SEA-BIRD ELECTRONICS, INC.
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Phone: (425) 643-9866 Fax: (425) 643-9954 www.seabird.com

Conductivity Calibration Report

Customer:	Woods Hole Oceangraphic Institution		
Job Number:	51761	**Date of Report:**	9/24/2008
Model Number	SBE 04	**Serial Number:**	042707

Conductivity sensors are normally calibrated 'as received', without cleaning or adjustments, allowing a determination of sensor drift. If the calibration identifies a problem or indicates cell cleaning is necessary, then a second calibration is performed after work is completed. The 'as received' calibration is not performed if the sensor is damaged or non-functional, or by customer request.

An 'as received' calibration certificate is provided, listing the coefficients used to convert sensor frequency to conductivity. Users must choose whether the 'as received' calibration or the previous calibration better represents the sensor condition during deployment. In SEASOFT enter the chosen coefficients using the program SEACON. The coefficient 'slope' allows small corrections for drift between calibrations (consult the SEASOFT manual). Calibration coefficients obtained after a repair or cleaning apply only to subsequent data.

'AS RECEIVED CALIBRATION' ☑ Performed ☐ Not Performed

Date: 9/24/2008 Drift since last cal: 0.0000 PSU/month*

Comments:

'CALIBRATION AFTER CLEANING & REPLATINIZING' ☐ Performed ☑ Not Performed

Date: Drift since Last cal: PSU/month*

Comments:

**Measured at 3.0 S/m*

Cell cleaning and electrode replatinizing tend to 'reset' the conductivity sensor to its original condition. Lack of drift in post-cleaning-calibration indicates geometric stability of the cell and electrical stability of the sensor circuit.

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SENSOR SERIAL NUMBER: 2707
CALIBRATION DATE: 24-Sep-08

SBE4 CONDUCTIVITY CALIBRATION DATA
PSS 1978: C(35,15,0) = 4.2914 Seimens/meter

GHIJ COEFFICIENTS

```
g = -1.07240735e+001
h =  1.55862776e+000
i = -1.08232113e-003
j =  1.68742220e-004
CPcor = -9.5700e-008 (nominal)
CTcor =  3.2500e-006 (nominal)
```

ABCDM COEFFICIENTS

```
a =  8.58544215e-006
b =  1.55620891e+000
c = -1.07200982e+001
d = -8.71663242e-005
m =  5.0
CPcor = -9.5700e-008 (nominal)
```

BATH TEMP (ITS-90)	BATH SAL (PSU)	BATH COND (Siemens/m)	INST FREO (kHz)	INST COND (Siemens/m)	RESIDUAL (Siemens/m)
0.0000	0.0000	0.00000	2.62448	0.00000	0.00000
-0.9941	34.8924	2.81063	4.99320	2.81059	-0.00004
1.0194	34.8919	2.98349	5.10308	2.98354	0.00004
14.9999	34.8930	4.28001	5.86125	4.28005	0.00003
18.4999	34.8929	4.62742	6.04813	4.62739	-0.00003
29.0000	34.8898	5.71300	6.59789	5.71298	-0.00002
32.4999	34.8831	6.08631	6.77655	6.08632	0.00001

Conductivity = $(g + hf^2 + if^3 + jf^4) / 10(1 + \delta t + \varepsilon p)$ Siemens/meter

Conductivity = $(af^m + bf^2 + c + dt) / [10 (1 + \varepsilon p)$ Siemens/meter

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

Residual = (instrument conductivity - bath conductivity) using g, h, i, j coefficients