

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

Boldly "X" this box if there is qualified data on this name.

Meter ID: YSI #4

RQ: 2017-11-27-18

Project: LSTK Lakes

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.

Circle/Fill In: Lab Calibration or Calibration/Verification on Site L.C

Temperature (Quarterly) FT 1400

Date of Last Temperature Verification 10/17

DO DEP SOP FT 1500	Name	Date	Time CT-ET	Temp	D.O. Chart mg/L	Meter D.O. mg/L	% DO	Probe Charge	Probe Gain	Pass / Fail	Lab / Field
Calibr.	<u>B-V</u>	<u>11/29/17</u>	<u>801</u>	<u>22.7</u>	<u>8.62</u>	<u>8.63</u>	<u>100</u>	<u>57.4</u>	<u>0.9283</u>	<u>P</u> F	<u>L</u> F
ICV			<u>805</u>	<u>22.8</u>	<u>8.61</u>	<u>8.61</u>	<u>100</u>	<u>58.4</u>	<u>0.9283</u>	<u>P</u> F	<u>L</u> F
CCV			<u>1439</u>	<u>22.8</u>	<u>8.62</u>	<u>8.52</u>	<u>98.8</u>	<u>60.4</u>	<u>0.9283</u>	<u>P</u> F	<u>L</u> F
CCV										P / F	L / F

DO Acceptance criteria from Table ± 0.3 mg/L.

Optical: DO gain range 0.85 to 1.15; DO charge N/A.

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

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>B-V</u>	<u>11/29/17</u>	<u>810</u>	<u>170720A</u>	<u>8/18</u>	<u>1000</u>	<u>1000</u>	<u>P</u> F	<u>L</u> F
ICV			<u>813</u>	<u>170720B</u>	<u>8/18</u>	<u>100</u>	<u>104</u>	<u>P</u> F	<u>L</u> F
CCV			<u>1440</u>	<u>81472017</u>	<u>3/18</u>	<u>147</u>	<u>150</u>	<u>P</u> F	<u>L</u> 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	Meter reading SU	mV	Pass / Fail	Lab / Field
Calibr.	<u>B-V</u>	<u>11/29/17</u>	<u>825</u>	<u>2708B60</u>	<u>7/19</u>	<u>7.0</u>	<u>7.0</u>	<u>-26.5</u>	<u>P</u> F	<u>L</u> F
Calibr.			<u>829</u>	<u>2710816</u>	<u>9/19</u>	<u>4.0</u>	<u>4.0</u>	<u>151.9</u>	<u>P</u> F	<u>L</u> F
Calibr.			<u>832</u>	<u>2706D31</u>	<u>12/18</u>	<u>10.0</u>	<u>9.98</u>	<u>-198.5</u>	<u>P</u> F	<u>L</u> F
ICV			<u>836</u>	<u>2708B60</u>	<u>7/19</u>	<u>7.0</u>	<u>7.03</u>	<u>-26.3</u>	<u>P</u> F	<u>L</u> F
CCV			<u>1443</u>	<u>2710816</u>	<u>9/19</u>	<u>4.0</u>	<u>4.01</u>	<u>150.7</u>	<u>P</u> F	<u>L</u> F
CCV									P / F	L / F

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 _____, slope from 4 to 7 _____ (both must be between 165 and 180 mV)

Is meter equipped with depth sensor? Yes / No If yes, list date of last quarterly depth verification 10/17

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>B-V</u>	<u>11/29/17</u>	<u>839</u>	<u>0.00</u>	<u>0.30</u>	<u>P</u> F	<u>L</u> F

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

COMMENTS:

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

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

Meter YSI #3 RQ- 2017-11-27-18 Project Hawthorne LKS

- Notes: (1) Numbers ≤ 4 , are rounded down; numbers ≥ 5 are rounded up (e.g., 5.15 becomes 5.2).
 (2) Always wait for meter to stabilize before recording any readings.
 (3) For Calibrations, record calibrated meter reading. Do not record initial meter reading before calibration.

Circle/Fill In: Lab Calibration or Calibration/Verification on Site

Temperature (Quarterly) FT 1400

Date of Last Temperature Verification

10/10/17

DO FDEP SOP FT 1500	Name	Date	Time CT-ET	Temp	D.O. Chart mg/L	Meter D.O. mg/L	% DO	Probe Charge	Probe Gain	Pass / Fail	Lab / Field
Calibr.	P O'Connor	11-29-17	0728	22.5	8.64	8.64	100.0	49.2	0.84154	P	L
ICV	L	L	0733	22.7	8.62	8.60	99.7	48.2	0.84154	P	L
CCV	A Kalmbacher	11-29-17	1755	22.6	8.64	8.43	97.7	47.1	0.84154	P	L
CCV											

Report DO mg/L with one decimal figure and DO % saturation as a whole number with no decimals.

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; 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	11-29-17	0753	170720A	08-2018	1000	1000	P	L
ICV	L	L	0755	170720B	08-2018	100	101	P	L
CCV	A Kalmbacher	11-29-17	1758	170720A	8/2018	1,000	998	P	L
CCV									

Report specific conductance as a whole number with no decimal figure.

Conductivity Acceptance criteria $\pm 5\%$

pH FDEP SOP FT 1100	Name	Date	Time CT-ET	Lot #	Expir. Date	pH Buffer SU	Meter reading SU	mV	Pass / Fail	Lab / Field
Calibr.	P O'Connor	11-29-17	0735	2708B60	07-2019	7.0	7.00	-10.6	PASS	CAB
Calibr.	L	L	0740	2710816	09-2019	4.0	4.00	165.3	PASS	CAB
Calibr.	L	L	0745	2706031	12-2018	10.0	10.00	-189.5	PASS	CAB
ICV	L	L	0748	2708B60	07-2019	7.0	7.05	-12.6	PASS	CAB
CCV	A Kalmbacher	11-29-17	1800	2708360	02-2019	7.0	7.04			
CCV										

Report pH with one decimal place; pH Acceptance criteria ± 0.2 SU;

mV pH7 Range 0 $\pm$ 50;

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

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

Slope from 7 to 10 and 4 to 7 must be between 165 and 180 mV

Depth (Quarterly)

Date of Last Depth Verification

10/10/2017

Depth Sensor (Daily)	Name	Date	Time CT-ET	Zero the Sensor	ICV Value	Pass / Fail	Lab / Field
Pressure mode in air	P O'Connor	11/29/17	0750	0.000	0.020	P	CAB

ICV acceptance criteria $\pm 5\%$ or ± 0.05 m, whichever is greater

NE 12/21/17