

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- 2016-09-05-20 Project Hawthorne Lakes

- 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 Lab

Temperature (Quarterly) FT 1400

Date of Last Temperature Verification 03/04/2016 7/18/2016

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>AKalmbacher</u>	<u>9/6/16</u>	<u>0740</u>	<u>21.92</u>	<u>8.57</u>	<u>8.59</u>	<u>100%</u>	<u>55.3</u>	<u>0.946</u>	<u>P</u>	<u>L</u>
ICV	<u>B. Davis</u>	<u>9/6/16</u>	<u>1529</u>	<u>27.5</u>	<u>7.89</u>	<u>7.65</u>	<u>96.9%</u>	<u>60.4</u>	<u>0.946</u>	<u>P</u>	<u>L</u>
CCV											
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 hos/cm	Meter Reading μ hos/cm	Pass / Fail	Lab / Field
Calibr.			<u>756</u>						
ICV	<u>AKalmbacher</u>	<u>9/6/16</u>	<u>856</u>	<u>160616A</u>	<u>6/17</u>	<u>1000</u>	<u>1022</u>	<u>P</u>	<u>L</u>
CCV	<u>B. Davis</u>	<u>9/6/16</u>	<u>1531</u>	<u>151113A</u>	<u>11/16</u>	<u>100</u>	<u>101</u>	<u>P</u>	<u>L</u>
CCV									

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

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>7.0</u>				
Calibr.						<u>4.0</u>				
Calibr.						<u>10.0</u>				
ICV	<u>AKalmbacher</u>	<u>9/6/16</u>	<u>800</u>	<u>2606104</u>	<u>6/18</u>	<u>7.0</u>	<u>7.04</u>	<u>-15.2</u>	<u>P</u>	<u>L</u>
CCV	<u>B. Davis</u>	<u>9/6/16</u>	<u>1533</u>	<u>2602556</u>	<u>1/18</u>	<u>4.0</u>	<u>3.97</u>	<u>166.1</u>	<u>P</u>	<u>L</u>
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 180mV

Depth (Quarterly)

Date of Last Depth Verification

Depth Sensor (Daily)	Name	Date	Time CT-ET	Zero the Sensor	ICV Value	Pass/ Fail	Lab/ Field
Pressure mode in air	<u>AKalmbacher</u>	<u>9/6/2016</u>		<u>0.000</u>			

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

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

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Meter **DEP143734**

RQ- **2016-09-05-18**

Project **Ref Lake LVS**

& Lake Superior

- 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 **LAB**

Temperature (Quarterly) FT 1400

Date of Last Temperature Verification **03/04/2016 07/2016**

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.	PO Connor	09/06/16	0715	23.0	8.57	8.56	100.0	—	—	Pass	LAB
ICV	↓	↓	0720	23.1	8.56	8.54	99.9	—	—	Pass	LAB
CCV	PO Connor	09/06/16	1555	25.6	8.17	8.10	—	—	—	—	—
CCV	PO Connor	09/06/16	1610	25.8	8.14	8.03	98.9	—	—	Pass	LAB

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.

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.	PO Connor	09/06/16	0722	160616A	06/2017	1000	1000	Pass	LAB
ICV	↓	↓	0724	15115A	11/2016	100	99	Pass	LAB
CCV	PO Connor	09/06/16	1610	160616A	06/2017	1000	997	Pass	LAB
CCV									

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

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.	PO Connor	09/06/16	0725	2606E04	06/2018	7.0	7.00	—	Pass	LAB
Calibr.	↓	↓	0730	2402556	04/2018	4.0	4.00	—	Pass	LAB
Calibr. ICV	↓	↓	0735	2510A88	04/2017	10.0	9.85	—	Pass	LAB
CCV	PO Connor	09/06/16	1615	2606E04	06/2018	7.00	7.06	—	Pass	LAB
CCV										
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 **W 17**

Depth Sensor (Daily)	Name	Date	Time CT-ET	Zero the Sensor	ICV Value	Pass / Fail	Lab / Field
Pressure mode				0.000			
In air							

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