

Appendix C. Calibration Certificates



專業化驗有限公司

QUALITY PRO TEST-CONSULT LIMITED

Unit 10, 14/F, Wah Wai Centre, 38-40 Au Pui Wan St., Fotan, Hong Kong

Email: info@qualityprotest.com; Website: www.qualityprotest.com

Tel: (852) 3956 8717; Fax: (852) 3956 3928

Report of Equipment Performance Check/Calibration

Test Report No. : AF100044
Date of Issue : 12 Oct, 2016
Page No. : 1 of 2

PART A – CUSTOMER INFORMATION

Enovative Environmental Service Ltd.
Rm 811, Hin Pui House,
Hin Keng Estate, Tai Wai
New Territories, Hong Kong
Attn: Mr. Thomas Wong

PART B – SAMPLE INFORMATION

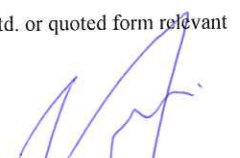
Description of Samples : Titrette bottle-top burette, 50ml
Brand Name : BRAND
Model Number : 1224B90
Serial Number : 10N64701
Equipment Number : --
Date of Received : 06 Oct, 2016
Date of Calibration : 11 Oct, 2016
Date of Next Calibration^(a) : 11 Jan, 2017

PART C – CALIBRATION REQUESTED

<u>Parameter</u>	<u>Reference Method</u>
Volume	In-house Method

^(a) The "Date of Next Calibration" is recommended according to best practice principals as practiced by Quality Pro Test-Consult Ltd. or quoted from relevant international standards.

APPROVED SIGNATORY :


YIU Sok-fong, Marble
Laboratory Manager



專業化驗有限公司

QUALITY PRO TEST-CONSULT LIMITED

Unit 10, 14/F, Wah Wai Centre, 38-40 Au Pui Wan St., Fotan, Hong Kong

Email: info@qualityprotest.com; Website: www.qualityprotest.com

Tel: (852) 3956 8717; Fax: (852) 3956 3928

Report of Equipment Performance Check/Calibration

Test Report No. : AF100044
 Date of Issue : 12 Oct, 2016
 Page No. : 2 of 2

PART D – RESULT^(bc)

Volume

Trial	Nominal volume (mL) (at interval)				
	3 (1-4)	3 (16-19)	3 (23-26)	3 (34-37)	3 (42-45)
1	2.9827	2.9816	2.9854	2.9768	2.9817
2	2.9828	2.9778	2.9843	2.9729	2.9802
3	2.9861	2.9821	2.9843	2.9698	2.9866
4	2.9757	2.9826	2.9881	2.9730	2.9790
5	2.9816	2.9775	2.9822	2.9714	2.9746
6	2.9875	2.9844	2.9823	2.9797	2.9757
7	2.9896	2.9859	2.9879	2.9758	2.9886
8	2.9825	2.9791	2.9889	2.9784	2.9817
9	2.9811	2.9833	2.9806	2.9799	2.9859
10	2.9887	2.9848	2.9862	2.9787	2.9820
Average	2.9838	2.9819	2.9850	2.9756	2.9816
Standard deviation	0.0042	0.0029	0.0028	0.0036	0.0045
Calculate volume (mL)	2.9940	2.9920	2.9952	2.9858	2.9917
Error (%)	-0.2008	-0.2651	-0.1610	-0.4748	-0.2754
RSD (%)	0.1401	0.0979	0.0933	0.1221	0.1516

Acceptance Criteria^(d)

Accuracy (%Error)	< ±1%	< ±1%	< ±1%	< ±1%	< ±1%
Precision (%RSD)	< 1%	< 1%	< 1%	< 1%	< 1%

~ END OF REPORT ~

^(b) The results relate only to the tested sample as received

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

^(d) The “acceptance criteria” is applicable for similar equipment used by Quality Pro Test-Consult Ltd. or quoted from relevant international standards.



