Location : ASR 5
Calibrated by : P.F.Yeung
Date : 09/10/2013

Sampler

Model : TE-5170 Serial Number : S/N 0816

Calibration Orfice and Standard Calibration Relationship

 Serial Number
 : 2323

 Service Date
 : 26 Dec 2012

 Slope (m)
 : 2.09107

 Intercept (b)
 : -0.02838

 Correlation Coefficient(r)
 : 0.99996

Standard Condition

Pstd (hpa) : 1013 Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1017 Ta(K) : 299

Resistance Plate dH [green]		dH [green liquid]	Z	X=Qstd	IC	Y
		(inch water)		(cubic meter/min)	(chart)	(corrected)
1	18 holes	12.5	3.537	1.705	52	52.02
2	13 holes	9.7	3.115	1.503	45	45.01
3	10 holes	7.6	2.758	1.332	40	40.01
4	7 holes	4.7	2.169	1.051	31	31.01
5	5 holes	3.0	1.733	0.842	24	24.01

Notes:Z=SQRT{dH(Pa/Pstd)(Tstd/Ta)}, X=Z/m-b, Y(Corrected Flow)=IC*{SQRT(Pa/Pstd)(Tstd/Ta)}

Sampler Calibration Relationship (Linear Regression)

Slope(m): 32.148 Intercept(b): -2.953 Correlation Coefficient(r): 0.9997

Location : ASR10A Calibrated by : P.F.Yeung Date : 15/10/2013

Sampler

Model : TE-5170 Serial Number : S/N 8162

Calibration Orfice and Standard Calibration Relationship

 Serial Number
 : 2323

 Service Date
 : 26 Dec 2012

 Slope (m)
 : 2.09107

 Intercept (b)
 : -0.02838

 Correlation Coefficient(r)
 : 0.99996

Standard Condition

Pstd (hpa) : 1013 Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1013 Ta(K) : 301

Resistance Plate		dH [green liquid]	Z	X=Qstd	IC	Y
		(inch water)		(cubic meter/min)	(chart)	(corrected)
1	18 holes	13.0	3.588	1.729	59	58.71
2	13 holes	10.4	3.209	1.548	52	51.74
3	10 holes	7.8	2.779	1.343	45	44.78
4	7 holes	5.0	2.225	1.078	36	35.82
5	5 holes	3.0	1.723	0.838	28	27.86

 $Notes: Z = SQRT\{dH(Pa/Pstd)(Tstd/Ta)\}, \ X = Z/m-b, \ Y(Corrected\ Flow) = IC*\{SQRT(Pa/Pstd)(Tstd/Ta)\}\}$

Sampler Calibration Relationship (Linear Regression)

Slope(m):34.384 Intercept(b): 1.161 Correlation Coefficient(r): 0.9997

Location : AQM1
Calibrated by : P.F.Yeung
Date : 17/10/2013

Sampler

 Model
 :
 TE-5170

 Serial Number
 :
 S/N 1253

Calibration Orfice and Standard Calibration Relationship

Serial Number : 2323

 Service Date
 :
 26 Dec 2012

 Slope (m)
 :
 2.09107

 Intercept (b)
 :
 -0.02838

 Correlation Coefficient(r)
 :
 0.99996

Standard Condition

Pstd (hpa) : 1013 Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1017 Ta(K) : 299

Resistance Plate		dH [green liquid]	Z	X=Qstd	IC	Y
		(inch water)		(cubic meter/min)	(chart)	(corrected)
1	18 holes	13.4	13.4 3.662 1.765		56	56.02
2	13 holes	9.4	3.067	1.480	47	47.01
3	10 holes	7.5	2.739	1.324	41	41.01
4	7 holes	5.0	2.237	1.083	33	33.01
5	5 holes	3.0	1.733	0.842	26	26.01

 $Notes: Z = SQRT\{dH(Pa/Pstd)(Tstd/Ta)\}, \ X = Z/m-b, \ Y(Corrected\ Flow) = IC*\{SQRT(Pa/Pstd)(Tstd/Ta)\}\}$

Sampler Calibration Relationship (Linear Regression)

Slope(m):32.944 Intercept(b): -2.175 Correlation Coefficient(r): 0.9990

Location : ASR 1
Calibrated by : P.F.Yeung
Date : 17/10/2013

Sampler

Model : TE-5170 Serial Number : S/N 0146

Calibration Orfice and Standard Calibration Relationship

Serial Number : 2323

 Service Date
 :
 26 Dec 2012

 Slope (m)
 :
 2.09107

 Intercept (b)
 :
 -0.02838

 Correlation Coefficient(r)
 :
 0.99996

Standard Condition

Pstd (hpa) : 1013 Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1016 Ta(K) : 299

Resi	Resistance Plate dH [green liquid		Z	X=Qstd	IC	Y
		(inch water)		(cubic meter/min)	(chart)	(corrected)
1	18 holes	13.0	3.605	1.737	52	51.99
2	13 holes	10.4	3.224	1.555	46	45.99
3	10 holes	7.8	2.792	1.349	39	38.99
4	7 holes	5.0	2.236	1.083	30	29.99
5	5 holes	3.0	1.732	0.842	23	22.99

Notes:Z=SQRT{dH(Pa/Pstd)(Tstd/Ta)}, X=Z/m-b, Y(Corrected Flow)=IC*{SQRT(Pa/Pstd)(Tstd/Ta)}

Sampler Calibration Relationship (Linear Regression)

Slope(m):32.647 Intercept(b): -4.881 Correlation Coefficient(r): 0.9996

Location : ASR 6A
Calibrated by : P.F.Yeung
Date : 17/10/2013

Sampler

Model : TE-5170 Serial Number : S/N 1059

Calibration Orfice and Standard Calibration Relationship

Serial Number : 2323

 Service Date
 :
 26 Dec 2012

 Slope (m)
 :
 2.09107

 Intercept (b)
 :
 -0.02838

 Correlation Coefficient(r)
 :
 0.99996

Standard Condition

Pstd (hpa) : 1013 Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1017 Ta(K) : 299

Resistance Plate		dH [green liquid]	Z	X=Qstd	IC	Y
		(inch water)		(cubic meter/min)	(chart)	(corrected)
1	18 holes	holes 12.5 3.53		1.705	56	56.02
2	13 holes	10.0	3.163	1.526	50	50.01
3	10 holes	8.0	2.829	1.367	44	44.01
4	7 holes	5.2	2.281	1.104	35	35.01
5	5 holes	2.8	1.674	0.814	26	26.01

Notes:Z=SQRT{dH(Pa/Pstd)(Tstd/Ta)}, X=Z/m-b, Y(Corrected Flow)=IC*{SQRT(Pa/Pstd)(Tstd/Ta)}

Sampler Calibration Relationship (Linear Regression)

Slope(m):32.148 Intercept(b): -2.953 Correlation Coefficient(r): 0.9997

Location : ASR 9C
Calibrated by : P.F.Yeung
Date : 05/11/2013

Sampler

Model : TE-5170 Serial Number : S/N 3572

Calibration Orfice and Standard Calibration Relationship

 Serial Number
 : 2323

 Service Date
 : 26 Dec 2012

 Slope (m)
 : 2.09107

 Intercept (b)
 : -0.02838

 Correlation Coefficient(r)
 : 0.99996

Standard Condition

Pstd (hpa) : 1013 Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1019 Ta(K) : 296

Resistance Plate dH [green		dH [green liquid]	Z	X=Qstd	IC	Y
		(inch water)		(cubic meter/min)	(chart)	(corrected)
1	18 holes	11.4	3.398	1.638	56	56.36
2	13 holes	9.0	3.019	1.457	50	50.32
3	10 holes	6.6	2.585	1.250	43	43.27
4	7 holes	4.2	2.062	0.100	36	36.23
5	5 holes	2.4	1.559	0.759	29	29.18

Notes:Z=SQRT{dH(Pa/Pstd)(Tstd/Ta)}, X=Z/m-b, Y(Corrected Flow)=IC*{SQRT(Pa/Pstd)(Tstd/Ta)}

Sampler Calibration Relationship (Linear Regression)

Slope(m):30.801 Intercept(b): 5.465 Correlation Coefficient(r): 0.9991

Location : ASR9A Calibrated by : P.F.Yeung Date : 05/11/2013

Sampler

Model : TE-5170 Serial Number : S/N 3573

Calibration Orfice and Standard Calibration Relationship

 Serial Number
 : 2323

 Service Date
 : 26 Dec 2012

 Slope (m)
 : 2.09107

 Intercept (b)
 : -0.02838

 Correlation Coefficient(r)
 : 0.99996

Standard Condition

Pstd (hpa) : 1013 Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1019 Ta(K) : 296

Resistance Plate		dH [green liquid]	Z	X=Qstd	IC	Y
		(inch water)		(cubic meter/min)	(chart)	(corrected)
1	18 holes	10.5	3.261	1.573	60	60.38
2	13 holes	8.2	2.882	1.392	54	54.34
3	10 holes	6.0	2.465	1.192	49	49.31
4	7 holes	4.0	2.013	0.976	42	42.27
5	5 holes	2.6	1.623	0.790	37	37.23

 $Notes: Z = SQRT\{dH(Pa/Pstd)(Tstd/Ta)\}, \ X = Z/m-b, \ Y(Corrected\ Flow) = IC*\{SQRT(Pa/Pstd)(Tstd/Ta)\}\}$

Sampler Calibration Relationship (Linear Regression)

Slope(m): 29.442 Intercept(b): 13.831 Correlation Coefficient(r): 0.9992



METHOD REFERNCE

Total Suspended Particulates ALS Method Code: HK-TSP

New glass fiber filters are conditioned in a desiccator of RH <50% for 24 hours or more before use. The initial filter weight was taken and record in the record book. Then the filter was put in a clean envelope for transportation.

After sampling, the filter was put in a paper holder and condition in a desiccator of RH <50% for 24 hours or more. The filter was removed from the holder carefully before weighing. The final weight was taken and record in the record book.

The dust weight was calculated as the difference of the weight of filter before and after sampling.



Certification of Quality

This product has been tested in accordance with procedures established through Global Water Instrumentation's Quality Management System. This product meets or exceeds its manufacturing acceptance criteria.

ITEM DESCRIPTION:

Wind Speed Sensor

MODEL NAME/ NUMBER:

WE550

PART NUMBER:

EC0000

SENSOR RANGE:

0-110 MPH

SENSOR OUTPUT:

4.00-19.91 mA

ACCURACY:

.2 MPH over the range 11 to 55 MPH

POWER REQUIRED

10-36 VDC

SERIAL NUMBER:

1337005099

CABLE LENGTH:

25 ft

CERTIFICATES:

CE Compliant

Water Leve Water Flow Water Samplers Water Qualit

Technician:

Wright, Jess

Date: 9/10/2013



Global Water Instrumentation warrants that its products are free from defects in material & workmanship under normal use & service for a period of one year from date of original shipment from factory. Repaired components are warranted for a period of 90 days from shipment. Contact us for complete warranty details.



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In the U.S. call toll free at 1-800-876-1172 International, 1-979-690-5560 Our Service Address Fax: 1-979-690-0440 Email: globalw@globalw.com College Station, TX 77845

Visit our online catalog at: www.globalw.com 151 Graham Rd



Certification of Quality

This product has been tested in accordance with procedures established through Global Water Instrumentation's Quality Management System. This product meets or exceeds its manufacturing acceptance criteria.

ITEM DESCRIPTION:

Wind Direction

MODEL NAME/ NUMBER:

WE570

PART NUMBER:

ED0000

SENSOR RANGE:

0-360°

SENSOR OUTPUT:

4.01-20.03 mA

ACCURACY:

1% of full scale

POWER REQUIRED

10-36 VDC

SERIAL NUMBER:

1337005143

CABLE LENGTH:

25 ft

CERTIFICATES:

CE Compliant

Technician:

Wright, Jess

Date: 9/12/2013

Global Water Instrumentation warrants that its products are free from defects in material & workmanship under normal use & service for a period of one year from date of original shipment from factory. Repaired components are warranted for a period of 90 days from shipment. Contact us for complete warranty details.



a xylem brand

In the U.S. call toll free at 1-800-876-1172 International: 1-979-690-5560 Fax: 1-979-690-0440 Email. globalw@globalw.com College Station, TX 77845

Visit our online catalog at www.globalw.com Our Service Address 151 Graham Rd

MetPak IITM

Product Test Report

Product Tested: MetPak
Part Number: 1723-1B-2-111
Serial Number: 13130002

Test Date: 26/03/2013

Location: Gill Instruments Ltd



GILL ensures that quality is inherent in all aspects of their activities and ensures that compliance with BS EN ISO9001: 2008 is maintained.

This report certifies that the above instrument has been tested in accordance with Gill internal procedures

Results

Test	Limits	Results
Wind Still Air Test (Zero Wind Speed) Wind Tunnel Test (12m/s nominal)	Pass/Fail Pass/Fail	Pass Pass
Pressure Sensor (Comparison DPI 142)	Pass/Fail	Pass
Temperature Sensor (Comparison HC2-S (SCS certified)) Humidity Sensor (Comparison HC2-S (SCS certified))	Pass/Fail Pass/Fail	Pass Pass

Wind sensor generic calibration is traceable to the University of Southampton wind tunnel and Gill instrumentation is maintained in accordance with UKAS.

Comparisons for Temperature, Humidity and Pressure are done against reference UKAS traceable instruments. The reference system numbers of these instruments are listed above.

All tests have been successfully completed

On behalf of Gill Instruments Ltd



Tony Raine Quality Control

2002-0396 Issue 1



Gill Instruments Ltd Softmorsh Park 67 Gosport Street Lymington Hampshire SO41 9EG, UK

T: +44 (0) 1590 613 500 F: +44 (0) 1590 613 555 E: anem@gill.co.uk

www.gill.co.uk



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GII Instruments Ltd

Reg No. 3154453 Registered Office: The George Business Centre, Christchurch Road, New Milton, 8H25 6QJ

ALS Technichem (HK) Pty Ltd



1 7-OCT-2013 22-OCT-2013

SUB-BATCH DATE RECEIVED

DATE OF ISSUE

ANALYTICAL CHEMISTRY & TESTING SERVICES

SUB-CONTRACTING REPORT

CONTACT **WORK ORDER** MR K.W. FAN HK1327473

CLIENT **ENVIROTECH SERVICES CO.**

ADDRESS SHOP 6, G/F

CASIO MANSION,

209 SHAUKEIWAN ROAD HONG KONG

PROJECT NO. OF SAMPLES

CLIENT ORDER

General Comments

Sample(s) were received in an ambient condition.

Sample(s) analysed and reported on an as received basis.

Calibration was subcontracted to and analysed by Action United Enviro Services.

Signatories

This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the Electronic Transactions Ordinance of Hong Kong, Chapter 553, Section 6.

Signatories

Position

Richard Fung

General Manager

WORK ORDER

: HK1327473

SUB-BATCH

: 1

CLIENT

: ENVIROTECH SERVICES CO.

PROJECT : ---



ALS Lab ID	Client's Sample ID	Sample Type	Sample Date	External Lab Report No.
HK1327473-001	S/N: 245834	Equipment	07-OCT-2013	S/N: 245834

Equipment Calibration Record

Equipment Calibrated:

Type:

Laser Dust monitor

Manufacturer:

Sibata LD-3B

Serial No.

