



**REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION**

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**Information supplied by customer:**

**CONTACT:** DEREK LO **WORK ORDER:** HK1310044  
**CLIENT:** LAM GEOTECHNICS LIMITED  
**DATE RECEIVED:** 03/12/2013  
**DATE OF ISSUE:** 10/12/2013  
**ADDRESS:** 11/F, CENTRE POINT, 181-185, GLOUCESTER ROAD,  
WANCHAI, HONG KONG

**PROJECT:** ---

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**METHOD OF PERFORMANCE CHECK/ CALIBRATION:**

Ref: APHA22nd ed 2130B

**COMMENTS**

It is certified that the item under performance check/calibration has been calibrated/checked by corresponding calibrated equipment in the laboratory. Maximum Tolerance and calibration frequency stated in the report, unless otherwise stated, the internal acceptance criteria of Pilot Testing Limited will be followed.

<b>Scope of Test:</b>	Turbidity
<b>Equipment Type:</b>	Turbidimeter
<b>Brand Name:</b>	Xin Rui
<b>Model No.:</b>	WGZ-3B
<b>Serial No.:</b>	1203008
<b>Equipment No.:</b>	--
<b>Date of Calibration:</b>	10 December, 2013

**Remarks:**

This is the Final Report. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

Mr. Peter Lee  
Director

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Address: Room 1503, 15/F, Wayson Commercial House, 68-70 Lockhart Road, Wanchai, Hong Kong  
Phone +852 2527 6691 | Email info@pilot-testing.com

**REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION****WORK ORDER: HK1310044****DATE OF ISSUE: 10<sup>th</sup> December, 2013****CLIENT: LAM GEOTECHNICS LIMITED**

<b>Equipment Type:</b>	Turbidimeter
<b>Brand Name:</b>	Xin Rui
<b>Model No.:</b>	WGZ-3B
<b>Serial No.:</b>	1203008
<b>Equipment No.:</b>	--
<b>Date of Calibration:</b>	10 December, 2013
<b>Date of next Calibration:</b>	10 March, 2014

**Parameters:****Turbidity**Method Ref: APHA 22<sup>nd</sup> ed. 2130B

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0	0.02	---
4	3.68	-8.0
10	10.3	+3.0
40	38.2	-4.5
100	94.0	-6.0
400	416	+4.0
1000	970	-3.0
	<b>Tolerance Limit (±%)</b>	<b>10.0</b>

Remark: "Displayed Reading" presents the figures shown on item under calibration/checking regardless of equipment precision or significant figures.

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**REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION**

**Information supplied by customer:**

**CONTACT:** DEREK LO                      **WORK ORDER:** HK1410014  
**CLIENT:** LAM GEOTECHNICS LIMITED  
**DATE RECEIVED:** 03/03/2014  
**DATE OF ISSUE:** 08/03/2014  
**ADDRESS:** 11/F, CENTRE POINT, 181-185, GLOUCESTER ROAD,  
WANCHAI, HONG KONG

**PROJECT:** ---

**METHOD OF PERFORMANCE CHECK/ CALIBRATION:**

Ref: APHA22nd ed 2130B

**COMMENTS**

It is certified that the item under performance check/calibration has been calibrated/checked by corresponding calibrated equipment in the laboratory. Maximum Tolerance and calibration frequency stated in the report, unless otherwise stated, the internal acceptance criteria of Pilot Testing Limited will be followed.

<b>Scope of Test:</b>	Turbidity
<b>Equipment Type:</b>	Turbidimeter
<b>Brand Name:</b>	Xin Rui
<b>Model No.:</b>	WGZ-3B
<b>Serial No.:</b>	1203008
<b>Equipment No.:</b>	--
<b>Date of Calibration:</b>	08 March, 2014

**Remarks:**

This is the Final Report. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

Mr. Peter Lee  
Director

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**REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION****WORK ORDER: HK1410014****DATE OF ISSUE: 08<sup>th</sup> March, 2014****CLIENT: LAM GEOTECHNICS LIMITED**

<b>Equipment Type:</b>	Turbidimeter
<b>Brand Name:</b>	Xin Rui
<b>Model No.:</b>	WGZ-3B
<b>Serial No.:</b>	1203008
<b>Equipment No.:</b>	--
<b>Date of Calibration:</b>	08 March, 2014
<b>Date of next Calibration:</b>	08 June, 2014

**Parameters:****Turbidity**Method Ref: APHA 22<sup>nd</sup> ed. 2130B

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0	0.02	---
4	3.94	-1.5
10	10.2	+2.0
40	41.4	+3.5
100	97.5	-2.5
400	416	+4.0
1000	980	-2.0
	Tolerance Limit ( $\pm\%$ )	10.0

Remark: "Displayed Reading" presents the figures shown on item under calibration/checking regardless of equipment precision or significant figures.

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**REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION**

**Information supplied by customer:**

**CONTACT:** DEREK LO **WORK ORDER:** HK1310059  
**CLIENT:** LAM GEOTECHNICS LIMITED  
**DATE RECEIVED:** 30/01/2014  
**DATE OF ISSUE:** 05/02/2014  
**ADDRESS:** 11/F, CENTRE POINT, 181-185, GLOUCESTER ROAD,  
WANCHAI, HONG KONG

**PROJECT:** ---

**METHOD OF PERFORMANCE CHECK/ CALIBRATION:**

Ref: APHA22nd ed 2130B

**COMMENTS**

It is certified that the item under performance check/calibration has been calibrated/checked by corresponding calibrated equipment in the laboratory. Maximum Tolerance and calibration frequency stated in the report, unless otherwise stated, the internal acceptance criteria of Pilot Testing Limited will be followed.

