Annex G1

# Calibration Certificates for Water Quality



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# **REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION**

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Date of Issue	0	12 March 2020
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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

: YSI ProDSS (Multi-Parameters)
: YSI (a xylem brand)
: 16H104234
: Mar 11, 2020
: Mar 11, 2020
: Jun 10, 2020

# PART C – REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

Parameter	Reference Method
pH at 25°C	APHA 21e 4500-H <sup>+</sup> B
Dissolved Oxygen	APHA 21e 4500-O G
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
<b>r</b>	Guide no. 3 Second edition March 2008: Working Thermometer Calibration Procedure.

## PART D - CALIBRATION RESULTS<sup>(b,c)</sup>

#### (1) pH at 25°C

Target (pH unit)	Displayed Reading <sup>(d)</sup> (pH Unit)	Tolerance <sup>(e)</sup> (pH Unit)	Results
4.00	4.02	0.02	Satisfactory
7.42	7.44	0.02	Satisfactory
10.01	10.02	0.01	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
10.0	10.4	0.4	Satisfactory
26.0	26.0	0.0	Satisfactory
47.0	47.4	0.4	Satisfactory

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

#### ~ CONTINUED ON NEXT PAGE ~

#### 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 referenced to YSI product specifications.

LEE Chun-ning, Desmond 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
0.38	0.39	0.01	Satisfactory
4.44	4.53	0.09	Satisfactory
6.78	6.70	-0.08	Satisfactory
8.54	8.74	0.20	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	151.0	2.79	Satisfactory
0.01	1412	1357	-3.90	Satisfactory
0.1	12890	11982	-7.04	Satisfactory
0.5	58670	56432	-3.81	Satisfactory
1.0	111900	110782	-1.00	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	10.00	0.00	Satisfactory
20	20.36	1.80	Satisfactory
30	30.56	1.87	Satisfactory

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

# (6) Turbidity

Expected Reading (NTU)	Displayed Reading <sup>(f)</sup> (NTU)	Tolerance <sup>(g)</sup> (%)	Results
0	0.00		Satisfactory
10	10.24	2.4	Satisfactory
20	21.20	6.0	Satisfactory
100	94.6	-5.4	Satisfactory
800	792.4	-1.0	Satisfactory

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

~ END OF REPORT ~

#### Remark(s): -

- "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 (2) relevant international standards.



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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	: 17E100747
Date of Received	: Mar 11, 2020
Date of Calibration	: Mar 11, 2020
Date of Next Calibration(a)	: Jun 10, 2020

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

Parameter	Reference Method
pH at 25°C	APHA 21e 4500-H <sup>+</sup> B
Dissolved Oxygen	APHA 21e 4500-O G
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<sup>(b,c)</sup>

# (1) pH at 25°C

Target (pH unit)	Displayed Reading <sup>(d)</sup> (pH Unit)	Tolerance <sup>(e)</sup> (pH Unit)	Results
4.00	4.04	0.04	Satisfactory
7.42	7.38	-0.04	Satisfactory
10.01	10.04	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
10.0	10.2	0.2	Satisfactory
26.0	26.6	0.6	Satisfactory
47.0	47.4	0.4	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.

(b) The results relate only to the calibrated equipment as received

The results relate only to the cultorate 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 referenced to YSI product specifications.

LEE Chun-ning, Desmond 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
0.38	0.48	0.10	Satisfactory
4.44	4.50	0.06	Satisfactory
6.78	6.68	-0.10	Satisfactory
8.54	8.62	0.08	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	148.2	0.88	Satisfactory
0.01	1412	1386	-1.84	Satisfactory
0.1	12890	12436	-3.52	Satisfactory
0.5	58670	57314	-2.31	Satisfactory
1.0	111900	111048	-0.76	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	9.99	-0.10	Satisfactory
20	20.16	0.80	Satisfactory
30	30.28	0.93	Satisfactory

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

# (6) Turbidity

Expected Reading (NTU)	Displayed Reading <sup>(f)</sup> (NTU)	Tolerance <sup>(g)</sup> (%)	Results
0	0.06		Satisfactory
10	10.34	3.4	Satisfactory
20	20.32	1.6	Satisfactory
100	92.4	-7.6	Satisfactory
800	801.6	0.2	Satisfactory

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

~ END OF REPORT ~

<u>Remark(s): -</u>

- <sup>9</sup> "Displayed Reading" presents the figures shown on item under calibration/ checking regardless of equipment precision or significant figures.
- <sup>(8)</sup> 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 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	: 17H105557
Date of Received	: Mar 11, 2020
Date of Calibration	: Mar 11, 2020
Date of Next Calibration(a)	: Jun 10, 2020

# PART C - REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

Parameter	Reference Method
pH at 25°C	APHA 21e 4500-H <sup>+</sup> B
Dissolved Oxygen	APHA 21e 4500-O G
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<sup>(b,c)</sup>

#### (1) pH at 25°C

Target (pH unit)	Displayed Reading <sup>(d)</sup> (pH Unit)	Tolerance <sup>(e)</sup> (pH Unit)	Results
4.00	4.00	0.00	Satisfactory
7.42	7.38	-0.04	Satisfactory
10.01	10.09	0.08	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
10.0	10.2	0.2	Satisfactory
26.0	26.6	0.6	Satisfactory
47.0	47.6	0.6	Satisfactory

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

#### ~ CONTINUED ON NEXT PAGE ~

#### 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 referenced to YSI product specifications.

LEE Chun-ning, Desmond 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
0.38	0.41	0.03	Satisfactory
4.44	4.50	0.06	Satisfactory
6.78	6.75	-0.03	Satisfactory
8.54	8.69	0.15	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	147.7	0.54	Satisfactory
0.01	1412	1467	3.90	Satisfactory
0.1	12890	12767	-0.95	Satisfactory
0.5	58670	59526	1.46	Satisfactory
1.0	111900	110742	-1.03	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	20.48	2.40	Satisfactory
30	30.84	2.80	Satisfactory

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

# (6) Turbidity

Expected Reading (NTU)	Displayed Reading <sup>(f)</sup> (NTU)	Tolerance <sup>(g)</sup> (%)	Results
0	0.18		Satisfactory
10	10.14	1.4	Satisfactory
20	19.66	-1.7	Satisfactory
100	105.4	5.4	Satisfactory
800	792.6	-0.9	Satisfactory

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

~ END OF REPORT ~

Remark(s): -

"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 (g) relevant international standards.



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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	: 18A104824
Date of Received	: Mar 11, 2020
Date of Calibration	: Mar 11, 2020
Date of Next Calibration(a)	: Jun 10, 2020

# PART C - REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

Parameter	Reference Method
pH at 25°C	APHA 21e 4500-H <sup>+</sup> B
Dissolved Oxygen	APHA 21e 4500-O G
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<sup>(b,c)</sup>

#### (1) pH at 25°C

Target (pH unit)	Displayed Reading <sup>(d)</sup> (pH Unit)	Tolerance <sup>(e)</sup> (pH Unit)	Results
4.00	4.06	0.06	Satisfactory
7.42	7.40	-0.02	Satisfactory
10.01	10.10	0.09	Satisfactory

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

#### (2) Temperature

Reading of Ref. thermometer	Displayed Reading (°C)	Tolerance (°C)	Results
10.0	10.5	0.5	Satisfactory
26.0	26.1	0.1	Satisfactory
47.0	46.2	-0.8	Satisfactory

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

#### ~ CONTINUED ON NEXT PAGE ~

#### 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

(\*) 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 referenced to YSI product specifications.

LEE Chun-ning, Desmond 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
0.38	0.42	0.04	Satisfactory
4.44	4.51	0.07	Satisfactory
6.78	6.78	0.00	Satisfactory
8.54	8.72	0.18	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	145.8	-0.75	Satisfactory
0.01	1412	1356	-3.97	Satisfactory
0.1	12890	12176	-5.54	Satisfactory
0.5	58670	56438	-3.80	Satisfactory
1.0	111900	110819	-0.97	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	10.00	0.00	Satisfactory
20	20.54	2.70	Satisfactory
30	30.72	2.40	Satisfactory

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

### (6) Turbidity

Expected Reading (NTU)	Displayed Reading <sup>(f)</sup> (NTU)	Tolerance <sup>(g)</sup> (%)	Results
0	0.02		Satisfactory
10	10.36	3.6	Satisfactory
20	20.82	4.1	Satisfactory
100	106.4	6.4	Satisfactory
800	812.4	1.6	Satisfactory

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

~ END OF REPORT ~

<u>Remark(s): -</u>

- "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 (2) relevant international standards.



