						File No.	MA20003/18/0007
Project No.	CKL 1 - Flat 12	1 Cha Kwo Ling	Village				
Date:		ar-21		6-1	1ay-21	Operator:	SK
Equipment No.:							
Equipment No.:	A-0	1-10	. Wodel No.:		5170	Seriai No.	0723
			Ambient (Condition			
Temperatu	re, Ta (K)	293.7	Pressure, Pa			762.9	
•	. , , , ,		•				
		0	rifice Transfer Sta	ındard Inform	ation		
Serial	No.	3864	Slope, mc	0.05846	Intercept		-0.00313
Last Calibra	ation Date:	11-Jan-21			$c = [\Delta H \times (Pa/76)]$		
Next Calibra	ation Date:	11-Jan-22		$Qstd = \{ [\Delta H : $	x (Pa/760) x (298	/Ta)] ^{1/2} -bc}	/ mc
	l		Calibration of	TSP Sampler			
Calibration	ΔH (orifice),		fice	O-41 (CEM)	AW (IIVE) :	HVS	60) x (298/Ta)] ^{1/2} Y-
Point	in. of water	[ΔH x (Pa/76	$(50) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	of water	∐∆w x (Pa//	axis (298/1a)] Y-
1	13.6		3.72	63.72	10.2		3.22
2	11.3	1	3.39	58.09	7.7		2.80
3	8.5		2.94	50.38	6.0		2.47
4	5.3		2.32	39.80	3.4	1.86	
5	3.1		1.78	30.45	1.8		1.35
By Linear Regr	ession of Y on Y	K					
Slope, mw =		_	1	Intercept, bw	-0.324	15	
	coefficient* =		.9983	-			
*If Correlation C	Coefficient < 0.99	90, check and red	calibrate.				
			C (P : (C	.			
From the TSP Fi	ald Calibration (Surva taka Ostd	Set Point C	alculation			
From the Regres							
From the Regres	sion Equation, u	ie i vaiue acc	ording to				
		mw x	$Qstd + bw = [\Delta W]$	x (Pa/760) x (2	$(98/Ta)]^{1/2}$		
	. D. 1	0 .1 .1 .)	2 (50 15) (5	T (200)			
Therefore, Se	et Point; W = (m	ıw x Qstd + bw)	2 x (760 / Pa) x (7	Ta / 298) =	4.09	<u> </u>	
Remarks:							
			0 - 1				
Conducted by:	SK Wong	Signature:		J'		Date:	6 March 2021
			1 0				
Checked by:	Henry Leung	Signature:	-lema X	~~~ <u>7</u>		Date:	6 March 2021

						File No.	MA20003/55/000
Project No.	CKL 2 - Flat 103	3 Cha Kwo Ling	Village			•	
Date:	6-Ma	ar-21	Next Due Date:	6-N	Лау-21	Operator:	SK
Equipment No.:	A-0	1-55	Model No.:	TE	E 5170	Serial No.	1956
			Ambient C	ondition			
Temperatu	re, Ta (K)	293.7	Pressure, Pa			762.9	
			ifice Transfer Stai				
Serial		3864	Slope, mc	0.05846	Intercept		-0.00313
Last Calibra		11-Jan-21			$c = [\Delta H \times (Pa/760)]$		
Next Calibr	ration Date:	11-Jan-22		$Qstd = \{ [\Delta H \ x]$	(Pa/760) x (298/7	Γa)] ^{1/2} -bc} /	mc
		•	Calibration of	ΓSP Sampler			
Calibration		Or	fice			HVS	
Point	ΔH (orifice), in. of water	[ΔH x (Pa/76	(0) x (298/Ta)] ^{1/2}	Qstd (CFM) X - axis	ΔW (HVS), in. of water	[ΔW x (Pa	/760) x (298/Ta)] ^{1/2} Y-axis
1	13.8		3.75	64.18	9.6		3.13
2	11.3		3.39	58.09	7.3		2.73
3	8.4		2.92	50.09	5.8		2.43
4	5.2		2.30	39.42	3.5		1.89
5	2.8		1.69	28.94	2.0		1.43
By Linear Regr Slope , mw = Correlation		_	9980	ntercept, bw	0.039	8	
*If Correlation C	Coefficient < 0.99	0, check and rec	alibrate.				
			Set Point Ca	lculation			
From the TSP Fi	ield Calibration C	Curve, take Qstd	= 43 CFM				
From the Regres	ssion Equation, th	e "Y" value acco	ording to				
			$\mathbf{gstd} + \mathbf{bw} = \mathbf{\Delta W} \mathbf{x}$	(Do/760) v (20	19/Ta)1 ^{1/2}		
		mw x Q	ystu + Dw – μΔνν x	(Fa/700) X (2)	70/1a)j		
Therefore, Se	et Point; W = (m	w x Qstd + bw)	² x (760 / Pa) x (7	Ta / 298) =	4.23		
Remarks:							
Conducted by:	SK Wong	Signature:	杨人			Date:	6 March 2021
·		-	1.0	/	•		CM. 1 2021
Checked by:	Henry Leung	Signature:	1-1	109 J		Date:	6 March 2021