245834

Equipment Ref:

Nil

Job Order

HK1327473

Standard Equipment:

Standard Equipment:

Higher Volume Sampler

Location & Location ID:

AUES office (calibration room)

Equipment Ref:

HVS 018

Last Calibration Date:

8 October 2013

Equipment Calibration Results:

Calibration Date:

10 & 11 October 2013

Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in mg/m³ (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/60min)
1hr50min	12:00 ~ 13:50	27.0	1012.8	0.123	6013	56.0
4hr25min	13:55 ~ 18:20	27.0	1012.8	0.207	26441	99.5
16hr20min	18:25 ~ 10:45	27.0	1012.8	0.050	25113	25.7

Sensitivity Adjustment Scale Setting (Before Calibration) Sensitivity Adjustment Scale Setting (After Calibration)

(CPM) 765 760 (CPM)

Linear Regression of Y or X

Slope (K-factor):

0.0021

Correlation Coefficient



0.25

0.2

Operator:

Tung Chi Sun

Signature:

16 October 2013

QC Reviewer:

Ben Tam

Signature:

Date: 16 October 2013

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Date of Calibration: 8-Oct-13 Gold King Industrial Building, Kwai Chung Location: Next Calibration Date: 8-Jan-14 Location ID: Calibration Room CONDITIONS Sea Level Pressure (hPa) 1008.1 Corrected Pressure (mm Hg) 756.075 Temperature (K) Temperature (°C) 300 26.8 CALIBRATION ORIFICE Make-> TISCH Qstd Slope -> 2.11662 Model-> 5025A Ostd Intercept -> -0.01714Calibration Date-> 9-Apr-13 Expiry Date-> 9-Apr-14 CALIBRATION H20 (L)H20 (R) Plate H20 IC LINEAR Ostd Ι (m3/min) REGRESSION No. (in) (in) (in) (chart) corrected 18 3.8 3.8 7.6 1.303 66 65.63 Slope = 21.6637 13 3 3 6.0 1.159 64 63.64 37.9417 Intercept = 2.2 2.2 Corr. coeff. = 10 4.4 0.994 60 59.66 0.9975 8 1.2 1.2 2.4 0.736 54 53.70 5 0.9 0.9 1.8 0.638 52 51.71 Calculations: FLOW RATE CHART 70.00 Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]60.00 Ostd = standard flow rate IC = corrected chart respones 50.00 chart response (IC) I = actual chart response m = calibrator Qstd slope 40.00 b = calibrator Qstd intercept Ta = actual temperature during calibration (deg K 30.00 Pstd = actual pressure during calibration (mm Hg For subsequent calculation of sampler flow: 20.00 1/m((I)[Sqrt(298/Tav)(Pav/760)]-b) 10.00

0.00

0.000

0.200

0.400

0.600

Standard Flow Rate (m3/min)

0.800

1.000

1.200

1.400

Pav = daily average pressure

Tav = daily average temperature

m = sampler slope b = sampler intercept

I = chart response

ALS Technichem (HK) Pty Ltd



ANALYTICAL CHEMISTRY & TESTING SERVICES



SUB-CONTRACTING REPORT

CONTACT : MR K.W. FAN WORK ORDER : HK1327471

CLIENT : ENVIROTECH SERVICES CO.

ADDRESS : SHOP 6, G/F. SUB-BATCH : 1
CASIO MANSION, DATE RECEIVED : 7-OCT-20

209 SHAUKEIWAN ROAD HONG KONG

DATE OF ISSUE 22-

PROJECT : ---- NO. OF SAMPLES : 1 CLIENT ORDER : ---

General Comments

Sample(s) were received in an ambient condition.

- Sample(s) analysed and reported on an as received basis.
- Calibration was subcontracted to and analysed by Action United Enviro Services.

