

G/F., 9/F., 12/F., 13/F. & 20/F., Leader Centre, 37 Wong Chuk Hang Road, Aberdeen, Hong Kong. 香港 黄竹坑追37號利達中心地下,9樓,12樓,13樓及20樓 E-mail: smec@cigismec.com Website: www.cigismec.com

Tel: (852) 2873 6860 Fax: (852) 2555 7533



CERTIFICATE OF CALIBRATION

Certificate No.:

15CA1203 04-01

Page

of

2

Item tested

Description:

Sound Level Meter (Type 1)

Microphone

Expiry Date:

Manufacturer:

B&K

B&K

Type/Model No .:

2236

4188

Serial/Equipment No.:

2100736

2288941

Adaptors used:

Item submitted by

Customer Name:

Lam Geotechnics Limited

Address of Customer:

Request No.

Date of receipt:

03-Dec-2015

Date of test:

04-Dec-2015

Reference equipment used in the calibration

Description:

Signal generator

Signal generator

Multi function sound calibrator

Model: B&K 4226

DS 360

DS 360

Serial No. 2288444 33873

61227

19-Jun-2016 16-Apr-2016 16-Apr-2016

Traceable to:

CIGISMEC CEPREI CEPRE

Ambient conditions

Temperature:

Relative humidity: Air pressure:

22 ± 1 °C 50 ± 10 %

1010 ± 10 hPa

Test specifications

1, The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580: Part 1: 1997 and the lab calibration procedure SMTP004-CA-152

The electrical tests were performed using an electrical signal substituted for the microphone which was removed and 2, replaced by an equivalent capacitance within a tolerance of +20%

The acoustic calibration was performed using an B&K 4226 sound calibrator and corrections was applied for the difference 3, between the free-field and pressure responsess of the Sound Level Meter.

Test results

This is to certify that the Sound Level Meter conforms to BS 7580: Part 1: 1997 for the conditions under which the test was performed.

Details of the performed measurements are presented on page 2 of this certificate.

Huang Jian Min/Feng Jun Qi

Actual Measurement data are documented on worksheets.

Approved Signatory:

Date:

05-Dec-2015

Company Chop:

The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.

C Soils & Materials Engineering Co., Ltd.

Form No.CARP152-1/Issue 1/Rev.C/01/02/2007



G/F, 9/F, 12/F, 13/F & 20/F, Leader Centre, 37 Wong Chuk Hang Road, Aberdeen, Hong Kong. 香港黃门坑道37號利達中心地下,9樓,12樓,13樓及20樓 E-mail: smec@cigismec.com Website: www.cigismec.com

Tel: (852) 2873 6860 Fax: (852) 2555 7533



CERTIFICATE OF CALIBRATION

(Continuation Page)

Certificate No.:

15CA1203 04-01

Page

2

2

1, Electrical Tests

The electrical tests were performed using an equivalent capacitance substituted for the microphone. The results are given in below with test status and the estimated uncertainties. The "Pass" means the result of the test is inside the tolerances stated in the test specifications. The "-" means the result of test is outside these tolerances.

Test:	Subtest:	Status:	Expanded Uncertanity (dB)	Coverage Factor
Self-generated noise	A	Pass	0.3	
3	C	Pass	1.0	2.1
	Lin	Pass	2.0	2.2
Linearity range for Leq	At reference range, Step 5 dB at 4 kHz	Pass	0.3	
	Reference SPL on all other ranges	Pass	0.3	
	2 dB below upper limit of each range	Pass	0.3	
	2 dB above lower limit of each range	Pass	0.3	
Linearity range for SPL	At reference range, Step 5 dB at 4 kHz	Pass	0.3	
Frequency weightings	A	Pass	0.3	
	C	Pass	0.3	
	Lin	Pass	0.3	
Time weightings	Single Burst Fast	Pass	0.3	
	Single Burst Slow	Pass	0.3	
Peak response	Single 100µs rectangular pulse	Pass	0.3	
R.M.S. accuracy	Crest factor of 3	Pass	0.3	
Time weighting I	Single burst 5 ms at 2000 Hz	Pass	0.3	
	Repeated at frequency of 100 Hz	Pass	0.3	
Time averaging	1 ms burst duty factor 1/103 at 4kHz	Pass	0.3	
	1 ms burst duty factor 1/104 at 4kHz	Pass	0.3	
Pulse range	Single burst 10 ms at 4 kHz	Pass	0.4	
Sound exposure level	Single burst 10 ms at 4 kHz	Pass	0.4	
Overload indication	SPL	Pass	0.3	
	Leq	Pass	0.4	

2, Acoustic tests

The complete sound level meter was calibrated on the reference range using a B&K 4226 acoustic calibrator with 1000Hz and SPL 94 dB. The sensitivity of the sound level meter was adjusted. The test result at 125 Hz and 8000 Hz are given in below with test status and the estimated uncertainties.