<b>Scope of Test:</b>	Turbidity
<b>Equipment Type:</b>	Turbidimeter
<b>Brand Name:</b>	Xin Rui
<b>Model No.:</b>	WGZ-3B
<b>Serial No.:</b>	1203016
<b>Equipment No.:</b>	--
<b>Date of Calibration:</b>	05 February, 2014

**Remarks:**

This is the Final Report. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

Mr. Peter Lee  
Director

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**REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION****WORK ORDER: HK1310059****DATE OF ISSUE: 05<sup>th</sup> February, 2014****CLIENT: LAM GEOTECHNICS LIMITED**

<b>Equipment Type:</b>	Turbidimeter
<b>Brand Name:</b>	Xin Rui
<b>Model No.:</b>	WGZ-3B
<b>Serial No.:</b>	1203016
<b>Equipment No.:</b>	--
<b>Date of Calibration:</b>	05 February, 2014
<b>Date of next Calibration:</b>	05 May, 2014

**Parameters:****Turbidity**Method Ref: APHA 22<sup>nd</sup> ed. 2130B

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0	0.02	---
4	3.72	-7.0
10	10.6	+6.0
40	42.6	+6.5
100	96.5	-3.5
400	430	+7.5
1000	972	-2.8
	Tolerance Limit ( $\pm\%$ )	10.0

Remark: "Displayed Reading" presents the figures shown on item under calibration/checking regardless of equipment precision or significant figures.

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**REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION****WORK ORDER: HK1310060****DATE OF ISSUE: 05<sup>th</sup> February, 2014****CLIENT: LAM GEOTECHNICS LIMITED**

<b>Equipment Type:</b>	Turbidimeter
<b>Brand Name:</b>	Xin Rui
<b>Model No.:</b>	WGZ-3B
<b>Serial No.:</b>	1203025
<b>Equipment No.:</b>	--
<b>Date of Calibration:</b>	05 February, 2014
<b>Date of next Calibration:</b>	05 May, 2014

**Parameters:****Turbidity**Method Ref: APHA 22<sup>nd</sup> ed. 2130B

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0	0.02	---
4	3.82	-4.5
10	10.4	+4.0
40	41.0	+2.5
100	95.0	-5.0
400	420	+5.0
1000	980	-2.0
	Tolerance Limit ( $\pm\%$ )	10.0

Remark: "Displayed Reading" presents the figures shown on item under calibration/checking regardless of equipment precision or significant figures.

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## REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

**CONTACT:** MR DEREK LO  
**CLIENT:** LAM GEOTECHNICS LIMITED  
**ADDRESS:** 11/F., CENTRE POINT,  
181-185 GLOUCESTER ROAD,  
WAN CHAI, HONG KONG  
**PROJECT:** --

**WORK ORDER:** HK1401751  
**LABORATORY:** HONG KONG  
**DATE RECEIVED:** 15/01/2014  
**DATE OF ISSUE:** 24/01/2014

### COMMENTS

It is certified that the item under calibration/checking has been calibrated/checked by corresponding calibrated equipment in the laboratory.  
Maximum Tolerance and calibration frequency stated in the report, unless otherwise stated, the internal acceptance criteria of ALS will be followed.

Scope of Test: Dissolved Oxygen, pH, Salinity and Temperature  
Equipment Type: Multimeter  
Brand Name: YSI  
Model No.: YSI Professional plus  
Serial No.: 11F100597  
Equipment No.: --  
Date of Calibration: 20 January, 2014

### NOTES

This is the Final Report and supersedes any preliminary report with this batch number.  
Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

  
Mr. Fung Lim Chee, Richard  
General Manager -  
Greater China & Hong Kong

# REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

**Work Order:** HK1401751  
**Date of Issue:** 24/01/2014  
**Client:** LAM GEOTECHNICS LIMITED



**Equipment Type:** Multimeter  
**Brand Name:** YSI  
**Model No.:** YSI Professional plus  
**Serial No.:** 11F100597  
**Equipment No.:** --  
**Date of Calibration:** 20 January, 2014      **Date of next Calibration:** 20 April, 2014

**Parameters:**

**Dissolved Oxygen**

**Method Ref: APHA (21st edition), 4500O: G**

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
4.31	4.34	0.03
7.01	7.02	0.01
9.54	9.40	-0.14
Tolerance Limit ( $\pm$ mg/L)		0.20

**pH Value**

**Method Ref: APHA (21st edition), 4500H:B**

Expected Reading (pH Unit)	Displayed Reading (pH Unit)	Tolerance (pH unit)
4.0	4.10	0.10
7.0	7.01	0.01
10.0	10.05	0.05
Tolerance Limit ( $\pm$ pH unit)		0.20

**Salinity**

**Method Ref: APHA (21st edition), 2520B**

Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)
0	0	--
10	9.44	-5.6
20	19.37	-3.2
30	29.87	-0.4
Tolerance Limit ( $\pm$ %)		10.0

**Temperature**

**Method Ref: Section 6 of International Accreditation New Zealand Technical**

**Guide No. 3 Second edition March 2008: Working Thermometer Calibration Procedure.**

Expected Reading ( $^{\circ}$ C)	Displayed Reading ( $^{\circ}$ C)	Tolerance ( $^{\circ}$ C)
9.0	9.7	0.7
18.5	18.6	0.1
38.5	38.6	0.1
Tolerance Limit ( $\pm$ $^{\circ}$ C)		2.0

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

  
 Mr. Fung Lim Chee, Richard  
 General Manager  
 Greater China & Hong Kong



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## REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

**CONTACT:** MS EMILY KONG  
**CLIENT:** LAM GEOTECHNICS LIMITED  
**ADDRESS:** 11/F., CENTRE POINT,  
181-185 GLOUCESTER ROAD,  
WAN CHAI, HONG KONG  
**PROJECT:** --

**WORK ORDER:** HK1400734  
**LABORATORY:** HONG KONG  
**DATE RECEIVED:** 08/01/2014  
**DATE OF ISSUE:** 14/01/2014

### COMMENTS

It is certified that the item under calibration/checking has been calibrated/checked by corresponding calibrated equipment in the laboratory.

Maximum Tolerance and calibration frequency stated in the report, unless otherwise stated, the internal acceptance criteria of ALS will be followed.

Scope of Test: Dissolved Oxygen, pH, Salinity and Temperature  
Equipment Type: Multimeter  
Brand Name: YSI  
Model No.: YSI Professional plus  
Serial No.: 11F100420  
Equipment No.: --  
Date of Calibration: 13 January, 2014

### NOTES

This is the Final Report and supersedes any preliminary report with this batch number.

Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

  
Mr. Fung Lim Chee, Richard  
General Manager -  
Greater China & Hong Kong

# REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

**Work Order:** HK1400734  
**Date of Issue:** 14/01/2014  
**Client:** LAM GEOTECHNICS LIMITED



**Equipment Type:** Multimeter  
**Brand Name:** YSI  
**Model No.:** YSI Professional plus  
**Serial No.:** 11F100420  
**Equipment No.:** --  
**Date of Calibration:** 13 January, 2014      **Date of next Calibration:** 13 April, 2014

**Parameters:**

**Dissolved Oxygen**      **Method Ref: APHA (21st edition), 4500O: G**

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
3.27	3.16	-0.11
6.58	6.73	0.15
9.37	9.34	-0.03
Tolerance Limit (±mg/L)		0.20

**pH Value**      **Method Ref: APHA (21st edition), 4500H:B**

Expected Reading (pH Unit)	Displayed Reading (pH Unit)	Tolerance (pH unit)
4.0	3.98	-0.02
7.0	6.96	-0.04
10.0	10.08	0.08
Tolerance Limit (±pH unit)		0.20

**Salinity**      **Method Ref: APHA (21st edition), 2520B**

Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)
0	0.00	--
10	9.85	-1.5
20	18.35	-8.2
30	27.53	-8.2
Tolerance Limit (±%)		10.0

**Temperature**      **Method Ref: Section 6 of International Accreditation New Zealand Technical Guide No. 3 Second edition March 2008: Working Thermometer Calibration Procedure.**

Expected Reading (°C)	Displayed Reading (°C)	Tolerance (°C)
10.0	10.2	0.2
20.0	19.6	-0.4
39.0	39.7	0.7
Tolerance Limit (±°C)		2.0

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

  
 \_\_\_\_\_  
 Mr. Fung Lim Chee, Richard  
 General Manager -  
 Greater China & Hong Kong



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## REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

**CONTACT:** MR DEREK LO  
**CLIENT:** LAM GEOTECHNICS LIMITED  
**ADDRESS:** 11/F., CENTRE POINT,  
181-185 GLOUCESTER ROAD,  
WAN CHAI, HONG KONG  
**PROJECT:** --

**WORK ORDER:** HK1334576  
**LABORATORY:** HONG KONG  
**DATE RECEIVED:** 12/12/2013  
**DATE OF ISSUE:** 17/12/2013

### COMMENTS

It is certified that the item under calibration/checking has been calibrated/checked by corresponding calibrated equipment in the laboratory.  
Maximum Tolerance and calibration frequency stated in the report, unless otherwise stated, the internal acceptance criteria of ALS will be followed.

Scope of Test: Dissolved Oxygen, pH, Salinity and Temperature  
Equipment Type: Multimeter  
Brand Name: YSI  
Model No.: Professional plus  
Serial No.: 13A100242  
Equipment No.: --  
Date of Calibration: 16 December, 2013

### NOTES

This is the Final Report and supersedes any preliminary report with this batch number.  
Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

  
Mr. Fung Lim Chee, Richard  
General Manager  
Greater China & Hong Kong

# REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

**Work Order:** HK1334576  
**Date of Issue:** 17/12/2013  
**Client:** LAM GEOTECHNICS LIMITED



**Equipment Type:** Multimeter  
**Brand Name:** YSI  
**Model No.:** Professional plus  
**Serial No.:** 13A100242  
**Equipment No.:** --  
**Date of Calibration:** 16 December, 2013      **Date of next Calibration:** 16 March, 2014

**Parameters:**

**Dissolved Oxygen**

**Method Ref: APHA (21st edition), 4500O: G**

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
1.93	2.07	0.14
4.72	4.83	0.11
8.61	8.74	0.13
Tolerance Limit ( $\pm$ mg/L)		0.20

**pH Value**

**Method Ref: APHA (21st edition), 4500H:B**

Expected Reading (pH Unit)	Displayed Reading (pH Unit)	Tolerance (pH unit)
4.0	4.05	0.05
7.0	6.94	-0.06
10.0	9.92	-0.08
Tolerance Limit ( $\pm$ pH unit)		0.20

