

CALIBRATION AND VERIFICATION LOG (FDEP SOP FT 1000-FT 1500, FD 1000-FD 4000)

Boldly "X" this box if there are qualified data on this page.

Meter ID: YSI # 3

RQ- 2018-11-12-19

Project: LSJR West

Notes: (1) Always wait for meter to stabilize before recording any readings.

(2) Report all digits displayed. Do not round before reporting measurements. (See special instructions for depth).

(3) For Calibrations, record calibrated meter reading. Do not record initial meter reading before calibration.

Temperature (Quarterly) FT 1400

Date of Last Temperature Verification

DO DEP SOP FT 1500	Name	Date	Time CT-ET	Temp °C	Baro- meter mmHg	D.O. Chart mg/L	Meter D.O. mg/L	% DO	Probe Charge	Probe Gain	Pass / Fail	Lab / Field
Calibr.	<u>AKalmbacher</u>	<u>11-14-18</u>	<u>0750</u>	<u>22.8</u>	<u>761.4</u>	<u>8.61</u>	<u>8.59</u>	<u>99.9</u>		<u>1.10497</u>	<u>P/F</u>	<u>L/F</u>
ICV			<u>0757</u>	<u>22.9</u>	<u>761.4</u>	<u>8.61</u>	<u>8.57</u>	<u>99.8</u>		<u>1.10497</u>	<u>P/F</u>	<u>L/F</u>
CCV	<u>AKalmbacher</u>	<u>11-14-18</u>	<u>1225</u>	<u>21.0</u>	<u>761.4</u>	<u>8.91</u>	<u>8.94</u>	<u>100.2</u>		<u>1.10497</u>	<u>P/F</u>	<u>L/F</u>
CCV											<u>P/F</u>	<u>L/F</u>

DO Acceptance criteria from Table ± 0.3 mg/L.

Rapid-Pulse Sensors: DO Gain Range 0.7 to 1.4; DO Charge Range 25-75.

Optical: DO gain range 0.85 to 1.15 (Pro DSS 0.75 to 1.50); DO charge N/A. Steady-state & Galvanic Sensors: DO Gain & Charge N/A.

Spec. Cond. FT 1200	Name	Date	Time CT-ET	Lot #	Expir. Date	Standard μ mhos/cm	Meter Reading μ mhos/cm	Pass / Fail	Lab / Field
Calibr.	<u>AKalmbacher</u>	<u>11-14-18</u>	<u>0805</u>	<u>180321</u>	<u>4/2019</u>	<u>1.000</u>	<u>1001</u>	<u>P/F</u>	<u>L/F</u>
ICV			<u>0807</u>	<u>181102</u>	<u>11/2019</u>	<u>100</u>	<u>103</u>	<u>P/F</u>	<u>L/F</u>
CCV	<u>AKalmbacher</u>	<u>11-14-18</u>	<u>1228</u>	<u>180321</u>	<u>4/2019</u>	<u>1.000</u>	<u>1.003</u>	<u>P/F</u>	<u>L/F</u>
CCV				<u>181102</u>	<u>11/2019</u>			<u>P/F</u>	<u>L/F</u>

Conductivity Acceptance criteria $\pm 5\%$

pH DEP SOP FT 1100	Name	Date	Time CT-ET	Lot #	Expir. Date	pH Buffer SU	Temp °C	Meter reading SU	mV	Pass / Fail	Lab / Field
Calibr.	<u>AKalmbacher</u>	<u>11-14-18</u>	<u>0810</u>	<u>2803E45</u>	<u>3/2020</u>	<u>7.</u>	<u>24.1</u>	<u>7.00</u>	<u>-20.7</u>	<u>P/F</u>	<u>L/F</u>
Calibr.			<u>0812</u>	<u>2806975</u>	<u>6/2020</u>	<u>4.</u>	<u>24.1</u>	<u>4.00</u>	<u>155.8</u>	<u>P/F</u>	<u>L/F</u>
Calibr.			<u>0815</u>	<u>1806F51</u>	<u>12/2019</u>	<u>10.</u>	<u>24.1</u>	<u>9.98</u>	<u>-190.2</u>	<u>P/F</u>	<u>L/F</u>
ICV			<u>0817</u>	<u>2803E45</u>	<u>3/2020</u>	<u>7.0</u>	<u>23.9</u>	<u>7.02</u>	<u>-19.9</u>	<u>P/F</u>	<u>L/F</u>
CCV			<u>1230</u>	<u>1806F51</u>	<u>12/2019</u>	<u>10.0</u>	<u>24.0</u>	<u>10.05</u>	<u>-195.3</u>	<u>P/F</u>	<u>L/F</u>
CCV										<u>P/F</u>	<u>L/F</u>

pH Acceptance criteria ± 0.2 SU; mV pH 7 Range 0 ± 50 ;

mV pH 4 Range $+180 \pm 50$;

mV pH 10 Range -180 ± 50 ;

If mV are recorded: slope from 7 to 10 169.5, slope from 4 to 7 176.5 (both must be between 165 and 180 mV)

Does meter have a depth sensor that will be used to measure total depth & sample depth? YES / NO / NA (not surf. water project)

If YES, complete daily Calibr. & ICV below and list date of last quarterly depth verification: 10/18/18

If NO, what will be used? (circle one) Secchi Disk Line / Sonar Unique ID: _____; Date of last verification: _____

Depth Sensor (Daily Calibration & ICV)	Name	Date	Time CT-ET	Calibrated Value (0.00 or Offset), meters	ICV Value, meters	Pass / Fail	Lab / Field
Pressure mode in air	<u>AKalmbacher</u>	<u>11-14-18</u>	<u>0820</u>	<u>0.00</u>	<u>0.00</u>	<u>P/F</u>	<u>L/F</u>

Report two decimal places. Round numbers ≤ 4 down, ≥ 5 up. ICV acceptance criteria $\pm 5\%$ or ± 0.05 m, whichever is greater.

