

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

Only "X" marks
on this page are
qualified data on
this page

Meter ID: Bu 7

RQ: 2018-10-15-05

Project: CQA mPA

- 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 6/19/18

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>Gary Smard</u>	<u>10/25/18</u>	<u>715</u>	<u>25.1</u>	<u>766</u>	<u>8.25</u>	<u>8.25</u>	<u>100.1</u>	<u>125.5</u>		<u>P/F</u>	<u>L/F</u>
ICV	<u>"</u>	<u>10/25/18</u>	<u>720</u>	<u>25.1</u>	<u>760</u>	<u>8.25</u>	<u>8.27</u>	<u>100.3</u>			<u>P/F</u>	<u>L/F</u>
CCV	<u>Gary Smard</u>	<u>10/30/18</u>	<u>1310</u>	<u>25.5</u>	<u>760</u>	<u>8.19</u>	<u>8.19</u>				<u>P/F</u>	<u>L/F</u>
CCV	<u>S. COFOR</u>	<u>10/31/18</u>	<u>0648</u>	<u>25.08</u>	<u>760</u>	<u>8.25</u>					<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 hos/cm	Meter Reading μ hos/cm	Pass / Fail	Lab / Field
Calibr.	<u>Gary Smard</u>	<u>10/25/18</u>	<u>722</u>	<u>1803220</u>	<u>06/19</u>	<u>10,000</u>	<u>10,000</u>	<u>P/F</u>	<u>L/F</u>
ICV	<u>"</u>	<u>10/25/18</u>	<u>730</u>	<u>1804220</u>	<u>04/10</u>	<u>500</u>	<u>4.99</u>	<u>P/F</u>	<u>L/F</u>
CCV	<u>S. COFOR</u>	<u>10/31/18</u>	<u>1632</u>	<u>2711227</u>	<u>11/19</u>	<u>50,000</u>	<u>99,880</u>	<u>P/F</u>	<u>L/F</u>
CCV								<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>Gary Smard</u>	<u>10/25/18</u>	<u>755</u>	<u>181455</u>	<u>03/20</u>	<u>6.917</u>	<u>25.12</u>	<u>7.00</u>	<u>286</u>	<u>P/F</u>	<u>L/F</u>
Calibr.	<u>"</u>		<u>758</u>	<u>183418</u>	<u>7/20</u>	<u>4.91</u>	<u>25.16</u>	<u>4.99</u>	<u>156.1</u>	<u>P/F</u>	<u>L/F</u>
Calibr.	<u>"</u>		<u>820</u>	<u>183381</u>	<u>5/20</u>	<u>10.01</u>	<u>25.1</u>	<u>10.0</u>	<u>192.8</u>	<u>P/F</u>	<u>L/F</u>
ICV	<u>"</u>		<u>825</u>	<u>183418</u>	<u>7/20</u>	<u>4.01</u>	<u>25.19</u>	<u>3.93</u>	<u>159.2</u>	<u>P/F</u>	<u>L/F</u>
CCV	<u>S. COFOR</u>	<u>10/31/18</u>	<u>1639</u>	<u>183381</u>	<u>5/20</u>	<u>10.0</u>	<u>24.88</u>	<u>9.90</u>	<u>197.7</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 _____, 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: _____

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>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:

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:

17

Project:

CD

- 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 8/19/18

DO DEP SOP FT 1500	Name	Date	Time (ET)	Temp. (°C)	D.O. Chart mg/L	Meter D.O. mg/L	% DO	Probe Charge	Probe Gain	Pass / Fail	Lab / Field
Calibr.	S. COFONE	10/25/18	0745	25.52	8.76	8.19	99.9			P F	L F
ICV	"	"	0747	25.37	8.22	8.22	100			P F	L F
CCV	Gray Snork	10/30/18	1610	25.61	8.17	8.14	99.7			P F	L F
CCV										P F	L F

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 (ET)	Lot #	Expir. Date	Standard μ mhos/cm	Meter Reading μ mhos/cm	Pass / Fail	Lab / Field
Calibr.	S. COFONE	10/25/18	0752	180522B	6/19	10,000	10,000	P F	L F
ICV	"	"	0756	280410	4/20	500	500	P F	L F
CCV	Gray Snork	10/30/18	1620	2711627	11/19	50,000	50,015	P F	L F
CCV								P F	L F

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

Conductivity Acceptance criteria $\pm 5\%$

pH DEP SOP FT 1100	Name	Date	Time (ET)	Lot #	Expir. Date	pH Buffer SU	Meter reading SU	mV	Pass / Fail	Lab / Field
Calibr.	S. COFONE	10/25/18	0810	181455	3/20	7.0	7.0	121.0	P F	L F
Calibr.	"	"	0815	183248	7/20	4.0	4.0	121.0	P F	L F
Calibr.	"	"	0820	183381	5/20	10.0	10.0	207.9	P F	L F
ICV	"	"	0825	183218	7/20	4.0	4.0	130.0	P F	L F
CCV	Gray Snork	10/30/18	1625	183381	5/20	10.0	10.20	215.2	P F	L F
CCV									P F	L F

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

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

Notes:

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)

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

Meter ID: 2245

RQ: 2018-10-15-05

Project: CM

- 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 10/11/18

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.	S. Cooper	10/30/18	0700	24.66	760	8.32	8.32	100.0	56.3		☒ F	☒ F
ICV	"	"	0702	24.58	760	8.32	8.33	100.0	56.3		☒ F	☒ F
CCV	S. Cooper	10/30/18	1325	23.65	760	8.48	8.50	100.5	56.3		☒ F	☒ 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 hos/cm	Meter Reading μ hos/cm	Pass / Fail	Lab / Field
Calibr.	S. Cooper	10/30/18	0705	280343	3/24	1000	1000	☒ F	☒ F
ICV	"	"	0707	180522	6/19	1000	1002	☒ F	☒ F
CCV	S. Cooper	10/30/18	1328	1805208	6/19	10,000	10051	☒ F	☒ 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.	S. Cooper	10/30/18	0708	181455	3/24	6.99	25.24	6.99	-19.2	P / F	L / F
Calibr.	"	"	0710	183218	7/20	4.00	25.46	4.00	152.1	☒ F	☒ F
Calibr.	"	"	0712	183381	5/20	10.00	25.51	10.00	-192.0	☒ F	☒ F
ICV	"	"	0714	183218	7/20	4.00	25.88	3.95	154.6	☒ F	☒ F
CCV	S. Cooper	10/30/18	1330	183381	7/20	10.00	25.13	10.00	-195.4	☒ F	☒ 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)

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: _____

If NO, what will be used? (circle one) Secchi Disk Line / Sonar Unique ID: DOOPER 3000 Date of last verification: 8/20/18

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 / 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: