SEA-BIRD ELECTRONICS, INC.

13431 NE 20th Street, Bellevue, Washington, 98005-2010 USA

Phone: (425) 643 - 9866 Fax (425) 643 - 9954 Email: seabird@seabird.com

SENSOR SERIAL NUMBER: 0039
CALIBRATION DATE: 15-Mar-11

WEBB GLIDER CONDUCTIVITY CALIBRATION DATA
PSS 1978: C(35,15,0) = 4.2914 Siemens/meter

COEFFICIENTS:

g = −9.882026e−001
h = 1.441406e−001
i = −3.547699e−004
j = 4.605701e−005

CPcor = −9.5700e−008
CTcor = 3.2500e−006
WBOTC = −6.3508e−007

BATH TEMP (ITS-90)	BATH SAL (PSU)	BATH COND (Siemens/m)	INST FREQ (Hz)	INST COND (Siemens/m)	RESIDUAL (Siemens/m)
22.0000	0.0000	0.00000	2623.97	0.00000	0.00000
1.0000	34.8640	2.97965	5257.49	2.97964	−0.00001
4.5000	34.8433	3.28702	5456.85	3.28703	0.00001
15.0000	34.8002	4.26985	6049.57	4.26984	−0.00001
18.5000	34.7911	4.61539	6244.34	4.61539	0.00000
24.0000	34.7814	5.17401	6546.64	5.17401	−0.00000
29.0000	34.7761	5.69647	6816.92	5.69648	0.00001
32.5000	34.7726	6.06923	7003.17	6.06923	−0.00000

f = INST FREQ * sqrt(1.0 + WBOTC * t) / 1000.0

Conductivity = $(g + hf^2 + if^3 + jf^4) / (1 + \delta t + \epsilon p)$ Siemens/meter

t = temperature[°C)]; p = pressure[decibars]; δ = CTcor; ϵ = CPcor;

Residual = instrument conductivity - bath conductivity
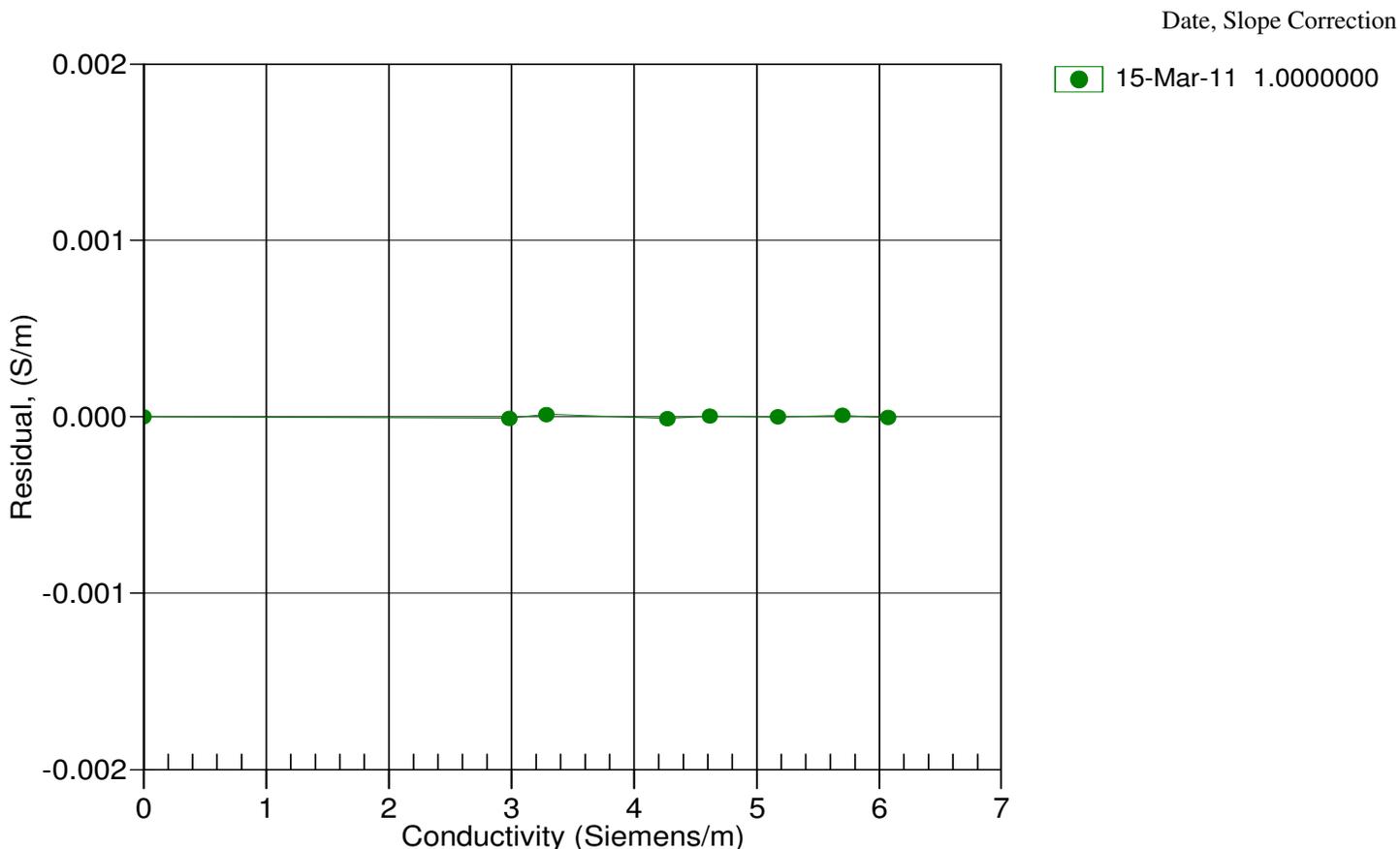
Date, Slope Correction