COMMENTS:

BD 11/27/18 JP 11/16/18

CALIBRATION AND VERIFICATION LOG (FDEP SOP FT 1000-FT 1500, FD 1000-FD 4000)

Boldly "X" this box if there are qualified data on this page.

Meter ID: DEP#154181

RQ: 2018-11-12-18

Project: LSJ2 West 2

Notes: (1) Always wait for meter to stabilize before recording any readings.

(2) Report all digits displayed. Do not round before reporting measurements. (See special instructions for depth).

(3) For Calibrations, record calibrated meter reading. Do not record initial meter reading before calibration.

Temperature (Quarterly) FT 1400

Date of Last Temperature Verification 10-10-2018

DO DEP SOP FT 1500	Name	Date	Time CT-ET	Temp °C	Baro- meter mmHg	D.O. Chart mg/L	Meter D.O. mg/L	% DO	Probe Charge	Probe Gain	Pass / Fail	Lab / Field
Calibr.	P.O'Connor	11-14-18	1150	23.2	761.6	8.54	8.57	100.3	-	-	(P) F	(L) F
ICV	✓	✓	1155	23.2	761.5	8.54	8.57	100.4	-	-	(P) F	(L) F
CCV	B- ✓	11/14/18	1602	20.8	759.5	8.95	9.05	101.1	-	-	(P) F	(L) F
CCV											P / F	L / F

DO Acceptance criteria from Table ± 0.3 mg/L.

Rapid-Pulse Sensors: DO Gain Range 0.7 to 1.4; DO Charge Range 25-75.

Optical: DO gain range 0.85 to 1.15 (Pro DSS 0.75 to 1.50); DO charge N/A. Steady-state & Galvanic Sensors: DO Gain & Charge N/A.

Spec. Cond. FT 1200	Name	Date	Time CT-ET	Lot #	Expir. Date	Standard μ mhos/cm	Meter Reading μ mhos/cm	Pass / Fail	Lab / Field
Calibr.	P.O'Connor	11-14-18	1200	181102	11-2019	1000	1001	(P) F	(L) F
ICV	✓	✓	1205	180321A	04-2019	100	102	(P) F	(L) F
CCV	B- ✓	11/14/18	1605	181102	11/19	1000	1000	(P) F	(L) F
CCV								P / F	L / F

Conductivity Acceptance criteria $\pm 5\%$

pH DEP SOP FT 1100	Name	Date	Time CT-ET	Lot #	Expir. Date	pH Buffer SU	Temp °C	Meter reading SU	mV	Pass / Fail	Lab / Field
Calibr.	P.O'Connor	11-14-18	1205	2803E45	03-2020	7.00	24.1	7.00	25.2	(P) F	(L) F
Calibr.	✓	✓	1212	2806975	06-2020	4.00	24.3	4.00	152.5	(P) F	(L) F
Calibr.	✓	✓	1215	1806F51	12-2019	10.00	24.2	9.98	-202.7	(P) F	(L) F
ICV	✓	✓	1220	2803E45	03-2020	7.00	24.2	7.05	-29.4	P / F	L / F
CCV	B- ✓	11/14/18	1608	2806975	6/20	4.0	24.2	4.04	1490	(P) F	(L) F
CCV	✓	✓	1610	1806F51	12/15	10.0	24.2	9.8	-202.4	(P) F	(L) F

pH Acceptance criteria ± 0.2 SU; mV pH 7 Range 0 $\pm$ 50;

mV pH 4 Range +180 $\pm$ 50;

mV pH 10 Range -180 $\pm$ 50;

If mV are recorded: slope from 7 to 10 _____, slope from 4 to 7 _____ (both must be between 165 and 180 mV)

Does meter have a depth sensor that will be used to measure total depth & sample depth? YES / NO / NA (not surf. water project)

If YES, complete daily Calibr. & ICV below and list date of last quarterly depth verification: 10-10-18

If NO, what will be used? (circle one) Secchi Disk Line / Sonar Unique ID: _____; Date of last verification: _____

Depth Sensor (Daily Calibration & ICV)	Name	Date	Time CT-ET	Calibrated Value (0.00 or Offset), meters	ICV Value, meters	Pass / Fail	Lab / Field
Pressure mode in air	P.O'Connor	11-14-18	1125	0.000	0.001	(P) F	(L) F

Report two decimal places. Round numbers ≤ 4 down, ≥ 5 up. ICV acceptance criteria $\pm 5\%$ or ± 0.05 m, whichever is greater.

COMMENTS:

BT QC/Scanned 11/27/18 JP 11/16/18