Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
001	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	112			LINE I, STA 1

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date Day	Mo.	Yr. (JD = 217)	Time GMT Hr.	Time GMT Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
001	51	31.44	N	179 08.66	W	05	AUG	91	04	30	100.0	100.0	04	34	100	16	8	-	4	1135	001

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 217/0400
at Surface 0400
Start Down 0402
at Bottom 042938
Start Up 043030
at Surface
Data off 0431

Data Location
Tape/Diskette I.D.
File Name/Header: MF9109_C001S_ 05AUG0401 (1232, 1132)

Remarks SHALLOW CAST
1132m WIRE OUT

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot.Data Therm-P	Sample Bot.Data Avg Tw	Sample Bot.Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1																			1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8	2	/	10		044940					9.198	8.207	34.054	32.495			32.500	32		8
9																			9
10																			10
11																			11
12																			12

Initials WF/CD
✓ _____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
002	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	115			002

Consec. Cast #	Latitude Deg.	Min.	N or S	Longitude Deg.	E or W	Date JD = 217 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
002	51	30.29	N	179	36.2 W	05	AUG	91	06	24	09.8	09.8	03	34	15	017	8		5		1204	002

CTD

Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time

Data on 217
at Surface 0553
Start Down 0554
at Bottom 0624
Start Up 0624
at Surface
Data off 0552

Data Location

Tape/Diskette I.D.	File Name/Header
	MF9109 C0025
	05AUG-0541

Remarks SHALLOW CAST

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Temp.	Cond.	Other	Conv. Mon. Values-CTD Press.	Temp.	Cond.	Sal.	Sample Bot. Data Therm-P	Avg Tw	Sal.	Sal. Bot. #	Other Samp.	Pos.
1																			1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8		B	1171	062545	063045					1167.712	2.832	31.508	34.364	1349	2.93	34.381	15		8
9																			9
10																			10
11																			11
12																			12

Initials WF/CD

✓

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
003	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	118			003

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb 1002.3	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
003	51	30.08	N	179 35.51	W	05	AUG	91	08	34	9.1	9.1	02	3	3	160	08	8-4		1116	3

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on ____
at Surface ____
Start Down ____
at Bottom 0834
Start Up ____
at Surface ____
Data off ____

Data Location
Tape/Diskette I.D. ____
File Name/Header MF9109_C003_S
05 AUG 0803

Remarks 7/1108

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Temp.	Cond.	Other	Conv. Mon. Values-CTD Press.	Temp.	Cond.	Sal.	Sample Bot.Data Therm-P	Avg Tw	Sal.	Sal. Bot. #	Other Samp.	Pos.
1	2		10		0855					10.218	6.038	33.016	32.642			33.031	18		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials LL
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
004	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	120			004

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb 1002.2	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
004	51	29.67	N	179 48.06	W	05	AUG	91	10	12	9.1	9.1	02	3	3	170	10	8	-	4	529	

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 0953
at Surface
Start Down 0957
at Bottom 1012
Start Up
at Surface
Data off

Data Location

Tape/Diskette I.D.	File Name/Header
	MF91096C004-S
	05AUG 0953

Remarks w/o 516 m — CTD banged down on deck pretty hard.

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot.Data Therm-P	Sample Bot.Data Avg Tw	Sample Bot.Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	38	B		101400	101910					499.780	3.629	31.590	33.974			DID NOT TRIP			1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials ____
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
005	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	122			005

Consec. Cast #	Latitude Deg.	Min.	N or S	Longitude Deg.	E or W	Date JD = 217 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb 1002.1	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
005	51	30.67	N	179 59.02	E	05	AUG	91	11	57	9.9	9.9	02	3	3	155	08	8	–	4	1078	005

CTD

Type & SN 91220-B

Press. SN 26072

Temp. SN 710

Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time

Data on ____

at Surface 1130

Start Down 1132

at Bottom 1159

Start Up ____

at Surface ____

Data off ____

Data Location

Tape/Diskette I.D.	File Name/Header
	MF9109 0058
	05 AUG 1130

Remarks w/o 1055

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot.Data Therm-P	Sample Bot.Data Avg Tw	Sample Bot.Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	38	B		1032	1204					1032.047	2.460	31.194	34.446	1204	2.45	34.472	19		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials ____

✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
006	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	124			006

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb 1001.5	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
006	51	27.99	N	179	52.52	E 05	AUG	91	13	18	9.0	9.0	02	3	3	175	10	8	-	4	312	006

CTD

Type & SN 91220-B

Press. SN 26072

Temp. SN 710

Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time

Data on ____

at Surface ____

Start Down ____

at Bottom 1318

Start Up ____

at Surface ____

Data off ____

Data Location

Tape/Diskette I.D.	File Name/Header
	MF9109-C0065
	05AUG 1307

Remarks w/o 293

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot.Data Therm-P	Sample Bot.Data Avg Tw	Sample Bot.Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	2			1320	1325					276.145	3.959	31.558	33.712			33.7737	04		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials ____

✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
007	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	130			CM-A

Consec. Cast #	Latitude Deg.	Min.	N or S	Longitude Deg.	E or W	Date JD = 217 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
007	51	29.83	N	179	58.34 E	05	AUG	91	20	17	09.0	09.0	04	3	3	12	04	8	4	1150	CMA

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on ____
at Surface ____
Start Down 1946
at Bottom 201708
Start Up 201735
at Surface ____
Data off ____

Data Location
Tape/Diskette I.D. ____
File Name/Header MF9169_C0075_05Aug1989 1153

Remarks @ MOORING A AMCHITKA PASS AFTER DEPLOYMENT 1345m

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Temp.	Cond.	Other	Conv. Mon. Values-CTD Press.	Temp.	Cond.	Sal.	Sample Bot. Data Therm-P	Avg Tw	Sal.	Sal. Bot. #	Other Samp.	Pos.
1	38	B	1300	201947	202505					1060.272	2.810	31.426	34.343	1269	2.79	34.348	02		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials WF
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
008	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	132			LINE I STA F

Consec. Cast #	Latitude Deg.	Min.	N or S	Longitude Deg.	E or W	Date JD = 217 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
008	51	27.93	N	179	39.91 E	05	AUG	91	22	54	09.8	09.7	043	3	0	80	06	8	-4	1	213	I F

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on
at Surface 2221
Start Down 2222
at Bottom 2254
Start Up 2255
at Surface 2319
Data off

Data Location
Tape/Diskette I.D.
File Name/Header: MF9109_C.008S_05AUG2220

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Temp.	Cond.	Other	Conv. Mon. Values-CTD Press.	Temp.	Cond.	Sal.	Sample Bot. Data Therm-P	Avg Tw	Sal.	Sal. Bot. #	Other Samp.	Pos.
1									Sal.										1
2																			2
3																			3
4	8		10m			12.412	5.885	32.607	33.125							33.116	35		4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials WF/CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
009	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	133			LINE I, STA G

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	Longitude	E or W	Date JD = 218 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
009	51	28.26	N	179	25.05	E	06	AUG	91	00	52	09.8	09.7	04	3	3	08	06	8	4	1320	IG

CTD

Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time

Data on ____
at Surface 002005
Start Down 002005
at Bottom 0052
Start Up 0052
at Surface ____
Data off ____

Data Location

Tape/Diskette I.D. ____

File Name/Header MF9109_C009S_06AUG003

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1		B	1185	005535						1194.861	2.910	31.536	34.302	1421	2.91	34.309	7		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials CD/WF

✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
010	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	138			LINE II STA A

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 218 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
010	51	10.32	N	179	10.67	E 06	AUG	91	04	29	11.7	11.4	04	3	3	210	05	8	-	4	1075	IIA

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on ____
at Surface 0402
Start Down 0404
at Bottom 0429
Start Up 0430
at Surface ____
Data off 0429

Data Location >1000 m

Tape/Diskette I.D.	File Name/Header
	MF9109_C0105
	06AUG0344

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot.Data Therm-P	Sample Bot.Data Avg Tw	Sample Bot.Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	2				0448					13.677	5.222	31.856	32.630			32.627	5		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials CDB/DF
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
011	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	140			II, B

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date Day	Mo.	Yr. (JD = 218)	Time GMT Hr.	Time GMT Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
011	51	04.74	N	179 11.13	E	06	AUG	91	06	15	11.7	11.7	04	43	V	AR	008	-	4	1908	II B

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on
at Surface
Start Down 05:42
at Bottom
Start Up
at Surface
Data off

Data Location
Tape/Diskette I.D.
File Name/Header: MF9109_C011S_06Aug 0535

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1																			1
2	0	B	1500	06:17.0	06:23.0					1495.679	2.231	31.241	34.508	1777	2.24	34.515	27		2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials WF/CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
012	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09				II, C

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	Longitude	E or W	Date Day	Date Mo.	Date Yr.	JD =	Time GMT Hr.	Time GMT Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
012	51	00.11	N	179	10.85	E	06	AUG	91	08	26	1200	119	05	1004.6	43	100	04	8	-	4	3141		II C

CTD

Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time

Data on ____
at Surface 0747
Start Down 0748
at Bottom ____
Start Up ____
at Surface ____
Data off ____

Data Location

Tape/Diskette I.D.	File Name/Header
	MF9109 C012S
	06AUG0731

Remarks

1528

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot.Data Therm-P	Sample Bot.Data Avg Tw	Sample Bot.Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	2		10							10.3	10.044	~~32.408~~	32.408			32.383	16		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials LL/PW

✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
0135	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	146			IID

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date Day	Mo.	Yr. (JD = 218)	Time GMT Hr.	Time GMT Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
013	50	50.21	N	179 11.96	E	06	AUG	91	11	33	12.2	12.0	05	4	3	110	06	8	-	4	4129	IID

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on ____
at Surface ____
Start Down ____
at Bottom 1133
Start Up ____
at Surface ____
Data off ____

Data Location
Tape/Diskette I.D. ____
File Name/Header MF9109 C0135 06AUG1053

Remarks MAX DEPTH = 1220 m
1286 620 NUTS

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot.Data Therm-P	Sample Bot.Data Avg Tw	Sample Bot.Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	17		1200							1200.148	2.436	31.258	34.462					421	1
2	1		1000							1003.269	2.685	31.345	34.407					422	2
3	6		800							800.650	3.014	31.482	34.332					423	3
4	24		600							598.299	3.305	31.576	34.244					424	4
5	8		400							407.898	3.570	31.605	34.102					425	5
6	16		200							200.761	4.010	31.736	33.911					426	6
7	23		100							98.896	4.212	31.611	33.610					427	7
8	11		50							50.363	4.222	31.129	33.088					428	8
9	18		25							24.424	5.502	31.939	32.739					429	9
10	19		0							1.448	10.792	/	32.323					430	10
11																			11
12																			12

Initials PWLL
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
013 D	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	146			II D

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date Day	Mo.	Yr.	JD = 218	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
013	50	49.03	N	179 12.06	E	06	AUG	91		14	26	12.1	12.0	054	4	3	120	08	8	-	4	4487	IID

CTD

Type & SN 92067

Press. SN 30066

Temp. SN 889

Cond. SN 529

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time

Data on ____

at Surface ____

Start Down ____

at Bottom 6:27

Start Up ____

at Surface ____

Data off ____

Data Location

Tape/Diskette I.D.	File Name/Header
	MF9109 C013D
	06AUG1236

Remarks DEEP CAST

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	6		4000							3999.700	1.464	31.652	34.662					431	1
2	518	5	3950	1431	1437					3954.314	1.462	31.635	34.662	3886	1.45	34.681	11	432	2
3	2		3900							3899.572	1.463	31.616	34.661					433	3
4	5	4	3500	1457	1502					3496.663	1.489	31.491	34.654	3349	1.54	34.673	14	434	4
5	10		3000							2998.271	1.556	31.356	34.641					435	5
6	3	3	2600	152320	1528					2599.355	1.635	31.259	34.625	2576	1.64	34.640	30	436	6
7	19		2200							2198.050	1.768	31.198	34.600					437	7
8	1	2	1800	154300	1548					1794.923	1.974	31.181	34.558	1778	1.98	34.571	29	438	8
9	4		1500							1498.987	2.175	31.200	34.516					439	9
10	11	1	1200							1198.542	2.446	31.259	34.455	1187	2.42	34.465	01	440	10
11																			11
12																			12

Initials ____

✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
014	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	149			IIE

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 218 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
014	50	31.73	N	179	10.70	06	AUG	91	19	26	11.7	11.7	03	4	3	080	06	8	-		6700	IIE

CTD

Type & SN 91220-B

Press. SN 26072

Temp. SN 710

Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time

Data on ____

at Surface ____

Start Down ____

at Bottom 1925

Start Up ____

at Surface ____

Data off ____

Data Location

Tape/Diskette I.D.	File Name/Header
	MF9109 C014
	06AUG1834

Remarks 90

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	2									1497.819	2.105					34			1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials ____

✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
015	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09				LINE II, STA F

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date Day	Mo.	Yr.	JD = 218	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S. S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
015	50	09.19	N	179 11.69	E	06	AUG	91		22	45	11.2	11.1	1020.8	3	5	100	08	8	5	2	59.5	IIF

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on
at Surface
Start Down 2209
at Bottom
Start Up
at Surface
Data off

Data Location
Tape/Diskette I.D.
File Name/Header
MF9109 C015S
06AUG2207

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1																			1
2	O	B	200	230830						198.836	3.861	31.583	33.884	—	3.85	33.883	34		2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials WF/CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
016	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	188			III A

Consec. Cast #	Latitude Deg.	Min.	N or S	Longitude Deg.	E or W	Date JD = Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
016	52	35.17	N	176	14.42	E 07	AUG	91	17	11	92	92	96	3	3	025	08	8	-	4	265	IIIA

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on
at Surface
Start Down
at Bottom 1711
Start Up
at Surface
Data off

Data Location

Tape/Diskette I.D.	File Name/Header
	MF9109 0165
	07AUG-1619

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Temp.	Cond.	Other	Conv. Mon. Values-CTD Press.	Temp.	Cond.	Sal.	Sample Bot. Data Therm-P	Avg Tw	Sal.	Sal. Bot. #	Other Samp.	Pos.
1	38	B		171142						1499.071	2.439	31.380	34.456	2200	2.44	34.463	10		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials ____
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
017S	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	193			III B

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date Day	Mo.	Yr.	JD = 219	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
017	57	57.97	N	176	59 E	07	AUG	91		2009		09.0	08.9	97	3	4	020	14	8	/	4	393	III B

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304
PMEL Shallow

Monitor Checks

	on Deck	at Surface
Press.		1938
Temp.		1938
Cond.		1939
Other		

Times JD/Time
Data on
at Surface
Start Down
at Bottom
Start Up
at Surface
Data off

Data Location
Tape/Diskette I.D.
File Name/Header: MF9109_017S_07 Aug 1936

Remarks 1200m Sample ~~Bottle~~ mis fired
1200m Sample on cast 17D
nuts

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Temp.	Cond.	Other	Conv. Mon. Values-CTD Press.	Temp.	Cond.	Sal.	Sample Bot. Data Therm-P	Avg Tw	Sal.	Sal. Bot. #	Other Samp.	Pos.
1	18		1200							1203.284	2.903	31.570	34.345	MISFIRED			33		1
2	19		1000							1000.464	3.193	31.669	34.264			34.269	33	441	2
3	8		800							799.679	3.514	31.756	34.136					442	3
4	24		600							599.397	3.682	31.708	34.008					443	4
5	6		400							401.802	3.873	31.640	33.833					444	5
6	1		200							200.371	3.798	31.181	33.470					445	6
7	11		100							99.774	3.722	30.957	33.334					446	7
8	17		50							50.645	4.001	31.098	33.243					447	8
9	16		25							25.147	7.233	33.692	33.015					448	9
10	23		0							0.506	8.359	34.605	32.941					449	10
11																			11
12																			12

Initials WF/CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
017D	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	197			III B

Consec. Cast # (DEEP)	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date Day	Mo.	Yr. (JD = 220)	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
017	53	01.87	N	176	15.26	08	AUG	91	02	00	10.9	10.1	00	4	8	020	22	8	4	8	3937 III B

CTD
Type & SN 92067
Press. SN 30066
Temp. SN 889
Cond. SN 529

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 220/
at Surface
Start Down
at Bottom
Start Up
at Surface
Data off

Data Location

Tape/Diskette I.D.	File Name/Header
	MF9109 017D
	07AUG2058

Remarks DEEP CAST * NUTRIENTS WERE SAMPLED ON SECOND DEEP CAST - LOG FILE WAS RENAMED TO MATCH 1st CAST nuts

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot.Data Therm-P	Sample Bot.Data Avg Tw	Sample Bot.Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	6		3965							3965.260	1.592	31.741	34.650					451	1
2	18	5	3915	020130						3897.586	1.594	31.719	34.649	3830	1.602	34.669	26	452	2
3	2		3865							3839.278	1.594	31.698	34.648					453	3
4	5	4	3500	021540	022033					3479.530	1.599	31.571	34.644	3412	1.70	34.662	03	454	4
5	10		3000		022950					2998.79	1.629	31.412	34.632					455	5
6	3	3	2600	023715	024222					2586.794	1.721	31.317	34.611	2566	1.725	34.625	28	456	6
7	19		2200	02[illegible]00						2198.996	1.876	31.273	34.576					457	7
8	1	2	1800	025830	030330					1789.825	2.172	31.314	34.512	1772	2.17	34.525	09	458	8
9	4		1500		031020					1501.956	2.471	31.400	34.444					459	9
10	11	1	1200	031615						1234.299	2.847	31.541	34.354	1226	2.84	34.366	25	460	10
11																			11
12																			12

