

**REPORT OF EQUIPMENT PERFORMANCE CHECK / CALIBRATION****Information supplied by customer:**

CONTACT: DEREK LO **WORK ORDER:** HK1410260
CLIENT: LAM GEOTECHNICS LIMITED
DATE RECEIVED: 2014-08-28
DATE OF ISSUE: 2014-09-04
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.

Scope of Test:	Turbidity
Equipment Type:	Turbidimeter
Brand Name:	Xin Rui
Model No.:	WGZ-3B
Serial No.:	1203010
Equipment No.:	---
Date of Calibration:	28-Aug-14

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: HK1410260
DATE OF ISSUE: 2014-09-04
CLIENT: LAM GEOTECHNICS LIMITED

Equipment Type:	Turbidimeter
Brand Name:	Xin Rui
Model No.:	WGZ-3B
Serial No.:	1203010
Equipment No.:	---
Date of Calibration:	28-Aug-14
Date of next Calibration:	28-Nov-14

Parameters:**Turbidity**Method Ref: APHA 22nd ed. 2130B

Expected Reading (NTU)	Display Reading (NTU)	Tolerance (%)
0	0.00	---
4	4.21	5.3
10	9.62	-3.8
40	42.0	5.0
100	100	0.0
400	410	2.5
1000	997	-0.3
	Tolerance Limit ($\pm\%$)	10.0

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

**REPORT OF EQUIPMENT PERFORMANCE CHECK / CALIBRATION****Information supplied by customer:**

CONTACT: DEREK LO **WORK ORDER:** HK1410310
CLIENT: LAM GEOTECHNICS LIMITED
DATE RECEIVED: 9/10/2014
DATE OF ISSUE: 16/10/2014
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.

Scope of Test:	Turbidity
Equipment Type:	Turbidimeter
Brand Name:	Xin Rui
Model No.:	WGZ-3B
Serial No.:	1203008
Equipment No.:	---
Date of Calibration:	09-Oct-14

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: HK1410310
DATE OF ISSUE: 16/10/2014
CLIENT: LAM GEOTECHNICS LIMITED

Equipment Type:	Turbidimeter
Brand Name:	Xin Rui
Model No.:	WGZ-3B
Serial No.:	1203008
Equipment No.:	---
Date of Calibration:	09-Oct-14
Date of next Calibration:	09-Jan-15

Parameters:
Turbidity

Method Ref: APHA 22nd ed. 2130B

Expected Reading (NTU)	Display Reading (NTU)	Tolerance (%)
0	0.00	---
4	4.13	3.3
10	10.3	3.0
40	39.8	-0.5
100	101	1.0
400	380	-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

Information supplied by customer:

CONTACT: DEREK LO **WORK ORDER:** HK1410311
CLIENT: LAM GEOTECHNICS LIMITED
DATE RECEIVED: 9/10/2014
DATE OF ISSUE: 16/10/2014
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.

Scope of Test:	Turbidity
Equipment Type:	Turbidimeter
Brand Name:	Xin Rui
Model No.:	WGZ-3B
Serial No.:	1203015
Equipment No.:	---
Date of Calibration:	09-Oct-14

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: HK1410311
DATE OF ISSUE: 16/10/2014
CLIENT: LAM GEOTECHNICS LIMITED

Equipment Type:	Turbidimeter
Brand Name:	Xin Rui
Model No.:	WGZ-3B
Serial No.:	1203015
Equipment No.:	---
Date of Calibration:	09-Oct-14
Date of next Calibration:	09-Jan-15

Parameters:
Turbidity

Method Ref: APHA 22nd ed. 2130B

Expected Reading (NTU)	Display Reading (NTU)	Tolerance (%)
0	0.00	---
4	3.90	-2.5
10	10.2	2.0
40	39.3	-1.8
100	103	3.0
400	388	-3.0
1000	986	-1.4
	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 ALAN LI
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WAN CHAI, HONG KONG
PROJECT: --

WORK ORDER: HK1423982
LABORATORY: HONG KONG
DATE RECEIVED: 28/07/2014
DATE OF ISSUE: 04/08/2014

COMMENTS

The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.
The "Tolerance Limit" quoted is the acceptance criteria applicable for similar equipment used by the ALS Hong Kong laboratory or quoted from relevant international standards.
The "Next Calibration Date" is recommended according to best practice principals as practised by the ALS Hong Kong laboratory or quoted from relevant international standards.