Test:	Subtest	Status	Expanded Uncertanity (dB)	Coverage Factor
Acoustic response	Weighting A at 125 Hz	Pass	0.3	
	Weighting A at 8000 Hz	Pass	0.5	

3, Response to associated sound calibrator

N/A

The expanded uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.

Calibrated by:

Date:

Fung Chi Yip 04-Dec-2015 End

Checked by:

Date:

Lam Tze Wai 05-Dec-2015

The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.

Soils & Materials Engineering Co., Ltd.

Form No.CARP152-2/Issue 1/Rev.C/01/02/2007



G/F, 9/F, 12/F, 13/F. & 20/F., Leader Centre, 37 Wong Chuk Hang Road, Aberdeen, Hong Kong. 香港黄竹坑道37號利達中心地下,9樓,12樓,13樓及20樓 E-mail: smec@cigismec.com Website: www.cigismec.com



CERTIFICATE OF CALIBRATION

Certificate No.:

15CA0528 04-03

Page:

1

Tel: (852) 2873 6860

Fax: (852) 2555 7533

2

of

Item tested

Description: Manufacturer: Acoustical Calibrator (Class 1)

Type/Model No.: Serial/Equipment No.: Rion Co., Ltd. NC-73 10465798

Adaptors used:

10

Item submitted by

Curstomer:

Lam Geotechnics Ltd.

Address of Customer:

Request No.: Date of receipt:

28-May-2015

Date of test:

30-May-2015

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Lab standard microphone	B&K 4180	2341427	15-Apr-2016	SCL
Preamplifier	B&K 2673	2239857	22-Apr-2016	CEPREI
Measuring amplifier	B&K 2610	2346941	22-Apr-2016	CEPREI
Signal generator	DS 360	61227	16-Apr-2016	CEPREI
Digital multi-meter	34401A	US36087050	17-Apr-2016	CEPREI
Audio analyzer	8903B	GB41300350	17-Apr-2016	CEPREI
Universal counter	53132A	MY40003662	16-Apr-2016	CEPREI

Ambient conditions

Temperature: 21 ± 1 °C Relative humidity: 60 ± 10 % Air pressure: 1000 ± 5 hPa

Test specifications

- The Sound Calibrator has been calibrated in accordance with the requirements as specified in IEC 60942 1997 Annex B and the lab calibration procedure SMTP004-CA-156.
- 2, The calibrator was tested with its axis vertical facing downwards at the specific frequency using insert voltage technique.
- 3, The results are rounded to the nearest 0.01 dB and 0.1 Hz and have not been corrected for variations from a reference pressure of 1013.25 hectoPascals as the maker's information indicates that the instrument is insensitive to pressure changes.

Test results

This is to certify that the sound calibrator conforms to the requirements of annex B of IEC 60942: 1997 for the conditions under which the test was performed. This does not imply that the sound calibrator meets IEC 60942 under any other conditions.

Details of the performed measurements are presented on page 2 of this certificate.

n/Feng Jun Qi

Huano Jian

Approved Signatory:

Date: 01-Jun-2015

Company Chos

SENGINEER SENGI

Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.

@ Soils & Materials Engineering Co., Ltd.

Form No. CARP156-1/Issue 1/Rev. D/01/03/2007



G/F., 9/F., 12/F., 13/F. & 20/F., Leader Centre, 37 Wong Chuk Hang Road, Aberdeen, Hong Kong. 香港黃竹坑道37號利達中心地下,9樓,12樓,13樓及20樓 E-mail: smec@cigismec.com Website: www.cigismec.com

Tel: (852) 2873 6860 Fax: (852) 2555 7533



CERTIFICATE OF CALIBRATION

(Continuation Page)

Certificate No.:

15CA0528 04-03

Page:

of

1, Measured Sound Pressure Level

The output Sound Pressure Level in the calibrator head was measured at the setting and frequency shown using a calibrated laboratory standard microphone and insert voltage technique. The results are given in below with the estimated uncertainties.