專業化驗有限公司

QUALITY PRO TEST-CONSULT LIMITED

Unit 10, 14/F, Wah Wai Centre, 38-40 Au Pui Wan St., Fotan, Hong Kong

Email: info@qualityprotest.com; Website: www.qualityprotest.com

Tel: (852) 3956 8717; Fax: (852) 3956 3928

Report of Equipment Performance Check/Calibration

Test Report No. : AF090103
Date of Issue : 27 Sep, 2016
Page No. : 1 of 2

PART A – CUSTOMER INFORMATION

Enovative Environmental Service Ltd.
Rm 811, Hin Pui House,
Hin Keng Estate, Tai Wai
New Territories, Hong Kong
Attn: Mr. Thomas Wong

PART B – SAMPLE INFORMATION

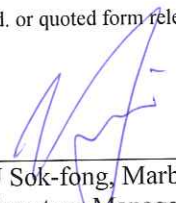
Description of Samples : Titrette bottletop burette, 50ml
Brand Name : BRAND
Model Number : 1224B90
Serial Number : 10N65665
Equipment Number : --
Date of Received : 19 Sep, 2016
Date of Calibration : 23 Sep, 2016
Date of Next Calibration^(a) : 23 Dec, 2016

PART C – CALIBRATION REQUESTED

<u>Parameter</u>	<u>Reference Method</u>
Volume	In-house Method

^(a) The "Date of Next Calibration" is recommended according to best practice principals as practiced by Quality Pro Test-Consult Ltd. or quoted from relevant international standards.

APPROVED SIGNATORY :


YIU Sok-fong, Marble
Laboratory Manager



專業化驗有限公司

QUALITY PRO TEST-CONSULT LIMITED

Unit 10, 14/F, Wah Wai Centre, 38-40 Au Pui Wan St., Fotan, Hong Kong

Email: info@qualityprotest.com; Website: www.qualityprotest.com

Tel: (852) 3956 8717; Fax: (852) 3956 3928

Report of Equipment Performance Check/Calibration

Test Report No. : AF090103
Date of Issue : 27 Sep, 2016
Page No. : 2 of 2

PART D – RESULT^(bc)

Volume

Trial	Nominal volume (mL) (at interval)				
	3 (1-4)	3 (16-19)	3 (23-26)	3 (34-37)	3 (42-45)
1	2.9823	2.9777	2.9744	2.9804	2.9881
2	2.9863	2.9831	2.9739	2.9900	2.9829
3	2.9837	2.9848	2.9896	2.9845	2.9820
4	2.9767	2.9828	2.9836	2.9833	2.9768
5	2.9852	2.9855	2.9828	2.9850	2.9814
6	2.9835	2.9881	2.9852	2.9860	2.9887
7	2.9817	2.9835	2.9842	2.9850	2.9715
8	2.9819	2.9712	2.9894	2.9710	2.9741
9	2.9848	2.9912	2.9688	2.9747	2.9815
10	2.9796	2.9838	2.9872	2.9817	2.9800
Average	2.9826	2.9832	2.9819	2.9822	2.9807
Standard deviation	0.0028	0.0055	0.0071	0.0056	0.0055
Calculate volume (mL)	2.9933	2.9939	2.9926	2.9929	2.9914
Error (%)	-0.2231	-0.2030	-0.2452	-0.2368	-0.2856
RSD (%)	0.0948	0.1832	0.2377	0.1872	0.1832

Acceptance Criteria^(d)

Accuracy (%Error)	< ±1%	< ±1%	< ±1%	< ±1%	< ±1%
Precision (%RSD)	< 1%	< 1%	< 1%	< 1%	< 1%

~ END OF REPORT ~

^(b) The results relate only to the tested sample as received

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

^(d) The "acceptance criteria" is applicable for similar equipment used by Quality Pro Test-Consult Ltd. or quoted from relevant international standards.



專業化驗有限公司

QUALITY PRO TEST-CONSULT LIMITED

Unit 10, 14/F, Wah Wai Centre, 38-40 Au Pui Wan St., Fotan, Hong Kong

Email: info@qualityprotest.com; Website: www.qualityprotest.com

Tel: (852) 3956 8717; Fax: (852) 3956 3928

Report of Equipment Performance Check/Calibration

Test Report No. : AF100043-2
Date of Issue : 12 Oct, 2016
Page No. : 1 of 2

PART A – CUSTOMER INFORMATION

Enovative Environmental Service Ltd.
Rm 811, Hin Pui House,
Hin Keng Estate, Tai Wai
New Territories, Hong Kong
Attn: Mr. Thomas WONG

PART B – DESCRIPTION

Name of Equipment : YSI 6920 multiparameter water quality meter
Manufacturer : YSI (a xylem brand)
Serial Number : 000109DF
Client's Reference Number : --
Date of Received : 05 Oct, 2016
Date of Calibration : 05 Oct, 2016
Date of Next Calibration^(a) : 05 Jan, 2017

PART C – REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

<u>Parameter</u>	<u>Reference Method</u>
pH at 25°C	APHA 21e 4500-H ⁺ B
Dissolved Oxygen	APHA 21e 4500-O G
Conductivity at 25°C	APHA 21e 2510B
Salinity	APHA 21e 2520B
Turbidity	APHA 21e 2130 B
Temperature	Section 6 of international Accreditation New Zealand Technical Guide no. 3 Second edition March 2008: Working Thermometer Calibration Procedure.

PART D – CALIBRATION RESULTS^(b,c)

pH at 25°C

Target (pH unit)	Displayed Reading ^(d) (pH Unit)	Tolerance ^(e) (pH Unit)	Results
4.00	3.93	-0.07	Satisfactory
7.42	7.40	-0.01	Satisfactory
10.01	9.96	-0.05	Satisfactory

Tolerance of pH should be less than ± 0.10 (pH unit)

Temperature

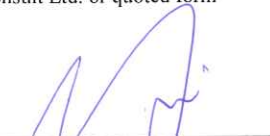
Reading of Ref. thermometer (°C)	Displayed Reading (°C)	Tolerance (°C)	Results
16.8	17.2	0.4	Satisfactory
25.8	26.0	0.2	Satisfactory
34.3	34.6	0.3	Satisfactory

Tolerance limit of temperature should be less than ± 2.0 (°C)

~ CONTINUED ON NEXT PAGE ~

- ^(a) The "Date of Next Calibration" is recommended according to best practice principals as practiced by Quality Pro Test-Consult Ltd. or quoted from relevant international standards.
- ^(b) The results relate only to the calibrated equipment as received
- ^(c) The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.
- ^(d) "Displayed Reading" denotes the figure shown on item under calibration/ checking regardless of equipment precision or significant figures.
- ^(e) The "Tolerance Limit" mentioned is the acceptance criteria applicable for similar equipment used by Quality Pro Test-Consult Ltd. or quoted from relevant international standards.

APPROVED SIGNATORY :


YIU Sok-fong, Marble
Laboratory Manager



專業化驗有限公司

QUALITY PRO TEST-CONSULT LIMITED

Unit 10, 14/F, Wah Wai Centre, 38-40 Au Pui Wan St., Fotan, Hong Kong

Email: info@qualityprotest.com; Website: www.qualityprotest.com

Tel: (852) 3956 8717; Fax: (852) 3956 3928

Report of Equipment Performance Check/Calibration

Test Report No. : AF100043-2
Date of Issue : 12 Oct, 2016
Page No. : 2 of 2

PART D – RESULT (Con't)

Dissolved Oxygen

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)	Results
1.91	1.85	-0.06	Satisfactory
4.66	4.61	-0.05	Satisfactory
7.07	7.14	0.07	Satisfactory
8.01	7.96	-0.05	Satisfactory

Tolerance limit of dissolved oxygen should be less than ± 0.20 (mg/L)

Conductivity at 25°C

Expected Reading ($\mu\text{S/cm}$)	Displayed Reading ($\mu\text{S/cm}$)	Tolerance (%)	Results
146.9	141.8	-3.5	Satisfactory
1412	1398	-1.0	Satisfactory
12890	12760	-1.0	Satisfactory
58670	58332	-0.6	Satisfactory
111900	111232	-0.6	Satisfactory