15-Mar-11 1.0000000

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SENSOR SERIAL NUMBER: 0039
CALIBRATION DATE: 11-Mar-11

WEBB GLIDER PRESSURE CALIBRATION DATA
508 psia S/N 5631

COEFFICIENTS:

PA0 =	1.037910e-002	PTCA0 =	5.091686e+001
PA1 =	2.445066e-002	PTCA1 =	2.182167e-001
PA2 =	1.595721e-009	PTCA2 =	-8.563787e-003
PTHA0 =	-8.438315e+001	PTCB0 =	2.511137e+001
PTHA1 =	4.736149e-002	PTCB1 =	-9.250000e-004
PTHA2 =	-3.880209e-007	PTCB2 =	0.000000e+000

PRESSURE SPAN CALIBRATION

PRESSURE PSIA	INST OUTPUT	THERMISTOR OUTPUT	COMPUTED PRESSURE	ERROR %FSR
14.67	651.0	2319.0	14.69	0.00
104.93	4335.6	2320.0	104.88	-0.01
204.93	8419.7	2319.0	204.91	-0.00
304.95	12501.5	2319.0	304.93	-0.00
404.94	16580.2	2320.0	404.94	-0.00
504.95	20656.4	2321.0	504.93	-0.00
404.93	16581.1	2320.0	404.96	0.01
304.93	12502.2	2320.0	304.95	0.00
204.93	8421.3	2319.0	204.95	0.00
104.94	4337.6	2319.0	104.93	-0.00
14.67	651.0	2319.0	14.69	0.00

THERMAL CORRECTION

TEMP ITS90	PRESS TEMP	INST OUTPUT
32.50	2520.00	669.94
29.00	2442.90	671.05
24.00	2332.80	672.28
18.50	2212.50	672.96
15.00	2135.70	673.33
4.50	1906.80	672.61
1.00	1830.00	672.21

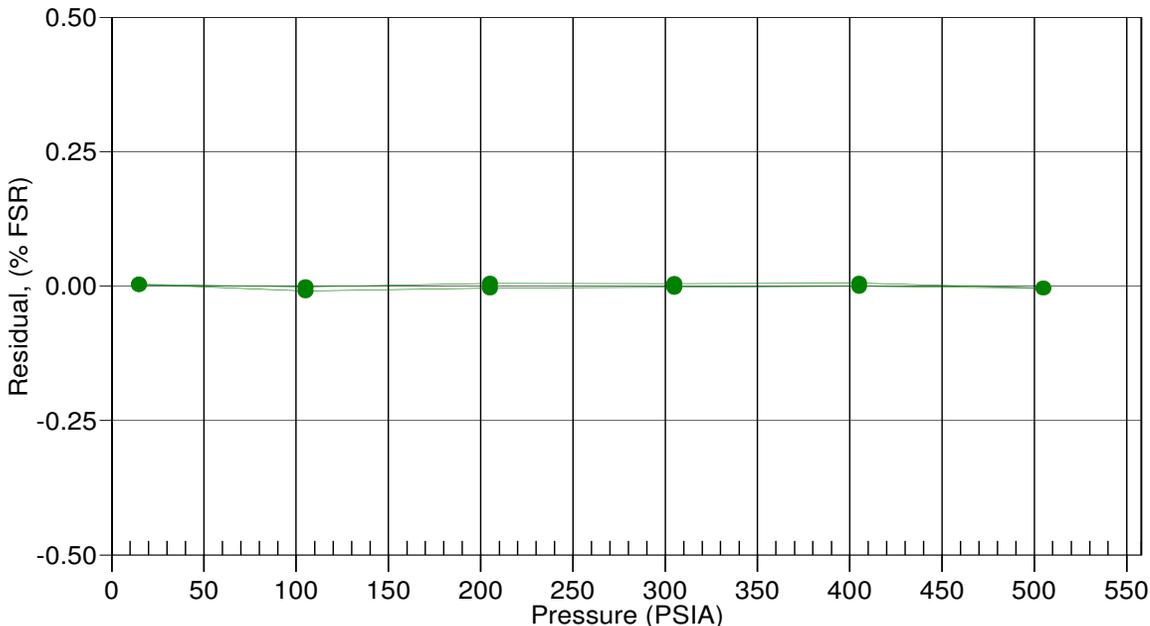| TEMP(ITS90)	SPAN(mV)
-5.00	25.12
35.00	25.08

y = thermistor output; $t = PTEMPA0 + PTEMPA1 * y + PTEMPA2 * y^2$

x = pressure output - PTCA0 - PTCA1 * t - PTCA2 * t^2

$n = x * PTCB0 / (PTCB0 + PTCB1 * t + PTCB2 * t^2)$

pressure (psia) = PA0 + PA1 * n + PA2 * n^2

Date, Avg Delta P %FS

● 11-Mar-11   0.00

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WEBB GLIDER TEMPERATURE CALIBRATION DATA
ITS-90 TEMPERATURE SCALE

ITS-90 COEFFICIENTS
a0 = −1.429462e−004
a1 = 3.053769e−004
a2 = −4.597241e−006
a3 = 2.154505e−007

BATH TEMP (ITS-90)	INSTRUMENT OUTPUT	INST TEMP (ITS-90)	RESIDUAL (ITS-90)
1.0000	672550.8	1.0000	0.0000
4.5000	576315.5	4.5000	−0.0000
15.0000	369588.2	15.0000	0.0000
18.5000	320651.0	18.5000	0.0000
24.0000	258000.4	23.9999	−0.0001
29.0000	212993.7	29.0000	0.0000
32.5000	186853.3	32.5000	−0.0000

Temperature ITS-90 = $1/\{a0 + a1[ln(n)] + a2[ln^2(n)] + a3[ln^3(n)]\} - 273.15$ (°C)

Residual = instrument temperature - bath temperature

Date, Delta T (mdeg C)

15-Mar-11   0.00