Frequency	Output Sound Pressure	Measured Output	Estimated Expanded
Shown	Level Setting	Sound Pressure Level	Uncertainty
Hz	dB	dB	dB
1000	94.00	94.06	0.10

2, Sound Pressure Level Stability - Short Term Fluctuations

The Short Term Fluctuations was determined by measuring the maximum and minimum of the fast weighted DC output of the B&K 2610 measuring amplifier over a 20 second time interval as required in the standard. The Short Term Fluctuation was found to be:

At 1000 Hz

STF = 0.002 dB

Estimated expanded uncertainty

0.005 dB

3, **Actual Output Frequency**

The determination of actual output frequency was made using a B&K 4180 microphone together with a B&K 2673 preamplifier connected to a B&K 2610 measuring amplifier. The AC output of the B&K 2610 was taken to an universal counter which was used to determine the frequency averaged over 20 second of operation as required by the standard. The actual output frequency at 1 KHz was:

At 1000 Hz

Actual Frequency = 966.3 Hz

Estimated expanded uncertainty

0.1 Hz

Coverage factor k = 2.2

Total Noise and Distortion 4,

For the Total Noise and Distortion measurement, the unfiltered AC output of the B&K 2610 measuring amplifier was connected to an Agilent Type 8903 B distortion analyser. The TND result at 1 KHz was:

At 1000 Hz

TND = 0.5 %

Estimated expanded uncertainty

0.7 %

The expanded uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.

Calibrated by:

End

Fung Chi Yip

Checked by:

Lam Tze Wai

Date:

30-May-2015

Date:

01-Jun-2015

The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.



TISCH ENVIRONMENTAL, INC. 145 SOUTH MIAMI AVE VILLAGE OF CLEVES, OH 45002 513.467.9000 877.263.7610 TOLL FREE 513.467.9009 FAX

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

	Tisch	Rootsmeter Orifice I.I		0005	Pa (mm) -	749.3
PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1 2 3 4 5	NA NA NA NA NA	NA NA NA NA NA	1.00 1.00 1.00 1.00	1.3930 0.9800 0.8790 0.8350 0.6900	3.2 6.4 7.9 8.7 12.7	2.00 4.00 5.00 5.50 8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
0.9883 0.9841 0.9820 0.9810 0.9757	0.7095 1.0042 1.1172 1.1749 1.4141	1.4090 1.9926 2.2278 2.3365 2.8179	0.9957 0.9915 0.9894 0.9884 0.9830	0.7148 1.0117 1.1256 1.1837 1.4247	0.8889 1.2570 1.4054 1.4740 1.7777
Ostd slop intercept coefficient y axis =	t (b) = ent (r) =	2.00072 -0.01209 0.99995 Pa/760)(298/Ta)]	Qa slope intercept coefficie y axis =	= (b) $=$	1.25282 -0.00763 0.99995

CALCULATIONS

Vstd = Diff. Vol[(Pa-Diff. Hg)/760](298/Ta) Qstd = Vstd/Time

Va = Diff Vol [(Pa-Diff Hg)/Pa] Qa = Va/Time

For subsequent flow rate calculations:

Qstd = $1/m\{[SQRT(H2O(Pa/760)(298/Ta))] - b\}$ $Qa = 1/m\{[SQRT H2O(Ta/Pa)] - b\}$



Location :		CMA1b				Calbrat	ion Date	:	21-Mar-16	
Equipment no. :		HVS001				Calbrat	ion Due Date	:	21-May-16	
	5									
CALIBRATION OF CONT	INUOUS FL	OW RECO	RDER							
				Ambient C	ondition					
Temperature, T _a		290		Kelvin	Pressure, Pa			1015	mmHg	
			Orifice	Transfer Sta	ndard Inform	ation				
Equipment No.		Ori001		Slope, m _c	2.000	72	Intercept, bc		-0.01209	
Last Calibration Date		30-Jun-1	5		(H	$xP_a/1$	013.3 x 298 /	T _a)	1/2	
Next Calibration Date		30-Jun-1	6		=	m _c	$x Q_{std} + b_c$			
				Calibratio	n of TSP					
Calibration	Ma	nometer R	eading	Q	std	Cont	inuous Flow	Τ	IC	
Point	н	(inches of	water)	(m ³ /	min.)	Re	Recorder, W		V(P _a /1013.3x298/T _a) ^{1/2} /35.31)	
	(up)	(down)	(difference)	X-a	axis	(CFM)			Y-axis	
1	6.2	6.2	12.4	1.7	917		58		58.8439	
2	4.8	4.8	9.6	1.5	772		52		52.7566	
3	3.6	3.6	7.2	1.3	667	567			44.6402	
4	2.4	2.4	4.8	1.1	170	36			36.5238	
5	1.6	1.6	3.2	0.9	132		24		24.3492	
By Linear Regression of Y	on X									
	Slope, m	=	38.3	3937	. In	tercept, b =	-8	.5301	<u> </u>	
Correlation (Coefficient*	=	0.9	915						
Calibration	n Accepted	=	Yes	/Ne**						
* if Correlation Coefficient	< 0.990, che	eck and rec	alibration aga	in.						
** Delete as appropriate.										
Remarks : As per client	s provided i	information	, the equipme	nt reference r	no. of the calil	brated High	Volume Sampler	has b	een	
	from EL452	to HVS001	with respect	to the update	in quality mar	nagement sy	/stem.			
Calibrated by :		Kit Au				Checke	d by	:	Pauline Wong	
Date :	2	1-Mar-16				Date		:	21-Mar-16	