Tolerance limit of conductivity should be less than ± 10.0 (%)

Salinity

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)	Results
10	10.07	0.7	Satisfactory
20	20.11	0.5	Satisfactory
30	30.24	0.8	Satisfactory

Tolerance limit of salinity should be less than ± 10.0 (%)

Turbidity

Expected Reading (NTU)	Displayed Reading ⁽¹⁾ (NTU)	Tolerance ⁽²⁾ (%)	Results
0	0	--	Satisfactory
3.55	3.61	1.7	Satisfactory
21.6	21.4	-0.9	Satisfactory
77.2	77.5	0.4	Satisfactory
887	896	1.0	Satisfactory

Tolerance limit of turbidity should be less than ± 10.0 (%)

~ END OF REPORT ~

⁽¹⁾ "Displayed Reading" presents the figures shown on item under calibration/ checking regardless of equipment precision or significant figures.

⁽²⁾ The "Tolerance Limit" mentioned is the acceptance criteria applicable for similar equipment used by Quality Pro Test-Consult Ltd. or quoted from relevant international standards.



專業化驗有限公司

QUALITY PRO TEST-CONSULT LIMITED

Unit 10, 14/F, Wah Wai Centre, 38-40 Au Pui Wan St., Fotan, Hong Kong

Email: info@qualityprotest.com; Website: www.qualityprotest.com

Tel: (852) 3956 8717; Fax: (852) 3956 3928

Report of Equipment Performance Check/Calibration

Test Report No. : AF100043-3
Date of Issue : 12 Oct, 2016
Page No. : 1 of 2

PART A – CUSTOMER INFORMATION

Enovative Environmental Service Ltd.
Rm 811, Hin Pui House,
Hin Keng Estate, Tai Wai
New Territories, Hong Kong
Attn: Mr. Thomas WONG

PART B – DESCRIPTION

Name of Equipment : YSI 6920 V2 Multi-Parameter Water Quality Sonde
Manufacturer : YSI (a xylem brand)
Serial Number : 11F100014
Client's Reference Number : --
Date of Received : 05 Oct, 2016
Date of Calibration : 05 Oct, 2016
Date of Next Calibration^(a) : 05 Jan, 2017

PART C – REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

Parameter	Reference Method
pH at 25°C	APHA 21c 4500-H ⁺ B
Dissolved Oxygen	APHA 21e 4500-O G
Conductivity at 25°C	APHA 21e 2510B
Salinity	APHA 21e 2520B
Turbidity	APHA 21e 2130 B
Temperature	Section 6 of international Accreditation New Zealand Technical Guide no. 3 Second edition March 2008: Working Thermometer Calibration Procedure.

PART D – CALIBRATION RESULTS^(b,c)

pH at 25°C

Target (pH unit)	Displayed Reading ^(d) (pH Unit)	Tolerance ^(e) (pH Unit)	Results
4.00	3.97	-0.03	Satisfactory
7.42	7.39	-0.03	Satisfactory
10.01	9.98	-0.03	Satisfactory

Tolerance of pH should be less than ±0.10 (pH unit)

Temperature

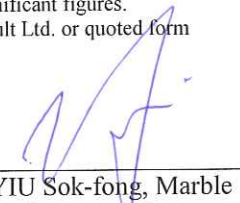
Reading of Ref. thermometer (°C)	Displayed Reading (°C)	Tolerance (°C)	Results
16.8	16.5	-0.3	Satisfactory
25.8	25.4	-0.4	Satisfactory
34.3	34.1	-0.2	Satisfactory

Tolerance limit of temperature should be less than ±2.0 (°C)

~ CONTINUED ON NEXT PAGE ~

- (a) The "Date of Next Calibration" is recommended according to best practice principals as practiced by Quality Pro Test-Consult Ltd. or quoted from relevant international standards.
- (b) The results relate only to the calibrated equipment as received
- (c) The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.
- (d) "Displayed Reading" denotes the figure shown on item under calibration/ checking regardless of equipment precision or significant figures.
- (e) The "Tolerance Limit" mentioned is the acceptance criteria applicable for similar equipment used by Quality Pro Test-Consult Ltd. or quoted from relevant international standards.

APPROVED SIGNATORY :


YIU Sok-fong, Marble
Laboratory Manager



專業化驗有限公司

QUALITY PRO TEST-CONSULT LIMITED

Unit 10, 14/F, Wah Wai Centre, 38-40 Au Pui Wan St., Fotan, Hong Kong

Email: info@qualityprotest.com; Website: www.qualityprotest.com

Tel: (852) 3956 8717; Fax: (852) 3956 3928

Report of Equipment Performance Check/Calibration

Test Report No. : AF100043-3

Date of Issue : 12 Oct, 2016

Page No. : 2 of 2

PART D – RESULT (Con't)

Dissolved Oxygen

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)	Results
1.91	1.87	-0.04	Satisfactory
4.66	4.61	-0.05	Satisfactory
7.07	7.09	0.02	Satisfactory
8.01	7.97	-0.04	Satisfactory

Tolerance limit of dissolved oxygen should be less than ± 0.20 (mg/L)

Conductivity at 25°C

Expected Reading ($\mu\text{S}/\text{cm}$)	Displayed Reading ($\mu\text{S}/\text{cm}$)	Tolerance (%)	Results
146.9	144.8	-1.4	Satisfactory
1412	1438	1.8	Satisfactory
12890	12967	0.6	Satisfactory
58670	58932	0.4	Satisfactory
111900	112866	0.9	Satisfactory

Tolerance limit of conductivity should be less than ± 10.0 (%)

Salinity

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)	Results
10	9.89	-1.1	Satisfactory
20	19.82	-0.9	Satisfactory
30	29.68	-1.1	Satisfactory

Tolerance limit of salinity should be less than ± 10.0 (%)

Turbidity

Expected Reading (NTU)	Displayed Reading ^(f) (NTU)	Tolerance ^(g) (%)	Results
0	0	--	Satisfactory
3.55	3.69	3.9	Satisfactory
21.6	21.3	-1.4	Satisfactory
77.2	76.8	-0.5	Satisfactory
887	872	-1.7	Satisfactory

Tolerance limit of turbidity should be less than ± 10.0 (%)

~ END OF REPORT ~

^(f) "Displayed Reading" presents the figures shown on item under calibration/ checking regardless of equipment precision or significant figures.

^(g) The "Tolerance Limit" mentioned is the acceptance criteria applicable for similar equipment used by Quality Pro Test-Consult Ltd. or quoted from relevant international standards.



專業化驗有限公司

QUALITY PRO TEST-CONSULT LIMITED

Unit 10, 14/F, Wah Wai Centre, 38-40 Au Pui Wan St., Fotan, Hong Kong

Email: info@qualityprotest.com; Website: www.qualityprotest.com

Tel: (852) 3956 8717; Fax: (852) 3956 3928

Report of Equipment Performance Check/Calibration

Test Report No. : AF100043-1
Date of Issue : 12 Oct, 2016
Page No. : 1 of 2

PART A – CUSTOMER INFORMATION

Enovative Environmental Service Ltd.
Rm 811, Hin Pui House,
Hin Keng Estate, Tai Wai
New Territories, Hong Kong
Attn: Mr. Thomas WONG

PART B – DESCRIPTION

Name of Equipment : YSI ProDSS (digital sampling system) handheld multiparameter meter with sensor probe
Manufacturer : YSI (a xylem brand)
Serial Number : 15M100005
Client's Reference Number : --
Date of Received : 05 Oct, 2016
Date of Calibration : 05 Oct, 2016
Date of Next Calibration^(a) : 05 Jan, 2017

PART C – REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

Parameter	Reference Method
pH at 25°C	APHA 21e 4500-H ⁺ B
Dissolved Oxygen	APHA 21e 4500-O G
Conductivity at 25°C	APHA 21e 2510B
Salinity	APHA 21e 2520B
Turbidity	APHA 21e 2130 B
Temperature	Section 6 of international Accreditation New Zealand Technical Guide no. 3 Second edition March 2008: Working Thermometer Calibration Procedure.