**Salinity**

**Method Ref: APHA (21st edition), 2520B**

Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)
0	0.00	--
10	9.99	-0.1
20	20.35	1.8
30	30.73	2.4
Tolerance Limit ( $\pm$ %)		10.0

**Temperature**

**Method Ref: Section 6 of International Accreditation New Zealand Technical**

**Guide No. 3 Second edition March 2008: Working Thermometer Calibration Procedure.**

Expected Reading ( $^{\circ}$ C )	Displayed Reading ( $^{\circ}$ C )	Tolerance ( $^{\circ}$ C )
10.0	10.7	0.7
18.5	18.2	-0.3
38.0	37.6	-0.4
Tolerance Limit ( $\pm$ $^{\circ}$ C)		2.0

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

  
 Mr. Fung Lim Chee, Richard  
 General Manager  
 Greater China & Hong Kong



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## REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

**CONTACT:** MR ALAN LI  
**CLIENT:** LAM GEOTECHNICS LIMITED  
**ADDRESS:** 11/F., CENTRE POINT,  
181-185 GLOUCESTER ROAD,  
WAN CHAI, HONG KONG  
**PROJECT:** --

**WORK ORDER:** HK1406576  
**LABORATORY:** HONG KONG  
**DATE RECEIVED:** 05/03/2014  
**DATE OF ISSUE:** 12/03/2014

### COMMENTS

It is certified that the item under calibration/checking has been calibrated/checked by corresponding calibrated equipment in the laboratory.

Maximum Tolerance and calibration frequency stated in the report, unless otherwise stated, the internal acceptance criteria of ALS will be followed.

Scope of Test: Dissolved Oxygen, pH, Salinity and Temperature  
Equipment Type: Multimeter  
Brand Name: YSI  
Model No.: Professional plus  
Serial No.: 13A100242  
Equipment No.: --  
Date of Calibration: 12 March, 2014

### NOTES

This is the Final Report and supersedes any preliminary report with this batch number.

Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

  
Mr. Fung Lim Chee, Richard  
General Manager  
Greater China & Hong Kong

# REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

**Work Order:** HK1406576  
**Date of Issue:** 12/03/2014  
**Client:** LAM GEOTECHNICS LIMITED



**Equipment Type:** Multimeter  
**Brand Name:** YSI  
**Model No.:** Professional plus  
**Serial No.:** 13A100242  
**Equipment No.:** --  
**Date of Calibration:** 12 March, 2014                      **Date of next Calibration:** 12 June, 2014

**Parameters:**

**Dissolved Oxygen**

**Method Ref: APHA (21st edition), 4500O: G**

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
2.63	2.55	-0.08
5.26	5.26	0.00
8.61	8.55	-0.06
Tolerance Limit (±mg/L)		0.20

**pH Value**

**Method Ref: APHA (21st edition), 4500H:B**

Expected Reading (pH Unit)	Displayed Reading (pH Unit)	Tolerance (pH unit)
4.0	3.92	-0.08
7.0	6.80	-0.20
10.0	9.85	-0.15
Tolerance Limit (±pH unit)		0.20

**Salinity**

**Method Ref: APHA (21st edition), 2520B**

Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)
0	0.00	--
10	10.12	1.2
20	20.35	1.8
30	30.92	3.1
Tolerance Limit (±%)		10.0

**Temperature**

**Method Ref: Section 6 of International Accreditation New Zealand Technical Guide No. 3 Second edition March 2008: Working Thermometer Calibration Procedure.**

Expected Reading (°C)	Displayed Reading (°C)	Tolerance (°C)
10.0	9.6	-0.4
20.0	20.6	0.6
42.0	41.7	-0.3
Tolerance Limit (±°C)		2.0

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

  
 Mr. Fung Lim Chee, Richard  
 General Manager -  
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**AIR POLLUTION MONITORING EQUIPMENT**  
 ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Jul 15, 2013    Roots-meter S/N    0438320    Ta (K) -    300  
 Operator Tisch    Orifice I.D. -    0005    Pa (mm) -    759.46

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER	ORFICE
					DIFF Hg (mm)	DIFF H2O (in.)
1	NA	NA	1.00	1.3910	3.2	2.00
2	NA	NA	1.00	0.9830	6.4	4.00
3	NA	NA	1.00	0.8800	7.9	5.00
4	NA	NA	1.00	0.8380	8.8	5.50
5	NA	NA	1.00	0.6930	12.7	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
0.9884	0.7106	1.4090	0.9958	0.7159	0.8888
0.9843	1.0013	1.9926	0.9916	1.0087	1.2570
0.9822	1.1161	2.2278	0.9895	1.1244	1.4054
0.9811	1.1708	2.3365	0.9884	1.1795	1.4740
0.9760	1.4084	2.8180	0.9832	1.4188	1.7777
Qstd slope (m) = 2.01968			Qa slope (m) = 1.26469		
intercept (b) = -0.02746			intercept (b) = -0.01732		
coefficient (r) = 0.99999			coefficient (r) = 0.99999		
y axis = $\sqrt{H_2O(Pa/760)(298/Ta)}$			y axis = $\sqrt{H_2O(Ta/Pa)}$		

CALCULATIONS

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

$$Qstd = Vstd / \text{Time}$$

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

$$Qa = Va / \text{Time}$$

For subsequent flow rate calculations:

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

$$Qa = 1/m \{ [\sqrt{H_2O(Ta/Pa)}] - b \}$$



Lam Geotechnics Limited

### Calibration Data for High Volume Sampler (TSP Sampler)

Location : CMA1b Calibration Date : 18-Jan-14  
 Equipment no. : EL452 Calibration Due Dat : 18-Mar-14

**CALIBRATION OF CONTINUOUS FLOW RECORDER**

Ambient Condition			
Temperature, T <sub>a</sub>	289	Kelvin	Pressure, P <sub>a</sub>
			1026 mmHg

Orifice Transfer Standard Information					
Equipment No.	EL086	Slope, m <sub>c</sub>	2.01968	Intercept, b <sub>c</sub>	-0.02746
Last Calibration Date	15-Jul-13	$(H \times P_a / 1013.3 \times 298 / T_a)^{1/2}$			
Next Calibration Date	15-Jul-14	= m <sub>c</sub> x Q <sub>std</sub> + b <sub>c</sub>			

Calibration of RSP						
Calibration Point	Manometer Reading			Q <sub>std</sub> (m <sup>3</sup> / min.) X-axis	Continuous Flow Recorder, W (CFM)	IC $(W(P_a/1013.3 \times 298/T_a)^{1/2}/35.31)$ Y-axis
	(up)	(down)	(difference)			
1	6.2	6.2	12.4	1.7951	60	61.3077
2	5.1	5.1	10.2	1.6294	51	52.1116
3	4.1	4.1	8.2	1.4623	41	41.8936
4	2.5	2.5	5.0	1.1449	25	25.5449
5	1.5	1.5	3.0	0.8899	13	13.2833

By Linear Regression of Y on X

Slope, m = 53.1762 Intercept, b = -34.7843

Correlation Coefficient\* = 0.9992

Calibration Accepted = Yes/No\*\*

\* if Correlation Coefficient < 0.990, check and recalibration again.

\*\* Delete as appropriate.

Remarks : \_\_\_\_\_

Calibrated by : Henry Checked by : Derek Lo  
 Date : 18-Jan-14 Date : 18-Jan-14



Lam Geotechnics Limited

**Calibration Data for High Volume Sampler (TSP Sampler)**

Location : CMA1b  
 Equipment no. : EL452

Calibration Date : 15-Mar-14  
 Calibration Due Dat : 15-May-14

**CALIBRATION OF CONTINUOUS FLOW RECORDER**

Ambient Condition			
Temperature, T <sub>a</sub>	298	Kelvin	Pressure, P <sub>a</sub>
			1015 mmHg

Orifice Transfer Standard Information					
Equipment No.	EL086	Slope, m <sub>c</sub>	2.01968	Intercept, b <sub>c</sub>	-0.02746
Last Calibration Date	15-Jul-13	$\left( \frac{H \times P_a}{1013.3 \times 298 / T_a} \right)^{1/2}$ $= m_c \times Q_{std} + b_c$			
Next Calibration Date	15-Jul-14				

Calibration of RSP						
Calibration Point	Manometer Reading			Q <sub>std</sub> (m <sup>3</sup> / min.) X-axis	Continuous Flow Recorder, W (CFM)	IC (W(P <sub>a</sub> /1013.3x298/T <sub>a</sub> ) <sup>1/2</sup> /35.31) Y-axis
	(up)	(down)	(difference)			
1	6.2	6.2	12.4	1.7586	60	60.0503
2	5.1	5.1	10.2	1.5962	51	51.0428
3	4.0	4.0	8.0	1.4152	40	40.0335
4	2.5	2.5	5.0	1.1217	24	24.0201
5	1.5	1.5	3.0	0.8719	12	12.0101

By Linear Regression of Y on X

Slope, m = 54.5933      Intercept, b = -36.4179  
 Correlation Coefficient\* = 0.9993  
 Calibration Accepted = Yes/Ne\*\*

\* if Correlation Coefficient &lt; 0.990, check and recalibration again.

\*\* Delete as appropriate.

Remarks : \_\_\_\_\_

Calibrated by : Felix Li  
 Date : 15-Mar-14

Checked by : Derek Lo  
 Date : 15-Mar-14



Lam Geotechnics Limited

**Calibration Data for High Volume Sampler (TSP Sampler)**

Location : CMA2a Calibration Date : 18-Jan-14  
 Equipment no. : EL449 Calibration Due Date : 18-Mar-14

**CALIBRATION OF CONTINUOUS FLOW RECORDER**

Ambient Condition			
Temperature, T <sub>a</sub>	289	Kelvin	Pressure, P <sub>a</sub>
			1026 mmHg

Orifice Transfer Standard Information					
Equipment No.	EL086	Slope, m <sub>c</sub>	2.01968	Intercept, b <sub>c</sub>	-0.02746
Last Calibration Date	15-Jul-13	$(H \times P_a / 1013.3 \times 298 / T_a)^{1/2}$ $= m_c \times Q_{std} + b_c$			
Next Calibration Date	15-Jul-14				

Calibration of RSP						
Calibration Point	Manometer Reading			Q <sub>std</sub> (m <sup>3</sup> / min.) X-axis	Continuous Flow Recorder, W (CFM)	IC (W(P <sub>a</sub> /1013.3x298/T <sub>a</sub> ) <sup>1/2</sup> /35.31) Y-axis
	(up)	(down)	(difference)			
1	6.1	6.1	12.2	1.7807	59	60.2859
2	5.1	5.1	10.2	1.6294	51	52.1116
3	4.0	4.0	8.0	1.4446	42	42.9154
4	2.5	2.5	5.0	1.1449	28	28.6103
5	1.4	1.4	2.8	0.8602	16	16.3487

By Linear Regression of Y on X

Slope, m = 47.6578 Intercept, b = -25.3287  
 Correlation Coefficient\* = 0.9993  
 Calibration Accepted = Yes/No\*\*

\* if Correlation Coefficient &lt; 0.990, check and recalibration again.

