

Annex F1

Calibration Certificates for  
Surface Water Quality  
Monitoring Equipment



## REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

CONTACT:	BEN TAM	WORK ORDER:	HK1912056
CLIENT:	ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING		
ADDRESS:	RM A 20/F., GOLD KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T. HONG KONG	SUB-BATCH:	0
		LABORATORY:	HONG KONG
		DATE RECEIVED:	20-Mar-2019
		DATE OF ISSUE:	26-Mar-2019

### 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.

Scope of Test:	Conductivity, Dissolved Oxygen, pH Value, Turbidity, Salinity and Temperature
Equipment Type:	Multifunctional Meter
Brand Name:	YSI
Model No.:	Professional DSS
Serial No.:	17B102764/17B100758
Equipment No.:	EQW019
Date of Calibration:	22 March, 2019

### 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.

Ms. Lin Wai Yu  
Assistant Manager - Inorganic

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# REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION



**WORK ORDER:** HK1912056  
**SUB-BATCH:** 0  
**DATE OF ISSUE:** 26-Mar-2019  
**CLIENT:** ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING

**Equipment Type:** Multifunctional Meter  
**Brand Name:** YSI  
**Model No.:** Professional DSS  
**Serial No.:** 17B102764/17B100758  
**Equipment No.:** EQW019  
**Date of Calibration:** 22 March, 2019                      **Date of Next Calibration:** 22 June, 2019

**PARAMETERS:**

Conductivity                      Method Ref: APHA (21st edition), 2510B

Expected Reading (µS/cm)	Displayed Reading (µS/cm)	Tolerance (%)
146.9	143.1	-2.6
6667	6194	-7.1
12890	12016	-6.8
58670	54263	-7.5
	<b>Tolerance Limit (%)</b>	<b>±10.0</b>

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

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
4.81	4.63	-0.18
6.77	6.60	-0.17
8.33	8.28	-0.05
	<b>Tolerance Limit (mg/L)</b>	<b>±0.20</b>

pH Value                                      Method Ref: APHA (21st edition), 4500H:B

Expected Reading (pH unit)	Displayed Reading (pH unit)	Tolerance (pH unit)
4.0	4.07	+0.07
7.0	7.19	+0.19
10.0	10.04	+0.04
	<b>Tolerance Limit (pH unit)</b>	<b>±0.20</b>

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

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 Assistant Manager - Inorganic

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**Brand Name:** YSI  
**Model No.:** Professional DSS  
**Serial No.:** 17B102764/17B100758  
**Equipment No.:** EQW019  
**Date of Calibration:** 22 March, 2019                      **Date of Next Calibration:** 22 June, 2019

**PARAMETERS:**

Turbidity                      Method Ref: APHA (21st edition), 2130B

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0	-0.24	--
4	4.26	+6.5
40	41.30	+3.2
80	75.41	-5.7
400	388.10	-3.0
800	724.34	-9.5
	<b>Tolerance Limit (%)</b>	<b>±10.0</b>

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

Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)
0	0.00	--
10	10.01	+0.1
20	19.14	-4.3
30	28.15	-6.2
	<b>Tolerance Limit (%)</b>	<b>±10.0</b>

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

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DATE OF ISSUE: 26-Mar-2019  
CLIENT: ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING

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Model No.: Professional DSS  
Serial No.: 17B102764/17B100758  
Equipment No.: EQW019  
Date of Calibration: 22 March, 2019      Date of Next Calibration: 22 June, 2019

PARAMETERS:  
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)
8.5	10.0	+1.5
23.0	22.4	-0.6
41.0	39.1	-1.9
	Tolerance Limit (°C)	±2.0

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Assistant Manager - Inorganic