						File No.	MA20003/04/0005
Project No.	KER 1 - Future	Residential Dev	elopment at Kerry (Godown			
Date:	1-Ap	or-21	Next Due Date:	1-J	Jun-21	Operator:	SK
Equipment No.:	A-0	1-04	Model No.:	TE	E 5170	Serial No.	10595
			A 1: 40	1141			
Temperatu	To (V)	294.9	Ambient C Pressure, Pa			762	
Temperatu	re, 1a (K)	294.9	Pressure, Pa	(mmHg)		/62	
		Or	ifice Transfer Star	ndard Informa	ation		
Serial	l No.	3864	Slope, mc	0.05846	Intercept	t, bc	-0.00313
Last Calibra	ation Date:	11-Jan-21	r	nc x Qstd + bo	$c = [\Delta H \times (Pa/760]]$) x (298/Ta)	1/2
Next Calibr	ation Date:	11-Jan-22]	Qstd = {[ΔH x	(Pa/760) x (298/7	Γa)] ^{1/2} -bc} /	mc
			Calibration of	TSP Sampler		TIV 10	
Calibration	AH (arifica)		rfice	O-td (CEM)	AW (HVC):	HVS	(200 /T)3 ^{1/2}
Point	ΔH (orifice), in. of water	[ΔH x (Pa/70	50) x (298/Ta)] ^{1/2}	Qstd (CFM) X - axis	ΔW (HVS), in. of water	[ΔW x (Pa/	760) x (298/Ta)] ^{1/2} Y-axis
1	13.2		3.66	62.61	8.0		2.85
2	10.8		3.31	56.64	6.3		2.53
3	8.2		2.88	49.36	4.8		2.21
4	4.8		2.21	37.78	2.9		1.71
5	2.8		1.68	28.86	1.9		1.39
	•	•				•	
By Linear Regr	ession of Y on X	- -					
Slope, $mw =$	0.0430	_	I	intercept, bw	0.114	1	
Correlation	coefficient* =	0	.9983	,			
*If Correlation C	Coefficient < 0.99	0, check and re	calibrate.				
			Set Point Ca	lculation			
	ield Calibration C						
From the Regres	ssion Equation, th	e "Y" value acc	ording to				
		mw x ($Qstd + bw = [\Delta W x]$	(Pa/760) x (29	98/Ta)] ^{1/2}		
			2004 · O	(1 111 / 00) 11 (2)			
Therefore, Se	et Point; W = (m	w x Qstd + bw)	$x^{2} \times (760 / Pa) \times (760 / Pa)$	$\Gamma a / 298) =$	3.80		
Remarks:							
Conducted by:	SK Wong	Signature:	[<u></u>		Date:	1 April 2021
·		-	1.0		•	•	•
Checked by:	Henry Leung	Signature:	-long X	, ~~~7		Date:	1 April 2021

