ____________________

METER BOX NO. ____________________

AMBIENT TEMP. ____ °C ____

INITIAL LEAK CHECK ____________________

FINAL LEAK CHECK ____________________

CITY ____________________

DATE ____________________

SAMPLE NO. ____________________

PROBE LENGTH m(ft) ____________________

PROBE HEATER SETTING ____________________

METER CALIBRATION FACTOR (Y) ____________________

SAMPLE POINT LOCATION ____________________

SAMPLE PURGED (min) ____________________

REMARKS: ____________________

Sampling Time (min)	Clock Time (24 hr)	Sample Volume $l(ft^3)$	Sample flow rate setting lpm (cfm)	Sample volume metered Δ Vml (ft^3)	Percent Deviation % (±)	Dry gas meter temp. °C (°F)	Impinger temperature °C (°F)
Total		Total		ΔVm avg.	Max. Dev.	Avg.	Max. Temp.

±) Percent deviation (%) = $\left| \frac{\Delta V_m - \Delta V_m \text{ avg.}}{\Delta V_m \text{ avg.}} \right| \times 100$

METHOD 6 Field sampling data sheet for SO_2.

METHOD 6 SAMPLE RECOVERY AND INTEGRITY DATA

PLANT ____________________ SAMPLE LOCATION ____________________

FIELD DATA CHECKS

SAMPLE RECOVERY PERSONNEL ____________________

PERSON WITH DIRECT RESPONSIBILITY FOR RECOVERED SAMPLES ____________________

Sample no.	Sample identification no.	Date of recovery	Liquid level marked	Stored in locked container
1				
2				
3				
4				
5				
6				
Blank				

REMARKS ____________________

____

SIGNATURE OF FIELD SAMPLE TRUSTEE ____________________

LABORATORY DATA CHECKS

LAB PERSON WITH DIRECT RESPONSIBILITY FOR RECOVERED SAMPLES ____________________

DATE RECOVERED SAMPLES RECEIVED ____________________

ANALYST ____________________

Sample no.	Sample identification no.	Date of analysis	Liquid at marked level	Sample identified
1				
2				
3				
4				
5				
6				
Blank				

REMARKS ____________________

____

SIGNATURE OF LAB SAMPLE TRUSTEE ____________________

METHOD 6

SULFUR DIOXIDE ANALYTICAL DATA

PLANT____________________ DATE____________________

SAMPLE LOCATION____________________ ANALYST____________________

NORMALITY OF BARIUM PERCHLORATE

1________ ml ________ N
2________ ml ________ N ________ N
3________ ml ________ N

Run No.	Sample No.	Total Volume of Sample	Sample Aliquot	Volume of Titrant V_t, ml		
				1st Titration	2nd Titration	Average
1						
2						
3						
4						
5						
6						

Blank Analysis - Volume of titrant

1st titration____________________
2nd titration____________________
Average____________________

$\frac{\text{1st titration}}{\text{2nd titration}} = 0.99$ to 1.01 or 1st titration - 2nd titration = 0.2

Signature of Analyst____________________
Signature of Reviewer or Supervisor____________________

Plant ______________________ City ______________________

Sample location ______________________ Date ______________________

Operator ______________________ Barometric Pressure (Pbar) __________ in. Hg

Sample No.	Sample point location	Sample time 24-hr	Probe temperature, °F	Flask and valve, No	Volume of flask and valve, ml	Initial Pressure in. Hg			Inital Temperature	
						Leq Ai	Leq Bi	Pi[a]	°F (ti)[a]	°R (Ti)[b]

[a] $Pi = Pbar - (Ai + Bi)$

[b] $Ti = ti + 460°F$

METHOD 7 Nitrogen Oxide Field Data Sheet

Plant ______________________ Date ______________________

Sample Recovery Personnel __________ Barometric Pressure, (P_{bar}) ________ in. Hg

Person with direct responsibility for recovered samples ______________

Sample No.	Final Pressure in. Hg			Final Temperature		Sample recovery time, 24-hr	pH adjusted 9 to 12	Liquid level marked	Samples stored in locked container
	Leq A_f	Leq B_f	P_f	°F (t_f)	°R (T_f)				

$P_f = P_{bar} - (A_f + B_f)$ $T_f = t_f + 460°F$

Lab person with direct responsibility for recovered samples ____________

Date recovered samples received ____________ Analyst ____________

All samples identifiable ____________ All liquids at marked level ______

Remarks ____

Signature of lab sample trustee ________________________________

METHOD 7 NO_x Sample Recovery and

Integrity Data Sheet

NO_x LABORATORY DATA FORM

Plant ____________________ Run No.(s) ____________________

Date samples received __________ Date analyzed ____________________

Aliquot factor ______________ Samples analyzed by ______________

Blank absorbance ____________ Data reviewed by ________________

Calibration factor (K_c) ________ Date of review ________________

Sample No.	Sample absorbance A	Dilution factor F	Total mass of NO_x at NO_2 in sample m

$m = 2\ K_c\ AF$, <u>Note</u>: If other than a 25 ml aliquot is used for analysis, the factor 2 must be replaced by a corresponding factor.

METHOD 7 ANALYTICAL DATA SHEET

OPTIMUM WAVELENGTH DETERMINATION

Spectrophotometer No. __________ Date ______________

Calibrated by ______________ Reviewed by __________

Spectrophotometer setting, nm	Absorbance of standard OD[a]	Absorbance of blank OD[b]	Actual absorbance of OD[c]
399 400 401			
402 403 404			
405 406 407			
408 409 410			
411 412 413			
414 415 416			

[a] Absorbance of the 200 μg NO_2 standard in a single beam spectrophotometer.