\*\* Delete as appropriate.

Remarks : \_\_\_\_\_

Calibrated by : Henry Checked by : Derek Lo  
 Date : 18-Jan-14 Date : 18-Jan-14



Lam Geotechnics Limited

### Calibration Data for High Volume Sampler (TSP Sampler)

Location : CMA2a  
 Equipment no. : EL449

Calibration Date : 15-Mar-14  
 Calibration Due Dat : 15-May-14

#### CALIBRATION OF CONTINUOUS FLOW RECORDER

Ambient Condition			
Temperature, T <sub>a</sub>	298	Kelvin	Pressure, P <sub>a</sub>
			1015 mmHg

Orifice Transfer Standard Information					
Equipment No.	EL086	Slope, m <sub>c</sub>	2.01968	Intercept, b <sub>c</sub>	-0.02746
Last Calibration Date	15-Jul-13	$(H \times P_a / 1013.3 \times 298 / T_a)^{1/2}$ $= m_c \times Q_{std} + b_c$			
Next Calibration Date	15-Jul-14				

Calibration of RSP						
Calibration Point	Manometer Reading			Q <sub>std</sub> (m <sup>3</sup> / min.) X-axis	Continuous Flow Recorder, W (CFM)	IC (W(P <sub>a</sub> /1013.3x298/T <sub>a</sub> ) <sup>1/2</sup> /35.31) Y-axis
	(up)	(down)	(difference)			
1	6.1	6.1	12.2	1.7445	59	59.0495
2	5.0	5.0	10.0	1.5806	50	50.0419
3	4.0	4.0	8.0	1.4152	41	41.0344
4	2.5	2.5	5.0	1.1217	28	28.0235
5	1.4	1.4	2.8	0.8428	15	15.0126

By Linear Regression of Y on X

Slope, m = 48.3583      Intercept, b = -26.2139

Correlation Coefficient\* = 0.9990

Calibration Accepted = Yes/No\*\*

\* if Correlation Coefficient < 0.990, check and recalibration again.

\*\* Delete as appropriate.

Remarks : \_\_\_\_\_

Calibrated by : Felix Li  
 Date : 15-Mar-14

Checked by : Derek Lo  
 Date : 15-Mar-14



Lam Geotechnics Limited

**Calibration Data for High Volume Sampler (TSP Sampler)**

Location : CMA3a  
 Equipment no. : EL333

Calibration Date : 20-Feb-14  
 Calibration Due Date : 20-Apr-14

**CALIBRATION OF CONTINUOUS FLOW RECORDER**

Ambient Condition			
Temperature, T <sub>a</sub>	288	Kelvin	Pressure, P <sub>a</sub>
			1020 mmHg

Orifice Transfer Standard Information			
Equipment No.	EL086	Slope, m <sub>c</sub>	2.01968
		Intercept, b <sub>c</sub>	-0.02746
Last Calibration Date	15-Jul-13	$\left( H \times P_a / 1013.3 \times 298 / T_a \right)^{1/2}$ $= m_c \times Q_{std} + b_c$	
Next Calibration Date	15-Jul-14		

Calibration of RSP						
Calibration Point	Manometer Reading			Q <sub>std</sub> (m <sup>3</sup> / min.) X-axis	Continuous Flow Recorder, W (CFM)	IC (W(P <sub>a</sub> /1013.3x298/T <sub>a</sub> ) <sup>1/2</sup> /35.31) Y-axis
	(up)	(down)	(difference)			
1	6.1	6.1	12.2	1.7786	62	63.2754
2	5.0	5.0	10.0	1.6115	52	53.0697
3	4.0	4.0	8.0	1.4428	41	41.8434
4	2.5	2.5	5.0	1.1435	25	25.5143
5	1.6	1.6	3.2	0.9175	13	13.2674

By Linear Regression of Y on X

Slope, m = 58.0066      Intercept, b = -40.5854  
 Correlation Coefficient\* = 0.9992  
 Calibration Accepted = Yes/No\*\*

\* if Correlation Coefficient &lt; 0.990, check and recalibration again.

\*\* Delete as appropriate.

Remarks : \_\_\_\_\_

Calibrated by : Henry  
 Date : 20-Feb-14

Checked by : Derek Lo  
 Date : 20-Feb-14



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**Calibration Data for High Volume Sampler (TSP Sampler)**

Location : CMA4a Calibration Date : 18-Jan-14  
 Equipment no. : EL390 Calibration Due Date : 18-Mar-14

**CALIBRATION OF CONTINUOUS FLOW RECORDER**

Ambient Condition			
Temperature, T <sub>a</sub>	289	Kelvin	Pressure, P <sub>a</sub>
			1026 mmHg

Orifice Transfer Standard Information			
Equipment No.	EL086	Slope, m <sub>c</sub>	2.01968
		Intercept, b <sub>c</sub>	-0.02746
Last Calibration Date	15-Jul-13	$(H \times P_a / 1013.3 \times 298 / T_a)^{1/2}$ $= m_c \times Q_{std} + b_c$	
Next Calibration Date	15-Jul-14		

Calibration of RSP						
Calibration Point	Manometer Reading			Q <sub>std</sub> (m <sup>3</sup> / min.) X-axis	Continuous Flow Recorder, W (CFM)	IC (W(P <sub>a</sub> /1013.3x298/T <sub>a</sub> ) <sup>1/2</sup> /35.31) Y-axis
	(up)	(down)	(difference)			
1	6.0	6.0	12.0	1.7662	60	61.3077
2	5.1	5.1	10.2	1.6294	52	53.1334
3	3.9	3.9	7.8	1.4266	41	41.8936
4	2.5	2.5	5.0	1.1449	26	26.5667
5	1.5	1.5	3.0	0.8899	14	14.3051

By Linear Regression of Y on X

Slope, m = 53.7145 Intercept, b = -34.2208  
 Correlation Coefficient\* = 0.9994  
 Calibration Accepted = Yes/No\*\*

\* if Correlation Coefficient &lt; 0.990, check and recalibration again.

\*\* Delete as appropriate.

Remarks : \_\_\_\_\_

Calibrated by : Henry Checked by : Derek Lo  
 Date : 18-Jan-14 Date : 18-Jan-14



Lam Geotechnics Limited

### Calibration Data for High Volume Sampler (TSP Sampler)

Location : CMA4a  
 Equipment no. : EL390

Calibration Date : 15-Mar-14  
 Calibration Due Dat : 15-May-14

#### CALIBRATION OF CONTINUOUS FLOW RECORDER

Ambient Condition			
Temperature, T <sub>a</sub>	298	Kelvin	Pressure, P <sub>a</sub>
			1015 mmHg

Orifice Transfer Standard Information					
Equipment No.	EL086	Slope, m <sub>c</sub>	2.01968	Intercept, b <sub>c</sub>	-0.02746
Last Calibration Date	15-Jul-13	$(H \times P_a / 1013.3 \times 298 / T_a)^{1/2}$ $= m_c \times Q_{std} + b_c$			
Next Calibration Date	15-Jul-14				

Calibration of RSP						
Calibration Point	Manometer Reading			Q <sub>std</sub> (m <sup>3</sup> / min.) X-axis	Continuous Flow Recorder, W (CFM)	IC (W(P <sub>a</sub> /1013.3x298/T <sub>a</sub> ) <sup>1/2</sup> /35.31) Y-axis
	(up)	(down)	(difference)			
1	6.0	6.0	12.0	1.7302	60	60.0503
2	5.1	5.1	10.2	1.5962	52	52.0436
3	4.0	4.0	8.0	1.4152	42	42.0352
4	2.5	2.5	5.0	1.1217	28	28.0235
5	1.5	1.5	3.0	0.8719	15	15.0126

By Linear Regression of Y on X

Slope, m = 51.8132      Intercept, b = -30.3615

Correlation Coefficient\* = 0.9994

Calibration Accepted = Yes/No\*\*

\* if Correlation Coefficient < 0.990, check and recalibration again.

\*\* Delete as appropriate.

Remarks : \_\_\_\_\_

Calibrated by : Felix Li  
 Date : 15-Mar-14

Checked by : Derek Lo  
 Date : 15-Mar-14





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### Calibration Data for High Volume Sampler (TSP Sampler)

Location : CMA5a  
 Equipment no. : EL380  
 Calibration Date : 18-Jan-14  
 Calibration Due Date : 18-Mar-14

**CALIBRATION OF CONTINUOUS FLOW RECORDER**

Ambient Condition			
Temperature, T <sub>a</sub>	289	Kelvin	Pressure, P <sub>a</sub>
			1026 mmHg

Orifice Transfer Standard Information			
Equipment No.	EL086	Slope, m <sub>c</sub>	2.01968
		Intercept, b <sub>c</sub>	-0.02746
Last Calibration Date	15-Jul-13	$(H \times P_a / 1013.3 \times 298 / T_a)^{1/2}$ $= m_c \times Q_{std} + b_c$	
Next Calibration Date	15-Jul-14		

Calibration of RSP						
Calibration Point	Manometer Reading			Q <sub>std</sub> (m <sup>3</sup> / min.) X-axis	Continuous Flow Recorder, W (CFM)	IC (W(P <sub>a</sub> /1013.3x298/T <sub>a</sub> ) <sup>1/2</sup> /35.31) Y-axis
	(up)	(down)	(difference)			
1	6.0	6.0	12.0	1.7662	60	61.3077
2	5.0	5.0	10.0	1.6135	51	52.1116
3	4.0	4.0	8.0	1.4446	42	42.9154
4	2.5	2.5	5.0	1.1449	26	26.5667
5	1.5	1.5	3.0	0.8899	13	13.2833

By Linear Regression of Y on X

Slope, m = 54.6083      Intercept, b = -35.6736

Correlation Coefficient\* = 0.9998

Calibration Accepted = Yes/No\*\*

\* if Correlation Coefficient < 0.990, check and recalibration again.

\*\* Delete as appropriate.

Remarks : \_\_\_\_\_

Calibrated by : Henry  
 Date : 18-Jan-14  
 Checked by : Derek Lo  
 Date : 18-Jan-14



Lam Geotechnics Limited

### Calibration Data for High Volume Sampler (TSP Sampler)

Location : CMA5a  
 Equipment no. : EL380

Calibration Date : 15-Mar-14  
 Calibration Due Date : 15-May-14

#### CALIBRATION OF CONTINUOUS FLOW RECORDER

Ambient Condition			
Temperature, T <sub>a</sub>	298	Kelvin	Pressure, P <sub>a</sub>
			1015 mmHg

Orifice Transfer Standard Information					
Equipment No.	EL086	Slope, m <sub>c</sub>	2.01968	Intercept, b <sub>c</sub>	-0.02746
Last Calibration Date	15-Jul-13	$\left( \frac{H \times P_a}{1013.3 \times 298 / T_a} \right)^{1/2}$ $= m_c \times Q_{std} + b_c$			
Next Calibration Date	15-Jul-14				

Calibration of RSP						
Calibration Point	Manometer Reading			Q <sub>std</sub> (m <sup>3</sup> / min.) X-axis	Continuous Flow Recorder, W (CFM)	IC (W(P <sub>a</sub> /1013.3x298/T <sub>a</sub> ) <sup>1/2</sup> /35.31) Y-axis
	(up)	(down)	(difference)			
1	5.9	5.9	11.8	1.7158	60	60.0503
2	5.0	5.0	10.0	1.5806	52	52.0436
3	4.0	4.0	8.0	1.4152	42	42.0352
4	2.4	2.4	4.8	1.0993	25	25.0210
5	1.5	1.5	3.0	0.8719	13	13.0109

By Linear Regression of Y on X						
Slope, m	=	55.6207	Intercept, b	=	-35.9089	
Correlation Coefficient*	=	0.9996				
Calibration Accepted	=	Yes/No**				

\* if Correlation Coefficient < 0.990, check and recalibration again.

\*\* Delete as appropriate.

Remarks : \_\_\_\_\_

Calibrated by : Felix Li  
 Date : 15-Mar-14

Checked by : Derek Lo  
 Date : 15-Mar-14



Lam Geotechnics Limited

**Calibration Data for High Volume Sampler (TSP Sampler)**

Location : CMA6a  
 Equipment no. : EL448

Calibration Date : 18-Jan-14  
 Calibration Due Date : 18-Mar-14

**CALIBRATION OF CONTINUOUS FLOW RECORDER**

Ambient Condition			
Temperature, T <sub>a</sub>	289	Kelvin	Pressure, P <sub>a</sub>
			1026 mmHg

Orifice Transfer Standard Information			
Equipment No.	EL086	Slope, m <sub>c</sub>	2.01968
		Intercept, b <sub>c</sub>	-0.02746
Last Calibration Date	15-Jul-13	$\left( \frac{H \times P_a}{1013.3 \times 298 / T_a} \right)^{1/2}$ $= m_c \times Q_{std} + b_c$	
Next Calibration Date	15-Jul-14		

Calibration of RSP						
Calibration Point	Manometer Reading			Q <sub>std</sub> (m <sup>3</sup> / min.) X-axis	Continuous Flow Recorder, W (CFM)	IC (W(P <sub>a</sub> /1013.3x298/T <sub>a</sub> ) <sup>1/2</sup> /35.31) Y-axis
	(up)	(down)	(difference)			
1	6.1	6.1	12.2	1.7807	61	62.3295
2	5.0	5.0	10.0	1.6135	52	53.1334
3	4.1	4.1	8.2	1.4623	43	43.9372
4	2.4	2.4	4.8	1.1220	25	25.5449
5	1.5	1.5	3.0	0.8899	14	14.3051

By Linear Regression of Y on X

Slope, m = 54.2293      Intercept, b = -34.6434  
 Correlation Coefficient\* = 0.9995  
 Calibration Accepted = Yes/No\*\*

\* if Correlation Coefficient &lt; 0.990, check and recalibration again.

\*\* Delete as appropriate.

Remarks : \_\_\_\_\_

Calibrated by : Henry  
 Date : 18-Jan-14

Checked by : Derek Lo  
 Date : 18-Jan-14



Lam Geotechnics Limited

**Calibration Data for High Volume Sampler (TSP Sampler)**

Location : CMA6a  
 Equipment no. : EL448

Calibration Date : 15-Mar-14  
 Calibration Due Dat : 15-May-14

**CALIBRATION OF CONTINUOUS FLOW RECORDER**

Ambient Condition			
Temperature, T <sub>a</sub>	298	Kelvin	Pressure, P <sub>a</sub>
			1015 mmHg

Orifice Transfer Standard Information					
Equipment No.	EL086	Slope, m <sub>c</sub>	2.01968	Intercept, b <sub>c</sub>	-0.02746
Last Calibration Date	15-Jul-13	$(H \times P_a / 1013.3 \times 298 / T_a)^{1/2}$ $= m_c \times Q_{std} + b_c$			
Next Calibration Date	15-Jul-14				

Calibration of RSP						
Calibration Point	Manometer Reading			Q <sub>std</sub> (m <sup>3</sup> / min.) X-axis	Continuous Flow Recorder, W (CFM)	IC (W(P <sub>a</sub> /1013.3x298/T <sub>a</sub> ) <sup>1/2</sup> /35.31) Y-axis
	(up)	(down)	(difference)			
1	6.1	6.1	12.2	1.7445	61	61.0511
2	5.1	5.1	10.2	1.5962	52	52.0436
3	4.0	4.0	8.0	1.4152	42	42.0352
4	2.4	2.4	4.8	1.0993	25	25.0210
5	1.4	1.4	2.8	0.8428	13	13.0109

By Linear Regression of Y on X

Slope, m = 53.2826      Intercept, b = -32.7446  
 Correlation Coefficient\* = 0.9992  
 Calibration Accepted = Yes/No\*\*

\* if Correlation Coefficient &lt; 0.990, check and recalibration again.

\*\* Delete as appropriate.

Remarks : \_\_\_\_\_

Calibrated by : Felix Li  
 Date : 15-Mar-14

Checked by : Derek Lo  
 Date : 15-Mar-14