Location	:		CMA2a				Calbratio	on Date	:	21-Mar-16
Equipment no.	:		HVS002				Calbratio	on Due Date	;	21-May-16
		-		··········					*	
CALIBRATION OF CO	ITNO	NUOUS FL	OW RECO	RDER						
					Ambient C	ondition				
Temperature, T _a			290		Kelvin	Pressure, Pa		10	015	mmHg
				Orifice	Transfer Sta	ndard Inform	ation			
Equipment No.		-	Ori001		Slope, m _c	2.000	72	Intercept, bc		-0.01209
Last Calibration Da	ate		30-Jun-1	5		(H	xPa/10	13.3 x 298 / T	Γ _a) ^{1/2}	10
Next Calibration Da	ate		30-Jun-1	6		=		(Q _{std} + b _c		Sales de
					Calibratio	n of TSP				
Calibration		Mai	nometer Re	eading	Q	std	Contir	nuous Flow		IC
Point		н (inches of v	water)	(m ³ /	(m ³ / min.) Recorder, W		order, W	(W(P _a /1013.3x298/T _a) ^{1/2} /35.3	
		(up)	(down)	(difference)	X-a	axis	(CFM)		Y-axis
1		6.8	6.8	13.6	1.8	761		64		64.9312
2		5.4	5.4	10.8	1.6	725		55		55.8002
3		4.1	4.1	8.2	1.4	581		48		48.6984
4		2.8	2.8	5.6	1.2	060		38		38.5529
5		1.8	1.8	3.6	0.9	682		30		30.4365
By Linear Regression	of Y c	on X								
		Slope, m	=	37.7	7519	Int	tercept, b =	-6.5	5353	
Correlat	ion C	oefficient*	=	0.9	990					
Calibr	ration	Accepted	=	Yes	/No**					
* !! O!-!! O#F-!		0.000	-1 d	-1:h4!						
* if Correlation Coeffici	ent <	0.990, cne	ck and reca	alibration aga	ın.					
** Delete as appropriat	te.									
Remarks : As per cl	ient's	provided i	nformation,	the equipme	nt reference r	no. of the calib	orated High V	olume Sampler ha	as been	
re-assigr	ned fr	om EL449	to HVS002	with respect	to the update	in quality mar	nagement sys	stem.		
Calibrated by	:		Kit Au				Checked	by	:	Pualine Wong
Date	:	2	1-Mar-16				Date		:	21-Mar-16



Location	:	CMA3a	Calbration Date	:	21-Mar-16
Equipment no.	:	HVS012	Calbration Due Date	:	21-May-16

				Ambient Co	ondition				
Temperature, T _a		290)	Kelvin	Pressure, P _a		1015 mml		
			Orifice T	ransfer Star	dard Information				
Equipment No.		Ori001		Slope, m _c	2.00072	Intercept, be	:	-0.01209	
Last Calibration Date	30-Jun-15				(HxP _a	/ 1013.3 x 298	/T _a) ^{1/2}		
Next Calibration Date		30-Jun-1	6		= n	$n_c \times Q_{std} + b_c$			
				Calibration	of TSP				
Calibration	Calibration Manometer Reading		Q	std C	ontinuous Flow		IC		
Point	H (inches of water)			(m ³ /	min.)	Recorder, W	(W(P ₂ /1013	3.3x298/T _a) ^{1/2} /35.3	
	(up)	(down)	(difference)	X-	axis	(CFM)		Y-axis	
1	7.0	7.0	14.0	1.9	034	54		54.7857	
2	5.6	5.6	11.2	1.7	031	49		49.7129	
3	4.2	4.2	8.4	1.4	757	42		42.6111	
4	3.1	3.1	6.2	1.2	687	38		38.5529	
5	1.8	1.8	3.6	0.9	682	30	;	30.4365	
By Linear Regression of Y	on X								
	Slope, m	=	25.9	695	Intercept	t, b =	5.2051		
Correlation Co	oefficient*	=	0.99	985					
Calibration Accepted = Ye		Yes/	No**						

^{**} Delete as appropriate.