Scope of Test: pH, Dissolved Oxygen, Salinity and Temperature
Description: Multimeter
Brand Name: YSI
Model No.: Professional Plus
Serial No.: 11F100597
Equipment No.: --
Date of Calibration: 4 August 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: HK1423982
 Date of Issue: 04/08/2014
 Client: LAM GEOTECHNICS LIMITED



Description: Multimeter
 Brand Name: YSI
 Model No.: Professional Plus
 Serial No.: 11F100597
 Equipment No.: --
 Date of Calibration: 4 August 2014

Date of next Calibration: 4 November 2014

Parameters:

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

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
3.71	3.79	+0.08
5.55	5.65	+0.10
7.40	7.52	+0.12
	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	4.04	+0.04
7.0	6.90	-0.10
10.0	9.97	-0.03
	Tolerance Limit (pH Unit)	±0.20

Salinity

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

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)
0	0.0	--
10	10.07	+0.7
20	20.72	+3.6
30	30.87	+2.9
	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.

Reading of Ref. thermometer (°C)	Displayed Reading (°C)	Tolerance (°C)
12.0	11.9	-0.1
22.5	22.5	0.0
33.5	33.0	-0.5
	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 ALAN LI
CLIENT: LAM GEOTECHNICS LIMITED
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WAN CHAI, HONG KONG

WORK ORDER: HK1436509
LABORATORY: HONG KONG
DATE RECEIVED: 10/11/2014
DATE OF ISSUE: 17/11/2014


COMMENTS

The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.
The "Tolerance Limit" quoted is the acceptance criteria applicable for similar equipment used by the ALS Hong Kong laboratory or quoted from relevant international standards.
The "Next Calibration Date" is recommended according to best practice principals as practised by the ALS Hong Kong laboratory or quoted from relevant international standards.

Scope of Test: Dissolved Oxygen, pH, Salinity and Temperature
Equipment Type: Multifunctional Meter
Brand Name: YSI
Model No.: Professional Plus
Serial No.: 11F100597
Equipment No.: --
Date of Calibration: 17 November, 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: HK1436509
Date of Issue: 17/11/2014
Client: LAM GEOTECHNICS LIMITED



Equipment Type: Multifunctional Meter
Brand Name: YSI
Model No.: Professional Plus
Serial No.: 11F100597
Equipment No.: --
Date of Calibration: 17 November, 2014

Date of next Calibration: 17 February, 2015

Parameters:

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

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
3.60	3.57	-0.03
6.24	6.20	-0.04
8.06	8.03	-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	4.09	+0.09
7.0	7.19	+0.19
10.0	10.02	+0.02
Tolerance Limit (pH unit)		±0.20

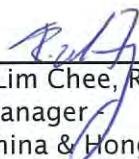
Salinity **Method Ref: APHA (21st edition), 2520B**

Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)
0	0.00	--
10	9.57	-4.3
20	19.70	-1.5
30	29.86	-0.5
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)
11.0	11.4	+0.4
21.5	21.9	+0.4
38.0	38.3	+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
 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: HK1423939
LABORATORY: HONG KONG
DATE RECEIVED: 25/07/2014
DATE OF ISSUE: 31/07/2014

COMMENTS

The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.
The "Tolerance Limit" quoted is the acceptance criteria applicable for similar equipment used by the ALS Hong Kong laboratory or quoted from relevant international standards.
The "Next Calibration Date" is recommended according to best practice principals as practised by the ALS Hong Kong laboratory or quoted from relevant international standards.

Scope of Test: Dissolved Oxygen, pH, Salinity and Temperature
Equipment Type: YSI SONDE
Brand Name: YSI
Model No.: YSI Professional plus
Serial No.: 14E 100105
Equipment No.: --
Date of Calibration: 29 July, 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: HK1423939
 Date of Issue: 31/07/2014
 Client: LAM GEOTECHNICS LIMITED



Equipment Type: YSI SONDE
 Brand Name: YSI
 Model No.: YSI Professional plus
 Serial No.: 14E 100105
 Equipment No.: --
 Date of Calibration: 29 July, 2014

Date of next Calibration: 29 October, 2014

Parameters:

Dissolved Oxygen

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

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
3.60	3.45	-0.15
5.55	5.64	+0.09
7.31	7.26	-0.05
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	4.00	0.00
7.0	7.03	+0.03
10.0	9.99	-0.01
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	9.25	-7.5
20	18.83	-5.9
30	28.03	-6.6
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)
10.5	11.0	+0.5
22.5	22.6	+0.1
33.5	33.6	+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: MR ALAN LI
CLIENT: LAM ENVIRONMENTAL SERVICES LTD
ADDRESS: 11/F., CENTRE POINT,
181-185 GLOUCESTER ROAD,
WAN CHAI, HONG KONG

WORK ORDER: HK1435131
LABORATORY: HONG KONG
DATE RECEIVED: 29/10/2014
DATE OF ISSUE: 05/11/2014

COMMENTS

The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.

The "Tolerance Limit" quoted is the acceptance criteria applicable for similar equipment used by the ALS Hong Kong laboratory or quoted from relevant international standards.

The "Next Calibration Date" is recommended according to best practice principals as practised by the ALS Hong Kong laboratory or quoted from relevant international standards.

Scope of Test: Dissolved Oxygen, pH, Salinity and Temperature
Equipment Type: Multifunctional Meter
Brand Name: YSI
Model No.: Professional Plus
Serial No.: 14E100105
Equipment No.: --
Date of Calibration: 31 October, 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: HK1435131
Date of Issue: 05/11/2014
Client: LAM ENVIRONMENTAL SERVICES LTD



Equipment Type: Multifunctional Meter
Brand Name: YSI
Model No.: Professional Plus
Serial No.: 14E100105
Equipment No.: --

Date of Calibration: 31 October, 2014 **Date of next Calibration:** 31 January, 2015

Parameters:

Dissolved Oxygen

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

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
2.46	2.58	+0.12
5.04	4.91	-0.13
8.02	7.92	-0.10
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	6.98	-0.02
10.0	10.05	+0.05
Tolerance Limit (pH unit)		±0.20

Salinity

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

Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)
0	0.00	--
10	9.58	-4.2
20	19.48	-2.6
30	30.32	+1.1
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)
13.4	13.7	+0.3
23.8	24.0	+0.2
33.8	33.6	-0.2
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



EQUIPMENT PERFORMANCE CHECK / CALIBRATION REPORT

Report No. : HK1410306
Project Name : EQUIPMENT PERFORMANCE CHECK/CALIBRATION REPORT
Date of Issue : 16/10/2014

Customer : LAM GEOTECHNICS LIMITED
Address : 11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WAN CHAI, HONG KONG

Calibration Job No. : HK1410306
Test Item No. : HK1410306-01
Test Item Details
Test Item Description : Multifunctional Meter
Manufacturer : YSI
Model No. : YSI 600XL
Serial No. : 05C1607
Test Item Receipt Date : 13-Oct-14
Test Period : 14/10/2014 - 15/10/2014

- Notes :
1. This report shall not be reproduced, except in full, without prior approval from Pilot Testing Limited.
 2. Results relate to item(s) as received.
 3. \pm indicates the tolerance limit
 4. N/A = Not applicable
 5. APHA - American Public Health Association, American Water Works Association and Water Environment Federation, Standard Methods for the Examination of Water and Wastewater, APHA-AWWA-WEF. USA
 6. DO, salinity, pH and temperature performance check was subcontracted to FT Laboratories Ltd.

Approved Signatory

 Peter Lee
 (Director)

Issue Date:

16/10/2014


REPORT OF EQUIPMENT PERFORMANCE CHECK

WORK ORDER: HK1410306
DATE OF ISSUE: 16/10/2014
CLIENT: LAM GEOTECHNICS LIMITED

Equipment Type	Multifunctional Meter
Manufacturer	YSI
Model No.	YSI 600XL
Serial No.	05C1607
Date of Calibration	14-Oct-14
Date of next Calibration	14-Jan-15

Parameters:
Temperature (Method Ref: APHA 19e 2550B)

Reference Reading (°C)	Temperature corrected of Thermometer (°C)	Display Reading (°C)	Deviation (°C)
10.21	10.37	10.33	-0.04
19.97	20.13	20.12	-0.01
30.02	30.18	30.16	-0.02
Tolerance Limit			±0.50

pH Value (Method Ref: APHA 19e 4500-H, B)

Expected Reading (pH unit)	pH unit of buffer at 20 °C (pH unit)	Display Reading at 20 °C (pH unit)	Deviation (pH unit)
6.0	6.01	5.89	-0.12
9.0	9.02	8.85	-0.17
Tolerance Limit			±0.20

Conductivity (Method Ref: APHA 19e 2520B)

KCl concentration (mol/L)	Standard conductivity (ms/cm) at 25°C)	Reading of SpCond (ms/cm)	Deviation (%)
0.0000	0.00	0.00	-
0.1000	12.89	12.82	-0.54
0.2000	24.8	24.78	-0.08
0.5000	58.67	58.43	-0.41
Tolerance Limit			±2.0

Dissolved Oxygen (DO) (Method Ref: (APHA 19e 4500-O, C)

DO of water sample (mg/L)	DO reading od DO probe (mg/L)	Deviation (mg/L)
4.15	3.98	-0.17
6.24	6.14	-0.10
8.16	8.15	-0.01
Tolerance Limit		±0.20

- Remarks:
- (1) Maxium tolerance ans calibration frequency stated in the reprot, unless otherwisestated, the internal acceptance criteria of Pilot Testing Limited will be followed.
 - (2) Displayed reading presents the figures shown on item under calibration/checking regardless of equipment precision or significant figures.
 - (3) Because of high sensitivity and ease of measurement, the conductivity method (according to APHA 19e 2510) is used to determine salinity.

- End of Report -



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ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Jul 14, 2014 Rootsmeter S/N 0438320 Ta (K) - 298
 Operator Tisch Orifice I.D. - 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	NA	NA	1.00	1.3870	3.2	2.00
2	NA	NA	1.00	0.9830	6.4	4.00
3	NA	NA	1.00	0.8760	7.9	5.00
4	NA	NA	1.00	0.8340	8.8	5.50
5	NA	NA	1.00	0.6860	12.7	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
0.9817	0.7078	1.4042	0.9957	0.7179	0.8919
0.9775	0.9944	1.9859	0.9915	1.0086	1.2613
0.9754	1.1135	2.2203	0.9894	1.1294	1.4101
0.9743	1.1683	2.3286	0.9882	1.1849	1.4790
0.9692	1.4128	2.8084	0.9830	1.4330	1.7837
Qstd slope (m) = 1.99175			Qa slope (m) = 1.24720		
intercept (b) = -0.00041			intercept (b) = -0.00026		
coefficient (r) = 0.99991			coefficient (r) = 0.99991		
y axis = SQRT[H2O(Pa/760) (298/Ta)]			y axis = SQRT[H2O(Ta/Pa)]		

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}



Lam Geotechnics Limited

Calibration Data for High Volume Sampler (TSP Sampler)

Location : CMA1b
 Equipment no. : EL452

Calibration Date : 21-Oct-14
 Calibration Due Date : 21-Dec-14

CALIBRATION OF CONTINUOUS FLOW RECORDER

Ambient Condition			
Temperature, T _a	303	Kelvin	Pressure, P _a
			1015 mmHg

Orifice Transfer Standard Information					
Equipment No.	EL086	Slope, m _c	1.99175	Intercept, b _c	-0.00041
Last Calibration Date	14-Jul-14	$(H \times P_a / 1013.3 \times 298 / T_a)^{1/2}$ $= m_c \times Q_{std} + b_c$			
Next Calibration Date	14-Jul-15				

Calibration of TSP						
Calibration Point	Manometer Reading			Q _{std} (m ³ / min.) X-axis	Continuous Flow Recorder, W (CFM)	IC (W(P _a /1013.3x298/T _a) ^{1/2} /35.31) Y-axis
	(up)	(down)	(difference)			
1	6.0	6.0	12.0	1.7265	64	63.5230
2	4.8	4.8	9.6	1.5442	58	57.5677
3	3.8	3.8	7.6	1.3740	52	51.6124
4	2.4	2.4	4.8	1.0920	40	39.7019
5	1.4	1.4	2.8	0.8341	32	31.7615

By Linear Regression of Y on X

Slope, m = 36.4512 Intercept, b = 0.9310
 Correlation Coefficient* = 0.9986
 Calibration Accepted = Yes/No**

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

** Delete as appropriate.

Remarks : _____

Calibrated by : Henry Lau
 Date : 21-Oct-14

Checked by : Derek Lo
 Date : 21-Oct-14



Lam Geotechnics Limited

Calibration Data for High Volume Sampler (TSP Sampler)

Location : CMA2a
 Equipment no. : EL449

Calibration Date : 21-Oct-14
 Calibration Due Date : 21-Dec-14

CALIBRATION OF CONTINUOUS FLOW RECORDER

Ambient Condition			
Temperature, T _a	303	Kelvin	Pressure, P _a
			1015 mmHg

Orifice Transfer Standard Information					
Equipment No.	EL086	Slope, m _c	1.99175	Intercept, b _c	-0.00041
Last Calibration Date	14-Jul-14	$(H \times P_a / 1013.3 \times 298 / T_a)^{1/2}$ $= m_c \times Q_{std} + b_c$			
Next Calibration Date	14-Jul-15				

Calibration of TSP						
Calibration Point	Manometer Reading			Q _{std} (m ³ / min.) X-axis	Continuous Flow Recorder, W (CFM)	IC (W(P _a /1013.3x298/T _a) ^{1/2} /35.31) Y-axis
	(up)	(down)	(difference)			
1	6.5	6.5	13.0	1.7970	63	62.5304
2	5.0	5.0	10.0	1.5761	57	56.5751
3	4.0	4.0	8.0	1.4097	50	49.6273
4	2.4	2.4	4.8	1.0920	41	40.6944
5	1.5	1.5	3.0	0.8633	34	33.7466

By Linear Regression of Y on X

Slope, m = 31.1199 Intercept, b = 6.6974
 Correlation Coefficient* = 0.9985
 Calibration Accepted = Yes/No**

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

** Delete as appropriate.

Remarks : _____

Calibrated by : Henry Lau
 Date : 21-Oct-14

Checked by : Derek Lo
 Date : 21-Oct-14



Lam Geotechnics Limited

Calibration Data for High Volume Sampler (TSP Sampler)

Location : CMA3a
 Equipment no. : EL333

Calibration Date : 21-Oct-14
 Calibration Due Date : 21-Dec-14

CALIBRATION OF CONTINUOUS FLOW RECORDER

Ambient Condition			
Temperature, T _a	303	Kelvin	Pressure, P _a
			1015 mmHg

Orifice Transfer Standard Information					
Equipment No.	EL086	Slope, m _c	1.99175	Intercept, b _c	-0.00041
Last Calibration Date	14-Jul-14	$(H \times P_a / 1013.3 \times 298 / T_a)^{1/2}$ $= m_c \times Q_{std} + b_c$			
Next Calibration Date	14-Jul-15				

Calibration of TSP						
Calibration Point	Manometer Reading			Q _{std} (m ³ / min.) X-axis	Continuous Flow Recorder, W (CFM)	IC (W(P _a /1013.3x298/T _a) ^{1/2} /35.31) Y-axis
	(up)	(down)	(difference)			
1	5.4	5.4	10.8	1.6379	54	53.5975
2	4.1	4.1	8.2	1.4272	49	48.6348
3	3.1	3.1	6.2	1.2410	42	41.6869
4	2.0	2.0	4.0	0.9969	37	36.7242
5	1.2	1.2	2.4	0.7722	31	30.7689

By Linear Regression of Y on X

Slope, m = 26.5451 Intercept, b = 10.0291
 Correlation Coefficient* = 0.9965
 Calibration Accepted = Yes/No**

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

** Delete as appropriate.

Remarks : _____

Calibrated by : Henry Lau
 Date : 21-Oct-14

Checked by : Derek Lo
 Date : 21-Oct-14



Lam Geotechnics Limited

Calibration Data for High Volume Sampler (TSP Sampler)

Location : CMA4a Calibration Date : 21-Oct-14
 Equipment no. : EL390 Calibration Due Date : 21-Dec-14

CALIBRATION OF CONTINUOUS FLOW RECORDER

Ambient Condition			
Temperature, T _a	303	Kelvin	Pressure, P _a
			1015 mmHg

Orifice Transfer Standard Information					
Equipment No.	EL086	Slope, m _c	1.99175	Intercept, b _c	-0.00041
Last Calibration Date	14-Jul-14	$(H \times P_a / 1013.3 \times 298 / T_a)^{1/2}$ $= m_c \times Q_{std} + b_c$			
Next Calibration Date	14-Jul-15				

Calibration of TSP						
Calibration Point	Manometer Reading			Q _{std} (m ³ / min.) X-axis	Continuous Flow Recorder, W (CFM)	IC (W(P _a /1013.3x298/T _a) ^{1/2} /35.31) Y-axis
	(up)	(down)	(difference)			
1	5.9	5.9	11.8	1.7120	58	57.5677
2	4.8	4.8	9.6	1.5442	51	50.6199
3	3.7	3.7	7.4	1.3558	43	42.6795
4	2.4	2.4	4.8	1.0920	34	33.7466
5	1.5	1.5	3.0	0.8633	25	24.8137

By Linear Regression of Y on X

Slope, m = 38.2048 Intercept, b = -8.2956
 Correlation Coefficient* = 0.9993
 Calibration Accepted = Yes/No**

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

** Delete as appropriate.

Remarks : _____

Calibrated by : Henry Lau Checked by : Derek Lo
 Date : 21-Oct-14 Date : 21-Oct-14



Lam Geotechnics Limited

Calibration Data for High Volume Sampler (TSP Sampler)

Location : CMA5a
 Equipment no. : EL380

Calibration Date : 21-Oct-14
 Calibration Due Date : 21-Dec-14

CALIBRATION OF CONTINUOUS FLOW RECORDER

Ambient Condition			
Temperature, T _a	303	Kelvin	Pressure, P _a
			1015 mmHg

Orifice Transfer Standard Information					
Equipment No.	EL086	Slope, m _c	1.99175	Intercept, b _c	-0.00041
Last Calibration Date	14-Jul-14	$(H \times P_a / 1013.3 \times 298 / T_a)^{1/2}$ $= m_c \times Q_{std} + b_c$			
Next Calibration Date	14-Jul-15				

Calibration of TSP						
Calibration Point	Manometer Reading			Q _{std} (m ³ / min.) X-axis	Continuous Flow Recorder, W (CFM)	IC (W(P _a /1013.3x298/T _a) ^{1/2} /35.31) Y-axis
	(up)	(down)	(difference)			
1	6.6	6.6	13.2	1.8107	58	57.5677
2	5.3	5.3	10.6	1.6226	54	53.5975
3	4.1	4.1	8.2	1.4272	48	47.6422
4	2.6	2.6	5.2	1.1366	39	38.7093
5	1.6	1.6	3.2	0.8916	32	31.7615

By Linear Regression of Y on X

Slope, m = 28.7132 Intercept, b = 6.2958
 Correlation Coefficient* = 0.9986
 Calibration Accepted = Yes/No**

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

** Delete as appropriate.

Remarks : _____

Calibrated by : Henry Lau
 Date : 21-Oct-14

Checked by : Derek Lo
 Date : 21-Oct-14



Lam Geotechnics Limited

Calibration Data for High Volume Sampler (TSP Sampler)

Location : CMA6a Calibration Date : 21-Oct-14
 Equipment no. : EL448 Calibration Due Date : 21-Dec-14

CALIBRATION OF CONTINUOUS FLOW RECORDER

Ambient Condition			
Temperature, T _a	303	Kelvin	Pressure, P _a
			1015 mmHg

Orifice Transfer Standard Information					
Equipment No.	EL086	Slope, m _c	1.99175	Intercept, b _c	-0.00041
Last Calibration Date	14-Jul-14	$\left(H \times P_a / 1013.3 \times 298 / T_a \right)^{1/2}$ $= m_c \times Q_{std} + b_c$			
Next Calibration Date	14-Jul-15				

Calibration of TSP						
Calibration Point	Manometer Reading			Q _{std} (m ³ / min.) X-axis	Continuous Flow Recorder, W (CFM)	IC (W(P _a /1013.3x298/T _a) ^{1/2} /35.31) Y-axis
	(up)	(down)	(difference)			
1	6.3	6.3	12.6	1.7691	56	55.5826
2	5.0	5.0	10.0	1.5761	50	49.6273
3	3.9	3.9	7.8	1.3920	44	43.6720
4	2.5	2.5	5.0	1.1145	36	35.7317
5	1.5	1.5	3.0	0.8633	27	26.7988

By Linear Regression of Y on X

Slope, m = 31.4483 Intercept, b = 0.0476
 Correlation Coefficient* = 0.9994
 Calibration Accepted = Yes/No**

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

** Delete as appropriate.

Remarks : _____

Calibrated by : Henry Lau Checked by : Derek Lo
 Date : 21-Oct-14 Date : 21-Oct-14