PART D – CALIBRATION RESULTS^(b,c)

pH at 25°C

Target (pH unit)	Displayed Reading ^(d) (pH Unit)	Tolerance ^(e) (pH Unit)	Results
4.00	3.97	-0.03	Satisfactory
7.42	7.38	-0.04	Satisfactory
10.01	9.94	-0.07	Satisfactory

Tolerance of pH should be less than ± 0.10 (pH unit)

Temperature

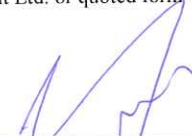
Reading of Ref. thermometer (°C)	Displayed Reading (°C)	Tolerance (°C)	Results
16.8	16.7	-0.1	Satisfactory
25.8	25.4	-0.4	Satisfactory
34.3	34.1	-0.2	Satisfactory

Tolerance limit of temperature should be less than ± 2.0 (°C)

~ CONTINUED ON NEXT PAGE ~

- ^(a) The "Date of Next Calibration" is recommended according to best practice principals as practiced by Quality Pro Test-Consult Ltd. or quoted form relevant international standards.
- ^(b) The results relate only to the calibrated equipment as received
- ^(c) The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.
- ^(d) "Displayed Reading" denotes the figure shown on item under calibration/ checking regardless of equipment precision or significant figures.
- ^(e) The "Tolerance Limit" mentioned is the acceptance criteria applicable for similar equipment used by Quality Pro Test-Consult Ltd. or quoted form relevant international standards.

APPROVED SIGNATORY :


YIU Sok-fong, Marble
Laboratory Manager



專業化驗有限公司

QUALITY PRO TEST-CONSULT LIMITED

Unit 10, 14/F, Wah Wai Centre, 38-40 Au Pui Wan St., Fotan, Hong Kong

Email: info@qualityprotest.com; Website: www.qualityprotest.com

Tel: (852) 3956 8717; Fax: (852) 3956 3928

Report of Equipment Performance Check/Calibration

Test Report No. : AF100043-1
Date of Issue : 12 Oct, 2016
Page No. : 2 of 2

PART D – RESULT (Con't)

Dissolved Oxygen

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)	Results
1.91	1.95	0.04	Satisfactory
4.66	4.73	0.07	Satisfactory
7.07	7.12	0.05	Satisfactory
8.01	8.06	0.05	Satisfactory

Tolerance limit of dissolved oxygen should be less than ± 0.20 (mg/L)

Conductivity at 25°C

Expected Reading ($\mu\text{S/cm}$)	Displayed Reading ($\mu\text{S/cm}$)	Tolerance (%)	Results
146.9	150.1	2.2	Satisfactory
1412	1453	2.9	Satisfactory
12890	12932	0.3	Satisfactory
58670	58996	0.6	Satisfactory
111900	112483	0.5	Satisfactory

Tolerance limit of conductivity should be less than ± 10.0 (%)

Salinity

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)	Results
10	9.94	-0.6	Satisfactory
20	20.03	0.2	Satisfactory
30	29.96	-0.1	Satisfactory

Tolerance limit of salinity should be less than ± 10.0 (%)

Turbidity

Expected Reading (NTU)	Displayed Reading ⁽¹⁾ (NTU)	Tolerance ⁽²⁾ (%)	Results
0	0	--	Satisfactory
3.55	3.50	-1.4	Satisfactory
21.6	21.4	-0.9	Satisfactory
77.2	77.5	0.4	Satisfactory
887	894	0.8	Satisfactory

Tolerance limit of turbidity should be less than ± 10.0 (%)

~ END OF REPORT ~

⁽¹⁾ "Displayed Reading" presents the figures shown on item under calibration/ checking regardless of equipment precision or significant figures.

⁽²⁾ The "Tolerance Limit" mentioned is the acceptance criteria applicable for similar equipment used by Quality Pro Test-Consult Ltd. or quoted from relevant international standards.