Remarks:

As per client's provided information, the equipment reference no. of the calibrated High Volume Sampler has been

re-assigned from EL333 to HVS012 with respect to the update in quality management system.

Calibrated by

: Kit Au

Checked by
: Pauline Wong

Date

: 21-Mar-16



Location	:	CMA4a	Calbration Date	:	21-Mar-16
Equipment no.	:	HVS004	Calbration Due Date	:	21-May-16
				-	

				Ambient (Condition			
Femperature, T _a		290		Kelvin	Pressure, F) a	1	015 mmHg
			Orifice	Transfer Sta	andard Infor	mation		
Equipment No.		Ori001			2.000	072	Intercept, bc	-0.01209
Last Calibration Date		30-Jun-1	5		(H	XPa / 10	013.3 x 298 /	$T_a)^{1/2}$
Next Calibration Date		30-Jun-1	6		=	m _c	$x Q_{std} + b_c$	
				Calibratio	on of TSP			
Calibration	Mai	Manometer Reading		Q	std	Continuous Flow		IC
Point	H (inches of water)		(m ³ /	min.)	Recorder, W		(W(P _a /1013.3x298/T _a) ^{1/2} /35.3	
	(up)	(down)	(difference)	X-a	xis		(CFM)	Y-axis
1	7.9	7.9	15.8	2.0217		52		52.7566
2	6.8	6.8	13.6	1.8	761	48		48.6984
3	5.4	5.4	10.8	1.6	725	42		42.6111
4	3.8	3.8	7.6	1.4	040	34		34.4947
5	2.1	2.1	4.2	1.0	453	28		28.4074
By Linear Regression of Y	on X		,					
	Slope, m	=	25.5	5259	In	tercept, b =	0.	4522
Correlation C	oefficient*	=	0.9	928				
Calibration	Accepted	=	Yes	'No**				

^{*} if Correlation Coefficient < 0.990, check and recalibration again.

Remarks:

As per client's provided information, the equipment reference no. of the calibrated High Volume Sampler has been

re-assigned from EL390 to HVS004 with respect to the update in quality management system.

Calibrated by

: ____ Kit Au ____ Checked by : ___ Pauline Wong

^{**} Delete as appropriate.



Location	:	CMA5b	Calbration Date	:	21-Mar-16
Equipment no.	:	HVS010	Calbration Due Date	:	21-May-16

CALIBRATION OF CONTINUOUS FLOW RECORDER

		Ambient C	ondition		
Temperature, T _a	290	Kelvin	Pressure, Pa	1015	mmHg

	Ori	fice Transfer Standa	ard Information		
Equipment No.	Ori001	Slope, m _c	2.00072	Intercept, bc	-0.01209
Last Calibration Date	30-Jun-15		$(HxP_a$	/1013.3 x 298/T _a)	1/2
Next Calibration Date	30-Jun-16		= ,	$m_c \times Q_{std} + b_c$	

				Calibration of TSP			
Calibration	Mai	nometer R	eading	Q _{std}	Continuous F	low	IC
Point	н	inches of	water)	(m ³ / min.)	Recorder, V	v	(W(P _a /1013.3x298/T _a) ^{1/2} /35.31)
	(up)	(down)	(difference)	X-axis	(CFM)		Y-axis
1	6.2	6.2	12.4	1.7917	64		64.9312
2	4.9	4.9	9.8	1.5935	58		58.8439
3	3.4	3.4	6.8	1.3284	54		54.7857
4	2.1	2.1	4.2	1.0453	46		46.6693
5	1.4	1.4	2.8	0.8546	40		40.5820
By Linear Regression of Y	on X					10	
	Slope, m	=	25.0	375	Intercept, b =	20.04	458
Correlation	Coefficient*	=	0.99	942			
Calibratio	n Accepted	=	Yes/	No**			

^{*} if Correlation Coefficient < 0.990, check and recalibration again.

