Appendix D. Calibration Certificates



REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Report No.

BA080092

Date of Issue

27 August 2021

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PART A - CUSTOMER INFORMATION

Enovative Environmental Service Ltd. Flat 2207, Yu Fun House, Yu Chui Court, Shatin New Territories, Hong Kong

PART B - DESCRIPTION

Attn: Mr. Thomas WONG

Name of Equipment

YSI ProDSS (Multi-Parameters)

Manufacturer

YSI (a xylem brand)

Serial Number

16H104233

Date of Received

Aug 27, 2021

Date of Calibration

Aug 27, 2021 Aug 27, 2021

Date of Next Calibration^(a)

Nov 26, 2021

PART C – REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

Parameter

Reference Method

pH at 25°C

APHA 21e 4500-H⁺ B APHA 21e 4500-O G

Dissolved Oxygen Conductivity at 25°C

APHA 21e 2510 B

Salinity

APHA 21e 2520 B APHA 21e 2130 B

Turbidity 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)

(1) pH at 25°C

Target (pH unit)	Displayed Reading ^(d) (pH Unit)	Tolerance ^(e) (pH Unit)	Results
4.00	4.02	0.02	Satisfactory
7.42	7.44	0.02	Satisfactory
10.01	9.96	-0.05	Satisfactory

Tolerance of pH should be less than ± 0.20 (pH unit)

(2) Temperature

Reading of Ref. thermometer (°C)	Displayed Reading (°C)	Tolerance (°C)	Results
10	10.0	0.0	Satisfactory
20	20.0	0.0	Satisfactory
45	44.9	-0.1	Satisfactory

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

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Remark(s): -

(a) The "Date of Next Calibration" is recommended according to best practice principals as practiced by QPT 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.

LEE Chun-ning Senior Chemist



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PART D - CALIBRATION RESULTS (Cont'd)

(3) Dissolved Oxygen

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)	Results
0.20	0.30	0.10	Satisfactory
2.19	2.27	0.08	Satisfactory
4.99	5.00	0.01	Satisfactory
7.49	7.58	0.09	Satisfactory

Tolerance limit of dissolved oxygen should be less than ±0.50 (mg/L)

(4) Conductivity at 25°C

Conc. of KCl (M)	Expected Reading (µS/cm)	Displayed Reading (μS/cm)	Tolerance (%)	Results
0.001	146.9	137.4	-6.47	Satisfactory
0.01	1412	1336.6	-5.34	Satisfactory
0.1	12890	12567.3	-2.50	Satisfactory
0.5	58670	57933.2	-1.26	Satisfactory
1.0	111900	110783	-1.00	Satisfactory

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

(5) Salinity

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)	Results
10	9.94	-0.60	Satisfactory
20	20.11	0.55	Satisfactory
30	30.18	0.60	Satisfactory

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

(6) Turbidity

Expected Reading (NTU)	Displayed Reading ^(f) (NTU)	Tolerance ^(g) (%)	Results
0	0.10		Satisfactory
10	9.93	-0.7	Satisfactory
20	20.06	0.3	Satisfactory
100	106.42	6.4	Satisfactory
800	797.21	-0.3	Satisfactory

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

Remark(s): -

[~] END OF REPORT ~

[&]quot;Displayed Reading" presents the figures shown on item under calibration/ checking regardless of equipment precision or significant figures.

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.



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Manufacturer

YSI (a xylem brand)

Serial Number

16H104234

Date of Received

Aug 27, 2021

Date of Calibration

Aug 27, 2021

Date of Next Calibration(a)

Nov 26, 2021

PART C – REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

Parameter

Reference Method

pH at 25°C

APHA 21e 4500-H+ B APHA 21e 4500-O G

Dissolved Oxygen Conductivity at 25°C

APHA 21e 2510 B

Salinity

APHA 21e 2520 B

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)

(1) pH at 25°C

Target (pH unit)	Displayed Reading ^(d) (pH Unit)	Tolerance ^(e) (pH Unit)	Results
4.00	4.01	0.01	Satisfactory
7.42	7.45	0.03	Satisfactory
10.01	9.98	-0.03	Satisfactory

Tolerance of pH should be less than ±0.20 (pH unit)

(2) Temperature

Reading of Ref. thermometer (°C)	Displayed Reading (°C)	Tolerance (°C)	Results
10	10.0	0.0	Satisfactory
20	20.0	0.0	Satisfactory
45	44.9	-0.1	Satisfactory

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

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Remark(s): -

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> LEE Chun-ning Senior Chemist



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Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)	Results
0.20	0.28	0.08	Satisfactory
2.19	2.30	0.11	Satisfactory
4.99	4.99	0.00	Satisfactory
7.49	7.53	0.04	Satisfactory

Tolerance limit of dissolved oxygen should be less than ± 0.50 (mg/L)

(4) Conductivity at 25°C

Conc. of KCl (M)	Expected Reading (µS/cm)	Displayed Reading (μS/cm)	Tolerance (%)	Results
0.001	146.9	138.4	-5.79	Satisfactory
0.01	1412	1339.3	-5.15	Satisfactory
0.1	12890	12663.2	-1.76	Satisfactory
0.5	58670	57882.1	-1.34	Satisfactory
1.0	111900	110653.4	-1.11	Satisfactory

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

(5) Salinity

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)	Results
10	9.93	-0.70	Satisfactory
20	19.89	-0.55	Satisfactory
30	30.20	0.67	Satisfactory

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

(6) Turbidity

Expected Reading (NTU)	Displayed Reading ^(f) (NTU)	Tolerance ^(g) (%)	Results
0	0.10		Satisfactory
10	9.90	-1.0	Satisfactory
20	19.88	-0.6	Satisfactory
100	107.31	7.3	Satisfactory
800	796.34	-0.5	Satisfactory

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

~ END OF REPORT ~

Remark(s): -

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.

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