[b] Absorbance of the blank in a single beam spectrophotometer.

[c] For a single beam spectrophotometer - absorbance of the standard minus absorbance of the blank. For a double beam spectrophotometer - absorbance of the 200 μg NO_2 standard with the blank in the reference cell.

Spectrophotometer setting for maximum actual absorbance of standard (nm) ______________.

If the maximum actual absorbance occurs at a spectrophotometer setting of 399 or 416 nm, the spectrophotometer must be repaired or recalibrated.

METHOD 7 Optimum Wavelength Determination Data Sheet.

Plant ____________

Location ____________

Operator ____________

Date ____________

Run No. ____________

Sample Box No. ____________

Meter Box No. ____________

Meter ΔH@ ____________

Meter Calibration Y ____________

Pitot Tube CP ____________

Probe Length ____________

Probe Liner Material ____________

Probe Heater Setting ____________

Ambient Temperature ____________

Barometric Pressure ____________

Assumed Moisture ____________

Static Pressure ____________

C Factor ____________

Reference ΔP ____________

Maximum ΔH ____________

Sheet ______ of ______

Nozzle Identification No. ____________

Nozzle Diameter ____________

Final Leak Rate ____________

Vacuum During Leak Check ____________

Remarks: ____________

Traverse Point Number	Sampling Time (θ), min.	Clock Time (24 hour)	Vacuum (in. Hg)	Stack Temperature (T_s), °C(°F)	Velocity Head (ΔP_s), mm H_2O (in. H_2O)	Pressure Differential Across Orifice Meter, mm H_2O (in. H_2O)	Gas Sample Volume, m^3 (ft^3)	Gas Sample Temperature at Dry Gas Meter		Temperature of Gas Leaving Condenser or Last Impinger, °C (°F)
								Inlet, °C (°F)	Outlet, °C (°F)	

Method 8 Field Data Form

PLANT____________________ SAMPLE LOCATION__________

FIELD DATA CHECKS

SAMPLE RECOVERY PERSONNEL ____________________

PERSON WITH DIRECT RESPONSIBILITY FOR RECOVERED SAMPLES__________

Sample no.	Sample identification no.		Date of recovery	Liquid level marked	Stored in locked container
	H_2SO_4	SO_2			
1					
2					
3					
BLANKS					

REMARKS

SIGNATURE OF FIELD SAMPLE TRUSTEE____________________

LABORATORY DATA CHECKS

LAB PERSON WITH DIRECT RESPONSIBILITY FOR RECOVERED SAMPLES__________

DATE RECOVERED SAMPLES RECEIVED____________________

ANALYST ____________________

Sample no.	Sample identification no.		Date of analysis	Liquid at marked level	Sample identified
	H_2SO_4	SO_2			
1					
2					
3					
BLANKS					

REMARKS

SIGNATURE OF LAB SAMPLE TRUSTEE____________________

METHOD 8 Sample recovery and integrity data.

PLANT ____________________ DATE ____________________

SAMPLE LOCATION ____________________ ANALYST ____________________

NORMALITY OF BARIUM PERCHLORATE
1. ______ ml $Ba(ClO_4)_2$
2. ______ ml $Ba(ClO_4)_2$ N(Avg.) =
3. ______ ml $Ba(ClO_4)_2$ ______________

SULFURIC ACID MIST (INCLUDING SULFUR TRIOXIDE) ANALYSIS

		Run 1	Run 2	Run 3
V_{soln} - Total volume of solution in which the sulfuric acid sample is contained, ml				
V_a - Volume of sample aliquot, ml				
V_t - Volume of barium perchlorate titrant used for sample, ml	1st titration			
	2nd titration			
	Average			
V_{tb} - Volume of barium perchlorate titrant used for blank, ml	1st titration			
	2nd titration			
	Average			

$$\frac{\text{1st titration}}{\text{2nd titration}} = 0.99 \text{ to } 1.01 \text{ or } |\text{1st titration} - \text{2nd titration}| \leq 0.2 \text{ ml}$$

SULFUR DIOXIDE ANALYSIS

		Run 1	Run 2	Run 3
V_{soln} - Total volume of solution in which the sulfur dioxide sample is contained, ml				
V_a - Volume of sample aliquot, ml				
V_t - Volume of barium perchlorate titrant used for sample, ml	1st titration			
	2nd titration			
	Average			
V_{tb} - Volume of barium perchlorate titrant used for blank, ml	1st titration			
	2nd titration			
	Average			

$$\frac{\text{1st titration}}{\text{2nd titration}} = 0.99 \text{ to } 1.01 \text{ or } |\text{1st titration} - \text{2nd titration}| \leq 0.2 \text{ ml}$$

SIGNATURE OF ANALYST ________________________________

SIGNATURE OF REVIEWER OR SUPERVISOR ________________________________

Method 8 analytical data sheet.

Plant: ____________ City: ____________

Site: ____________ Sam. Type: ____________

Date: ____________ Run No: ____________

Front Rinse ☐ Front Filter ☐ Front Solu ☐

Back Rinse ☐ Back Filter ☐ Back Solu ☐

Solution: ____________ Level Marked ____________

Volume: Initial ____________ Final ____________

Clean Up By: ____________

Remarks: ____________

Example sample label.