# **Appendix E. 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

Report No.

BA090071

Date of Issue

27 September 2021

Page No.

#### 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

18A104824

Date of Received

Sep 24, 2021 Sep 24, 2021

Date of Calibration

Date of Next Calibration(a)

Dec 23, 2021

## PART C - REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

**Parameter** 

Reference Method

pH at 25°C Dissolved Oxygen

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

Conductivity at 25°C

APHA 21e 2510 B

Salinity

APHA 21e 2520 B

Turbidity Temperature APHA 21e 2130 B 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 <sup>(e)</sup> (pH Unit)	Results
4.00	4.03	0.03	Satisfactory
7.42	7.46	0.04	Satisfactory
10.01	9.96	-0.05	Satisfactory

Tolerance of pH should be less than  $\pm 0.20$  (pH unit)

## (2) Temperature

Reading of Ref. thermometer (°C)	Displayed Reading (°C)	Tolerance (°C)	Results
10	10.0	0.0	Satisfactory
24	24.0	0.0	Satisfactory
48	48.0	0.0	Satisfactory

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

#### ~ CONTINUED ON NEXT PAGE ~

## Remark(s): -

The "Date of Next Calibration" is recommended according to best practice principals as practiced by QPT or quoted form relevant international standards.

The results relate only to the calibrated equipment as received

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

> 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
0.18	0.30	0.12	Satisfactory
2.71	2.66	-0.05	Satisfactory
5.00	5.09	0.09	Satisfactory
7.48	7.48	0.00	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	147.6	0.48	Satisfactory
0.01	1412	1451	2.76	Satisfactory
0.1	12890	12758	-1.02	Satisfactory
0.5	58670	58927	0.44	Satisfactory
1.0	111900	110688	-1.08	Satisfactory

Tolerance limit of conductivity should be less than  $\pm 10.0$  (%)

## (5) Salinity

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)	Results
10	9.98	-0.20	Satisfactory
20	19.87	-0.65	Satisfactory
30	29.80	-0.67	Satisfactory

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

## (6) Turbidity

Expected Reading (NTU)	Displayed Reading <sup>(f)</sup> (NTU)	Tolerance <sup>(g)</sup> (%)	Results
0	0.17		Satisfactory
10	9.94	-0.6	Satisfactory
20	19.88	-0.6	Satisfactory
100	98.93	-1.1	Satisfactory
800	794.52	-0.7	Satisfactory

Tolerance limit of turbidity should be less than  $\pm 10.0$  (%)

~ END OF REPORT ~

## Remark(s): -

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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 Attn: Mr. Thomas WONG

#### PART B - DESCRIPTION

Name of Equipment

YSI ProDSS (Multi-Parameters)

Manufacturer

YSI (a xylem brand)

Serial Number

21G105356

Date of Received

Sep 24, 2021

Date of Calibration

Sep 24, 2021

Date of Next Calibration(a)

Dec 23, 2021

#### PART C – REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

**Parameter** 

Reference Method

pH at 25°C

APHA 21e 4500-H<sup>+</sup> 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 <sup>(e)</sup> (pH Unit)	Results
4.00	4.01	0.01	Satisfactory
7.42	7.45	0.03	Satisfactory
10.01	10.05	0.04	Satisfactory

Tolerance of pH should be less than  $\pm 0.20$  (pH unit)

## (2) Temperature

Reading of Ref. thermometer (°C)	Displayed Reading (°C)	Tolerance (°C)	Results
10	10.0	0.0	Satisfactory
24	24.0	0.0	Satisfactory
48	48.0	0.0	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..

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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
0.18	0.30	0.12	Satisfactory
2.71	2.60	-0.11	Satisfactory
5.00	5.13	0.13	Satisfactory
7.48	7.49	0.01	Satisfactory

Tolerance limit of dissolved oxygen should be less than  $\pm 0.50$  (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	147.5	0.41	Satisfactory
0.01	1412	1466	3.82	Satisfactory
0.1	12890	12747	-1.11	Satisfactory
0.5	58670	59430	1.30	Satisfactory
1.0	111900	110667	-1.10	Satisfactory

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

### (5) Salinity

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)	Results
10	9.97	-0.30	Satisfactory
20	20.36	1.80	Satisfactory
30	30.77	2.57	Satisfactory

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

## (6) Turbidity

Expected Reading (NTU)	Displayed Reading <sup>(f)</sup> (NTU)	Tolerance <sup>(g)</sup> (%)	Results
0	0.18		Satisfactory
10	10.13	1.3	Satisfactory
20	19.74	-1.3	Satisfactory
100	102.36	2.4	Satisfactory
800	796.41	-0.4	Satisfactory

Tolerance limit of turbidity should be less than  $\pm 10.0$  (%)

~ END OF REPORT ~

Remark(s): -

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

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