						File No.	MA20003/44/0006
Project No.	KTD1 - Centre o	of Excellence in	Paediatrics (Childr	en's Hospital)			
Date:	1-Ap	or-21	Next Due Date:	1-J	Jun-21	Operator:	SK
Equipment No.:	A-01	1-44	Model No.:	TE	E-5170	Serial No.	1316
			Ambient C	andition			
Temperatur	re Ta(K)	294.9	Pressure, Pa			762	
remperatu	ic, ia (K)	274.7	Tressure, ra	(IIIIII Ig)		702	
		Or	ifice Transfer Star	ndard Informa	ntion		
Serial	No.	3864	Slope, mc	0.05846	Intercept		-0.00313
Last Calibra	ation Date:	11-Jan-21] ı	nc x Qstd + bo	$c = [\Delta H \times (Pa/760]]$) x (298/Ta)	l ^{1/2}
Next Calibra	ation Date:	11-Jan-22		$Qstd = \{ [\Delta H \ x] \}$	(Pa/760) x (298/7	Γa)] ^{1/2} -bc} /	mc
			Calibration of T	FSD Samplar			
G 17 .:		O	fice	i Si Sampler		HVS	
Calibration Point	ΔH (orifice), in. of water		60) x (298/Ta)] ^{1/2}	Qstd (CFM) X - axis	ΔW (HVS), in. of water		/760) x (298/Ta)] ^{1/2} Y-axis
1	13.1		3.64	62.37	9.0		3.02
2	10.5		3.26	55.85	6.8		2.62
3	7.9		2.83	48.45	5.3		2.32
4	5.9		2.44	41.88	3.4		1.86
5	3.0		1.74	29.88	1.8		1.35
-	ession of Y on X						
Slope, mw =		-		ntercept, bw	-0.228	33	
Correlation			.9968				
*If Correlation C	Coefficient < 0.99	0, check and re	calibrate.				
			Set Point Ca	lculation			
From the TSP Fi	eld Calibration C	urve, take Ostd					
	sion Equation, th						
C	1		-		1/2		
		mw x ($\mathbf{Qstd} + \mathbf{bw} = [\Delta \mathbf{W} \ \mathbf{x}]$	(Pa/760) x (29	98/Ta)] ^{1/2}		
Therefore, Se	et Point; W = (m	w x Qstd + bw)	$x^2 \times (760 / Pa) \times (760 / Pa)$	Γa / 298) =	3.92		
Remarks:							
Conducted by:	SK Wong	Signature:	ła.			Date:	1 April 2021
conducted by:	DIE WOIIE	Signature:			•	Daw.	1 April 2021
Checked by:	Henry Leung	Signature:	-long X	, ~9~7		Date:	1 April 2021

						File No.	MA20003/41/0005
Project No.	KTD 2c - G/IC	Zone next to Kw	un Tong Bypass (N	ext to the Kow	loon Bay Sewage	Interception	Station)
Date:	1-A	pr-21	Next Due Date:	1-J	[un-21	Operator:	SK
Equipment No.:	A-0)1-41			5170		5280
1 1			•			•	
			Ambient C	ondition			
Temperatur	re, Ta (K)	294.9	Pressure, Pa	(mmHg)		762	
	Γ		ifice Transfer Star				
Serial		3864	Slope, mc	0.05846	Intercept		-0.00313
Last Calibra		11-Jan-21			$c = [\Delta H \times (Pa/760)]$		
Next Calibra	ation Date:	11-Jan-22	•	<u>Qsta = { ΔH x</u>	(Pa/760) x (298/7	a) -bc /	me
		•	Calibration of	FSP Sampler			
		Or	fice	isi sampici		HVS	
Calibration Point	ΔH (orifice), in. of water		(60) x (298/Ta)] ^{1/2}	Qstd (CFM) X - axis	ΔW (HVS), in. of water		(760) x (298/Ta)] ^{1/2} Y-axis
1	13.2		3.66	62.61	7.5		2.76
2	10.8		3.31	56.64	6.0		2.46
3	7.8		2.81	48.14	4.6		2.17
4	5.4	:	2.34	40.06	3.5		1.89
5	2.6		1.62	27.82	2.0		1.42
By Linear Regr		X					
Slope, mw =		_		Intercept, bw =	0.372	8	
	coefficient* =		.9984	,			
*If Correlation C	coefficient < 0.9	90, check and rec	calibrate.				
			Set Point Ca	lculation			
From the TSP Fi	eld Calibration (Curve, take Qstd		il culturo il			
From the Regres	sion Equation, tl	he "Y" value acco	ording to				
			- -		1/2		
		mw x Q	$\mathbf{Qstd} + \mathbf{bw} = [\Delta \mathbf{W} \ \mathbf{x}]$	(Pa/760) x (29	08/Ta)] ^{1/2}		
Therefore, Se	et Point; W = (n	nw x Qstd + bw)	² x (760 / Pa) x (7	Γa / 298) =	3.89		
Remarks:							
							1 4 7 2021
Conducted by:	SK Wong	Signature:				Date:	1 April 2021
Checked by:	Henry Leung	Signature:	-lema X	, ~~~7		Date:	1 April 2021



RECALIBRATION **DUE DATE:**

January 11, 2022

Calibration Certification Information

January 11, 2021 Cal. Date:

Rootsmeter S/N: 438320

°K

Operator: Jim Tisch Ta: 297 Pa: 750.1

mm Hg

Calibration Model #: TE-5025A

Calibrator S/N: 3864

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.4470	3.2	2.00
2	3	4	1	1.0210	6.4	4.00
3	5	6	1	0.9140	8.0	5.00
4	, 7	8	1	0.8670	8.8	5.50
5	9	10	1	0.7140	12.9	8.00

	Data Tabulation					
Vstd	Qstd	$\sqrt{\Delta H \left(\frac{Pa}{Pstd}\right) \left(\frac{Tstd}{Ta}\right)}$		Qa	√∆H(Ta/Pa)	
(m3)	(x-axis)	(y-axis)	Va	(x-axis)	(y-axis)	
0.9860	0.6814	1.4073	0.9957	0.6881	0.8899	
0.9818	0.9616	1.9902	0.9915	0.9711	1.2585	
0.9797	1.0719	2.2251	0.9893	1.0824	1.4071	
0.9786	1.1288	2.3337	0.9883	1.1399	1.4757	
0.9732	1.3630	2.8146	0.9828	1.3765	1.7798	
	m=	2.06566		m=	1.29348	
QSTD	b=	0.00315	QA	b=	0.00199	
	r=	0.99996		r=	0.99996	

	Calculations					
Vstd=	ΔVol((Pa-ΔP)/Pstd)(Tstd/Ta)	Va=	ΔVol((Pa-ΔP)/Pa)			
Qstd=	Vstd/∆Time	Qa=	Va/∆Time			
	For subsequent flow rate calculations:					
Qstd=	$1/m\left(\left(\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}\right)-b\right)$	Qa=	$1/m\left(\left(\sqrt{\Delta H\left(Ta/Pa\right)}\right)-b\right)$			

Standard Conditions				
Tstd:	298.15 °K			
Pstd:	760 mm Hg			
	Key			
ΔH: calibrator manometer reading (in H2O)				
ΔP: rootsme	ter manometer reading (mm Hg)			
Ta: actual ab	solute temperature (°K)			
Pa: actual barometric pressure (mm Hg)				
b: intercept				
m: slope				

RECALIBRATION

US EPA recommends annual recalibration per 1998 40 Code of Federal Regulations Part 50 to 51, Appendix B to Part 50, Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere, 9.2.17, page 30

www.tisch-env.com



Certificate of Calibration - Wind Monitoring Station

Description: Yau Lai Estate, Bik Lai House

Manufacturer: <u>Davis Instruments</u>

Model No.: <u>Davis7440</u>

Serial No.: <u>MC01010A44</u>

Equipment No.: SA-03-04

Date of Calibration <u>20-Feb-2021</u>

Next Due Date <u>20-Aug-2021</u>

1. Performance check of Wind Speed

Wind Sp	peed, m/s	Difference D (m/s)
Wind Speed Reading (V1)	Anemometer Value (V2)	D = V1 - V2
0.0	0.0	0.0
1.5	1.6	-0.1
2.5	2.5	0.0
3.5	3.4	0.1

2. Performance check of Wind Direction

Wind Di	rection (°)	Difference D (°)
Wind Direction Reading (W1)	Marine Compass Value (W2)	D = W1 - W2
0	0	0.0
90	90	0.0
180	180	0.0
270	270	0.0

Test Specification:

- 1. Performance Wind Speed Test The wind meter was on-site calibrated against the anemometer
- 2. Performance Wind Direction Test The wind meter was on-site calibrated against the marine compass at four direction

Calibrated by:	<u> </u>	Approved by:	-leng chang
	Wong Shing Kwai	_	Henry Leung