ENSR ASIA (HK) LTD TSP High Volume Sampler Field Calibration Report

Cal Data:	100000 1 toda to 1	Po Shan Mansior	ns (CA1)	Operator:	Shum Ka	am Yuen	_
Cal. Date: 7-May-09				Next Due Date:	7-Jul-09		1 -1
Equipment No.:	A.001.46T			Serial No.	10217		
			Ambient	Condition			
Temperatur	re, Ta (K)	302	Pressure, F	Pa (mmHg)		756.6	
)							
				tandard Informatio			
Equipme		843 Slope, mc		2.02158	Intercept, bc -0.0		
Last Calibra		4-Nov-08			= [DH x (Pa/760) x		
Next Calibra	ition Date:	4-Nov-09		Qstd = {[DH x (I	Pa/760) x (298/Ta)]	"bc} / mc	
			Calibration of	of TSP Sampler			
		C	rfice		HV	S Flow Recorder	
Resistance Plate No. DH (orifice), in. of water [DH x (Pa/760) x (298/Ta)] ^{1/2}		Qstd (m³/min) X - axis	Flow Recorder Reading (CFM)	Continuous Flow Recor Reading IC (CFM) Y-a			
18	9.8		3.10		50.0	49.56	
13	6.9		2.60	1.30	42.0	41.63	
10	5.3		2.28		34.0	33.70	
7	3.7	1.91		0.96	28.0	27.75	
5	2.8		1.66	0.83	22.0	21.80	
By Linear Regres Slope, mw = Correlation Coef	38.8644 fficient* =		9945	Intercept, bw =	-10.0	0179	
	SIIIOICITE ~ 0.000, 1	bricon and recails	orate.				
Johnstation Jok							
				Calculation			
From the TSP Fie			1.30m³/min	Calculation			
From the TSP Fie			1.30m³/min	Calculation			
From the TSP Fie		e "Y" value accord	1.30m ³ /min ding to		"a)] ^{1/2}		
From the TSP Fie		e "Y" value accord	1.30m ³ /min ding to	Calculation x [(Pa/760) x (298/1	ā)] ^{1/2}		
From the TSP Fiel	sion Equation, the	"Y" value accord	1.30m ³ /min ding to	x [(Pa/760) x (298/1	ā)] ^{1/2}	40.87	
From the TSP Fiel	sion Equation, the	"Y" value accord	1.30m ³ /min ding to x Qstd + bw = IC	x [(Pa/760) x (298/1	ā] ^{1/2}	40.87	
From the TSP Fiel	sion Equation, the	"Y" value accord	1.30m ³ /min ding to x Qstd + bw = IC	x [(Pa/760) x (298/1	ā)] ^{1/2}	40.87	
From the TSP Fiel From the Regress Therefore, Set Po	sion Equation, the	"Y" value accord	1.30m ³ /min ding to x Qstd + bw = IC	x [(Pa/760) x (298/1	⁻ a)] ^{1/2}	40.87	
From the TSP Fiel From the Regress Therefore, Set Po	sion Equation, the	"Y" value accord	1.30m ³ /min ding to x Qstd + bw = IC	x [(Pa/760) x (298/1	ā] ^{1/2}	40.87	
From the TSP Fiel	sion Equation, the	"Y" value accord	1.30m ³ /min ding to x Qstd + bw = IC	x [(Pa/760) x (298/1	[a)] ^{1/2}	40.87	

ENSR ASIA (HK) LTD TSP High Volume Sampler Field Calibration Report

Station	Podium oh Hamil	ton Court (CA2)	Operator:	Shum Ka	am Yuen	
Cal. Date: 7-May-09				Next Due Date:	7-Ju		
Equipment No.: A.001.15				Serial No.	103	380	•
			Ambient	Condition			
Temperatur	re, Ta (K)	302	Pressure, F	Pa (mmHg)		756.6	
)							
			Orifice Transfer S	tandard Informatio			
Equipme		843 Slope, mc		2.02158	Intercept, bc -0.		
Last Calibra		4-Nov-08			= [DH x (Pa/760) x		
Next Calibra	ition Date:	4-Nov-09		Qstd = {[DH x (I	Pa/760) x (298/Ta)]	^{1/2} -bc} / mc	
			Calibration o	f TSP Sampler			
		C	Orfice		HV	S Flow Recorder	
Resistance Plate No. DH (orifice), in. of water [DH x (Pa/760) x (2)		60) x (298/Ta)] ^{1/2}	Qstd (m³/min) X - axis	Flow Recorder Reading (CFM)	Continuous Flow Reading IC (CFI		
18	10.0		3.13		48.0	47.57	
13	7.7		2.75	1.37	40.0	39.65	
10	5.7		2.37		34.0	33.70	
7	4.0	1.98		0.99	28.0	27.75	
5	2.8			0.83	20.0	19.82	
By Linear Regres Slope , mw = Correlation Coef	36.5574		9936 brate.	Intercept, bw =	-9.7	663	
			Set Point	Calculation			
rom the TSP Fie	ld Calibration Cur	ve_take Ostd =		Calculation			
	sion Equation, the						
					410		
		mw	x Qstd + bw = IC	k [(Pa/760) x (298/T	「a)] ^{1/2}		
herefore, Set Po	int; IC = (mw x Q	std + bw) x [(76	60 / Pa) x (Ta / 29	8)] ^{1/2} =	-	38.10	
Remarks:							
	1			Í		0 11	0
C Reviewer:	lie tu		Signature:	100		Date: & May	, 04

V:\EM&A Calibration Certificate\High Volun

EQUIPMENT CALIBRATION RECORD

Type: Manufacturer/Brand: Model No.: Equipment No.: Sensitivity Adjustment Scale Setting: Operator:				Laser Dust Monitor SIBATA LD-3 A.005.07a 557 CPM						
				Mike Shek (MSKM)						
Standa	rd Equipment									
Venue: Cyb Model No.: Seri Serial No: Con Sen			nsor: <u>12</u> 0 June 2008	Ying Seco DAB2198 DOC1436	ondary S 99803 59803	K _o : <u>1250</u> 0	2			
Calibra	tion Result	· · · · · · · · · · · · · · · · · · ·								
	ivity Adjustment ivity Adjustment					*** · · · · · · · · · · · · · · · · · ·	PM PM			
Hour	Date (dd-mm-yy)	-	Time		oient dition R.H. (%)	Concentration ¹ (mg/m³) Y-axis	Total Count ²	Count/ Minute ³ X-axis		
1	14-06-08	09:00	- 10:00	32.2	75	0.03113	1007	16.78		
2	14-06-08	10:00	- 11:00	32.4	74	0.03566	1166	19.43		
3 4	14-06-08 14-06-08	11:00 13:00	- 12:00 - 14:00	32.5 32.5	74 75	0.03146 0.04583	1025 1485	17.08 24.75		
Slope (1. Monitoring of 2. Total Count 3. Count/minut or Regression of (K-factor): ation coefficient:	was logge e was cal	ed by Laser [Dust Mon	itor	shnick TEOM [®]				
Validity	of Calibration F	Record:	13 June 2	009	· · · · · · · · · · · · · · · · · · ·					
Remarks	s:							70 40		
QC Re	viewer: <i>Mike</i>	Shek	Signat	ure:	like	Date	э: <u>16 Jun</u>	e 2008		

EQUIPMENT CALIBRATION RECORD

Туре:				Laser Du	ıst Moni	tor					
Manufacturer/Brand:				SIBATA							
Model No.:				LD-3		 					
Equipment No.:				A.005.07a							
Sensitivity Adjustment Scale Setting:				557 CPM							
Opera	ator:			Mike She	k (MSKN	1)					
Standa	rd Equipment										
·				((_ · _ · _ · _ · _ · _ · _ · _ ·	TCOL®						
Equip		Rupprecht				ahaal)	······································				
Venue Model		Cyberport		ing Seco	nuary Sc	illool)					
		Series 140 Control:	·	AB21989	00002						
Serial	NO:			00C14365	· · · · · · · · · · · · · · · · · · ·	K _o : 12500	· · · · · · · · · · · · · · · · · · ·				
Last C	Calibration Date*:	Sensor: : 5 June 20		0014300	19003	K _o : <u>12500</u>		vocanium en			
				1.1							
*Remar	ks: Recommend	led interval for ha	ardwar	e calibrat	ion is 1 y	/ear					
Calibra	tion Result										
		Scale Setting (B Scale Setting (A			•	557 CP					
Hour	Date	Time		Ambient Condition		Concentration ¹ (mg/m ³)	Total	Count/			
	(dd-mm-yy)						Count ²	Minute ³			
	` ' ' ' '			Temp	R.H.	Y-axis		X-axis			
				(°C)	(%)						
1	06-06-09	09:00 - 1	0:00	30.2	76	0.04175	1392	23.20			
2	06-06-09	10:00 - 1	1:00	30.6	76	0.03983	1330	22.17			
3	06-06-09		2:00	31.0	75	0.04025	1339	22.31			
4	06-06-09		4:00	31.2	76	0.04271	1426	23.77			
Slope	2. Total Count 3. Count/minu ar Regression of (K-factor):	0.00	aser [l by (T 018	Dust Moni	tor	shnick TEOM [™]					
Correl	ation coefficient:	0.99	965								
Validit	y of Calibration F	Record: 5 Ju	ıne 20	10							
Remark	s:				rancoman martin			······			
QC Re	eviewer: <i>YW F</i>	=una	Signat	ure:	1.	Date	e: 8 June	2009			

EQUIPMENT CALIBRATION RECORD

Type:	facturer/Brand:		_	Laser D SIBATA	ust Mon	itor		
Model No.:				LD-3				
Equipment No.:			_	A.005.1	la			
Sensitivity Adjustment Scale Setting:			ıg: _	799 CP				
Opera	utor:		_	Mike Sh	ek (MSKI	М)		
Standa	rd Equipment							
P= 1								J
Equip			recht & Pa					
Venue			rport (Pui	Ying Seco	ondary S	chool)		
Model Serial			s 1400AB	0400400	00000			
Senai	NO.	Contro Senso		0AB2198				
Last C	Calibration Date*:		ne 2008	00C1436	09803	K _o : <u>1250</u>	U	
*D	l D							
- Hemar	ks: Recommend	ied interval f	or nardwa	re calibra	tion is 1 y	year		
Calibra	tion Result							
Sensit Sensit	ivity Adjustment ivity Adjustment	Scale Settin Scale Settin	g (Before g (After C	Calibration alibration	on):):		PM PM	
Hour	Date	Tim	Time		oient	Concentration	Total	Count/
	(dd-mm-yy)			Condition		(mg/m ³)	Count ²	Minute ³
				Temp	R.H.	Y-axis		X-axis
	20 25 25			(°C)	(%)			
1	06-07-08	10:00 -	11100	29.9	81	0.01680	704	11.74
2	06-07-08	11:00 -	12:00	29.8	80	0.01748	738	12.30
3 4	06-07-08	12:00 -	13:00	29.6	80	0.01537	659	10.98
Note:	06-07-08	13:00 -	14:00	29.6	80	0.01688 shnick TEOM®	730	12.17
vol o .	2. Total Count					ISHNICK TEOW		
	3. Count/minut							
Duling	or Dooroopion of	V ou V			,			
	ar Regression of (K-factor):	YOFX	0.0014					
	ation coefficient:	-	0.0014					
	y of Calibration F	Record: _	5 July 200	09				
Remark	s:							
						•		ł
<u>. </u>					1			
OC D a	eviewer: <i>Mike</i>	Shok	Cianat	uroi	H.Lo	Б.,	711	2000
WO HE	viewer: <i>Mike</i>	OHEK	Signat	ui e	<i></i>	Dat	e: _ 7 July 2	<u> 2008 </u>



綜合試驗有限公司 SOILS & MATERIALS ENGINEERING CO., LTD.

