

Annex F1

Calibration Certificates for  
Surface Water Quality  
Monitoring Equipment



## REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

CONTACT:	MR BEN TAM	WORK ORDER:	HK1936450
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:	26-Aug-2019
		DATE OF ISSUE:	02-Sep-2019

### COMMENTS

Equipment information (Brand name, Model No., Serial No. and Equipment No.) is provided by client. 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.**

**The "Next Calibration Date" is recommended according to best practice principle as practised 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/ Model No.:	YSI Professional DSS
Serial No./ Equipment No.:	15H102620/ 15H103928 (EQW018)
Date of Calibration:	30-Aug-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.

Mr Chan Siu Ming, Vico  
Manager - Inorganic

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WORK ORDER: HK1936450  
 SUB-BATCH: 0  
 DATE OF ISSUE: 02-Sep-2019  
 CLIENT: ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING

Equipment Type: Multifunctional Meter  
 Brand Name/ Model No.: YSI Professional DSS  
 Serial No./ Equipment No.: 15H102620/ 15H103928 (EQW018)  
 Date of Calibration: 30-Aug-2019                      Date of Next Calibration: 30-Nov-2019

**PARAMETERS:**

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

Expected Reading ( $\mu\text{S/cm}$ )	Displayed Reading ( $\mu\text{S/cm}$ )	Tolerance (%)
146.9	160.7	+9.4
6667	6485	-2.7
12890	12380	-4.0
58670	55669	-5.1
	Tolerance Limit (%)	$\pm 10.0$

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

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
7.43	7.41	-0.02
4.06	4.07	+0.01
2.05	2.20	+0.15
	Tolerance Limit (mg/L)	$\pm 0.20$

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

Expected Reading (pH unit)	Displayed Reading (pH unit)	Tolerance (pH unit)
4.0	4.15	+0.15
7.0	7.07	+0.07
10.0	9.90	-0.10
	Tolerance Limit (pH unit)	$\pm 0.20$

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

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 Manager - Inorganic

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 Date of Calibration: 30-Aug-2019                      Date of Next Calibration: 30-Nov-2019

**PARAMETERS:**

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

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0	0.02	--
4	3.76	-6.0
40	37.23	-6.9
80	73.56	-8.1
400	401.38	+0.3
800	780.12	-2.5
	Tolerance Limit (%)	±10.0

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

Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)
0	0.00	--
10	10.30	+3.0
20	20.32	+1.6
30	31.32	+4.4
	Tolerance Limit (%)	±10.0

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Equipment Type: Multifunctional Meter  
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Date of Calibration: 30-Aug-2019 Date of Next Calibration: 30-Nov-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)
10.0	9.9	-0.1
20.0	18.9	-1.1
38.0	36.4	-1.6
	Tolerance Limit (°C)	±2.0

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