Initials ____
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
018S	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	203			III, C

Consec. Cast # (SHALLOW)	Latitude Deg.	Min.	N or S	Longitude Deg.	E or W	Date Day	Mo.	Yr. (JD = 220)	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
018	53	30.77	N	176 16.75	E	08	AUG	91	06	55	09.9	09.2	04	4	8	00	20	8	5	2	3937	IIIC

CTD

Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time

Data on 220 / 0618
at Surface 061825
Start Down 0618
at Bottom 065515
Start Up 0655
at Surface
Data off 0655

Data Location

Tape/Diskette I.D.	File Name/Header
	MF9109 018S
	08AUG0617

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Temp.	Cond.	Other	Conv. Mon. Values-CTD Press.	Temp.	Cond.	Sal.	Sample Bot. Data Therm-P	Avg Tw	Sal.	Sal. Bot. #	Other Samp.	Pos.
1			1500	065515	070019					1511.473	2.291	31.283	34.488	1491	2.29	34.495	23		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials ____
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
0195	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	209			

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	Longitude Min.	E or W	Date JD = Day	Mo.	Yr.	Time GMT Hr.	Time GMT Min.	Dry Bulb	Wet Bulb	Bar. mb 1007.1	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
019	54	00.84	N	176	16.37	E	08	AUG	91	10	49	9.6	8.9	07	4	8	355	20	8	5	2	3937	IIIID

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on ____
at Surface ____
Start Down ____
at Bottom ____
Start Up ____
at Surface ____
Data off ____

Data Location
Tape/Diskette I.D. ____
File Name/Header MF9109 0195
08AUG1014

Remarks: w/o 1330
Banged side of ship on launch

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot.Data Therm-P	Sample Bot.Data Avg Tw	Sample Bot.Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	6		1200							1200.518	2.607	31.369	34.417					461	1
2			1000							1000.474	2.824	31.427	34.361					462	2
3			800							801.189	3.140	31.546	34.275					463	3
4			600							601.184	3.422	31.624	34.177					464	4
5			400							400.583	3.678	31.642	34.037					465	5
6			200							201.143	3.754	31.341	33.705					466	6
7			100							100.501	2.891	30.113	33.171					467	7
8			50							50.528	5.215	31.991	33.067					468	8
9			25							25.101	8.937	35.129	32.941					469	9
10			0							0.873	8.950	35.126	32.937					470	10
11																			11
12																			12

Initials ____
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
19D	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09				III D

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	Longitude Min.	E or W	Date JD = Day	Mo.	Yr.	Time GMT Hr.	Time GMT Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
019	54	01.22	N	176 16.22		E	08	AUG	91	13	30	9.9	9.3	07	4	8	345	20	8	4	2	397	III D

CTD
Type & SN 92067
Press. SN 30066
Temp. SN 889
Cond. SN 529

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on ____
at Surface ____
Start Down ____
at Bottom ____
Start Up ____
at Surface ____
Data off ____

Data Location
Tape/Diskette I.D. ____
File Name/Header MF9109 019D
08AUG

Remarks DEEP CAST w/o 3882 ALSO SEE MARGIN. Banged side of ship just below surface on deployment.

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	471		3950							3946.467	1.590	31.733	34.650					471	1
2	472	5	3900	133515						3900.370	1.593	31.720	34.650	3835	1.56	34.669	06	472	2
3	473		3850							3849.573	1.590	31.699	34.650					473	3
4	474	4	3500	135400						3505.052	1.590	31.574	34.646	3440	1.64	34.664	13	474	4
5	475		3000							3001.027	1.612	31.400	34.636	2962	1.61	34.652	12	475	5
6	476	3	2600	142230						2599.362	1.678	31.292	34.619				~~12~~	476	6
7	477		2200							2200.777	1.800	31.228	34.591	2176	1.79	34.604	21	477	7
8	478	2	1800	144715						1803.337	2.008	31.204	34.546				~~24~~	478	8
9	479		1500							1498.172	2.253	31.248	34.493	1482	2.23	34.504	24	479	9
10	480	1	1200	150600						1205.931	2.592	31.357	34.415				~~24~~	480	10
11														Prob: no sample at 1200m;					11
12														others OMO	RKR				12

There was an extra, inadvertant bottle firing, probably at this juncture. All subsequent samples would be off by one, and there would be no 1200m sample. This needs to be verified by comparison of sample data w/ logged data before nutrient samples can be evaluated w/ confidence.

Initials LL/PW
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
19D	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09				

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date Day	Mo.	Yr.	JD =	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
019	54	01.22	N	176 16.22	E	08	AUG	91		13	30	9.9	9.3	07	4	8	345	20	8	4	2	3937	IIID

CTD
Type & SN 92067
Press. SN 30066
Temp. SN 889
Cond. SN 529

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on ____
at Surface ____
Start Down ____
at Bottom ____
Start Up ____
at Surface ____
Data off ____

Data Location
Tape/Diskette I.D. ____
File Name/Header MF9109 019D
08AUG

Remarks DEEP CAST w/o 3882 ALSO SEE MARGIN. Banged side of ship just below surface on deployment.

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	471		3950							3946.467	1.590	31.733	34.650					471	1
2	472	5	3900	133515						3900.370	1.593	31.720	34.650	3835	1.56	34.669	06	472	2
3	473		3850							3849.573	1.590	31.699	34.650	[illegible]	[illegible]	[illegible]	13	473	3
4	474	4	3500	135400						3505.052	1.590	31.574	34.646	3440	1.64	34.664	~~15~~	474	4
5	475		3000			3500				3001.027	1.612	31.400	34.636	2962	1.61	34.652	12	475	5
6	476	3	2600	142230		3000				2599.362	1.678	31.292	34.619				~~12~~	476	6
7	477		2200			2600				2200.777	1.800	31.226	34.591	2176	1.79	34.604	21	477	7
8	478	2	1800	144715		2200				1803.337	2.008	31.204	34.546				~~27~~	478	8
9	479		1500			1800				1498.172	2.253	31.248	34.493	1482	2.23	34.504	24	479	9
10	480	1	1200	150600		1500				1205.931	2.592	31.357	34.415				~~24~~	480	10
11						no 1200m sample													11
12																			12

both tripped @ 3500m

There was an extra, inadvertant bottle firing, probably at this juncture. All subsequent samples would be off by one, and there would be no 1200m sample. This needs to be verified by comparison of sample data w/ logged data before nutrient samples can be evaluated w/ confidence.

Initials ✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
205	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	216			III E

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 220 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S. S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
02P	54	27.68	N	176 16.16	E	08	AUG	91	19	39	09.2	08.8	11	4	8	355	22	8	4	3308	III E

CTD

Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time

Data on ____
at Surface 1856
Start Down 1856
at Bottom 1939
Start Up 1940
at Surface ____
Data off ____

Data Location

Tape/Diskette I.D. ____

File Name/Header
MF9109 020S
08AUG1855

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1			1500		1939					1504.829	2.293	31.281	34.487			34.495	20		1
2																			2
3																			3
4																	20		4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials RW/LL

✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
021S	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	256			~~IV~~ F

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date Day	Mo.	Yr.	JD =	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
021	52	22.85	N	172 51.09	E	09	AUG	91		14	27	9.2	8.8	1011.0	4	8	355	22	8	4	2	1287	~~IV~~ F

CTD

Type & SN 91220-B

Press. SN 26072

Temp. SN 710

Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time

Data on ____

at Surface ____

Start Down ____

at Bottom 1427

Start Up ____

at Surface ____

Data off ____

Data Location

Tape/Diskette I.D. ____

File Name/Header MF9109 021S

09 AUG

Remarks

w/o 1269

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot.Data Therm-P	Sample Bot.Data Avg Tw	Sample Bot.Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1		B		14930						10080	8.763	34.828	32.795	12	8.74	32.800	04		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials ____

✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
022S	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09				IV E

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date Day	Mo.	Yr.	JD = 221	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb 1019.0	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
022	52	17.65	N	174 46.66	E	09	AUG	91		17	00	9.2	8.4	19	3	8	305	15	8	7	2	2562	IVE

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on
at Surface
Start Down
at Bottom 1700
Start Up
at Surface
Data off

Data Location
Tape/Diskette I.D.
File Name/Header
MF9109 0225
-09 AUG/610

Remarks w/o 1516
Data logger crashed when this cast was @ approx. 1070 m. (No data was logge'd after that depth.)

File fragmentation recreated from audio tape. Tape ran out shortly before end of cast, however.

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Temp.	Cond.	Other	Conv. Mon. Values-CTD Press.	Temp.	Cond.	Sal.	Sample Bot. Data Therm-P	Avg Tw	Sal.	Sal. Bot. #	Other Samp.	Pos.
1			1495	170021						1495.331	2.340	31.317	34.486			34.491	33		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials ____
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
023S	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09				LINE IV, STA D

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 221 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
023	52	09.82	N	172 34.31	E	09	AUG	91	1924	09	08.3	19.3	1019.9	8	2	75	12	8	5	2	3725	IVD

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on ____
at Surface ____
Start Down ____
at Bottom 12:26
Start Up ____
at Surface ____
Data off ____

Data Location
Tape/Diskette I.D. ____
File Name/Header MF9109 023S
09 AUG 1851

Remarks Cast depth 1200 @ w/o 1202

NUTS

	Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot.Data Therm-P	Sample Bot.Data Avg Tw	Sample Bot.Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1200	1			1200			1199.804	2.758	31.479	34.391							34.396	01	481	1
1000	2			1000			1000.803	3.002	31.553	34.325									482	2
800	3			799			799.961	3.280	31.629	34.228									483	3
600	4			601			601.758	3.582	31.706	34.108									484	4
400	5			400		114500	400.258	3.822	31.650	33.898									485	5
200	6			200		115030	200.484	3.778	31.170	33.478									486	6
100	7			100		115332	100.386	3.532	30.744	33.274									487	7
50	8			50		115527	50.684	4.466	31.341	33.060									488	8
25	9			25		115640	26.027	8.011	34.170	32.793									489	9
0	10			0		115827	0.561	8.658											490	10
	11																			11
	12																			12

Initials (DW)

✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
023D	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09				LINE IV, STA D

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 221 Day	Mo.	Yr.	Time GMT Hr.	Time GMT Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
023	52	08.65	N	172	35.80	09	AUG	91	21	39	11.0	10.0	19	3	7	270	10	8	5	3990	IVD

CTD
Type & SN 92067
Press. SN 30066
Temp. SN 889
Cond. SN 529

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on
at Surface
Start Down 2010
at Bottom 213926
Start Up 2140
at Surface
Data off

Data Location
Tape/Diskette I.D.
File Name/Header
MF9109 023D
09AUG2009

Remarks DEEP CAST
logging started @ 1007 m @ 123425 Z

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot.Data Therm-P	Sample Bot.Data Avg Tw	Sample Bot.Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1			3950		213955					3966.749	1.482	31.655	34.659					491	1
2		5	3900	214125	214625					3907.686	1.495	31.643	34.657	3840	1.50	34.676	10	492	2
3			3850		214817					3866.851	1.496	31.630	34.657					493	3
4		4	3500	215530	220031					3502.297	1.529	31.523	34.649	3434	1.52	34.666	11	494	4
5			3000		2211					2996.118	1.607	31.392	34.633					495	5
6		3	2600	221746	222250					2606.488	1.706	31.315	34.614	2579	1.70	34.629	16	496	6
7			2200							2200.248	1.869	31.272	34.582					497	7
8		2	1800	223820	224316					1798.887	2.137	31.298	34.526	1780	2.13	34.539	27	498	8
9			1500		224941					1501.438	2.375	31.340	34.473					499	9
10		1	1200	225620	230113					1199.804	2.726	31.454	34.394	1186	2.72	34.403	29	500	10
11																			11
12																			12

Initials ____
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
0245	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	265			LINE IV, STA C

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 222 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
0245	52	00.97	N	172	20.86	E 10	AUG	91	01	13	11.5	10.0	20	3	7	270	17	8	5	2	5805	IVC

CTD

Type & SN 91220-B

Press. SN 26072

Temp. SN 710

Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time

Data on ____

at Surface ____

Start Down 00:35:10

at Bottom 01:12:56

Start Up 01:13:18

at Surface ____

Data off ____

Data Location

Tape/Diskette I.D. ____

File Name/Header MF9109_0245 10AUG0034

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	0	B	910	012345	012900					910.714	3.184	31.630	34.273	896	3.19	34.278	34		1
2	0	B	910	012345	012900														2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials WF/CD

✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
025S	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	267			LINE IV, STA B

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
025	55	51.94	N	172 07.80	E	10	AUG	91	03	25	08.9	08.0	18	3	8	250	14	8	7	2	7200	IVB

CTD

Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time

Data on ____
at Surface 024900
Start Down 024915
at Bottom 0325
Start Up 0325
at Surface ____
Data off ____

Data Location

Tape/Diskette I.D. ____

File Name/Header MF9109_025S_ 10 Aug 0235

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot.Data Therm-P	Sample Bot.Data Avg Tw	Sample Bot.Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1				034940						9.202	9.095	35.070	32.741			32.744	30		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials ____
✓ ____

10AUG0500

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
0265	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09				LINE IV, STA A

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 222 Day	Mo.	Yr.	Time GMT Hr.	Time GMT Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
0265	51	37.94	N	171	54.05	E	10	AUG	91	0555	08.5	08.1	1018	3	8	275	16	8	7	2	54.18	IVA

CTD

Type & SN 91220-B

Press. SN 26072

Temp. SN 710

Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time

Data on ____

at Surface 051730

Start Down 051745

at Bottom 05:54:45

Start Up 05:55:10

at Surface ____

Data off ____

Data Location

Tape/Diskette I.D. ____

File Name/Header MF9109 0265 / 10AUG0500

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot.Data Therm-P	Sample Bot.Data Avg Tw	Sample Bot.Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	O	B	500	06:11:35	06:16:48					500.905	3.734	31.695	33.990	493	3.73	33.991	8		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials WF/C

✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
0275	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	297			LINE V, STA A

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	Longitude	E or W	Date JD = 223 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
027	53	00.06	N	172	07.43	E	11	AUG	91	03	21	09.1	08.9	1015	3	5	255	12	8	3	4	464	V A

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on
at Surface 030233
Start Down 0303
at Bottom 032021
Start Up 032058
at Surface
Data off

Data Location
Tape/Diskette I.D.
File Name/Header
MF9109_0275
11AUG0304

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Temp.	Cond.	Other	Conv. Mon. Values-CTD Press.	Temp.	Cond.	Sal.	Sample Bot. Data Therm-P	Avg Tw	Sal.	Sal. Bot. #	Other Samp.	Pos.
1	0	B	350	032330	032837					347.553	3.711	31.592	33.971	341	3.71	33.975	13		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

448 WO

Initials WF/CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
028S	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	249			LINE I, STA B

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	Longitude Min.	E or W	Date JD = 223 Day	Mo.	Yr.	Time GMT Hr.	Time GMT Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
028	53	01.11	N	171	52.04	E	11	AUG	91	04	42	08.5	08.5	15	32	2	235	16	8	7	4	514	IB

CTD

Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time

Data on ____
at Surface 042750
Start Down 0428
at Bottom 0442
Start Up 044225
at Surface 0452
Data off ____

Data Location

Tape/Diskette I.D. ____

File Name/Header: MF9109 0285-11Aug; 11Aug0426

Remarks
DRIFTER (40 m) DEPLOYED @ THIS STA AFTER CTD CAST

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1																			1
2	6									9.734	8.379	34.490	32.797			32.804	06		2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials WF/CD

✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
029S	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	301			LINE I, STA C

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	Longitude	E or W	Date JD = 223 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb ~~1015.1~~	Bar. mb 1015.1	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
029	53	01.54	N	171	37.36	E	11	AUG	91	06	03	08.9	08.9	1	5	3	22	60	16	9	4	065.4	VC

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on ____
at Surface 054615
Start Down 054642
at Bottom 060315
Start Up 060335
at Surface ____
Data off ____

Data Location
Tape/Diskette I.D. ____
File Name/Header MF9109 029S 11AUG0545

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot.Data Therm-P	Sample Bot.Data Avg Tw	Sample Bot.Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	O	B	250	061115	061632					250.924	3.738	31.464	33.843	246	3.73	33.845	26		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials CJF/CD
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
0305	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	303			LINE V, STA D

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 223 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
030	53	02.89	N	171	23.93	11	AUG	91	07	22	09.0	09.0	1532	2	6	0	12	9	7	4	570	NID

CTD

Type & SN 91220-B

Press. SN 26072

Temp. SN 710

Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time

Data on ____

at Surface 070655

Start Down 070715

at Bottom 0721

Start Up 072205

at Surface ____

Data off ____

Data Location

Tape/Diskette I.D.	File Name/Header
	MF9109_0305
	11911G0706

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1			300		072725					301.446	3.770	31.510	33.837			33.839	12		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials CD/WF

✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
0315	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	304			

Consec. Cast #	Latitude Deg.	Min.	N or S	Longitude Deg.	E or W	Date JD = Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
031	53	03	N	171	15	65	E	11	AUG	91	08	50	9.0	8.9	1015.0	3	2	220	10	9	4	1550	IV E

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on
at Surface
Start Down
at Bottom 849
Start Up
at Surface
Data off

Data Location
Tape/Diskette I.D.
File Name/Header: MF9109 0315, 11AUG0809

Remarks
w/o 1514
NUTS!

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Temp.	Cond.	Other	Conv. Mon. Values-CTD Press.	Temp.	Cond.	Sal.	Sample Bot. Data Therm-P	Avg Tw	Sal.	Sal. Bot. #	Other Samp.	Pos.
1	501		1200							1199.987	2.748	31.471	34.391					501	1
2	502		1000							1001.099	2.950	31.518	34.337			34.339	20	502	2
3	503		800							801.480	3.250	31.618	34.246					503	3
4			600							600.760	3.440	31.630	34.167					504	4
5			400							399.818	3.693	31.609	33.983					505	5
6			200							200.061	3.805	31.243	33.536					506	6
7			100							100.002	3.644	30.854	33.292					507	7
8			50							49.995	4.381	31.436	33.257					508	8
9			25							25.076	7.777	34.022	32.855					509	9
10			0							1.520	8.760	34.804	32.776					510	10
11																			11
12																			12

Initials ____
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
325	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	306			IF

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	Longitude E or W	Date JD = Day	Mo.	Yr.	Time GMT Hr.	Time GMT Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
032	53	02.80	N	171 10.23	E	11	AUG	91	10	34	9.5	9.3	1015.1	3	7	240	10	9	3	4	650	IF

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on
at Surface
Start Down
at Bottom 1034
Start Up
at Surface
Data off

Data Location
Tape/Diskette I.D.
File Name/Header
MF9109 0325
11 AUG 1016

Remarks
w/o 644

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1										10.573	8.603	34.680	32.787			32.792	21		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials ✓✓
✓

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
335	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	312			

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date Day	Date Mo.	Date Yr.	JD =	Time GMT Hr.	Time GMT Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
033	53	20.39	N	170 26.88	E	11	AUG	91		14	05	8.9	8.9	1014.2	14	3	255	14	9	7	4	1179	IG

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on ____
at Surface ____
Start Down ____
at Bottom 1405
Start Up ____
at Surface ____
Data off ____

Data Location

Tape/Diskette I.D.	File Name/Header
	MF9109 0335
	11AUG1336

Remarks
w/o 1132

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1										1118.137	2.973	31.586	34.335	1101	2.97	34.340			1
2	38	B		140630						↓	↓	↓	↓				03		2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials LL/PW
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
0345	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	317			LINE V, STA H

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	Longitude	E or W	Date Day	Date Mo.	Date Yr.	JD = 223	Time GMT Hr.	Time GMT Min.	Dry Bulb	Wet Bulb	Bar. mb 1013.9	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
034	53	20.66	N	170	32.14	E	11	AUG	91		21	08	08.5	08.3	14	2	2	270	10	9	4	2	0766	V H

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on ____
at Surface ____
Start Down 20:49:00
at Bottom 21:08:00
Start Up 21:08:40
at Surface ____
Data off ____

Data Location
Tape/Diskette I.D. ____
File Name/Header MF9109 MF9109-0345- 11Aug2047

Remarks CAST HAD SPIKY DATA — ? POSSIBLY JELLYFISH IN COND CELL — CAST RE-DONE.

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot.Data Therm-P	Sample Bot.Data Avg Tw	Sample Bot.Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1																			1
2																			2
3	0	B	700	21:10:35						697.077	3.451	31.548	34.006	685	3.45	34.168	14		3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials WF
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
034S - 2	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	318			LINE V STA H

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	Longitude Min.	E or W	Date Day	Date Mo.	Date Yr.	JD = 223	Time GMT Hr.	Time GMT Min.	Dry Bulb	Wet Bulb	Bar. mb 1013.9	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
034	53	20	51	N	170	31	08	E	11	AUG	91	22	22	08	57	08	3	14	27	270	10	94	2073	VH

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on ____
at Surface 220250
Start Down ____
at Bottom ____
Start Up 222244
at Surface ____
Data off ____

Data Location

Tape/Diskette I.D.	File Name/Header
	MF9109 034S
	11AUG2201

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1			729		2222					729.151	3.370	31.653	34.200			34.202	28		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials WF/CD
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
035	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	323			LINE V, STA I

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 224 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
035	53	32.27	N	169	56.22	E 12	AUG	91	01	28	08.8	08.1	1014	3	7	290	08	9	7	2166	V I

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on ____
at Surface ____
Start Down 010035
at Bottom 012740
Start Up ____
at Surface ____
Data off ____

Data Location
Tape/Diskette I.D. ____
File Name/Header MF9109 035S - 12AUG0047

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot.Data Therm-P	Sample Bot.Data Avg Tw	Sample Bot.Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	9		100		014550					102.092	3.759	30.893	33.219			33.798	22		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials CD/WF
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
036s	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	325			LINE J, STA J

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	Longitude	E or W	Date JD = 224 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
036	53	41.32	N	169	37.27	E	12	AUG	91	03	41	08.4	08.4	14	36	27	50	9	7	4		1545	J

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on ____
at Surface 030558
Start Down 030615
at Bottom 034108
Start Up 034154
at Surface ____
Data off ____

Data Location
Tape/Diskette I.D. ____
File Name/Header MF9109_mF9109-036S -12Aug0257

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp. (nuts)	Pos.
1	19		1200		034840					1200.580	2.405	31.232	34.464					511	1
2	6		1000							999.753	2.756	31.389	34.386					512	2
3	23		800							798.420	3.046	31.487	34.305					513	3
4	17		600		040230					600.517	3.319	31.566	34.217					514	4
5	8		400		040655					400.874	3.596	31.610	34.085			34.086	09	515	5
6	16		200		041110					200.003	3.789	31.474	33.828					516	6
7	24		100		041340					100.086	2.752	30.039	33.224					517	7
8	1		50		041525					50.283	3.794	30.768	33.062					518	8
9	0		25							25.229	8.291	34.340	32.713					519	9
10	18		0		041825					0.514	8.799	34.785	32.720					520	10
11																			11
12																			12

Initials WF/CD
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
037 s	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	329			LINE V, STA K

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date Day	Date Mo.	Date Yr. (JD = 224)	Time GMT Hr.	Time GMT Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
037	53	55.04	N	169 11.91	E	12	AUG	91	06	41	08.4	08.4	14	3	2	270	07	9	7	4	173	V K

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on ____
at Surface 060507
Start Down 060517
at Bottom 064041
Start Up 064100
at Surface ____
Data off ____

Data Location
Tape/Diskette I.D. ____
File Name/Header MF9109_037S
12AUG060604

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1																			1
2	0	B	1000	064930	065430					1002.461	2.753	31.381	34.379	987	2.76	34.382	23		2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials WF/CD
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
0385	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	333			IL

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 224 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb 1014.3	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
0385	54	05.02	N	168 50.47	E	12	AUG	91	09	23	8.6	8.5	14	3	4	265	06	9	-4	1225	IL

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on
at Surface
Start Down
at Bottom 0923
Start Up
at Surface
Data off

Data Location
Tape/Diskette I.D.
File Name/Header
MF9109 0385
12 AUG

Remarks
v/o 1254

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1			9.5							9.465	9.118	35.169	32.822			32.829	24		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials LAL/PN
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
0398	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	336			

Consec. Cast #	Latitude Deg.	Min.	N or S	Longitude Deg.	E or W	Date JD = 244 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb 1014.8	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
39	54	13.11	N	168 38.39	E	12	AUG	91	11	06	8.2	8.1	15	3	4	270	08	9	-	4	445	IM

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on
at Surface
Start Down
at Bottom 1105
Start Up
at Surface
Data off

Data Location
Tape/Diskette I.D.
File Name/Header MF9109_039 /244G1052

Remarks w/o 453

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Temp.	Cond.	Other	Conv. Mon. Values-CTD Press.	Temp.	Cond.	Sal.	Sample Bot. Data Therm-P	Avg Tw	Sal.	Sal. Bot. #	Other Samp.	Pos.
1																			1
2	38	B		110830						398.215	3.571	31.559	34.050	393	3.56	34.054	25		2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials LL/PW
✓

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
040s	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	363			LINE VI, STA A

Consec. Cast #	Latitude Deg.	Min.	N or S	Longitude Deg.	E or W	Date JD = 225 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
040	55	37.06	N	165 11.79	E	13	AUG	91	00	37	12.2	12.0	17	3	4	350	05.9	7	4		695	VIA

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on ____
at Surface ____
Start Down 001830
at Bottom 00:37:00
Start Up 00:37:20
at Surface ____
Data off ____

Data Location
Tape/Diskette I.D. ____
File Name/Header MF9109 040S
13AUG00017

Remarks
Line 6

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Temp.	Cond.	Other	Conv. Mon. Values-CTD Press.	Temp.	Cond.	Sal.	Sample Bot. Data Therm-P	Avg Tw	Sal.	Sal. Bot. #	Other Samp.	Pos.
1	16		300	004450						293.687	3.673	31.478	33.903			33.907	02		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials WF/CD
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
0415	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	364			LINE VI STA B

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 225 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
041	55	41.25	N	164	55.65	13	AUG	91	02	21	13.0	12.5	17	2	4	—	—	9	7	4	2950	VIB

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on ____
at Surface 014620
Start Down 014637
at Bottom 0224
Start Up 0234
at Surface ____
Data off ____

Data Location

Tape/Diskette I.D.	File Name/Header
	MF9109 0415
	13AUG0145 downcast
	13AUG0232 upcast

Remarks SCS-tape drives crashed - only 80 m of downcast was recorded - upcast @ 60 m/min - break in data during upcast @ ~1490-1450 m - CONT BELOW

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1																			1
2																			2
3	O	B	1500	022430	023419					1499.348	2.201	31.217	34.509	1474	2.21	34.515	33		3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

also, downcast was recorded on cassette tape, reread & saved as primary source of data for this cast

Initials CD/WF
✓ ____

3,712

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
0425	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	366			LINE VI STA C

Consec. Cast #	Latitude Deg.	Min.	N or S	Longitude Deg.	Min.	E or W	Date JD = 225 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb 1017.1	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
042	55	46	04	N	164	43.19	E	13	AUG	91	04	50	13.0	12.5	17	17		00	9	7	2	4039	VIC

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on ____
at Surface 041950
Start Down 0420
at Bottom 0449
Start Up 0450
at Surface ____
Data off ____

Data Location
Tape/Diskette I.D. ____
File Name/Header MF9109 0425
13AUG0418

Remarks
w/o 1207

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot.Data Therm-P	Sample Bot.Data Avg Tw	Sample Bot.Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	17		1200		0450					1202.954	2.516	31.310	34.440	1184	2.52			521	1
2	19		1000		0453					1000.153	2.729	31.364	34.386					522	2
3	11		800		0458					801.014	3.018	31.465	34.305					523	3
4	6		600		0502					600.545	3.282	31.534	34.216					524	4
5	18		400		0507					399.393	3.601	31.601	34.068					525	5
6	1		200		0511					200.076	3.494	31.148	33.744			33.743	07	526	6
7	24		100		0514					100.687	2.322	29.704	33.248					527	7
8	16		50		0516					49.145	3.309	30.368	33.078					528	8
9	0		25		0518					24.727	6.981	33.389	32.926					529	9
10	8		0		0519					0.609	11.116	36.992	32.859					530	10
11																			11
12																			12

Initials CO/NF
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
042D	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09				LINE JC, STA C

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date Day	Mo.	Yr.	JD = 225	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
042	55	45.74	N	164	43.90	13	AUG	91		07	04	12.2	12.0	1017.1	07	—	—	—	972		4008	VIC

CTD

Type & SN 92067
Press. SN 30066
Temp. SN 889
Cond. SN 529

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time

Data on 225
at Surface 0528
Start Down 052915
at Bottom 0704
Start Up 070415
at Surface
Data off

Data Location

Tape/Diskette I.D.

File Name/Header: MF9109 042D
13AUG 0527

Remarks DEEP CAST
DATA WAS COLLECTED FROM SURFACE TO BOTTOM took 1 salt sample only

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	6		~4000		0704					4044.643	1.478	31.680	34.662					531	1
2	18	5	~3950	070535	071045					3994.007	1.486	31.667	34.660	—	—	34.677	13	532	2
3	2		~3900		071350					3945.061	1.487	31.651	34.659					533	3
4	5	4	3500	072130	072635					3499.180	1.526	31.521	34.651	2473	1.72	—		534	4
5	10		3000							2998.437	1.630	31.414	34.634					535	5
6	3	3	2600	074501	075010					2601.075	1.705	31.315	34.618	2273	1.85	—		536	6
7	19		2200		075915					2200.465	1.840	31.253	34.589					537	7
8	1	2	1800	080826	081331					1799.356	2.034	31.224	34.545	1780	2.03	—		538	8
9	4		1500		082110					1500.197	2.292	31.278	34.488					539	9
10	11	1	1200	082810	083615	w/o varied, steadied + soaked longer				1199.387	2.519	31.307	34.435	1184	2.52	—		540	10
11																			11
12																			12

Initials CO WF
✓ LL

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
435	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	370			VI D

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date Day	Mo.	Yr.	JD = 226	Time GMT Hr.	Time GMT Min.	Dry Bulb	Wet Bulb	Bar. mb 1016.9	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
043	55	52	00	164	30	26	E	13	AUG	91	10	40	12.5	12.1	17	1	7	230	06	9	7	5	4387 VI D

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on ____
at Surface ____
Start Down ____
at Bottom 1040
Start Up ____
at Surface ____
Data off ____

Data Location

Tape/Diskette I.D.	File Name/Header
	MF9109 0435-
	13AUG1002.SCS

Remarks
w/o 1497

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot.Data Therm-P	Sample Bot.Data Avg Tw	Sample Bot.Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1										1506.497	2.213	31.227	34.505			34.511	16		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials LL/PW
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
445	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	372			~~VI~~ E

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb 1018	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
044	55	55	68 N	164	13 42 E	13	AUG	91	12	42	12.0	12.0	18	17	175	06	9	7	4		439	1 ~~VI~~ E

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on ____
at Surface ____
Start Down ____
at Bottom 1241
Start Up ____
at Surface ____
Data off ____

Data Location
Tape/Diskette I.D. ____
File Name/Header MF9109 0445
13 AUG 1212

Remarks
NUTS.

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1			1200	12						1199.507	2.513	31.297	34.429					421	1
2			1000	1						1001.353	2.740	31.362	34.370					422	2
3			800							800.812	3.004	31.440	34.290					423	3
4			600							598.918	3.264	31.494	34.188					424	4
5			400							399.833	3.580	31.544	34.023					425	5
6			200							200.339	2.572	30.212	33.569					426	6
7			100							99.814	1.044	28.569	33.177					427	7
8			50							50.243	2.905	30.041	33.094					428	8
9			25							25.799	6.854	33.286	32.934					429	9
10			0							2.753	12.722	38.011	32.438			32.446	10	430	10
11																			11
12																			12

Initials UL/PW
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
44D	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	373			~~IV~~ E

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date Day	Mo.	Yr.	JD =	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
44	55	55.72	N	164 13.20	E	13	AUG	91		15	22	13.0	12.8	1018	1	7	175	06	9	7	4	4408	~~IV~~ E

CTD
Type & SN 92067
Press. SN 30066
Temp. SN 889
Cond. SN 529

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on ____
at Surface ____
Start Down ____
at Bottom 1523
Start Up ____
at Surface ____
Data off ____

Data Location
Tape/Diskette I.D. ____
File Name/Header MF9109 044D – 13 AUG 1340

Remarks DEEP CAST. Last bottle came up untripped. Taking salinities from all nine other bottles to assist in determing when the misfire (or un-fire) took place. *

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Temp.	Cond.	Sal.	Sample Bot. Data Therm-P	Avg Tw	Sal.	Sal. Bot. #	Other Samp.	Pos.
1			4446	4446	152340					4446.315	1.503	31.837	34.662	~~Difficult to tell what sample came from what bottles~~				431	1
2		5	4397	152600	152100					4394.884	1.501	31.818	34.662			34.680	06	432	2
3			4344							4342.992	1.500	31.800	34.661			34.677	26	433	3
4		4	3500	155010	155510					3502.255	1.549	31.540	34.649		no	34.624	05	434	4
5			3000							2999.929	1.624	31.409	34.634			34.641	15	435	5
6		3	2600	161606	162108					2493.241	1.707	31.271	34.613			[illegible]	04	436	6
7			2200							2199.301	1.795	31.216	34.593	2152	1.91 no	34.505	35	437	7
8		2	1800	163803						1799.124	1.985	31.185	34.549			[illegible]	12	438	8
9			1500							1503.195	2.221	31.224	34.495	1490	2.21	bad-RKR ~~33.845~~		439	9
10		1	1200	165624						1204.107	2.509	31.294	34.427			34.427	18	—	10
11																			11
12																			12

* Best guess (Ron Reed's) is that this was merely a mechanical failure involving only the last bottle. — NO. RKR

Initials VL/PW
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
455	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	373			LINE VII, STA F

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	Longitude	E or W	Date Day	Date Mo.	Date Yr.	JD =	Time GMT Hr.	Time GMT Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
045	56	00.64	N	164	02.73	E	13	AUG	91		18	59	12.7	12.1	1018.7	1	7	170	07	9	7	5	4387	VII F

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on ____
at Surface ____
Start Down ____
at Bottom 1858
Start Up ____
at Surface ____
Data off ____

Data Location
Tape/Diskette I.D. ____
File Name/Header MF9109

Remarks
w/o 1495

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot.Data Therm-P	Sample Bot.Data Avg Tw	Sample Bot.Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1			10							10.320	11.421	37.240	32.826			32.804	19		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials VL/AW
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
046S	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	377			LINE VI, STA G

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 225 Day	Mo.	Yr.	Time GMT Hr.	Time GMT Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
046	56	04.56	N	163	52.32	E 13	AUG	91	20	41	12.01	11.8	1018.2	7	19	010	9	7	2		309	VI G

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 225
at Surface 2011
Start Down 201155
at Bottom 204120
Start Up 204152
at Surface
Data off

Data Location
Tape/Diskette I.D.
File Name/Header: MF9109 046S 13AUG2010

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp. (NUTS)	Pos.
1	17		1200		2041					1200.448	2.547	31.321	34.421					441	1
2	19		1000		2047					999.910	2.763	31.380	34.369					442	2
3	11		800		2052					800.219	3.046	31.469	34.282			34.285	8	443	3
4	6		600		2058					599.227	3.346	31.545	34.163					444	4
5	18		400		2102					399.868	3.586	31.512	33.979					445	5
6	1		200		2107					199.402	2.179	29.814	33.489					446	6
7	24		100		2110					101.104	1.036	28.584	33.204					447	7
8	16		50		2112					50.271	1.790	29.140	33.140					448	8
9	0		25		2114					25.185	6.486	32.989	32.961					449	9
10	8		0							0.766	14.054	31.845	38.579					450	10
11																			11
12																			12

Initials WF/CD

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
046D	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	378			LINE VI, STA G

Consec. Cast # DEEP	Latitude Deg.	Min.	N or S	Longitude Deg.	E or W	Date JD = 225 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
046	56	04	N	163	E	13	AUG	91	22	34	13.6	13.0	17	37	185	13	9	7	2	3095	VIG

CTD

Type & SN 92067
Press. SN 30066
Temp. SN 889
Cond. SN 529

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time

Data on 225 ____
at Surface 212655
Start Down 2127
at Bottom 2234
Start Up 2234
at Surface ____
Data off 2234

Data Location

Tape/Diskette I.D.	File Name/Header
	MF9109_046D
	13AUG2120

Remarks DEEP CAST
LOGGED DATA FROM SURFACE TO BOTTOM-
nuts

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Temp.	Cond.	Other	Conv. Mon. Values-CTD Press.	Temp.	Cond.	Sal.	Sample Bot. Data Therm-P	Avg Tw	Sal.	Sal. Bot. #	Other Samp.	Pos.
1	6		3060		2235													451	1
2	18	5	3010	223840	224350					3010.960	1.606	31.400	34.637	2966	1.59	34.650	11	452	2
3	2		2960		2245					2958.557	1.615	31.386	34.635					453	3
4	5	4	2900	224724	2252					2900.576	1.635	31.379	34.631	2858	1.63	34.644	01	454	4
5	10		2800		2255					2799.158	1.644	31.346	34.628					455	5
6	3	3	2600	230010	230520					2600.929	1.692	31.304	34.617	2573	1.69	34.651	09	456	6
7	19		2200		2313					2199.578	1.818	31.232	34.588					457	7
8	1	2	1800	232155	2327					1800.646	2.020	31.210	34.542	1784	2.02	34.551	22	458	8
9	4		1500		2333					1499.666	2.272	31.259	34.485					459	9
10	11	1	1200	233940	234446					1199.838	2.541	31.313	34.419	1186	2.54	34.428	32	460	10
11																			11
12																			12

Initials SD/MF

✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
047S	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	380			LINE VI, STA H

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	Longitude Min.	E or W	Date JD = 226 Day	Mo.	Yr.	Time GMT Hr.	Time GMT Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
047	56	07.38	N	163	42.42	E	14	AUG	91	02	09	12.9	12.0	17	3	7	21	5	08	97	2	1600	VIH

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on
at Surface 013220
Start Down 013240
at Bottom 020835
Start Up 020859
at Surface
Data off

Data Location
Tape/Diskette I.D.
File Name/Header MF9109_047S - 14 Aug 0101

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1																			1
2																			2
3																			3
4	0	B	600	✓ 022510						598.654	3.454	31.581	34.093	591	3.45	34.096	30		4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials WR/CD
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
048	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	405			VII-A

Consec. Cast #	Latitude Deg. Min.	N or S	Longitude Deg.	E or W	Date JD = 226 Day Mo. Yr.	Time GMT Hr. Min.	Dry Bulb	Wet Bulb	Bar. mb 1019.0	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
048	5559 46	N	167 58 22	E	14 AUG 91	1605	10.0	10.0	19	2	6	190	09	9	7	2	3937	VII-A

CTD

Type & SN ~~92067~~ 91220-3

Press. SN ~~30066~~ 26072

Temp. SN ~~889~~ 710

Cond. SN ~~529~~ 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time

Data on ____

at Surface ____

Start Down ____

at Bottom 1604

Start Up ____

at Surface ____

Data off ____

Data Location

Tape/Diskette I.D. ____

File Name/Header MF9109 0485

14 AUG 1531

Remarks DEEP CAST w/ 1209

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Temp.	Cond.	Other	Conv. Mon. Values-CTD Press.	Temp.	Cond.	Sal.	Sample Bot. Data Therm-P	Avg Tw	Sal.	Sal. Bot. #	Other Samp. (NUTS)	Pos.
1			1200							1201.165	2.461	31.264	34.444					451	1
2			1000							1000.352	2.708	31.346	34.385			34.644	01	452	2
3			800							800.161	2.960	31.420	34.313					453	3
4			600							601.235	3.235	31.483	34.204					454	4
5			400							401.970	3.503	31.496	34.045					455	5
6			200							200.480	2.397	30.048	33.550					456	6
7			100							101.324	0.687	28.296	33.205					457	7
8			50							50.098	2.402	29.148	33.097					458	8
9			25							24.678	7.450	33.789	32.908					459	9
10			0							1.451	10.822	36.647	32.778					460	10
11																			11
12																			12

Initials ✓

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
48D	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09				VII A

Consec. Cast #	Latitude Deg.	Min.	N or S	Longitude Deg.	E or W	Date Day	Mo.	Yr.	JD = 226	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
048	56	00.00	N	167	58.00	14	AUG	91		18	30	11.0	10.2	1019.5	3	7	170	10	8	72	3941	VII A

CTD
Type & SN 92067
Press. SN 30066
Temp. SN 889
Cond. SN 529

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on
at Surface
Start Down
at Bottom 1830
Start Up
at Surface
Data off

Data Location
Tape/Diskette I.D.
File Name/Header MF9109 048D
14 AUG 1656

Remarks DEEP CAST MAX DEPTH: 3957
3950

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Temp.	Cond.	Other	Conv. Mon. Values-CTD Press.	Temp.	Cond.	Sal.	Sample Bot.Data Therm-P	Avg Tw	Sal.	Sal. Bot. #	Other Samp. (NUTS)	Pos.
1			3950							3958.684	1.516	31.680	34.657					461	1
2		5	3900	183303	183810					3903.804	1.527	31.668	34.655	3835	1.53	34.675	10	462	2
3			3850							3850.277	1.533	31.655	34.655					463	3
4		4	3500	184815						3496.416	1.569	31.553	34.647	—	—	34.666	11	464	4
5			3000							2999.353	1.619	31.405	34.635					465	5
6		3	2600	191000						2601.714	1.680	31.295	34.619	2567	1.68	34.635	12	466	6
7			2200							2201.672	1.796	31.218	34.593					467	7
8		2	1800	192940						1803.752	1.967	31.174	34.553	1788	1.96	34.566	35	468	8
9			1500							1499.916	2.176	31.194	34.507					469	9
10		1	1200	194605	195230					1205.461	2.450	31.256	34.442	1193	2.45	34.452	05	470	10
11																			11
12																			12

Initials LL/PW
✓

.874 3.647

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
049S	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	413			LINE VII, STA B

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	Longitude	E or W	Date JD = 227 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
049	56	26.88	N	167	09.38	E	15	AUG	91	00	39	11.0	10.2	1018	3	7	170	06	8	2	389.5	VIIB

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on ____
at Surface 0003
Start Down 000430
at Bottom 003935
Start Up 004065
at Surface ____
Data off ____

Data Location
Tape/Diskette I.D. ____
File Name/Header MF9109 049S
15AUG0003

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot.Data Therm-P	Sample Bot.Data Avg Tw	Sample Bot.Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	O	B	900	✓ 005100	005612					904.108	2.740	31.323	34.373	892	2.74	34.380	04		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials SD/WF
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
050S	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	426			LINE VII, STA C

Consec. Cast #	Latitude Deg.	Min.	N or S	Longitude Deg.	Min.	E or W	Date JD = 227 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb 1016.5	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
050	56	51	95	N 166	24	86	E 15	AUG	91	06	51	11.9	11.0	17	3	8	150	06	8	7	2	3729	VII C

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		0.709
Temp.		11.937
Cond.		37.751
Other		32.872

Times JD/Time
Data on ____
at Surface 061946
Start Down 0620
at Bottom 065103
Start Up 0652
at Surface ____
Data off ____

Data Location
Tape/Diskette I.D. ____
File Name/Header MF9109 050S 15AUG0618

Remarks missing 600 m sample picked up on the next cast 050D. nuts

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Temp.	Cond.	Other	Conv. Mon. Values-CTD Press.	Temp.	Cond.	Sal.	Sample Bot.Data Therm-P	Avg Tw	Sal.	Sal. Bot. #	Other Samp.	Pos.
1			1200							1201.734	2.541	31.318	34.424					471	1
2			1000							999.626	2.714	31.344	34.377					472	2
3			800							799.516	2.944	31.406	34.313					473	3
4			600		DIDN'T FIRE					599.909	3.259	31.501	34.202	NO SAMPLE			See cast 050D bottle	474	4
5			400							399.802	3.564	31.544	34.040					475	5
6			200							200.628	2.097	29.745	33.490					476	6
7			100							100.283	0.927	28.501	33.214					477	7
8			50							48.971	0.609	28.105	33.073			33.072	32	478	8
9			25							24.938	3.104	30.137	33.021					479	9
10			0							1.277	11.910	37.719	32.864					480	10
11																			11
12																			12

Initials CD/WF
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
050D	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	427			LINE III; STA C

Consec. Cast #	Latitude Deg.	Min.	N or S	Longitude Deg.	E or W	Date JD = 227 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb 1016.2	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
050	56	57.89	N	166	22.73	E 15	AUG	91	08	57	12.0	11.2	16	3	8	160	06	9	7	2	3720	VIIIC

CTD
Type & SN 92067
Press. SN 30066
Temp. SN 889
Cond. SN 529

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 227
at Surface
Start Down 0734
at Bottom 0857
Start Up
at Surface
Data off

Data Location
Tape/Diskette I.D.
File Name/Header
MF9109 050D
15AUG0734

Remarks DEEP CAST
w/o 1324 nuts

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Temp.	Cond.	Other	Conv. Mon. Values-CTD Press.	Temp.	Cond.	Sal.	Sample Bot. Data Therm-P	Avg Tw	Sal.	Sal. Bot. #	Other Samp.	Pos.
1			3736							3735.434	1.527	31.609	34.655					481	1
2		5	(-50) 3685	0901/20						3677.494	1.545	31.602	34.652	3617	1.54	34.670	15	482	2
3			(-100) 3685							3636.520	1.551	31.592	34.651					483	3
4		4	3500	91136						3500.728	1.582	31.566	34.646	3460	1.23	34.663	30	484	4
5			3000							2999.275	1.648	31.426	34.630					485	5
6		3	2600	93740	093947					2603.670	1.728	31.331	34.612	2583	1.72	34.627	26	486	6
7			2200							2202.501	1.864	31.267	34.580					487	7
8		2	1800	95545						1798.018	2.099	31.265	34.526	1779	2.10	34.422*	09	488	8
9			1500							1501.775	2.341	31.308	34.470					489	9
10		1	1200	101330						1188.021	2.567	31.325	34.412	1174	2.56	34.538*	19	490	10
11			600							601.050	3.235	31.486	34.207					474	11
12																			12

* THESE TWO SAMPLES WERE PROBABLY PUT IN THE WRONG SAMPLE BOTTLE

Initials LL/MN
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
051S	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	432			~~VIII~~ D

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	Longitude E or W	Date JD = Day	Mo.	Yr.	Time GMT Hr.	Time GMT Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
051	57.12	35	N	165 50.60	E	15	AUG	91	1333		10.5	10.0	1015.3	3	8	145	06	97	2	36.12	~~VIII~~ D

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on
at Surface
Start Down
at Bottom 1333
Start Up
at Surface
Data off

Data Location
Tape/Diskette I.D.
File Name/Header: MF9109 051S
1SAMG1256

Remarks W/o 1519

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1			10							9.831	11.486	37.165	32.696			32.705	22		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials LL/PW
✓

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
052	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	436			~~VII~~ E

Consec. Cast #	Latitude Deg.	Min.	N or S	Longitude Deg.	E or W	Date JD = Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb (1014.0)	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
052	57	35.41	N	165 14.60	E	15	AUG	91	17	11	11.8	11.1	14	3	8	120	08	8	7	2	3458	~~VII~~ E

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on ____
at Surface ____
Start Down ____
at Bottom ____
Start Up ____
at Surface ____
Data off ____

Data Location
Tape/Diskette I.D. ____
File Name/Header MF9109 0525 15AUG 1631

Remarks
w/o 1201
NUTS

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Temp.	Cond.	Other	Conv. Mon. Values-CTD Press.	Temp.	Cond.	Sal.	Sample Bot. Data Therm-P	Avg Tw	Sal.	Sal. Bot. #	Other Samp.	Pos.
1			1200							1202.259	2.477	31.274	34.437					491	1
2			1000							1000.098	2.714	31.344	34.376					492	2
3			800							800.938	2.970	31.419	34.301					493	3
4			600							599.452	3.239	31.485	34.203			34.208	18	494	4
5			400							400.111	3.556	31.548	34.052					495	5
6			200							199.889	3.325	30.978	33.715					496	6
7			100							99.663	1.077	28.624	33.213					497	7
8			50							47.565	2.232	29.505	33.135					498	8
9			25							25.169	4.564	31.459	33.114					499	9
10			0							2.185	13.751	39.417	32.875					500	10
11																			11
12																			12

Initials LL/PN
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
052D	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	437			LINE VII, STA E

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date Day	Mo.	Yr.	JD = 227	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
052	57	35.89	N	165	15.38	15	AUG	91		19	35	12.5	12.0	1014.0	3	8	120	10	8	7	3454	VIIE

CTD
Type & SN 92067
Press. SN 30066
Temp. SN 889
Cond. SN 529

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on
at Surface
Start Down
at Bottom
Start Up
at Surface
Data off

Data Location
Tape/Diskette I.D.
File Name/Header: MF9109 052D 15AUG1806

Remarks DEEP CAST
w/o 3443 nuts

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Temp.	Cond.	Sal.	Sample Bot. Data Therm-P	Avg Tw	Sal.	Sal. Bot. #	Other Samp.	Pos.
1		Bot	+20 3465							3466.713	1.497	31.488	34.656					501	1
2		5	+30 3415	193500						3419.064	1.492	31.467	34.657	3372	1.43	34.673	20	502	2
3			+180 3365							3365.980	1.517	31.467	34.653					503	3
4		4	3200	194720	195242					3200.013	1.590	31.460	34.641	3151	1.58	34.657	23	504	4
5			3000		195712					2999.447	1.641	31.421	34.631					505	5
6		3	2600	200445	200959	THERM FRAME HUNG				2600.825	1.710	31.316	34.614	—	—	34.629	08	506	6
7			2200		201811					2199.400	1.809	31.226	34.589					507	7
8		2	1800	202600	203135					1802.005	1.977	31.181	34.551	1784	1.98	34.562	14	508	8
9			1500		203755					1500.768	2.178	31.194	34.505					509	9
10		1	1200	204400	204911	THERM FRAME HUNG				1201.759	2.473	31.268	34.435	—	—	34.445	29	510	10
11																			11
12																			12

LL/RW Initials WF/CD ✓

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
053S	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	439			LINE VII STA F

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	Longitude Min.	E or W	Date Day	Date Mo.	Date Yr. (JD = 227)	Time GMT Hr.	Time GMT Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
053	57	42.92	N	164	58.15	E	15	AUG	91	22	53	12.1	11.5	1014	3	7	140	08	8	7	5	3470	VIIF

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 227/
at Surface 2214
Start Down 221725
at Bottom 225330
Start Up 225410
at Surface
Data off

Data Location
Tape/Diskette I.D.
File Name/Header: MF9109 053S 15A162216

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1		B	70		2319					69.332	1.442	28.877	33.165			33.170	25		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials ____
✓ ____

.970 3.625

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
054S	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	442			LINE VII STA G

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 228 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
054	57	51.57	N	164	41.68	E	16	AUG	91	01	07	12.9	11.9	13	37	125	10	8	7	2	3387	VIIG

CTD

Type & SN 91220-B

Press. SN 26072

Temp. SN 710

Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time

Data on 002830

at Surface 002715

Start Down 002840

at Bottom 010710

Start Up 010740

at Surface

Data off

Data Location

Tape/Diskette I.D.

File Name/Header: MF9109 054S 16AUG0019

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot.Data Therm-P	Sample Bot.Data Avg Tw	Sample Bot.Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1																			1
2	O	B	750	✓ 012030						752.793	2.996	31.414	34.292	740	3.00	34.299	13		2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials CD/WF

✓ ____

.971 3.663

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
055S	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	445			LINE VII, STA H

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	Longitude Min.	E or W	Date JD = 228 Day	Mo.	Yr.	Time GMT Hr.	Time GMT Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
055	57	59.70	N	164	28.15	E	16	AUG	91	05	06	15.5	13.7	12	3	8	12	06	7	7	1	3333	VIIIH

CTD

Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		.946
Temp.		13.379
Cond.		38.996
Other		32.802

Times JD/Time

Data on 228
at Surface 024330
Start Down 024635
at Bottom 031525
Start Up 0316
at Surface
Data off

Data Location

Tape/Diskette I.D.
File Name/Header MF9109_055S 16AUG0243

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1			1200							1203.853	2.519	31.304	34.428					511	1
2			1000							1000.387	2.757	31.372	34.365					512	2
3			800							799.862	3.025	31.455	34.287					513	3
4			600							600.599	3.305	31.519	34.174					514	4
5			400							400.315	3.523	31.529	34.063					515	5
6			200							199.754	3.347	31.004	33.723					516	6
7			100							100.212	1.116	28.655	33.210					517	7
8			50							49.788	2.529	29.755	33.135			33.140	02	518	8
9			25							25.341	8.287	34.641	33.034					519	9
10			0							1.216	13.382	39.012	32.814					520	10
11																			11
12																			12

Initials CD/WF

✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
055D	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	444			LINE VII ; STA H

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date Day	Date Mo.	Date Yr. (JD = 228)	Time GMT Hr.	Time GMT Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
055	57	59.70	N	164 28.15	E	16	AUG	91	03	15	13.0	12.0	12	37	1	35	08	8	7	2	3387	VIIH

CTD
Type & SN 92067
Press. SN 30066
Temp. SN 889
Cond. SN 529

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on
at Surface 035015
Start Down 035115
at Bottom 050537
Start Up 0507
at Surface
Data off

Data Location
Tape/Diskette I.D.
File Name/Header MF9109 055D
16AUG0344

Remarks DEEP CAST
logging started @ 1150 m

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1			3300		0507					3337.646	1.523	31.462	34.653					521	1
2 (3258)		5	3250	050830	051350					3288.239	1.551	31.464	34.648	3242	1.49	34.666	34	522	2
3			3200		051625					3237.063	1.565	31.455	34.646					523	3
4		4	3050	052110	052615	Therm Rock Hung				3048.228	1.597	31.408	34.639	—	—	34.655	33	524	4
5			3000		0528					2999.916	1.603	31.394	34.637					525	5
6		3	2600	053520	054030	Therm Rock hung				2598.951	1.671	31.287	34.621	—	—	34.636	28	526	6
7			2200		054920					2200.809	1.784	31.209	34.595					527	7
8 (1800)		2	1800	055630	060140					1800.009	1.996	31.193	34.547	1781	1.99	34.559	27	528	8
9			1500		0608					1499.989	2.217	31.221	34.497					529	9
10		1	1200	061350	061850					1198.040	2.514	31.295	34.426	1186	2.51	34.436	21	530	10
11																			11
12																			12

Initials SD
✓

.940 3.661

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
056S	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	447			LINE VII, STA I

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date Day	Mo.	Yr.	JD = 228	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
056	58	05.85	N	164 19.62	E	16	AUG	91		08	11	13.0	12.0	1012.1	2	8	140	04	8	7	2	3408	VIII

CTD

Type & SN 91220-B

Press. SN 26072

Temp. SN 710

Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		0.758
Temp.		13.400
Cond.		38.977
Other		32.766

Times JD/Time

Data on ____

at Surface 0734 20

Start Down 0735 24

at Bottom 08 11 20

Start Up 08 10 45

at Surface ____

Data off ____

Data Location

Tape/Diskette I.D. ____

File Name/Header MF9109 056S 16AUG 0734

Remarks @ 1500m w/o 1499

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot.Data Therm-P	Sample Bot.Data Avg Tw	Sample Bot.Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1																			1
2																			2
3																			3
4	38	B	1250	081652	082201					1248.687	2.463	31.284	34.442			34.449	03		4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials LL/PW

✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
0578	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	450			VII J

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date Day	Mo.	Yr.	JD = 228	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
057	58	12.85	N	164 20.21	E	16	AUG	91		10	13	13.3	11.9	12	2	7	130	06	8	5	2	346.6	VII F J

CTD
Type & SN 92067
Press. SN 30066
Temp. SN 889
Cond. SN 529

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on ____
at Surface ____
Start Down ____
at Bottom 1014
Start Up ____
at Surface ____
Data off ____

Data Location
Tape/Diskette I.D. ____
File Name/Header MF9109
16 Aug 0934

Remarks DEEP CAST WO 1496 P 1502

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1																			1
2			10							10.378	13.409	39.074	32.845			32.802		06	2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials LL/PW
✓

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
0588	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	452			VII K

Consec. Cast #	Latitude Deg.	Min.	N or S	Longitude Deg.	E or W	Date Day	Mo.	Yr.	JD =	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
058	58	17	23	164	12	91	E	16	AUG	91	1237	105	100	1012.3	2	7	120	07	87	2	3283	VII K

CTD

Type & SN 92067

Press. SN 30066

Temp. SN 889

Cond. SN 529

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time

Data on ____

at Surface ____

Start Down ____

at Bottom 1236

Start Up ____

at Surface ____

Data off ____

Data Location

Tape/Diskette I.D.	File Name/Header
	MF9109

Remarks DEEP CAST w.o. - 1501

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Temp.	Cond.	Other	Conv. Mon. Values-CTD Press.	Temp.	Cond.	Sal.	Sample Bot. Data Therm-P	Avg Tw	Sal.	Sal. Bot. #	Other Samp.	Pos.
1										10.723	13.203	38.586	32.564			32.561			1
2			10														16		2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials LL/PW

✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
0595	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	454			VII L

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date Day	Mo.	Yr.	JD = 228	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb 1012.0	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
059	58	22.00	N	164 06.78	E	16	AUG	91		1435		12.0	10.8	12	2	7	120	04	8	7	2	1750	VII L

CTD
Type & SN 92067
Press. SN 30066
Temp. SN 889
Cond. SN 529

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on
at Surface
Start Down
at Bottom 1434
Start Up
at Surface
Data off

Data Location
Tape/Diskette I.D.
File Name/Header MF9109

Remarks DEEP CAST w/o 1504

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Temp.	Cond.	Other	Conv. Mon. Values-CTD Press.	Temp.	Cond.	Sal.	Sample Bot. Data Therm-P	Avg Tw	Sal.	Sal. Bot. #	Other Samp.	Pos.
1	11	—								9.636	10.326	36.085	32.658			32.672	07		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials LLPW

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
0605	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	484			LINE VIII, STA A

Consec. Cast #	Latitude Deg.	Min.	N or S	Longitude Deg.	E or W	Date JD = 229 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
060	56	52.03	N	168	30.43	17	AUG	91	06	44	12.4	10.8	12	3	8		0	8	7	2366	VIII A

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on ____
at Surface 06 12 20
Start Down 06 14 50
at Bottom 06 44 17
Start Up ____
at Surface ____
Data off ____

Data Location
Tape/Diskette I.D. ____
File Name/Header MF9109_0605_17Aug 06 12

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Temp.	Cond.	Other	Conv. Mon. Values-CTD Press.	Temp.	Cond.	Sal.	Sample Bot. Data Therm-P	Avg Tw	Sal.	Sal. Bot. #	Other Samp. (nuts)	Pos.
1			1200		064455					1199.796	2.482	31.277	34.437					531	1
2			1000							1000.637	2.718	31.349	34.378					532	2
3			800		0654					800.325	2.961	31.412	34.303					533	3
4			600		065910					600.927	3.243	31.492	34.207					534	4
5			400		070400					401.559	3.497	31.500	34.056					535	5
6			200		070850					200.299	3.122	30.774	33.680					536	6
7			100		071200					99.698	1.068	28.617	33.212			33.216	15	537	7
8			50		071430					49.755	2.413	29.661	33.138					538	8
9			25		071610					25.592	7.667	34.056	32.995					539	9
10			0		071730					1.272	12.224	37.982	32.842					540	10
11																			11
12																			12

Initials WF/CD
✓ ____

WWH [illegible]

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
060D	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	485			LINE VIIF, STA A

Consec. Cast #	Latitude Deg.	Min.	N or S	Longitude Deg.	E or W	Date JD = 229 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb 1012.0	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
060	56	52.82	N	168	29.38	17	AUG	91	08	53	11.5	9.8	12	4	8	---	00	8	7	2	3866	A

CTD

Type & SN 92067

Press. SN 30066

Temp. SN 889

Cond. SN 529

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time

Data on ____

at Surface ____

Start Down ____

at Bottom 0851

Start Up ____

at Surface ____

Data off ____

Data Location

Tape/Diskette I.D. ____

File Name/Header MF9109 060D 17AUG0725

Remarks DEEP CAST w/o 3834

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Temp.	Cond.	Other	Conv. Mon. Values-CTD Press.	Temp.	Cond.	Sal.	Sample Bot. Data Therm-P	Avg Tw	Sal.	Sal. Bot. #	Other Samp.	Pos.
1			3890							3891.871	1.536	31.671	34.665					421	1
2		5	3840	085600						3839.965	1.545	31.660	34.653	3774	1.55	34.673	24	422	2
3			3790							3791.050	1.553	31.649	34.652					423	3
4		4	3400	091313						3399.752	1.594	31.538	34.643	3343	1.60	34.661	26	424	4
5			3000							3000.260	1.625	31.410	34.634					425	5
6		3	2600	093705						2602.969	1.684	31.798	34.618	2581	1.67	34.634	30	426	6
7			2200							2201.088	1.807	31.225	34.590					427	7
8		2	1800	095850						1799.869	1.985	31.185	34.549	1782	1.98	34.562	04	428	8
9			1500							1500.963	2.195	31.206	34.501					429	9
10		1	1200	101830						1199.969	2.476	31.270	34.435	1188	2.47	34.445	19	430	10
11																			11
12																			12

Initials LL/PW

✓

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
0615	NOAA Ship MILLER FREEMAN	MF-91-09 B.S. FOCI	492			~~VIII~~ B

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date Day	Mo.	Yr.	JD = 229	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb 1012.0	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
061	57	31.70	N	168 32.04	E	17	AUG	91		1503		11.6	10.5	12.4	7	—	00	8	7	2		3750	VIII B

CTD
Type & SN 92067
Press. SN 30066
Temp. SN 889
Cond. SN 529

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on
at Surface
Start Down
at Bottom 1503
Start Up
at Surface
Data off

Data Location

Tape/Diskette I.D.	File Name/Header
	MF9109 0615
	17 AUG 1424

Remarks DEEP CAST
w/o 1516

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1			1500	150340						1499.049	2.309	31.287	34.480	1474	2.31	34.489	13		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials ____
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
625	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	500			LINE VIII, STA C.

Consec. Cast #	Latitude Deg.	Min.	N or S	Longitude Deg.	E or W	Date JD = 229 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
062	58	05	N	168	32 02	E 17	AUG	91	19	43	11.6	10.5	12	4	7		08	7	2	37 37	VIIIC

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on ____
at Surface ____
Start Down ____
at Bottom ____
Start Up ____
at Surface ____
Data off ____

Data Location
Tape/Diskette I.D. ____
File Name/Header: MF9109 0625, 17 AUG 1904

Remarks First attempt at this station aborted @ c. 900m due to frozen display screen.

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Temp.	Cond.	Other	Conv. Mon. Values-CTD Press.	Temp.	Cond.	Sal.	Sample Bot. Data Therm-P	Avg Tw	Sal.	Sal. Bot. #	Other Samp.	Pos.
1									Sal										1
2	6		150			152.519	2.339	29.960	33.529							33.526	09		2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Start LL/PW

Initials WF/CD
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
063S	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	502			LINE VIII, STA D

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 229 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
063	58	24.78	N	168	31.21	E 17	AUG	91	22	50	15.8	13.3	1024.7			0	0	8	7	3595	VIIID

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		0.435
Temp.		12.364
Cond.		38.202
Other (SAL)		32.931

Times JD/Time
Data on ____
at Surface 221815
Start Down 222015
at Bottom 225002
Start Up ____
at Surface ____
Data off ____

Data Location
Tape/Diskette I.D. ____
File Name/Header MF9109 063S
17AUG2217

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Temp.	Cond.	Other	Conv. Mon. Values-CTD Press.	Temp.	Cond.	Sal.	Sample Bot. Data Therm-P	Avg Tw	Sal.	Sal. Bot. #	Other Samp.	Pos.
1			1200		225030					1201.479	2.461	31.263	34.442					431	1
2			1000		2256					999.916	2.691	31.331	34.385					432	2
3			800		2301					800.009	2.950	31.408	34.309					433	3
4			600		2306					600.232	3.207	31.474	34.223					434	4
5			400		2311					399.444	3.494	31.513	34.075					435	5
6			200		2317					199.935	3.433	31.115	33.769					436	6
7			100		2320					100.312	1.027	28.592	33.225					437	7
8			50		2322					49.898	2.407	29.647	33.128					438	8
9			25		2323					24.414	6.597	33.130	33.009			33.024	21	439	9
10			0		2325					0.873	12.393	38.237	32.939					440	10
11																			11
12																			12

Initials CD WF
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
063D	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	503			LINE VII, STA D

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date Day	Mo.	Yr.	JD = 230	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb 1011.9	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
063	58	24.17	N	168 31.73	E	18	AUG	91		00	51	15.8	13.3	1247			/	00	8	7	2359.5	VIII D

CTD
Type & SN 92067
Press. SN 30066
Temp. SN 889
Cond. SN 529

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on ____
at Surface ____
Start Down 2330
at Bottom 0050
Start Up 005113
at Surface ____
Data off ____

Data Location

Tape/Diskette I.D.	File Name/Header
	MF9109 063D
	17AUG2332

Remarks DEEP CAST

3640 NUTS

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1			3565		0050					3618.012	1.556	31.590	34.651					441	1
2		5	3515	✓ 005245	005745					3570.516	1.579	31.590	34.648			34.666	29	442	2
3			3465		0108					3526.180	1.587	31.577	34.646					443	3
4		4	3200	✓	0109	NOT HELD @ DEPTH FOR 5 MIN				3197.453	1.613	31.476	34.638			34.655	27	444	4
5			3000		0112					3002.186	1.626	31.411	34.634					445	5
6		3	2600	✓ 012045	012600					2600.480	1.667	31.285	34.622			34.636	22	446	6
7			2200		013410					2199.984	1.790	31.213	34.594					447	7
8		2	1800	✓ 014130	014630					1800.374	1.978	31.181	34.551			34.562	23	448	8
9			1500		0152					1497.736	2.186	31.199	34.504					449	9
10		1	1200	✓ 015810	020315					1199.390	2.463	31.261	34.438			34.447	16	450	10
11																			11
12																			12

Initials CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
0645	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	505			LINE VIII, STA 8

Consec. Cast #	Latitude Deg.	Min.	N or S	Longitude Deg.	E or W	Date JD = 230 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
064	58	37.80	N	168 31.26	E	18	AUG	91	04	19	13.1	11.6	1247	2	3	0	04	8	7	3520	VIII E

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on ____
at Surface 034015
Start Down 034315
at Bottom 041929
Start Up 0420
at Surface ____
Data off ____

Data Location
Tape/Diskette I.D. ____
File Name/Header MF9109_0645_18AUG0326

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Temp.	Cond.	Other	Conv. Mon. Values-CTD Press.	Temp.	Cond.	Sal.	Sample Bot. Data Therm-P	Avg Tw	Sal.	Sal. Bot. #	Other Samp.	Pos.
1	0	B	180	✓044430	0449					182.196	3.644	31.296	33.775	180	3.64	33.773	18		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials CD/WF
✓ ____

1.258 3.7+0

Pg. 78 of ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
065S	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	508			LINE VIII, STA F

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date Day	Mo.	Yr.	JD = 230	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
065	58	49.16	N	168	30.04	18	AUG	91		06	31	12.8	11.8	1238	2	4	0	07	8	7	3195	VIIIF

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks	on Deck	at Surface
Press.		2.433
Temp.		12.401
Cond.		38.294
Other		32.986

Times	JD/Time
Data on	
at Surface	055300
Start Down	055440
at Bottom	063015
Start Up	063048
at Surface	
Data off	

Data Location
Tape/Diskette I.D.
File Name/Header: MF9109 065S 18AUG0549

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1			10							13.457	10.567	36.622	32.978			32.990	7		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials CD/WF

✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
066S	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	509			LINE VIII, STA G

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	Longitude Min.	E or W	Date Day	Date Mo.	Date Yr. (JD = 230)	Time GMT Hr.	Time GMT Min.	Dry Bulb	Wet Bulb	Bar. mb (1012.0)	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
066	58	55.81	N	168	31.16	E	18	AUG	91	08	07	12.8	11.8	12	3	8	200	09	8	7	2	31 79	VIII G

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on ____
at Surface 073720
Start Down 073810
at Bottom 0807
Start Up ____
at Surface ____
Data off ____

Data Location
Tape/Diskette I.D. ____
File Name/Header MF9109 066S 18AUG0729

Remarks w/o 1195

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1			1200							1200.142	2.560	31.329	34.418			34.426	33	451	1
2			1000							1001.425	2.781	31.388	34.358					452	2
3			800							800.733	3.052	31.472	34.278					453	3
4			600							599.743	3.332	31.543	34.176					454	4
5			400							400.407	3.596	31.546	34.008					455	5
6			200							200.258	2.662	30.256	33.529					456	6
7			100							99.951	1.248	28.747	33.188					457	7
8			50							49.413	2.351	29.616	33.147					458	8
9			25							24.208	5.732	32.392	33.027					459	9
10			0							0.766	13.022	38.712	32.843					460	10
11																			11
12																			12

Initials CB/WF - LL/PW
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
066D	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	510			VIII G

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date Day	Mo.	Yr.	JD = 230	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
066	58	55.75	N	168 31.82	E	18	AUG	91		1006		13.21	12.5	1012.2	3	8	200	09	8	7	2	3216	VIIIG

CTD
Type & SN 92067
Press. SN 30066
Temp. SN 889
Cond. SN 529

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on ____
at Surface ____
Start Down ____
at Bottom ____
Start Up ____
at Surface ____
Data off ____

Data Location
Tape/Diskette I.D. ____
File Name/Header MF9109 066D 18AUG0854

Remarks DEEP CAST w/o 3178m

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Temp.	Cond.	Sal.	Sample Bot. Data Therm-P	Avg Tw	Sal.	Sal. Bot. #	Other Samp.	Pos.
1			3225							3226.645	1.543	31.446	34.663					461	1
2		5	3175	100918						3176.067	1.566	31.455	34.672	3125	1.57	34.661	02	462	2
3			3125							3126.243	1.575	31.446	34.674					463	3
4		4	3000	102251						3000.741	1.592	31.414	34.674	2954	1.59	34.655	14	464	4
5			2800							2801.015	1.633	31.369	34.667					465	5
6		3	2600	103834						2599.791	1.681	31.325	34.657	2463	1.73	34.633	08	466	6
7			2200							2201.809	1.823	31.237	34.587					467	7
8		2	1800	110244						1798.965	2.026	31.214	34.541	1067	2.65	34.552	34	468	8
9			1500							1501.184	2.262	31.252	34.487					469	9
10		1	1200	11:21:30						1199.435	2.557	31.325	34.416	1186	2.55	34.424	25	470	10
11																			11
12																			12

Initials LJP
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
67S	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	511			JIII H

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	Longitude Min.	E or W	Date Day	Date Mo.	Date Yr.	JD =	Time GMT Hr.	Time GMT Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
067	59	03	05 N	168	30	75 E	18	AUG	91	13	12	13	11	16	1012.2	3	8	225	11	8	72	3158	~~JIII~~ H

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on
at Surface
Start Down
at Bottom 1312
Start Up
at Surface
Data off

Data Location
Tape/Diskette I.D.
File Name/Header
MF9109 067S
18AUG1234

Remarks
w/o 1494

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot.Data Therm-P	Sample Bot.Data Avg Tw	Sample Bot.Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1																			1
2	16		10							9.569	10.102	36.001	32.775			32.782	28		2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials LL/BW
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
0685	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	512			~~VII~~ I

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 230 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb 1012.2	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
068	59	08	05 N	168	31 05 E	18	AUG	91	14	52	13.0	11.2	1023.8	2	7	0	12	8	7	326	~~VIII~~ I

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on ____
at Surface ____
Start Down ____
at Bottom 1451
Start Up ____
at Surface ____
Data off ____

Data Location

Tape/Diskette I.D.	File Name/Header
	MF9109.0685
	18AUG1413

Remarks
w/o 1553

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1			1500							1500.224	2.248	31.245	34.493			34.502	20		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials LCR
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
0695	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	516			~~VIII~~ J

Consec. Cast #	Latitude Deg.	Min.	N or S	Longitude Deg.	E or W	Date JD = 230 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb 1012.6	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
0695	59	15.10	N	168 31.89	E	18	AUG	91	16	56	13.2	12.2	13	3	8	250	12	8	7	3220	~~VIII~~ 5

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on
at Surface
Start Down
at Bottom 1656
Start Up
at Surface
Data off

Data Location

Tape/Diskette I.D.	File Name/Header
	MF9109 0695
	18AUG91 1615

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Temp.	Cond.	Other	Conv. Mon. Values-CTD Press.	Temp.	Cond.	Sal.	Sample Bot.Data Therm-P	Avg Tw	Sal.	Sal. Bot. #	Other Samp.	Pos.
1																			1
2	38	B	10	1722.30	1727.50					10.270	12.617	38.211	32.714	16	13.04	32.734	03		2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials LL/PW
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
070s	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	517			~~VIII~~ K

Consec. Cast #	Latitude Deg.	Min.	N or S	Longitude Deg.	E or W	Date JD = Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
070	59	24.82	N	168 31.38	E	18	AUG	91	19	07	12.1	11.8	1013.0	3	7	250	14	8	7	308	~~VIII~~ K

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on
at Surface
Start Down
at Bottom
Start Up
at Surface
Data off

Data Location
Tape/Diskette I.D.
File Name/Header: MF9109

Remarks
w/o 1500

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	16		1500							1499.983	2.214	31.221	34.500			34.508	06		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials ____
✓ ____

.768 3.679

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
0715	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	519			LINE VIII, STA L

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date Day	Mo.	Yr.	JD = 230	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
071	59	37	N	168	E	18	AUG	91		21	27	13.6	12.1	1013	3	8	220	10	8	7	2	2966	VIIIL

CTD

Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		0.825
Temp.		12.317
Cond.		38.120
Other		32.894

Times JD/Time

Data on 204940
at Surface 204850
Start Down 205005
at Bottom 212645
Start Up 212643
at Surface
Data off

Data Location

Tape/Diskette I.D.

File Name/Header: MF9109 0715 18AUG2048

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot.Data Therm-P	Sample Bot.Data Avg Tw	Sample Bot.Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1			300	214835	215340					287.814	3.672	31.446	33.869	285	3.67	33.865	35		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials ____
✓ ____

.93 3.64

Pg. 86 of ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
0725	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	521			LINE VIII, STA M

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	Longitude	E or W	Date Day	Date Mo.	Date Yr. (JD = 231)	Time GMT Hr.	Time GMT Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
072	59	55.37	N	168	30.67	E	19	AUG	91	00	08	12.1	11.8	13	3	7	230	16	8	7	1368	VIII M

CTD

Type & SN 91220-B

Press. SN 26072

Temp. SN 710

Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time

Data on ____

at Surface 233300

Start Down 233725

at Bottom 000810

Start Up 000835

at Surface ____

Data off ____

Data Location

Tape/Diskette I.D.	File Name/Header
	MF9109 0725
	18AUG2332

Remarks

Salinities "bouncy" @ surface
Bucket sample taken

30.8
change
32.86

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot.Data Therm-P	Sample Bot.Data Avg Tw	Sample Bot.Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	Bucket sample @ surface												32.86			32.865	12		1
2																			2
3			150		0029					152.984	1.004	28.597	33.225			33.230	11		3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials ____

✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
073S	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	522			LINE VIII, STA N

Consec. Cast #	Latitude Deg.	Min.	N or S	Longitude Deg.	E or W	Date JD = 231 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
073	60	05	09 N	168	30 93	E 19	AUG	91	02	08	13.0	12.0	14	37	2	30	16	8	7	2 270	VIII N

CTD

Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		1.004
Temp.		12.407
Cond.		36.722
Other		31.479

Times JD/Time

Data on 015750
at Surface 015600
Start Down 015800
at Bottom 020830
Start Up
at Surface
Data off

Data Location

Tape/Diskette I.D.	File Name/Header
	MF9109 073S
	19AUG0155

Remarks stopped at 135 m for ~2 mins then continued max depth 263 m "Jumpy" salinities @ surface

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot.Data Therm-P	Sample Bot.Data Avg Tw	Sample Bot.Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1										20.718	4.247	30.918	32.800			32.815	1		1
2																			2
3	Bucket sample @ surface															31.697	5		3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Both up downcast are here in file cassette

Initials CO/WF

✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
074	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	563			LINE IX STA A

Consec. Cast #	Latitude Deg.	Min.	N or S	Longitude Deg.	E or W	Date JD = 232 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
074	57	28	27	N 173	42 16	E 20	AUG	91	01	52	11.9	10.2	1019	3	7	200	18	5	6	1	3712	IX A

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on
at Surface 001100
Start Down 001255
at Bottom
Start Up
at Surface
Data off

Data Location
Tape/Diskette I.D.
File Name/Header MF9109_074S_20Aug 0010

Remarks
nuts

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Temp.	Cond.	Other	Conv. Mon. Values-CTD Press.	Temp.	Cond.	Sal.	Sample Bot. Data Therm-P	Avg Tw	Sal.	Sal. Bot. #	Other Samp.	Pos.
1			1200							1202.164	2.506	31.297	34.435					471	1
2			1000							1000.859	2.743	31.362	34.367					472	2
3			800							800.436	3.019	31.450	34.286					473	3
4			600							600.003	3.334	31.557	34.189					474	4
5			400							400.730	3.655	31.620	34.035					475	5
6			200							200.643	3.583	31.181	33.691					476	6
7			100							100.018	1.758	29.147	33.155			33.160	22	477	7
8			50							50.503	3.137	30.262	33.125					478	8
9			25							25.028	9.378	35.581	33.001					479	9
10			0							1.343	10.679	36.751	33.011					480	10
11																			11
12																			12

Initials DF/CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
074D	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	564			LINE IX; STA A

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date Day	Mo.	Yr. (JD = 232)	Time GMT Hr.	Time GMT Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
074	57	28.34	N	173 42.98	E	20	AUG	91	03	00	11.9	10.3	18	37	18	014	6	3	1	37	12	IX A

CTD
Type & SN 92067
Press. SN 30066
~~Temp. SN~~ 889
Cond. SN 529

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on
at Surface 012010
Start Down 020308 012055
at Bottom 025945
Start Up
at Surface
Data off

Data Location
Tape/Diskette I.D.
File Name/Header: MF9109 074D 20AUG0122 to 1485 20AUG

Remarks DEEP CAST salinity jump @~1340 (~.08‰) closed file MF9109-074D_20AUG0122, brought CTD back to 1200 m, restarted cast

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Temp.	Conv. Cond.	Conv. Sal.	Sample Bot. Data Therm-P	Avg Tw	Sal.	Sal. Bot. #	Other Samp.	Pos.
1			~3680		030038					3742.256	1.593	31.685	34.675					481	1
2		5	~3630	030250						3685.036	1.594	31.669	34.675			34.668	30	482	2
3			~3580							3631.773	1.593	31.645	34.674					483	3
4		4	3200	031900	032415					3200.135	1.592	31.478	34.661			34.659	27	484	4
5			3000		032830					2999.257	1.605	31.409	34.653					485	5
6		3	2600	033540	034055					2599.684	1.670	31.282	34.616			34.636	25	486	6
7			2200	034830						2199.962	1.784	31.203	34.589					487	7
8		2	1800	035520	040045					1797.337	1.982	31.178	34.545			34.562	16	488	8
9			1500	040620						1498.001	2.215	31.220	34.498					489	9
10		1	1200	041220						1198.054	2.525	31.305	34.427			34.438	04	490	10
11																			11
12																			12

Initials LJF/CD

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
0755	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	571			1X B

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 232 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb 1017.2	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
075	58	05	N	173 22	63 E	20	AUG	91	08	29	10.6	09.4	17	3	7	170	18	8	6	2	36 12	1X B

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on
at Surface
Start Down
at Bottom 0827 05
Start Up 0832 32
at Surface
Data off

Data Location
Tape/Diskette I.D.
File Name/Header: MF9109 0755 20AUG0759

Remarks w0/1499

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot.Data Therm-P	Sample Bot.Data Avg Tw	Sample Bot.Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	38	B	1500	082700	083215					1498.698	2.243	31.241	34.494			34.503	14		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials ✓

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
076S	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	577			IX C

Consec. Cast #	Latitude Deg.	Min.	N or S	Longitude Deg.	E or W	Date JD = 232 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb 1016.6	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
076	58	41	65 N	173 07	01 E	20	AUG	91	12	54	11.6	9.5	17	3	7	165	18	8	6	2	3450	IX C

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on
at Surface
Start Down
at Bottom 1254
Start Up
at Surface
Data off

Data Location
Tape/Diskette I.D.
File Name/Header
MF9109 076S
20 AUG 1216

Remarks
w/o 1497

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Temp.	Cond.	Other	Conv. Mon. Values-CTD Press.	Temp.	Cond.	Sal.	Sample Bot. Data Therm-P	Avg Tw	Sal.	Sal. Bot. #	Other Samp.	Pos.
1			10							10.420	11.292	37.215	32.916			32.923	09		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials LL/BW
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
772	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	583			IX D

Consec. Cast #	Latitude Deg. Min.	N or S	Longitude Deg.	E or W	Date JD = 232 Day Mo. Yr.	Time GMT Hr. Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
0772	5906 31	N	17257 70	E	20 AUG 91	1617	109	98	1016.1	4	7	150	18	8	62	3331	IX D

CTD

Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time

Data on
at Surface
Start Down
at Bottom 1617
Start Up
at Surface
Data off

Data Location

Tape/Diskette I.D.

File Name/Header
MF9109 0775
20 Aug 1538

Remarks w/o 1494

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1			1501							1500.777	2.181	31.199	34.507			34.513	02		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials ____
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
0785	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	586			LINE IX, STA E

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 232 Day	Mo.	Yr.	Time GMT Hr.	Time GMT Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
078	59	21.25	N	172 46.66	E	20	AUG	91	18	37	11.0	09.6	16	4	7	135	18	8	6	2	3368	IX E

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on ____
at Surface ____
Start Down ____
at Bottom 1836
Start Up ____
at Surface ____
Data off ____

Data Location

Tape/Diskette I.D.	File Name/Header
	MF9109 0785
	21 AUG 1750 *

Remarks
w/ 1215

* out-of-sequence date stamp due to reconstruction of cast from audio tape. (original accidentally deleted??)

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1			1200							1201.677	2.535	31.314	34.425					481	1
2			1000	184225						998.316	2.778	31.386	34.360					482	2
3			800							800.720	3.027	31.461	34.291					483	3
4			600	185624						604.364	3.301	31.528	34.187					484	4
5			400							400.056	3.562	31.535	34.031					485	5
6			200	191104						201.134	3.591	31.244	33.758					486	6
7			100							99.875	1.609	29.046	33.185					487	7
8			50	192155						49.614	2.805	29.991	33.137					488	8
9			25							24.532	9.219	35.424	32.986					489	9
10			0	193124						1.826	11.628	37.435	32.837			32.843	34	490	10
11																			11
12																			12

Initials PW/LL
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
078D	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	587			IX-E

Consec. Cast #	Latitude Deg.	Min.	N or S	Longitude Deg.	Min.	E or W	Date JD = 232 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
078	59	22.58	N	172	45.33	E	20	AUG	91	21	35	12.8	11.0	1016.4	8	1	130	15	8	6	2	3362	IXE

CTD
Type & SN 92067
Press. SN 30066
Temp. SN 889
Cond. SN 529

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 232
at Surface
Start Down 204415 / 194515
at Bottom 213510
Start Up
at Surface
Data off

Data Location
Tape/Diskette I.D. ? Jellyfish @ ~1700 m?
File Name/Header MF9109_078D_20Aug1938
20AUG2026
2042

Remarks DEEP CAST
Logging started @ 1033m

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Temp.	Cond.	Other	Conv. Mon. Values-CTD Press.	Temp.	Cond.	Sal.	Sample Bot. Data Therm-P	Avg Tw	Sal.	Sal. Bot. #	Other Samp.	Pos.
1			~3340		213520					3374.880	1.578	31.516	34.644					491	1
2		5	~3290	213725	214330					3341.899	1.575	31.500	34.644			34.666	33	492	2
3			~3240		214510					3288.595	1.574	31.478	34.642					493	3
4		4	3200	214735	215240					3197.825	1.578	31.447	34.639			34.662	32	494	4
5			3000		215825					2998.933	1.597	31.385	34.633					495	5
6		3	2600		220700					2587.671	1.667	31.273	34.613			34.635	18	496	6
7			2200		222050					2197.173	1.788	31.202	34.584					497	7
8		2	1800	222820	223455					1794.678	1.992	31.187	34.546			34.558	8	498	8
9			1500		224105					1498.438	2.237	31.233	34.491					499	9
10		1	1200	224715	225235					1200.880	2.543	31.315	34.419			34.428	7	500	10
11																			11
12																			12

↑ .08 deep
↓ .15

brought up from 2119m to 2073m ~21067

Initials CD / WF
✓

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
0795	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	588			LINE IX, STA F

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 233 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb 1014.7	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
079	59	33.01	N	172 40.24	E	21	AUG	91	00	56	11.6	10.5	15	4	8	110	18	8	7	2	3325	IX F

CTD

Type & SN	~~92067~~	912207
Press. SN	~~30066~~	26072
Temp. SN	~~889~~	710
Cond. SN	~~529~~	304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time

Data on	233 /
at Surface	001740
Start Down	001820
at Bottom	005612
Start Up	
at Surface	
Data off	

Data Location

Tape/Diskette I.D.	File Name/Header
	MF9109 0795
	21AUG0016

Remarks ~~DEEP~~ CAST SHALLOW

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Temp.	Cond.	Other	Conv. Mon. Values-CTD Press.	Temp.	Cond.	Sal.	Sample Bot. Data Therm-P	Avg Tw	Sal.	Sal. Bot. #	Other Samp.	Pos.
1																			1
2	38	B	1250	✓ 001230	001740					1249.851	2.567	31.355	34.415			34.423	10		2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials CD/WF

✓

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
080S	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	590			LINE IX, STA G

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 233 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb 1014.0	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
080	59	42.80	N	172	35.55	E	21 AUG	91	03	03	10.5	10.1	14	4	8	110	18	8	7	2	3237	IXG

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		1.375
Temp.		11.951
Cond.		37.636
Other		32.748

Times JD/Time
Data on ____
at Surface 022640
Start Down 022750
at Bottom 030300
Start Up 030310
at Surface ____
Data off ____

Data Location
Tape/Diskette I.D. ____
File Name/Header MF9109_0805

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot.Data Therm-P	Sample Bot.Data Avg Tw	Sample Bot.Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1			100							101.822	1.324	28.781	33.149			33.155	12		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials CD/WF
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
081S	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	591			LINE TX, STA H

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 233 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
081	59	49	03 N	1723	03 E	21	AUG	91	04	46	11.8	11.2	1013	4	7	090	10	8	7	3181	TXH

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on ____
at Surface 040535
Start Down 040655
at Bottom 044611
Start Up 044643
at Surface ____
Data off ____

Data Location
Tape/Diskette I.D. ____
File Name/Header MF9109 081S 21AUG0405

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot.Data Therm-P	Sample Bot.Data Avg Tw	Sample Bot.Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1																			1
2	7		75	051240						77.998	1.239	28670	33.112			33.116	24		2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials WF/CD
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
082S	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	594			LINE TX, STA I

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	Longitude	E or W	Date JD = 233 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb 1013.1	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
082	59	56	N	172	29.76	E	21	AUG	91	06	45	11.2	11.2	13	4	5	100	12	8	7	2	30	56 TX I

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		1.012
Temp.		11.531
Cond.		37.095
Other		32.591

Times JD/Time
Data on ____
at Surface 061040
Start Down 061205
at Bottom 064448
Start Up ____
at Surface ____
Data off ____

Data Location
Tape/Diskette I.D. ____
File Name/Header MF9109 082S 21AUG0609

Remarks nuts

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	38	B	1200	064448	064500					1197.097	2.689	31.414	34.385			34.392	11	501	1
2			1000	065346	5411					1000.122	2.943	31.491	34.313					502	2
3			800	065904	5925					801.890	3.229	31.579	34.221					503	3
4			600	070428	0450					600.264	3.486	31.592	34.072					504	4
5			400	071019	1036					400.135	3.614	31.347	33.753					505	5
6			200	071445	071520					200.060	0.779	28.420	33.210					506	6
7			100	071741	071800					100.979	1.268	28.735	33.151					507	7
8			50	071943	071956					50.958	1.015	28.422	33.048					508	8
9			25	072107	072125					25.315	0.991	28.258	32.877					509	9
10			0	072240	072356					1.097	11.549	37.126	32.605					510	10
11																			11
12																			12

Initials CD/WF
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
082D	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	595			LINE IX, STA I

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date Day	Mo.	Yr.	JD = 233	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb (1013.0)	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
082	59	57.56	N	172 29.21	E	21	AUG	91		09	11	12.1	12.0	13	3	5	100	08	97	5	3037	IX I

CTD
Type & SN 92067
Press. SN 30066
Temp. SN 889
Cond. SN 529

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on
at Surface 073440
Start Down 0735
at Bottom
Start Up
at Surface
Data off

Data Location
Tape/Diskette I.D.
File Name/Header: MF9109 082D
21 AUG 0733

Remarks DEEP CAST Dramatic upward jump in Sal @ ~2300m. Took fish back up to 1990, started down again * EDIT OUT TURNAROUND in PROCESSING

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot.Data Therm-P	Sample Bot.Data Avg Tw	Sample Bot.Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1			3038		091230					3038.734	1.610	31.413	34.636					511	1
2		5	2988	091320	091835					2989.126	1.631	31.408	34.631			34.646	20	512	2
3			2938		092130					2939.955	1.640	31.397	34.629					513	3
4		4	2888	092313	092815					2892.227	1.653	31.387	34.625			34.643	28	514	4
5			2700		093320					2703.803	1.706	31.352	34.613					515	5
6		3	2600	093609	094120					2596.280	1.734	31.328	34.606			34.623	01	516	6
7			2200		094955					2200.786	1.854	31.251	34.573					517	7
8		2	1800	095840	100255					1802.468	2.804	31.217	34.528			34.548	23	518	8
9			1500		1011					1497.038	2.345	31.307	34.468					519	9
10		1	1200	107718	102225					1207.252	2.690	31.416	34.383			34.392	03	520	10
11																			11
12																			12

USE FIRST PASS TO 2100
2ND PASS 2100-2200 → THEN GAP (NO GOOD DATA) → GETS GOOD AGAIN 2400

upcast: good fit with end of good data trace from downcast beginning @ 2440 + up

Initials LWPW ✓

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
835	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	596			IX J

Consec. Cast #	Latitude Deg.	Min.	N or S	Longitude Deg.	E or W	Date JD = 233 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
083	60	04.91	N	172 27.41	E	21	AUG	91	12	19	11.4	11.4	1012.8	3	5	100	08	97	5	2881	IXJ

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on ____
at Surface ____
Start Down ____
at Bottom 1219
Start Up ____
at Surface ____
Data off ____

Data Location
Tape/Diskette I.D. ____
File Name/Header MF9109 0835-21 AUG 1140

Remarks W/1507
Bottle did not trip

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Temp.	Cond.	Other	Conv. Mon. Values-CTD Press.	Temp.	Cond.	Sal.	Sample Bot. Data Therm-P	Avg Tw	Sal.	Sal. Bot. #	Other Samp.	Pos.
1			1000							998.427	2.923	31.477	34.318				—		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
																			8
9																			9
10																			10
11																			11
12																			12

Initials LYPW
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
0845	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09				IX K

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date Day	Mo.	Yr.	JD = 233	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb 1012.7	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D IX K
084	60	08.80	N	172 22.17	E	21	AUG	91		14	18	11.2	11.2	13	3	5	120	06	9	7	5	273.1	IX K

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on ____
at Surface ____
Start Down ____
at Bottom ____
Start Up ____
at Surface ____
Data off ____

Data Location
Tape/Diskette I.D. ____
File Name/Header MF9109_0845_21AUG1331

Remarks w/01494 1502 cast
MF09SUP_21AUG1440

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1																			1
2			40							40.314	1.626	28.940	33.006			33.065	29		2
3																			3
4																			4
5																			5
6																			6
7																			7
																			8
9																			9
10																			10
11																			11
12																			12

Initials PW/LL
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
85	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	602			IX L

Consec. Cast #	Latitude Deg.	Min.	N or S	Longitude Deg.	E or W	Date JD = 233 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb 1013.0	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
085	60	27.72	N	172 13.90	E	21	AUG	91	17	34	11.5	11.3	13	3	5	110	08	8	7	143*	IX L

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on
at Surface
Start Down
at Bottom
Start Up
at Surface
Data off

Data Location
Tape/Diskette I.D.
File Name/Header MF9109 085S
21 AUG 1648

* Depth difficult to reckon — times at bottom 1433, and 1800+.

Remarks w/o 1412
max depth ~1420

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Temp.	Cond.	Other	Conv. Mon. Values-CTD Press.	Temp.	Cond.	Sal.	Sample Bot. Data Therm-P	Avg Tw	Sal.	Sal. Bot. #	Other Samp.	Pos.
1																			1
2			1350							1349.542	2.515	31.362	34.429			34.437	19		2
3																			3
4																			4
5																			5
6																			6
7																			7
																			8
9																			9
10																			10
11																			11
12																			12

Initials LL/PW
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
0868	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	657			LINE X STA A

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 234 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
86	58	01.06	N	178 36.44	E	22	AUG	91	21	01	11.5	11.0	1648	12	02	08	72			3795	X A

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on ____
at Surface 20:29:20
Start Down 20:31:10
at Bottom 210130
Start Up 210205
at Surface ____
Data off ____

Data Location
Tape/Diskette I.D. ____
File Name/Header MF9109_0865_22Aug2029

Remarks
nuts

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1			1200		2101					1203.777	2.585	31.351	34.416					521	1
2			1000		2108					1000.530	2.828	31.423	34.351					522	2
3			800							798.466	3.071	31.474	34.262					523	3
4			600		2118					599.676	3.392	31.589	34.168					524	4
5			400		2124					398.187	3.624	31.559	33.996					525	5
6			200		2129					200.961	3.503	31.101	33.678					526	6
7			100		2133					100.944	2.322	29.624	33.159					527	7
			50		2136					50.576	4.645	31.524	33.094					528	8
9			25							25.587	9.876	36.056	33.030					529	9
10			0							1.842	9.929	36.095	33.032			33.038	08	530	10
11																			11
12																			12

Initials WF/CD
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
086D	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	658			LINE X STA A

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	Longitude Min.	E or W	Date Day	Date Mo.	Date Yr.	JD = 235	Time GMT Hr.	Time GMT Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
086	58	05.04	N	178	37.92	E	23	AUG	91		02	03	11.6	11.1	1015	4	8	120	20	8	7	2	3800	X A

CTD

Type & SN ~~91220-B~~ 92067
Press. SN ~~26072~~ 30066
Temp. SN ~~710~~ 889
Cond. SN ~~304~~ 925

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time

Data on ____
at Surface ____
Start Down 214730
at Bottom ____
Start Up ____
at Surface ____
Data off ____

Data Location MAY BE 087

Tape/Diskette I.D.	File Name/Header
(new cond cell - kept new pump) good cast	MF9109 086D-23AUG0033
first cast (bad)	MF9109_086D-22AUG.2148
(new pump) second cast (bad)	MF9109_086D-22AUG.2307*

Remarks Salinity was ~0.1‰ too high during first cast - Replaced pump & re-did cast, salinity was even worse - Replaced cond cell, sal good -

2148
New pump @ 702 m @ 23212
upcast
586 m 34.25‰
520 34.19
480 34.155
380 34.075
320 34.059

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot.Data Therm-P	Sample Bot.Data Avg Tw	Sample Bot.Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1			~3790		020345					3823.726	1.608	31.703	34.646			34.613	19	531	1
2		5	~3740	020530	021245					3772.141	1.611	31.686	34.645			34.659	7	532	2
3			~3690		021440					3725.160	1.610	31.668	34.645			34.665	35	533	3
4		4	3500	021910	022440					3496.594	1.597	31.574	34.642			34.664	21	534	4
5			3000		023455					3000.527	1.627	31.408	34.630			—	—	535	5
6		3	2600	024250	024743					2604.810	1.688	31.299	34.614			34.632	34	536	6
7			2200		025536					2198.721	1.815	31.227	34.585			34.210	24	537	7
8		2	1800	030350	030844					1798.994	2.019	31.207	34.541			34.555	32	538	8
9			1500		031505					1499.881	2.270	31.257	34.484			34.489	29	539	9
10		1	1200	032115	032614					1201.168	2.584	31.344	34.410			34.424	01	540	10
11																			11
12																			12

seabird.cal & seabird.cal-deep were updated

Initials WF/CD
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
087S	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	665			LINE X, STA B

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date Day	Date Mo.	Date Yr. (JD = 235)	Time GMT Hr.	Time GMT Min.	Dry Bulb	Wet Bulb	Bar. mb (1014.0)	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
087	58	41.77	N	178 32.96	E	23	AUG	91	07	41	10.5	9.9	14	4	8	110	18	8	7	2375	X B

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		1.493
Temp.		10.582
Cond.		36.572
Other		32.920

Times JD/Time
Data on ____
at Surface ____
Start Down 065203
at Bottom 074140
Start Up ____
at Surface ____
Data off ____

Data Location
Tape/Diskette I.D. ____
File Name/Header MF9109 087S 23AUG0651

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot.Data Therm-P	Sample Bot.Data Avg Tw	Sample Bot.Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1			1500	✓ 074140	074725					1487.824	2.245	31.235	34.491			34.499	6		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials BF/CD, LL/PW
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
088S	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	672			IC

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date Day	Mo.	Yr.	JD = 235	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb 1011.3	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
088	59	22.94	N	178	34.89	E	23	AUG	91	12	32	10.5	8.7	11	4	8	075	18	87	2	3750	IC

CTD

Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time

Data on ____
at Surface ____
Start Down ____
at Bottom 1232
Start Up ____
at Surface ____
Data off ____

Data Location

Tape/Diskette I.D. ____

File Name/Header: MF9109 088S 23 AUG 1154

Remarks

w/o 1

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot.Data Therm-P	Sample Bot.Data Avg Tw	Sample Bot.Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1										100.692	1.487	28.897	33.125			33.132	18		1
2			100																2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials LL/PW

✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
0895	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	676			XD

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date Day	Mo.	Yr. (JD = 235)	Time GMT Hr.	Time GMT Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
089	59	45.89	N	178	34.95	23	AUG	91	15	28	10.0	9.6	1009.2	4	7	060	20	8	7	3443	XD

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on ____
at Surface ____
Start Down ____
at Bottom 1528
Start Up ____
at Surface ____
Data off ____

Data Location
Tape/Diskette I.D. ____
File Name/Header MF9109 0895
23AUG1457

Remarks w/o 1200

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1				1200						1200.743	2.602	31.355	34.405			34.411	11	421	1
2				1000						998.650	2.878	31.448	34.331					422	2
3				800						799.702	3.131	31.510	34.241					423	3
4				600						602.444	3.452	31.596	34.112					424	4
5				400						402.777	3.673	31.539	33.918					425	5
6				200						201.239	2.588	30.063	33.367					426	6
7				100						100.253	2.173	29.506	33.168					427	7
8				50						50.995	3.464	30.539	33.124					428	8
9				25						24.235	9.751	35.846	32.931					429	9
10				0						1.784	10.928	36.764	32.800					430	10
11																			11
12																			12

Initials LL/RW
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
089D	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	677			X D

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date Day	Mo.	Yr.	JD = 235	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb 1007.1	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
089	59	45.75	N	178 32.39	E	23	AUG	91		17	46	10.9	10.5	97	4	7	060	20	8	7	2	3416	X D

CTD
Type & SN 92067
Press. SN 30066
Temp. SN 889
Cond. SN 529

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on
at Surface
Start Down
at Bottom 1746
Start Up
at Surface
Data off

Data Location
Tape/Diskette I.D.
File Name/Header: MF9109 089D – 23 AUG 1625

Remarks DEEP CAST W.O. 3521

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot.Data Therm-P	Sample Bot.Data Avg Tw	Sample Bot.Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1			3424		1746					3424	1.583	31.539	34.646			34.661	27	431	1
2		5	3374	174900	175414					3381.541	1.578	31.519	34.646			34.664	23	432	2
3			3324		1757					3324.597	1.576	31.495	34.644			34.635	10	433	3
4		4	3000	180338	180640					2993.758	1.610	31.394	34.633			34.652	03	434	4
5			2600		181518					2599.013	1.680	31.291	34.615			34.614	20	435	5
6		3	2200	182230	182738					2197.690	1.819	31.279	34.583			34.598	28	436	6
7			1800		183430					1803.484	2.007	31.199	34.540			34.209	05	437	7
8		2	1650	183815	184435					1656.154	2.115	31.213	34.516			34.496	13	438	8
9			1500		184825					1500.483	2.254	31.243	34.484			34.493	26	439	9
10		1	1200	185400	1210					1210.896	2.596	31.350	34.400			34.410	15	440	10
11																			11
12																			12

Initials LL/RW
✓

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
090S	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	682			LINE X, STA E

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 235 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
090	60	06.61	N	178 34.83	E	23	AUG	91	22	01	09.2	08.8	04	4	7	06	52	8	9	2850	XE

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		1.157
Temp.		11.057
Cond.		36.363
Other		32.289

Times JD/Time
Data on ____
at Surface 212400
Start Down 212445
at Bottom 220110
Start Up 220140
at Surface ____
Data off ____

Data Location
Tape/Diskette I.D. ____
File Name/Header MF9109_0905_ 23AUG2123

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot.Data Therm-P	Sample Bot.Data Avg Tw	Sample Bot.Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	38	B	80	222745	224240					80.138	2.144	29.429	33.114			33.120	22		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
																			8
9																			9
10																			10
11																			11
12																			12

Initials WF/CD
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
091S	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	684			LINE X, STA F

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 236 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
091	60	19.66	N	178 35.38	E	24	AUG	91	00	36	09.0	09.0	02	5	7	060	32	9	7	8	2489	X F

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		0.345
Temp.		11.147
Cond.		35.913
Other		31.780

Times JD/Time
Data on ____
at Surface ____
Start Down 0000
at Bottom 003720
Start Up 003750
at Surface ____
Data off ____

Data Location
Tape/Diskette I.D. ____
File Name/Header MF9109 091S 23AUG2359

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Temp.	Cond.	Other	Conv. Mon. Values-CTD Press.	Temp.	Cond.	Sal.	Sample Bot. Data Therm-P	Avg Tw	Sal.	Sal. Bot. #	Other Samp.	Pos.
1			35							36.649	4.159	30.686	32.606			32.588	04		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
																			8
9																			9
10																			10
11																			11
12																			12

Initials WF/CD
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
092S	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	686			LINE X STA G

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date Day	Date Mo.	Date Yr.	JD = 236	Time GMT Hr.	Time GMT Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
092	60	36.64	N	178	34.68 E	24	AUG	91		03	37	10.21	10.00	00	5	7	045	309	7	8		2312	X G

CTD

Type & SN 91220-B

Press. SN 26072

Temp. SN 710

Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time

Data on ____

at Surface 03:00:00

Start Down 03 01 25

at Bottom 03:36:45

Start Up 033715

at Surface ____

Data off ____

Data Location

Tape/Diskette I.D. ____

File Name/Header MF9109_092S_24Aug 0259

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	38	8	100	040000						102.023	1.775	29.099	33.076			33.079	02		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials ____

✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
093S	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	689			LINE X STA H

Consec. Cast #	Latitude Deg.	Min.	N or S	Longitude Deg.	E or W	Date JD = 236 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
093	60	46.62	N	178	35 15	E 24	AUG	91	05	51	09.8	09.8	98	5	7	040	28	8	75	2487	X H

CTD

Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		0.951
Temp.		10.792
Cond.		36.263
Other		32.424

Times JD/Time

Data on ____
at Surface 051219
Start Down 051320
at Bottom 0551
Start Up 055120
at Surface ____
Data off ____

Data Location

Tape/Diskette I.D. ____

File Name/Header MF9109 093S
24 AUG 0511

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Temp.	Cond.	Other	Conv. Mon. Values-CTD Press.	Temp.	Cond.	Sal.	Sample Bot. Data Therm-P	Avg Tw	Sal.	Sal. Bot. #	Other Samp.	Pos.
1			~75							76.397	1.839	29.170	33.112			33.112	09		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials ____
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
094S	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	692			LINE X, STA I

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 236 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
094	60	59.87	N	178 35.31	E	24	AUG	91	08	06	10.1	10.0	998.5	5	6	035	30.8	7	5	1543	X I

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on
at Surface
Start Down 072930
at Bottom 080600
Start Up
at Surface
Data off

Data Location
Tape/Diskette I.D.
File Name/Header
MF9109_094S
24AUG0729

Remarks WO 1494

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	38	B	1500	080600	084118					1504.553	2.287	31.272	34.482			34.490	16		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Started By CD/WF

Initials LL/PW
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
095S	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	696			LINE X, STA J

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date Day	Mo.	Yr.	JD = 236	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb 997.0	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
095	61	13.71	N	178 35.73	E	24	AUG	91		10	27	10.5	10.1	997	5	6	040	30	8	7	5	368	XJ

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on
at Surface
Start Down
at Bottom 1026
Start Up
at Surface
Data off

Data Location
Tape/Diskette I.D.
File Name/Header
MF9109 095S
24AUG1014

Remarks bottle did not trip w/o 344 not set up correctly

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1			40							41.072	-0.132	27.084	32.531						1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials LPW
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
096S	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	729			CM-E

Consec. Cast #	Latitude Deg.	Min.	N or S	Longitude Deg.	E or W	Date JD = 237 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
096	59	14	N	178	W	25	AUG	91	06	45	10.8	10.2	947.3	7	10	14	8	7	2	939	CME

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		0.586
Temp.		9.962
Cond.		35.713
Other		32.614

Times JD/Time
Data on ____
at Surface 061800
Start Down 061900
at Bottom 064457
Start Up 064518
at Surface ____
Data off ____

Data Location
Tape/Diskette I.D. ____
File Name/Header MF9109 096S 25AUG0556

Remarks Cast after deployment of mooring CM-E (St. Matthew Island)

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Temp.	Cond.	Other	Conv. Mon. Values-CTD Press.	Temp.	Cond.	Sal.	Sample Bot. Data Therm-P	Avg Tw	Sal.	Sal. Bot. #	Other Samp.	Pos.
1	38	B	5	070100						6.120	9.987	35.762	32.639				11		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials CW/WF
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
0975	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	747			XI A

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date Day	Mo.	Yr.	JD = 237	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
097	59	03.85	N	176 57.74	W	25	AUG	91		1548		10.1	10.1	998.9	5	7	325	22	8	7	141	XI A

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on ____
at Surface ____
Start Down ____
at Bottom 1547
Start Up ____
at Surface ____
Data off ____

Data Location
Tape/Diskette I.D. ____
File Name/Header MF9109 097
26 AUG 1542

Remarks
w/o 123

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1										122.018	2.406	29.667	33.114				18		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials LL/PW
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
098S	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09				XB

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date Day	Mo.	Yr.	JD = 237	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb 1001.6	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
098	58	53.08	N	177 13.95	W	25	AUG	91		17	12	10.1	10.0	02	5	6	320	30	8	72	126	XB

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on ____
at Surface ____
Start Down ____
at Bottom 1711
Start Up ____
at Surface ____
Data off ____

Data Location
Tape/Diskette I.D. ____
File Name/Header MF9109 098S-
25 AUG 1907

Remarks
w/o 117

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1			10							10.484	9.895	35.339	32.291				30		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials ____
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
995	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	752			XIC

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date Day	Mo.	Yr.	JD = 237	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb 1005.1	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
099	58	41.75	N	177	27.33	W	25	AUG	91	18	45	10.3	10.3	05	5	6	300	28	87	2	330	XIC

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on ____
at Surface ____
Start Down ____
at Bottom 1844
Start Up ____
at Surface ____
Data off ____

Data Location
Tape/Diskette I.D. ____
File Name/Header MF9109 0995-
25 AUG 1837

Remarks
Wb 335

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Temp.	Cond.	Other	Conv. Mon. Values-CTD Press.	Temp.	Cond.	Sal.	Sample Bot. Data Therm-P	Avg Tw	Sal.	Sal. Bot. #	Other Samp.	Pos.
1			375							323.430	3.620	31.170	33.575				12		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials CL/PW
✓ ____

2.48 3.713

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
100S	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	754			LINE X1, STA D

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date Day	Mo.	Yr. (JD = 237)	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
100	58	31.60	N	177 44.11	W	25	AUG	91	20	46	10.5	10.2	08	5	6	305	24	87	2	2150	XID

CTD

Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		1.060
Temp.		9.906
Cond.		35.727
Other		32.679

Times JD/Time

Data on ____
at Surface 200845
Start Down 2009
at Bottom 2046
Start Up 204616
at Surface ____
Data off ____

Data Location

Tape/Diskette I.D. ____

File Name/Header MF9109_100S 25AUG1955

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1			400	210500	211023					392.984	3.668	31.449	33.822				14		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials ____

✓ ____

2.503

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
101S	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	757			LINE X1 STA E

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date Day	Mo.	Yr. (JD = 237)	Time GMT Hr.	Time GMT Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
101	58	23.70	N	177 52.58	W	25	AUG	91	23	02	10.8	10.4	11.47	2	9	0	18	5	7	2950	XIE

CTD

Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		1.244
Temp.		9.860
Cond.		35.718
Other		32.711

Times JD/Time

Data on ____
at Surface 222315
Start Down 222355
at Bottom 2302
Start Up 230225
at Surface ____
Data off ____

Data Location

Tape/Diskette I.D. ____

File Name/Header MF9109_101S 25AUG2222

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1			25							42.639	3.556	30.373	32.836				02		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials SD/WJF

✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
1025	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	760			LINE XI, STA F

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	Longitude Min.	E or W	Date JD = 238 Day	Mo.	Yr.	Time GMT Hr.	Time GMT Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
102	58	16	03	N 178	03	43	W 26	AUG	91	01	13	108	100	13	58	29	5	18	5	3	1	3368	XIF

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		1.348
Temp.		9.921
Cond.		35.748
Other		32.686

Times JD/Time
Data on ____
at Surface 003952
Start Down 004040
at Bottom ____
Start Up ____
at Surface ____
Data off ____

Data Location
Tape/Diskette I.D. ____
File Name/Header MF9109 1025
26AUG0027

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot.Data Therm-P	Sample Bot.Data Avg Tw	Sample Bot.Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	38	B	1200	011240						1194.078	2.660	31.392	34.391				22	441	1
2			1000							1002.705	2.898	31.462	34.323					442	2
3			800							799.745	3.149	31.506	34.218					443	3
4			600							602.065	3.546	31.650	34.079					444	4
5			400							402.391	3.689	31.476	33.827					445	5
6			200							200.074	2.918	30.284	33.298					446	6
7			100							99.298	2.593	29.797	33.092					447	7
8			50							50.608	4.101	30.997	33.024					448	8
9			25							24.141	9.720	35.577	32.684					449	9
10			0							3.502	9.950	35.780	32.691					450	10
11																			11
12																			12

Initials CD/WF
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
102D	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	761			LINE XI, STA F

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 238 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
102	58	16.56	N	178	01.14 W	26	AUG	91	03	16	12.2	11.8	1358			285 (294)	09	8	7	3368	XI F

CTD

Type & SN 92067

Press. SN 30066

Temp. SN 889

Cond. SN 529

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time

Data on

at Surface

Start Down 0158

at Bottom 031555

Start Up

at Surface

Data off

Data Location

Tape/Diskette I.D.	File Name/Header
	MF9109 102D
	26AUG 0159

Remarks DEEP CAST
logging started @ 1112 m

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Temp.	Cond.	Other	Conv. Mon. Values-CTD Press.	Temp.	Cond.	Sal.	Sample Bot. Data Therm-P	Avg Tw	Sal.	Sal. Bot. #	Other Samp.	Pos.
1			3360		031621					3359.482	1.597	31.524	34.641				9	451	1
2		5	3310	✓ 031800	032259					3301.837	1.608	31.510	34.638				25	452	2
3			3260		032510					3251.665	1.612	31.493	34.636				4	453	3
4		4	3000	✓ 033000	033509					2996.932	1.631	31.410	34.629				35	454	4
5			2800		033906					2799.446	1.658	31.353	34.622				16	455	5
6		3	2600	✓ 034245	034740					2597.545	1.696	31.301	34.612				13	456	6
7			2200		035504					2201.056	1.833	31.240	34.581				26	457	7
8		2	1800	✓ 040155	040706					1798.498	2.068	31.241	34.529				28	458	8
9			1500		041251					1501.928	2.318	31.287	34.469				27	459	9
10		1	1200	✓ 041800	042307					1200.463	2.659	31.390	34.387				6	460	10
11																			11
12																			12

Initials CD/WF

✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
103S	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	765			LINE XI, STA G

Consec. Cast #	Latitude Deg.	Min.	N or S	Longitude Deg.	E or W	Date JD = 238 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
103	58	03.28	N	178 17.93	W	26	AUG	91	07	03	10.6	10.4	16	5	7	240	10	8	7	3581	XI G

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		2.001
Temp.		9.913
Cond.		35.770
Other		32.715

Times JD/Time
Data on
at Surface
Start Down 062510
at Bottom 070220
Start Up 070255
at Surface 072920
Data off

Data Location
Tape/Diskette I.D.
File Name/Header: MF9109_103S_ 26AUG0623

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Temp.	Cond.	Other	Conv. Mon. Values-CTD Press.	Temp.	Cond.	Sal.	Sample Bot. Data Therm-P	Avg Tw	Sal.	Sal. Bot. #	Other Samp.	Pos.
1			50		072734					53.490	2.956	29.889	32.856				07		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials CD/WF
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
104S	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	768			XI H

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	Longitude E or W	Date Day	Date Mo.	Date Yr. (JD = 238)	Time GMT Hr.	Time GMT Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
104	57	51	62 N	178	36 84 W	26	AUG	91	10	01	10.0	9.7	1015.2	4	7	210	20	87	2	37	18 XI H

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on
at Surface
Start Down 0921
at Bottom 1002
Start Up
at Surface
Data off

Data Location
Tape/Diskette I.D.
File Name/Header: MF9109 104S 26AUG09

Remarks
w/o 1028

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1			bottom							1503.077	2.307	31.286	34.478				33		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials KK/RN
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
1055	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	771			XI, I

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 238 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
105	57	35.55	N	178 56.72	W	26	AUG	91	1308		9.9	9.6	15	5	7	210	26	8	7	2	~~45/16~~	~~XI~~ I

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on
at Surface
Start Down
at Bottom 1308
Start Up
at Surface
Data off

Data Location 3733

Tape/Diskette I.D.	File Name/Header
	MF9109 1055
	26AUG

Remarks
w/o 1516

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1			50	1338	1343					51.139	3.415	30.394	32.999				34		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials ____
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
1065	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	776			~~ST~~ J

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 238 Day	Mo.	Yr.	Time GMT Hr.	Time GMT Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
106	57	20.81	N	179 17.22	W	26	AUG	91	1628		99	99	1013.9	5	7	21	27	8	7	2	3532	~~ST~~ J

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on
at Surface
Start Down
at Bottom 1627
Start Up
at Surface
Data off

Data Location ~~[illegible]~~ 3800

Tape/Diskette I.D.

File Name/Header MF9109 1065

Remarks
W/o 1546

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1			[illegible]		1627					1507.747	2.280	31.270	34.486				21		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials LL/BJ
✓

1985 3.80

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
107S	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	783			LINE XI, STA K

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	Longitude Min.	E or W	Date Day	Date Mo.	Date Yr.	JD = 238	Time GMT Hr.	Time GMT Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
107	56	53	18 N	179	51	60 W	26	AUG	91		20	49	10.1	10.1	15	5	7	22	24	8	7	2	38	12	XI K

CTD

Type & SN 91220-B

Press. SN 26072

Temp. SN 710

Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		1.045
Temp.		9.872
Cond.		35.966
Other		32.953

Times JD/Time

Data on ____

at Surface ~2009

Start Down 201155

at Bottom 204820

Start Up 204840

at Surface ____

Data off ____

Data Location

Tape/Diskette I.D.	File Name/Header
	MF9109 107S
	26AUG2011

Remarks

PWR LOST TO WINCH @ 205227Z FOR ~15 SECS

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1			600	210600	211200					590.667	3.421	31.581	34.133				23		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials ____

✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
108S	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	789			LINE XI, STA L

Consec. Cast #	Latitude Deg.	Min.	N or S	Longitude Deg.	E or W	Date JD = 239 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
108	56	23.45	N	179	33.93	E	27	AUG	01	14	11.0	10.1	1016	5	7	230	22	8	7	2	3837	XI L

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		0.971
Temp.		9.850
Cond.		35.991
Other		32.999

Times JD/Time
Data on ____
at Surface ____
Start Down ____
at Bottom 01:14:07
Start Up 01:14:40
at Surface ____
Data off ____

Data Location
Tape/Diskette I.D. ____
File Name/Header MF9109 108S 27AUG0032

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Temp.	Cond.	Other	Conv. Mon. Values-CTD Press.	Temp.	Cond.	Sal.	Sample Bot. Data Therm-P	Avg Tw	Sal.	Sal. Bot. #	Other Samp.	Pos.
1	6		1		014153					2.206	9.872	36.013	33.001				01		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
																			8
9																			9
10																			10
11																			11
12																			12

Initials CD/WF
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
109S	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	796			LINE XI, STA M

Consec. Cast #	Latitude Deg.	Min.	N or S	Longitude Deg.	E or W	Date JD = 239 Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
109	55	56.48	N	179 00.10	E	27	AUG	91	06	00	09.1	09.1	1165	4	2	15	14	8	4	3856	XI M

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		1.019
Temp.		9.756
Cond.		35.904
Other		32.995

Times JD/Time
Data on ____
at Surface 052330
Start Down 052350
at Bottom 060015
Start Up 060030
at Surface ____
Data off ____

Data Location
Tape/Diskette I.D. ____
File Name/Header MF9109 109S 27AUG0522

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Temp.	Cond.	Other	Conv. Mon. Values-CTD Press.	Temp.	Cond.	Sal.	Sample Bot. Data Therm-P	Avg Tw	Sal.	Sal. Bot. #	Other Samp.	Pos.
1			800	061300	0619					778.064	3.215	31.564	34.229				32		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
																			8
9																			9
10																			10
11																			11
12																			12

Initials ____
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
1105	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	805			~~XII~~ A

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date Day	Date Mo.	Date Yr.	JD =	Time GMT Hr.	Time GMT Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D
110	55	17.61	N	179 57.28	W	27	AUG	91		11	38	9.0	9.0	1017.4	5	19	51	11	87	2		3843	~~XII~~ A

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on ____
at Surface ____
Start Down ____
at Bottom 1138
Start Up ____
at Surface ____
Data off ____

Data Location

Tape/Diskette I.D.	File Name/Header
	MF9109 1105
	27AUG1059

Remarks
w/ 1505

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1			1500							1505.230	2.295	31.279	34.482				08		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials LL/PW
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
115	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	816			~~DH~~ B

Consec. Cast #	Latitude Deg.	Min.	N or S	Longitude Deg.	E or W	Date JD = Day	Mo.	Yr.	Time GMT Hr.	Min.	Dry Bulb	Wet Bulb	Bar. mb 1017.0	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
111	54	30.30	N	178 43.48	W	27	AUG	91	17	56	10.7	10.7	17	3	6	190	10	87	5	383.7	~~DH~~ B

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on ____
at Surface ____
Start Down ____
at Bottom 175
Start Up ____
at Surface ____
Data off ____

Data Location
Tape/Diskette I.D. ____
File Name/Header MF9109 115 27AUG1914

Remarks
w/o 1512

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot.Data Therm-P	Sample Bot.Data Avg Tw	Sample Bot.Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1			15							14.500	9.373	35.629	33.060				03		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials LL/PW
✓ ____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
112S	NOAA Ship MILLER FREEMAN	B.S. FOCI MF-91-09	826			LINE XII, STA C

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	Longitude Min.	E or W	Date Day	Date Mo.	Date Yr.	JD = 240	Time GMT Hr.	Time GMT Min.	Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D
112	53	27.67	N	177	09.33	W	28	AUG	91		03	01	12.0	12.0	21	4	1	225	24	9	7	374	IXIIC

CTD
Type & SN 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on
at Surface
Start Down 022655
at Bottom 030120
Start Up 030520
at Surface
Data off

Data Location
Tape/Diskette I.D.
File Name/Header: MF9109 112S 28AUG0225

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1			✓ 1500	030120	030510					1497.683	2.261	31.252	34.489				3		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

CAST 86:
use version; 1
= larger of two

CAST 34
uses version; 2
time = 22:22

Truncated casts
25, 50, 73, 101

28AUG0225

Initials CO/WF
✓