

LIBRATION AND VERIFICATION LOG (DEP SOP FT 1000-FT 1500, FD 1000-FD 4000)

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

Meter ID: Scud Bucket

RQ: 06

Project: HAB

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 3/5/21

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>Liz Bates</u>	<u>6/3/21</u>	<u>8:20</u>	<u>24.1</u>	<u>75.7</u>	<u>8.3</u>	<u>8.35</u>	<u>99.5</u>	<u>/</u>	<u>1.049908</u>	<u>P</u> / <u>F</u>	<u>L</u> / <u>F</u>
ICV	<u>1</u>	<u>1</u>	<u>1</u>	<u>24.2</u>	<u>75.7</u>	<u>8.3</u>	<u>8.34</u>	<u>99.5</u>	<u>/</u>	<u>/</u>	<u>P</u> / <u>F</u>	<u>L</u> / <u>F</u>
CCV	<u>1</u>	<u>1</u>	<u>14:33</u>	<u>26.6</u>	<u>75.2</u>	<u>8.0</u>	<u>8.11</u>	<u>101.1</u>	<u>/</u>	<u>/</u>	<u>P</u> / <u>F</u>	<u>L</u> / <u>F</u>
CCV											<u>P</u> / <u>F</u>	<u>L</u> / <u>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>Liz Bates</u>	<u>6/3/21</u>	<u>8:25</u>	<u>201026A</u>	<u>11/21</u>	<u>1000</u>	<u>1000</u>	<u>P</u> / <u>F</u>	<u>L</u> / <u>F</u>
ICV	<u>1</u>	<u>1</u>	<u>1</u>	<u>210271A</u>	<u>02/22</u>	<u>100</u>	<u>104.3</u>	<u>P</u> / <u>F</u>	<u>L</u> / <u>F</u>
CCV	<u>Liz Bates</u>	<u>1</u>	<u>14:35</u>	<u>210271A</u>	<u>02/22</u>	<u>100</u>	<u>102.9</u>	<u>P</u> / <u>F</u>	<u>L</u> / <u>F</u>
CCV								<u>P</u> / <u>F</u>	<u>L</u> / <u>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>Liz Bates</u>	<u>6/3/21</u>	<u>8:30</u>			<u>7.00</u>	<u>24.3</u>	<u>7.00</u>	<u>-380.1</u>	<u>P</u> / <u>F</u>	<u>L</u> / <u>F</u>
Calibr.						<u>4.00</u>	<u>24.4</u>	<u>4.00</u>	<u>-253.8</u>	<u>P</u> / <u>F</u>	<u>L</u> / <u>F</u>
Calibr.						<u>10.01</u>	<u>24.4</u>	<u>10.01</u>	<u>-494.0</u>	<u>P</u> / <u>F</u>	<u>L</u> / <u>F</u>
ICV										<u>P</u> / <u>F</u>	<u>L</u> / <u>F</u>
CCV										<u>P</u> / <u>F</u>	<u>L</u> / <u>F</u>
CCV										<u>P</u> / <u>F</u>	<u>L</u> / <u>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) mV off

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: 3/5/21

If NO, what will be used? (circle one) Secchi Disk Line / Sonar Unique ID: Knothead Date of last verification: 12/4/20

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>Liz Bates</u>	<u>6/3/21</u>	<u>9:15</u>	<u>0.272</u>	<u>0.272</u>	<u>P</u> / <u>F</u>	<u>L</u> / <u>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:

Failed calibration pH initially, passed 2nd time but
mV very wrong →

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:

Sand Bucket

RQ-

2021-06-07-

Project:

SHAB

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.		6/3/21									P / F	L / F
ICV											P / F	L / F
CCV											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 hos/cm	Meter Reading μ hos/cm	Pass / Fail	Lab / Field
Calibr.		6/3/21						P / F	L / F
ICV								P / F	L / F
CCV								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.	W2Bates	6/3/21	9:00	202114	05/22	7.00	24.2	7.00	-364.8	P / F	L / F
Calibr.			1	205283	10/22	4.00	24.5	4.00	-244.4	P / F	L / F
Calibr.				203539	06/22	10.01	24.5	10.01	-467.0	P / F	L / F
ICV				203539	06/22	10.01	24.4	10.01	-467.0	P / F	L / F
CCV				205283	10/22	4.00	24.3	6.00	-324.9	P / F	L / F
CCV										P / F	L / F

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

mV pH 4 Range +180 ± 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	W2Bates	6/3/21	9:15	0.272	0.272	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:

← MW OKF.

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: 20D102974

RQ: 2021-05-03-14

Project: SMP

- 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 06/01/2021

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.	Leif Boman	06/03/21	8:25	24.6	759.5	8.3	8.29	99.9	/	1.06/9	P/F	D/F
ICV				24.9	759.4	8.3	8.28	99.9	/	/	P/F	D/F
CCV			16:00	28.4	758.2	7.8	7.79	100.5	/	/	P/F	D/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.	Leif Boman	06/03/21	8:25	201026A	11/21	1000	1000	P/F	D/F
ICV				20210127A	02/22	100	104.2	P/F	D/F
CCV			16:00	210127A	02/22	100	104.8	P/F	D/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.	Leif Boman	06/03/21	8:25	202114	05/22	7.00	24.4	7.00	-25.0	P/F	D/F
Calibr.				205283	10/22	4.00	24.5	4.00	151.8	P/F	D/F
Calibr.				203539	06/22	10.00	24.5	10.00	-202.8	P/F	D/F
ICV				203539	06/22	10.00	24.5	10.00	-202.5	P/F	D/F
CCV			16:00	205283	10/22	4.00	24.5	4.00	148.7	P/F	D/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 10 177.8, slope from 4 to 7 176.8 (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: 12/04/20

If NO, what will be used? (circle one) Secchi Disk Line / Sonar Unique ID: crvsty; Date of last verification: 12/04/20

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: