



東業德勤測試顧問有限公司  
ETS-TESTCONSULT LIMITED

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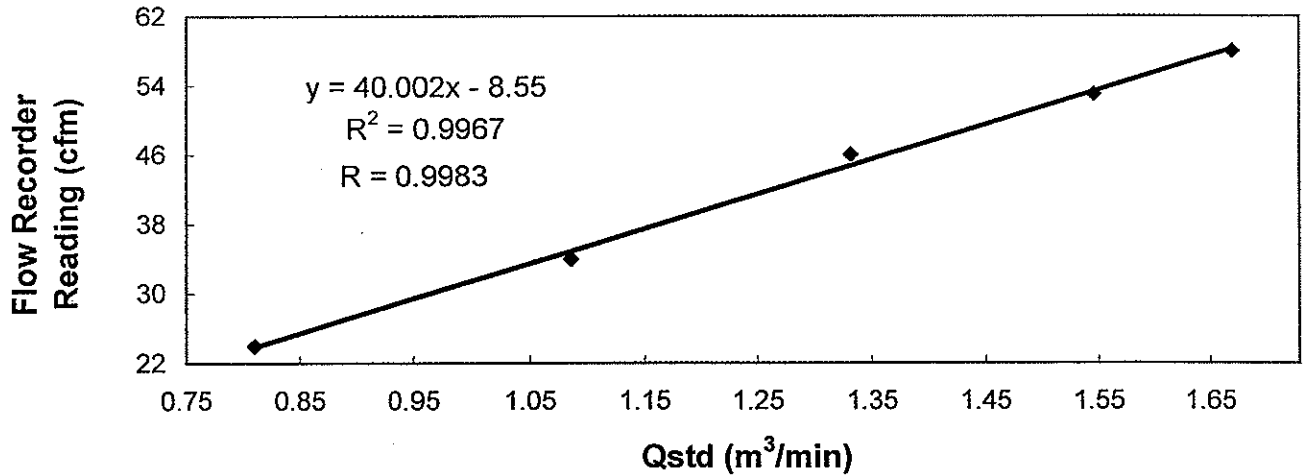
**TEST REPORT**

**Calibration Report  
of  
High Volume Air Sampler**

Manufacturer : Graseby GMW Date of Calibration : 12 August 2008  
Serial No. : 1173 (ET/EA/003/17) Calibration Due Date : 11 October 2008  
Method : Based on Operation Manual to perform 5-point calibration by using calibration kit  
Tisch TE-5025 A

Results	Flow recorder reading (cfm)	58	53	46	34	24
	Qstd (Actual flow rate, m <sup>3</sup> /min)	1.67	1.55	1.33	1.09	0.81
	Pressure : 753 mm Hg	Temp. : 298 K				

**Sampler 1173 Calibration Curve  
Site: Sok Kwu Wan (AM-1)  
Date of Calibration: 12 August 2008**



Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after 5-point calibration

The high volume sampler complies \* / does not comply \* with the specified requirements and is deemed acceptable \* / unacceptable \* for use.

Calibrated by :   
LEUNG, Ka Chun  
(Assistant Environmental Officer)

Approved by :   
LAW, Sau Yee  
(Senior Environmental Officer)







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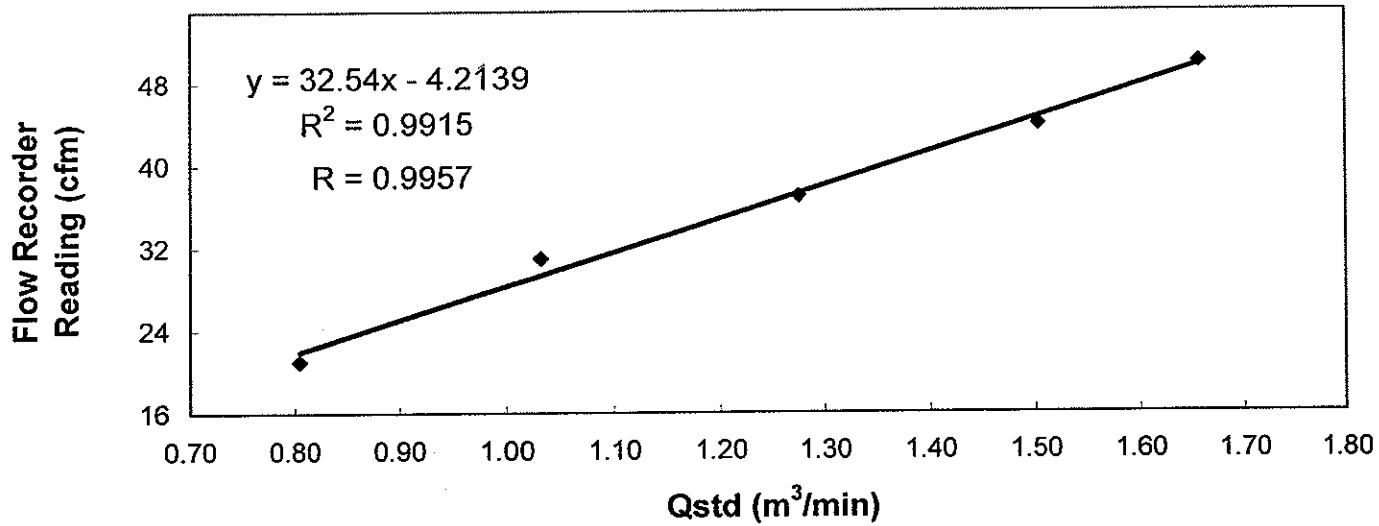
**TEST REPORT**

Calibration Report  
of  
High Volume Air Sampler

Manufacturer : Graseby GMW Date of Calibration : 14 October 2008  
Serial No. : 9865 (ET / EA / 003 / 14) Calibration Due Date : 13 December 2008  
Method : Based on Operations Manual for in series calibration method by TISCH  
ENVIROMENTAL Model Te-5025A calibration kit

Results	Flow recorder reading (cfm)	50	44	37	31	21
	Qstd (Actual flow rate, m <sup>3</sup> /min)	1.66	1.50	1.27	1.03	0.80
	Pressure : 755 mm Hg	Temp. : 303 K				

**Sampler 9865 Calibration Curve**  
Site: Sok Kwu Wan (AM-2)



Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after a 5-point calibration

The high volume sampler complies\* / ~~does not comply\*~~ with the specified requirements and is deemed acceptable\* / unacceptable\* for use.

Calibrated by :   
LEUNG, Ka Chun  
(Assistant Environmental Officer)

Approved by :   
LAW, Sau Yee  
(Senior Environmental Officer)



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**TEST REPORT**

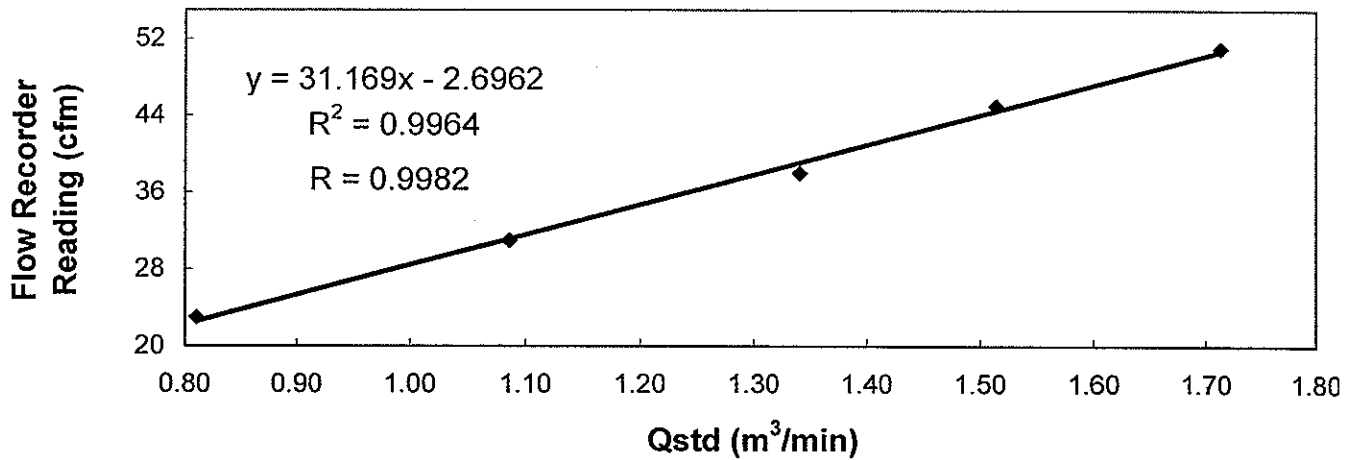
**Calibration Report  
of  
High Volume Air Sampler**

Manufacturer : Graseby GMW Date of Calibration : 12 August 2008  
Serial No. : 9912 (ET / EA / 003 / 15) Calibration Due Date : 11 October 2008  
Method : Based on Operations Manual for in series calibration method by TISCH  
ENVIROMENTAL Model Te-5025A calibration kit

Results :

Flow recorder reading (cfm)	51	45	38	31	23
Qstd (Actual flow rate, m <sup>3</sup> /min)	1.71	1.51	1.34	1.09	0.81
Pressure :	753 mm Hg			Temp. :	298 K

**Sampler 9912 Calibration Curve  
Site: Sok Kwu Wan (AM-3)  
Date of Calibration: 12 August 2008**



Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after a 5-point calibration

The high volume sampler complies \* / does not comply \* with the specified requirements and is deemed acceptable \* / unacceptable \* for use.

Calibrated by :   
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Approved by :   
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**TEST REPORT**

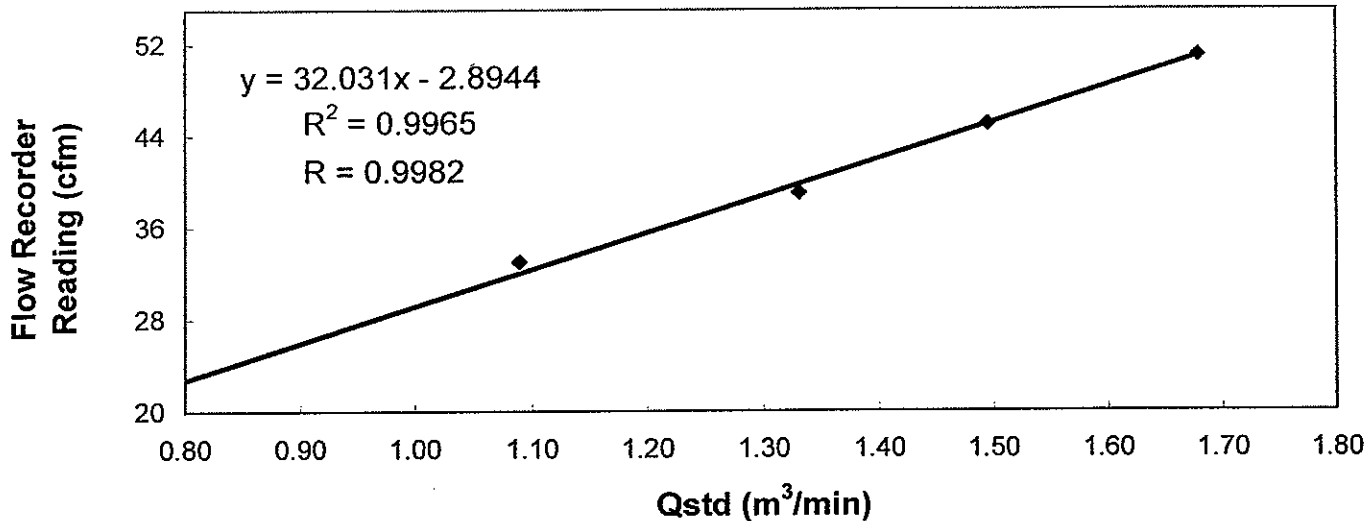
**Calibration Report**  
of  
**High Volume Air Sampler**

**Manufacturer** : Graseby GMW Date of Calibration : 14 October 2008  
**Serial No.** : 9912 (ET / EA / 003 / 15) Calibration Due Date : 13 December 2008  
**Method** : Based on Operations Manual for in series calibration method by TISCH  
ENVIROMENTAL Model Te-5025A calibration kit

**Results** :

Flow recorder reading (cfm)	51	45	39	33	22
Qstd (Actual flow rate, m <sup>3</sup> /min)	1.68	1.50	1.33	1.09	0.79
Pressure :	755 mm Hg			Temp. :	303 K

**Sampler 9912 Calibration Curve**  
Site: Sok Kwu Wan (AM-3)

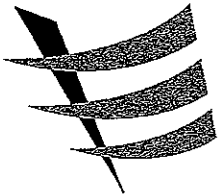


Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after a 5-point calibration

The high volume sampler complies\* / ~~does not comply\*~~ with the specified requirements and is deemed acceptable\* / unacceptable\* for use.

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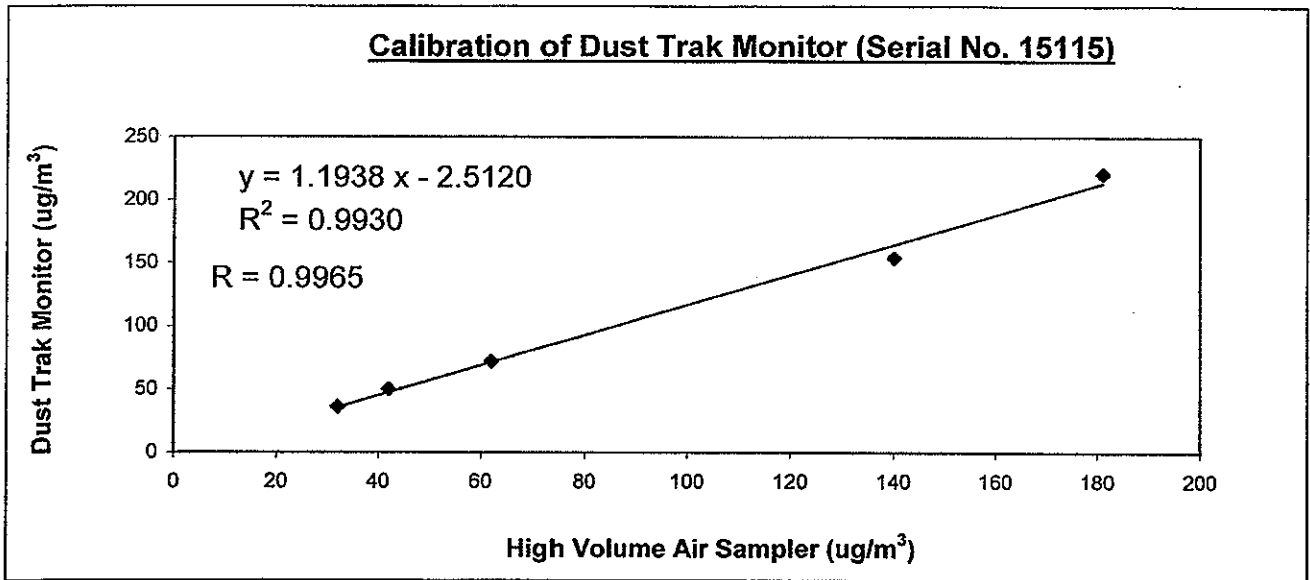
**TEST REPORT**

**Internal Calibration Report  
of  
Dust Trak Monitor**

Manufacturer : TSI - 8520 Dust Trak Date of Calibration : 14 July 2008  
Serial No. : 15115 (ET/EA/001/02) Calibration Due Date : 13 January 2009  
Method : Parallel measurement (five-point calibration) by placing the Dust Trak Monitor and High Volume Air Samper together under the same environmental condition

Results :

Dust Trak Monitor ( $\mu\text{g}/\text{m}^3$ )	36	50	72	154	221
High Volume Air Sampler ( $\mu\text{g}/\text{m}^3$ )	32	42	62	140	181
Serial No of High Volume Air Sampler : 1178			Calibration Date: 01 September 2008		



Acceptance Criteria :

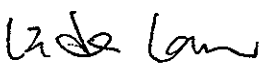
Correlation coefficient (r) of the calibration curve greater than 0.990 after a five point calibration

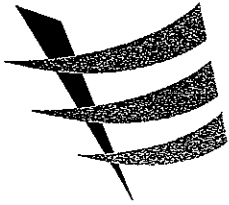
**The Dust Trak Monitor complies \* / does not comply \* with the internal calibration procedures and is deemed acceptable \* / unacceptable \* for use.**

Calibrated by :

  
LEUNG, Ka Ming  
(Assistant Environmental Officer)

Approved by :

  
LAW, Sau Yee  
(Senior Environmental Officer)



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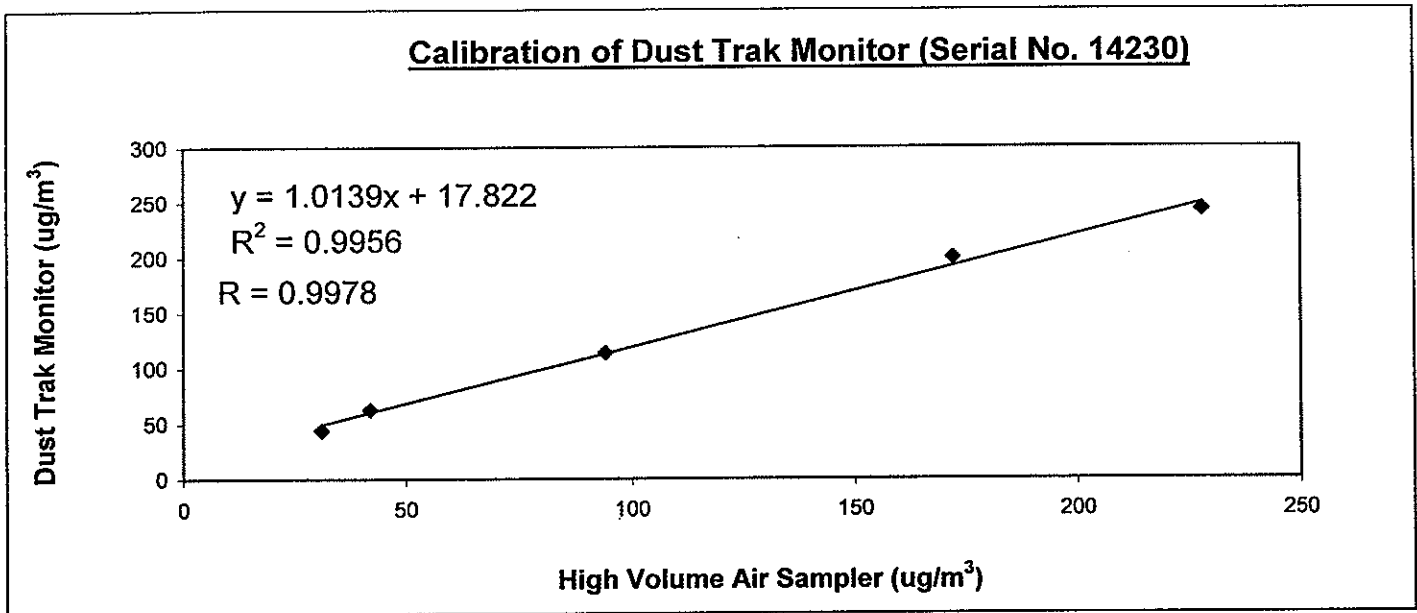
**TEST REPORT**

**Internal Calibration Report**  
of  
**Dust Trak Monitor**

Manufacturer : TSI - 8520 Dust Trak Date of Calibration : 12 July 2008  
Serial No. : 14230 ( ET/EA/001/04 ) Due Date : 11 January 2009  
Method : Parallel measurement (five-point calibration) by placing the Dust Trak Monitor and High Volume Air Samper together under the same environmental condition


Results :

Dust Trak Monitor (ug/m <sup>3</sup> )	44	63	114	200	243
High Volume Air Sampler (ug/m <sup>3</sup> )	31	42	94	172	228
High Volume Air Sampler Serail No.: 1178			Calibration Due Date: 01 September 2008		



Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after a five point calibration

The Dust Trak Monitor complies \* / does not comply \* with the internal calibration procedures and is deemed acceptable \* / unacceptable \* for use.

Calibrated by :   
LEUNG, Ka Chun  
(Assistant Environmental Officer)

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AIR POLLUTION MONITORING EQUIPMENT

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - May 14, 2008 Roots-meter S/N 9833620 Ta (K) - 295  
 Operator Tisch Orifice I.D. - 1172 Pa (mm) - 750.57

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.3800	3.1	2.00
2	NA	NA	1.00	0.9650	6.3	4.00
3	NA	NA	1.00	0.8630	7.9	5.00
4	NA	NA	1.00	0.8230	8.6	5.50
5	NA	NA	1.00	0.6770	12.7	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
0.9935	0.7199	1.4125	0.9958	0.7216	0.8866
0.9893	1.0252	1.9976	0.9916	1.0276	1.2538
0.9870	1.1437	2.2334	0.9894	1.1464	1.4018
0.9862	1.1983	2.3424	0.9885	1.2011	1.4703
0.9807	1.4486	2.8251	0.9830	1.4521	1.7732
Qstd slope (m) = 1.94106			Qa slope (m) = 1.21546		
intercept (b) = 0.01311			intercept (b) = 0.00823		
coefficient (r) = 0.99996			coefficient (r) = 0.99996		

y axis =  $\sqrt{H_2O(Pa/760)(298/Ta)}$

y axis =  $\sqrt{H_2O(Ta/Pa)}$

CALCULATIONS

$V_{std} = \text{Diff. Vol} [(Pa - \text{Diff. Hg}) / 760] (298 / Ta)$   
 $Q_{std} = V_{std} / \text{Time}$

$V_a = \text{Diff Vol} [(Pa - \text{Diff Hg}) / Pa]$   
 $Q_a = V_a / \text{Time}$

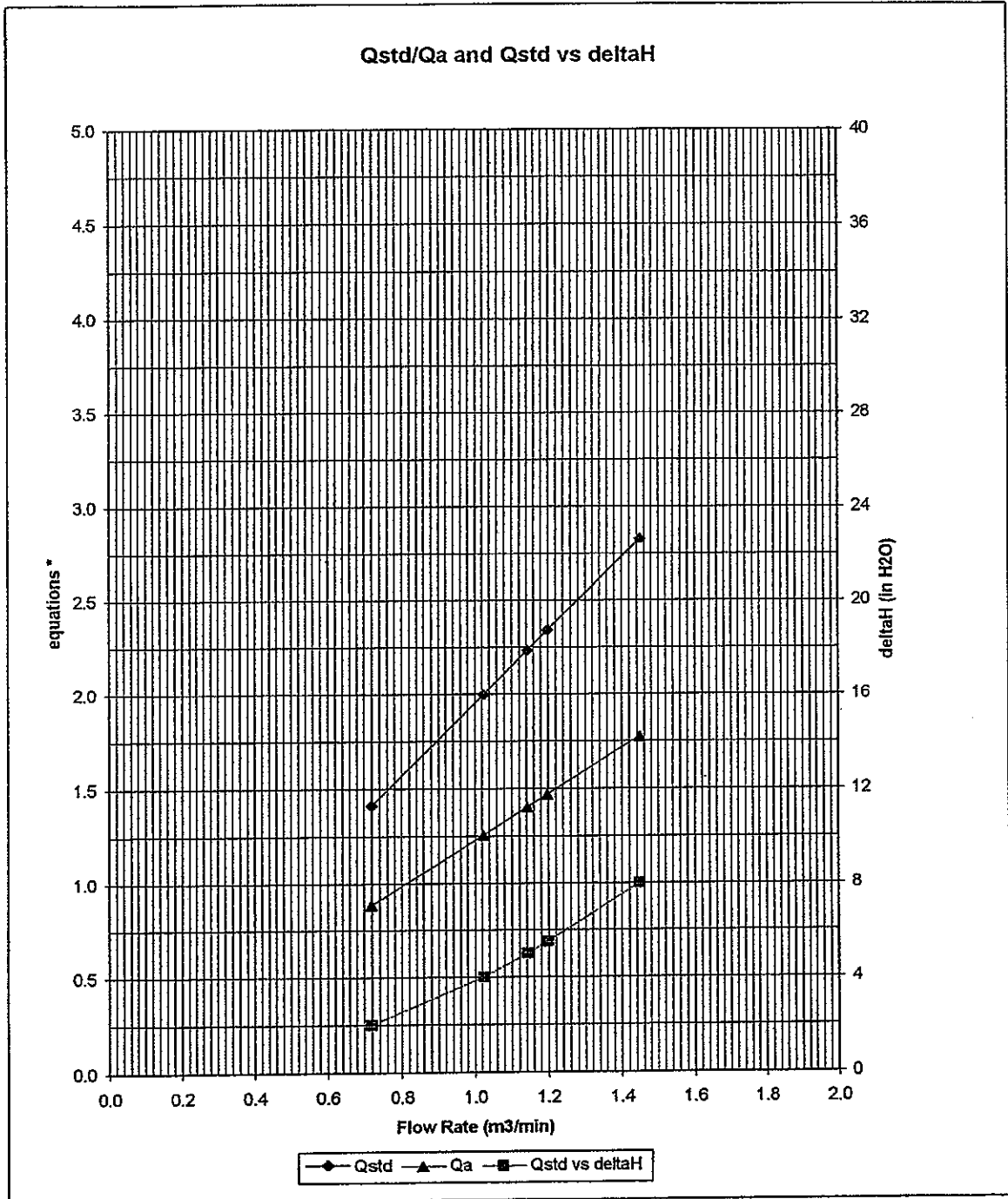
For subsequent flow rate calculations:

$Q_{std} = 1/m \{ [\sqrt{H_2O(Pa/760)(298/Ta)}] - b \}$   
 $Q_a = 1/m \{ [\sqrt{H_2O(Ta/Pa)}] - b \}$



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AIR POLLUTION MONITORING EQUIPMENT



\* y-axis equations:

Qstd series:

$$\sqrt{\Delta H \left( \frac{P_a}{P_{std}} \right) \left( \frac{T_{std}}{T_a} \right)}$$

Qa series:

$$\sqrt{(\Delta H (T_a / P_a))}$$

# 1172