** Delete as ap	propriate.
-----------------	------------

Remarks : As per client's provided information, the equipment reference no. of the calibrated High Volume Sampler has been

re-assigned from EL222 to HVS010 with respect to the update in quality management system.

 Calibrated by
 :
 Kit Au
 Checked by
 :
 Pauline Wong

 Date
 :
 21-Mar-16
 Date
 :
 21-Mar-16



Location	:	MA1e	Calbration Date	:	21-Mar-16
Equipment no.	:	HVS007	Calbration Due Date		21-May-16

CALIBRATION OF CONTINUOUS FLOW RECORDER

Ambient Condition						
Temperature, T _a	290	Kelvin Pressure, P _a	1015	mmHg		

	Orifi	ice Transfer Standa	rd Information		
Equipment No.	Ori001	Slope, m _c	2.00072	Intercept, bc	-0.01209
Last Calibration Date	30-Jun-15		$(HxP_a/$	1013.3 x 298 / T _a)	1/2
Next Calibration Date	30-Jun-16		= <i>m</i>	$c \times Q_{std} + b_c$	

			C	alibration of TSP		
Calibration	tion Mand		eading	Q _{std}	Continuous Flow	IC
Point	н	inches of	water)	(m ³ / min.)	Recorder, W	(W(P _a /1013.3x298/T _a) ^{1/2} /35.31)
	(up)	(down)	(difference)	X-axis	(CFM)	Y-axis
1	6.2	6.2	12.4	1.7917	59	59.8584
2	5.3	5.3	10.6	1.6570	50	50.7275
3	4.0	4.0	8.0	1.4403	44	44.6402
4	2.5	2.5	5.0	1.1399	30	30.4365
5	1.4	1.4	2.8	0.8546	20	20.2910
y Linear Regression of	Y on X		***************************************			
	Slope, m	=	41.298	30	Intercept, b =	-15.6646
Correlation	Coefficient*	=	0.995	7	,	
Calibratio	n Accepted	=	Yes/Ne	**		

^{*} if Correlation Coefficient < 0.990, check and recalibration again.

Remarks : As per client's provided information, the equipment reference no. of the calibrated High Volume Sampler has been

re-assigned from EL455 to HVS007 with respect to the update in quality management system.

 Calibrated by
 :
 Kit Au
 Checked by
 :
 Pauline Wong

 Date
 :
 21-Mar-16
 Date
 :
 21-Mar-16



Location	:	MA1w	Calbration Date	:	21-Mar-16
Equipment no.	:	HVS008	Calbration Due Date	:	21-May-16

CALIBRATION OF CONTINUOUS FLOW RECORDER

Temperature, T _a	290	Kelvin Pressure, Pa	1015	mmHg
-----------------------------	-----	---------------------	------	------

	Orifi	ce Transfer Standar	d Information		
Equipment No.	Ori001	Slope, m _c	2.00072	Intercept, bc	-0.01209
Last Calibration Date	30-Jun-15		$(HxP_a/$	1013.3 x 298 / T _a)	1/2
Next Calibration Date	30-Jun-16		= <i>m</i>	$a_c \times Q_{std} + b_c$	

Calibration of TSP						
Calibration	Manometer Reading			Q _{std}	Continuous Flow	ıc
Point	H (inches of water)			(m ³ / min.)	Recorder, W	(W(P _a /1013.3x298/T _a) ^{1/2} /35.31)
	(up)	(down)	(difference)	X-axis	(CFM)	Y-axis
1	6.5	6.5	13.0	1.8344	58	58.8439
2	5.2	5.2	10.4	1.6414	51	51.7420
3	4.1	4.1	8.2	1.4581	43	43.6256
4	2.5	2.5	5.0	1.1399	32	32.4656
5	1.5	1.5	3.0	0.8844	25	25.3637
By Linear Regression of Y on X						
Slope, m =		35.7	112 In	Intercept, b = -7.2889		
Correlation Coefficient*		=	0.99	973		
Calibration Accepted		=	Yes/	\0 **		

^{*} if Correlation Coefficient < 0.990, check and recalibration again.

Remarks: As per client's provided information, the equipment reference no. of the calibrated High Volume Sampler has been

re-assigned from EL080 to HVS008 with respect to the update in quality management system.

 Calibrated by
 :
 Kit Au
 Checked by
 :
 Pauline Wong

 Date
 :
 21-Mar-16
 Date
 :
 21-Mar-16