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Date of Issue	:	24 January 2019
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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 6920V2 (Multi-Parameters)
Manufacturer	: YSI (a xylem brand)
Serial Number	: 0001C6A7
Date of Received	: Jan 20, 2020
Date of Calibration	: Jan 20, 2020
Date of Next Calibration(a)	: Apr 20, 2020

# PART C – REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

Parameter	Reference Method
pH at 25°C	APHA 21e 4500-H <sup>+</sup> B
Dissolved Oxygen	APHA 21e 4500-O G
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
1	Guide no. 3 Second edition March 2008: Working Thermometer Calibration Procedure.

# PART D - CALIBRATION RESULTS<sup>(b,c)</sup>

#### (1) pH at 25°C

Target (pH unit)	Displayed Reading <sup>(d)</sup> (pH Unit)	Tolerance <sup>(e)</sup> (pH Unit)	Results
4.00	3.99	-0.01	Satisfactory
7.42	7.38	-0.04	Satisfactory
10.01	10.06	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
10.0	10.04	0.0	Satisfactory
20.0	20.05	0.1	Satisfactory
45.0	44.90	-0.1	Satisfactory

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

#### ~ CONTINUED ON NEXT PAGE ~

#### Remark(s): -

(b) 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. (c)

"Displayed Reading" denotes the figure shown on item under calibration/ checking regardless of equipment precision or significant figures. The "Tolerance Limit" mentioned is referenced to YSI product specifications. (d)

(e)

LEE Chun-ning, Desmond

Senior Chemist

The "Date of Next Calibration" is recommended according to best practice principals as practiced by QPT 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
0.92	1.31	0.39	Satisfactory
4.68	4.68	0.00	Satisfactory
5.18	5.33	0.15	Satisfactory
8.84	8.98	0.14	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	153.4	4.42	Satisfactory
0.01	1412	1386	-1.84	Satisfactory
0.1	12890	12784	-0.82	Satisfactory
0.5	58670	57934	-1.25	Satisfactory
1.0	111900	110886	-0.91	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	20.20	1.00	Satisfactory
30	30.42	1.40	Satisfactory

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

# (6) Turbidity

Expected Reading (NTU)	Displayed Reading <sup>(f)</sup> (NTU)	Tolerance <sup>(g)</sup> (%)	Results
0	0.2		Satisfactory
10	10.1	1.0	Satisfactory
20	19.8	-1.0	Satisfactory
100	98.7	-1.3	Satisfactory
800	788.4	-1.5	Satisfactory

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

~ END OF REPORT ~

Remark(s): -

- "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 (g) relevant international standards.



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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 6920V2 (Multi-Parameters)
Manufacturer	: YSI (a xylem brand)
Serial Number	: 0001C6A7
Date of Received	: Apr 21, 2020
Date of Calibration	: Apr 21, 2020
Date of Next Calibration(a)	: Jul 20, 2020

# PART C – REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

Parameter	Reference Method
pH at 25°C	APHA 21e 4500-H <sup>+</sup> B
Dissolved Oxygen	APHA 21e 4500-O G
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<sup>(b,c)</sup>

#### (1) pH at 25°C

Target (pH unit)	Displayed Reading <sup>(d)</sup> (pH Unit)	Tolerance <sup>(e)</sup> (pH Unit)	Results
4.00	4.02	0.02	Satisfactory
7.42	7.46	0.04	Satisfactory
10.01	10.10	0.09	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
10.0	10.1	0.1	Satisfactory
28.0	28.1	0.1	Satisfactory
49.0	49.1	0.1	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 *(b)* 

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

"Displayed Reading" denotes the figure shown on item under calibration/ checking regardless of equipment precision or significant figures. The "Tolerance Limit" mentioned is referenced to YSI product specifications. (d)

(e)

LEE Chun-ning, Desmond 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
0.78	0.59	-0.19	Satisfactory
2.18	2.26	0.08	Satisfactory
5.67	5.55	-0.12	Satisfactory
8.03	8.11	0.08	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	1458	3.26	Satisfactory
0.1	12890	12666	-1.74	Satisfactory
0.5	58670	59424	1.29	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	9.95	-0.50	Satisfactory
20	19.96	-0.20	Satisfactory
30	30.34	1.13	Satisfactory

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

#### (6) Turbidity

Expected Reading (NTU)	Displayed Reading <sup>(f)</sup> (NTU)	Tolerance <sup>(g)</sup> (%)	Results
0	0		Satisfactory
10	9.90	-1.0	Satisfactory
20	19.80	-1.0	Satisfactory
100	98.9	-1.1	Satisfactory
800	793.2	-0.8	Satisfactory

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

~ END OF REPORT ~

<u>Remark(s): -</u>

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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# 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 6920V2 (Multi-Parameters)
Manufacturer	: YSI (a xylem brand)
Serial Number	: 00019CB2
Date of Received	: Jan 20, 2020
Date of Calibration	: Jan 20, 2020
Date of Next Calibration(a)	: Apr 20, 2020

# PART C - REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

Parameter	Reference Method
pH at 25°C	APHA 21e 4500-H <sup>+</sup> B
Dissolved Oxygen	APHA 21e 4500-O G
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<sup>(b,c)</sup>

#### (1) pH at 25°C

Target (pH unit)	Displayed Reading <sup>(d)</sup> (pH Unit)	Tolerance <sup>(e)</sup> (pH Unit)	Results
4.00	4.01	0.01	Satisfactory
7.42	7.36	-0.06	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
10.0	10.03	0.0	Satisfactory
20.0	20.06	0.1	Satisfactory
45.0	44.90	-0.1	Satisfactory

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

#### ~ CONTINUED ON NEXT PAGE ~

#### <u>Remark(s): -</u>

(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 referenced to YSI product specifications.

LEE Chun-ning, Desmond 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
0.92	1.22	0.30	Satisfactory
4.68	4.66	-0.02	Satisfactory
5.18	5.34	0.16	Satisfactory
8.84	8.96	0.12	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	152.9	4.08	Satisfactory
0.01	1412	1391	-1.49	Satisfactory
0.1	12890	12796	-0.73	Satisfactory
0.5	58670	57862	-1.38	Satisfactory
1.0	111900	110894	-0.90	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	10.05	0.50	Satisfactory
20	19.96	-0.20	Satisfactory
30	30.38	1.27	Satisfactory

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

# (6) Turbidity

Expected Reading (NTU)	Displayed Reading <sup>(f)</sup> (NTU)	Tolerance <sup>(g)</sup> (%)	Results
0	0.1		Satisfactory
10	9.9	-1.0	Satisfactory
20	19.8	-1.0	Satisfactory
100	98.6	-1.4	Satisfactory
800	789.3	-1.3	Satisfactory

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

~ END OF REPORT ~

Remark(s): -

<sup>(0)</sup> "Displayed Reading" presents the figures shown on item under calibration/ checking regardless of equipment precision or significant figures.

(b) 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 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 6920V2 (Multi-Parameters)
Manufacturer	: YSI (a xylem brand)
Serial Number	: 00019CB2
Date of Received	: Apr 21, 2020
Date of Calibration	: Apr 21, 2020
Date of Next Calibration(a)	: Jul 20, 2020

# PART C – REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

Parameter	Reference Method
pH at 25°C	APHA 21e 4500-H <sup>+</sup> B
Dissolved Oxygen	APHA 21e 4500-O G
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
Temperature	Guide no. 3 Second edition March 2008: Working Thermometer Calibration Procedure.

# PART D - CALIBRATION RESULTS<sup>(b,c)</sup>

## (1) pH at 25°C

Target (pH unit)	Displayed Reading <sup>(d)</sup> (pH Unit)	Tolerance <sup>(e)</sup> (pH Unit)	Results
4.00	4.01	0.01	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)	1 Reading (°C) Tolerance (°C)	
10.0	10.1	0.1	Satisfactory
28.0	28.0	0.0	Satisfactory
49.0	49.1	0.1	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.

(b) 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. (c)

"Displayed Reading" denotes the figure shown on item under calibration/ checking regardless of equipment precision or significant figures. The "Tolerance Limit" mentioned is referenced to YSI product specifications. (d)

(e)

LEE Chun-ning, Desmond 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
0.78	0.60	-0.18	Satisfactory
2.18	2.22	0.04	Satisfactory
5.67	5.67 5.57		Satisfactory
8.03	8.12	0.09	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	147.7	0.54	Satisfactory
0.01	1412	1438	1.84	Satisfactory
0.1	12890	12741	-1.16	Satisfactory
0.5	58670	59364	1.18	Satisfactory
1.0	111900	110822	-0.96	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	9.94	-0.60	Satisfactory
20	20.04	0.20	Satisfactory
30	30.52	1.73	Satisfactory

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

# (6) Turbidity

Expected Reading (NTU)	Displayed Reading <sup>(f)</sup> (NTU)	Tolerance <sup>(g)</sup> (%)	Results
0	0		Satisfactory
10	9.90	-1.0	Satisfactory
20	19.70	-1.5	Satisfactory
100	97.8	-2.2	Satisfactory
800	794.2	-0.7	Satisfactory

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

~ END OF REPORT ~

Remark(s): -

"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.