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

Certificate No.:

08CA0603 01

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of

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Item tested

Description:

Sound Level Meter (Type I)

Manufacturer:

RION CO., LTD.

Microphone

RION CO., LTD.

Type/Model No.:

NL-31

UC-53A

Serial/Equipment No.:

00320528 / N.007.03A

88783

Adaptors used:

Item submitted by

Customer Name:

ENSR ASIA (HK) LTD.

Address of Customer:

Room 1213-1219, Grand Central Plaza, Tower 2, 138 Shalin Rural Committee Rd, Sha Tin, New Territories, HK

Request No.: Date of request:

03-Jun-2008

Date of test:

12-Jun-2008

Reference equipment used in the calibration

Description:

Model:

Serial No.

Expiry Date:

Traceable to:

Multi function sound calibrator Signal generator

B&K 4226

2288444 33873

11-Jan-2009 06-Dec-2008 CIGISMEC CEPREI

Signal generator

DS 360 DS 360

61227

13-Jun-2008

CEPRE

Ambient conditions

Temperature:

(23 ± 2) °C (60 ± 15) %

Relative humidity: Air pressure:

(1000 ± 10) hPa

Test specifications

The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580; Part 1: 1997 1, 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%.

3, The acoustic calibration was performed using an B&K 4226 sound calibrator and corrections was applied for the difference 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_lian-Min/Feng Jun Qi

Actual Measurement data are documented on worksheets.

Approved Signatory:

12-Jun-2008

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.

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



綜合試驗有限公司 SOILS & MATERIALS ENGINEERING CO., LTD.

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



CERTIFICATE OF CALIBRATION

Certificate No.:

09CA0611 01

Page

of

Tel: (852) 2873 6860

Fax: (852) 2555 7533

2

Item tested

Description:

Sound Level Meter (Type 1)

Microphone

Manufacturer: Type/Model No.: RION CO., LTD.

RION CO., LTD.

Serial/Equipment No.:

NL-31

UC-53A 88783

Adaptors used:

00320528 / N.007.03A

Item submitted by

Customer Name:

ENSR ASIA (HK) LTD.

Address of Customer:

Room 1213-1219, Grand Central Plaza, Tower 2, 138 Shatin Rural Committee Rd, Sha Tin, New Territories, HK

Request No .: Date of request:

10-Jun-2009

Date of test:

11-Jun-2009

Reference equipment used in the calibration

Description:

Model:

Serial No.

Expiry Date:

Traceable to:

Multi function sound calibrator Signal generator

B&K 4226 DS 360

2288444 33873

12-Jan-2010 12-Jun-2009

CIGISMEC **CEPREI**

Signal generator

DS 360

61227

18-Jul-2009

CEPREI

Ambient conditions

Temperature:

23 ± 1 °C

Relative humidity: Air pressure:

55 ± 15 % 995 ± 15 hPa

Test specifications

The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580: Part 1: 1997 1. 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%.

3, The acoustic calibration was performed using an B&K 4226 sound calibrator and corrections was applied for the difference 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.

Actual Measurement data are documented on worksheets.

Approved Signatory:

Date:

12-Jun-2009

Company Chop:

Huang Jian Mih/Feng Jun Qi

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.

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



輝創工程有限公司

Sun Creation Engineering Limited Calibration and Testing Laboratory

Certificate No.: C083543

Certificate of Calibration

This is to certify that the equipment

Description: Sound Level Calibrator

Manufacturer: Rion

Model No.: NC-73

Serial No.: 10307223 (N. 004 08)

has been calibrated for the specific items and ranges. The results are shown in the Calibration Report No. C083543.

The equipment is supplied by

Co. Name: ENSR Asia (HK) Limited

Address: 11/F., Grand Central Plaza, Tower 2, 138 Shatin Rural Committee Rd., Shatin, N.T.

Date of Issue: 14 July 2008

Certified by:

K C/Lee

The test equipment used for testing are traceable to the National Standards as specified in this report. This report shall not be reproduced except in full and with prior written approval from this laboratory.