Signatories

This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the Electronic Transactions Ordinance of Hong Kong, Chapter 553, Section 6.

Signatories

Position

Richard Fung

General Manager

WORK ORDER

: HK1327471

SUB-BATCH CLIENT : 1

: ENVIROTECH SERVICES CO.

PROJECT

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ALS Lab ID	Client's Sample ID	Sample Type	Sample Date	External Lab Report No.
HK1327471-001	S/N: IY5546	Equipment	07-OCT-2013	S/N: IY5546

Equipment Calibration Record

Equipment Calibrated:

Type:

Laser Dust monitor

Manufacturer:

Sibata LD-3B

Serial No.

1Y5546

Equipment Ref:

Nil

Job Order

HK1327471

Standard Equipment:

Standard Equipment:

Higher Volume Sampler

Location & Location ID:

AUES office (calibration room)

Equipment Ref:

HVS 018

Last Calibration Date:

8 October 2013

Equipment Calibration Results:

Calibration Date:

10 & 11 October 2013

Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in mg/m³ (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/60min)
1hr50min	12:00 ~ 13:50	27.0	1012.8	0.123	5911	55.0
4hr25min	13:55 ~ 18:20	27.0	1012.8	0.207	24157	90.9
16hr20min	18:25 ~ 10:45	27.0	1012.8	0.050	24112	24.7

Sensitivity Adjustment Scale Setting (Before Calibration) Sensitivity Adjustment Scale Setting (After Calibration)

629 (CPM) 633 (CPM)

Linear Regression of Y or X

Slope (K-factor):

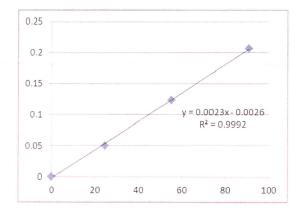
0.0023

Correlation Coefficient

0.9992

Validity of Calibration Record

16 Oct 2013



Operator: Tung Chi Sun

Signature:

Date:

16 October 2013

QC Reviewer:

Ben Tam

Signature:

Date: 16 October 2013

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Date of Calibration: 8-Oct-13 Location: Gold King Industrial Building, Kwai Chung Next Calibration Date: 8-Jan-14 Location ID: Calibration Room CONDITIONS Corrected Pressure (mm Hg) Sea Level Pressure (hPa) 1008.1 756.075 Temperature (°C) 26.8 Temperature (K) 300 CALIBRATION ORIFICE Make-> TISCH 2.11662 Ostd Slope -> Model-> 5025A Qstd Intercept -> -0.01714 Calibration Date-> 9-Apr-13 Expiry Date-> 9-Apr-14 CALIBRATION H20 (L)H20 (R) H20 LINEAR Plate **Qstd** IC No. (in) (in) (in) (m3/min) (chart) corrected REGRESSION 18 3.8 3.8 7.6 1.303 66 65.63 Slope = 21.6637 13 3 3 6.0 1.159 64 63.64 37.9417 Intercept = 10 2.2 2.2 4.4 0.994 60 59.66 Corr. coeff. = 0.9975 8 1.2 1.2 2.4 0.736 54 53.70 5 0.9 0.9 1.8 0.638 52 51.71 Calculations: FLOW RATE CHART 70.00 Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]60.00 Ostd = standard flow rate IC = corrected chart respones 50.00 I = actual chart response m = calibrator Qstd slope 40.00 b = calibrator Qstd intercept Ta = actual temperature during calibration (deg K 30.00 Pstd = actual pressure during calibration (mm Hg Actual For subsequent calculation of sampler flow: 20.00 1/m((I)[Sqrt(298/Tav)(Pav/760)]-b) 10.00 m = sampler slope b = sampler intercept 0.00 I = chart response 0.000 0.200 0.400 0.600 0.800 1.000 1.200 1.400 Tav = daily average temperature Standard Flow Rate (m3/min) Pav = daily average pressure