

**CTD Processing Notes**  
**Fr 08/90**  
**D.J. Vaudrey**

**General.**

Research cruise Fr08/90 was primarily a study of the inorganic and organic carbon cycles in equatorial waters. The majority of the sampling was carried out north of the New Britain New Ireland Archipelago. The majority of the stations were carried out to only 300 decibars pressure.

CTD Unit 1 was used in conjunction with the pH sensor, the SeaTech Fluorometer and the LiCor Light sensor interfaced with the 16 channel A/D digitizer. Problems with the LiCor light sensor caused excessive loading of the CTD 12 volt supply and excessive switching noise occurred from the inverters caused very noisy data when both the pH and light sensors were connected simultaneously. These sensors were never used simultaneously to alleviate the problem. This problem was evident on stations 5 and 6. Towards the end of the cruise the noise problem again appeared with noisy data on stations 67 and 69. (Station 67 had an offset in salinity of about 0.300psu occurring at 244 decibars. The upcast values for these also exhibited data inconsistent with the sample bottle data.)

A total of 286 samples were drawn for salinity analyses. Of these only 178 were able to be used. Of the rejects all but 12 were rejected automatically for a) gradients too steep, b) too great a pressure range within the sample burst. Out of the 71 stations only 32 stations had salinity samples available for calibration purposes. Because of the spread of samples across a few stations within the cruise the calibration was applied as a cruise wide mean Cell Factor across all stations.

**Station List.**

- 5. Noisy data in downcast. Poor averaged data. Many gaps in 2 decibar averages.
- 6. Noisy data in downcast. Poor averaged data. Many gaps in 2 decibar averages.
- 67. Noisy data. Poor quality data. Probable fault with A/D digitizer causing data interruption.
- 69. Noisy data. Poor quality data. Probable fault with A/D digitizer causing data interruption.

**Calibration Information.**

Temperature Coefficients (Determined in tank tests 20 Feb 1990)  
Temperature Bias = 1.0001  
Temperature Offset = 9.9899E-04oC

Conductivity (Cell Factors)  
Mean cell factor applied to all stations 1.00072

Standard Deviation = 0.00008  
Equivalent S.D Salinity = 0.0036psu

Pressure Offsets.

# 001	Offset = -3.00	# 002	Offset = -2.00
# 003	Offset = -2.30	# 004	Offset = -3.10
# 005	Offset = -3.70	# 006	Offset = -2.60
# 007	Offset = -2.60	# 008	Offset = -2.20
# 009	Offset = -2.90	# 010	Offset = -3.00
# 011	Offset = -2.80	# 012	Offset = -2.60
# 013	Offset = -3.00	# 014	Offset = -3.10
# 015	Offset = -2.30	# 016	Offset = -3.20
# 017	Offset = -2.50	# 018	Offset = -3.10
# 019	Offset = -2.50	# 020	Offset = -2.00
# 021	Offset = -2.50	# 022	Offset = -2.70
# 023	Offset = -2.10	# 024	Offset = -1.30
# 025	Offset = -3.60	# 026	Offset = -1.60
# 027	Offset = -2.90	# 028	Offset = -2.40
# 029	Offset = -2.70	# 030	Offset = -2.70
# 031	Offset = -2.30	# 032	Offset = -2.40
# 033	Offset = -2.40	# 034	Offset = -2.40
# 035	Offset = -2.40	# 036	Offset = -2.70
# 037	Offset = -2.60	# 038	Offset = -2.50
# 039	Offset = -2.60	# 040	Offset = -2.70
# 041	Offset = -0.90	# 042	Offset = -2.20
# 043	Offset = -1.80	# 044	Offset = -2.70
# 045	Offset = -2.90	# 046	Offset = -2.80
# 047	Offset = -2.60	# 048	Offset = -2.70
# 049	Offset = -2.70	# 050	Offset = -2.40
# 051	Offset = -2.80	# 052	Offset = -2.60
# 053	Offset = -5.50	# 054	Offset = -2.80
# 055	Offset = -2.40	# 056	Offset = -2.50
# 057	Offset = -2.50	# 058	Offset = -2.60
# 059	Offset = -2.60	# 060	Offset = -1.20
# 061	Offset = -1.60	# 063	Offset = -2.80
# 064	Offset = -2.20	# 065	Offset = -2.50
# 066	Offset = -2.40	# 067	Offset = -2.90
# 068	Offset = -2.30	# 069	Offset = -2.70
# 070	Offset = -2.30	# 071	Offset = -2.40