MBL/WHOI

0 0301 0031872 1

GIC
856
A24

APPENDIX TO CRUISES
FOR AN
OCEANOGRAPHIC SURVEY OF
SANTA MONICA BAY, CALIFORNIA

conducted by the
University of Southern California
under contract to
Hyperion Engineers, Inc.

January 30, 1957

PREFACE

From all oceanographic surveys vast amounts of data are gathered so that the scientist may reach the resulting conclusions. All too often these data are "lost" in far-flung files, and as the years pass they are completely forgotten. It is the purpose of this APPENDIX to cruises conducted by the University of Southern California for the Hyperion Engineers, Inc. to make the raw data available to those who may be interested, and to reduce the hazard of having the information lost to posterity.

The field and laboratory files will remain in the Hancock Foundation at the University. We would appreciate notification of any obvious errors in the data so that proper corrections may be made.

Submitted by,

Robert E. Stevenson
Director
Inshore Research

TABLE OF CONTENTS

	PAGE
SEDIMENTS.....	1
Santa Monica Bay.....	1
Newport Beach.....	46
Whites Point.....	48
Rocks in Place.....	50
Transported Rocks.....	53
Abbreviations Used in Sediment Section.....	54
HYDROGRAPHIC STATIONS.....	56
Santa Monica Bay.....	56
Whites Point and Orange County.....	115
BACTERIA AND NUTRIENTS.....	137
Station Locations.....	137
Bacteria and Nutrient Cruises.....	142
Nutrient and Water Properties.....	186
CURRENT STATIONS.....	198
LIGHT TRANSMISSION IN SEA WATER.....	205
BATHYTHERMOGRAPH TRAVERSES.....	213
DRIFT CARDS.....	368

71703

APPENDIX TO CRUISES

SEDIMENTS

SANTA MONICA BAY

Station No.	Lat 33° Long 118°	Depth fms.	Sed type	MD	So	% CaCO ₃	% Org. C.	% Heavies	% Sand	% Silt	% Clay	% Gravel
2358	46°12"	124	s	.022	4.61				15.2	55.2	29.6	
2360	28°04" 47°59"	49	sS	.068	1.90				53.7	30.9	14.8	0.7
2361	27°58" 47°03"	167	Ss	.060	2.00				48.3	39.9	11.8	
2362	30°07" 46°02"	352	Ss	.031	1.94				20.4	60.1	19.5	
2474	31°52" 46°03"	417	s	.011	3.48				2.3	66.2	31.5	
2724	34°08" 48°00"	171	SsG	1.700	ND				25.6	25.0	0.2	49.2
2725	30°00" 50°00"	19	R & G	---	---							
2726	28°00" 50°00"	70	s	.026	2.43				3.6	79.5	16.9	
2727	30°00" 50°00"	66	Ss	.058	1.52				46.8	45.4	7.8	
2788	32°00" 48°03"	9	S	.380	1.33				96.7			3.3
2789	24°47" 49°59"	94	s	.005	ND				1.6	52.9	45.5	
2790	34°05" 49°58"	186	Ss	.027	2.81				24.3	57.8	17.9	
2791	36°00" 48°00"	415	s	.007	ND				1.8	54.2	44.0	
2792	36°03" 47°59"	308	s	.023	3.02				12.9	64.8	22.3	
2793	33°59" 48°00"	257	Ss	.038	4.65				36.3	41.7	22.0	
2991	32°00" 52°43" 26°53"	22	S	.085	1.24				83.7	9.9	6.4	

APPENDIX TO CRUISES

SEDIMENTS

SANTA MONICA BAY

Station No.	Lat 33° Long 118°	Depth fms.	Sed type	MD	So	% CaCO ₃	% Org. C.	% Heavies	% Sand	% Silt	% Clay	% Gravel
2994	55°00"	30	SS	.070	3.70				53.8	40.6	5.4	0.2
2995	30°38"											
2995	55°00"											
2997	32°27"	37	SS	.360	3.12				76.7	14.0	4.8	3.5
2997	54°57"											
2998	33°39"	100	SS	.078	1.16				63.4	32.3	4.4	
2998	51°22"											
2999	34°40"	44	Ss	.059	1.80				40.0	43.3	9.6	7.1
2999	53°11"											
3003	40°00"	81	s	.035	2.40				13.7	68.1	18.2	
3003	57°02"											
3056	40°00"	162	s	.021	2.46				2.9	78.2	19.9	
3056	55°17"											
3057	27°23"	10	S	.470	2.27			10.0	100			
3057	56°37"											
3058	28°00"	11	S	---	---							
3058	56°52"											
3059	28°22"	11	S	.097	1.53				100			
3059	57°04"											
3060	28°37"	11	S	---	---							
3060	57°57"											
3061	29°26"	13	S	.094	1.40				100			
3061	58°12"											
3062	29°37"	13	S	.105	2.05				100			
3062	58°33"											
3063	29°55"	11	S	---	---							
3063	58°47"											
3064	30°09"	12	S	.248	3.00				100			
3064	59°39"											
3065	31°05"	12	SS	.072	1.15				78.2	19.3	2.5	
3065	59°53"		not analyzed									
	31°18"	12										

APPENDIX TO CRUISES

SEDIMENTS

SANTA MONICA BAY

Station No.	Lat 34° Long 118°	Depth fms.	Sed type	MD	So	% CaCO ₃	% Org. C.	% Heavies	% Sand	% Silt	% Clay	% Gravel
3066	00°02"		not									
3067	31°31"	11	analyzed									
	00°09"		not									
3068	31°48"	10	analyzed									
	01°03"		not									
3069	32°27"	9	analyzed					6.1				
	01°10"		not									
3070	32°45"	9	analyzed									
	01°10"											
3071	32°56"	8	SS	.070	1.09			1.8	76.3	21.2	2.5	
3072	01°10"	9	S	.088	1.20				88.5	11.5		
3073	33°20"		not									
	01°12"	9	analyzed									
3074	33°39"		not									
	01°12"		not									
3075	34°48"	13	analyzed									
	01°10"											
3076	35°09"	15	SS	.072	1.45			.74	60.5	35.0	4.5	
3077	01°08"											
	35°34"	13	SS	---	---							
3078	00°26"											
	35°33"	20	SS	---	---							
3079	Lat 33°											
	59°18"											
3080	33°45"	26	SS	.063	1.38				54.3	41.8	3.9	
	59°12"											
3081	32°15"	19	SS	.069	1.36				64.0	32.2	3.8	
	58°28"											
3082	31°35"	22	SS	.085	1.08			2.59	66.4	33.6		
	57°42"		not									
3083	30°58"	22	analyzed									

APPENDIX TO CRUISES

SEDIMENTS

SANTA MONICA BAY

Station No.	Lat 33° Long 118°	Depth fms.	Sed type	MD	So	% CaCO ₃	% Org. C.	% Heavies	% Sand	% Silt	% Clay	% Gravel
3081	57°02"	22	S	.068	1.22				100			
3082	30°27"		not analyzed									
3083	56°00"	21	not analyzed									
3084	29°53"	23	not analyzed									
3085	55°39"	26	not analyzed									
3086	29°41"	33	not analyzed									
3087	53°20"	33	Ss	.052	1.53				35.6	59.9	4.5	
3088	28°03"	31	S	.420	2.81				100			
3089	51°40"	30	Ss	.052	2.81			8.7	43.1	49.5	7.4	
3090	27°00"	31	S	.620	7.9				100			
3091	52°30"	29	not analyzed									
3092	29°25"	30	not analyzed									
3093	53°32"	33	SS	.380	3.38			5.8	76.3	21.6	2.1	
3094	30°11"	31	SG	>2.000					37.8	4.6		57.6
3095	54°30"	40	SS	.110	5.37			2.65	69.5	30.5		
3096	30°43"	31	S	.235	1.62				100			
	55°57"	27	not analyzed									
	31°11"											
	55°33"											
	31°36"											
	56°48"											
	32°26"											
	54°28"											
	32°08"											
	52°40"											
	31°04"											
	52°08"											
	33°55"											
	55°20"											
	31°46"											
	55°36"											
	30°41"											

APPENDIX TO CRUISES

SEDIMENTS

SANTA MONICA BAY

Station No.	Lat 33° Long 118°	Depth fms.	Sed type	MD	So	% CaCO ₃	% Org. C.	% Heavies	% Sand	% Silt	% Clay	% Gravel
3097	56°15"	18	SS	.069	1.17			11.1	72.5	27.5		
3098	29°07"											
	56°27"	13	S	.105	1.10			13.5	100			
3099	28°35"											
	56°23"											
3100	28°17"	16	1t gray S	.128	1.51		0.274	7.1	90.0	6.0	4.0	
	52°40"											
3101	27°51"	31	1t gray SS	.063	1.31		0.634	2.4	54.5	43.6	1.9	
	50°11"											
3102	23°43"	36	1t gray Ss	.031	2.38		0.227	2.04	24.8	64.4	10.8	
	49°51"											
3103	24°55"	95	ol gray s	.022	2.55	14.6	2.71	1.67	12.3	69.0	18.7	
	49°37"											
3105	26°05"	150	ol gray s	.022	2.31	14.9	2.43	1.67	17.5	67.1	15.4	
	48°46"											
3106	28°07"	223	ol gray SS	.096	1.65	8.1	1.02	2.26	71.6	26.1	2.3	
	48°14"											
3107	30°30"	300	ol gray Ss	.033	1.97	12.5	1.65	3.4	22.2	71.7	6.1	
	47°36"											
3110	32°54"	300	ol gray s	.029	1.93	12.0	1.61		15.7	77.8	6.5	
	53°47"											
3111	41°12"	270	ol gray s	.026	1.67		1.87		1.0	95.2	3.8	
	55°18"											
3112	33°45"	235	ol gray Ss	.036	2.14	12.2	1.10		29.9	64.7	5.4	
	55°30"											
3113	36°07"	188	ol gray Ss	.052	1.73	12.5	0.876	5.2	42.0	56.4	1.6	
	55°00"											
3114	33°48"	113	ol gray Ss	.044	1.95		1.38	6.6	33.9	58.0	8.1	
	55°08"											
	32°00"	35	ol gray SS	.084	3.10		0.261	6.91	56.8	42.7	0.5	
	Lat 34°											
3115	01°24"	17	ol gray Ss	.059	1.53		0.697	1.42	47.0	47.7	5.3	
	36°36"											

APPENDIX TO CRUISES

SEDIMENTS

SANTA MONICA BAY

Station No.	Lat 33° Long 118°	Depth fms.	Sed type	MD	So	% CaCO ₃	% Org. C.	% Heavies	% Sand	% Silt	% Clay	% Gravel
3116	55°55"	28	ol gray G	---	---							
3117	55°46"	22	not analyzed									
3118	55°49"	17	S	1.050	1.13				100			
3119	55°55"	14	sS	.065	1.40			4.1	65.2	34.8		
3120	55°56"	11	not analyzed									
3121	55°48"	9	not analyzed					7.2				
3122	27°24"	10	not analyzed									
3123	55°33"	12	not analyzed									
3124	27°46"	20	not analyzed									
3125	55°32"	24	not analyzed									
3126	29°12"	26	not analyzed									
3127	55°35"	29	not analyzed									
3128	29°51"	31	not analyzed									
3129	55°34"	21	not analyzed									
3130	30°28"	19	not analyzed	.084	1.32				72.9	27.1		
3131	55°36"	10	not analyzed	.560	1.40				100			

APPENDIX TO CRUISES

SEDIMENTS

SANTA MONICA BAY

Station No.	Lat 33° Long 118°	Depth fms.	Sed type	MD	So	% CaCO ₃	% Org. C.	% Heavies	% Sand	% Silt	% Clay	% Gravel
3132	55°00"		not									
	27°46"	14	analyzed									
3133	54°43"		not									
	28°32"	21	analyzed									
3134	54°33"											
	28°59"	24	sS	.063	1.43				55.4	44.6		
3135	54°22"		not									
	29°31"	27	analyzed									
3136	54°14"		not									
	29°58"	29	analyzed									
3137	54°03"											
	30°30"	31	S	.320	2.31			21.3	100			
3138	53°56"											
	30°59"	31	sS	.460	4.76				74.6	20.7	4.7	
3139	53°38"		not									
	31°40"	31	analyzed									
3140	53°20"											
	32°10"	32	R (ss)	----	----							
3141	53°24"		not									
	31°23"	31	analyzed									
3142	54°01"		not									
	29°27"	28	analyzed									
3143	54°10"		not									
	29°00"	25	analyzed									
3144	54°28"		not									
	28°18"	21	analyzed									
3145	54°40"											
	27°47"	16	S	.190	1.50			4.5	100			
3146	54°57"		not									
	27°02"	10	analyzed									
3147	54°24"											
	26°52"	10	S	.105	1.10			8.2	100			

APPENDIX TO CRUISES

SEDIMENTS

SANTA MONICA BAY

Station No.	Lat 33° Long 118°	Depth fms.	Sed type	MD	So	% CaCO ₃	% Org. C.	% Heavies	% Sand	% Silt	% Clay	% Gravel
3148	54°08"	11	S	.105	1.10				100			
3149	27°00"		not analyzed					1.69				
3150	27°06"	12										
	53°20"											
3151	27°36"	20	S	.112	1.11			6.3	100			
	52°42"		not analyzed									
3152	27°11"	24										
	52°57"											
3153	27°15"	20	S	.100	1.09			10.3	100			
	53°34"											
3154	26°58"	14	S	.100	1.09				100			
	53°57"											
3155	26°45"	10	S	.089	1.02			4.3	100			
	54°05"											
3156	26°41"	10	S	.106	1.11			7.5	100			
	54°15"											
3157	26°23"	8	S	.110	1.11			6.6	100			
	54°10"											
3158	26°15"	7.25	S	.105	1.10				100			
	53°47"											
3159	26°23"	8	S	.106	1.10			6.5	100			
	53°10"											
3160	26°32"	13	S	.102	1.09				100			
	52°04"		not analyzed									
3161	26°33"	23										
	47°56"											
3162	25°12"	12.5	ol gray S	.105	1.35		0.230	5.34	92.7	2.9	4.4	
	47°59"		not analyzed									
3163	25°09"	12.5										
	49°53"											
	24°39"	60	gray s	.006	2.63			6.7	1.9	70.0	28.1	

APPENDIX TO CRUISES

SEDIMENTS

SANTA MONICA BAY

Station No.	Lat 33° Long 118°	Depth fms.	Sed type	MD	So	% CaCO ₃	% Org. C.	% Heavies	% Sand	% Silt	% Clay	% Gravel
3164	49°52"	80	gray Ss	.039	2.82		2.19	4.8	35.8	55.6	8.6	
3165	24°37"											
	50°03"	22	ol gray Ss	.033	2.43		2.70	1.61	36.1	58.8	5.1	
3166	23°06"											
	49°15"	196	ol gray Ss	.029	3.14		2.32		32.7	55.6	11.7	
3167	27°14"											
	48°16"	280	ol gray Ss	.043	2.89		1.72	4.0	40.0	50.0	10.0	
3168	29°38"											
	47°40"	315	ol gray Ss	.043	2.61		1.36	2.6	35.4	53.2	11.4	
3169	32°10"											
	46°33"	380	ol gray s	.013	2.54		2.18		4.1	80.8	15.1	
3170	33°42"											
	46°38"	460	ol gray s	.008	2.05		2.73		0.9	81.5	17.6	
3171	37°02"											
	48°10"	425	gray s	.012	2.07		2.74		1.2	88.0	10.8	
3172	37°04"											
	55°05"	32	ol gray ss	.210	3.54		0.391		73.7	26.2		
3173	32°13"											
	48°04"	462	ol gray s	.005	2.11		1.88		0.4	63.8	35.8	
3174	39°21"											
	50°22"	352	ol gray s	.006	2.63		2.29		1.6	62.4	36.0	
3175	39°20"											
	50°00"	410	ol gray s	.007	2.44		2.61		1.4	65.9	32.7	
3176	41°45"											
	51°58"	330	br bl s	.009	2.43		2.15		1.6	72.4	26.0	
3177	41°57"											
	53°26"	294	ol gray s	.016	3.21		1.85		6.3	66.8	26.9	
3178	41°36"											
	54°38"	230	ol gray s	.010	3.05		1.66		9.8	67.6	22.6	
3179	39°48"											
	55°39"	190	ol gray s	.038	1.25		1.04	3.4	19.9	61.3	18.8	
	38°00"											

APPENDIX TO CRUISES

SEDIMENTS

SANTA MONICA BAY

Station No.	Lat 33° Long 118°	Depth fms.	Sed type	MD	So	% CaCO ₃	% Org. C.	% Heavies	% Sand	% Silt	% Clay	% Gravel
3180	55°30"	160	ol gray Ss	.043	2.55		1.42	3.0	37.4	50.4	12.2	
3181	35°55"											
3181	55°12"											
3183	34°00"	104	ol gray sS	.063	2.51		1.05		50.2	33.5	16.3	
3183	58°38"		not									
3183	31°35"	20	analyzed									
3184	59°28"		not									
3184	30°58"	13	analyzed									
3185	59°50"		not									
3185	31°29"	13	analyzed									
3186	59°50"		not									
3186	32°05"	14	analyzed									
3187	59°48"		not									
3187	33°15"	20	analyzed									
3188	59°40"		not									
3188	35°34"	28	analyzed									
3189	53°05"		not									
3189	31°18"	31	analyzed									
3190	53°01"		not									
3190	28°23"	31	analyzed									
3191	53°02"		not									
3191	26°20"	13	analyzed									
3192	52°24"		not									
3192	25°55"	15	analyzed									
3193	51°55"		not									
3193	25°47"	17	analyzed									
3194	53°05"											
3194	33°07"	37	ol gray sS	.093	2.41		0.945		61.6	24.2	14.2	
3195	53°03"											
3195	32°24"	33	ol gray sS	.150	1.73	39.6	0.660	0.9	77.2	9.1	13.7	
3196	57°20"		not									
3196	28°41"	11	analyzed									

APPENDIX TO CRUISES

SEDIMENTS

SANTA MONICA BAY

Station No.	Lat 33° Long 118°	Depth fms.	Sed type	MD	So	% CaCO ₃	% Org. C.	% Heavies	% Sand	% Silt	% Clay	% Gravel
3197	58°01" 30°51" Lat 34°	18	not analyzed									
3198	01°14" 39°30"	16	-----	---	---				63.0	26.8	10.2	
3199	01°58" 39°30"	10	gray bl ss	.071	1.34		0.716					
3200	01°38" 40°02"	10	not analyzed									
3201	01°04" 39°50"	15	not analyzed									
3202	00°19" 39°27"	28	s	.036	1.58				13.5	70.1	16.4	
3203	00°00" 39°13" Lat 33°	34	gr bl s	.041	1.47		0.602		13.5	72.8	13.7	
3204	58°10" 39°10"	115	ol gray s	.032	3.10		1.36		14.2	62.7	23.1	
3205	58°00" 37°00" Lat 34°	88	ol gray s	.041	1.25		1.35		13.5	63.6	22.9	
3206	00°02" 37°02" Lat 33°	31	gr bl Ss	.053	1.41		0.505		42.8	47.3	9.9	
3207	59°58" 35°25" Lat 34°	27	not analyzed									
3208	00°03" 34°40" Lat 33°	25	gr bl Ss	.043	1.41		0.806	0.8	30.9	59.8	10.2	
3209	57°54" 34°35"	57	gr bl ss	.095	1.69		0.737	2.4	69.6	23.2	7.2

APPENDIX TO CRUISES

SEDIMENTS

SANTA MONICA BAY

Station No.	Lat 33° Long 118°	Depth fms.	Sed type	MD	So	CaCO ₃ %	Org. C. %	Heavies %	Sand %	Silt %	Clay %	Gravel %
3210	57°58"	29	ol gray ss	.063	1.62		0.637		51.2	42.9	5.9	
3211	32°36"		not									
	59°15"	14	analyzed									
3212	32°05"		not									
	59°32"	17	analyzed									
	32°07"											
	Lat 34°											
3213	00°00"											
	32°28"	15	b1 ss	.078	1.28		0.667	1.32	68.4	25.9	5.7	
3214	00°12"		not									
	32°07"	11	analyzed									
3218	00°03"											
	30°20"	6.5	ol gray S	.112	1.48		0.338		84.6	12.6	2.8	
	Lat 33°											
3219	56°00"											
	27°45"	11	ol gray ss	.390	3.48		0.383		78.8	15.7	0.4	5.1
3220	54°51"											
	27°00"	10.5	ol gray S	.087	1.17		0.906	1.20	89.3	9.1	1.6	
3221	46°26"											
	25°23"	18	r b1 S	.840	1.73		0.678	1.5	99.3			0.7
3222	46°30"											
	28°42"	110	ol gray s	.046	1.30		1.45	2.0	19.8	66.8	13.4	
3223	48°27"		not									
	31°11"	165	analyzed									
3224	48°32"											
	28°30"	235					2.8	1.09				
3225	48°30"											
	26°10"	40	gr b1 Ss	.048	1.36		0.936	0.7	31.0	56.0	13.0	
3226	50°33"											
	26°15"	41	gr b1 ss	.090	1.71		0.692	3.78	65.0	21.8	9.8	3.4
3227	50°40"											
	28°45"	65	ol gray Ss	.053	1.51		0.934	1.7	38.8	46.4	14.8	

APPENDIX TO CRUISES

SEDIMENTS

SANTA MONICA BAY

Station No.	Lat 33° Long 118°	Depth fms.	Sed type	MD	So	% CaCO ₃	% Org. C.	% Heavies	% Sand	% Silt	% Clay	% Gravel
3228	50°30"	60	ol gray s	.035	1.71		1.27	1.4	13.7	71.2	15.1	
3229	31°04"											
3229	50°35"											
3230	33°30"	46	ol gray ss	.099	1.64		1.24	3.0	72.8	16.3	10.9	
3230	52°33"											
3230	38°22"	150	ol gray ss	.084	1.52	19.6	1.24		72.8	17.6	9.6	
3231	52°48"											
3231	36°05"	42	gr bl ss	.093	4.61	45.6	+5.54		60.9	13.9	25.2	
3232	52°38"											
3232	33°36"	38	gr bl G	---	---							
3233	52°28"											
3233	31°13"	36	gr bl ss	.063	2.24		0.717		50.5	36.2	13.3	
3234	52°24"											
3234	28°40"	40	ol gray s	.034	1.82		1.21		11.2	68.0	20.8	
3235	52°20"											
3235	25°50"	15	gray S	.084	1.32		0.406		83.3	7.2	9.5	
3236	54°58"											
3236	27°30"	145	gr bl S	.097	1.17		0.416		88.2	2.8	9.0	
3237	Lat 34° 00°28"											
3237	31°18"	8.5	ol gray ss	.085	1.48		0.200	1.3	70.6	18.4	11.0	
3238	01°20"											
3238	33°27"	10.5	gr bl ss	.076	1.27		0.232	1.23	72.9	16.9	10.3	
3239	01°50"											
3239	35°38"	10.5	gr bl ss	.068	1.82		0.560	0.80	55.7	33.0	11.3	
3240	00°20"											
3240	37°15"	27	ol gray Ss	.053	1.69		0.675	0.89	41.5	44.0	14.5	
3241	Lat 33° 58°36"											
3241	38°22"	95	ol gray Ss	.048	1.42		0.948	1.55	30.2	61.7	8.1	
3242	58°35"											
3242	36°00"	75	ol gray Ss	.048	1.39		0.868		27.6	63.8	8.6	

APPENDIX TO CRUISES

SEDIMENTS

SANTA MONICA BAY

Station No.	Lat 33° Long 118°	Depth fms.	Sed type	MD	So	% CaCO ₃	% Org. C.	% Heavies	% Sand	% Silt	% Clay	% Gravel
3243	58°42"	30	gr bl Ss	.185	2.69		0.739	3.7	71.5	25.3	3.2	
3244	58°40"	20	gr bl Ss	.058	1.32		0.472	0.51	44.6	48.3	7.1	
3245	58°33"	8.5	ol gray SS	.065	4.62			1.6	54.4	18.6	27.0	
3246	56°33"	9.5	gr bl Ss	.078	1.38		0.633	2.3	69.8	24.7	6.4	
3247	27°24"	18	gr bl Ss	.061	1.21		0.483	2.4	48.1	45.9	6.0	
3248	56°32"	28	ol gray SS	.078	1.45		0.396		66.0	24.0	10.0	
3249	31°20"	60	not analyzed									
3250	56°38"	105	ol gray S	.100	1.27		1.97		100			
3251	33°48"	138	gr bl s	.013	4.05	14.0	2.17		1.8	66.0	32.2	
3252	56°07"	33	gr bl S	.285	2.16		0.302		100			
3253	32°26"	60	ol gray S	.380	1.65		0.204	2.7	100			
3254	56°38"	60	ol gray G	---	---		0.340		10.0			90.0
3255	33°38"	100	gr bl SS	.078	1.34	18.4	0.866	3.1	70.5	16.8	12.7	
3256	54°51"	38	not analyzed									

APPENDIX TO CRUISES

SEDIMENTS

SANTA MONICA BAY

Station No.	Lat 33° Long 118°	Depth fms.	Sed type	MD	So	% CaCO ₃	% Org. C.	% Heavies	% Sand	% Silt	% Clay	% Gravel
3257	52°45"* 31°49" 53°08"											
	32°15"	29	R & G	----	----							
3258	58°12"	10	not									
	29°24"	to 40	analyzed									
3259	57°50"	10	not									
	28°55"	to 40	analyzed									
3260	57°32"	10	not									
	28°36"	to 40	analyzed									
3261	57°12"	10	not									
	28°25"	to 40	analyzed									
3262	56°45"	10	not									
	28°12"	to 40	analyzed									
3263	56°42"	10	not									
	28°05"	to 40	analyzed									
3264	56°30"	10	not									
	28°23"	to 40	analyzed									
3265	57°00"	10	not									
	28°48"	to 40	analyzed									
3266	56°40"	10	not									
	30°25"	to 40	analyzed									
3267	56°43"	10	not									
	30°55"	to 40	analyzed									
3268A	53°36"											
	31°47"											
	53°27"											
	31°57"	30±	S & R & G				0.679(s)					

* This indicates the station is between Lat 33°52'45", Long 118°31'49" and Lat 33°53'08", Long 118°32'15".

APPENDIX TO CRUISES

SEDIMENTS

SANTA MONICA BAY

Station No.	Lat 33° Long 118°	Depth fms.	Sed type	MD	So	% CaCO ₃	% Org. C.	% Heavies	% Sand	% Silt	% Clay	% Gravel
3268B	53°05" 31°10" 53°06" 31°24"	30±	R & G									
3268B	53°05" 31°10" 53°06" 31°24"	30±	gr bl ss	.165	2.65				66.5	15.5	9.6	8.4
3268C	52°25" 32°25" 52°38" 32°05"	30±	R & G	----	----							
3268D	53°05" 32°55" 52°50" 32°57"	30±	R & G	----	----							
3268E	52°50" 33°37" 52°53" 34°20"	30±	R & G	----	----							
3269	Lat 34° 01°12" 32°25"	8	gr bl S	.081	1.20		0.375	2.7	82.6	10.5	6.9	
3270	Lat 33° 55°18" 30°18"	27	not analyzed									
3271	51°10" 25°53"	35	not analyzed									
3272	50°55" 24°50"	18	not analyzed									
3273	Lat 34° 01°30" 30°18"	7	not analyzed									

THIS PAGE VOIDED

APPENDIX TO CRUISES

SEDIMENTS

SANTA MONICA BAY

Station No.	Lat 33° Long 118°	Depth fms.	Sed type	MD	So	% CaCO ₃	% Org. C.	% Heavies	% Sand	% Silt	% Clay	% Gravel
3283	53°58"	32										
	31°50"											
	52°14"											
	32°47"	38	R & G	---	---							
3284	54°20"											
	32°44"	34										
	52°30"											
	33°03"	38	R & G									
3285	54°53"											
	32°44"	36										
	52°30"											
	33°03"	40	R & G	---	---							
	Lat 34°											
3287	00°44"											
	32°06"	9.5	gr bl ss	.078	1.11		0.386	2.2	79.4	16.3	4.3	
3288	00°45"											
	33°09"	17.5	gr bl ss	.062	1.51		0.728	1.1	50.4	41.9	7.7	
3289	01°02"											
	36°07"	19	ol gray ss	.075	1.77		0.754	0.8	61.2	25.5	13.3	
3290	01°01"											
	38°08"	21	ol gray Ss	.052	1.51	6.5	0.781	0.9	34.8	59.6	5.6	
	Lat 33°											
3291	59°22"											
	38°32"	40	gr bl Ss	.059	1.35	6.9	0.596		41.6	55.2	3.2	
3292	59°13"											
	36°32"	43		---	---			2.0				
3293	59°11"											
	34°32"	30.5	gr bl ss	.069	1.26		0.507	2.3	67.6	31.1	1.3	
3294	59°14"											
	32°34"	22.5	gr bl ss	.067	1.31		0.704		57.8	38.8	3.4	
3295	58°15"											
	29°58"	20.5	ol gray ss	.075	1.19		0.601	1.3	71.8	27.1	1.1	

APPENDIX TO CRUISES

SEDIMENTS

SANTA MONICA BAY

Station No.	Lat 33° Long 118°	Depth fms.	Sed type	MD	So	% CaCO ₃	% Org. C.	% Heavies	% Sand	% Silt	% Clay	% Gravel
3296	56°49"	21	gr bl ss	.082	1.29		0.797		72.3	26.1	1.6	
3297	56°49"	29	ol gray S	.092	1.36		0.339		80.1	14.5	5.4	
3298	55°51"	67	gr bl S	.116	1.32		0.385	4.2	86.8	8.8	4.4	
3299	53°44"	26	ss	.078	1.38		0.490	1.2	70.1	24.8	5.1	
3300	56°56"	10.5	ol gray G	---	---							
3301	27°09"	10	ol gray G	2.000					10.0	1.4	1.1	87.5
3303	51°41"	27	ol gray S	.080	1.19			1.1	80.2	14.5	5.3	
3304	51°33"	56	gr bl Ss	.049	2.25			2.1	36.0	54.4	9.6	
3305	28°48"	37	gr bl GsS	.180	6.38	41.9	0.852	0.6	46.6	27.6	5.9	19.9
3306	51°24"	41	gr bl ss	.135	3.13		1.36	1.2	61.5	24.1	7.1	7.3
3307	49°04"	132	gr bl S	.103	1.09		0.957	2.8	100			
3308	33°32"	85	ol gray s	.044	1.18		1.45		4.3	87.0	8.7	
3316	49°07"	10.5	no recovery									
3317	31°11"	7.5	ol gray Ss	.058	1.84		1.04		46.5	45.4	8.1	
3317	55°26"		0-12"									
3317	55°31"	7.5	Ss	.053	1.43				36.9	55.1	8.0	
3317	26°40"		12-13"									
3317	55°31"	7.5	ol gray S	.120	2.16				89.2	8.2	2.6	

APPENDIX TO CRUISES

SEDIMENTS

SANTA MONICA BAY

Station No.	Lat 33° Long 118°	Depth fms.	Sed type	MD	So	% CaCO ₃	% Org. C.	% Heavies	% Sand	% Silt	% Clay	% Gravel
3317	55°31" 26°40"	7.5	14-23" S	.097	1.90				85.0	13.8	1.2	
3318	55°33" 27°50"	15	gr bl S 60"	.093	1.22	1.01			87.4	9.5	3.1	
3319A	55°17" 28°25"	18	ol gray ss	.071	1.18				79.3	16.4	4.3	
3319B	55°17" 28°25"	18	gr bl ss	.084	1.26		0.452	1.12	78.0	17.5	4.5	
3320	55°20" 28°59"	22	gr bl ss 0-6"	.072	2.00	0.600			57.3	3.6	39.1	
3320	55°20" 28°59"	22	ss 6-15"	ND	ND				56.5	38.2	5.3	
3320	55°20" 28°59"	22	ol gray Ss	ND	ND				37.9	61.7	0.4	
3321	55°17" 29°36"	25	Ss 0-6"	.037	1.29	5.5	0.602		26.8	54.1	19.1	
3321	55°17" 29°36"	25	gr bl Ss 6-11"	.054	1.40				39.0	60.1	0.9	
3321	55°17" 29°36"	25	missing 11-27"									
3321	55°17" 29°36"	25	Ss	.056	1.32				37.8	56.0	6.2	
3322	55°13" 30°17"	27	gr bl Ss 0-18"	.048	1.63	3.8	0.450		34.2	60.8	5.0	
3322	55°13" 30°17"	27	Ss 18-24"	.057	1.33				39.5	56.6	3.9	
3322	55°13" 30°17"	27	Ss 24-36"	.052	1.45				35.8	58.3	5.9	
3322	55°13" 30°17"	27	Ss	.056	1.70				35.6	49.4	6.7	8.3

APPENDIX TO CRUISES

SEDIMENTS

SANTA MONICA BAY

Station No.	Lat 33° Long 118°	Depth fms.	Sed type	MD	So	% CaCO ₃	% Org. C.	% Heavies	% Sand	% Silt	% Clay	% Gravel
3322	55°13"	27	36-39" gray ss	.066	2.38		0.439		52.8	44.9	2.3	
3323	30°17"											
3323	55°12"	30.5	gr bl s	.350	ND		0.355		100			
3323	30°46"		0-5"									
3323	55°12"	30.5	ss	.061	1.58			1.97	48.7	46.0	5.3	
3323	30°46"		5-14"									
3323	55°12"	30.5	ss	.057	1.78				45.8	48.6	5.6	
3323	30°46"		14-30"									
3323	55°12"	30.5	ss	.064	2.51				51.7	41.8	6.5	
3323	30°46"		30-35"									
3323	55°12"	30.5	Gss	.375	3.99				63.3	24.7	1.5	10.5
3323	30°46"		35-36"									
3324	55°11"	30.5	gray Gss	.812	ND				59.4	11.8	2.7	26.1
3324	31°23"											
3324	55°11"	32.5	gr bl ss	.073	3.22		0.208	5.61	60.9	31.9	7.2	
3324	31°23"		0-10"									
3324	55°11"	32.5	gray Gss	.240	3.75				73.9	15.5	0.6	10.9
3324	31°23"		10-14"									
3325	55°06"	32.5	Ssg	>2.000	ND				24.9	13.0	2.1	60.0
3325	31°57"											
3325	55°06"	34.5	gr bl ss	.094	4.08		0.139	6.52	65.4	31.2	3.4	
3325	31°57"		0-13"									
3325	55°06"	34.5	ss	.160	3.84			4.68	60.1	29.7	5.0	5.2
3325	31°57"		13-17"									
3325	55°06"	34.5	gray ss	.240	2.12				79.2	5.7	14.0	1.1
3325	31°57"		17-34"									
3325	55°06"	34.5	ss	.075	3.22				60.2	24.6	15.2	
3325	31°57"		34-40"									
3326	55°03"	34.5	ss	.081	1.23				74.7	14.1	11.2	
3326	32°05"											
3326	55°03"	37	gr bl ss	.405	4.52			3.81	72.2	23.9	3.9	

APPENDIX TO CRUISES

SEDIMENTS

SANTA MONICA BAY

Station No.	Lat 33° Long 118°	Depth fms.	Sed type	MD	So	% CaCO ₃	% Org. C.	% Heavies	% Sand	% Silt	% Clay	% Gravel
3326	55°03"		17-28"									
	32°05"	37	gray ss	.284	2.32		0.182		80.3	13.8	0.8	5.1
3327	55°02"		2-6"									
	33°09"	50	ol gray SG	2.300	3.94				34.5	1.7	0.1	63.7
3327	55°02"		6-16"									
	33°09"	50	ol gray S	.098	1.44				87.3	12.6	0.1	
3327	55°02"		16-18"									
	33°09"	50	ol gray ss	.088	1.64				69.4	28.3	2.3	
3328	Lat 34° 01°33"											
	32°52"	6.5	ol gray ss	.074	1.32		0.182	2.18	79.3	18.6	2.1	
3329	Lat 33° 57°47"											
	35°47"	85	gr bl ss	.023	1.98	7.8	1.66		27.5	57.3	15.2	
3330	57°55"											
	34°40"	60	ol gray S	.084	1.23	5.0	0.479		80.6	15.3	4.1	
3331	57°59"											
	33°27"	32	gr bl S	.210	2.78	3.5	0.330	2.47	85.6	12.2	2.2	
3332	58°05"											
	32°14"	28	ol gray ss	.063	1.44	5.8	0.657	3.06	52.2	43.0	4.8	
3333	58°11"											
	31°06"	21	bl ss	.071	1.64	5.3	0.783		61.5	32.2	6.3	
3333A	56°12"											
	30°03"	23	ol gray S	.072	1.12		0.575		81.8	13.3	4.9	
3334	58°15"											
	29°55"	14	ol gray S	.092	1.29	5.9	1.27		100			
3335	58°20"											
	28°43"	7	ol gray ss	.068	1.37			1.13	60.3	35.8	3.9	
3336	57°20"											
	28°36"	12	ol gray ss	.082	2.02	4.5	0.709		67.9	28.9	3.2	
3337	57°15"											
	29°48"	18	bl Ss	.060	1.42	4.3	0.555	0.85	46.1	51.8	2.1	

APPENDIX TO CRUISES

SEDIMENTS

SANTA MONICA BAY

Station No.	Lat 33° Long 118°	Depth fms.	Sed type	MD	So	% CaCO ₃	% Org. C.	% Heavies	% Sand	% Silt	% Clay	% Gravel
3338	57°10"	24.5	gr bl Ss	.049	1.25		1.12	4.77	34.7	60.0	5.3	
3339	20°59"											
	57°05"	28.5	gr bl Ss	.074	1.17	4.5	0.365		73.0	23.9	3.1	
3340	32°10"											
	57°00"	35.5	ol gray ss	.079	2.48	5.7	0.371		59.7	38.4	1.9	
3341	33°20"											
	56°55"	77	gr bl Ss	.070	1.59	7.6	0.830	2.23	57.4	34.2	8.3	
3342	34°35"											
	56°50"	105	gr bl s	.042	1.18	12.3	2.18		3.9	81.6	14.5	
3343	35°43"											
	55°59"	121	gr bl s	.043	1.22		1.72		13.2	66.4	20.4	
3344	35°38"											
	55°55"	100	gr bl s	.045	1.27	11.6	1.54	2.98	19.7	61.6	18.7	
3345	34°26"											
	56°00"	54	ol gray S	.150	1.28			2.93	87.1	6.1	6.8	
3346	33°15"											
	56°05"	32	ol gray ss	.105	1.73		0.494		78.6	18.2	3.2	
3347	32°04"											
	56°12"	27	bl Ss	.080	1.21	5.0	0.154		63.6	33.2	3.2	
3348	30°48"											
	56°15"	24	bl Ss	.056	1.64	4.2	0.575	0.93	43.3	51.8	4.9	
3349	29°42"											
	56°20"	16.5	bl Ss	.080	1.52	6.8	0.507	1.27	66.5	27.7	5.8	
3350	28°31"											
	54°23"	23	bl Ss	.062	2.05	6.0	0.529	0.80	50.0	38.2	11.8	
3351	28°20"											
	54°18"	28.5	bl Ss	.043	1.66		0.529	1.60	28.9	67.0	4.1	
3352	29°30"											
	54°13"	32	ol gray Ss	.048	1.19		0.319	11.89	44.1	52.7	3.2	
3353	30°42"											
	54°07"	33	ol gray ss	.325	3.13	5.5	0.185		77.8	19.6	2.6	
	31°52"											

APPENDIX TO CRUISES

SEDIMENTS

SANTA MONICA BAY

Station No.	Lat 33° Long 118°	Depth fms.	Sed type	MD	So	% CaCO ₃	% Org. C.	% Heavies	% Sand	% Silt	% Clay	% Gravel
3354	54°02"											
	33°03"	39	gr bl sS	.118	3.19	35.2	0.716		73.5	22.1	4.4	
3355	46°32"											
	27°03"	32	gr bl sS	.086	1.27	25.7	0.458	1.58	78.7	17.7	3.6	
3356	46°35"											
	29°25"	155	ol gray s	.046	1.23	13.0	1.03		14.1	82.3	3.6	
3357	46°35"		not analyzed									
3358	31°49"	330										
	46°47"											
3359	34°06"	390	gr bl s	.038	1.30	13.8	1.78		1.1	69.3	29.6	
	48°38"											
3360	36°29"	312	ol gray s	.040	1.29	16.4	1.59		1.5	72.4	26.1	
	48°42"											
3361	34°05"	210	gr bl Ss	.049	1.32	18.9	1.41		29.1	62.3	8.6	
	48°43"											
3362	31°44"	106	gr bl Ss	.048	1.26	13.7	1.31	4.30	23.9	68.3	7.8	
	48°43"											
3363	29°21"	170	gr bl Ss	.052	1.76	5.5	0.679	3.50	38.4	55.7	5.9	
	48°43"											
3364	27°00"	105	gr bl s	.043	1.21		2.30		4.7	83.0	12.3	
	50°38"											
3365	24°47"	16	gr bl S	.094	1.22		0.663		90.8	8.4	0.8	
	52°38"											
3366	27°15"	26	gr bl sS	.074	1.37				71.5	23.2	5.3	
	56°34"		not analyzed									
3367	30°32"	24										
	56°34"											
3368	28°10"	12	bl S	.245	3.56	4.2	0.412		86.3	11.3	2.4	
	54°37"											
3369	27°06"	11	ol gray S	.091	1.19		0.520		92.8	4.3	2.9	
	54°38"											
	29°28"	27	gr bl Ss	.047	2.21		1.04		39.2	53.5	7.3	

APPENDIX TO CRUISES

SEDIMENTS

SANTA MONICA BAY

Station No.	Lat 33° Long 118°	Depth fms.	Sed type	MD	So	% CaCO ₃	% Org. C.	% Heavies	% Sand	% Silt	% Clay	% Gravel
3370	54°38"	33.5	gr bl GsS	.315	2.54	5.2	0.338		66.8	18.4	3.7	11.1
3371	31°50"											
3372	54°38"	80	gr bl sS	.084	1.68	24.7		3.05	66.8	23.9	9.3	
	34°11"											
	52°42"											
3373	34°13"	42	ol gray SsG	.600	ND				42.2	12.5	4.2	41.1
	50°42"											
3374	34°15"	50	gr bl S	.175	1.91				80.2	12.0	4.8	3.0
	50°44"											
3375	31°53"	49	gr bl S	.143	1.54				80.7	13.9	5.4	
	50°42"											
3376	29°32"	65	gr bl s	.042	1.22	8.0			1.7	84.9	13.4	
	50°40"											
3377	27°10"	41	bl Ss	.058	1.70	6.1		3.72	45.6	49.1	5.3	
	52°40"											
3378	29°29"	33	bl Ss	.055	3.02	22.2			45.9	48.6	5.5	
	52°40"											
3379	31°52"	30	gr bl S	.208	1.49	87.7			89.2	9.5		1.4
	56°35"											
3380	32°52"	34	ol gray sS	.315	1.80	6.3			79.5	17.0	3.5	
	58°30"											
3381	31°44"	24	bl s	.045	1.23	5.0			9.9	84.7	5.4	
	58°32"											
	29°26"	9.5	----	----	----	3.2						
3382	Lat 34° 00°13"											
	31°08"	8.5	bl Ss	.057	1.46	5.0			43.2	53.4	3.4	
3383	Lat 33° 58°30"											
	34°07"	33	ol gray sS	.090	2.86	5.8		7.27	67.1	29.5	3.4	
3384	Lat 34° 00°12"											
	33°28"	17	bl s	.045	1.23	5.0			17.2	77.4	5.4	

APPENDIX TO CRUISES

SEDIMENTS

SANTA MONICA BAY

Station No.	Lat 33° Long 118°	Depth fms.	Sed type	MD	So	% CaCO ₃	% Org. C.	% Heavies	% Sand	% Silt	% Clay	% Gravel
3385	50°00"	65	gr bl s	.042	1.29	20.8			16.9	74.7	8.4	
3386	32°23"											
3387	50°00"	100	gr bl ss	.118	1.97			0.94	67.4	27.8	4.8	
	34°48"											
	51°59"	50	ol gray S	.586	2.17				90.5	6.4	3.1	
3388	37°10"											
	52°01"	40	gr bl Ss	.053	3.24	49.2			45.6	45.9	8.5	
3389	34°48"											
	52°03"	38	gr bl Ss	.059	4.36	29.0		1.28	48.6	44.0	7.4	
3390	32°33"											
	52°05"	33	gr bl GSS	.066	6.40				28.9	44.4	4.5	22.2
3391	30°00"											
	54°06"	30	gr bl Ss	.056	1.48				40.2	53.5	6.3	
3392	30°00"											
	54°06"	35	ol grayGSS	1.080	ND				55.5	12.6	4.7	27.2
3393	32°33"											
	54°02"	41	gr bl ss	.114	2.14				73.1	16.7	7.9	2.3
3394	34°12"											
	56°14"	32	gr bl S	.126	1.36			11.22	81.9	12.0	2.5	3.6
3395	32°27"											
	56°15"	24	gr bl ss	.070	1.35	5.4		1.94	63.3	29.8	6.9	
	30°00"											
	Lat 34°											
3397	00°03"											
	30°06"	7	ol gray S	.087	1.22	3.1			88.3	9.3	2.4	
3398	01°22"											
	33°02"	7	ol gray S	.077	1.19	5.4			81.8	14.4	3.8	
	Lat 33°											
	52°08"											
3399	39°15"	250	ol gray s	.042	1.27	12.8			14.3	72.6	13.1	
3400	50°30"											
	37°06"	220	gr bl Ss	.045	1.46	12.8			25.2	74.5	0.3	

APPENDIX TO CRUISES

SEDIMENTS

SANTA MONICA BAY

Station No.	Lat 33° Long 117°	Depth fms.	Sed type	MD	So	% CaCO ₃	% Org. C.	% Heavies	% Sand	% Silt	% Clay	% Gravel
3401	37°00"		not									
3402	58°19.2"	9.5	analyzed									
	36°49.8"		not									
3403	58°27.6"	10	analyzed									
	37°17.2"		not									
3404	58°56.4"	10.5	analyzed									
	36°34.2"		not									
3405	57°59.4"	10.5	analyzed									
	37°00"		not									
3406	59°46.2"	12.5	analyzed									
	36°44.4"		not									
3407	59°18.6"	14	analyzed									
	36°28.2"		not									
3408	58°48"	16	analyzed									
	36°10.8"		not									
3409	58°18.6"	21	analyzed									
	35°53.4"		not									
	57°49.8"	24	analyzed									
3410	Long 118° 40°20"		not									
3411	48°28"	448	analyzed									
	43°30"		not									
3412	52°01"	487	analyzed									
	44°53"		not									
3413	46°04"	488	analyzed									
	41°15"		not									
3414	47°03"	487	analyzed									
	44°36"		not									
3415	47°05"	486	analyzed									
	55°42"											
3416	32°04"	33	ol gray S	.120	1.86				85.2	13.4	1.4	
	47°35"	40.5	gr bl ss	.065	1.23			6.69	58.4	36.0	5.6	
	28°21"											

APPENDIX TO CRUISES

SEDIMENTS

SANTA MONICA BAY

Station No.	Lat 33° Long 118°	Depth fms.	Sed type	MD	So	% CaCO ₃	% Org. C.	% Heavies	% Sand	% Silt	% Clay	% Gravel
3417	49°42"	70	ol gray ss	.066	1.41	9.6			55.4	36.5	8.1	
3418	28°19"											
	51°38"											
3419	27°23"	37.5	gr bl ss	.052	1.26	5.9		1.33	26.5	69.3	4.2	
	55°35"											
	30°36"	26	bl ss	.090	2.98			5.38	62.7	33.4	3.9	
3420	57°58"											
	34°01"	38	gr bl ss	.100	1.64			2.89	68.9	20.4	7.5	3.2
3421	56°20"											
	37°00"	122	gr bl s	.018	3.18	14.3			3.3	69.3	27.4	
3422	53°47"											
	36°34"	50	ol gray ss	.365	3.97	54.5			79.9	14.3	5.8	
3423	54°02"											
	35°01"	33	ol gray ss	.115	1.71	24.2		1.17	77.6	15.3	7.1	
3424	55°42"											
	32°03"	32	gr bl ss	.101	1.88	4.5		5.56	78.6	18.1	3.3	
3425	58°46"											
	31°18"	19	gr bl s	.074	1.13	5.0		1.99	81.8	13.7	4.5	
	Lat 34°											
3426	01°12"											
	33°15"	9	ol gray ss	.074	1.15			1.63	75.2	13.8	4.0	7.0
	Lat 33°											
3446	48°49"											
	24°43"	12.5	bl s	.803	ND	1.7		1.60	100			
3447	49°38"											
	24°58"	50	ol gray ss	.064	1.37	7.0		3.92	52.8	44.8	2.4	
3448	54°22"											
	28°20"	21	gr bl ss	.070	1.27			1.60	64.1	31.2	4.7	
3449	54°18"											
	29°30"	27.5	ol gray Ss	.061	1.61			2.50	49.0	43.9	7.1	
3450	54°13"											
	30°42"	31	ol gray Ss	.049	1.35	1.6			32.2	62.8	5.0	

APPENDIX TO CRUISES

SEDIMENTS

SANTA MONICA BAY

Station No.	Lat 33° Long 118°	Depth fms.	Sed type	MD	So	% CaCO ₃	% Org. C.	% Heavies	% Sand	% Silt	% Clay	% Gravel
3451	54°08"											
	31°52"	33	gr bl ss	.345	3.72	15.5			72.2	23.6	4.2	
3453	53°58"											
	34°15"	43.3	gr bl ss	.145	1.94	54.8		1.11	78.8	15.3	5.9	
3454	54°57"											
	34°20"	134	ol gray Ss	.030	2.95	11.3			17.2	61.7	21.1	
3455	54°52"											
	35°30"	133.3	ol gray Ss	.044	3.23				35.0	46.7	18.3	
3456	53°53"											
	35°26"	43.3	gr bl ss	.065	2.19	41.6			48.7	38.7	9.0	3.6
3457	52°54"											
	35°19"	42	gr bl ss	.070	2.42	44.3			51.0	35.9	8.3	4.8
3458	52°59"											
	34°08"	43.3	ol gray ss	.070	1.52	27.5			61.1	30.4	8.5	
3460	53°08"											
	31°47"	32	gr bl ss	.113	2.36	3.0			69.5	23.3	7.2	
3461	53°12"											
	30°35"	31	ol gray ss	.072	3.30	13.5			52.5	45.5	2.0	
3462	53°19"											
	29°24"	31	ol gray Ss	.061	1.42	4.9			48.8	43.5	7.7	
3463	53°23"											
	28°13"	28	gr bl S	.082	1.18	4.2			80.5	15.4	4.1	
3464	52°28"											
	28°07"	40	gr bl Ss	.053	1.32	26.5			34.7	60.2	5.1	
3465	52°18"											
	29°18"	36	gr bl Ss	.048	2.02				43.7	50.8	5.5	
3466	52°12"											
	30°28"	34	gr bl ss	.075	2.12	37.0			54.8	32.6	9.3	3.3
3467	52°08"											
	31°41"	37.5	ol gray ss	.070	1.68	32.7			56.8	35.9	7.3	
3468	52°04"											
	32°52"	60	gr bl Ss	.053	1.56			1.90	35.9	52.2	7.2	4.7

APPENDIX TO CRUISES

SEDIMENTS

SANTA MONICA BAY

Station No.	Lat 33° Long 118°	Depth fms.	Sed type	MD	SO	CaCO ₃ %	Org. C. %	Heavies %	Sand %	Silt %	Clay %	Gravel %
3469	47°21"	143	gr bl s	.012	2.89				12.7	63.3	24.0	trace
3470	30°42" 51°53"	39	gr bl Ss	.085	2.98	36.4			57.2	37.5	5.3	
3471	32°38" 51°28"	46	ol grayGSS	.195	ND	62.5			59.1	9.7	3.8	27.4
3472	35°15" 51°28"	150	ol gray Ss	.056	1.61	16.1			43.7	43.0	13.1	
3473	37°20" 52°54"	41	ol gray Ss	.061	1.54	23.5		3.53	49.0	43.9	7.1	
3474	34°38" 53°50"	41	ol grayGSS	.108	2.60	30.8			52.6	18.8	7.6	21.0
3475	33°55" 55°05"	10	gr bl S	.083	1.29	3.8		4.74	87.0	9.2	3.8	
3476	27°10" 50°37"	44	gr bl Ss	.045	2.05	7.2		3.99	33.1	61.5	5.4	
3477	27°47" 48°37"	31	gr bl Ss	.048	1.28	11.6		2.16	24.9	70.4	4.7	
3478	25°32" 54°33"	12	gr bl S	.075	1.19	2.6		2.61	83.2	6.4	4.2	6.2
3479	27°07" 55°05"	6	gr bl S	.090	1.59	3.7			80.4	15.4	4.2	
3480	26°25" 55°10"	7	gray S	.430	1.27	1.3		8.79	99.0	1.0		
3481	26°56" 55°37"	7.5	gr bl Ss	.044	1.38			4.58	23.9	68.6	7.5	
3482	26°49" 55°33"	12	gr bl S	.999	1.98	19.3			88.7	9.1	2.2	
3483	27°30" 55°01"	14	gr bl S	.103	1.28	3.0		3.36	87.1	9.7	3.2	
3484	27°29" 55°05"	15	ol gray S	.082	1.23			1.31	87.9	8.7	3.4	

APPENDIX TO CRUISES

SEDIMENTS

SANTA MONICA BAY

Station No.	Lat 33° Long 118°	Depth fms.	Sed type	MD	So	% CaCO ₃	% Org. C.	% Heavies	% Sand	% Silt	% Clay	% Gravel
3485	53°36"	20	ol gray S	.090	1.43			0.95	83.7	13.1	3.2	
3486	27°35" 54°50"	17	ol gray sS	.079	1.25	16.9		1.13	73.9	22.6	3.5	
3487	28°03" 55°43"	14	ol gray S	.099	1.33	4.9		3.00	84.8	11.2	4.0	
3488	28°00" 56°07"	16	ol gray S	.080	1.21	3.4		2.42	83.9	12.3	3.8	
3489	28°30" 54°40"	23	ol gray Ss	.052	1.36			1.09	35.6	58.9	5.5	
3490	28°37" 53°09"	25	ol gray S	.078	1.22	4.7		1.38	82.2	12.6	5.2	
3491	27°49" 52°41"	31	ol gray Ss	.055	1.66	6.2		1.66	42.7	51.2	6.1	
3492	28°04" 54°30"	26	ol gray sS	.067	1.37	5.6		2.89	56.0	31.3	12.7	
3493	29°11" 56°24"	17	ol gray sS	.077	1.33	5.0			68.8	23.3	7.9	
3494	29°01" 56°42"	19	ol gray sS	.076	1.15	5.8		2.05	76.1	15.5	8.4	
3495	29°30" 56°58"	21	ol gray sS	.070	1.34			1.26	61.8	32.4	5.8	
3496	30°00" 54°21"	28	gr bl Ss	.042	1.89			4.28	23.3	71.2	5.5	
3497	29°46" 54°11"	31	gr bl Ss	.061	1.71	5.3			48.8	45.4	5.8	31
3498	52°14" 28°16"	42	ol gray Ss	.056	1.83	6.3		3.29	43.4	48.3	8.3	
3499	49°22" 24°33"	13.5	r S	1.460	1.19	2.3	.0675	4.40	88.5	0.9	0.1	10.5
3500	47°26" 26°08"	21	gr bl GS	.475	ND	64.8			52.6	8.6	2.6	36.2

APPENDIX TO CRUISES

SEDIMENTS

SANTA MONICA BAY

Station No.	Lat 33° Long 118°	Depth fms.	Sed type	MD	So	% CaCO ₃	% Org. C.	% Heavies	% Sand	% Silt	% Clay	% Gravel
3501	44°40"		not analyzed									
	47°00"	488										
3527	49°21"											
3528	36°04"	140	gr bl sS	.094	1.54	20.3			77.0	13.4	9.6	
	50°28"											
3529	35°03"	85	gr bl sS	.072	1.36	18.6		4.52	64.0	29.6	6.4	
	53°06"											
3530	28°57"	30	gr bl Ss	.059	1.52			7.55	46.6	43.7	9.7	
	51°54"											
3531	29°54"	34		---	---	46.8						
	49°42"											
3532	30°02"	74	gr bl s	.032	1.98	11.9			2.1	80.2	17.2	
	47°22"											
3533	26°08"	21	r bl S	.415	1.32	82.2	0.240	2.41	94.8	2.2	0.3	2.7
	46°19"											
3539	27°04"	34	ol gray sS	.071	1.37	20.9		2.15	62.4	30.3	7.3	
	54°18"											
	33°18"	44										
	52°16"											
	31°44"	37	gr bl R & G	---	---							
3539	54°18"											
	33°18"	44	sS	.147	2.20				77.6	17.1	5.3	
3540	51°34"											
	32°29"	40										
	53°11"											
	32°22"	31	R & G	---	---							
3541	54°28"											
	31°46"	33										
	54°28"											
	33°18"	54	R & G	---	---							

APPENDIX TO CRUISES

SEDIMENTS

SANTA MONICA BAY

Station No.	Lat 33° Long 118°	Depth fms.	Sed type	MD	So	% CaCO ₃	% Org. C.	% Heavies	% Sand	% Silt	% Clay	% Gravel
3542	54°00"	42										
	34°42"											
	57°07"											
3543	31°23"	31	R & G	----	----							
	50°54"											
	35°21"	85										
	51°30"											
3544	34°34"	42	R & G	----	----							
	51°30"											
	34°34"	42										
	53°03"											
3545	33°03"	33	R & G	----	----							
	56°32"											
3546	32°28"	37	ol gray S	.123	1.64	4.5			89.5	6.8	3.7	
	48°57"											
3547	25°55"	43	ol gray Ss	.059	2.22	10.4		2.72	47.6	46.9	5.5	
	48°20"											
3548	25°22"	25	ol gray ss	.073	1.32				65.5	30.1	4.4	
	48°02"											
3551	26°23"	37	ol gray Ss	.059	1.38	14.8			42.1	49.2	8.7	
	42°05"		not									
3552	19°46"	23	analyzed									
	42°00"		not									
3553	19°30"	26	analyzed									
	42°12"		not									
3554	00°00"	24	analyzed									
	41°48"		not									
3555	20°17"	37	analyzed									
	41°42"		not									
3556	19°38"	33	analyzed									
	41°55"		not									
	19°57"	29	analyzed									

APPENDIX TO CRUISES

SEDIMENTS

SANTA MONICA BAY

Station No.	Lat 33° Long 118°	Depth fms.	Sed type	MD	So	% CaCO ₃	% Org. C.	% Heavies	% Sand	% Silt	% Clay	% Gravel
3557	42°00"		not									
	20°13"	30	analyzed									
3558	41°44"		not									
	19°58"	34	analyzed									
3559	41°31"		not									
	20°12"	83	analyzed									
3560	41°30"		not									
	19°42"	35	analyzed									
	Long 117°											
3561	36°52"		not									
	58°15"	10	analyzed									
3563	36°55"		not									
	58°28"	10	analyzed									
3564	37°03"		not									
	58°35"	10	analyzed									
	Lat 118°											
3619	42°03"		not									
	19°07"	22	analyzed									
3625	51°33"		not									
	18°58"	27	analyzed									
3626	41°32"		not									
	19°02"	31	analyzed									
	Lat 117°											
3632	36°55"		not									
	58°12"	9.5	analyzed									
3633	36°58"		not									
	58°24"	9.5	analyzed									
3640	36°23"		not									
	56°36"	7.5	analyzed									
	Lat 118°											
3641	55°11"											
	33°03"	59	SS		.210	2.85			76.6	13.2	7.2	

APPENDIX TO CRUISES

SEDIMENTS

SANTA MONICA BAY

Station No.	Lat 33° Long 118°	Depth fms.	Sed type	MD	So	% CaCO ₃	% Org. C.	% Heavies	% Sand	% Silt	% Clay	% Gravel
3642	55°57"		0-4"									
3642	32°48"	50	ol gray SG	ND	ND				68.8	24.6	6.6	
3642	55°57"		4-10"									
3642	32°48"	50	ol gray Ss	.060	1.66				48.9	41.7	9.9	4.5
3642	55°57"		10-16"									
3642	32°48"	50	ol gray sS	.065	1.69				53.2	41.9	4.9	
3642	55°57"		16-25"									
3642	32°48"	50	ol gray s	.025	2.81				19.6	69.2	11.2	
3644	Lat 34° 00°08"											
3644	32°57"	6	Ss	.058	1.42				44.6	51.0	4.4	
3645	Lat 33° 55°50"		0-6"									
3645	33°03"	80	ol gray sS	.089	1.52				75.5	17.1	6.8	
3645	55°50"		6-12"									
3645	33°03"	80	ol gray sS	.097	1.54				79.7	14.6	5.7	
3645	55°50"		12-18"									
3645	33°03"	80	ol gray sS	.087	1.49				74.1	21.1	4.7	
3645	55°50"		18-24"*									
3645	33°03"	80	ol gray sS	.108	1.61				76.7	17.9	5.4	
3645	55°50"		24-29"									
3645	33°03"	80	ol gray sS	.110	1.71				73.7	18.8	7.5	
3645	55°50"		29-35"									
3645	33°03"	80	ol gray s	.025	2.92				18.4	65.3	16.3	
3645	55°50"		35-41"									
3645	33°03"	80	ol gray s	.016	2.41				8.1	81.7	11.2	
3645	55°50"		41-47"									
3645	33°03"	80	ol gray s	.025	2.75				16.9	64.3	18.8	
3645	55°50"		47-53"									
3645	33°03"	80	s	ND	ND							

* From 0-24" layers and patches of shell fragments were observed.

APPENDIX TO CRUISES

SEDIMENTS

SANTA MONICA BAY

Station No.	Lat 33° Long 118°	Depth fms.	Sed type	MD	So	% CaCO ₃	% Org. C.	% Heavies	% Sand	% Silt	% Clay	% Gravel
3646	55°40"		0-6"									
	33°20"	77	ol gray ss	.073	1.71				62.1	26.9	11.0	
3646	55°40"		6-12"									
	33°20"	77	ol gray ss	.081	1.42				71.7	23.3	5.0	
3646	55°40"		12-18"									
	33°20"	77	ol gray ss	.082	1.32				74.9	19.5	5.6	
3646	55°40"		18-24"									
	33°20"	77	ol gray ss	.085	1.64				70.5	23.2	6.3	
3646	55°40"		24-30"									
	33°20"	77	ol gray ss	.083	1.50				72.9	19.3	7.8	
3646	55°40"		30-36"									
	33°20"	77	ol gray ss	.084	1.34				77.0	19.9	4.1	
3646	55°40"		36-42"									
	33°20"	77	ol gray ss	.077	1.56				67.5	27.6	4.9	
3646	55°40"		42-48"									
	33°20"	77	ol gray ss	.053	3.24				47.0	36.5	16.5	
3646	55°40"		48-55" *									
	33°20"	77	ol gray ss	.069	1.63				56.5	40.4	3.1	
3647	55°36"		0-6"									
	33°31"	107	ol gray ss	.044	2.42				35.5	52.5	12.0	
3647	55°36"		6-12"									
	33°31"	107	ol gray ss	.051	2.39				42.5	44.4	13.1	
3647	55°36"		12-18"									
	33°31"	107	ol gray ss	.064	1.93				52.2	40.4	7.4	
3647	55°36"		18-24"									
	33°31"	107	ol gray ss	.052	2.45				44.6	46.9	8.5	
3647	55°36"		24-30"									
	33°31"	107	ol gray ss	.063	2.28				51.6	40.0	8.4	
3647	55°36"		30-36"									
	33°31"	107	ol gray ss	.058	2.65				48.6	41.4	10.0	

* Shell fragments were found at the bottom of the core.

APPENDIX TO CRUISES

SEDIMENTS

SANTA MONICA BAY

Station No.	Lat 33° Long 118°	Depth fms.	Sed type	MD	So	% CaCO ₃	% Org. C.	% Heavies	% Sand	% Silt	% Clay	% Gravel
3647	55°36"		36-42"									
	33°31"	107	ol gray Ss	.056	2.41				47.1	45.7	7.2	
3647	55°36"		42-48"									
	33°31"	107	ol gray ss	.063	2.12				51.1	41.9	7.0	
3647	55°36"		48-54"									
	33°31"	107	ol gray ss	.063	2.16				50.9	41.3	7.8	
3647	55°36"		54-60"									
	33°31"	107	ol gray ss	.068	1.69				57.3	32.4	10.3	
3647	55°36"		60-68" *									
	33°31"	107	ol gray ss	.066	1.88				52.8	39.8	7.4	
3648	55°28"		0-6"									
	33°42"	120	ol gray ss	.067	1.96				55.8	32.7	11.5	
3648	55°28"		6-12"									
	33°42"	120	ol gray ss	.071	1.86				59.8	31.1	9.1	
3648	55°28"		12-18"									
	33°42"	120	ol gray ss	.072	1.98				59.9	31.5	8.6	
3648	55°28"		18-24"									
	33°42"	120	ol gray ss	.083	1.84				60.0	28.7	11.3	
3648	55°28"		24-30"									
	33°42"	120	ol gray ss	.074	2.57				58.9	26.7	14.4	
3648	55°28"		30-36"									
	33°42"	120	ol gray Ss	.058	2.65				48.5	36.5	15.0	
3648	55°28"		36-42"									
	33°42"	120	ol gray ss	.080	1.76				57.8	29.6	12.6	
3648	55°28"		42-48" **									
	33°42"	120	ol gray ss	.070	1.76				59.2	28.9	11.9	
3678	49°44"											
	24°55"	92	gr bl Ss	.042	2.74	10.9			37.2	59.0	13.8	

* No layers and laminations were observed in any section of the core.

** No layers or laminations were observed in this core.

APPENDIX TO CRUISES

SEDIMENTS

SANTA MONICA BAY

Station No.	Lat 33° Long 118°	Depth fms.	Sed type	MD	So	% CaCO ₃	% Org. C.	% Heavies	% Sand	% Silt	% Clay	% Gravel
3679	51°42"	35	gr bl S	.082	1.22				100			
3680	24°33" 51°40"	17	bl S	.116	1.89	3.1			93.1	3.3	3.6	
3681	25°45" 51°33"	35	gr bl ss not analyzed	.075	1.47	5.2			66.6	27.6	5.8	
3682	26°54" 51°24"	40										
3683	28°08" 51°17"	59	ol gray s	.040	1.89				18.3	70.0	11.7	
3684	29°24" 50°18"	69	ol gray s	.035	2.33				13.3	71.4	15.3	
3685	29°25" 50°13"	67	ol gray s	.027	2.49				5.0	78.4	16.6	
3686	30°36" 51°13"	54	ol gray s	.036	2.25				8.0	79.1	12.9	
3687	30°36" 51°08"	41	ol gray ss	.160	2.96				70.8	13.1	6.3	7.8
3688	51°02" 33°03"	43	ol gray ss	.094	1.79	42.3			70.6	21.4	7.0	
3689	52°01" 33°28"	40	gr bl ss	.102	3.20				65.8	19.2	5.0	
3690	52°08" 32°16"	39	gr bl ss	.056	1.66				45.6	47.8	6.6	4.0
3691	52°12" 31°04"	36.5	gr bl ss	.026	3.16				20.4	57.3	22.3	
3692	52°18" 29°48"	32	S	.360	1.23				100			
3693	59°29" 29°25"	6.5	not analyzed									
3694	59°23" 31°51"	10	ol gray S	.082	1.26	4.5			86.1	10.4	3.5	

APPENDIX TO CRUISES

SEDIMENTS

SANTA MONICA BAY

Station No.	Lat 33° Long 118°	Depth fms.	Sed type	MD	So	% CaCO ₃	% Org. C.	% Heavies	% Sand	% Silt	% Clay	% Gravel
3695	59°18"	18.5	gr bl S	.092	1.22	4.3			81.9	11.3	4.8	
3696	31°50"	25	not analyzed									
3697	59°13"											
	33°03"											
3697	59°10"	30.5	bl Ss	.080	1.81			69.9	26.6	3.5		
3698	34°16"		not analyzed									
	58°07"	58										
	34°53"											
3699	58°12"	32	ol gray S	.160	2.68	3.6			82.1	14.4	3.5	
3700	33°29"											
	58°16"	28	bl Ss	.074	1.57				65.2	27.9	6.9	
3701	32°17"											
	58°20"	21	gr bl Ss	.079	1.27				76.0	18.7	5.3	
3702	30°05"											
	58°25"	13.5	ol gray S	.285	3.16	5.2			85.7	10.4	3.9	
3703	29°51"		not analyzed									
	58°31"	7										
	28°40"											
3704	57°35"											
	27°42"	7	gr bl S	.168	1.31	3.3			100			
3705	57°28"											
	28°56"	12	ol gray S	.097	1.49	4.2			85.3	10.5	4.2	
3706	57°23"		not analyzed									
	30°10"	19										
3707	57°18"											
	31°23"	25	gr bl Ss	.075	1.48	5.1			65.8	28.8	5.4	
3708	57°12"											
	32°36"	31	gr bl S	.139	1.71				86.6	10.9	2.5	
3709	57°08"											
	33°50"	55.5	gr bl S	.181	1.44	3.2			93.1	4.3	2.6	
3710	57°03"											
	35°02"	86	ol gray Ss	.051	2.29				44.4	41.7	14.9	

APPENDIX TO CRUISES

SEDIMENTS

SANTA MONICA BAY

Station No.	Lat 33° Long 118°	Depth fms.	Sed type	MD	So	% CaCO ₃	% Org. C.	% Heavies	% Sand	% Silt	% Clay	% Gravel
3711	55°58"											
	35°35"	119	ol gray s	.027	2.42				12.9	73.8	13.3	
3712	56°03"											
	34°20"	97	ol gray sS	.064	1.50				51.9	36.7	11.4	
3713	56°08"											
	33°07"	45	gr bl GS	.291	1.48	4.2			69.4	5.5	2.2	22.9
3714	56°13"											
	31°58"	30	gr bl S	.089	1.30				85.8	11.0	3.2	
3715	56°19"											
	30°32"	26	gr bl sS	.088	2.05	2.9			71.0	24.5	4.5	
3716	56°25"											
	29°30"	20	ol gray sS	.080	1.36	4.7			74.3	20.8	4.9	
3717	56°30"											
	28°18"	12.5	ol gray S	.520	1.82				90.9	6.8	2.3	
3718	56°35"											
	27°03"	5	r S	.390	1.24	1.9			100			
3719	56°02"											
	27°28"	9.5	ol gray sS	.115	3.44				72.4	21.4	4.2	
3720	55°36"											
	26°32"	6.5	bl sS	.070	1.53				59.0	35.1	5.9	
3721	55°31"											
	27°45"	13.5	gr bl S	.105	1.52	6.4			85.4	11.3	3.3	
3780	55°57"											
	28°40"	17.5	gr bl sS	.077	1.36				71.8	24.5	3.7	
3781	55°25"											
	28°57"	21	gr bl sS	.064	1.51				51.7	43.3	5.0	
3782	54°57"											
	28°13"	19	gr bl S	.082	1.24				81.4	14.9	3.7	
3783	55°02"											
	27°01"	11	gr bl S	.092	1.43				88.7	9.9	1.4	
3784	54°31"											
	27°15"	12.5	bl S	.093	1.20				92.3	5.6	2.1	

APPENDIX TO CRUISES

SEDIMENTS

SANTA MONICA BAY

Station No.	Lat 33° Long 118°	Depth fms.	Sed type	MD	So	% CaCO ₃	% Org. C.	% Heavies	% Sand	% Silt	% Clay	% Gravel
3785	54°03"	11	ol gray S	.091	1.22				100			
3786	26°43" 53°02"	14	gr bl S	.087	1.26				86.2	10.2	3.6	
3787	26°48" 53°36"	6	gr bl S	.090	1.21				100			
3788	25°35" 52°39"	6.5	ol gray S	.094	1.44				100			
3789	24°55" 52°34"	15	ol gray S	.090	1.19				92.1	5.3	2.6	
3790	26°08" 52°28"	26.5	ol gray ss	.073	1.45				66.0	27.7	6.3	
3791	27°22" 53°25"	25	bl ss	.085	1.27				77.3	15.0	7.7	
3792	28°02" 53°56"	20	ol gray ss	.084	1.31				78.5	14.9	7.6	
3793	27°55" 54°26"	23	gr bl Ss	.060	1.61				48.3	41.3	10.4	
3794	28°28" 54°55"	25	gr bl Ss	.051	1.93				41.4	47.3	11.3	
3795	29°24" 55°21"	27	ol gray Ss	.050	1.49				36.0	58.6	5.4	
3796	30°10" 55°51"	24.5	ol gray Ss	.051	1.54				38.3	55.5	6.2	
3797	29°52" 55°16"	31	gr bl ss	.085	3.09				56.0	30.8	5.2	8.0
3798	31°22" 55°09"	35.5	gr bl ss	.300	ND				71.9	24.0	4.1	41
3799	32°34" 54°10"	34	ol gray S	.480	ND				82.3	14.4	3.3	
3800	32°08" 54°15" 30°55"	32	ol gray Ss	.058	2.63				45.9	46.7	5.6	1.8

APPENDIX TO CRUISES

SEDIMENTS

SANTA MONICA BAY

Station No.	Lat 33° Long 118°	Depth fms.	Sed type	MD	So	% CaCO ₃	% Org. C.	% Heavies	% Sand	% Silt	% Clay	% Gravel
3801	54°21"	28	gr bl Ss	.048	1.45				31.5	63.1	5.4	
3802	29°43" 53°53"	27	ol gray ss	.058	1.45	5.7			54.4	39.6	6.0	
3803	29°06" 53°22"	30	gr bl Ss	.046	1.32				23.3	71.0	5.7	
3804	29°15" 52°22"	40	gr bl Ss	.044	1.37				26.2	68.0	5.8	
	28°37" Lat 34°											
3848	01°22" 34°53"	11	gr bl ss	.075	1.27	4.8			68.6	26.9	4.5	
3849	01°08" 35°25"	12.5	gr bl ss	.080	1.49				68.9	27.0	4.1	
3850	01°44" 35°04"	7	not analyzed									
3851	00°43" 35°15"	13	bl ss	.076	1.45				65.7	27.7	6.6	
3852	00°14" 35°16"	20	ol gray Ss	.057	1.53	6.1			45.7	47.2	7.1	
	Lat 33°											
3853	59°43" 35°14"	27	gr bl Ss	.058	1.45	6.2			45.5	47.8	6.7	
3854	59°12" 35°13"	34.5	gr bl ss	.076	1.33				68.8	26.0	5.2	
3855	58°43" 35°13"	55	not analyzed									
3856	58°15" 35°13"	67	not analyzed									
3857	57°43" 35°12"	80	not analyzed									
3858	57°14" 35°11"	90	not analyzed									

APPENDIX TO CRUISES

SEDIMENTS

SANTA MONICA BAY

Station No.	Lat 33° Long 118°	Depth fms.	Sed type	MD	So	% CaCO ₃	% Org. C.	% Heavies	% Sand	% Silt	% Clay	% Gravel
3859	57°33"		not									
	34°42"	71	analyzed									
3860	57°52"		not									
	34°15"	48	analyzed									
3861	58°09"											
	33°45"	33	b1 S	.580	2.57				81.8	15.0	3.2	
3862	58°46"											
	32°47"	27	b1 Ss	.061	1.49				48.6	45.0	6.4	
3863	59°23"											
	31°48"	17	b1 sS	.081	1.35				71.7	22.7	5.6	
3864	59°58"		not									
	30°48"	9	analyzed									
3865	56°12"											
	28°53"	17	gr b1 sS	.073	1.31				66.9	27.4	5.7	
3866	55°10"											
	27°04"	10.5	b1 sS	.063	1.55				50.4	42.5	7.1	
3867	55°00"											
	27°40"	15	gr b1 sS	.085	1.31				75.6	18.9	5.5	
3868	54°47"											
	28°13"	20	ol gray ss	.074	1.43				64.3	30.4	5.3	
3869	54°27"		not									
	29°18"	26.5	analyzed									
3870	53°42"											
	31°33"	31.5	gr b1 Gss	.250	ND	10.0			56.0	22.6	5.8	15.5
3871	52°16"											
	30°38"	35	b1 sS	.064	1.70	25.7			52.8	41.6	5.6	
3872	51°36"											
	29°32"	52.5	gr b1 s	.038	1.68				3.9	83.1	13.0	
3873	51°11"		not									
	28°40"	61.5	analyzed									
3874	50°06"		not									
	26°38"	43	analyzed									

APPENDIX TO CRUISES

SEDIMENTS

SANTA MONICA BAY

Station No.	Lat 33° Long 118°	Depth fms.	Sed type	MD	So	% CaCO ₃	% Org. C.	% Heavies	% Sand	% Silt	% Clay	% Gravel
3875	49°18"	25	b1 ss	.071	1.40	8.0			60.3	34.2	5.5	
3876	25°10"											
	48°46"											
	24°07"	9	b1 S	.540	1.33	3.1			100			
3898	41°56"		not									
	19°25"	26	analyzed									
3899	42°03"		not									
	19°50"	27	analyzed									
3900	42°10"		not									
	20°06"	27	analyzed									
3901	42°18"		not									
	20°21"	28	analyzed									
3902	42°26"		not									
	20°36"	26	analyzed									
3903	42°33"		not									
	20°51"	27	analyzed									
3904	42°42"		not									
	21°06"	27.5	analyzed									
3905	42°49"		not									
	21°22"	27	analyzed									
3906	42°58"		not									
	21°37"	29	analyzed									
3907	43°04"		not									
	21°53"	29	analyzed									
	Lat 34°											
3952	01°53"	6	gr b1 ss	.082	1.22	6.4			77.6	16.8	5.6	
3953	40°08"											
	00°45"	24	ol gray Ss	.043	1.69	7.0			25.3	67.8	6.9	
3954	41°07"											
	01°22"	14.9	gr b1 ss	.078	1.51	6.7			65.5	26.6	7.9	
	41°09"											

APPENDIX TO CRUISES

SEDIMENTS

SANTA MONICA BAY

Station No.	Lat 33° Long 118°	Depth fms.	Sed type	MD	So	% CaCO ₃	% Org. C.	% Heavies	% Sand	% Silt	% Clay	% Gravel
3955	59°54"	33.5	gr bl Ss	.049	1.98	8.0			37.8	48.8	13.4	
3956	41°06" 59°00"											
3957	41°08" 57°43"	81	gr bl Ss	.054	1.83	8.0			43.2	43.0	13.8	
3958	41°01" 56°34"	169	gr bl Ss	.036	2.84	12.0			24.9	57.8	17.3	
3959	41°02" 55°33"	200	gr bl s	.026	3.02				5.7	70.8	23.5	
3960	41°04" 53°58"	219	ol gray s	.024	3.02	11.9			9.9	68.9	21.2	
3961	39°53" 53°18"	246	ol gray Ss	.057	4.04	11.2			40.2	29.7	22.1	
3962	38°40" 52°07"	145	gr bl sS	.076	1.61	16.0			63.4	20.6	16.0	
3963	38°23" 50°55"	140	ol gray sS	.123	2.07	14.6			73.9	15.6	10.5	
3964	38°12" 49°39"	230	gr bl Ss	.043	2.82	12.9			27.2	56.0	16.8	
3965	37°27" 48°25"	270	gr bl s	.017	4.05	13.7			7.6	61.5	30.9	
	35°22"	274	gr bl s	.009	4.87	14.6			3.3	57.4	39.3	

APPENDIX TO CRUISES

SEDIMENTS

NEWPORT

Station No.	Lat 33° Long 117°	Depth fms.	Sed type	MD	So	% CaCO ₃	% Org. C.	% Heavies	% Sand	% Silt	% Clay	% Gravel
3401	37°00"	9.5	dk gray S	.176	1.24				92.9	4.2	2.3	
3402	58°19.2"											
	36°49.8"	10	dk gray S	.107	1.21				94.8	2.8	2.4	
3403	58°27.6"											
	37°17.2"	10.5	dk gray S	.100	1.25				90.1	7.8	2.1	
3404	58°56.4"											
	36°34.2"	10.5	dk gray S	.120	1.30				98.0	0.1	1.9	
3405	57°59.4"											
	37°00"	12.5	dk gray S	.078	1.19				89.5	7.3	3.2	
3406	58°46.2"											
	36°44.4"	14	dk gray S	.078	1.19	3.5			89.5	7.3	3.2	
3407	58°18.6"											
	36°28.2"	16	dk gray S	.076	1.19				83.1	12.7	4.2	
3408	58°48"											
	36°10.8"	21	dk gray S	.080	1.20	4.2			85.4	10.2	4.4	
3409	58°18.6"											
	35°53.4"	24	dk gray sS	.072	1.25				70.8	23.1	6.1	
3561	57°49.8"											
	36°52"	10	gray S	.120	1.26				100			
3563	58°15"											
	36°55"	10	gray S	.109	1.30				100			
3564	58°28"											
	37°03"	10	gray S	.102	1.39	2.0			100			
3565	58°35"											
	37°05"	9.5	gray S	.100	1.15	2.6			100			
3566	58°42"											
	37°10"	9.5	gray sS	.077	1.27				74.1	23.1	2.8	
3567	58°56"											
	36°12"	9.5	gray S	.128	1.23	1.5			100			
	58°07"											

APPENDIX TO CRUISES

SEDIMENTS

NEWPORT

Station No.	Lat 33° Long 117°	Depth fms.	Sed type	MD	So	% CaCo ₃	% Org. C.	% Heavies	% Sand	% Silt	% Clay	% Gravel
3568	36°50"	8.5	gray S	.138	1.25	2.1			100			
3569	36°02"	16.5	dk gray sS	.076	1.30	5.5			71.6	22.2	6.2	
3632	36°55"	9.5	dk gray S	.187	1.21				100			
3633	36°58"	9.5	gray S	.105	1.27				100			
3634	36°52"	9.5	dk gray S	.125	1.48	2.5			100			
3635	36°48"	9	gray S	.140	1.33				100			
3636	36°42"	9	dk gray S	.128	1.29				100			
3638	36°33"	8	dk gray S	.160	1.23	1.4			100			
3639	36°28"	7.5	gray S	.155	1.28	2.0			100			
3640	36°23"	7.5	dk gray S	.160	1.28	1.6			100			
3666	37°02"	8.5	dk gray S	.161	1.31	1.7			100			
	58°10"											

APPENDIX TO CRUISES

SEDIMENTS

WHITES POINT

Station No.	Lat 33° Long 118°	Depth fms.	Sed type	MD	So	% CaCO ₃	% Org. C.	% Heavies	% Sand	% Silt	% Clay	% Gravel
3551	42°05"	23	gr bl Ss	.052	2.22	13.1			41.1	49.4	9.5	
3552	19°46" 42°00"											
3553	19°30" 42°12"	26	gr bl Ss	.060	1.90				47.5	45.4	7.1	
3554	00°00" 41°48"	24	bl Ss	.043	2.29	19.0			35.1	48.4	16.5	
3555	20°17" 41°42"	37	gr bl Ss	.053	1.76	11.9			39.0	54.7	6.3	
3556	19°38" 41°55"	33	gr bl Ss	.056	2.25				43.8	44.8	11.4	
3557	19°57" 42°00"	29	gr bl Ss	.054	1.84	10.2			41.2	49.4	9.4	
3558	20°13" 41°44"	30	gr bl Ss	.057	1.82				41.8	54.6	3.6	
3559	19°58" 41°31"	34	gr bl Ss	.050	2.07	7.9			38.9	49.1	12.0	
3560	20°12" 41°30"	83	gr bl Ss	.036	3.19	9.4			27.4	57.5	15.1	
3619	19°42" 42°03"	35	gr bl Ss	.051	2.40	8.4			40.9	50.4	8.7	
3620	19°07" 41°49"	22	ol gray Ss	.048	2.48	12.2			43.5	45.0	11.5	
3621	19°14" 41°36"	29	gr bl Ss	.035	2.49	4.9			22.1	65.1	12.8	
3622	19°18" 41°24"	34	ol gray Ss	.049	1.98	9.6			37.2	51.0	11.8	
3623	19°32" 41°57"	55	gr bl s	.029	2.36	9.7			20.1	75.6	4.3	
3625	18°50" 51°33"	21.5	ol gray sS	.068	2.11	12.1			53.1	41.2	5.7	
	18°58"	27	gr bl sS	.055	1.87	12.0			43.7	45.6	10.7	

APPENDIX TO CRUISES

SEDIMENTS

WHITES POINT

Station No.	Lat 33° Long 118°	Depth fms.	Sed type	MD	So	% CaCO ₃	% Org. C.	% Heavies	% Sand	% Silt	% Clay	% Gravel
3626	41°32"											
	19°02"	31	gr bl Ss	.042	1.87	9.6			29.9	64.4	5.7	
3627	41°17"											
	19°18"	40	gr bl Ss	.060	1.87	8.8			48.5	40.0	11.5	
3628	42°05"											
	19°50"	24	gr bl Ss	.037	2.80	11.6			30.4	55.4	14.2	
3651	41°52"											
	20°05"	30	gr bl Ss	.046	2.11	11.2			38.6	48.4	13.0	
3652	42°05"											
	19°52"	26	gr bl Ss	.061	2.11				49.8	39.6	10.6	
3653	42°27"											
	20°27"	23	gr bl ss	.810	2.74	13.3			63.4	29.3	7.3	

APPENDIX TO CRUISES

SEDIMENTS

ROCKS IN PLACE

Station No.	Rock Type	Age
2725	Dark gray siltstone	Miocene (?)
	Gray shale	Miocene (?)
	Black chert, white surface alteration	Miocene (?)
3232	Siliceous shale	Miocene (?)
3257	Laminated shale	Miocene (?)
	Gray siltstone	Miocene (?)
3268A	Siliceous shale	Miocene (?)
	Gray shale	Miocene (?)
	Sandstone	Miocene (?)
	Black chert, white surface alteration	Miocene (?)
3268B	Sandstone	Miocene (?)
3268C	Mica schist	Basement ?
	Fragment of breccia?	Jurassic (?)
3268E	Black shale	Miocene (?)
3274B	Siliceous shale	Miocene (?)
	Black chert, white surface alteration	Miocene (?)
3274C	Black chert, white surface alteration	Miocene (?)
	Siliceous shale	Miocene (?)
3274D	Siliceous shale	Miocene (?)
	Black chert, white surface alteration	Miocene (?)
	Gray mudstone	Miocene (?)
3282	Black chert, white surface alteration	Miocene (?)
	Siliceous shale	Miocene (?)
3284	Siliceous shale	Miocene (?)
	Black chert, white surface alteration	Miocene (?)
3285	Gray shale	Miocene (?)
	Black chert, white surface alteration	Miocene (?)
3372	Siliceous shale	Miocene (?)
3389	Mudstone	Miocene (Mohnian?)
		Contained the following Foraminifera:
		Epistominella capitaneensis
		Bolivina decurtata
		Uvigerina hootsi
3542	Siliceous shale	Miocene (?)
	Siliceous shale	Miocene (?)

APPENDIX TO CRUISES

SEDIMENTS

ROCKS IN PLACE

Station No.	Rock Type	Age
3544	Gray shale	Miocene (?)
	Light yellow sandstone	Miocene (?)
4321	Dark gray mudstone	U. Miocene (L. Mohnian) Contained the following Foraminifera: Epistominella gyroidinaformis Cibicides illingi Eponides multicamerata Baggina robusta Bolivina ticensis Eponides rosaformis Epistominella capitanensis Bolivina decurtata Uvigerina hootsi
	Dark gray shale containing phosphorite granules	Miocene (?)
	White limestone	Miocene (?)
	Siliceous shale	Miocene (?)
4323	Siliceous shale	Miocene (?)

APPENDIX TO CRUISES

SEDIMENTS

ROCKS IN PLACE

Station No.*	Lat 33° Long 118°	Sampling Device	Rock Type	Age
27	48°24" 29°00"	D	Dark gray, crystalline limestone Gray rhyolite, high quartz content	Miocene (?) Miocene (?)
29	49°06" 31°30"	C	Grayish-brown diatomaceous limestone	Miocene (?)
30	48°24" 31°42"	D	Gray mudstone	L. U. Miocene Miocene Foraminifera
31	48°12" 30°12"	D	Dark gray diatomaceous mudstone	L. U. Miocene Miocene Foraminifera and Miocene Diatoms
32	53°42" 34°24"	D	Dark gray limestone Pilitic, aphytic basalt Porphyritic andesite Diatomaceous mudstone Gray-brown crystalline limestone Cherty white limestone Black bituminous limestone Black chert, white surface alteration	Miocene (?) Miocene (?) Miocene (?) Miocene (?) Miocene (?) Miocene (?) Miocene (?) Miocene (?)
33	55°00" 33°12"	D	Quartz, from pegmatite Fine grained rhyolite Black slate, fine cleavage Dark gray meta-sandstone Yellow tuffaceous shale with chert bands Gray limestone, chert enclosed Black chert, white surface alteration	? Miocene (?) Miocene (?) Miocene (?) Miocene (?) Miocene (?) Miocene (?) Miocene (?)
34	55°00" 34°36"	D	Yellow-gray sandy shale Green-gray, finely crystalline limestone Gray limestone concretions with calcite core	L. U. Miocene Miocene Foraminifera Miocene (?) ?
35	54°30" 36°18"	D	Finely crystalline limestone	Miocene (?)
36	59°00" 39°36"	D	Cherty compact shale	Miocene (?)

* After Emery and Shepard, 1945.

APPENDIX TO CRUISES

SEDIMENTS

TRANSPORTED ROCKS

Station No.	Lat 33° Long 118°	Sampling Device	Rock Type
2725	previously given		Mica schist, granite, gneiss, quartzite
3257	previously given		Mica schist
3268A	previously given		Mica schist, sandstone
3268B	previously given		Sandstone
3274B	previously given		Mica schist
3274C	previously given		Granodiorite
3274D	previously given		Mica schist
3282	previously given		Granite gneiss, diorite, mica schist
3284	previously given		Granite gneiss, diorite
3285	previously given		Granite gneiss
3327	previously given		Granodiorite, mica schist, sandstone
3394	previously given		Diorite, granite gneiss, granodiorite
3544	previously given		Mica schist
28*	48°12'	D	Granite
	29°06'		
33*	53°42'	D	Granite
	34°24'		
35*	54°30'	D	Granite
	36°18'		

* After Emery and Shepard, 1945.

APPENDIX TO CRUISES

SEDIMENTS

ABBREVIATIONS USED IN SEDIMENT SECTION

Sediments:

Type

G = Gravel, gravelly

R = Rock

s = Silt, silty

S = Sand, sandy

Color

bl = Black

br = Brown

dk = dark

gr = Green

gray = Gray

lt = light

ol = Olive

r = Red

Gear:

C = Corer

D = Dredge

APPENDIX TO CRUISES

SEDIMENTS

Station No.	Depth of penetration of 1,000 lb. core barrel
3316	5"
3317	26"
3318	36"
3319	60"
3320	27"
3321	46"
3322	40"
3323	57"
3324	24"
3325	62"
3326	36"
3327	44"

HYDROGRAPHIC STATIONS

Santa Monica Bay

Station No.	Lat 33°	Long 118°	Bottle Depth (Feet)	Sigma t	Temp	Cl.	S
0905 6/18/55	See	BZ		24.30	17.28	18.535	33.48
1004 6/18/55	"	"		24.24	19.11	18.26	32.99
1050 6/18/55	"	"		24.25	17.78	18.575	33.56
1113 6/18/55	"	"		24.38	16.94	18.525	33.47
1145 6/18/55	"	"		24.22	17.67	18.54	33.49
1215 6/18/55	"	"		23.95	18.33	18.46	33.35
1245 6/18/55	"	"		23.79	18.89	18.445	33.32
1315 6/18/55	"	"		23.89	18.89	18.515	33.45
1329 6/18/55	"	"		24.12	17.78	18.485	33.39
1348 6/18/55	"	"		24.12	17.78	18.48	33.39
1415 6/18/55	"	"		23.99	18.06	18.445	33.32
1445 6/18/55	"	"		23.89	18.89	18.515	33.45
1530 6/18/55	"	"		24.00	18.94	18.605	33.61
1615 6/18/55	"	"		24.19	17.78	18.54	33.49
3100 6/19/55	52° 40"	27° 51"	0	23.96	18.33	18.47	33.37
	"	"	27	24.73	14.79	18.44	33.30
	"	"	167	25.64	10.02	18.61	33.62
3101 6/19/55	50° 11"	23° 43"	0	24.16	17.67	18.49	33.40
	"	"	91	25.67	10.69	18.53	33.49
	"	"	181	26.08	9.66	18.67	33.73
3102 6/19/55	49° 51"	24° 55"	0	24.02	18.39	18.52	33.46
	"	"	72	25.61	11.02	18.54	33.48
	"	"	272	26.21	9.06	18.73	33.83
3103 6/19/55	49° 37"	26° 05"	0	24.03	18.22	18.50	33.42
	"	"	102	25.67	10.42	18.50	33.42
	"	"	482	26.49	8.49	18.86	34.07

HYDROGRAPHIC STATIONS

Station No.	Lat 33°	Long 118°	Bottle Depth (Feet)	Sigma t	Temp	Cl.	S
3103 6/19/55	49° 37"	26° 05"	912	26.70	7.97	18.95	34.23
3104 6/19/55	49° 17"	27° 06"	0	24.09	18.06	18.52	33.45
"	"	"	100	25.63	10.65	18.49	33.42
"	"	"	561	26.53	8.47	18.88	34.11
"	"	"	1150	26.69	7.75	18.92	34.18
3105 6/19/55	48° 46"	28° 07"	0	24.15	18.06	18.56	33.53
"	"	"	99	25.46	11.28	18.46	33.35
"	"	"	699	26.63	8.37	18.94	34.22
"	"	"	1299	26.75	7.54	18.94	34.22
3106 6/19/55	48° 14"	30° 30"	0	24.15	18.33	18.61	33.61
"	"	"	70	25.43	12.02	18.54	33.48
"	"	"	900	26.68	8.25	18.97	34.27
"	"	"	1750	26.84	7.57	19.01	34.34
*3107 6/19/55	47° 36"	32° 54"	0	24.13	18.61	18.64	33.68
"	"	"	220?	25.90	9.77	18.59	33.58
"	"	"	1050?	26.65	8.19	18.94	34.21
"	"	"	1900?	26.96	6.15	18.96	34.25
**3108 6/19/55	49° 45"	38° 06"	0	24.07	18.94	18.66	33.71
"	"	"	250?	26.05	9.39	18.65	33.69
"	"	"	1200?	26.72	7.80	18.95	34.23
3109 6/19/55	51° 42"	42° 00"	0	24.17	18.89	18.72	33.82
"	"	"	350	26.19	8.96	18.70	33.78
"	"	"	950	26.61	8.85	18.98	34.29
"	"	"	2300	27.13	5.39	19.01	34.34

*Wire 25° Bottom at 1950' wire
 **Wire 20° Wire 2250' out.

HYDROGRAPHIC STATIONS

Station No.	Lat 33°	Long 118°	Bottle Depth (Feet)	Sigma t	Temp	Cl.	S
3110 6/19/55	53°47"	41°12"	0	23.98	18.89	18.58	33.57
	"	"	350	26.14	9.26	18.69	33.77
	"	"	1050	26.68	8.04	18.95	34.22
	"	"	1800	26.91	6.77	18.98	34.29
3111 6/19/55	55°18"	38°45"	0	24.18	17.94	18.56	33.53
	"	"	214	25.96	9.69	18.62	33.63
	"	"	764	26.54	8.60	18.91	34.16
	"	"	1364	26.79	7.23	18.94	34.21
3112 4/19/55	55°30"	36°07"	0	24.34	17.22	18.55	33.51
	"	"	126	25.70	10.61	18.545	33.50
	"	"	626	26.44	8.66	18.85	34.04
	"	"	1076	26.70	7.89	18.95	34.22
3113 6/19/55	55°00"	33°48"	0	24.19	17.78	18.54	33.49
	"	"	130	25.66	10.71	18.53	33.47
	"	"	380	26.20	9.14	18.72	33.82
	"	"	660	26.53	8.58	18.90	34.14
3114 6/19/55	55°08"	32°00"	0	24.09	18.33	18.56	33.53
	"	"	113	25.64	10.96	18.55	33.50
	"	"	183	25.96	9.81	18.63	33.66
0845 6/20/55	See BT			23.74	18.78	18.39	33.22
0850 6/20/55	"	"				18.34	33.13
0853 6/20/55	"	"				18.02	32.56
0858 6/20/55	"	"				18.02	32.56
0902 6/20/56	"	"				18.46	33.35
0951 6/20/55	"	"		23.48	16.94	17.88	32.30

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.	Lat 33°	Long 118°	Bottle Depth (Feet)	Sigma t	Temp	C1	S
0954 6/20/55	See	BT				18.04	32.59
0958 6/20/55	"	"				17.94	32.41
1002 6/20/55	"	"				18.45	33.33
1005 6/20/55	"	"		23.98	18.33	18.48	33.39
1053 6/20/55	"	"				18.505	33.43
1057 6/20/55	"	"				18.48	33.39
1101 6/20/55	"	"				18.465	33.36
1105 6/20/55	"	"				18.47	33.37
1108 6/20/55	"	"				18.52	33.46
1239 6/20/55	"	"				18.42	33.28
1242 6/20/55	"	"				18.47	33.37
1245 6/20/55	"	"				18.495	33.41
3221 7/11/55	46° 26'	25° 23'	0	24.09	18.33	18.56	33.53
	"	"	50	25.23	12.89	18.51	33.44
	"	"	100	25.05	13.92	18.53	33.48
3222 7/11/55	46° 30'	28° 42'	0	24.12	18.36	18.59	33.58
	"	"	126	25.62	11.00	18.54	33.49
	"	"	396	26.27	8.87	18.74	33.86
	"	"	706	26.55	8.47	18.90	34.14
3223 7/11/55	48° 27'	31° 11'	0	24.07	18.61	18.60	33.60
	"	"	100	25.56	11.33	18.54	33.49
	"	"	550	26.33	8.49	18.74	33.86
	"	"	980	27.44	7.84	18.91	34.16
3224 7/11/55	48° 32'	28° 30'	0	24.11	18.44	18.60	33.60
	"	"	130	25.92	9.85	18.61	33.62

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.	Lat 33°	Long 118°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
3224 7/11/55	48° 32' 11"	28° 30' 11"	780	26.54	8.18	18.86	34.07
	"	"	1460	26.88	6.93	18.97	34.27
3225 7/11/55	48° 30' 11"	26° 10' 11"	0	24.05	18.33	18.53	33.48
	"	"	124	25.65	10.83	18.54	33.49
	"	"	224	26.03	9.71	18.67	33.73
3226 7/11/55	50° 33' 11"	26° 15' 11"	0	23.87	18.94	18.51	33.44
	"	"	90	25.40	11.98	18.51	33.44
	"	"	240	26.13	9.27	18.69	33.77
3227 7/11/55	50° 40' 11"	28° 45' 11"	0	23.91	19.17	18.59	33.58
	"	"	203	25.98	9.62	18.62	33.64
	"	"	383	26.33	8.84	18.78	33.93
3228 7/11/55	50° 30' 11"	31° 04' 11"	0	24.03	18.89	18.62	33.64
	"	"	180	25.72	10.51	18.55	33.51
	"	"	340	26.11	9.15	18.66	33.71
3229 7/11/55	50° 35' 11"	33° 30' 11"	0	23.99	18.89	18.59	33.58
	"	"	152	25.49	10.97	18.45	33.31
	"	"	272	25.90	9.32	18.53	33.48
3230 7/11/55	52° 33' 11"	38° 22' 11"	0	24.03	18.89	18.62	33.64
	"	"	126	25.56	11.32	18.53	33.48
	"	"	476	26.30	8.83	18.76	33.89
	"	"	906	27.39	8.31	18.92	34.18
3231 7/11/55	52° 48' 11"	36° 05' 11"	0	24.81	15.56	18.61	33.62
	"	"	153	25.40	11.94	18.50	33.42
	"	"	253	25.72	11.21	18.63	33.66
3232 7/11/55	52° 38' 11"	33° 36' 11"	0	24.22	18.06	18.61	33.62

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.	Lat 33°	Long 118°	Bottle Depth (Feet)	Sigma t	Temp	Cl.	S
3232 7/11/55	52° 38' 11"	33° 36' 11"	135	25.28	12.72	18.52	33.46
"	"	"	235	25.70	9.73	18.44	33.31
3233 7/11/55	52° 28' 11"	31° 13' 11"	0	24.27	18.06	18.64	33.68
"	"	"	100	25.35	12.46	18.54	33.49
"	"	"	200	25.85	10.02	18.58	33.57
3234 7/11/55	52° 54' 11"	28° 40' 11"	0	24.16	18.39	18.62	33.64
"	"	"	156	-	-	-	-
"	"	"	236	25.99	9.86	18.66	33.71
3235 7/11/55	52° 20' 11"	25° 50' 11"	0	23.98	18.33	18.48	33.39
"	"	"	50	24.00	18.19	18.47	33.37
"	"	"	85	25.54	11.63	18.56	33.53
3237 7/12/55	34° 00° 28' 11"	31° 18' 11"	0	23.97	18.33	18.47	33.37
"	"	"	30	23.70?	18.84?	18.37	33.19
"	"	"	45	-	-	18.54	33.49
3238 7/12/55	01° 20' 11"	33° 27' 11"	0	23.84	19.17	18.53	33.48
"	"	"	30	24.34	16.91	18.50	33.42
"	"	"	50	24.78	15.36	18.56	33.53
3239 7/12/55	01° 50' 11"	35° 38' 11"	0	23.95	18.83	18.55	33.51
"	"	"	34	24.63	16.55	18.09	32.68
"	"	"	51	24.99	14.14	18.52	33.46
3240 7/12/55	00° 20' 11"	37° 15' 11"	0	24.12	18.33	18.58	33.57
"	"	"	100	25.37	11.97	18.49	33.40
"	"	"	180	25.93	9.92	18.62	33.64
3241 7/12/55	33° 58° 36' 11"	38° 22' 11"	0	24.36	17.50	18.61	33.62
"	"	"	87	25.12	13.49	18.52	33.46

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.	Lat 33°	Long 118°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
3241 7/12/55	58° 36''	38° 22''	307	26.23	19.14	18.75	33.87
	"	"	577	26.29	9.60	18.84	34.04
3242 7/12/55	58° 35''	36° 00''	0	24.22	17.83	18.57	33.55
	"	"	67	25.17	13.55	18.56	33.53
	"	"	242	-	-	-	-
	"	"	457	26.28	8.94	18.76	33.89
3243 7/12/55	58° 42''	33° 40''	0	24.18	18.06	18.58	33.57
	"	"	83	25.18	13.42	18.55	33.51
	"	"	173	25.90	9.82	18.59	33.58
3244 7/12/55	58° 40''	31° 24''	0	23.92	19.33	18.62	33.64
	"	"	63	25.61	11.23	18.56	33.53
	"	"	113	25.89	9.70	18.57	33.55
3245 7/12/55	58° 33''	27° 00''	0	23.44	19.44	18.29	33.04
	"	"	26	24.22	18.02	18.60	33.60
3246 7/12/55	56° 33''	27° 24''	0	25.57	18.89	18.29	33.04
	"	"	28	23.80	18.11	18.31	33.08
3247 7/12/55	56° 32''	29° 06''	0	24.07	18.33	18.55	33.51
	"	"	60	25.37	12.34	18.54	33.49
	"	"	100	25.02	14.09?	18.54	33.49
3248 7/12/55	56° 38''	31° 20''	0	23.07	18.28	17.81	32.18
	"	"	92	25.41	12.18	18.54	33.49
	"	"	162	25.84	10.15	18.59	33.58
3249 7/12/55	"	33° 48''	0	24.18	18.06	18.58	33.46
	"	"	70	25.06	13.81	18.52	33.46
	"	"	190	25.84	10.08	18.58	33.57

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.	Lat 33°	Long 118°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
3249 7/12/55	56° 38' 18"	33° 48' 18"	350	26.27	9.03	18.76	33.89
3250 7/12/55	56° 33' 11"	36° 10' 11"	0	24.24	18.56	18.71	33.80
	"	"	71	24.88	14.93	18.56	33.53
	"	"	421	26.29	8.98	18.77	33.91
	"	"	751	27.34	8.39	18.81	34.13
3251 7/12/55	56° 33' 11"	38° 29' 11"	0	24.13	18.33	18.59	33.58
	"	"	171	25.55	11.50	18.55	33.51
	"	"	546	26.11	9.21	18.67	33.73
			926	26.28	8.95	18.76	33.89
3253 7/13/55	56° 38' 11"	33° 48' 18"	0	24.32	17.22	18.53	33.48
	"	"	200	26.23	7.88	18.61	33.62
	"	"	370	27.16	9.15	18.70	33.78
3254 7/13/55	54° 36' 11"	33° 38' 11"	0	24.34	17.11	18.54	33.48
	"	"	109	25.72	10.60	18.56	33.53
	"	"	279	26.02	9.33	18.62	33.64
3255 7/13/55	54° 51' 11"	36° 02' 11"	0	24.17	17.22	18.57	33.55
	"	"	324	26.18	9.20	18.72	33.82
	"	"	604	26.54	8.56	18.90	34.14
3256 7/13/55	52° 38' 11"	33° 35' 11"	0	24.22	17.78	18.56	33.53
	"	"	121	25.52	11.83	18.57	33.55
	"	"	221	25.98	9.90	18.66	33.71
1030 7/20/55	See	BT		24.40	16.88*	18.53	33.48
1035 7/20/55	"	"		24.12	18.05*	18.53	33.48
1039 7/20/55	"	"		23.48	20.25*	18.47	33.37
1045 7/20/55	"	"		23.28	20.67*	18.41	33.26

*Temperature from centigrade thermometer.

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.	Lat 33°	Long 118°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
1050 7/20/55	See	BT		23.26	20.75*	18.41	33.26
1053 7/24/55	"	"		23.32	20.65*	18.43	33.30
1055 7/24/55	"	"		23.38	20.35*	18.42	33.28
1057 7/20/55	"	"		23.34	20.25*	18.37	33.19
1059 7/20/55	"	"		23.19	19.80*	18.18	32.84
1101 7/20/55	"	"		23.43	18.00*	18.02	32.56
1103 7/20/55	"	"		23.88	16.96*	18.17	32.83
3287 7/28/55	34° 00' 44"	32' 06"	0	24.53	16.61	18.58	33.57
	"	"	50	24.93	13.43	18.54	33.49
	"	"	70	25.82	9.83	18.54	33.49
3288	34° 00' 45"	33' 09"	0	24.52	16.60	18.57	33.55
	"	"	25	25.49	15.50	18.54	33.49
	"	"	75	25.80	9.92	18.53	33.48
3289	34° 01' 02"	36' 07"	0	24.39	17.00	18.55	33.51
	"	"	50	25.51	15.46	18.55	33.51
	"	"	65	25.39	12.25	18.54	33.49
3290	34° 01' 01"	38' 08"	0	24.29	17.45	18.55	33.51
	"	"	50	25.52	15.43	18.55	33.51
	"	"	100	25.54	11.43	18.54	33.49
3291	33° 59' 22"	38' 32"	0	24.04	18.80	18.61	33.62
	"	"	25	-	-	-	-
	"	"	100	26.40	11.00	18.54	33.49
	"	"	200	25.95	9.66	18.61	33.62
3292	59' 13"	36' 32"	0	24.10	18.32	18.57	33.55
	"	"	50	-	-	18.55	33.55

*Temperature from centigrade thermometer.

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.	Lat 33°	Long 118°	Bottle Depth (Feet)	Sigma t	Temp	Cl.	S
3232 7/28/55	59°13"	36°32"	150	26.61	9.98	18.56	33.53
3293	59°11"	34°32"	0	24.12	18.14	18.55	33.51
	"	"	50	25.43	15.74	18.53	33.48
	"	"	125	25.67	10.84	18.55	33.51
3294	59°14"	32°34"	0	24.23	17.80	18.57	33.55
	"	"	55	25.68	14.61	18.53	33.48
	"	"	105	25.45	11.94	18.54	33.49
3295	58°15"	29°58"	0	24.34	17.35	18.57	33.55
	"	"	25	25.47	15.60	18.54	33.49
	"	"	75	25.44	12.09	18.55	33.51
3296	56°49"	29°55"	0	23.79	18.91	18.45	33.33
	"	"	58	24.98	17.63	18.53	33.48
	"	"	108	24.93	14.68	18.56	33.53
3297	56°49"	31°54"	0	24.31	17.39	18.56	33.53
	"	"	25	-	-	18.53	33.48
	"	"	50	26.46	10.66	18.54	33.49
	"	"	150	25.81	10.08	18.56	33.53
3298	55°51"	33°30"	0	23.95	19.10	18.60	33.60
	"	"	50	-	-	18.53	33.48
	"	"	150	25.72	9.74	18.61	33.62
	"	"	250	26.12	9.17	18.67	33.73
3299	53°44"	28°32"	0	23.99	18.45	18.51	33.44
	"	"	65			18.54	33.49
	"	"	115	26.41	10.94	18.54	33.49
	"	"	165	25.78	10.35	18.57	33.55

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.	Lat 33°	Long 118°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
3300 7/28/55	56° 56''	27° 03''	0	23.84	17.86	18.30	33.06
	"	"	30	-	16 +	18.48	33.39
	"	"	50	25.37	12.36	18.54	33.49
3301	57° 09''	29° 00''	0	24.06	17.80	18.45	33.33
	"	"	20	-	16 +	18.42	33.28
	"	"	40	24.99	14.14	18.52	33.46
3303 7/29/55	51° 41''	26° 23''	0	23.86	19.10	18.54	33.49
	"	"	55			18.53	33.48
	"	"	95	26.29	11.54	18.53	33.48
	"	"	135	25.79	10.33	18.57	33.55
3304	51° 33''	28° 48''	0	23.93	18.80	18.53	33.48
	"	"	92			18.54	33.49
	"	"	192	25.85	10.05	18.58	33.57
	"	"	292	26.07	9.16	18.64	33.68
3305	51° 24''	31° 07''	0	24.03	18.50	18.55	33.51
	"	"	80	-	-	18.53	33.48
	"	"	130	25.69	10.81	18.56	33.53
	"	"	180	25.82	10.20	18.58	33.57
3306	51° 13''	33° 31''	0	23.90	19.30	18.60	33.60
	"	"	55	-	-	18.54	33.49
	"	"	105	25.62	10.98	18.53	33.48
	"	"	205	25.86	10.01	18.58	33.57
3307	49° 04''	33° 32''	0	23.80	19.80	18.62	33.64
	"	"	205	-	-	18.60	33.60
	"	"	480	26.41	8.67	18.82	34.00

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.	Lat 33°	Long 118°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
3307 7/29/55	49°04"	33°32"	800	26.55	8.45	18.90	34.14
3308	49°07"	31°11"	0	24.10	18.20	18.55	33.51
	"	"	100	-	-	18.55	33.51
	"	"	250	25.75	9.66	18.62	33.64
	"	"	400	26.29	8.79	18.75	33.87
0830 7/29/55	See	BT		24.06	17.60	18.41	33.26
0835 7/29/55	"	"		23.91	17.80	18.34	33.13
0840 7/29/55	"	"		23.89	17.80	18.32	33.10
0845 7/29/55	"	"		24.11	17.50	18.43	33.30
0849 7/29/55	"	"		24.27	17.30	18.51	33.44
0855 7/29/55	"	"		24.36	17.20	18.56	33.53
0905 7/29/55	"	"		24.34	17.30	18.56	33.53
0915 7/29/55	"	"		24.31	17.40	18.56	33.53
0925 7/29/55	"	"		24.35	17.20	18.55	33.51
0935 7/29/55	"	"		24.25	17.30	18.50	33.42
0945 7/29/55	"	"		24.49	17.90	18.22	32.92
0955 7/29/55	"	"		24.39	17.50	18.08	32.66
1005 7/29/55	"	"		24.24	17.40	18.51	33.44
1016 7/29/55	"	"		24.30	17.30	18.53	33.48
1030 7/29/55	"	"		24.27	17.50	18.55	33.51
1041 7/29/55	"	"		24.27	17.50	18.55	33.51
1051 7/29/55	"	"		24.16	17.80	18.52	33.46
3329 8/11/55	57°47"	35°47"		24.05	18.50	18.56	33.53
3330	57°55"	34°40"		24.05	18.49	18.56	33.53
3331	57°59"	33°27"		23.96	18.79	18.55	33.51

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.	Lat 33°	Long 118°	Bottle Depth (Feet)	Sigma t	Temp	Cl.	S
3332 8/11/55	58°05"	32°14"		23.90	18.86	18.55	33.51
3333	58°11"	31°06"		23.83	19.20	18.53	33.48
3334	58°15"	29°55"		23.72	19.50	18.51	33.44
3335	58°20"	28°43"		23.75	19.51	18.53	33.48
3336	57°20"	28°36"		23.52	19.36	18.34	33.13
3337	57°15"	29°48"		23.69	19.57	18.49	33.42
3338	57°10"	30°59"		23.84	19.21	18.54	33.49
3339	57°05"	32°10"		23.91	19.00	18.55	33.51
3340	57°00"	33°20"		23.98	18.87	18.58	33.57
3341	56°55"	34°35"		24.08	18.63	18.61	33.62
3342	56°50"	35°43"		24.04	18.60	18.57	33.55
3343	55°49"	35°38"		23.88	19.10	18.55	33.51
3344	55°55"	34°26"		23.87	19.19	18.56	33.53
3345	56°00"	33°15"		23.93	19.10	18.58	33.57
3346	56°05"	32°04"		23.94	18.73	18.55	33.51
3347	56°12"	30°48"		23.92	19.00	18.56	33.53
3348	56°15"	29°42"		23.77	19.45	18.53	33.48
3349	56°20"	28°31"		23.67	19.04	18.39	33.22
3350	54°23"	28°20"		23.64	19.41	18.43	33.30
3351	54°18"	29°30"		23.85	19.00	18.51	33.44
3352	54°13"	30°42"		23.74	19.58	18.54	33.49
3353	54°07"	31°52"		23.89	19.18	18.57	33.55
3354	54°02"	33°03"		23.82	19.41	18.56	33.53
3355 8/16/55	46°32"	27°03"	0	23.80	19.40	18.55	33.51
	"	"	60	25.26	12.86	18.53	33.48

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.	Lat 33°	Long 118°	Bottle Depth (Feet)	Sigma t	Temp	Cl.	S
3355 8/16/55	46°32"	27°03"	120	25.56	11.18	18.54	33.49
3356	46°35"	29°25"	0	23.70	19.98	18.58	33.57
	"	"	300	26.03	9.40	18.63	33.66
	"	"	600	26.39	8.71	18.81	33.98
3357	46°35"	31°49"	0	23.49	20.20	18.57	33.55
	"	"	500	26.55	8.42	18.89	34.13
	"	"	1500	26.79	7.30	18.95	34.23
3358	46°47"	34°06"	0	23.40	21.36	18.63	33.66
	"	"	600	26.41	8.64	18.82	34.00
	"	"	1800	26.88	6.67	18.95	34.23
3359	48°38"	36°29"	0	23.62	20.59	18.64	33.68
	"	"	500	-	8.94	Broken Bottle	
	"	"	1500	26.77	7.57	18.96	34.25
3360	48°42"	34°05"	0	23.44	21.10	18.61	33.62
	"	"	400	26.21	9.01	18.72	33.82
	"	"	900	26.53	8.57	18.89	34.13
3361	48°43"	31°44"	0	23.70	20.01	18.59	33.58
	"	"	200	25.88	9.89	18.58	33.57
	"	"	400	26.15	9.08	18.68	33.75
3362	48°43"	27°21"	0	23.55	20.58	18.59	33.58
	"	"	250	25.75	10.51	18.57	33.55
	"	"	600	26.18	9.11	18.71	33.80
3363	48°43"	27°00"	0	23.61	20.32	18.58	33.57
	"	"	200	25.77	10.34	18.56	33.53
	"	"	400	26.03	9.50	18.64	33.68

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.	Lat 33°	Long 118°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
3364 8/16/55	50' 38"	24' 47"	0	23.24	21.40	18.43	33.30
	"	"	30	24.43-	16 +	18.41	33.26
	"	"	70	25.19	13.15	18.52	33.46
3365	52' 38"	27' 15"	0	23.69	20.10	18.60	33.60
	"	"	60	24.64-	16 +	18.56	33.53
	"	"	120	25.58	11.24	18.54	33.49
3366 8/17/55	56' 34"	30' 32"	0	23.93	19.10	18.58	33.57
	"	"	60	24.65-	16 +	18.57	33.55
	"	"	120	25.45	12.17	18.57	33.55
3367	56' 34"	28' 10"	0	23.83	19.40	18.57	33.55
	"	"	25	24.64-	16 +	18.56	33.53
	"	"	60	24.69	15.62	18.54	33.49
3368	54' 37"	27' 06"	0	23.17	19.60	18.12	32.72
	"	"	25	No	Sample		
	"	"	50	24.64-	16 +	18.56	33.53
3369	54' 38"	29' 28"	0	23.74	19.85	18.59	33.58
	"	"	50	24.83	15.32	18.59	33.58
	"	"	100	25.56	11.28	18.53	33.48
3370	54' 38"	31' 50"	0	23.77	19.81	18.60	33.60
	"	"	75	24.88	14.65	18.52	33.46
	"	"	150	25.62	11.00	18.54	33.49
3371	54' 38"	34' 11"	0	23.66	20.20	18.60	33.60
	"	"	150	25.70	10.66	18.55	33.51
	"	"	300	25.87	9.83	18.57	33.55
3372	52' 42"	34' 13"	0	23.41	21.20	18.61	33.62

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.	Lat 33°	Long 118°	Bottle Depth (Feet)	Sigma t	Temp	Cl.	S
3372 6/17/55	52°42"	34°13"	100	25.05	13.97	18.54	33.49
	"	"	200	25.80	11.07	18.55	33.51
3373	50°42"	34°15"	0	23.36	21.40	18.61	33.62
	"	"	100	25.23	13.13	18.55	33.51
	"	"	200	25.76	10.37	18.56	33.53
3374	50°44"	31°53"	0	23.95	20.99	18.60	33.60
	"	"	100	25.37	12.51	18.56	33.53
	"	"	200	25.72	10.59	18.56	33.53
3375	50°42"	29°32"	0	23.53	20.65	18.59	33.58
	"	"	120	25.64	11.17	18.57	33.55
	"	"	250	25.98	9.78	18.64	33.68
3376	50°40"	27°10"	0	23.60	20.30	18.57	33.55
	"	"	100	24.89	14.74	18.54	33.49
	"	"	200	25.78	10.26	18.56	33.53
3377	52°40"	29°29"	0	23.54	20.65	18.60	33.60
	"	"	75	24.62-	16	18.55	33.51
	"	"	150	25.58	11.25	18.54	33.49
3378	52°40"	31°52"	0	23.43	21.14	18.61	33.62
	"	"	60	24.62-	16	18.55	33.51
	"	"	120	25.59	11.14	18.53	33.48
3379	56°35"	32°52"	0	23.66	20.28	18.61	33.62
	"	"	75	24.92	14.58	18.54	33.49
	"	"	150	25.50	11.20	18.53	33.48
3380	58°30"	31°44"	0	23.36	21.40	18.61	33.62
	"	"	50	24.62-	16 +	18.55	33.51

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.	Lat 33°	Long 118°	Bottle Depth (Feet)	Sigma t.	Temp.	Cl.	S
3380 8/17/55	58'30"	31'44"	100	25.57	11.81	18.61	33.62
3381	58'32"	29'26"	0	23.89	19.65	18.59	33.58
	"	"	20	24.65-	16 +	18.57	33.55
	"	"	40	24.72	15.72	18.57	33.55
3382	34° 00'13"	31'08"	0	23.90	19.22	18.58	33.57
	"	"	15	24.65-	16 +	18.57	33.55
	"	"	35	24.61-	16 +	18.54	33.49
3383	33° 58'30"	34'07"	0	23.79	19.65	18.59	33.58
	"	"	75	25.22	13.07	18.53	33.48
	"	"	150	25.54	11.42	18.53	33.48
3384	34° 00'12"	33'28"	0	24.04	18.60	18.57	33.55
	"	"	35	24.81	15.17	18.55	33.51
	"	"	75	25.42	12.12	18.54	33.49
0915 8/24/55	See	BT		-	18.33	18.45	33.33
0945 8/24/55	"	"		-	17.78	18.33	33.12
1015 8/24/55	"	"		-	16.67	18.56	33.53
1050 8/24/55	"	"		-	18.39	18.60	33.60
1120 8/24/55	"	"		-	17.39	18.60	33.60
1150 8/24/55	"	"		-	17.44	18.59	33.58
1218 8/24/55	"	"		-	18.72	18.58	33.57
1244 8/24/55	"	"		-	17.89	18.59	33.58
1248 8/24/55	"	"		-	18.28	18.59	33.58
1255 8/24/55	"	"		-	18.78	18.40	33.24
1302 8/24/55	"	"		-	16.61	17.93	32.39
1314 8/24/55	"	"		-	18.56	18.52	33.46

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.	Lat	Long 118°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
1347 8/24/55	See	BT		-	18.11	18.55	33.51
1520 8/24/55	"	"		-	17.28	18.53	33.48
1550 8/24/55	"	"		-	17.72	18.54	33.48
0900 8/25/55	"	"		-	16.44	18.48	33.39
3399 8/25/55	33° 52'08"	39'15"		24.55	16.67	18.61	33.62
3400	50'30"	37'06"		24.65	16.17	18.60	33.60
3416 9/7/55	47'35"	28'21"		-	20.10	18.56	33.53
3417	49'42"	28'19"		-	19.25	18.57	33.55
3418	51'38"	27'23"	0	-	18.51	18.58	33.57
	"	"	25	-	17.69	18.56	33.53
	"	"	50	-	16.00+	18.54	33.49
	"	"	75	-	12.92	18.53	33.48
	"	"	100	-	12.32	18.54	33.49
	"	"	150	-	11.40	18.54	33.49
	"	"	200	-	10.61	18.57	33.55
3419	55'35"	30'36"			17.70	18.55	33.51
3420	57'58"	34'01"			15.99	18.54	33.49
3421	56'20"	37'00"	0		16.79	18.55	33.51
	"	"	25		15.04	18.53	33.48
	"	"	50		13.86	18.53	33.48
	"	"	75		12.29	18.52	33.46
	"	"	150		11.25	18.54	33.49
	"	"	300		9.90	18.61	33.62
	"	"	700		8.84	18.79	33.95
3422	53'47"	36'34"			18.53	18.54	33.49

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.	Lat 33°	Long 118°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
3423 9/17/55	54°02"	35°01"			17.70	18.54	33.49
3424	55°42"	32°03"			18.70	18.53	33.48
3425	58°46"	31°18"	0		17.00	18.56	33.53
	"	"	10		17.07	18.55	33.51
	"	"	20		16.60	18.55	33.51
	"	"	40		14.21	18.54	33.49
	"	"	55		13.80	18.54	33.49
	"	"	75		12.89	18.55	33.51
	"	"	95		12.65	18.53	33.48
1016 9/7/55	See	BT				18.53	33.48
1018 9/7/55	"	"				18.56	33.53
1020 9/7/55	"	"				18.54	33.49
1024 9/7/55	"	"				18.55	33.51
1025 9/7/55	"	"				18.55	33.51
1026 9/7/55	"	"				18.56	33.53
1027 9/7/55	"	"				18.54	33.49
1028 9/7/55	"	"				18.55	33.51
1029 9/7/55	"	"				18.54	33.49
1030 9/7/55	"	"				18.53	33.48
1031 9/7/55	"	"				18.53	33.48
1032 9/7/55	"	"				18.56	33.53
1033 9/7/55	"	"				18.53	33.48
1034 9/7/55	"	"				18.53	33.48
1036 9/7/55	"	"				18.53	33.48
0835 9/8/55	"	"				18.38	33.21

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.	Lat	Long	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
0850 9/8/55	See	BT				18.55	33.51
0910 9/8/55	"	"				18.54	33.49
0915 9/8/55	"	"				18.53	33.48
0920 9/8/55	"	"				18.52	33.46
0927 9/8/55	"	"				18.53	33.48
0941 9/8/55	"	"				18.53	33.48
0955 9/8/55	"	"				18.55	33.51
1009 9/8/55	"	"				18.54	33.49
1023 9/8/55	"	"				18.25	32.97
1030 9/8/55	"	"				18.39	33.22
1035 9/8/55	"	"				18.36	33.17
1045 9/8/55	"	"				18.55	33.51
1050 9/8/55	"	"				18.56	33.53
1120 9/8/55	"	"				18.60	33.60
1131 9/8/55	"	"				18.54	33.49
1144 9/8/55	"	"				18.57	33.55
1155 9/8/55	"	"				18.57	33.55
1200 9/8/55	"	"				18.57	33.55
1205 9/8/55	"	"				18.56	33.53
1210 9/8/55	"	"				18.56	33.53
1216 9/8/55	"	"				18.55	33.57
1220 9/8/55	"	"				18.58	33.57
1235 9/8/55	"	"				18.59	33.58
1240 9/8/55	"	"				18.55	33.51
1245 9/8/55	"	"				18.58	33.57

HYDROGRAPHIC STATIONS

Station No.	Lat 33°	Long 118°	Bottle Depth	Sigma t	Temp.	Cl.	S
1250 9/8/55	See	BT				18.58	33.57
1251 9/8/55	"	"				18.55	33.51
1306 9/8/55	"	"				18.53	33.48
1315 9/8/55	"	"				18.55	33.51
1330 9/8/55	"	"				18.57	33.55
1344 9/8/55	"	"				18.57	33.55
1351 9/8/55	"	"				18.57	33.55
1407 9/8/55	"	"				18.57	33.55
1420 9/8/55	"	"				18.56	33.53
1430 9/8/55	"	"				18.55	33.51
1440 9/8/55	"	"				18.56	33.53
1450 9/8/55	"	"				18.55	33.51
1500 9/8/55	"	"				18.56	33.53
1510 9/8/55	"	"				18.56	33.53
1520 9/8/55	"	"				18.39	33.22
1620 9/8/55	"	"				18.34	33.13
1705 9/8/55	"	"				18.54	33.49
0925 9/9/55	"	"				18.54	33.49
3448 9/9/55	54°22"	28°20"			19.80	18.55	33.51
3449	54°18"	29°30"			20.82	18.56	33.53
3450	54°13"	30°42"			20.13	18.55	33.51
3451	54°08"	31°52"			18.80	18.56	33.53
3452	54°03"	33°03"			18.28	18.54	33.49
3453	53°58"	34°15"			17.55	18.53	33.48
3454	54°57"	34°20"			18.10	18.52	33.46

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.	Lat 33°	Long 118°	Bottle Depth	Sigma t	Temp.	Cl.	S
3455 9/9/55	54° 52"	35° 30"			16.81	18.53	33.48
3456	53° 53"	35° 26"			17.95	18.54	33.49
3457	52° 54"	35° 19"			17.90	18.54	33.49
3458	52° 54"	35° 19"			17.90	18.53	33.48
3459	52° 59"	34° 08"			17.85	18.53	33.48
3460	53° 03"	33° 56"			18.00	18.53	33.48
3461	53° 08"	31° 47"			18.70	18.56	33.53
3462	53° 12"	30° 35"			18.91	18.54	33.49
3463	53° 19"	29° 24"			20.65	18.55	33.51
3464	53° 23"	28° 13"			20.90	18.55	33.51
3465	Not	Given			18.90	18.55	33.51
3466	"	"			18.83	18.53	33.48
3467	"	"			18.61	18.55	33.51
3468	"	"			18.67	18.53	33.48
0905 9/14/55	See	B1				18.57	33.55
0907	"	"				18.58	33.57
0909	"	"				18.58	33.57
0911	"	"				18.58	33.57
0913	"	"				18.58	33.57
0915	"	"				18.58	33.57
0917	"	"				18.57	33.55
0919	"	"				18.59	33.58
0921	"	"				18.58	33.57
0923	"	"				18.57	33.55
0925	"	"				18.58	33.57

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.	Lat	Long 118°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
0927 9/4/55	See	BT				18.58	33.57
0929 "	"	"				18.58	33.57
0931 "	"	"				18.58	33.57
0933 "	"	"				18.57	33.55
0936 "	"	"				18.58	33.57
0938 "	"	"				18.57	33.55
0940 "	"	"				18.56	33.53
0942 "	"	"				18.58	33.57
0944 "	"	"				18.58	33.57
0946 "	"	"				18.58	33.57
0948 "	"	"				18.58	33.57
0950 "	"	"				18.55	33.51
0952 "	"	"				18.56	33.53
0954 "	"	"				18.56	33.53
3469 9/14/55	33° 47' 21"	30' 42"			18.28	18.67	33.73
3470	51' 53"	32' 38"	0		17.00	18.57	33.55
	"	"	10		17.07	18.56	33.53
	"	"	20		16.60	18.55	33.51
	"	"	40		14.21	18.54	33.49
	"	"	55		13.80	18.52	33.46
	"	"	75		12.89	18.52	33.46
	"	"	95		12.65	18.52	33.46
3471	51' 28"	35' 15"			18.28	18.60	33.60
3472	51' 28"	37' 20"	0		18.39	18.60	33.60
	51' 28"	37' 20	25		18.03	18.57	33.55

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.	Lat. 33°	Long. 118°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
3472 9/14/55	51°28"	37°20"	50		15.50 +	18.56	33.53
"	"	"	75		14.80	18.53	33.48
"	"	"	150		12.75	18.52	33.46
"	"	"	300		10.60	18.52	33.46
"	"	"	700		9.09	18.64	33.68
3473	52°54"	34°38"				18.58	33.57
3475	55°05"	27°10"	0		19.44	18.10	32.70
	"	"	15		17.92	18.54	33.49
	"	"	30		14.72	18.53	33.48
	"	"	50		13.73	18.54	33.49
3476	50°37"	27°47"			18.39	18.55	33.51
3478 9/15/55	54°33"	27°07"			18.89	18.41	33.26
3479	55°05"	26°25"			20.39	18.33	33.12
3480	55°10"	26°56"			17.94	17.82	32.20
3481	55°37"	26°49"			19.56	18.32	33.10
3482	55°33"	27°30"			20.28	18.37	33.19
3483	55°01"	27°29"			20.00	18.41	33.26
3484	55°05"	27°17"			19.44	18.39	33.22
3485	53°36"	27°35"			16.72	18.43	33.30
3486	54°50"	28°03"			19.56	18.38	33.21
3487	55°49"	28°00"			19.00	18.35	33.15
3488	56°07"	28°30"			19.44	18.28	33.03
3490	53°09"	27°49"			19.39	18.58	33.57
3491	52°41"	28°04"			18.56	18.57	33.55
3492	54°30"	29°11"			18.72	18.57	33.55

APPENDIX TO CRUISES

80

HYDROGRAPHIC STATIONS

Station No.	Lat. 33°	Long. 118°	Bottle Depth (Feet)	Sigma t	Temp.	C1.	S
3493	56°24"	29°01"			18.56	18.58	33.57
3494	56°42"	29°30"			18.94	18.57	33.55
3495	56°58"	30°00"			18.50	18.56	33.53
3496	54°21"	29°46"			18.33	18.56	33.53
3497	54°11"	30°18"			18.33	18.55	33.51
3498	52°14"	28°16"			19.33	18.57	33.55
0820 9/16/55	See	BT				18.53	33.48
0830 "	"	"				18.51	33.44
0840 "	"	"				18.33	33.12
0850 "	"	"				18.11	32.72
0900 "	"	"				18.56	33.53
0920 "	"	"				18.56	33.53
0927 "	"	"				18.56	33.53
0936 "	"	"				18.56	33.53
0945 "	"	"				18.54	33.49
0955 "	"	"				18.35	33.15
1000 "	"	"				18.07	32.65
1009 "	"	"				17.96	32.45
1011 "	"	"				17.82	32.20
1013 "	"	"				18.36	33.17
1015 "	"	"				18.02	32.56
1017 "	"	"				17.77	32.10
1020 "	"	"				17.78	32.12
1022 "	"	"				18.43	33.30
1024 "	"	"				18.45	33.33

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.	Lat.	Long.	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
1026 9/16/55	See	BT				18.38	33.21
1028	"	"	"			18.37	33.19
1032	"	"	"			18.32	33.10
1034	"	"	"			18.50	33.42
1036	"	"	"			18.53	33.48
1038	"	"	"			18.56	33.53
1040	"	"	"			18.56	33.53
1043	"	"	"			18.56	33.53
1045	"	"	"			18.55	33.51
1048	"	"	"			18.55	33.51
1050	"	"	"			18.56	33.53
1057	"	"	"			18.55	33.51
1103	"	"	"			18.55	33.51
1135	"	"	"			18.50	33.42
1145	"	"	"			18.52	33.46
1215	"	"	"			18.56	33.53
1240	"	"	"			18.51	33.44
1028 9/29/55	"	"	"			18.35	33.15
1037	"	"	"			18.30	33.06
1047	"	"	"			18.50	33.42
1102	"	"	"			18.56	33.53
1127	"	"	"			18.55	33.51
1137	"	"	"			18.54	33.49
1153	"	"	"			18.55	33.51
1237	"	"	"			18.56	33.53

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.	Lat. 33°	Long. 118°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
1252 9/29/55	See	BT				18.55	33.51
1305 "	"	"				18.57	33.55
1318 "	"	"				18.58	33.57
1333 "	"	"				18.58	33.57
1346 "	"	"				18.57	33.55
1402 "	"	"				18.55	33.51
1415 "	"	"				18.54	33.49
1434 "	"	"				18.55	33.51
1448 "	"	"				18.56	33.53
1502 "	"	"				18.58	33.57
1520 "	"	"				18.57	33.55
1534 "	"	"				18.56	33.53
1548 "	"	"				18.55	33.51
1601 "	"	"				18.55	33.51
3526 9/30/55	50°27"	37°15"	0		16.00	18.62	33.64
	"	"	25			18.60	33.60
	"	"	45			18.57	33.55
	"	"	100			18.58	33.57
	"	"	500			18.76	33.89
3527	49°21"	36°04"			16.20	18.57	33.55
3528	50°28"	35°03"			16.08	18.56	33.53
3529	53°06"	28°57"			17.10	18.56	33.53
3530	51°54"	29°54"			17.01	18.55	33.51
3531	49°42"	30°02"			17.62	18.55	33.51
3532	47°22"	26°08"			17.96	18.41	33.26

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.	Lat. 33°	Long. 118°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
3532 9/30/55	47'22"	26'08"	20			18.50	33.42
	"	"	40			18.53	33.48
	"	"	70			18.53	33.48
	"	"	110			18.53	33.48
3533	46'19"	27'04"			17.91	18.49	33.40
1435 11/9/55	See	BT				18.59	33.58
1440	"	"				18.59	33.58
1445	"	"				18.60	33.60
1450	"	"				18.59	33.58
1456	"	"				18.44	33.31
1500	"	"				18.39	33.22
1505	"	"				18.41	33.26
1510	"	"				18.44	33.31
1515	"	"				18.46	33.35
1520	"	"				18.44	33.31
1525	"	"				18.50	33.42
1530	"	"				18.46	33.35
1535	"	"				18.61	33.62
1540	"	"				18.60	33.60
1545	"	"				18.61	33.62
1550	"	"				18.60	33.60
1555	"	"				18.60	33.60
1600	"	"				18.61	33.62
1605	"	"				18.60	33.60
0910 11/10/55	"	"				18.52	33.46

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.		Lat.	Long.	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
0920	11/10/55	See	BT				18.53	33.48
0945	"	"	"				18.50	33.42
0955	"	"	"				18.57	33.55
1005	"	"	"				18.60	33.60
1010	"	"	"				18.62	33.64
1434	11/22/55	"	"				18.53	33.48
0715	11/23/55	"	"				18.54	33.49
0722	"	"	"				18.53	33.48
0740	"	"	"				18.52	33.46
0751	"	"	"				18.51	33.44
0805	"	"	"				18.55	33.51
0820	"	"	"				18.55	33.51
0831	"	"	"				18.54	33.49
0844	"	"	"				18.57	33.55
0903	"	"	"				18.55	33.51
0915	"	"	"				18.55	33.51
0927	"	"	"				18.38	33.21
0930	"	"	"				18.16	32.81
0935	"	"	"				18.19	32.86
0937	"	"	"				18.10	32.70
0940	"	"	"				18.26	32.99
0945	"	"	"				18.45	33.33
0950	"	"	"				18.51	33.44
0955	"	"	"				18.54	33.49
1010	"	"	"				18.56	33.53

HYDROGRAPHIC STATIONS

Station No.		Lat.	Long.	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
1025	11/23/55	See	BT				18.55	33.51
1038	"	"	"				18.55	33.51
1055	"	"	"				18.55	33.51
1110	"	"	"				18.54	33.49
1125	"	"	"				18.48	33.39
1130	"	"	"				18.48	33.39
1140	"	"	"				18.47	33.37
1150	"	"	"				18.46	33.35
1153	"	"	"				18.47	33.37
1220	"	"	"				18.55	33.51
1240	"	"	"				18.55	33.51
1255	"	"	"				18.55	33.51
1310	"	"	"				18.52	33.46
1325	"	"	"				18.51	33.44
1020	12/29/55	"	"				18.61	33.62
1039	"	"	"				18.55	33.51
1101	"	"	"				18.65	33.69
1118	"	"	"				18.56	33.53
1120	"	"	"				18.56	33.53
1131	"	"	"				18.56	33.53
1143	"	"	"				18.56	33.53
1156	"	"	"				18.53	33.48
1210	"	"	"				18.38	33.21
1237	"	"	"				18.62	33.64
1256	"	"	"				18.57	33.55

HYDROGRAPHIC STATIONS

Station No.	Lat. 33°	Long. 118°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
1308 12/29/55	See	BT				18.59	33.58
1315	"	"	"			18.57	33.55
1335	"	"	"			18.56	33.53
1349	"	"	"			18.50	33.42
1406	"	"	"			18.51	33.44
1435	"	"	"			18.57	33.55
1447	"	"	"			18.59	33.58
1506	"	"	"			18.56	33.53
1516	"	"	"			18.55	33.51
1532	"	"	"			18.53	33.48
1543	"	"	"			18.51	33.44
1605	"	"	"			18.50	33.42
3806 1/12/56	55° 10"	26° 50"	0		12.80	18.20	32.88
	"	"	15		12.52	18.37	33.19
	"	"	25		11.76	18.48	33.39
	"	"	45		11.84?	18.55	33.51
3807	55° 13"	26° 58"	0		13.00	18.00	32.52
	"	"	15		12.27	18.44	33.31
	"	"	25		11.68	18.51	33.44
	"	"	45		11.51	18.56	33.53
3808	55° 22"	27° 03"	0		13.10	18.07	32.65
	"	"	15		12.89	18.40	32.24
	"	"	25		11.95	18.50	32.42
	"	"	45		10.18	18.54	33.49
3809	55° 32"	27° 07"	0		13.30	18.38	33.21

APPENDIX TO CRUISES

Station No.	Lat. 33°	Long. 118°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
3809 1/12/56	55°32"	27°07"	15		12.92	18.35	33.15
	"	"	25		11.65	18.53	33.48
	"	"	45		-	18.57	33.55
3810	55°40"	27°11"	0		13.40	18.25	32.97
	"	"	15		13.18	18.29	33.04
	"	"	25		12.35	18.49	33.40
	"	"	45		-	18.55	33.51
3811	55°48"	27°16"	0		13.40	18.24	32.95
	"	"	15		13.07	18.30	33.06
	"	"	25		12.60	18.46	33.35
	"	"	45		9.02?	18.53	33.48
3812	54°31"	26°41"	0		14.15	18.49	33.40
	"	"	10		13.55	18.48	33.49
	"	"	20		12.59	18.52	33.46
	"	"	40		11.71?	18.50	33.42
3813	54°38"	26°42"	0		13.85	18.50	33.42
	"	"	10		13.42	18.46	33.35
	"	"	20		13.20	18.48	33.39
	"	"	40		1048?	18.50	33.42
3814	54°47"	26°43"	0		13.65	18.47	33.37
	"	"	10		13.39	18.48	33.39
	"	"	20		13.28	-	-
	"	"	40		-	-	-
3815	54°55"	26°49"	0		13.30	18.07	32.65
	"	"	10		13.19	18.22	32.92

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.	Lat. 33°	Long. 118°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
3815 1/12/56	54°55"	26°49"	20		12.77	18.48	33.39
	"	"	40		-	18.54	33.49
3817 1/13/56	55°06"	26°53"	0		12.70	17.90	32.34
"	"	"	15		12.61	18.38	33.21
"	"	"	25		12.03	18.51	33.44
"	"	"	45		-	18.53	33.48
3818	55°14"	26°57"	0		13.55	18.36	33.17
	"	"	15		13.11	18.45	33.31
	"	"	25		12.25	18.52	33.46
	"	"	45		11.92	18.53	33.48
3819	55°23"	27°02"	0		12.90	17.85	32.25
	"	"	15		12.93	18.41	33.26
	"	"	25		12.70	18.51	33.44
	"	"	45		11.92	-	-
3820	55°32"	27°03"	0		13.30	18.06	32.63
	"	"	15		13.21	18.42	33.28
	"	"	25		12.67	18.48	33.39
	"	"	45		12.26	18.52	33.46
3821	55°44"	27°13"	0		13.60	18.18	32.84
	"	"	15		12.75	18.47	33.37
	"	"	25		12.41	18.51	33.44
	"	"	45		12.27	18.51	33.44
3822	55°52"	27°16"	0		13.60	18.45	33.33
	"	"	15		12.87	18.49	33.40
	"	"	25		12.39	18.50	

HYDROGRAPHIC STATIONS

Station No.	Lat. 33°	Long. 118°	Bottle Depth (Feet)	Sigma t	Temp.	C1.	S
3822 1/13/56	55' 52"	27' 16"	45		12.28	18.52	33.46
3823	56' 04"	27' 23"	0		13.80	18.37	33.19
	"	"	15		12.65	18.49	33.40
	"	"	25		12.23	18.48	33.39
	"	"	45		12.17	18.50	33.42
3824	56' 14"	27' 28"	0		13.30	18.50	33.42
	"	"	10		12.95	18.47	33.37
	"	"	20		12.17	18.51	33.44
	"	"	40		12.19	18.51	33.44
3825	56' 23"	27' 30"	0		13.60	18.49	33.40
	"	"	15		13.08	18.45	33.33
	"	"	25		12.44	18.48	33.39
	"	"	45		12.19	18.46	33.35
3826	56' 35"	27' 37"	0		13.95	18.35	33.15
	"	"	15		12.92	18.45	33.33
	"	"	25		12.31	18.49	33.40
	"	"	45		12.11	18.49	33.40
3827	46' 30"	26' 29"	0		13.30	18.52	33.46
	"	"	15		12.78	18.50	33.42
	"	"	25		12.17	18.50	33.42
	"	"	45		12.11	18.51	33.44
#1 1/2,13/56	Bacteria Sta.					17.45	31.53
#2	"	"	"			18.12	32.74
#3	"	"	"			18.10	32.70
#4	"	"	"			18.38	33.21

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.	Lat.	Long. 118°	Bottle Depth	Sigma t	Temp.	Cl.	S
#5 1/12/13/56 Bacteria Sta.						18.39	33.22
#6 "	"	"				18.08	32.66
#19 "	"	"				17.91	32.36
#23 "	"	"				17.86	32.27
#27 "	"	"				18.37	33.19
#31 "	"	"				18.40	33.24
#35 "	"	"				18.32	33.10
#39 "	"	"				18.51	33.44
#43 "	"	"				18.69	33.77
#47 "	"	"				18.72	33.82
#51 "	"	"				18.33	33.12
#55 "	"	"				18.45	33.33
#59 "	"	"				17.98	32.48
#63 "	"	"				18.39	33.22
#67 "	"	"				18.36	33.17
#71 "	"	"				18.29	33.04
#75 "	"	"				18.65	33.69
#79 "	"	"				18.54	33.49
#83 "	"	"				18.53	33.48
#87 "	"	"				18.58	33.57
#91 "	"	"				18.48	33.39
#95 "	"	"				18.43	33.30
3828 1/18/56	33° 46'22"	27'00"			13.15	18.53	33.48
3829	48'05"	26'32"			13.10	18.49	33.40
1127 1/18/56	See	BT				18.48	33.39

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.	Lat.	Long. 118°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
3830 1/18/56	33° 49'47"	27'13"			13.25	18.50	33.42
3831	48'59"	29'26"			13.20	18.52	33.46
3832	48'12"	31'40"			-	18.53	33.48
3833	49'55"	32'17"			13.20	18.53	33.48
3834	50'43"	30'00"			13.20	18.54	33.49
3835	51'30"	27'45"			13.00	18.47	33.37
1259 1/18/56	See	BT				18.48	33.39
1310 "	"	"				18.37	33.19
3836	33° 52'20"	28'37"			12.90	18.57	33.55
3837	52'20"	30'48"			13.00	18.53	33.48
3838	51'33"	33'03"			13.00	18.53	33.48
3839	53'09"	33'58"			13.30	18.55	33.51
3840	53'57"	31'42"			13.20	18.54	33.49
3841	54'42"	29'29"			13.20	18.54	33.49
1520 1/18/56	See	BT				18.52	33.46
3843	33° 55'58"	32'53"			13.00	18.54	33.49
1604 1/18/56	See	BT				18.54	33.49
3846	33° 57'33"	34'29"			12.90	18.55	33.51
3847	58'38"	32'21"			12.70	18.55	33.51
3848	34° 01'22"	34'53"			-	18.53	33.48
1700 1/18/56	See	BT				18.53	33.48
3849 1/19/56	34° 01'44"	35'04"		0	-	18.55	33.51
	"	"		20	12.12	18.54	33.51
	"	"		40	-	18.54	33.49
	"	"		60	11.53	18.53	33.48

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.	Lat.	Long. 118°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
3850	34° 01'44"	35'04"	0		11.80	18.55	33.51
"	"	"	20		11.70	18.54	33.49
"	"	"	35			18.54	33.49
3851	00'43"	35'15"	0		12.20	18.54	33.49
"	"	"	20		12.09	18.53	
"	"	"	40		-	18.55	33.51
"	"	"	60		11.64	18.55	33.51
3852	00'14"	35'16"	0		12.80	18.55	33.51
"	"	"	20		12.51	18.53	33.48
"	"	"	40		-	18.53	33.48
"	"	"	60		11.65	18.53	33.48
3853	33° 59'43"	35'14"	0		12.90 +	18.55	33.51
"	"	"	20		12.93	18.53	33.48
"	"	"	40		-	18.53	33.48
"	"	"	100		11.64	18.53	33.48
3854	59'12"	35'13"	0		13.00	18.55	33.51
"	"	"	20		12.82	18.54	33.49
"	"	"	40		-	18.53	33.48
"	"	"	80		11.65	18.59	33.48
3855	58'43"	35'13"	0		13.10	18.55	33.51
"	"	"	20		12.84	18.58	33.57
"	"	"	40		-	18.54	33.49
"	"	"	120		11.64	18.55	33.51
3856	58'15"	35'13"	0		13.00	18.55	33.51
"	"	"	20		11.39	18.56	33.53

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.	Lat. 33°	Long. 118°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
3856 1/19/56	58°15"	35°13"	40		-	18.56	33.53
"	"	"	180		11.64	18.68	33.75
3857	57°43"	35°12"	0		13.00	18.56	33.53
"	"	"	20		12.95	18.55	33.51
"	"	"	40		-	18.54	33.49
"	"	"	196		11.64	18.56	33.53
3858	57°14"	35°11"	0		13.20	18.56	33.53
"	"	"	20		12.94	18.54	33.49
"	"	"	40		-	18.55	33.51
"	"	"	250		9.86	18.65	33.69
3859	57°33"	34°42"	0		13.00	18.55	33.51
"	"	"	20		12.83	18.55	33.51
"	"	"	40		-	18.54	33.49
"	"	"	200		10.07	18.63	33.66
3860 <i>6/22/56</i>	57°52"	34°15"	0		13.00	18.55	33.51
"	"	"	20		12.83	18.55	33.51
"	"	"	40		-	18.55	33.51
"	"	"	125		10.09?	18.53	33.48
3861	58°09"	33°45"	0		13.10	18.54	33.49
"	"	"	20		12.83	18.53	33.48
"	"	"	40		-	18.54	33.49
"	"	"	82		10.09?	18.54	33.49
3862	58°46"	32°47"	0		13.00	18.56	33.53
"	"	"	20		12.74	18.54	33.49
"	"	"	40		-	18.54	33.49

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.	Lat. 33°	Long. 118°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
3862 1/19/56	58°46"	32°47"	60		10.09?	18.54	33.49
3863	59°23"	31°48"	0		12.80	-	-
	"	"	20		12.36	18.53	33.48
	"	"	40		-	18.56	33.53
	"	"	80		10.09?	18.56	33.53
3864	59°58"	30°48"	0		12.40	18.54	33.49
	"	"	20		12.10	18.54	33.49
	"	"	40		-	18.54	33.49
3866 1/20/56	55°10"	27°04"	0		12.60	18.06	32.63
	"	"	20		12.17	18.47	33.37
	"	"	40		-	18.53	33.48
3867	55°10"	27°04"	0		12.30	18.34	33.13
	"	"	20		11.85	18.54	33.49
	"	"	40		-	18.55	33.51
	"	"	65		10.09?	18.57	33.55
3868	54°47"	28°13"	0		12.20	18.38	33.21
	"	"	20		12.03	18.48	33.39
	"	"	40		-	18.54	33.49
	"	"	80		10.08?	18.54	33.49
3869	54°27"	29°18"	0		12.30	-	-
	"	"	20		12.19	18.48	33.39
	"	"	40		-	18.53	33.48
	"	"	100		10.10?	18.55	33.51
3870	53°42"	31°33"	0		12.30	18.54	33.49
	"	"	20		12.34	18.54	33.49

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.	Lat. 33°	Long. 118°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
3870 1/20/56	53°42"	31°33"	40			18.54	33.49
	"	"	115		10.08?	18.55	33.51
3871	52°16"	30°38"	0		12.30	18.54	33.49
	"	"	20		12.10	18.54	33.49
	"	"	40		-	18.55	33.51
	"	"	125		10.10?	18.57	33.55
3872	51°36"	29°32"	0		12.00	18.54	33.49
	"	"	20		12.04	18.54	33.49
	"	"	40			18.54	33.49
	"	"	180		10.09?	18.60	33.60
3873	51°11"	28°40"	0		11.00	18.54	33.49
	"	"	20		11.99	18.54	33.49
	"	"	40		-	18.56	33.53
	"	"	NOT GIVEN		10.09?	18.63	33.66
3874	50°06"	26°38"	0		12.40	18.51	33.44
	"	"	20		12.33	18.51	33.44
	"	"	40		-	18.53	33.48
	"	"	110		10.11?	18.55	33.51
3875	49°18"	25°10"	0		12.30	18.51	33.44
	"	"	20		12.20	18.51	33.44
	"	"	40		-	18.54	33.49
	"	"	100		10.09?	18.55	33.51
3876	48°46"	24°07"	0		-	-	-
	"	"	20		12.09	18.52	33.46
	"	"	40		-	18.53	33.48

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.	Lat.	Long. 118°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
	33°						
3908 2/15/56	46°45"	26°11"			14.00	18.42	33.28
3909	47°05"	26°31"			13.70	18.48	33.39
3910	47°29"	26°53"			13.40	18.49	33.40
3911	47°55"	27°16"			13.30	18.42	33.28
3912	48°15"	27°37"			14.00	18.34	33.13
3913	49°03"	28°20"			14.00	18.33	33.12
3914	49°56"	29°11"			13.75	18.42	33.28
3915	49°52"	27°57"			13.95	18.35	33.15
3916	49°49"	26°46"			13.90	18.31	33.08
3917	49°44"	25°35"			14.00	18.30	33.06
3918	49°43"	24°57"			13.80	18.32	33.10
3919	49°41"	24°25"			13.90	18.35	33.15
3920	49°40"	23°54"			14.00	18.38	33.21
3921	55°08"	26°52"			13.40	18.20	32.88
3922	55°02"	27°32"			13.80	18.22	32.92
3923	54°48"	28°15"			13.45	18.46	33.35
3924	54°36"	29°11"			13.40	18.49	33.40
3925	54°13"	30°16"			13.55	18.49	33.40
3926	59°04"	33°25"			13.30	18.39	33.22
	34°						
3927	00°07"	33°38"			12.90	18.42	33.28
3928	00°37"	33°44"			12.85	18.40	33.24
3929	01°06"	33°49"			13.00	18.40	33.24
3930	01°36"	33°55"			13.00	18.41	33.26
#31 3/8/56	Bacteria Sta.					18.22	32.92
#32 3/8/56	"	"				18.14	32.77

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.	Lat.	Long. 118°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
#33 3/8/56	Bacteria Sta.					18.39	33.21
#34 "	"	"				18.47	33.37
#35 "	"	"				18.50	33.42
#36 "	"	"				18.57	33.55
#37 "	"	"				18.53	33.48
#38 "	"	"				18.54	33.49
#39 "	"	"				18.55	33.51
#40 "	"	"				18.56	33.53
#41 "	"	"				18.59	33.58
#42 "	"	"				18.64	33.68
#43 "	"	"				18.60	33.60
#44 "	"	"				18.68	33.75
#45 "	"	"				18.51	33.44
#46 "	"	"				18.75	33.87
#47 "	"	"				18.53	33.48
#48 "	"	"				18.58	33.57
4002 3/22/56	34° 01'32"	34'24"	0		14.50	18.45	33.33
	"	"	20		13.44	18.51	33.44
	"	"	40		12.49*	18.55	33.51
4003	00'36"	34'46"	0		14.70	18.44	33.31
	"	"	20		13.96	18.44	33.31
	"	"	40		12.54	18.57	33.55
	"	"	100		11.11*	18.57	33.55
4004	33° 59'42"	35'21"	0		13.90	18.55	33.51
	"		20		12.93	18.58	33.57

*Uncorrected

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.	Lat. 33°	Long. 118°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
4004 3/22/56	59°42"	35°21"	40		12.68	18.59	33.58
	"	"	100		11.40*	18.59	33.58
4005	58°48"	35°52"	0		13.80	18.58	33.57
	"	"	20		13.04	18.56	33.53
	"	"	40		12.53	18.56	33.53
	"	"	100		10.21*	18.58	33.57
4006	57°57"	36°26"	0		14.20	18.57	33.55
	"	"	20		13.06	18.57	33.55
	"	"	40		12.57	18.58	33.57
	"	"	100		10.90*	18.56	33.53
4007	57°01"	36°59"	0		14.65	18.54	33.49
	"	"	20		12.73	18.55	33.51
	"	"	40		11.92	18.58	33.57
	"	"	100		11.45*	18.53	33.48
4008	56°11"	37°30"	0		14.20	18.54	33.49
	"	"	20		13.21	18.56	33.53
	"	"	40		13.02	18.56	33.53
	"	"	100		11.37*	18.53	33.48
4009	55°13"	38°04"	0		14.45	18.57	33.55
	"	"	20		13.55	18.56	33.53
	"	"	40		13.34	18.54	33.49
	"	"	100		11.85*	18.53	33.48
4010	55°13"	36°56"	0		14.60	18.56	33.53
	"	"	20		13.64	18.53	33.48
	"	"	40		13.25	18.53	33.48

*Uncorrected

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.	Lat. 33°	Long. 118°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
4010 3/22/56	55°13"	36°56"	100		11.63*	18.53	33.48
4011	55°13"	35°44"	0		14.40	18.54	33.49
	"	"	20		13.64	18.55	33.51
	"	"	40		13.21	18.55	33.51
	"	"	100		11.55*	18.53	33.48
4012	55°13"	34°30"	0		14.50	18.56	33.53
	"	"	20		13.36	18.54	33.49
	"	"	40		13.07	18.52	33.46
	"	"	100		11.52*	18.52	33.46
4013	55°10"	33°18"	0		14.50	18.56	33.53
	"	"	20		13.80	18.55	33.51
	"	"	40		12.85	18.52	33.46
	"	"	100		11.48*	18.53	33.48
4014	55°12"	32°11"	0		14.80	18.56	33.53
	"	"	20		13.54	18.54	33.49
	"	"	40		12.74	18.55	33.51
	"	"	100		11.60*	18.53	33.48
4015	55°12"	31°02"	0		14.10	18.58	33.57
	"	"	20		12.99	18.54	33.49
	"	"	40		12.42	18.58	33.57
	"	"	100		11.58*	18.54	33.49
4016	55°12"	29°47"	0		14.10	18.59	33.58
	"	"	20		13.44	18.54	33.49
	"	"	40		12.55	18.55	33.51
	"	"	100		12.00*	18.54	33.49

*Uncorrected

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.	Lat. 33°	Long. 118°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
4017 3/22/56	55'10"	28'35"	0		14.10	18.56	33.53
	55'10"	"	20		13.33	18.56	33.53
	"	"	40		12.74	18.55	33.51
	"	"	100		11.43*	18.58	33.57
4018	55'10"	27'22"	0		15.60	18.29	33.04
	"	"	20		14.76	18.26	32.99
	"	"	40		13.41	18.54	33.49
**							
10:14 3/28/56	See	BT	0			18.61	33.62
"	"	"	"			18.60	33.60
"	"	"	"			18.61	33.62
"	"	"	" Av			18.61	33.61
1040	"	"	"			18.57	33.55
1048	"	"	"			18.59	33.58
**							
1104	"	"	0			18.60	33.60
"	"	"	"			18.61	33.62
"	"	"	"			18.60	33.60
"	"	"	" Av			18.60	33.61
1116	"	"	"			18.60	33.60
1129	"	"	"			18.64	33.68
1143	"	"	"			18.60	33.60
1158	"	"	"			18.59	33.58
1238	"	"	"			18.61	33.62
**							
1252	"	"	0			18.60	33.60
"	"	"	"			18.59	33.58
"	"	"	"			18.60	33.60

*Uncorrected

*Hydrographic check

HYDROGRAPHIC STATIONS

Station No.		Lat.	Long.	Bottle Depth	Sigma t	Temp.	Cl.	S
**								
1252	3/28/56	See	BT	0 Av.			18.60	33.59
1303	"	"	"				18.59	33.58
**								
1316	"	"	"	0			18.62	33.64
	"	"	"	"			18.62	33.64
	"	"	"	"			18.62	33.64
	"	"	"	" Av.			18.62	33.64
1329	"	"	"				18.60	33.60
**								
1342	"	"	"	0			18.61	33.62
	"	"	"	"			18.61	33.62
	"	"	"	"			18.61	33.62
	"	"	"	" Av.			18.61	33.62
1354	"	"	"				18.46	33.35
1410	"	"	"				18.49	33.40
1424	"	"	"				18.61	33.62
1436	"	"	"				18.59	33.58
1450	"	"	"				18.60	33.60
1505	"	"	"				18.59	33.58
1518	"	"	"				18.59	33.58
1532	"	"	"				18.58	33.57
1544	"	"	"				18.49	33.40
1104	3/29/56	"	"				18.57	33.55
1130	"	"	"				18.58	33.57
1140	"	"	"				18.58	33.57
1211	"	"	"				18.63	33.66
1235	"	"	"				18.61	33.62

** Hydrographic check

Station No.	Lat. 33°	Long. 118°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
4086 4/17/56	55°07"	26°52"	0		14.50	18.00	32.52
	"	"	15			18.21	32.90
	"	"	30			18.58	33.57
	"	"	45			18.62	33.64
4087	54°50"	26°44"	0		14.22	18.27	33.01
	"	"	15			18.49	33.40
	"	"	30			18.60	33.60
	"	"	45			18.60	33.60
4088	54°32"	26°39"	0		14.30	18.04	32.59
	"	"	15			18.47	33.37
	"	"	30			18.60	33.60
	"	"	45			18.60	33.60
4089	54°15"	26°37"	0		14.50	18.18	32.84
	"	"	15			18.39	33.22
	"	"	30			18.61	33.62
	"	"	45			18.61	33.62
4090	53°59"	26°32"	0		14.85	18.37	33.19
	"	"	15			18.55	33.51
	"	"	30			18.57	33.55
	"	"	45			18.61	33.62
4092	53°45"	26°18"	0		15.00	18.13	32.75
	"	"	15			18.48	33.39
	"	"	30			18.59	33.58
	"	"	45			18.61	33.62
4093	53°33"	26°05"	0		15.50 +	18.24	32.95

HYDROGRAPHIC STATIONS

Station No.	Lat. 33°	Long. 118°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
4093 4/17/56	53°33"	26°05"	15			18.49	33.40
	"	"	30			18.54	33.49
	"	"	45			18.55	33.51
4094	53°22"	25°43"	0		15.40	18.13	32.75
	"	"	15			18.50	33.42
	"	"	30			18.51	33.44
	"	"	45			18.56	33.53
4095	53°11"	25°30"	0		15.50	18.17	32.83
	"	"	15			18.48	33.39
	"	"	30			18.53	33.48
	"	"	45			18.49	33.40
4096	53°00"	25°26"	0		15.45	18.29	33.04
	"	"	15			18.38	33.21
	"	"	30			18.50	33.42
	"	"	45			18.55	33.51
4197 4/25/56	47°54"	26°10"			14.70	18.56	33.53
1038 "	See	BT				18.52	33.46
4198	49°43"	27°15"			14.90	18.56	33.53
4199	49°00"	29°28"			14.75	18.56	33.53
4200	48°17"	31°43"			14.90	18.57	33.55
4201	49°53"	32°19"			14.90	18.57	33.55
4202	50°42"	30°03"			14.85	18.58	33.57
1214 "	See	BT				18.52	33.46
4203	51°30"	27°48"			14.80	18.56	33.53
4204	53°03"	28°38"			15.25	18.55	33.51

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.	Lat. 33°	Long. 118°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
4205 4/25/56	52°18"	30°48"			14.75	18.58	33.57
4206	51°31"	33°05"			15.10	18.59	33.58
4207	53°05"	33°47"			16.50	18.59	33.58
4208	53°52"	31°45"			15.80	18.58	33.57
4209	54°42"	29°34"			15.00	18.58	33.57
1418 "	See	BT				18.34	33.13
1435 "	"	"				18.30	33.06
4210	56°43"	30°43"			15.20	18.58	33.57
4211	55°51"	33°01"			15.55	18.58	33.57
4212	55°04"	35°11"			14.90	18.58	33.57
4213	57°00"	36°43"			15.10	18.57	33.55
4214	57°48"	34°32"			15.00	18.58	33.57
4215	58°35"	32°21"			16.00	18.51	33.41
1617	See	BT				18.36	33.17
1640	"	"				18.39	33.22
* 4217 5/8/56	55°06"	26°53"			12.78		
					A	17.34	31.33
					B	17.35	31.35
					C	17.36	31.36
					A	17.58	31.76
					B	17.45	31.53
					C	17.45	31.53
4218	55°23"	27°06"			13.78		
					A	17.93	32.39
					B	17.96	32.45
					C	17.95	32.45
					A	18.13	32.75

*Bottle test

HYDROGRAPHIC STATIONS

Station No.	Lat. 33°	Long. 118°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
* 4218	5/8/56	55'23"	27'06"		B	18.06	32.63
					C	18.05	32.61
* 4219	"	55'37"	27'10"		15.00 A	18.24	32.95
					B	18.24	32.95
					C	18.24	32.95
					A	18.45	33.33
					B	18.35	33.15
					C	18.35	33.15
* 4220	"	55'35"	27'12"		14.44 A	17.77	32.10
					B	17.77	32.10
					C	17.76	32.09
					A	17.96	32.45
					B	17.91	32.36
					C	17.85	32.25
* 4221	"	55'54"	27'35"		14.72 A	18.48	33.39
					B	18.48	33.39
					C	18.49	33.40
					A	18.67	33.73
					B	18.60	33.60
					C	18.59	33.58
* 4222	"	56'06"	27'48"		16.56 A	18.22	32.92
					B	18.22	32.92
					C	18.21	32.90
					A	18.37	33.19
					B	18.33	33.12

*Bottle test

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.		Lat. 33°	Long. 118°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S	
* 4222	5/8/56	56° 06"	27° 48"				C	18.34	33.13
* 4223	"	56° 17"	27° 50"			16.11	A	17.86	32.27
							B	17.86	32.27
							C	17.85	32.25
							A	18.07	32.65
							B	17.99	32.50
							C	17.97	32.47
* 4224	"	56° 37"	27° 53"			15.56	A	18.42	33.28
							B	18.43	33.30
							C	18.43	33.30
							A	18.66	33.71
							B	18.54	33.49
							C	18.54	33.49
4236	5/22/56	55° 07"	26° 56"	0		15.00		17.91	32.36
		"	"	15		14.90		18.10	32.70
		"	"	30		14.3-		18.58	33.57
		"	"	45		13.88		18.58	33.57
4239		55° 42"	27° 28"	0		15.50		18.05	32.61
		"	"	15		15.60		18.46	33.35
		"	"	30		14.5-		18.58	33.57
		"	"	45		12.37		18.61	33.62
4240		55° 55"	27° 29"	0		16.60		18.37	33.19
		"	"	15		15.74		18.46	33.35
		"	"	30		14.5-		18.59	33.58
		"	"	45		12.67		18.61	33.61

* Bottle test

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.	Lat. 33°	Long. 118°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
4241 5/22/56	55° 42''	26° 55''	0		16.75	18.33	33.12
	"	"	15		17.03	18.37	33.13
	"	"	30		16.4-	18.39	33.22
	"	"	45		15.43	18.56	33.53
4242	55° 32''	26° 28''	0		16.50	18.33	33.12
	"	"	10		15.98	18.31	33.08
	"	"	25		16.3-	18.33	33.12
4243	55° 35''	26° 32''	0		-	18.27	33.01
	"	"	15		15.60	18.29	33.04
	"	"	30		16.0-	18.54	33.49
4244	55° 27''	26° 37''	0		15.85	18.29	33.04
	"	"	15		15.49	18.50	33.42
	"	"	30		14.5-	18.58	33.57
4627 6/7/56	47° 54''	34° 22''	0		16.90	18.75	33.87
	"	"	20		-	18.70	33.78
	"	"	60		14.4-	18.69	33.77
	"	"	100		11.38	18.63	33.66
	"	"	500		9.00	18.98	34.29
	"	"	1000		9.21	19.00	34.33
	"	"				19.12	34.54
	"	"				19.12	34.54
	"	"				19.12	34.54
	"	"				19.11	34.52
4268	47° 15''	32° 30''	0		16.90	18.71	33.80
	"	"	20?		16.29	18.70	33.78

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.	Lat. 33°	Long. 118°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
4268 6/7/56	47°15"	32°30"	40?		14.55	18.67	33.73
	"	"	100?		13.8-	18.66	33.71
	"	"	500?		9.05	18.94	34.22
	"	"	1000?		8.08	19.03	34.38
	"	"				19.10	34.51
	"	"				19.09	34.49
	"	"				19.11	34.52
	"	"				19.16	34.61
4269	46°22"	30°55"	0		17.20	18.72	33.82
	"	"	20		15.98	18.69	33.77
	"	"	50		12.0-	18.72	33.82
	"	"	250		9.15	18.84	34.04
	"	"	500		9.01	18.80	33.96
	"	"	750		6.80	19.03	34.38
	"	"	1000		8.55	19.07	34.45
	"	"				18.79	33.95
	"	"				19.07	34.45
	"	"				19.17	34.63
	"	"				19.11	34.52
4270	47°55"	31°37"	0		17.40	18.62	33.64
	"	"	20		-	18.63	33.66
	"	"	60		15.49	18.61	33.62
	"	"	250		-	18.74	33.86
	"	"	500		9.04	18.91	34.16
	"	"	750		8.79	18.95	34.23

APPENDIX TO CRUISES
HYDROGRAPHIC STATIONS

Station No.	Lat. 33°	Long. 118°	Bottle Depth	Sigma t	Temp,	Cl.	S
4270 6/7/56	47° 55"	31° 37"	1000		8.31	19.01	34.34
	"	"				19.01	34.34
	"	"				19.01	34.34
	"	"				19.01	34.34
4271	48° 15"	30° 17"	0		17.00	18.62	33.64
	"	"	20		15.63	18.60	33.60
	"	"	60		14.80	18.60	33.60
	"	"	250		-	18.67	33.73
	"	"	500		9.10	18.83	34.02
	"	"	750		8.87	18.91	34.16
	"	"	1000		7.34	18.98	34.29
	"	"				19.02	34.36
	"	"				19.01	34.34
	"	"				19.00	34.33
	"	"				18.99	34.31
4272	48° 23"	29° 09"	0		16.40	18.63	33.66
	"	"	20		-	18.61	33.62
	"	"	60		14.38	18.60	33.60
	"	"	100		12.89	18.60	33.60
	"	"	250		13.92	18.67	33.73
	"	"	500		9.09	18.82	34.00
	"	"	1200		8.18	18.94	34.22
4273	48° 55"	29° 10"	0		16.50	18.71	33.80
	"	"	20		16.16	18.70	33.78
	"	"	60		13.11	18.70	33.78

HYDROGRAPHIC STATIONS

Station No.	Lat. 33°	Long. 118°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
4273 6/7/56	48° 55'	29° 10'	100		13.12	18.69	33.77
	"	"	200		10.17	18.72	33.82
	"	"	400		-	18.84	34.04
	"	"	700		-	19.00	34.33
	"	"	900		9.10	18.94	34.22
	"	"	1000		8.31	18.98	34.29
	"	"				19.07	34.45
	"	"		Bazooka		19.07	34.45
	"	"				19.06	34.43
	"	"				19.06	34.43
4274 6/8/56	49° 22'	26° 53'	0		16.90	18.68	33.75
	"	"	20		15.88	18.68	33.75
	"	"	60		13.19	18.65	33.69
	"	"	250		9.12	18.91	34.16
	"	"	500		8.83	18.96	34.25
	"	"	750		8.21	19.02	34.36
	"	"	1000		7.81	19.03	34.38
	"	"				19.05	34.42
	"	"				19.07	34.45
	"	"				19.06	34.43
	"	"				19.04	34.40
4275	49° 50'	25° 12'	0		17.00	18.73	33.84
	"	"	20		16.0 +	18.69	33.77
	"	"	60		11.09	18.68	33.75
	"	"	100		10.45	18.72	33.82

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.	Lat. 33°	Long. 118°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
4275 6/8/56	49° 50"	25° 12"	250		9.15	18.85	34.05
	"	"	500		8.22	19.02	34.36
	"	"				19.02	34.36
	"	"				19.02	34.36
	"	"				19.03	34.38
	"	"				19.03	34.38
4276	50° 03"	24° 04"	0		17.70	18.68	33.75
	"	"	20		17.07	18.70	33.78
	"	"	60		10.86	18.69	33.77
	"	"	100		10.50	18.72	33.82
	"	"	250		9.16	18.84	34.04
	"	"				18.88	34.11
	"	"				18.86	34.07
	"	"				18.87	34.09
	"	"				18.88	34.11
4277	49° 43"	23° 53"	0		17.50	18.69	33.77
	"	"	10		17.16	18.70	33.78
	"	"	20		16. +	18.72	33.82
	"	"	30		16.81	18.71	33.80
	"	"				18.69	33.77
	"	"				18.69	33.77
	"	"				18.71	33.80
	"	"				18.70	33.78
4278	50° 19"	24° 09"	0		17.80	18.70	33.78
	"	"	20		15.63	18.69	33.77

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.	Lat. 33°	Long. 118°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
4278 6/8/56	50°19"	24°09"	30		13.85	18.69	33.77
	"	"	40		11.68	18.69	33.77
	"	"				18.70	33.78
	"	"				18.70	33.78
	"	"				18.70	33.78
	"	"				18.70	33.78
4279	50°14"	25°32"	0		17.80	18.78	33.93
	"	"	20		-	18.70	33.78
	"	"	60		-	18.72	33.82
	"	"	100		10.47	18.70	33.78
	"	"	250		9.11	18.86	34.07
	"	"	350		8.80	18.93	34.20
	"	"				19.00	34.33
	"	"				19.00	34.33
	"	"				19.01	34.34
	"	"				19.00	34.33
4280	49°22"	24°55"	0		17.50	18.70	33.78
	"	"	20		16.45	18.74	33.86
	"	"	60		12.29	18.67	33.73
	"	"	100		10.47	18.67	33.73
	"	"				18.78	33.93
	"	"				18.74	33.86
	"	"				18.72	33.82
	"	"				18.72	33.82
	"	"				18.72	33.82
4281	48°33"	26°14"	0		17.60	18.68	33.75

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.	Lat. 33°	Long. 118°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
4281 6/8/56	48° 33''	26° 14''	20		16.80	18.67	33.73
	"	"	60		13.78	18.67	33.73
	"	"	100		11.23	18.73	33.84
	"	"	250		9.41	18.79	33.95
	"	"				18.92	34.18
	"	"				18.91	34.16
	"	"				18.90	34.14
	"	"				18.92	34.18
4282	48° 50''	29° 33''	0		-	18.73	33.84
	"	"	20		15.96	18.68	33.75
	"	"	60		14.53	18.67	33.73
	"	"	250		9.33	18.81	33.98
	"	"	500		8.96	18.94	34.22
	"	"	750		8.44	18.99	34.31
	"	"				19.02	34.36
	"	"				19.03	34.38
	"	"				19.03	34.38
	"	"				19.02	34.36
4283	48° 03''	28° 53''	0		16.60	18.72	33.82
	"	"	20		16.02	18.70	33.78
	"	"	60		13.62	18.74	33.86
	"	"	100		12.24	18.71	33.80
	"	"	250		9.42	18.77	33.91
	"	"	500		8.99	18.96	34.25
	"	"				19.02	34.36

APPENDIX TO CRUISES
HYDROGRAPHIC STATIONS

Station No,	Lat. 33°	Long. 118°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
4283 6/8/56	48'03"	28'53"				19.03	34.38
	"	"				19.03	34.38
	"	"				19.03	34.38

HYDROGRAPHIC STATIONS

Whites Point and Orange County

Station No.	Lat 33°	Long 118°	Bottle Depth (Feet)	Sigma t	Temp. Cl.	S
Whites Pt. 3551 10/21/55	42°05"	19°46"	0		15.74	18.50 33.42
	"	"	15		15.15	18.50 33.42
	"	"	95		11.59	18.53 33.48
3552	42°00"	19°30"	0		15.81	18.50 33.42
	"	"	15		15.45	18.50 33.42
	"	"	95		10.98	18.54 33.49
3553	42°12"	20°00"	0		15.42	18.48 33.39
	"	"	15		15.22	18.48 33.39
	"	"	95		11.00	18.50 33.42
3554	41°48"	20°17"	0		15.60	18.51 33.44
	"	"	15		15.37	18.50 33.42
	"	"	95		11.10	18.51 33.44
3555	41°42"	19°22"	0		15.70	18.51 33.44
	"	"	15		15.04	18.47 33.37
	"	"	95		10.74	18.53 33.48
3556	41°45"	19°57"	0		15.50	18.50 33.42
	"	"	15		15.46	18.51 33.44
	"	"	95		11.14	18.52 33.46
3357	42°00"	20°09"	0		15.50	18.51 33.44
	"	"	15		15.09	18.47 33.37
	"	"	95		11.47	18.51 33.44
3558	41°44"	19°58"	0		15.50	18.51 33.44
	"	"	15		15.43	18.51 33.44
	"	"	95		11.05	18.50 33.42
3559	41°31"	20°12"	0		15.70	18.52 33.46

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.	Lat 33°	Long	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
3559 10/21/55	41° 31'	118° 20' 12"	15		15.48	18.50	33.42
	"	"	95		11.14	18.51	33.44
3560	41° 30'	119° 42'	0		15.95	18.50	33.42
	"	"	15		15.46	18.50	33.42
	"	"	95		11.25	18.51	33.44
Orange Co. 3561 10/22/55	36° 52'	117° 58' 15"	0		15.70	18.01	33.54
	"	"	15		15.83	18.50	33.42
	"	"	45		14.13	18.51	33.44
3563	36° 55'	58° 28'	0		16.35	18.31	33.08
	"	"	15		16.15	18.48	33.39
	"	"	45		14.05	18.51	33.49
3564	37° 03'	58° 35'	0		16.60	18.52	33.46
	"	"	15		16.03	18.55	33.51
	"	"	45		14.63	18.54	33.49
3565	37° 05'	58° 42'	0		16.60	18.54	33.49
	"	"	15		16.17	18.54	33.49
	"	"	45		15.21	18.54	33.49
3566	37° 10'	58° 56'	0		16.62	18.55	33.51
	"	"	15		16.05	18.54	33.49
	"	"	45		13.89	18.53	33.48
3567	36° 12'	58° 07'	0		16.20	18.43	33.30
	"	"	15		16.25	18.54	33.49
	"	"	45		14.71	18.53	33.48
3568	36° 50'	58° 01'	0		17.00	18.46	33.35
	"	"	15		16.68	18.48	33.39

HYDROGRAPHIC STATIONS

Station No.	Lat. 33°	Long.	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
		117°					
3568 10/22/55	35° 50''	58° 01''	45		14.60	18.53	33.48
3569	36° 02''	58° 57''	0		17.02	18.60	33.60
	"	"	15		16.92	18.57	33.55
	"	"	45		15.45	18.54	33.49
Whites Pt.		118°					
3619 11/3/55	42° 03''	19° 07''	0		16.30	18.57	33.55
	"	"	15		15.73	18.53	33.48
	"	"	115		11.16	18.53	33.48
3620	41° 49''	19° 14''	0		16.00	18.57	33.55
	"	"	15		15.68	18.54	33.49
	"	"	50		13.22	18.53	33.48
	"	"	110		12.15	18.53	33.48
3621	41° 36''	19° 18''	0		16.20	18.58	33.57
	"	"	15		15.88	18.56	33.53
	"	"	50		14.03	18.53	33.48
	"	"	110		11.79	18.53	33.48
3622	41° 24''	19° 32''	0		16.50	18.57	33.55
	"	"	15		15.92	18.56	33.53
	"	"	50		14.08	18.54	33.49
	"	"	110		12.43	18.51	33.44
3623	41° 57''	18° 50''	0		16.05	18.55	33.51
	"	"	15		15.94	18.53	33.48
	"	"	50		15.54	18.54	33.49
	"	"	110		12.17	18.53	33.48
3625	⁴¹ / ₅₁ 1° 33''	18° 58''	0		16.40	18.56	33.53
	"	"	15		16.11	18.55	33.51

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.	Lat. 33°	Long. 118°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
3625 11/3/55	⁴ 31'33"	18'58"	50		15.49	18.55	33.51
	"	"	110		14.18	18.53	33.48
3626	41'32"	19'02"	0		16.30	18.56	33.53
	"	"	15		16.12	18.55	33.51
	"	"	50		15.52	18.54	33.49
	"	"	110		12.73	18.53	33.48
3627	41'17"	19'18"	0		16.10	18.55	33.51
	"	"	15		16.14	18.55	33.51
	"	"	50		15.35	18.54	33.49
	"	"	110		13.06	18.53	33.48
*3627	"	"	0			18.49	
	"	"	15			18.49	
	"	"	50			18.48	
	"	"	110			18.46	
3628	42'05"	19'50"	0		16.00	18.46	33.35
	"	"	15		15.86	18.55	33.51
	"	"	50		15.60	18.54	33.49
	"	"	110			18.53	33.48
Orange Co.		117°					
3632 11/4/55	36'55"	58'12"	0		16.15	18.49	33.40
	"	"	15		15.76	18.52	33.46
	"	"	45		15.02	18.55	33.51
3633	36'58"	58'24"	0		16.40	18.52	33.46
	"	"	15		15.97	18.50	33.42
	"	"	45		15.09	18.54	33.49
3634	36'52"	57'59"	0		16.40	18.46	33.35

*By Hyperion Lab. Electrical Method. Correction for Hyperion
Readings to AHF Readings = +0.06 PP+ (CL).

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.		Lat. 33°	Long. 117°	Bottle Depth (Feet)	Sigma t	Temp.	C1.	S
3634	11/4/55	36° 52''	57° 59''	15		15.88	18.53	33.48
		"	"	45		15.13	18.53	33.48
3635		36° 48''	36° 33''	0		16.85	18.48	33.39
		"	"	15		16.40	18.54	33.49
		"	"	45		15.26	18.55	33.51
3636		36° 42''	57° 33''	0		16.80	18.51	33.44
		"	"	15		16.30	18.55	33.51
		"	"	45		14.97	18.55	33.51
3637		36° 40''	57° 18''	0		17.05	18.54	33.49
		"	"	15		16.30	18.56	33.53
		"	"	45		15.78	18.56	33.53
3638		36° 33''	57° 03''	0		16.60	18.56	33.53
		"	"	15		16.36	18.56	33.53
		"	"	45		14.91	18.53	33.48
3639		36° 28''	56° 50''	0		17.00	18.54	33.49
		"	"	15		16.61	18.55	33.51
		"	"	45		15.14	18.53	33.48
3640		36° 23''	56° 36''	0		16.90	18.55	33.51
		"	"	15		16.49	18.54	33.49
		"	"	45		15.57	18.54	33.49
Whites Pt.			118°					
3652	11/17/55	42° 05''	19° 52''	0		15.25	18.47	33.37
		"	"	15		14.60	18.46	33.35
		"	"	40		14.32	18.42	33.28
		"	"	120		12.39	18.38	33.21
3653		42° 27''	20° 27''	0		15.90	18.51	33.44

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.	Lat. 33°	Long. 118°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
3653 11/17/55	42°27'	20°27'	25		15.63	18.55	33.51
	"	"	105		12.97	18.44	33.31
3654 11/18/55	37°12'	117°58'38"	0			18.53	33.48
	"	"	15		15.10	18.53	33.48
	"	"	30		15.57	18.54	33.49
	"	"	45		15.14	18.55	33.51
3656	37°02'	58°30'	0		15.80	18.52	33.46
	"	"	15		15.56	18.56	33.53
	"	"	30		15.47	18.55	33.51
	"	"	45		14.83	18.52	33.46
3657	36°57'	58°24'	0		15.77	18.41	33.26
	"	"	15		15.64	18.55	33.51
	"	"	30		15.32	18.55	33.51
	"	"	45		14.19	18.53	33.48
3658	36°52'	58°13'	0		16.00	18.38	33.21
	"	"	15		15.66	18.54	33.49
	"	"	30		15.16	18.54	33.49
	"	"	45		14.45	18.53	33.48
3659	36°43'	58°06'	0		15.95	18.41	33.26
	"	"	15		15.31	18.55	33.51
	"	"	30		15.69	18.55	33.51
	"	"	45		15.33	18.54	33.49
3660	36°40'	57°55'	0		16.40	18.54	33.49
	"	"	15		15.76	18.55	33.51
	"	"	30		15.76	18.56	33.53

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.	Lat. 33°	Long. 117°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
3660 11/18/55	36°40"	57°55"	45		14.85	18.53	33.48
3661	36°38"	58°30"	0		16.30	18.44	33.31
	"	"	15		15.73	18.55	33.51
	"	"	30		15.63	18.56	33.53
	"	"	45		15.25	18.54	33.49
3662	36°46"	58°21"	0		16.35	18.44	33.31
	"	"	15		15.71	18.55	33.51
	"	"	30		15.64	18.55	33.51
	"	"	45		15.45	18.55	33.51
3663	37°00"	58°02"	0		16.00	18.47	33.37
	"	"	15		15.60	18.48	33.39
	"	"	30		15.54	18.54	33.49
	"	"	45		14.71	18.53	33.48
3664	36°35"	58°35"	0		16.60	18.43	33.30
	"	"	15		15.77	18.53	33.48
	"	"	30		15.57	18.55	33.51
	"	"	45		14.79	18.54	33.49
3665	36°46"	58°21"	0		16.10	18.53	33.48
	"	"	15		15.82	18.54	33.49
	"	"	30		15.33	18.55	33.51
	"	"	45		14.66	18.55	33.51
3666	37°02"	58°10"	0		16.20	18.53	33.48
	"	"	15		16.03	18.54	33.49
	"	"	30		15.11	18.55	33.51
	"	"	45		14.87	18.55	33.51

APPENDIX TO CRUISES

122

HYDROGRAPHIC STATIONS

Station No.	Lat. 33°	Long. 117°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
3667 11/18/55	36'41"	57'52"	0		15.90	18.51	33.44
	"	"	15		15.82	18.54	33.49
	"	"	30		15.28	18.54	33.49
	"	"	45		14.46		
3668	36'45"	58'06"	0		15.75	18.34	33.13
	"	"	15		15.56	18.56	33.53
	"	"	30		14.53	18.54	33.49
	"	"	45		13.91	18.53	33.48
Sta. Mon. Bay	3						
3669	26'56"	58'22"			16.20	18.53	33.48
3670	37'02"	58'30"			16.20	18.53	33.48
		118°					
3671 11/22/55	55'08"	27'03"			15.00	17.76	32.09
3672	54'42"	28'12"			15.25	18.42	33.28
3673	54'24"	29'15"			15.25	18.54	33.49
3674	54'02"	30'21			15.45	18.56	33.53
3675	59'17"	29'05"			14.80	18.53	33.48
3676	59'17"	31'07"			15.00	18.53	33.48
3677	59'17"	32'23"			14.80	18.53	33.48
3678 11/30/55	49'44"	24'55"				18.53	33.48
Orange Co.		117°					
3738 12/19/55	37'06"	58'50"	0		13.65	18.52	33.46
	"	"	15		13.06	18.54	33.49
	"	"	30		13.13	18.53	33.48
	"	"	45		13.77	18.55	33.51
3739	37'02"	58'40"	0		13.85	18.40	33.24

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.	Lat. 33°	Long. 117°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
3739 12/19/55	37°02"	58°40"	15		13.47	18.42	33.28
	"	"	30		13.16	18.50	33.42
	"	"	45		13.25	18.53	33.48
3740	36°56"	58°30"	0		13.50	18.52	33.46
	"	"	15		13.14	18.52	33.46
	"	"	30		13.12	18.51	33.44
	"	"	45		13.18	18.53	33.48
3742	36°52"	58°20"	0		13.65	18.46	33.35
	"	"	15		13.10	18.52	33.46
	"	"	30		13.16	18.53	33.48
	"	"	45		13.78?	18.53	33.48
3743	36°42"	58°08"	0		13.65	18.55	33.51
	"	"	15		13.29	18.53	33.48
	"	"	30		13.32	18.53	33.48
	"	"	45		13.25	18.53	33.48
3744	36°35"	57°58"	0		13.65	18.45	33.33
	"	"	15		13.34	18.53	33.48
	"	"	30		13.31	18.55	33.51
	"	"	45		13.25	18.55	33.51
3745	36°29"	57°48"	0		13.75	18.52	33.46
	"	"	15		13.32	18.54	33.49
	"	"	30		13.29	18.54	33.49
	"	"	45		13.04	18.53	33.48
3746	36°23"	58°44"	0		13.65	18.55	33.51
	"	"	15		13.25	18.51	33.44

APPENDIX TO CRUISES

124

HYDROGRAPHIC STATIONS

Station No.	Lat. 33°	Long. 117°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
3746 12/19/55	36°23"	58°44"	30		13.22	18.53	33.48
	"	"	45		13.84	18.53	33.51
3747	36°32"	58°35"	0		13.57	18.50	33.42
	"	"	15		13.26	18.48	33.39
	"	"	30		13.18	18.53	33.48
	"	"	45		13.25	18.53	33.48
3748	36°40"	58°30"	0		13.60	18.52	33.46
	"	"	15		13.17	18.53	33.48
	"	"	30		13.13	18.53	33.48
	"	"	45		13.25	18.53	33.48
3751 12/20/55	36°30"	57°54"	0		13.45	18.58	33.57
	"	"	15		12.76	18.55	33.51
	"	"	30		13.06	18.55	33.51
	"	"	45		13.18	18.56	33.53
3752	36°37"	58°04"	0		13.75	18.34	33.13
	"	"	10		13.10	18.44	33.31
	"	"	25		13.47	18.57	33.55
	"	"	40		13.96	18.55	33.51
3753	36°44"	58°12"	0		13.80	18.13	32.75
	"	"	15		13.38	18.38	33.21
	"	"	30		13.38	18.55	33.51
	"	"	45		13.31	18.55	33.51
3754	36°52"	58°19"	0		13.80	17.81	32.18
	"	"	15		12.91	18.06	32.63
	"	"	30		13.33	18.45	33.33

APPENDIX TO CRUISES

125

HYDROGRAPHIC STATIONS

Station No.	Lat. 33°	Long. 117°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
3754 12/20/55	36°52'	58°19'	45		13.35	18.59	33.58
3755	36°55'	58°28'	0		13.75	18.55	33.51
	"	"	15		13.33	18.57	33.55
	"	"	30		13.36	18.56	33.53
	"	"	45		13.39	18.57	33.55
3756	37°02'	58°40'	0		13.95	18.56	33.53
	"	"	15		13.55	18.56	33.53
	"	"	30		13.39	18.56	33.53
	"	"	45		13.25	18.55	33.51
3757	37°05'	58°48'	0		14.10	18.58	33.57
	"	"	15		13.68	18.58	33.57
	"	"	30		13.64	18.58	33.57
	"	"	45		13.40	18.56	33.53
3758	36°30'	58°44'	0		14.25	18.59	33.58
	"	"	15		13.68	18.59	33.58
	"	"	30		13.58	18.59	33.58
	"	"	45		13.60	18.58	33.57
3759	36°36'	58°36'	0		14.15	18.56	33.53
	"	"	15		13.77	18.58	33.57
	"	"	30		13.47	18.59	33.58
	"	"	45		13.38	18.58	33.57
3760	36°44'	58°30'	0		14.30	18.61	33.62
	"	"	15		13.57	18.59	33.58
	"	"	30		13.33	18.57	33.55

HYDROGRAPHIC STATIONS

Station No.	Lat. 33°	Long. 117°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
3760 12/20/55	36'44"	58'30" 118°	45		13.24	18.57	33.55
3761	38'45"	01'04"	0		14.50	18.63	33.66
	"	"	5		14.22*	18.56	33.53
	"	"	20		14.06*	18.55	33.51
	"	"	35		13.78*	18.55	33.51
Whites Pt. 3878 2/2/56	42'02"	20'15"	0		12.80	18.19	32.86
	"	"	25		12.59	18.19	32.86
	"	"	75		12.57	18.31	33.08
	"	"	125		11.64	18.53	33.48
3879	42'03"	20'03"	0		13.00	18.19	32.86
	"	"	25		12.57	18.18	32.84
	"	"	75		12.47	18.35	33.15
	"	"	125		11.43	18.53	33.48
3880	42'04"	19'48"	0		13.00	18.18	32.84
	"	"	25		12.60	18.19	32.86
	"	"	75		12.51	18.30	33.06
	"	"	125		11.04	18.48	33.39
3881	42'05"	19'38"	0		12.95	18.21	32.90
	"	"	25		12.72	18.19	32.86
	"	"	75		12.49	18.37	33.19
	"	"	125		11.65	18.52	33.46
3882	42'06"	19'24"	0		13.00	18.20	32.88
	"	"	25		12.67	18.20	32.88
	"	"	75		12.38	18.38	33.21
	"	"	125		11.18	18.54	33.49

*From Bathythermograph Trace.

APPENDIX TO CRUISES
HYDROGRAPHIC STATIONS

Station No.	Lat. 33°	Long. 118°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
3883 2/2/56	42° 23''	20° 28''	0		13.05	18.20	32.88
	"	"	25		12.71	18.16	32.81
	"	"	75		12.47	18.29	33.04
	"	"	125		11.66	18.51	33.44
3884	42° 28''	20° 38''	0		13.20	18.19	32.86
	"	"	25		12.69	18.19	32.86
	"	"	75		12.53	18.23	32.94
	"	"	125		11.81	18.51	33.44
3885	42° 34''	20° 44''	0		13.15	18.19	32.86
	"	"	25		12.66	18.16	32.81
	"	"	75		12.53	18.25	32.97
	"	"	125		11.92	18.49	33.40
3886	42° 39''	20° 58''	0		13.10	18.18	32.84
	"	"	25		12.82	18.17	32.83
	"	"	75		12.54	18.25	32.97
	"	"	125		12.09	18.52	33.46
3887	42° 42''	21° 16''	0		12.90	18.21	32.90
	"	"	25		12.80	18.18	32.84
	"	"	75		12.60	18.24	32.95
	"	"	125		12.05	18.49	33.40
3888	43° 46''	24° 03''	0		12.90	18.24	32.95
	"	"	25		12.78	18.24	32.95
	"	"	75		12.46	18.24	32.95
	"	"	125		12.00	18.43	33.30
3890 2/3/56	42° 04''	19° 33''				18.33	33.12

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.	Lat. 33°	Long. 118°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
3891 2/3/56	41°52"	19°58"			12.70	18.33	33.12
3892	41°43"	20°00"	0		12.95	18.32	33.12
	"	"	25		12.64	18.33	33.12
	"	"	75		12.72	18.43	33.30
	"	"	125		11.78	18.51	33.44
3893	41°34"	20°07"			13.10	18.33	33.12
3894	41°18"	20°14"	0		13.15	18.34	33.13
	"	"	25		12.65	18.35	33.15
	"	"	75		12.62	18.47	33.37
	"	"	500		8.91	18.85	34.05
3895	40°08"	24°51"	0		13.10	18.21	32.90
	"	"	25		12.60	18.23	32.94
	"	"	75		12.45	18.29	33.04
	"	"	125		11.82	18.50	33.42
3896	43°12"	22°03"	0		13.75	18.23	32.94
	"	"	25		13.01	18.22	32.92
	"	"	75		12.80	18.33	33.12
	"	"	125		11.93	18.45	33.33
3898 2/12/56	41°56"	19°25"	0		12.90	18.42	33.28
	"	"	25		12.47	18.47	33.37
	"	"	75		12.88	18.54	33.49
	"	"	125		11.68	18.53	33.48
3899	42°03"	19°50"	0		13.00	18.47	33.37
	"	"	25		12.59	18.46	33.35
	"	"	75		12.77	18.53	33.48

HYDROGRAPHIC STATIONS

Station No.	Lat. 33°	Long. 118°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
3899 2/12/56	42°03"	19°50"	125		11.72	18.53	33.48
3900	42°10"	20°06"	0		13.00	18.47	33.37
	"	"	25		12.57	18.47	33.37
	"	"	75		12.64	18.51	33.44
	"	"	125		11.75	18.51	33.44
3901	42°18"	20°21"	0		13.00	18.47	33.37
	"	"	25		12.69	18.45	33.33
	"	"	75		12.98	18.53	33.48
	"	"	125		11.74	18.53	33.48
3902	42°26"	20°36"	0		13.60	18.45	33.33
	"	"	25		12.76	18.45	33.33
	"	"	75		12.74	18.47	33.37
	"	"	125		12.98	18.54	33.49
3903	42°33"	20°51"	0		13.10	18.47	33.37
	"	"	25		12.67	18.45	33.33
	"	"	75		13.01	18.53	33.48
	"	"	125		12.92	18.53	33.48
3904	42°42"	21°06"	0		13.50	18.43	33.30
	"	"	25		12.68	18.45	33.33
	"	"	75		13.00	18.53	33.48
	"	"	125			18.54	33.49
3905	42°49"	21°22"	0		13.20	18.44	33.31
	"	"	25		12.77	18.45	33.33
	"	"	75		13.52	18.52	33.46
	"	"	125			18.53	33.48

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.	Lat. 33°	Long. 118°	Bottle Depth (Feet)	Sigma t	Temp.	Cl.	S
3906 2/12/56	42° 58'	21° 37'	0		13.10	18.45	33.33
	"	"	25		12.55	18.45	33.33
	"	"	75		13.04	18.53	33.48
	"	"	125			18.49	33.40
3907	43° 04'	21° 53'	0		13.20	18.47	33.37
	"	"	25		12.64	18.46	33.35
	"	"	75		12.93	18.55	33.51
	"	"	125			18.54	33.49

APPENDIX TO CRUISES

131

HYDROGRAPHIC STATIONS

Station No.	Lat.	Long.	Bottle	Sigma t	Temp.	Cl.	S
Whites Pt.							
1457 10/21/55	Bacteria Sta.					18.50	33.42
1501	"	"				18.51	33.44
1505	"	"				18.52	33.46
1508	"	"				18.52	33.46
1512	"	"				18.52	33.46
1515	"	"				18.50	33.42
1517	"	"				18.51	33.44
Orange Co.							
0918 12/19/55	"	"				18.42	33.28
0928	"	"				18.31	33.08
1002	"	"				18.53	33.48
1021	"	"				18.38	33.21
1043	"	"				18.43	33.30
1107	"	"				18.42	33.28
1135	"	"				18.07	32.65
1205	"	"				18.23	32.94
1342	"	"				17.52	31.65
1421	"	"				18.23	32.94
1447	"	"				18.05	32.61
1500	"	"				18.53	33.48
1042 12/19/55	"	"				18.57	33.55
1539	"	"				18.53	33.48
1543	"	"				18.41	33.26
1547	"	"				18.54	33.49
1551	"	"				18.56	33.53
1555	"	"				18.57	33.55

HYDROGRAPHIC STATIONS

Station No.	Lat.	Long.	Bottle Depth	Sigma t	Temp.	Cl,	S
1559 12/19/55	Bacteria	Sta.				18.58	33.57
1603	"	"				18.61	33.62
1607	"	"				18.55	33.51
1610	"	"				18.57	33.55
1614	"	"				18.56	33.53
1618	"	"				18.63	33.66
1622	"	"				18.61	33.62
1630	"	"				18.53	33.48
1634	"	"				18.57	33.55
1639	"	"				18.61	33.62
1644	"	"				18.57	33.55
1648	"	"				18.65	33.69
1655	"	"				17.88	32.30
#1 12/19-20/55	"	"				17.92	32.38
#2	"	"				18.38	33.21
#3	"	"				18.43	33.30
#4	"	"				18.41	33.26
#5	"	"				18.46	33.35
#6	"	"				17.94	32.41
#7	"	"				18.36	33.17
#8	"	"				18.41	33.26
#9	"	"				18.45	33.33
#10/o	"	"				18.46	33.35
#11	"	"				17.72	32.01
#12/1539	"	"				18.58	33.57

APPENDIX TO CRUISES

133

HYDROGRAPHIC STATIONS

Station No.	Lat.	Long.	Bottle Depth	Sigma t	Temp.	Cl.	S
#13/1543	12/19-						
	20/55	Bacteria Sta.				18.60	33.60
#14/1547	"	"	"			18.60	33.60
#15/1551	"	"	"			18.64	33.68
#16/1555	"	"	"			18.64	33.68
#17/1559	"	"	"			18.64	33.68
#18/1603	"	"	"			18.62	33.64
#19/1607	"	"	"			18.65	33.69
#20/1610	"	"	"			18.59	33.58
#21/1614	"	"	"			18.72	33.82
#22/1618	"	"	"			18.57	33.55
#23/1622	"	"	"			18.61	33.62
#24/1627	"	"	"			18.66	33.71
#25/1630	"	"	"			18.57	33.55
#26/1634	"	"	"			18.62	33.64
#27/1639	"	"	"			18.64	33.68
#28/1644	"	"	"			18.59	33.58
#29/1648	"	"	"			18.66	33.71
#30/1655	"	"	"			17.90	32.34
#31	"	"	"			18.41	33.26
#32	"	"	"			18.40	33.24
#33	"	"	"			18.41	33.26
#34	"	"	"			18.41	33.26
#35	"	"	"			18.41	33.26
#36	"	"	"			18.11	32.72
#37	"	"	"			18.41	33.26

APPENDIX TO CRUISES

134

HYDROGRAPHIC STATIONS

Station No.	Lat.	Long.	Bottle Depth	Sigma t	Temp.	Cl.	S
#38 12/19- 20/55	Bacteria	Sta.				18.41	33.26
#39 "	"	"				18.48	33.39
#40 "	"	"				18.45	33.33
#41/1149 "	"	"				18.11	32.74
#42/1152 "	"	"				18.66	33.71
#43/1159 "	"	"				18.60	33.60
#44/1203 "	"	"				18.55	33.51
#45/1206 "	"	"				18.58	33.57
#46/1210 "	"	"				18.59	33.58
#47/1239 "	"	"				18.61	33.62
#48/1237 "	"	"				18.60	33.60
#49/1241 "	"	"				18.56	33.53
#50/1243 "	"	"				18.52	33.46
#51/1247 "	"	"				18.51	33.44
#52/1251 "	"	"				18.52	33.46
#53/1255 "	"	"				18.51	33.44
#54/1259 "	"	"				18.53	33.48
#55/1302 "	"	"				18.51	33.44
#56/1306 "	"	"				18.52	33.46
#51/1309 "	"	"				18.51	33.44
#58/1313 "	"	"				18.52	33.46
#59/1316 "	"	"				18.52	33.46
Whites Pt. #1 2/23/56	"	"				18.12	32.74
#2 "	"	"				18.17	32.83
#3 "	"	"				18.18	32.84

APPENDIX TO CRUISES

HYDROGRAPHIC STATIONS

Station No.	Lat.	Long.	Bottle Depth	Sigma t	Temp.	Cl.	S
#4	2/2/3/56	Bacteria Sta.				18.18	32.84
#5	"	"	"			18.17	32.83
#6	"	"	"			18.22	32.92
#7	"	"	"			18.27	33.01
#8	"	"	"			18.31	33.08
#9	"	"	"			18.28	33.03
#10	"	"	"			18.28	33.03
#19	"	"	"			18.41	33.26
#20	"	"	"			18.43	33.26
#21	"	"	"			18.39	33.22
#22	"	"	"			18.40	33.24
#23	"	"	"			18.46	33.35
#24	"	"	"			18.42	33.28
#25	"	"	"			18.43	33.30
#26	"	"	"			18.44	33.31
#27	"	"	"			18.42	33.28
#28	"	"	"			18.39	33.22
#29	"	"	"			18.44	33.31
#30	"	"	"			18.44	33.31
#31	"	"	"			18.36	33.17
#32	"	"	"			18.37	33.19
#33	"	"	"			18.41	33.26
#34	"	"	"			18.38	33.21
#35	"	"	"			18.39	33.22
#36	"	"	"			18.39	33.22

APPENDIX TO CRUISES
HYDROGRAPHIC STATIONS

Station No.	Lat.	Long.	Bottle Depth	Sigma t	Temp.	C1.	S
#37 2/2-3/56	Bacteria	Sta.				18.42	33.28
#38 "	"	"				18.39	33.22
#39 "	"	"				18.45	33.33
#40 "	"	"				18.42	33.28
#41 "	"	"				18.44	33.31
#1 2/11/56	"	"				18.33	33.12
#2 "	"	"				18.40	33.24
#3 "	"	"				18.47	33.37
#4 "	"	"				18.43	33.30
#5 "	"	"				18.44	33.31

APPENDIX TO CRUISES

BACTERIA AND NUTRIENT

STATION LOCATIONS

Station No.	Lat 33°	Long 118°	Station No.	Lat 33°	Long 118°	Station No.	Lat 33°	Long 117°
3550	Whites Point		3624	41°43"	18°58"	3657	36°57"	58°24"
3551	42°05"	19°46"	3625	41°33"	18°58"	3658	36°52"	58°13"
3552	42°00"	19°30"	3626	41°32"	19°02"	3659	36°43"	58°06"
3553	42°12"	20°00"	3627	41°17"	19°18"	3660	36°40"	57°55"
3554	41°48"	20°17"	3628	42°05"	19°50"	3661	36°38"	58°30"
3555	41°42"	19°22"	3629	42°06"	20°11"	3662	36°46"	58°21"
3556	41°45"	19°57"	3630	41°52"	19°37"	3663	37°00"	58°02"
3557	42°00"	20°09"	3631	Newport		3664	36°35"	58°35"
3558	41°44"	19°58"	3632	36°55"	58°12" ^{117°}	3665	36°46"	58°21"
3559	41°31"	20°12"	3633	36°58"	58°24"	3666	37°02"	58°10"
3560	41°30"	19°42" ^{117°}	3634	36°52"	57°59"	3667	36°41"	57°52"
3561	36°52"	58°15"	3635	36°48"	36°33"	3668	36°45"	58°06"
3563	36°55"	58°28"	3636	36°42"	57°33"	3669	26°56"	58°22"
3564	37°03"	58°35"	3637	36°40"	57°18"	3670	37°02"	58°30" ^{118°}
3565	37°05"	58°42"	3638	36°33"	57°03"	3671	55°08"	27°03"
3566	37°10"	58°56"	3639	36°28"	56°50"	3672	54°42"	28°12"
3567	36°12"	58°07"	3640	36°23"	56°36"	3673	54°24"	29°15"
3568	36°50"	58°01"	3649	Whites Point		3674	54°02"	30°21"
3569	36°02"	58°57" ^{118°}	3651	41°52"	20°05"	3675	59°17"	29°05"
3619	42°03"	19°07"	3652	42°05"	19°52"	3676	59°17"	31°07"
3620	41°49"	19°14"	3653	42°27"	20°27" ^{117°}	3677	59°17"	32°23"
3621	41°36"	19°18"	3654	37°12"	58°38"	3678	49°44"	24°55"
3622	41°22"	19°32"	3655	Newport		3687	51°08"	31°52"
3623	41°57"	18°50"	3656	37°02"	58°30"	3700	58°16"	32°17"

APPENDIX TO CRUISES

BACTERIA AND NUTRIENT

STATION LOCATIONS

Station No.	Lat 33°	Long 118°	Station No.	Lat 33°	Long 117°	Station No.	Lat 33°	Long 118°
3703	58°31"	28°40"	3742	36°52"	58°20"	3785	54°03"	26°43"
3704	57°35"	27°42"	3743	36°42"	58°08"	3786	53°32"	26°48"
3705	57°28"	28°56"	3744	36°35"	57°58"	3787	53°36"	25°35"
3706	57°23"	30°10"	3745	36°29"	57°48"	3788	52°39"	24°55"
3707	57°18"	31°23"	3746	36°23"	58°44"	3789	52°34"	26°08"
3708	57°12"	32°36"	3747	36°32"	58°35"	3790	52°28"	27°22"
3709	57°08"	33°50"	3748	36°40"	58°30"	3791	53°25"	28°02"
3710	57°03"	35°02"	3749	Newport		3792	53°56"	27°55"
3711	55°58"	35°35"	3751	36°30"	57°54"	3793	54°26"	28°28"
3712	56°03"	34°20"	3752	36°37"	58°04"	3794	54°55"	29°24"
3713	56°08"	33°07"	3753	36°44"	58°12"	3795	55°21"	30°10"
3714	56°13"	31°58"	3754	36°52"	58°19"	3796	55°51"	29°52"
3715	56°19"	30°32"	3755	36°55"	58°28"	3797	55°16"	31°22"
3716	56°25"	29°30"	3756	37°02"	58°40"	3798	55°09"	32°34"
3717	56°30"	28°18"	3757	37°05"	58°48"	3799	54°10"	32°08"
3718	56°35"	27°03"	3758	36°30"	58°44"	3800	54°15"	30°55"
3719	56°02"	27°28"	3759	36°36"	58°36"	3801	54°21"	29°43"
3720	55°36"	26°32"	3760	36°44"	58°30" 118°	3802	53°53"	29°06"
3721	55°31"	27°45"	3761	38°45"	01°04"	3803	53°22"	29°15"
3737	Newport		3780	55°57"	28°40"	3804	52°22"	28°37"
3738	37°06"	58°50" 117°	3781	55°25"	28°57"	3805	Hyperion	
3739	37°02"	58°40"	3782	54°57"	28°13"	3806	55°10"	26°50"
3740	36°56"	58°30"	3783	55°02"	27°01"	3807	55°13"	26°58"
3741	Newport		3784	54°31"	27°15"	3808	55°22"	27°03"

APPENDIX TO CRUISES

BACTERIA AND NUTRIENT

STATION LOCATIONS

Station No.	Lat 33°	Long 118°	Station No.	Lat 33°	Long 118°	Station No.	Lat 33°	Long 118°
3809	55°32"	27°07"	3854	59°12"	35°13"	3879	42°03"	20°03"
3810	55°40"	27°11"	3855	58°43"	35°13"	3880	42°04"	19°48"
3811	55°48"	27°16"	3856	58°15"	35°13"	3881	42°05"	19°38"
3812	54°31"	26°41"	3857	57°43"	35°12"	3882	42°06"	19°24"
3813	54°38"	26°42"	3858	57°14"	35°11"	3883	42°23"	20°28"
3814	54°47"	26°43"	3859	57°33"	34°42"	3884	42°28"	20°38"
3815	54°55"	26°49"	3860	57°52"	34°15"	3885	42°34"	20°44"
3816	Hyperion		3861	58°09"	33°45"	3886	42°39"	20°58"
3817	55°06"	26°53"	3862	58°46"	32°47"	3887	42°42"	21°16"
3818	55°14"	26°57"	3863	59°23"	31°48"	3888	43°46"	24°03"
3819	55°23"	27°02"	3864	59°58"	30°48"	3889	Whites Point	
3820	55°32"	27°03"	3866	55°10"	27°04"	3890	42°04"	19°53"
3821	55°44"	27°13"	3867	55°00"	27°40"	3891	41°52"	19°58"
3822	55°52"	27°16"	3868	54°47"	28°13"	3892	41°43"	20°00"
3823	56°04"	27°23"	3869	54°27"	29°18"	3893	41°34"	20°07"
3824	56°14"	27°28"	3870	53°42"	31°33"	3894	41°18"	20°14"
3825	56°23"	27°30"	3871	52°16"	30°38"	3895	44°08"	24°51"
3826	56°35"	27°37"	3872	51°36"	29°32"	3896	43°12"	22°03"
3827	46°30"	26°29"	3873	51°11"	28°40"	3897	Whites Point	
3849	34° 01°08"	35°25"	3874	50°06"	26°38"	3898	41°56"	19°25"
3850	01°44"	35°04"	3875	49°18"	25°10"	3899	42°03"	19°50"
3851	00°43"	35°15"	3876	48°46"	24°07"	3900	42°10"	20°06"
3852	00°14"	35°36"	3877	Whites Point		3901	42°18"	20°21"
3853	33° 59°43"	35°14"	3878	42°02"	20°15"	3902	42°26"	20°36"

APPENDIX TO CRUISES

BACTERIA AND NUTRIENT

STATION LOCATIONS

Station No.	Lat 33°	Long 118°	Station No.	Lat 34°	Long 118°	Station No.	Lat 33°	Long 118°
3903	42°33"	20°51"	3927	00°07"	33°38"	4070	55°02"	27°04"
3904	42°42"	21°06"	3928	00°37"	33°44"	4071	54°57"	27°15"
3905	42°49"	21°22"	3929	01°06"	33°49"	4072	54°53"	27°26"
3906	42°58"	21°37"	3930	01°36"	33°55"	4073	54°47"	27°38"
3907	43°04"	21°53"	3953	00°45"	41°07"	4074	54°45"	27°50"
3908	46°45"	26°11"	3954	01°22"	41°09"	4075	54°42"	28°03"
3909	47°05"	26°31"	3955	33° 59°54"	41°06"	4076	54°37"	28°15"
3910	47°29"	26°53"	3956	59°00"	41°08"	4077	54°04"	27°17"
3911	47°55"	27°16"	3957	57°43"	41°01"	4078	54°16"	27°15"
3912	48°15"	27°37"	4055	53°58"	26°24"	4079	54°28"	27°09"
3913	49°03"	28°20"	4056	54°08"	26°28"	4080	54°37"	27°07"
3914	49°36"	29°11"	4057	54°14"	26°32"	4081	54°45"	27°00"
3915	49°52"	27°57"	4058	54°27"	26°37"	4082	54°55"	26°59"
3916	49°49"	26°46"	4059	54°37"	26°41"	4084	Hyperion	
3917	49°44"	25°35"	4060	54°46"	26°45"	4085	Hyperion	
3918	49°43"	24°57"	4061	54°56"	26°49"	4086	55°07"	26°52"
3919	49°41"	24°25"	4062	55°05"	26°53"	4087	54°50"	26°44"
3920	49°40"	23°54"	4063	55°14"	26°52"	4088	54°32"	26°39"
3921	55°08"	26°52"	4064	55°22"	26°52"	4089	54°15"	26°37"
3922	55°02"	27°32"	4065	55°33"	26°55"	4090	53°59"	26°32"
3923	54°48"	28°15"	4066	55°43"	26°50"	4091	Hyperion	
3924	54°36"	29°11"	4067	55°51"	26°50"	4092	53°45"	26°18"
3925	54°13"	30°16"	4068	55°58"	26°52"	4093	53°33"	26°05"
3926	59°04"	33°25"	4069	56°07"	26°51"	4094	53°22"	25°43"

APPENDIX TO CRUISES

BACTERIA AND NUTRIENT

STATION LOCATIONS

Station No.	Lat 33°	Long 118°	Station No.	Lat 33°	Long 118°
4095	53°11"	25°30"	4244	55°27"	26°37"
4096	53°00"	25°26"	4285	Hyperion	
		117°			
4097	36°49"	56°01"	4286	Hyperion	
4103	36°05"	57°05"	4287	55°08"	26°49"
4143	36°56"	58°48"	4288	Hyperion	
4216	Hyperion		4289	55°22"	26°58"
		118°			
4217	55°06"	26°53"	4290	55°48"	27°07"
4218	55°23"	27°06"	4291	55°28"	27°36"
4219	55°37"	27°10"	4292	55°45"	27°04"
4220	55°35"	27°12"	4293	56°02"	27°00"
4221	55°54"	27°35"	4294	55°52"	27°19"
4222	56°06"	27°48"	4295	56°14"	27°17"
4223	56°17"	27°50"	4296	56°38"	27°27"
4224	56°37"	27°53"			
4225	Hyperion				
4226	28°13"	29°26"			
4236	55°07"	26°56"			
4237	Hyperion				
4238	Hyperion				
4239	55°42"	27°28"			
4240	55°55"	27°29"			
4241	55°42"	26°55"			
4242	55°32"	26°28"			
4243	55°35"	26°32"			

APPENDIX TO CRUISES

BACTERIA AND NUTRIENT

Cruise 224

October 21, 1955

Cruise Description: A dye patch, over the Whites Point sewer outfall was followed for six hours. Water samples were collected for bacteria and nutrient determinations and cores were taken for bacteria study. Plankton hauls, bathythermograph casts, and Secchi disc readings were made at each station.

Bacteriological Data:

Station No.	Clock Time	Type of Experiment	Elapsed Time (hrs)	Depth (ft)	Cl.	Coliforms MPN/ML
3550		Dye patch	0	0	18.50	23.0
					18.41	2.9
			1		18.50	23.0
					18.51	23.0
			2		18.50	6.2
					18.50	6.2
			4		18.50	23.0
					18.50	13.0
			6		18.50	2.3
					18.50	6.2
						MPN/100 gr.
3551		Grid				1,900
3552						500,000 +
3553						350,000
3554						320,000 +
3555						330,000 +
3556						600,000 +
3557						240,000 +
3558						600
3559						6,200
3560						700,000 +

APPENDIX TO CRUISES

BACTERIA AND NUTRIENT

Cruise 224

October 22, 1955

Cruise Description: A dye patch, placed in the Orange County sewer boil was followed for six hours. Surface and subsurface water samples were obtained for bacterial and nutrient study and bottom samples were taken for bacterial observations.

Bacteriological Data:

Station No.	Clock Time	Type of Experiment	Elapsed Time (hrs)	Depth (ft)	Cl.	Coliforms MPN/ML
		Dye patch	0		17.89	35,000
					17.90	17,000
			1		18.33	13,000
					18.33	4,600
			2		18.35	1,100
					18.36	4,900
			4		18.54	130
					18.50	79
			6		18.50	26
					18.50	23
3561		Profile (line from bubble)		0	18.01	70,000
				15	18.50	2,300
				30		62
				45	18.51	23
				M	18.28	10,000
3563		"		0	18.31	6,200
				15	18.48	6,200
				30		620
				45	18.51	2,300
				M	18.41	180
3564		"		0	18.52	230
				15	18.55	2.3
				30		62
				45	18.54	23
				M	18.53	210
3565		"		0	18.54	13
				15		50
				30		2
				45		6.2
				M	18.55	230
3566		"		0	18.55	23
				15	18.54	13
				30		6.2
				45	18.53	23
				M	18.55	520

Cruise 224

144

October 22, 1955

Station No.	Clock Time	Type of Experiment	Elapsed Time (hrs)	Depth (ft)	Cl.	Coliforms MPN/ML
3567		Profile		0	18.43	70,000
		(opposite		15	18.54	2,300
		side of		30		23
		bubble)		45	18.53	62
				M	18.38	1,600
3568		"		0	18.46	2,300
				15	18.48	23
				30		230
				45	18.53	no sample
				M	18.50	930

APPENDIX TO CRUISES

BACTERIA AND NUTRIENT

Cruise 226

November 3, 1955

Cruise Description: Three bacteria profiles were obtained in the vicinity of the inner boil at the Whites Point sewage outfall. Cores were then taken for bacterial determination and water samples at hydrographic stations were analyzed for nutrients.

Bacteriological Data:

Station No.	Clock Time	Type of Experiment	Elapsed Time (hrs)	Depth (ft)	Cl.	Coliforms MPN/ML
3619		Grid				Neg at 24 m.
3620						"
3621						"
3622						"
3623						"
3625						"
3626						"
3627						"
3624A		Dye patch	0			6,200
3624B			0			2,300
3628		Profile		0		2,300
				25		6,200
				40		24,000
				70		nil
				100		2.3
				M		nil
3629		"		0		620
				25		23
				40		230
				70		6.2
				100		2,300
3630		"		0		nil
				25		"
				40		"
				70		"
				100		"

APPENDIX TO CRUISES

BACTERIA AND NUTRIENT

Cruise 226

November 4, 1955

Cruise Description: Nine hydrographic and bacteria stations were occupied in a line extending downcoast from the Orange County sewer outfall. Water and bottom samples were analyzed for bacteria and nutrients. A dye patch, placed over the outfall was followed for four hours.

Bacteriological Data:

Station No.	Clock Time	Type of Experiment	Elapsed Time (hrs)	Depth (ft)	Cl.	Coliforms MPN/ML
3631		Dye patch	0			13,000
						24,000
			2			170
						490
3632		Profile	4			240
						540
				0		24,000
				15		230
				25		620
3633		Profile		45		6.2
				M		nil
				0		2,300
				15		230
				25		2,300
3634		"		45		23
				M		nil
				0		>700
				15		23
				25		62
3635		"		45		6.2
				M		60
				0		>700
				15		62
				25		62
3636		"		45		23
				M		2,300
				0		700
				15		62
				25		13
				45		4.6
				M		60

Cruise 226

November 4, 1955

Station No.	Clock Time	Type of Experiment	Elapsed Time (hrs)	Depth (ft)	C1.	Coliforms MPN/ML
3637		"		0		23
				15		62
				25		23
				45		2.3
				M		2,300
3638		"		0		240
				M		130
3639		"		0		6.2
				M		nil
3640		"		0		6.2
				M		nil

APPENDIX TO CRUISES
BACTERIA AND NUTRIENT

Cruise 228

November 17, 1955

Cruise Description: Subsurface samples were taken by divers in the vicinity of the Whites Point sewage outfall. These samples, along with cores, were taken for bacterial analysis. Two bacteria profiles were made; one at the outfall, and one at the end of the divers' track.

Bacteriological Data:

Station No.	Clock Time	Type of Experiment	Elapsed Time (hrs)	Depth (in)	Cl.	Coliforms MPN/ML
3649		Divers	0			70,000 +
			2			2,300
						6,200
						70,000
3651A		Sediment		0		6
3651B		(core)		0		nil
3651B				1		nil
3651B				5		23
3651C						23
3651D						23
				(ft)		
3652		Profile		0		70,000
		(outfall)		15		6,200
				40		70,000
				80		6,200
				115		24,000
3653		Profile		0		130
		(2nd diver		15		62
		station)		40		62
				80		240
				115		2,400

APPENDIX TO CRUISES

BACTERIA AND NUTRIENT

Cruise 228

November 18, 1955

Cruise Description: Sixteen hydrographic and bacteriological stations were occupied in the vicinity of the Orange County sewage outfall. Water samples were taken for bacterial content and nutrient determination. A dye patch was placed in the boil and followed for eight hours.

Bacteriological Data:

Station No.	Clock Time	Type of Experiment	Elapsed Time (hrs)	Depth (ft)	Cl.	Coliforms MPN/ML
3655		Dye patch	0			92,000
						160,000
			2			3,300
						2,100
			4			2,400 +
3654		Profile				72
			6			1.3
						28
				0		2,300
				15		2,300
3656		"		30		70,000 +
				45		230
				0		2,300
				15		2,300
				30		70,000 +
3657		"		45		130
				0		620
				15		13,000
				30		70,000
				45		620
3658		"		0		70,000
				15		2,300
				30		2,300
				45		13,000
				0		6,200
3659		"		15		620
				30		2.3
				40		23
				0		620
				15		6.2
3660		"		30		230
				45		62

Cruise 228

November 18, 1955

Station No.	Clock Time	Type of Experiment	Elapsed Time (hrs)	Depth (ft)	Cl.	Coliforms MPN/ML
3661		Profile		0		6.2
				15		95
				30		0.6
				45		23
3662		"		0		6,200
				15		620
				30		6,200
				45		230
3663		"		0		2,300
				15		5,000
				30		620
				45		62
3664		"		0		23
				15		62
				30		0.5
				45		23
				M		nil
3665		"		0		620
				15		23
				30		2.3
				45		23
3666		"		0		23
				15		2,300
				30		50
				45		620
				M		13
3667		"		0		620
				15		620
				30		62
				45		50
3668		"		0		21,000
				15		2,300
				30		62
				40		230
3669		"		0		50
				15		620
				30		230
				45		23
3670		"		0		6.2
				15		23
				30		62
				45		230

APPENDIX TO CRUISES

BACTERIA AND NUTRIENT

Cruise 230

November 30 to December 1, 1955

Cruise Description: On both days, core and snapper samples of bottom sediment in Santa Monica Bay were collected. Bacteria samples were taken at each station from the surface sediment. On the 30th, the Eckman current meter was employed at the anchor station.

Bacteriological Data:

Station No.	Clock Time	Type of Experiment	Elapsed Time (hrs)	Depth (ft)	Cl.	Coliforms* MPN/ML
3678 to						
3703		Sediment				nil
3704		"				6
3705 to						
3713		"				nil
3714		"				23
3715		"				nil
3716		"				130
3717		"				nil
3718		"				240
3719		"				6
3720		"				700
3721		"				nil

* All samples checked for enteric pathogens.

Tetrathionate + S.S. agar showed growth in only two samples:

3686 - aeroleic spore former on triple sugar iron agar.

3715 - no growth on triple sugar iron agar.

No suspicious colonies (pathogens) noted on EMB agar. Mostly flat, spreading, rough (spore former) types.

APPENDIX TO CRUISES

BACTERIA AND NUTRIENT

Cruise 233

December 19-20, 1955

Cruise Description: Both days were spent in the vicinity of the Orange County sewer outfall using dye marker to track portions of the sewage field. Water samples were taken for bacteria study. Hydrographic stations were occupied near the boil to obtain water samples for nutrient determinations. Hydrophotometer and plankton casts were made at each station.

Bacteriological Data:

Station No.	Clock Time	Type of Experiment	Elapsed Time (hrs)	Depth (ft)	Cl.	Coliforms MPN/ML
3737		Dye patch	0		17.92	17,000
			1		18.38	700
			2		18.43	490
			3		18.41	46
			4		18.46	7
3741		"	0		17.94	17,000
			1		18.36	2,300
			2		18.41	1,100
			3		18.45	790
			3:45		18.46	490
3749		"	0		18.41	3,300
			1:15		18.40	3,300
			2		18.41	4,900
			3		18.41	2,200
			4		18.41	79
3700		"	0		18.11	35,000
			1		18.41	3,300
			2		18.41	430
			3		18.48	46
			4		18.45	28
		Storage Exper.	0-A			70,000
			2-A			70,000
			4-A			24,000
			6-A			13,000
			0-B			24,000
#11	?	Surface Samples	2-B			24,000
			4-B			6,200
#12	1539	"	6-B			2,300
					17.72	24,000
#12	1539	"			18.58	620

Cruise 233

December 19-20, 1955

Station No.	Clock Time	Type of Experiment	Elapsed Time (hrs)	Depth (ft)	Cl.	Coliforms MPN/ML
#13	1543	"			18.60	6.20
#14	1547	"			18.60	2.30
#15	1551	"			18.64	0.60
#16	1555	"			18.64	nil
#17	1559	"			18.64	0.46
#18	1603	"			18.62	nil
#19	1607	"			18.65	0.60
#20	1610	"			18.59	nil
#21	1614	"			18.72	0.60
#22	1618	"			18.57	0.60
#23	1622	"			18.61	nil
#24	1627	"			18.66	0.60
#25	1630	"			18.57	0.60
#26	1634	"			18.62	nil
#27	1639	"			18.64	nil
#28	1644	"			18.59	nil
#29	1648	"			18.66	nil
#30	1655	"			17.90	70,000
#41	1149	"			18.11	70,000
#42	1152	"			18.66	2.30
#43	1159	"			18.60	2.30
#44	1203	"			18.55	0.60
#45	1206	"			18.58	nil
#46	1210	"			18.59	nil
#47	1234	"			18.61	nil
#48	1237	"			18.60	0.60
#49	1241	"			18.56	nil
#50	1243	"			18.52	0.60
#51	1247	"			18.51	0.60
#52	1251	"			18.52	nil
#53	1255	"			18.51	nil
#54	1259	"			18.53	nil
#55	1302	"			18.51	nil
#56	1306	"			18.52	nil
#57	1309	"			18.51	nil
#58	1313	"			18.52	nil
#59	1316	"			18.52	nil

APPENDIX TO CRUISES
BACTERIA AND NUTRIENT

Cruise 234

December 30, 1955

Cruise Description: Twenty-five bottom sediment samples were obtained for bacteria analysis. Stations were in the general vicinity of the Hyperion outfall and extended as far as five miles to sea.

Bacteriological Data:

Station No.	Clock Time	Type of Experiment	Elapsed Time (hrs)	Depth (ft)	Cl.	Coliforms* MPN/ML
3780		Sediment				nil
3781		"				6.10
3782		"				1.80
3783		"				4.50
3784		"				nil
3785		"				2.00
3786		"				9.30
3787		"				1.80
3788		"				2.00
3789		"				nil
3790		"				nil
3791		"				2
3792		"				2
3793		"				6.10
3794		"				4.50
3795		"				nil
3796		"				nil
3797		"				nil
3798		"				nil
3799-C		"				nil
3800		"				nil
3801		"				nil
3802		"				nil
3803		"				nil
3804-S		"				4.50
3804-C		"				nil

* All samples checked for enteric pathogens. All results negative using tetrathionate broth and S.S. agar.

APPENDIX TO CRUISES

BACTERIA AND NUTRIENT

Cruise 235

January 12-13, 1956

Cruise Description: On both days dye patches, placed in the boil of the Hyperion sewer outfall, were followed. Hydrographic stations were established in lines paralleling the shore and water samples were collected for bacteria and nutrient determinations. At each station plankton hauls were made and transparency of water was recorded.

Bacteriological Data:

Station No.	Clock Time	Type of Experiment	Elapsed Time (hrs)	Depth (ft)	Cl.	Coliforms MPN/ML
3805		Dye patch	0		17.45	13,000
			1		18.12	3,300
			2		18.10	1,300
			4		18.38	330
			6		18.39	23
3816		"	0		18.08	11,000
3806		Profile		0	17.91	13,000
				15		24,000
				30		130
				45		130
3807		"		0	17.86	24,000
				15		nil
				30		nil
				45		nil
3808		"		0	18.37	0.60
				15		620
				30		6.20
				45		23
3809		"		0	18.40	5,000
				15		23
				30		62
				45		23
3810		"		0	18.32	62
				15		620
				30		23
				45		230
3811		"		0	18.51	620
				15		230
				30		6.20
				45		23

Cruise 235

January 12-13, 1956

Station No.	Clock Time	Type of Experiment	Elapsed Time (hrs)	Depth (ft)	Cl.	Coliforms MPN/ML
3811		Profile		0	18.51	620
				15		230
				30		6.20
				45		23
3812		"		0	18.69	nil
				10		nil
				25		nil
				40		1.30
3813		"		0	18.72	nil
				10		nil
				25		nil
				40		1.30
3814		"		0	18.33	2,300
				10		2,300
				25		230
				40		0.60
3815		"		0	18.45	2,300
				10		5,000
				25		6.20
				40		6.20
3817		"		0	17.98	70,000 +
				15		13,000
				25		620
				45		2,300
3818		"		0	18.39	2,300
				15		2,300
				25		130
				45		62
3819		"		0	18.36	24,000
				15		62
				25		23
				45		620
3820		"		0	18.29	2,300
				15		2,300
				25		62
				45		23
3821		"		0	18.65	62
				15		23
				20		23
				45		2.30
3822		"		0	18.54	5,000
				15		62
				20		0.60
				45		23
3823		"		0	18.53	2,300
				15		62
				20		0.60
				45		230

Cruise 235

January 12-13, 1956

Station No.	Clock Time	Type of Experiment	Elapsed Time (hrs)	Depth (ft)	Cl.	Coliforms MPN/ML
3824		Profile		0	18.58	23
				10		23
				20		62
				40		23
3825		"		0	18.48	620
				15		230
				25		6.20
				45		620
3826		"		0	18.43	2,300
				15		6.20
				25		2.30
				45		13

APPENDIX TO CRUISES

BACTERIA AND NUTRIENT

Cruise 237

February 2, 1956

Cruise Description: Ten bacteria and hydrographic stations were occupied in a line parallel to shore, extending upward from the Los Angeles County sewer outfall. Coincidentally, a dye patch was placed in the boil of the nearshore outfall and followed for six hours.

Bacteriological Data:

Station No.	Clock Time	Type of Experiment	Elapsed Time (hrs)	Depth (ft)	Cl.	Coliforms* MPN/ML
3877		Dye patch	0		18.12	43,000
			1		18.17	160,000
			2		18.02	240,000 +
			4		18.02	160,000
			6		18.01	240,000 +

* Results questionable - plugs were accidentally soaked with polluted water.

APPENDIX TO CRUISES
BACTERIA AND NUTRIENTS

Cruise 237

February 3, 1956

Cruise Description: Four bacteria profiles were taken on a line extending seaward from the outer Los Angeles County sewer outfall. A dye patch was followed from the inner boil. Several hydrographic stations were occupied and a grid of stations was run in which samples were taken for bacterial study.

Bacteriological Data:

Station No.	Clock Time	Type of Experiment	Elapsed Time (hrs)	Depth (ft)	Cl.	Coliforms MPN/ML
3889		Dye patch	0		18.22	240,000 + *
			1		18.27	22,000 + *
			2		18.31	24,000 + *
			4		18.28	13 *
			6		18.28	64 *
		Dye toxicity**	0			1.30
		(with dye)	1 3/4			120
			4			6,200
			6			620
		Dye toxicity	0			21
		(without dye)	1 3/4			6,200
			4			620
			6			6,200
#19		Grid		0	18.41	.60
#20					18.43	.60
#21					18.39	nil
#22					18.40	23
#23					18.46	230
#24					18.42	6,200
#25					18.43	620
#26					18.44	6,200
#27					18.42	2,300
#28					18.39	620
#29					18.44	23
#30					18.44	.60

* Results questionable - plugs were accidentally soaked with polluted water.

** Experiment carried out with 0.015% fluorescein in sea water. Highest concentration of dye in actual samples: $5 \times 10^{-6}\%$ in 3877-4; $1 \times 10^{-5}\%$ in 3889-1.

Cruise 237

February 3, 1956

Station No.	Clock Time	Type of Experiment	Elapsed Time (hrs)	Depth (ft)	Cl.	Coliforms MPN/ML
#31					18.36	6.20
#32					18.37	62
#33					18.41	230
#34					18.38	2,300
#35					18.39	1,300
#36					18.39	620
#37					18.42	62
#38					18.39	6.20
#39					18.45	1,300
#40					18.42	6,200
#41					18.44	2,300
3878		Profile		0	18.19	nil
				15	18.19	.60
				50	18.31	nil
				85	18.53	230
				120		230
3879		"		0	18.19	2.30
				15	18.18	nil
				50	18.35	nil
				85	18.53	nil
				120		nil
3880		"		0	18.18	lost
				15	18.19	lost
				50	18.30	24,000
				85	18.48	lost
				120		lost
3881		"		0	18.21	nil*
				15	18.19	lost
				50	18.37	nil
				85	18.52	lost
				120		23*
3882		"		0	18.20	lost
				15	18.20	lost
				50	18.38	6.20*
				85	18.54	nil
				120		13***
3883		"		0	18.20	nil*
				15	18.16	62
				50	18.29	620
				85	18.51	6.20*
				120		210*
3884		"		0	18.19	.60*
				15	18.19	5*
				50	18.23	620
				85	18.51	12*
				120		nil

* Results questionable - plugs were accidentally soaked with polluted water.

*** Muddy sample.

Cruise 237

161

February 3, 1956

Station No.	Clock Time	Type of Experiment	Elapsed Time (hrs)	Depth (ft)	Cl.	Coliforms MPN/ML
3885		Profile		0	18.19	nil
				15	18.16	nil
				50	18.25	nil
				85	18.49	nil
3886		"		120		6.20
				0	18.18	nil
				15	18.17	nil
				50	18.25	.46(?)
				85	18.52	23(?)
3887		"		120		6.2
				0	18.21	lost
				15	18.18	lost
				50	18.24	lost
				85	18.49	lost
3888		"		120		lost
3890		"		0		23*
				0	18.33	nil
				15		6,200
				50		2,300
				85		230
3891		"		120		6,200
				0	18.33	2.30
				15		.60
				50		nil
				85		nil
3892		"		120		230
				0	18.32	nil*
				15	18.33	.60*
				50	18.43	nil
				85	18.51	nil
3893		"		120		230
				0	18.33	nil
				15		nil
				50		nil
				85		nil
				120		2.30

* Results questionable - plugs were accidentally soaked with polluted water.

APPENDIX TO CRUISES
BACTERIA AND NUTRIENT

Cruise 238

February 12, 1956

Cruise Description: A dye patch was released into the inner sewage boil at the Whites Point outfall and followed for six hours. Hydrographic, bacteria, and hydrophotometer stations were occupied in a line paralleling the shore. Water samples were taken for bacteria and nutrient determinations and plankton and bathythermograph casts were made at each station.

Bacteriological Data:

Station No.	Clock Time	Type of Experiment	Elapsed Time (hrs)	Depth (ft)	Cl.	Coliforms MPN/ML
3877		Dye patch	0			2,300
			1			1,400
			2			950
			4			95
			6 1/3			230
		Dye toxicity (dye)	0-A			2,300
			0-B			6,200
			2-A			6,200
			2-B			62
			4-A			2,300
			4-B			6,200
			6-A			6,200
			6-B			2,300
		Dye toxicity (control)	0-A			2,100
			0-B			24,000
			2-A			2,300
			2-B			6,200
			4-A			2,300
			4-B			6,200
			6-A			2,300
			6-B			2,300
3898		Profile		0		6,200
				15		6,200
				65		130
				95		6,200
				125		6.20
3899		"		0		2,300
				15		6,200
				65		2,300
				95		6,200
				125		230

Cruise 238

163

February 12, 1956

Station No.	Clock Time	Type of Experiment	Elapsed Time (hrs)	Depth (ft)	C1.	Coliforms MPN/ML
3900		Profile		0		2,300
				15		2,300
				65		230
				95		620
				125		2,300
3901		"		0		6,200
				15		2,300
				65		6.20
				95		nil
				125		2,300
3902		"		0		nil
				15		620
				65		2,100
				95		24,000
				125		62
3903		"		0		24,000
				15		2,300
				65		62
				95		nil
				125		62
3904		"		0		130
				15		2,300
				65		230
				95		62
				125		620
3905		"		0		62
				15		230
				65		620
				95		6,200
				125		230
3906		"		0		620
				15		2,300
				65		23
				95		23
				125		230
3907		"		0		230
				15		2,300
				65		70,000
				95		6,200
				125		2,300

APPENDIX TO CRUISES

BACTERIA AND NUTRIENT

Cruise 243

March 8, 1956

Cruise Description: Two grids were run in the vicinity of the Hyperion outfall. The grids were located between two dye patches started almost simultaneously on opposite poles of the boil and were rectangular in shape.

Bacteriological Data:

Station No.	Clock Time	Type of Experiment	Elapsed Time (hrs)	Depth (ft)	Cl.	Coliforms MPN/ML
#1		Grid - 1		0	18.70	620
#2					18.54	5,000
#3					18.90	1,300
#4					19.05	2,300
#5					18.93	24,000
#6					19.23	2,300
#7					18.61	6,200
#8					18.79	70,000
#9					18.46	24,000
#10					18.30	6,200
#11					19.00	13,000
#12					18.48	24,000
#13					18.67	6,200
#14					18.65	6,200
#15					18.79	2,300
#16					18.55	2,300
#17					18.80	6,200
#18					18.72	6,200
#19					18.82	620
#20					18.89	230
#21					18.80	2,300
#22					18.87	2,300
#23					18.80	2,300
#24					18.81	2,300
#25					18.77	2,300
#26					18.77	2,300
#27					18.95	2,300
#28					18.75	2,300
#29					18.74	2,300
#30					18.83	2,300
#31					18.22	2,300
#32					18.14	6,200

Cruise 243

165

March 8, 1956

Station No.	Clock Time	Type of Experiment	Elapsed Time (hrs)	Depth (ft)	C1.	Coliforms MPN/ML
#33		Grid - 1		0	18.39	70,000
#34					18.47	2,300
#35					18.50	6,200
#36					18.57	2,300
#37					18.53	2,300
#38					18.54	2,300
#39					18.55	230
#40					18.56	620
#41					18.59	2,300
#42					18.64	210
#43					18.60	2,300
#44					18.68	2,300
#45					18.51	620
#46					18.75	2,300
#47					18.53	6,200
#48					18.58	6,200
#49					18.57	2,300
#50					18.41	5,000
#51		Grid - 2		0	18.71	95
#52					18.49	230
#53					18.58	620
#54					18.68	2,300
#55					18.70	2,300
#56					18.51	2,300
#57					18.45	6,200
#58					18.49	70,000
#59					18.43	24,000
#60					18.34	24,000
#61					18.33	24,000
#62					18.38	6,200
#63						24,000
#64					18.47	6,200
#65					18.58	2,300
#66					18.54	6,200
#67					18.71	620
#68					18.60	2,300
#69					18.61	620
#70					18.59	2,300
#71					18.60	2,300
#72					18.61	620
#73					18.63	6,200
#74					18.56	620
#75					18.72	70,000 +
#76					18.53	6,200
#77					18.60	6,200
#78					18.47	6,200
#79					18.57	24,000
#80					18.49	70,000 +

Cruise 243

March 8, 1956

Station No.	Clock Time	Type of Experiment	Elapsed Time (hrs)	Depth (ft)	Cl.	Coliforms MPN/ML
#81					18.53	24,000
#82					18.59	6,200
#83					18.53	13,000
#84					18.59	2,300
#85					18.65	6,200
#86					18.84	24,000
#87					18.63	620
#88					18.74	620
#89					18.94	230
#90					18.65	620
#91					18.83	230
#92					18.64	620
#93					18.58	62
#94					18.45	620
#95					18.50	620
#96					18.37	2,300
#97					18.36	6,200
#98					18.25	6,200
#99					18.27	70,000
#100					18.32	13,000
XX		(Composite sample from boil)				70,000 +

APPENDIX TO CRUISES

BACTERIA AND NUTRIENT

Cruise 248

April 17, 1956

Cruise Description: Primary unchlorinated effluent was released at the Hyperion Treatment Plant. Two dye patches were released in the center of the seven sewage boils and followed. Surface water samples were taken for bacteria determinations over grids covering the dye patch areas. Bacteria profiles were then made, with hydrophotometer casts at each profile station.

Bacteriological Data:

Station No.	Clock Time	Type of Experiment	Elapsed Time (hrs)	Depth (ft)	Cl.	Coliforms MPN/ML
4084		Dye patch	0		17.80	54,000
			2		18.11	17,000
			4		18.20	490
			6		18.33	4.90
			8		18.37	13
4085		"	0		17.84	24,000
			2		18.01	7,900
			4		18.19	1,300
			6		18.36	1.70
			8		18.40	1.30
4091						
#11		Grid - 1		0	18.41	2,300
#12					18.15	24,000
#13					18.20	5,000
#14					18.25	6,200
#15					18.27	2,300
#16					18.23	1,300
#17					18.12	13,000
#18					18.23	70,000
#19					18.25	2,300
#20					18.15	6,200
#21					18.17	2,300
#22					18.23	2,300
#23					18.13	70,000
#24					18.24	6,200
#25					18.28	5,000
#26					18.17	6,200
#27					18.11	2,300
#28					18.14	2,300
#29					18.16	13,000

Cruise 248

April 17, 1956

Station No.	Clock Time	Type of Experiment	Elapsed Time (hrs)	Depth (ft)	Cl.	Coliforms MPN/ML
#30		Grid - 1		0	18.16	2,300
#31					18.26	6,200
#32					18.25	6,200
#33					18.31	2,300
#34					18.28	2,100
#35					18.27	6,200
4097						
#36		Grid - 2	0		18.35	6,200
#37					18.32	2,300
#38					18.32	62
#39					18.31	620
#40					18.29	230
#41					18.32	230
#42					18.27	620
#43					18.29	1,300
#44					18.32	230
#45					18.32	230
#46					18.32	62
#47					18.34	230
#48					18.31	230
#49					18.32	62
#50					18.34	50
#51					18.32	620
#52					18.35	620
#53					18.36	130
#54					18.35	62
#55					18.34	230
#56					18.32	230
#57					18.31	500
#58					18.32	620
#59					18.33	62
#60					18.35	23
4086		Profile		0	18.00	24,000
				15	18.21	70,000 +
				30	18.58	230
				45	18.62	130
4087				0	18.27	6,200
				15	18.49	2,300
				30	18.60	1,300
				45	18.60	130
4088				0	18.04	24,000
				15	18.47	5,000
				30	18.60	620
				45	18.60	62
4089				0	18.18	24,000
				15	18.39	6,200
				30	18.61	620
				45	18.61	21

Cruise 248

April 17, 1956

Station No.	Clock Time	Type of Experiment	Elapsed Time (hrs)	Depth (ft)	Cl.	Coliforms MPN/ML
4090		Profile		0	18.37	230
				15	18.55	130
				30	18.57	62
				45	18.61	2,300
4092		"		0	18.13	6,200
				15	18.48	23
				30	18.59	62
				45	18.61	62
4093		"		0	18.24	13,000
				15	18.49	23*
				30	18.54	62
				45	18.55	23
4094		"		0	18.13	1,300
				15	18.50	2,300
				30	18.51	230
				45	18.56	2.30
4095		"		0	18.17	230
				15	18.48	62
				30	18.53	nil
				45	18.49	23
4096		"		0	18.29	62
				15	18.38	62
				30	18.50	0.60
				45	18.55	0.60

* Muddy sample.

APPENDIX TO CRUISES

BACTERIA AND NUTRIENT

Cruise 249

April 21-22, 1956

Cruise Description: Bottom sediment samples were collected in the vicinity of the Orange County sewage outfall through the use of divers, a bacterial bottom sampler, and a snapper. Secchi disc and surface temperature readings were obtained for each sampling position. Water transparencies were noted in the morning and evening.

Bacteriological Data:

Station No.	Clock Time	Type of Experiment	Elapsed Time (hrs)	Depth (ft)	Cl.	Coliforms MPN/CM ²
#1*		Sediment				250
#2*						2,500
#3*						920
#4*						52,000
#5*						25,000
#6A						25,000
#6B						5,200
#6D1*						9,200
#6D2*						25,000
#7						9,200
#8						520
#9						92
#10						nil
#11*						52
#12*						5,200
#13*						920
#14*						9,200
#15*						no sample
#16*						25,000
#17*						25,000
#18						24
#19						no sample
#20						92
#21*						5,200
#22*						2,500

* Diver samples.

Cruise 249

April 21-22, 1956

Station No.	Clock Time	Type of Experiment	Elapsed Time (hrs)	Depth (ft)	Cl.	Coliforms MPN/CM ²
#23*						25,000
#24*						25,000
#25*						9,200
#26*						9,200
#27**						9,200
#28						920
#29**						520
#30**						92
#31*						250
#32*						920
#33*						250
#34*						520
#35*						520
#36						92
#37						80
#38						24
#39						250
#40						24
#41*						nil
#42*						520
#43*						200
#44*						250
#45*						920
#46						920
#47						920
#48						92
#49						nil
#50						nil
#51*						24
#52*						24
#53*						250
#54*						250
#55*						200
#56						250
#57						24
#58						52
#59						920
#60						92
#61*						92
#62*						nil
#63*						nil
#64*						18
#65*						24
#66						2,500
#67						250

* Diver samples.

** Snapper samples.

Cruise 249

172

April 21-22, 1956

Station No.	Clock Time	Type of Experiment	Elapsed Time (hrs)	Depth (ft)	Cl.	Coliforms MPN/CM ²
#68						92
#69						250
#70						nil
#71*						nil
#72*						nil
#73*						24
#74*						24
#75*						nil
#76						52
#77						24
#78						92
#79						250
#80						nil
#81*						24
#82*						nil
#83*						24
#84*						nil
#85*						24
#86						2,500
#87						92
#88						920
#89						nil
#90						24
#91*						920
#92*						nil
#93*						24
#94*						nil
#95*						24
#96						nil
#97						250
#98						24
#99						250
#100						24

* Diver samples.

APPENDIX TO CRUISES

BACTERIA AND NUTRIENT

Cruise 252

May 8, 1956

Cruise Description: A profile series of bacteria stations were run. Primary effluent was discharged from the Whites Point outfall and followed through the use of dye patches.

Bacteriological Data:

Station No.	Clock Time	Type of Experiment	Elapsed Time (hrs)	Depth (ft)	Cl.	Coliforms MPN/ML
		Dye toxicity (with dye*)	0-A			23
			0-B			620
			2-A			6.2
			2-B			6.2
			4-A			nil
			4-B			nil
			6-A			0.46
			6-B			0.6*
		Dye toxicity (without dye)	0-A			62
			0-B			23
			2-A			2.3
			2-B			6.2
			4-A			0.6
			4-B			0.46
			6-A			nil
			6-B			nil
4216A		Dye patch	0		17.57	24,000
			2		18.12	3,300
			4		18.08	230
			6		18.32	7
			8		18.20	0.45
4216B		"	0		17.79	13,000
			2		18.04	3,300
			4		18.18	11
			6		18.21	7
			8		18.21	2.3-
4217		Profile		0	17.74	23
				15	18.52	620
				30	18.66	620
				45	18.68	230
4218		"		0	18.06	6,200
				15	18.64	6.2
				30	18.68	130
				45	18.66	23

* 0.01% fluorescein dye.

Cruise 252

174

May 8, 1956

Station No.	Clock Time	Type of Experiment	Elapsed Time (hrs)	Depth (ft)	Cl.	Coliforms MPN/ML
4219		Profile		0	18.39	2,300
				15	18.68	1,300
				30	18.66	23
				45	18.50	50
4220		"		0	17.93	130
				15	18.68	13
				30	18.62	0.6
				45	18.66	0.6
4221		"		0	18.43	62
				15	18.56	23
				30	18.67	23
				45	18.60	6.2
4222		"		0	18.51	62
				15	18.64	230
				30	18.69	nil
				45	18.67	nil
4223		"		0	17.83	230
				15	18.59	230
				30	18.63	5
				45	18.67	nil
4224		"		0	18.29	6.2
				15	18.69	62
				30	18.64	nil
				45	18.67	5
4225						
#11		Grid -1		0	18.03	2,300
#12					18.00	6,200
#13					17.88	6,200
#14					17.76	1,300
#15					17.74	6,200
#16					17.91	6,200
#17					17.72	130
#18					17.74	24,000
#19					17.69	2,300
#20					17.73	1,300
#21					17.93	2,300
#22					17.97	24,000
#23					17.87	2,300
#24					17.91	2,300
#25					18.03	6,200
#26					17.86	5
#27					17.79	2,300
#28					17.75	13,000
#29					17.78	70,000
#30					17.84	1,300
#31					17.98	2,300
#32					18.03	6,200
#33					18.02	2,300
#34					18.03	1,300
#35					18.02	2,300

Cruise 252

May 8, 1956

Station No.	Clock Time	Type of Experiment	Elapsed Time (hrs)	Depth (ft)	Cl.	Coliforms MPN/ML
4226						
#36		Grid - 2		0	18.31	13
#37					18.29	23
#38					18.23	6.2
#39					18.18	23
#40					18.15	62
#41					18.15	6.2
#42					18.15	6.2
#43					18.14	62
#44					18.24	62
#45					18.19	23
#46					18.25	23
#47					18.19	23
#48					18.20	23
#49					18.16	62
#50					18.16	230
#51					18.16	23
#52					18.16	6.2
#53					18.20	23
#54					18.19	62
#55					18.24	50
#56					18.29	23
#57					18.22	62
#58					18.20	23
#59					18.20	62
#60					18.19	62

APPENDIX TO CRUISES

BACTERIA AND NUTRIENT

Cruise 254

May 22-23, 1956

Cruise Description: Radioactive scandium (46) was released through the pipe at the Los Angeles County sewer outfall. The radioactive field was followed by dye patch and by the cruising over of various grid patterns. Hydrographic stations were spaced along the grid.

Bacteriological Data:

Station No.	Clock Time	Type of Experiment	Elapsed Time (hrs)	Depth (ft)	Cl.	Coliforms MPN/ML
4237		Dye patch	0		17.81	13,000
			2		18.18	6,400
			4		18.16	54,000
			6		18.15	130
			8		18.29	23
			9½		18.18	79
4238		"	0		17.50	54,000
			2		18.16	13,000
			4		18.10	330
			6		18.19	700
			8		18.09	330
			10		18.13	33
May 22	1144	Surface sample		0	18.24	6,200
	1414				18.15	5,000
	1427				18.29	2,300
	1439				18.29	2,300
	1440				18.28	620
	1444				18.26	230
	1506				18.26	620
	1700				18.24	620
	1705				18.34	230
	1732				18.30	62
	2155				18.27	620
May 23	0953				18.50	6.2
4236	0830	Profile		0*	17.90	13,000
				0	18.36	6,200
				15	18.27	6,200
				30	18.60	620
				45	18.63	24,000

* In sewage boil.

Cruise 254

177

May 22-23, 1956

Station No.	Clock Time	Type of Experiment	Elapsed Time (hrs)	Depth (ft)	C1.	Coliforms MPN/ML
4239	1030	Profile		0	18.26	5,000
				15	18.62	2,300
				30	18.62	23
				45	18.54	230
4240	1315	"		0	18.39	620
				15	18.56	13
				30	18.64	0.6
				45	18.88	23
4241	1540	"		0	18.33	2,300
				15	18.36	230
				30	18.65	230
				45	18.61	62
4242	1815	"		0	18.33	620
				10	18.35	230
				20	18.54	230
				30	18.58	130
4243	2210	"		0	18.26	62
				10	18.34	62
				20	18.40	230
				30	18.70	23
4244	0040	"		0	18.67	62
				10	18.44	62
				20	18.59	0.6
				30	18.78	2.3

APPENDIX TO CRUISES

178

BACTERIA AND NUTRIENT

Cruise 258

June 11-12, 1956

Cruise Description: On the first day of the cruise, subsurface water motion in the vicinity of the ^{2/4 Anaheim} Los Angeles County sewage outfall was investigated using floats and current crosses. On the 12th, a bacteria survey was run on primary effluent in the Hyperion area.

Bacteriological Data:

Station No.	Clock Time	Type of Experiment	Elapsed Time (hrs)	Depth (ft)	Cl.	Coliforms MPN/ML
4285A	0600	Dye patch	0	0	16.44	240,000 +
			2*		17.82	17,000
4285B	0630	"	0		17.41	92,000
			2*		17.92	17,000
			4		17.83	1,300
			5 $\frac{1}{2}$		18.05	79
4288	0915	"	0		17.53	35,000
			2		17.96	2,200
			4		18.03	49
			5		18.11	70
4286A						
#11	0800	Grid-1		0	18.13	620
#12					17.87	70,000 +
#13					18.07	24,000
#14					17.63	70,000
#15					17.83	24,000
#16					17.86	13,000
#17					17.75	24,000
#18					17.85	24,000
#19					17.81	6,200
#20					17.75	24,000
#21					17.69	24,000
#22					17.79	13,000
#23					17.76	21,000
#24					17.80	6,200
#25					17.83	24,000
#26					17.78	70,000
#27					17.65	24,000
#28					17.77	70,000 +
#29					17.74	24,000

* 4285 A and 4285 B merged between 2 and 4 hour periods

APPENDIX TO CRUISES
BACTERIA AND NUTRIENT

Cruise 258

June 11-12, 1956

Station No.	Clock Time	Type of Experiment	Elapsed Time (hrs)	Depth	Cl.	Coliforms MPN/ML
4286A						
#30					17.73	24,000
#31					18.03	6.2
#32					18.06	6.2
#33					17.82	2.9
#34					17.94	6,200
#35					17.87	5,000
4286B						
#36	1200	Grid-2		0	18.17	130
#37					18.22	2,300
#38					18.22	23
#39					17.99	620
#40					17.93	230
#41				0	18.15	6.2
#42					17.89	62
#43					17.94	62
#44					18.20	6.2
#45					18.19	62
#46					18.10	230
#47					17.96	230
#48					18.47	230
#49					18.32	23
#50					18.11	620
#51					18.01	620
#52					18.03	620
#53					18.10	2,300
#54					18.21	23
#55					18.10	1,300
#56					18.19	620
#57					18.02	620
#58					18.19	620
#59					18.18	230
#60					18.08	230
4287		Profile		0	17.95	70,000
				15	17.81	70,000
				30	18.69	62
				45	18.76	62
4289		"		0	18.19	24,000
				15	18.36	6,200
				30	18.59	230
				45	18.67	230
4290		"		0	18.05	2,300
				15	18.29	2,300

APPENDIX TO CRUISES

BACTERIA AND NUTRIENT

CRUISE 258

June 11-12, 1956.

Station No.	Clock	Type of Experiment	Elapsed Time (hrs)	Depth (ft)	Cl.	Coliforms MPN/ML
4290		Profile		30	18.59	23
				45	18.68	0.6
4291		"		0	18.43	5,000
				15	18.53	2,300
				30	18.72	60
				45	18.61	6.2
4292		"		0	18.36	2,300
				15	18.73	2,300
				30	18.73	230
				45	18.69	0.6
4293		"		0	18.37	2,300
				15	18.42	230
				30	18.58	2.3
				45	18.62	6.2
4294		"		0	18.55	620
				15	18.65	23
				30	18.68	23
				45	18.62	62
4295		"		0	18.26	230
				15	18.46	230
				30	18.53	230
				45	18.62	0.6
4296		"		0	18.29	23
				15	18.22	62
				30	18.37	130
				45	18.55	2.3

APPENDIX TO CRUISES

BACTERIA AND NUTRIENT

Cruise 259

June 21-22, 1956

Cruise Description: A 110 station grid was covered from the beach out to the 150 foot line in the area of the hyperion sewage out-fall. Bacteria determinations were made on all bottom sediment samples. Portions of the samples were saved for lab. analysis.

Bacteriological Data:

Station No.	Clock Time	Type of Experiment	Elapsed Time	Depth (Feet)	Cl.	Coliforms MPN/CM ²
#1		Sediment				Nil
#2						"
#3						"
#4						"
#5						"
#6						"
#7						"
#8						"
#9						"
#11						"
#12						"
#13						"
#14						"
#15						"
#16						"
#17						"
#18						"
#19						"
#21						"
#22						"
#23						"
#24						"
#25						"
#26						"
#27						"
#28						"
#29						"
#30						"
#31						"
#32						"
#33						"
#34						"
#35						24

Cruise 259

June 21-22, 1956

Station No.	Clock Time	Type of Experiment	Elapsed Time	Depth (Feet)	Cl.	Coliforms MPN/CM ²
#36		Sediment				Nil
#37						"
#38						"
#39						"
#40						"
#41						"
#42						"
#43						"
#44						"
#45						24
#46						24
#47						Nil
#48						"
#49						"
#50						"
#51						"
#52						"
#53						"
#54						180
#55						24
#56						Nil
#57						"
#58						"
#59						"
#60						"
#61						"
#62						"
#63						"
#64						"
#65						24
#66						Nil
#67						"
#68						"
#69						"
#70						"
#71						"
#72						"
#73						"
#74						"
#75						"
#76						"
#77						"
#78						"
#79						"
#80						"
#81						"

Cruise 259

June 21-22, 1956

Station No.	Clock Time	Type of Experiment	Elapsed Time	Depth (Feet)	Cl.	Coliform MPN/CM ²
#82		Sediment				Nil
#83						"
#84						250
#85						52
#86						Nil
#87						"
#88						"
#89						"
#90						"
#91						"
#92						"
#93						"
#94						"
#95						24
#96						Nil
#97						"
#98						"
#99						"
#100						"
#101						"
#102						"
#103						"
#104						"
#105						"
#106						"
#107						"
#108						"
#109						"
# 0*						"

*Anchorage 6/21

APPENDIX TO CRUISES

BACTERIA AND NUTRIENT

Cruise Lab.

July 16, 1956

Bacteriological Data:

Station No.	Clock Time	Type of Experiment	Elapsed Time (hrs)	Depth (ft)	Cl.	Coliforms MPN/ML
		Dye Toxicity*	0			6,200
		In sunlight				
		(with dye)	2			24,000
			2			0.60
						0.60
			4			1.30
						2.30
			6			2.30
						0.60
		Dye Toxicity	0			13,000
		(without dye)				70,000
		Dye Toxicity	2			1.3
		(without dye)				2.1
			4			Nil
						0.60
			6			2.30
						0.46

*0.01% Sodium Fluorescein

5% Primary Effluent in Sea Water

} 100 ml in Pressor Bottles

APPENDIX TO CRUISES

BACTERIA AND NUTRIENT

Cruise Lab.

July 1956

Bacteriological Data:

Station No.	Clock Time	Type of Experiment	Elapsed Time	Depth (Feet)	C1.	Coliforms MPN/ML
		Dye Toxicity*	0			24,000
		In sunlight				70,000
		(with dye)	2			2,300
						2,300
			4			2,300
						620
			6			230
						230
		Dye Toxicity	0			24,000
		(without dye)				70,000
		Dye Toxicity	2			230
		(without dye)				2,300
			4			23
						6.2
			6			0.60
						Nil

*0.01% Sodium Fluorescein

5% Primary Effluent in sea water)

} 500 ML in open beakers

APPENDIX TO CRUISES

NUTRIENTS AND WATER PROPERTIES

Station No.	Temp. °C	Depth (Ft.)	Secchi Disk Trans.	Plankton at 50 ft. (ml.)	PO ₄ μ g-a/L	SiO ₃ μ g-a/L	NO ₃ μ g-a/L	DO ml/L	NH ₄ μ g-a/L
3551	15.74	0	20	0.10*	1.7	6.0		3.25	
	15.15	15			1.8	6.0		4.90	
	11.59	95			2.0+	9.0		3.05	
3552	15.81	0	23	0.06*	1.7	7.0		5.37	
	15.45	15			1.6	5.0		2.96	
	10.98	95			2.0	8.0		2.33	
3553	15.42	0	21	0.1-*	1.7	7.0		2.92	
	15.22	15			1.7	6.0		3.43	
	11.03	95			2.0+	8.0		2.95	
3554	15.60	0	24	0.1-*	1.8	6.0		4.83	
	15.37	15			1.3	6.0		4.37	
	11.10	95			1.5	8.0		3.35	
3555	15.70	0	20	0.1-*	1.7	6.0		5.38	
	15.04	15			2.2	6.0		3.38	
	10.74	95			2.1	9.0		2.47	
3556	15.50	0	23	0.1-*	2.3	6.0		3.39	
	15.46	15			2.2	6.0		3.08	
	11.14	95			2.1	8.0		2.38	
3557	15.50	0	18	0.1-*	2.3	6.0		3.49	
	15.09	15			2.3	6.0		3.60	
	11.47	95			2.1	8.0		2.56	
3558	15.50	0	23		2.1	6.0		2.34	
	15.43	15			2.2	6.0		3.18	
	11.05	95			2.1	8.0		2.53	
3559	15.70	0	28		2.1	6.0		4.79	
	15.48	15			1.9	6.0		2.57	
	11.14	95			2.1	8.0		2.72	
3560	15.95	0	25	0.1-*	2.2	6.0		3.39	
	15.46	15			2.3	6.0		3.17	
	11.25	95			2.3	8.0		2.17	
3561	15.70	0	16	0.1-	6.0	20.0**		4.76	
	15.83	15			1.2	6.0**		3.03	
	14.13	45			1.0	7.0**		2.92	
3563	16.35	0	18	0.1-	4.2	20.0**		3.95	
	16.15	15			1.8	6.0**		3.42	
	14.05	45			1.3	7.0**		3.03	
3564	16.60	0	17	0.1-	1.5	7.0**		5.06	
	16.03	15			0.6	5.0**		4.25	
	14.63	45			1.0	7.0**		3.62	
3565	16.60	0	19	0.1-	1.2	6.0**		3.88	
	16.17	15			0.9	5.0**		2.96	
	15.21	45			0.8	4.0**		3.82	
3566	16.62	0	15	0.1-	1.3	6.0**		4.37	
	16.05	15			1.4	5.0**		4.19	
	13.89	45			1.6	8.0**		3.35	

*Taken at 100 feet

**Uncorrected for salt factor.

APPENDIX TO CRUISES

187

NUTRIENTS AND WATER PROPERTIES

Station No.	Temp. °C	Depth (Ft.)	Secchi Disk Trans. (Feet)	Plankton at 50 ft (ml.)	PO ₄ μg-a/L	SiO ₃ μg-2/L	NO ₃ μg-a/L	DO ml/L	NH ₄ μg-a/L
3567	16.20	0	18	0.1+	0.6	9.0**		2.93	
	16.25	15			0.6	4.0**		3.24	
	14.71	45			0.2	6.0**		2.84	
3568	17.00	0	13	0.1-	3.2	8.0**		5.95	
	16.68	15			2.4	6.0**		4.23	
	14.60	45			1.4	7.0**		5.49	
3569	17.02	0	34	0.1- *	1.5	3.0**		5.14	
	16.92	15			1.5	2.0**		4.10	
	15.45	45			1.4	2.0**		3.79	
3619	16.30	0	24	0.10 *	0.3	5.0	1.4	3.58	
	15.73	15			0.4	6.0	3.0	3.81	
	11.16	115			1.2	20.0	18.0	4.06	
3620	16.00	0	25	0.15 *	0.3+	4.0	0.7	1.46	
	15.68	15			0.4	6.0	1.0	4.68	
	13.22	50			1.1	15.0	9.0	2.74	
	12.15	110			0.9	30.0	14.0	3.01	
3621	16.20	0	29	0.1- *	0.4	4.0	0.8	2.53	
	15.88	15			0.4	4.0	0.8	2.76	
	14.03	50			1.1	9.0	9.0	2.39	
	11.79	110			1.0	15.0	17.0	2.72	
3622	16.50	0	29	0.10 *	0.3	3.0		3.75	
	15.62	15			0.4	4.0		1.67	
	14.08	50			0.7	8.0		2.21	
	12.43	110			1.1	15.0		2.30	
3623	16.05	0	25	0.20 *	1.2	8.0		4.06	
	15.94	15			1.1	9.0		2.57	
	15.54	50			0.9	9.0		2.31	
	12.17	110			1.4	25.0		2.69	
3625	16.40	0	25	0.10 *	0.6	5.0	1.2	3.84	
	16.11	15			0.5	5.0	0.7	3.57	
	15.49	50			0.9	8.0		3.00	
	14.18	110			1.3	10.0	4.0	2.03	
3626	16.30	0	27	0.10 *	0.5	6.0	1.2	6.14	
	16.12	15			0.4	4.0	0.8	4.42	
	15.52	50			0.8	5.0		3.16	
	12.73	110			1.5	10.0	7.0	2.71	
3627	16.10	0	27	0.10 *	0.6	5.0		6.11	
	16.14	15			0.5	4.0		3.75	
	15.35	50			1.0	5.0		3.41	
	13.06	110			2.2	9.0		2.54	
3628	15.00	0	10		2.6	20.0	9.0	1.20	
	15.86	15			0.5	5.0	1.0	3.84	
	15.60	50			0.9	8.0	0.7	2.87	
		110			1.0	9.0	1.4	4.11	

*Taken at 100 feet.

**Uncorrected for salt factor.

NUTRIENTS AND WATER PROPERTIES

Station No.	Temp. °C	Depth (Ft.)	Secchi Disk Trans. (Feet)	Plankton at 50 ft (ml.)	PO ₄ μ g-a/L	SiO ₃ μ g-a/L	NO ₃ μ g-a/L	DO ml/L	NH ₄ μ g-a/L
3632	16.15	0	5	0.10	1.4	5.0		3.71	
	15.76	15			0.9	4.0		3.84	
	15.02	45			0.8	5.0		3.78	
3633	16.40	0	17	0.10	1.0	5.0		3.60	
	15.97	15			1.7	6.0		5.04	
	15.09	45			0.1	5.0		3.99	
3634	16.40	0	22	0.10	2.1	6.0		3.33	
	15.88	15			0.5	5.0		5.31	
	15.13	45			0.1	5.0		3.11	
3635	16.85	0	30	0.10	1.8	6.0		3.99	
	16.40	15			<0.1	4.0		5.72	
	15.26	45			<0.1	5.0		4.89	
3636	16.80	0	23	0.15	1.4	6.0		4.07	
	16.30	15			<0.1	5.0		3.01	
	14.97	45			0.1	6.0		3.02	
3637	17.05	0	25	0.10	Trace	5.0		4.24	
	16.30	15			Trace	4.0		3.93	
	15.78	45			0	6.0		5.55	
3638	16.60	0	19		0.2	4.0		2.64	
	16.36	15			0	4.0		4.38	
	14.91	45			0	6.0		3.92	
3639	17.00	0	21		0.1	4.0		3.86	
	16.61	15			0	3.0		3.56	
	15.14	45			0.1	6.0		3.80	
3640	16.90	0	20		0.1	4.0		4.52	
	16.49	15			0.1	3.0		5.18	
	15.57	45			0.1	5.0		5.76	
3652	15.25	0	7	2.60 *	2.1	9.5		5.24	11.0
	14.60	15			2.0	9.5		5.34	12.0
	14.32	40			2.7	13.0		3.08	17.0
	12.39	120			3.8	15.0		2.99	18.0
3653	15.90	0	38	0.50 *	>1.0**	11.0		5.54	1.0
	15.63	25			0.8	7.0		3.07	<1.0
	12.97	105			2.3	12.0		3.26	6.0
3654		0	23	1.00	0.9	6.0		5.21	<1.0
	15.10	15			1.1	5.0		5.74	0
	15.57	30			1.4	6.5		5.22	0
	15.14	45			0.7	7.0		5.20	0
3656	15.80	0	34	1.00	1.2	7.0		5.70	1.0
	15.56	15			0.5	6.0		5.72	<1.0
	15.47	30			0.4	6.0		5.27	0
0918	14.83	45			0.9	8.0		4.34	<1.0
Inter.	15.94	0			2.2	8.5		5.67	
3657	15.77	0	25	0.10	2.2	9.5		5.51	22.0
	15.64	15			0.5	3.0		5.82	<1.0
	15.32	30			0.1	6.5		4.60	0
	14.19	45			0.8	8.0		4.41	<1.0

*Taken at 100 feet.

**Dye in sample, determination questionable.

APPENDIX TO CRUISES.

NUTRIENTS AND WATER PROPERTIES

Station No.	Temp. °C	Depth (Ft.)	Secchi Disk Trans. (Feet)	Plankton at 50 ft (ml.)	PO ₄ μ g-a/L	SiO ₃ μ g-a/L	NO ₃ μ g-a/L	DO ml/L	NH ₄ μ g-a/L
0928									
Inter.	15.75	0			4.4	8.5		4.07	
3658	16.00	0	30	0.10	2.4	9.5		5.59	30.0
	15.66	15			0.5	7.0		5.81	1.0
	15.16	30			0.6	6.5		5.48	<1.0
	14.45	45			0.8	7.0		5.18	<1.0
1002									
Inter.	15.85	0			0.9	4.0		5.76	
3659	15.95	0	33		2.2	10.0		5.62	19.0
	15.31	15			0.4	5.0		5.80	<1.0
	15.69	30			0.3	5.0		5.25	<1.0
	15.33	45			0.6	7.0		4.96	<1.0
1021									
Inter.	16.10	0			2.1	8.0		2.91	
3660	16.40	0	32	0.20	0.5	9.5		5.82	4.5
	15.76	15			0.6	3.0		5.29	<1.0
	15.76	30			0.4	4.0		5.74	<1.0
	14.85	45			0.8	7.5		1.27	<1.0
1043									
Inter.	16.30	0			2.1	7.5		5.83	
3661	16.30	0	40		1.0	8.0		5.61	20.0
	15.73	15			0.6	3.0		5.86	1.0
	15.63	30			0.5	6.0		5.56	<1.0
	15.25	45			0.4	7.5		1.26	<1.0
1107									
Inter.	16.55	0			2.3	8.0		5.58	
3662	16.35	0			1.0	8.5		5.64	18.0
	15.71	15			0.4	3.0		5.94	2.0
	15.64	30			0.2	3.5		3.69	<1.0
	15.45	45			0.3	5.0		3.16	<1.0
1135									
Inter.	16.20	0			7.2	25.0		5.41	
3663	16.00	0	25		1.9	8.5		5.64	13.0
	15.60	15			1.4	8.5		5.69	11.0
	15.54	30			0.7	6.5		5.78	<1.0
	14.71	45			0.7	7.5		5.30	<1.0
12:05									
Inter.	16.20	0			4.0	15.0		2.67	
3664	16.60	0	32		2.2	8.0		5.24	19.0
	15.77	15			0.7	4.0		5.61	3.0
	15.57	30			0.4	4.0		5.46	<1.0
	14.79	45			0.8	7.5		3.72	<1.0
3665	16.10	0	34		0.6	5.0		3.03	3.0
	15.82	15			0.5	5.0		2.79	1.5
	15.33	30			0.5	5.0		3.58	<1.0
	14.66	45			0.7	8.0		2.97	<1.0

APPENDIX TO CRUISES

NUTRIENTS AND WATER PROPERTIES

Station No.	Temp. °C	Depth (Ft.)	Secchi Disk Trans. (Feet)	Plankton at 50 ft (ml.)	PO ₄ μ g-a/L	SiO ₃ μ g-a/L	NO ₃ μ g-a/L	DO ml/L	NH ₄ μ g-a/L
1342									
Inter.	16.00	0			11.2	35.0			
3666	16.20	0	25		0.4	5.0		5.76	1.0
	16.03	15			0.5	5.0		5.79	<1.0
	15.11	30			0.4	5.0		5.64	<1.0
	14.87	45			0.6	8.0		5.22	<1.0
3667	15.90	0	30		0.7	6.0		5.52	8.0
	15.82	15			0.5	5.0		5.83	3.0
	15.28	30			0.6	7.0		4.80	<1.0
	14.46	45			0.7	8.0		5.19	<1.0
1421									
Inter.	15.80	0			3.6	18.0		5.29	
3668	15.75	0	31		2.4	11.0		5.05	32.0
	15.56	15			0.5	4.0		3.13	<1.0
	14.53	30			0.6	7.5		5.32	<1.0
	13.91	45			0.8	8.0		5.06	<1.0
14:47									
Inter.	15.30	0			4.8	25.0		5.23	
3669	16.20	0	28		0.5	5.0		5.96	2.5
15:00									
Inter.	16.20	0			0.5	5.0		5.90	
3670	16.20	0	23		0.5	5.0		5.94	<1.0
10:42									
Inter.		0			0.3	4.0	1.5	4.82	
3738	13.65	0	Meter*	10.00	1.1	7.0	2.0	5.45	
	13.06	15			0.8	4.5	1.5	3.17	
	13.13	30			0.9	6.5	1.5	3.54	
	13.77	45			0.9	6.5	1.0	5.41	
3739	13.85	0	Meter*	5.00	4.4	10.0	4.5	4.06	
	13.47	15			2.9	11.0	1.0	2.94	
	13.16	30			1.1	7.0	1.5	5.29	
	13.25	45			0.9	6.5	1.5	1.38	
3740	13.50	0	Meter*		1.0	7.0	2.0	5.35	
	13.14	15			1.0	7.0	1.5	5.40	
	13.12	30			0.9	7.0	2.0	5.51	
	13.18	45			0.2	7.0	1.5	5.43	
3742	13.65	0	Meter*	12.00	1.4	7.5	1.5	4.76	
	13.10	15			1.0	7.0	1.5	5.35	
	13.16	30			1.8	7.0	1.0	4.05	
	13.78	45			7.0	7.5	1.0	4.15	
3743	13.65	0	Meter*	15.00	0.8	7.0	1.5	5.60	
	13.29	15			0.9	7.0	1.0	5.34	
	13.32	30			0.4	7.0	1.5	3.71	
	13.25	45			0.2	7.5	1.0	3.26	
3744	13.65	0	Meter*	6.00	2.0	7.0	1.5	4.28	
	13.34	15			0.7	6.0	1.5	5.51	

*See sect. on light transmission in sea water

APPENDIX TO CRUISES

NUTRIENTS AND WATER PROPERTIES

Station No.	Temp. °C	Depth (Ft.)	Secchi Disk Trans. (Feet)	Plankton at 50 ft (ml.)	PO ₄ μg-a/L	SiO ₃ μg-a/L	NO ₃ μg-a/L	DO ml/L	NH ₄ μg-a/L
3744	13.31	30			0.5	6.0	1.5	3.81	
	13.25	45			0.7	6.0	1.5	4.25	
3745	13.75	0	Meter*	15.00	1.5	7.5	1.5	3.19	
	13.32	15			0.6	6.0	1.5	5.52	
	13.29	30			0.5	6.0	3.0	5.49	
	13.04	45			0.8	7.5	1.5	4.94	
3746	13.65	0	Meter*	6.00	0.8	6.0	1.0	2.73	
	13.25	15			1.4	8.0	1.5	4.07	
	13.22	30			0.7	7.0	1.5	3.65	
	13.84	45			0.6	6.5	1.0	4.75	
3747	13.57	0	Meter*	4.00	1.7	7.0	1.5	4.74	
	13.26	15			1.8	7.5	1.0	5.44	
	13.18	30			0.7	7.0	1.0	5.48	
	13.25	45			0.6	6.5	1.0	5.50	
3748	13.60	0		4.60	1.6	7.5	1.0	4.09	
	13.17	15			1.2	7.0	1.5	5.49	
	13.13	30			0.8	7.0	1.0	4.72	
	13.25	45			0.6	7.0	1.5	5.27	
1539									
Inter.		0				7.0	2.0	5.15	
1543									
Inter.		0			0.7	8.5	2.0	5.35	
1547									
Inter.		0			0.1	6.0	1.5	3.68	
1551									
Inter.		0			0.1	4.5	1.5	4.01	
1555									
Inter.		0			0.2	4.5	1.5	4.23	
1559									
Inter.		0			0.3	5.0	1.5	3.24	
1603									
Inter.		0			0.3	6.0	2.0	5.20	
1607									
Inter.		0			< 1	5.0	1.5	5.32	
1610									
Inter.		0			< 1	4.5	2.5	5.15	
1614									
Inter.		0			< 1	4.5		3.63	
1618		0			0.2	6.0		5.70	
1622									
Inter.		0			0.2	6.5	2.5	5.62	
1630									
Inter.		0			0.1	7.0	2.0	5.65	
1634									
Inter.		0			0.1	5.0	1.5	5.66	
1639									
Inter.		0			0.1	6.0	1.5	5.63	
1644									
Inter		0			> .1		1.5	5.52	

*See sect. on light transmission in sea water.

APPENDIX TO CRUISES

NUTRIENTS AND WATER PROPERTIES

Station No.	Temp. °C	Depth (Ft.)	Secchi Disk Trans. (Feet)	Plankton at 50 ft (ml.)	PO ₄ μ g-a/L	SiO ₃ μ g-a/L	NO ₃ μ g-a/L	DO ml-L	NH ₄ μ g-2/L
1648									
Inter.		0			0.2		2.0	5.62	
Inter.		0						5.55	
Inter.		0						5.17	
3751	13.45	0	Meter*		0.6	5.0	1.0	5.23	
	12.75	15			0.8	7.0	1.5	4.67	
	13.06	30			0.9	7.0	1.5	4.70	
	13.18	45			0.6	7.0	1.5	3.87	
3752	13.75	0	"	6.00	5.6	15.0	1.0	4.87	
	13.10	15			3.8	9.0	1.0	5.44	
	13.47	30			0.9	6.0	1.5	5.51	
	13.96	45			0.8	7.0	1.5	5.49	
3753	13.80	0	"	4.00	8.0	20.0	4.5	3.82	
	13.38	15			3.6	11.0	2.0	5.40	
	13.38	30			1.1	6.0	1.5	5.56	
	13.31	45			0.8	5.0	1.5	5.38	
3754	13.80	0	"	11.00	13.0	26.0	18.0	5.16	
	12.91	15			7.6	22.0	5.0	5.33	
	13.33	30			3.0	9.0	1.5	4.90	
	13.35	45			0.6	5.0	2.0	5.55	
3755	13.75	0	"	6.0	0.7	9.0	1.0		
	13.33	15			0.7	5.0	1.5	5.43	
	13.36	30			0.6	5.0	2.0	5.34	
	13.39	45			0.6	7.0	1.5	5.51	
3756	13.95	0	"	15.00	0.3	6.0	1.5	4.54	
	13.55	15			0.3	5.0	1.5	5.65	
	13.39	30			0.3	6.0	3.5	5.52	
	13.25	45			0.5	7.0	2.0	5.28	
3757	14.10	0	"	7.00	0.3	6.0		5.58	
	13.68	15			0.3	7.0		4.86	
	13.64	30			0.3	5.5		5.54	
	13.40	45			0.4	7.0		5.34	
3758	14.25	0	"	12.00	0.3	6.0	1.5	5.77	
	13.68	15			0.3	6.0	1.5	5.67	
	13.68	30			0.3	6.0	2.0	5.66	
	13.60	45			0.3	6.5	1.5	5.61	
3759	14.15	0	"	5.00	0.3	6.0	1.5	5.70	
	13.77	15			0.3	6.0	2.0	5.64	
	13.47	30			0.3	6.0	2.0	5.58	
	13.38	45			0.4	7.0	1.5	5.54	
3760	14.30	0	"	7.00	0.1	6.0	2.0	5.50	
	13.57	15			0.2	7.0	2.5	5.48	
	13.33	30			0.1	7.0	3.0	5.56	
	13.24	45			0.2	7.0	2.5	5.39	

*See section on light transmission in sea water

APPENDIX TO CRUISES

NUTRIENTS AND WATER PROPERTIES

Station No.	Temp. °C	Depth (Ft.)	Secchi Disk Trans. (Feet)	Plankton at 50 ft (ml.)	PO ₄ μ g-a/L	SiO ₃ μ g-a/L	NO ₃ μ g-a/L	DO ml/L	NH ₄ μ g-a/L
3761	14.50	0	Meter*		0.6	6.0	1.5	5.69	
		15			0.4	6.5	1.5	5.71	
		30			0.4	5.0	1.5	5.63	
		45			0.4	6.5	2.0	5.67	
3806	12.80	0	5*	10.00	5.2	15.0	1.5	4.97	12.0
	12.56	15			2.6	11.0	2.0	5.08	<1.0
	11.76?	25			1.5	14.0	1.5	4.35	0
	11.84?	45			1.9	16.0	2.0	3.88	0
3807	13.00	0	6*	4.00	7.6	21.0	1.0	5.04	40.0
	12.34	15			2.2	10.0	2.0	5.34	<1.0
	11.68	25			1.7	14.0	0	4.27	0
	11.51	45			1.8	17.0	1.0	3.79	0
3808	13.10	0	11*	8.00	7.4	19.0	2.0	4.97	37.0
	12.93	15			2.2	8.0	1.0	5.77	<1.0
	11.95	25			1.6	12.0	1.0	4.78	0
	10.18?	45			1.8	16.0	2.5	3.95	0
3809	13.30	0	18*		2.8	9.0	1.5	5.94	13.0
	12.96	15			2.7	9.0	0	2.21	0
	11.65	25			1.4	13.0	2.0	4.71	<1.0
		45			1.7	15.0	2.0	3.58	0
3810	13.40	0	20*	1.50	4.2	14.0	1.0	5.82	16.0
	13.21	15			3.3	11.0	0	6.14	7.0
	12.35	25			1.5	10.0	1.0	5.08	<1.0
	11.35?	45			1.6	16.0	5.0	4.30?	0
3811	13.40	0	9*		4.8	14.0	2.0	6.30	20.0
	13.12	15			3.6	9.0	1.0	6.11	4.5
	12.60	25			1.6	7.0	1.5	5.55	<1.0
	9.02?	45			1.4	14.0	3.5	4.23	0
3812	14.15	0	27*	2.50	0.6	6.0	0	6.76	<1.0
	13.57	15			0.8	6.0	0	6.94	0
	12.59	25			0.8	10.0	0	5.51	0
	11.71?	45			1.2	15.0	2.0	4.25	<1.0
3813	13.85	0	23*	2.00	0.7	6.0	0.5	6.66	13.0
	13.45	15			0.7	5.0	0.5	6.99	0
	13.20	25			0.7	6.0	0.5	6.84	0
	10.48?	45			1.6	14.0	5.0	4.32	<1.0
3814	13.65	0	24*	1.50	0.5	5.0	0.5	6.95	<1.0
		15			0.7	5.0	0.5	6.98	0
		25			0.7	5.0	0.5	7.00	0
		45			1.4	13.0	5.0	4.74	<1.0
3815	13.30	0	7*	4.00	6.0	17.0	2.0	5.96	46.0
	13.21	15			3.4	12.0	1.5	5.83?	13.0
	12.77	25			1.0	7.0	2.0	6.05	10.0
	11.23?	45			1.6	17.0	6.5	3.91	<1.0

*See sect. on light transmission in sea water.

NUTRIENTS AND WATER PROPERTIES

Station No.	Temp. °C	Depth (Ft.)	Secchi Disk Trans. (Feet)	Plankton at 50 ft (ml.)	PO ₄ μ g-a/L	SiO ₃ μ g-a/L	NO ₃ μ g-a/L	DO ml/L	NH ₄ μ g-a/L
3817	12.70	0	5*	4.00	8.9	11.0	3.0	5.08	66.0
	12.61	15			2.4	11.0	2.5	3.78	13.0
	12.03	25			1.2	11.0	3.5	5.21	0
		45			1.3	21.0	4.5	4.94	<1.0
3818	13.55	0	5*	3.00	4.0	12.0	2.5	5.79	28.0
	13.12	15			2.5	10.0	1.5	5.91	14.0
	12.25	25			0.8	7.0	2.5	5.88	<1.0
	11.92	45			1.2	10.0	0	4.85	<1.0
3819	12.90	0	15*	1.00	10.0	23.0	4.0	4.92	62.0
	12.93	15			2.0	8.0	1.5	6.11	<1.0
	12.70	25			0.6	5.0	0.5	6.61	<1.0
	11.92	45							
3820	13.30	0	22*	0.75	7.0	19.0	4.0	5.24	68.0
	13.27	15			2.7	7.0	1.5	6.14	<1.0
	12.67	25			0.9	7.0	1.5	6.96	<1.0
	12.26	45			0.8	8.0	2.0	4.96	<1.0
3821	13.60	0	22*		5.6	15.0	3.0	5.55	36.0
	12.80	15			1.3	6.0	1.5	6.50	3.0
	12.41	25			0.5	6.0	2.0	6.28	0
	12.27	45			0.7	7.0	5.5	5.97	0
3822	13.60	0	23*		1.8	7.0	2.0	5.69	11.0
	12.92	15			0.8	5.0	1.5	6.83	0
	12.39	25			0.5	7.0	4.0	6.02	0
	12.28	45			0.8	7.0	6.0	4.93	0
3823	13.80	0	22*	.50	4.3	10.0	6.0	5.26	16.0
	12.68	15			0.8	5.0	1.5	6.62	0
	12.23	25			0.9	7.0	6.0	5.97	0
	12.17	45			1.1	7.0	6.5	5.64	<1.0
3824	13.30	0	24	1.00	1.0	6.0	6.0	6.37	0
	12.97	15			1.2	5.0	1.5	5.96	0
	12.17	25			0.9	7.0	6.0	3.16	0
	12.19	45			1.0	7.0	6.5	5.59	0
3825	13.60	0	25	0.75	1.6	6.0	3.0	6.52	4.5
	13.11	15			1.4	6.0	2.0	5.98	15.0
	12.44	25			0.8	7.0	3.0	6.28	0
	12.19	45			1.1	7.0	4.0	5.66	0
3826	13.95	0	15*	1.00	2.8	10.0	6.0	6.47	8.5
	12.94	15			1.3	6.0	2.5	6.45	<1.0
	12.31	25			1.0	7.0	6.0	5.78	0
	12.11	45			1.2	9.0	10.5	5.37	0
3827	13.30	0			0.4	4.0	0	6.63	<1.0
	12.78	15			0.4	4.5	0	6.79	0
	12.17	25			0.5	5.0	1.5	6.34	0
	12.11	45			0.5	5.5	2.0	6.19	0
3878	12.80	0	36	2.40	1.0	7.5	0	5.97	10.5
	12.59	25			0.9	7.0	4.0	5.92	4.5

*See sect. on light transmission in sea water.

APPENDIX TO CRUISES

195

NUTRIENTS AND WATER PROPERTIES

Station No.	Temp. °C	Depth (Ft.)	Secchi Disk Trans. (Feet)	Plankton at 50 ft. (ml.)	PO ₄ μ g-a/L	SiO ₃ μ g-a/L	NO ₃ μ g-a/L	DO ml/L	NH ₄ μ g-a/L
3878	12.57	75			1.8	7.0	4.0	5.81	3.5
	11.64	125			1.3	11.0	7.5	4.37	3.0
3879	13.00	0	39	2.00	0.8	7.5	4.5	5.94	5.5
	12.57	25			0.9	7.0	0	6.01	4.5
	12.47	75			1.1	9.5	7.0	4.97	5.5
	11.43	125			1.4	14.5	16.0	3.54	1.5
3880	13.00	0	18	15.00	0.8	6.0	3.5	5.99	5.0
	12.60	25			0.9	6.0	4.5	5.98	4.5
	12.51	75			1.0	6.0	4.0	5.74	4.0
	11.04	125			3.8	16.0	22.0	3.58	11.5
3881	12.95	0	36	2.00	0.6	6.0	0	5.17	5.0
	12.72	25			0.8	6.5	3.5	6.09	4.0
	12.49	75			0.9	8.5	4.5	5.44	2.5
	11.65	125			1.3	12.0	12.0	4.40	1.5
3882	13.0	0	29	2.00	0.6	8.5	5.0	6.16	5.0
	12.67	25			0.6	8.0	3.5	5.19	4.0
	12.38	75			0.9	10.0	7.0	5.21	4.5
	11.18	125			Muddy	16.0	20.0	2.17	Muddy
3883	13.05	0	25	2.50	0.7	7.0	3.5	6.14	5.5
	12.71	25			0.9	7.5	3.0	6.11	3.5
	12.47	75			0.6	8.5	4.5	5.48	4.0
	11.66	125			1.6	12.5	8.0	4.33	2.0
3884	13.20	0	29	2.00	0.7	7.5	5.0	6.11	5.0
	12.69	25			0.5	6.5	0.5	6.16	4.0
	12.53	75			1.4	10.0	5.0	5.56	6.0
	11.81	125			1.3	13.0	2.5	4.60	1.5
3885	13.15	0	30		0.6	8.5	4.5	6.14	4.0
	12.66	25			0.5	6.5	1.0	6.28	3.0
	12.53	75			1.3	8.0	3.5	5.58	6.0
	11.92	125			1.0	12.0	3.5	4.72	1.0
3886	13.10	0	48	1.00	0.6	8.5	3.0	6.07	5.0
	12.82	25			0.5	6.5	0	6.20	4.0
	12.54	75			0.7	7.5	1.5	5.75	4.0
	12.09	125			1.1	11.5	12.0	4.06	3.0
3887	12.90	0		0.75	0.5	7.5	4.5	6.24	4.0
	12.80	25			0.5	7.0	0	6.23	3.0
	12.60	75			0.6	6.5	0.5	4.89	1.0
	12.05	125			1.0	12.0	0.5	4.76	2.5
3888	13.10	0		1.25	0.6	7.0	3.5?	6.09	3.0
	12.78	25			0.5	6.5	0.5	5.23	3.5
	12.46	75			0.9	8.0	1.0	5.77	3.5
	12.00	125			1.6	13.0	3.0	4.34	5.5
3892	12.95	0	42	1.50	5.5	6.5		6.24	1.5
	12.64	25			5.5	6.5		6.16	1.0
	12.72	75			5.0	6.5		5.88	0
	11.78	125			1.2	13.0		4.27	1.5

APPENDIX TO CRUISES

196

NUTRIENTS AND WATER PROPERTIES

Station No.	Temp. °C	Depth (Ft.)	Secchi Disk Trans. (Feet)	Plankton at 50 ft (ml.)	PO ₄ μ g-a/L	SiO ₃ μ g-a/L	NO ₃ μ g-a/L	DO ml/L	NH ₄ μ g-a/L
3894	13.15	0	54	1.00	5.0	6.5		6.16	<1.0
	12.65	25			5.0	6.5		6.21	<1.0
	12.62	75			4.5	6.5		5.81	<1.0
	8.91	125			2.2	32.0		2.33	0
3895	13.10	0	38	1.60	1.0	8.0		5.99	5.0
	12.60	25			12.0	8.5		6.01	5.0
	12.45	75			1.2	9.0		5.47	5.5
	11.82	125			1.4	13.0		2.71	3.0
3896	13.75	0	25	0.60	1.2	8.5		5.07	8.0
	13.01	25			1.2	8.0		5.64	6.5
	12.80	75			0.5	6.5		6.03	<1
	11.93	125			2.0	11.5		4.48	7.0
3898	12.90	0	18*	10.00	3.2	11.5		5.16	15.0
	12.47	25			2.0	9.5		5.21	9.0
	12.88	75			0.6	4.5		5.98	0
	11.68	125			0.3	12.0		4.49	0
3899	13.00	0	17*	25.00	2.0	8.0		2.82	9.0
	12.59	25			2.2	8.5		2.99	9.5
	12.77	75			0.8	5.5		3.16	2.0
	11.72	125			1.5	12.0		3.66	2.0
3900	13.00	0	16*	18.00	1.9	8.0		5.35	7.5
	12.57	25			1.8	8.0		5.37	7.0
	12.64	75			1.4	7.5		5.50	4.0
	11.75	125			2.2	13.0		4.42	5.0
3901	13.00	0	17*	10.00	2.0	7.5		3.24	8.0
	12.69	25			1.9	7.5		5.33	8.5
	12.98	75			0.5	3.5		6.05	0
	11.74	125			1.3	12.0		4.56	<1.0
3902	13.60	0	16*	11.00	3.2	9.5		5.03	13.0
	12.76	25			2.1	9.5		5.18	8.5
	12.74	75			1.6	5.0		5.42	6.0
	12.98	125			0.7	7.0		5.98	0
3903	13.10	0	23*	10.00	2.0	8.0		5.39	7.0
	12.67	25			1.9	8.5		5.39	6.0
	13.01	75			0.8	6.0		5.95	<1.0
	12.92	125			0.6	5.0		5.97	0
3904	13.50	0	16*	12.00	2.4	11.0		5.06	12.0
	12.68	25			2.0	10.0		5.29	7.0
	13.00	75			0.7	6.0		5.94	0
		125			0.8	7.0		5.62	0
3905	13.20	0	18*	8.00	1.9	9.0		5.42	9.0
	12.77	25			1.8	9.0		5.33	7.0
	13.52	75			0.9	6.0		5.78	1.5
		125			0.8	7.0		5.80	0

*See sect. on light transmission in sea water.

APPENDIX TO CRUISES

NUTRIENTS AND WATER PROPERTIES

Station No.	Temp. °C	Depth (Ft.)	Secchi Disk Trans. (Feet)	Plankton at 50 ft (ml.)	PO ₄ μ g-a/L	SiO ₃ μ g-a/L	NO ₃ μ g-a/L	DO ml/L	NH ₄ μ g-a/L
3906	13.10	0	19*	11.00	1.8	9.0		5.45	7.5
	12.55	25			1.8	8.5		5.50	6.0
	13.04	75			0.5	6.0		6.05	0
		125			2.0	12.0		4.51	5.0
3907	13.20	0	18	13.00	1.5	8.0		5.63	6.0
	12.64	25			1.5	8.0		5.61	6.0
	12.93	75			0.5	6.0		5.47	0
		125			0.7	7.5		5.08	0

*See section on light transmission in sea water.

APPENDIX TO CRUISES

CURRENT STATIONS

Date	Gear	<u>Time</u>		<u>Sec.</u> 50'	Knots	Dir. (True)	Meter Depth (ft)
		Start	Stop				
6-25, 26-55	Current Cross	2227		45	0.67	126°	
Head of		2254		50	0.60	126°	
Santa Monica		2321		55	0.55	122°	
Canyon		2346		80	0.37	119°	
		0011		110	0.27	110°	
		0037		100	0.31	107°	
		0103		200	0.15	140°	
		0129			0	114°	
		0156		200	0.15	106°	
		0240			0	066°	
		0330		70	0.43	053°	
		0357		60	0.50	070°	
		0436		60	0.50	076°	
		0505		50	0.60	090°	
		0533		50	0.60	083°	
		0559		45	0.67	100°	
		0627		65	0.46	100°	
7-11, 12-55	" "	2006		55	0.55	135°	
(Off Redondo)		2104		100	0.30	260°	
		2158		50	0.60	305°	
		2253		55	0.55	020°	
		2351		60	0.50	315°	
		0047		115	0.26	270°	
		0142		50	0.60	260°	
		0240		Neg1.			
		0340		170	0.18	275°	
		0510		240	0.12	310°	

APPENDIX TO CRUISES

199

Date	Gear	CURRENT STATIONS			Knots	Direction (true)
		Time	Stop	Sec. 50'		
8-30, 31-55 (Off Malibu)	Current Cross	0811			0.07	090°
		0844			0.10	090°
		0917			0.07	100°
		0940			0.05	045°
		0945			0.07	135°
		1021			0.04	020°
		1050			0.04	090°
		1120			0.01	120°
		1149			0.11	100°
		1222			0.20	090°
		1254			0.13	120°
		1323			0.25	140°
		2056			0.08	160°
		2133			0.15	170°
		2206			0.17	170°
		2241			0.16	180°
		2314			0.31	225°
		2350			0.22	240°
		0026			0.17	240°
		0059			0.19	240°
		0131			0.13	240°
		0202			0.08	240°
		0238			0.06	220°
		0315			0.04	240°
		0355			0.03	240°
		0432			0.02	270°
		0505			0.08	300°
		0538			0.05	360°

200

200

Date	Gear	Time		Sec 50'	Knots	Dir. (Mag.)	Meter Depth (Feet)
		Start	Stop				
8-30, 31-55	Current Cross	0610			0.06	330 ^{0*}	
		0641			0.04	030 ^{0*}	
		0716			0.33	030 ^{0*}	
		0751			0.33	060 ^{0*}	
6-25,26-55	** Gemware Meter	2036	2046		0.35-	080 ⁰	190
(Head of Santa Monica Canyon)		2129	2139		0.23	090 ⁰	"
		2148	2208		0.19	095 ⁰	"
		2217	2237		0.09	105 ⁰	"
		2244	2305		0.0+	100 ⁰	"
		2311	2331		0.09	140 ⁰	"
		2336	2356		0.0+	165 ⁰	"
		0001	0021		0.10-	155 ⁰	"
		0027	0047		0.10	170 ⁰	"
		0053	0113		0.07	170 ⁰	"
		0119	0139		0.24	180 ⁰	"
		0146	0206		0.21		"
		0230	0250		0.24		"
		0320	0340		0.17	220 ⁰	"
		0347	0407		0.24		"
		0426	0446		0.31	235 ⁰	"
		0455	0515		0.38	225 ⁰	"
		0523	0543		0.35	230 ⁰	"
		0549	0609		0.29	250 ⁰	"
		0617	0637		0.24	255 ⁰	"
7-11,12-55	"	1956	2016		Neg1.	310 ⁰	65
(Hyperion)		2026	2046		"	330 ⁰	"
		2054	2114		0.14	250 ⁰	"
		2122	2142		Neg1.	320 ⁰	"

```
*True direction      Low @ 2015 June 25
**From tide tables: High @ 0135 June 26
                   Low @ 0807 June 26
```


APPENDIX TO CRUISES

201

Date	Gear	CURRENT STATIONS		Knots	Dir. (Mag.)	Meter Depth (ft.)
		Time Start	Time Stop			
7-11,12-55	Gemware Meter	2148	2208	0.10	260 ⁰	65
		2217	2237	Neg1.	230 ⁰	"
		2243	2303	0.15	140 ⁰	"
		2311	2331	0.35	135 ⁰	"
		2341	2402	0.16	130 ⁰	"
		0010	0030	Neg1.		"
		0037	0057	"	110 ⁰	"
		0105	0125	0.17	080 ⁰	"
		0132*	0152	0.10		"
		0200	0220	0.17		"
		0230	0250	0.08	280 ⁰	"
		0303	0323	Neg1.	010 ⁰	"
		0330	0350	0.22	350 ⁰	"
		0400	0420	Neg1.		"
		0430	0450	"	330 ⁰	"
		0500	0520	0.18	350 ⁰	"
		0530	0550	Neg1.		"
		0555	0615	0.09	320 ⁰	"
		0625	0645	0.16	345 ⁰	"
7-27,28-55 (Central Rock Shelf)	"	2153	2213	0.05	180 ⁰	20
		2246	2306	Neg1.	190 ⁰	"
		2338	2358	"	360 ⁰	"
		0033	0053	0.06	330 ⁰	"
		0128	0148	Neg1.	020 ⁰	"
		0223	0243	0.13	240 ⁰	"
		0320	0340	0.14	330 ⁰	"
		0420	0440	0.09	200 ⁰	"
		0520	0540	0.08	020 ⁰	"

*Foam line passed 0135 heading 260⁰ true.

APPENDIX TO CRUISES

202

CURRENT STATIONS

Date	Gear	Time		Sec	Knots	Dir (Mag)	Meter Depth (Ft.)
		Start	Stop				
7-27, 28-55	Gemware Meter	0620	0640		0.10	020 ⁰	20
		0720	0740		0.05	090 ⁰	"
		2115	2135		Neg1.	350 ⁰	100
		2220	2240		"	200 ⁰	100
		2312	2332		"	240 ⁰	"
		0007	0027		"		"
		0103	0123		"	100 ⁰	"
		0153	0213		0.04		"
		0250	0310		Neg1.	270 ⁰	"
		0350	0410		"		"
		0450	0510		"	010 ⁰	"
		0550	0610		0.10	304 ⁰	"
		0650	0710		0.10	305 ⁰	"
		1937	2007		0.15	050 ⁰	35
		2050	2120		Neg1.	350 ⁰	"
7-28,29-55 (Malibu)	"	2013	2043		0.11	110 ⁰	20
		2126	2158		0.07	350 ⁰	"
		1638	1648		0.30	345 ⁰	15
		1713	1723		0.15	330 ⁰	"
8-10-55 (No Limits) Santa Monica Bay	"	1658	1708		0.34	190 ⁰	20
		1725	1733:20		0.25	285 ⁰	"
		2007	2015:20		0.08	350 ⁰	"
		2018	2026:20		0.09	225 ⁰	"
		2044	2052:20		0.07	055 ⁰	"
		2112	2120:20		0.14	070 ⁰	"
		2059	2107:20		0.07		10

APPENDIX TO CRUISES

CURRENT STATIONS

Date	Gear	Time		Sec. 50'	Knots	Dir. (Mag.)	Meter Depth (ft.)
		Start	Stop				
8-24, 25-55 (Malibu)	Gemware Meter	2015	2045		0.09		20
		2058	2128		0.09	310 ⁰	"
		2136	2204		0.06	300 ⁰	"
		2210	2240		0.07	300 ⁰	"
		2245	2315		0.05	350 ⁰	"
		2320	2350		0.09	320 ⁰	"
10-18,19-55 (Rocky Area)	"	1955	2025		0.16	230 ⁰	180
		2041	2111		0.08		"
		2133	2203		0.22	170 ⁰	"
		2230	2300		0.13	180 ⁰	"
		2316	2346		0.11	240 ⁰	"
		0002	0032		0.06	200 ⁰	"
		0045	0115		0.22	210 ⁰	"
		0130	0200		0.16	150 ⁰	"
		0211	0241		Neg1.		"
		0300	0330		0.26	270 ⁰	"
		0357	0427		0.28	110 ⁰	"
		0441	0511		0.18	150 ⁰	"
		0522	0522		Neg1.	155 ⁰	"
		0611	0641		0.24	190 ⁰	"
		1848	1935		0.39	020 ⁰	100
		1955	2025		0.22	050 ⁰	"
		2041	2111		0.26	050 ⁰	"
		2133	2203		0.35	060 ⁰	"
		2230	2300		0.38	060 ⁰	"
		2316	2346		0.39	090 ⁰	"
		0002	0032		0.23	012 ⁰	"
		0045	0115		0.26	070 ⁰	"

APPENDIX TO CRUISES

204

CURRENT STATIONS

Date	Gear	<u>Time</u>		Knots	Dir. (Mag.)	Meter Depth (ft.)
		Start	Stop			
10-18,19-55	Gemware Meter	0130	0200	0.32	130 ⁰	100
		0211	0241	0.50	150 ⁰	"
		0300	0330	0.26	145 ⁰	"
		0357	0427	0.21	135 ⁰	"
		0441	0511	0.15		"
		0522	0552			"
		0611	0641	0.11	160 ⁰	"

Light Transmission in Sea Water

Station Number

Depth (ft)	3671	3672	3673	3674	3675	3676	3677	3687
5	18	48	82	80	77	76	86	96
10	50	52	80	79	80	77	85	94
15	55	58	81	80	78	78	84	97
20	60	59	82	82	82	79	85	96
25	70	79	82	82	92	81		98
30	78	63	83		98			97
35	58	82	83					96
40	43	87	84		89	84	89	
45	50	93	83		89			
50	68			85		99	98	99
55	59	94	85					98
60			85					94
65						98		
70						95		
75		100	87			88	98	
80						81		
85								
90		80					93	
95								
100		79	97	94			89	
105								
110							81	
115							79	
120								
125			100					
130								
135								
140								
145								
150				98				

Station Number

[illegible]

Light Transmission in Sea Water

Station Number

Depth (ft)	3853	3854	3855	3856	3857	3858	3859	3860	3861	3862	3863	3864	3866	3867	3868	3869	3870	3871	3872	3873	3874	3875
5	90	88	87	84	86	89	85	82	84	84	79	82	28	86	59	62	87	87	83	86	83	84
10	90	88	84	85		89	84	84	85	85	79	80	54	81	73	61	87	86	82	86	83	85
15	90	89	83	85	85	87	85	83	86	85	76	79	58	80		62	88	86	82	86	82	84
20	90	89	83	85	84	85	82	84	87	84	76	79	85	90	94	63	87	87	87	85	83	84
25	90	90	88	85		84	83	82	89	84	77	79	85	88	96	68	87	91	87	86	83	81
30	91	90	91	87	83	85	84	84	90	82	78	79	85	88	95	80	88	91	86	87	83	94
35			92	87	84	85	82	82	90	80	80	79	86	89	98	81	89	91	91	87	85	95
40	93	93	93	87	84	85	84	83	90	79	80	79	84	82	94	85	89	93	90	87	84	91
45			92	87	85	86	83	82	92	79	80		83	57	94	86	89	93	88	87	83	93
50	94	95	93	87	86	85	84	83	99	79	79		63	64	95	85	89	94	88	87	83	94
55									88	79	77											
60	95	95	94	88	85	85	85	85	88	80	77			48	96	86	89	96	87		80	95
65									88	82	77											
70		96	92	88	88	85	85	85	88	83	77			53	96	87	92	96	89		79	95
75									88	84	77									95		
80	94	97	93	89	89	86	84	85	88	85	77			58	96	87	95	90	92	96	83	95
90					88				88	85	77						96			96		
100	96	96	92	89	89	86	85	85	88	85	77					90	96	83	96	96	93	93
110									88	85							96			96		
120	83	93	94	90	91	88	89	87	88	85						86	96	83	92	93	98	88
130	73									86							96			90		
140	84	91	93	91	89	90	89	87	88	80						68	96	84	74	83	94	88
150									88	80							96			80		
160		90	93	92	92	91	90	88	88	80								81	70	80	91	
170									88											80	88	
180		91	90	92	92		92											80	75			

Light Transmission in Sea Water

Depth (ft)	Station Number																			
	3876	3898	3899	3900	3901	3902	3903	3904	3905	3906	3908	3909	3910	3911	3912	3913	3914	3915	3916	3917
5	68	48	42	52	48	55	58	52	59	61	62									
10	69	59	19	54	48	58	60	54	56	63	59	60	73	64	75	59	71	52	44	45
15	70	81	18	54	51	59	66	58	55	63	59									33
20	78	69	57	60	59	59	75	63	56	64	58	60	73	76	78	75	77	62	45	46
25	79	62	62	62	72	59	76	63	58	68	59									64
30	81	66	61	61	78	60	77	63	61	72	57	60	76	78	79	73	83	62	44	72
35	91	88	38	62	83	61	78	69	64	79	59									76
40	89	90	28	77	59	62	68	75	64	84	59	66	80	79	81	79	86	71	67	76
45	79	89	42	87	85	61	87	75	93	86	62									77
50	74	88	29	85	87	64	92	78	93	91	68	72	89	80	85	79	86	75	67	77
55		89	38	85	85	64	95	84			69									
60		86	29	83	84	73	90	90	94	94	69	73	90	87	89	81	86	75	70	80
65		85	27	86	84	76	95	91			70									
70		54	28	65	83	78	94	94	96	95	82	75	89	92	90	87	87	78	76	82
75		62	26	69	85	79	94	94			79									
80		78	25	70	83	80	94	95	94	94	82	80	93	93	92	91	96	83	81	85
85		80	25	69	84	94	94	95			82									
90		84	26	71	80	97	93	95	95	93	83	81	94	94	94	92	96	84	87	89
95		81	28	40	73	95	93	95			84									
100		81	31	39	63	98	96	95	94	89	85	81	94	94	94	93	97	85	87	90
105		83	36	41	44	98	98	95												
110		81	37	43	50	98	94	95	93	90		84	93	94	94	94	98	86	87	90
115		83	39	40	65	96	78	95												
120		83	44	49	74	99	51	95	93	88		86	91	94	94	94	99	87	87	88
125		83	65	61	78	85	74	94												
130		83	80	69	78	78	73	90	81	88		84	93	94	94	95	98	89	87	87
135			80	76	76	56	74	89												
140			80	80	76	53		80		76		87	94	93	94	96	98	89	87	88
145				73	70	58		80												
150				63	68			79		81		86	94	93	94	96	96	89	90	88
155																				
160										86			93	93	94	95	96	87	91	89
165																				
170													94	94	94	97	96			90

Light Transmission in Sea Water

Station Number

Depth (ft)	3920	3921	3922	3923	3924	3925	3926	3927	3928	3929	3930	3933	3934	3935	3936	3937	4055	4056	4057	4058	4059	4060
5	50		24	61							85	87	82	93	88	82	64	40	49	36	35	19
10	51	54	52	61	71	74	84	86	91	83	86	88	97	93	88	84	56	54	46	43	21	25
15	49	49	64	62							85	89	97	93	87	84	54	58	56	46	37	40
20	48	53	28	68	73	75	84	85	92	82	86	89	97	92	87	84	61	67	50	50	40	59
25	48	49	52	70							84	89	97	93	88	86	86	71	66	68	53	64
30	44	52	69	71	74	74	84	86	91	82	85	89	97	95	90	87	92	79	76	72	66	66
35	49	48	72	75							82	89	97	95	90	87	93	86	82	81	50	68
40	58	49	73	76	78	76	84	88	89	82	81	97	97	93	90	89	95	91	84	81	74	76
45	65	48	72	76							71	97	97	92	87	92	97	74	59	79	84	76
50		47	72	76	77	72	92	89	88	85		97	95	91	90	93	72					70
55			73																			
60			73	77	79	54	91	88	88	88			86	90	86	93						
65																						
70			74	77	80	75	91	89	90				84	85	85	91						
75																						
80				76	80	78	91	90	91			97		85	87	92						
85																						
90				76	81	82	92	89	90			96		83	85	92						
95																						
100				78	80	84	94	89				95		86	82	94						
105																						
110					81	85	94	80				90		82	81	94						
115																						
120					81	88	94					89		81	87	94						
125																						
130					80	90	92					84		82	90	92						
135																						
140					79	90	91					68		90	88	94						
145																						
150						85	86							83	87	96						
155																						
160						83	82							80	86	94						
165																						
170															87	96						

Light Transmission in Sea Water

Station Number

Depth (ft)	4061	4062	4063	4064	4065	4066	4067	4068	4069	4070	4071	4072	4073	4074	4075	4076	4077	4078	4079	4080	4081	4082
5	19	42	26	29	8	23	41	31	34	5	31	61	74	78	84	76	82	90	74	56	41	34
10	17	38	33	36	21	35	36	39	35	9	39	61	74	74	79	76	80	90	73	49	68	66
15	25	51	35	28	34	44	40	35	37	15	41	59	69	75	83	78	77	75	54	36	51	66
20	54	52	36	28	44	46	43	39	43	36	40	66	68	75	79	79	76	76	52	28	68	63
25	66	56	50	37	45	48	53	45	45	54	62	65	70	75	80	79	75	80	55	42	64	60
30	74	64	49	51	49	44	52	48	44	62	67	58	70	76	79	79	75	78	72	74	70	55
35	72	63	51	59	50	41	46	50		70	71	58	75	76	79	80	75	73	77	76	73	56
40	78	69	66	58	53					70	73	72	73	80	81	80	77	71	75	76	70	63
45	85	63	25	65						68	71	74	78	81	83	83	79	73	71	74	69	64
50	38	54		31						63	71	76	77	81	82	81	78	74	73	71	69	58
55										73	69	80	80	81	82	83	77	76	71	70	59	50
60										31	68	77	80	80	81	82	78	78	70	68	50	
65												75	78	82	83	81	75	79	66	63		
70												72		80	83	77	75	81		58		
75														81	84	71	74	65				
80														75	81	66	71					
85														68	84	66						
90															85	65						
95															84	65						
100															83	64						
105																64						
110																64						
115																65						

Station Number

[illegible]

Santa Monica Bay
Cruise 203
June 20, 1955

APPENDIX TO CRUISES

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Cruise Number 203

Date: 6-18-55

215

[illegible]

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

216

Cruise Number 203

Date: 6-19-55

Cruise Description: A series of hydrographic stations, following the axes of Santa Monica and Redondo Submarine Canyons, was completed the second day of the cruise. Bathythermograph traces were also made.

[illegible]

*Inversion

APPENDIX TO CRUISES

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Cruise Number 203

Date: 8-20-55

217

Cruise Description: The last day of the cruise was spent collecting underway bottom samples and temperatures in a pattern radiating from the hyperion outfall.

[illegible]

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Date: 6-18-55

219

[illegible]

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Date: 6-18-55

219

[illegible]

APPENDIX TO CRUISES

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

220

Cruise Number 203

Date: 6-18-55

[illegible]

APPENDIX TO CRUISES

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Cruise Number 203

Date: 6-19-55

221

[illegible]

222

Date: 6-20-55

[illegible]

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Date: 6-20-55

223

[illegible]

Santa Monica Bay
Cruise 204 and 205
July 6, 1955

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Date: 7-6-55

Cruise Description: A detailed bathythermograph survey was run over the entire area of Santa Monica Bay to the 250 fathom line. Underway bottom samples were obtained along with several Hayward Grab samples. A fathogram record was made of the day's run.

[illegible]

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Date: 7-6-55

226

[illegible]

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Cruise Number 204, 205

Date: 7-7-55

Cruise Description: Large bottom samples supplemented by underway samples were obtained north of Santa Monica Canyon and near the Hyperion outfall. Detailed bathythermograph traces were made between the Santa Monica breakwater and a location four miles south of Palos Verdes Point.

[illegible]

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Date: 7-7-55

228

[illegible]

TEMPERATURE INVERSIONS

Cruise 204, 205

Date: 7-7-55

Time: 1230
Temp. Depth

62	6
63	12
64	16-23
63	25
62	27
61	31

Santa Monica Bay
Cruise 208
July 19, 1955

APPENDIX TO CRUISES

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

231

Cruise Number 208

Date: 7-19-55

Time ↓	1324	1326	1330	1333	1340	1350	1400	1410	1420	1430	1440	1450	1500	1510	1520 D.	1520 U.	1522 D.	1522 U.	1524 D.	1524 U.	1526	1530
72°																						
71																						
70																						
69																						
68																						
67																						
66																						
65		0																				
64		24	0	64.8 9									0-7	0-9							0	64.5 8
63	63.5 24	25	24	17			63.5 12		0	0		63.4 8	10	63.5 8	12	0-12	63.5 15	63.2 21	0-8	0-9	8	11
62	26	26	24	19	62.8 9	62.2 5	62.5 20	10	9	4	7	9	13	9	47	22	42	26	9	57	11	12
61	27	27	25	20	14	12	25	21	14	9	10	10	16	12	48	23	43	28	10	60	12	14
60	30	29	26	22	15	16	42	32	16	15	14	11	20	14	50	25	44	30	11	62	14	15
59	31	30	28	23	18	30	50	38	21	21	17	15	22	21	53	27	45	31	15	63	16	16
58	33	23	29	31	38	35	61	43	37	27	21	17	24	22	54	28	46	32	17	68	20	24
57	34	39	35	33	45	45	65	47	42	29	26	19	28	25	55	31	48	36	23	69	21	26
56	36	44	45	39	47	52	73	50	45	33	30	23	31	27	56	33	49	38	25	70	22	27
55	43	51	56	53	48	53	80	53	50	38	31	25	32	28	58	35	52	44	26- 38	72	24	30
54	55	65	59	65	52	55	84	54	54	44	32	26	33	29	60	42	55	49	68	74	25	31
53	70	75	74	72	81	69	101	56	59	49	33	27	37	30	65	49	62	53	72	79	28	34
52	78	83	91	95	93	74	105	66	77	54	52	50	62	35	70	58	63	62	75	82	39	53
51	100	102	109	118	113	99	128	100	98	85	89	65	75	65	95	85	90	92	90	96	55	62
50	135	125	140	137	126	150	165	148	108	117	117	106	104	81	115	115	110	110	113	113	76	79
49	170	155	161	190	175	175	197	173	195	150	185	150	185	145	155	155	140	140	160	160	160	145
48	198	195	205			205									210		190	190

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Date: 7-19-55

232

Cruise Description: Thermograms, observations of surface water phenomena and Fathograms were made over the area of the Santa Monica shelf.

[illegible]

APPENDIX TO CRUISES

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Cruise Number 208

Date: 7-19-55

233

Time →	1110	1120	1130	1140	1150	1200	1210	1220	1230	1240	1249	1251	1255	1300	1302	1306	1309	1310	1313	1315	1320	1322
72°																						
71																						
70																						
69																						
68											3	3										
67								67.1 2	67.3 3	11	4	5			67.5 5	0	0				0-6	
66								13	10	12	4	6		66.3 4	6	4	4	66.8 3	0		9	
65								15	22	15	6	7	65.4 5	5	6	8	6	4		90-7	10	65.8 9
64	64.5 6							18	23	18	15	10	7	6	7	10	10	7	11	10	14	10
63	63.2 19	2					63.8 7	23	25	19	22	22	8	12	14	16	20	9	19	11	16	10
62	23	11	62.8 14	0	62.5 10		13	25	25	23	25	25	10	14	18	19	22	12	23	15	17	11
61	25	12	14	10	11	61.8 5	15	28	26	24	26	26	13	15	20	22	24	15	24	17	18	12
60	29	13	15	16	13	10	17	29	27	25	27	27	17	21	23	23	25	20	25	18	19	13
59	34	14	17	19	16	25	34	33	28	26	30	31	20	22	35	24	27	23	28	18	23	14
58	38	15	23	22	24	48	41	35	28	27	33	39	24	23	38	25	29	26	30	19	25	20
57	47	18	29	25	28	51	48	37	28	29	34	43	27	29	44	31	33	32	32	19	31	23
56	52	22	36	30	31	62	58	41	29	30	36	46	33	36	49	37	36	40	37	20	35	25
55	54	27	41	35	41	65	67	50	33	33	38	47	42	48	54	41	47	46	43	44	39	35
54	57	31	43	37	53	67	74	52	40	35	41	51	55	50	56	46	55	54	49	48	48	44
53	59	40	54	45	56	68	90	56	61	45	46	58	63	65	63	60	56	65	60	52	62	60
52	63	51	59	83	102	87	114	72	75	54	53	63	66	75	79	71	75	75	67	69	73	68
51	85	79	90	96	107	105	124	104	82	69	62	74	75	83	91	92	90	89	83	79	100	91
50	115	102	111	116	150	134		131	97	83	75	90	113	110	120	116	115	121	96	104	129	120
49		140	155	156	195	175		145	105	100	105	145		149	160	150	140	150	130	138	175	156
48		198	185	195				165	170		170	195		173	203	195	200	210	190	170	200	190

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Cruise Number 208

Date: 7-19-55 234

234

[illegible]

TEMPERATURE INVERSIONS

Cruise 208

Date: 7-19-55

Time: 0945		0950		0955		0956	
Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth
63.2	Surf.	63.3	Surf.	65.9	Surf.	63.5	Surf.
62	8	64	5	65	5	64	5
62	12	65	14	64	5	65	6
63	13	65	17	64	10	66	9
63.7	18	64	17	65	15	65	20
63	23	63	18	65	26	64	22
62	24	62	28	64	27	63	23
61	26	61	29				
62	28	60	34				
62	30						
61	31						
60	32						

Time: 0957		0958		1000		1001		1100	
Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth
62	Surf.	63.2	Surf.	63.8	Surf.	63.5	Surf.	62.1	Surf.
63	3	64	5	64	5	64	5	63	5
64	6	65	6	65	6	64	15	63	15
65	10	66	7	66	9				
65	24	66	14	65	12				
64	26	65	15	64	18				
63	27	64	25						
62	28	63	26

TEMPERATURE INVERSIONS

Cruise 208

Date: 7-19-55

Time:	1315	1324		1326		1330		1520D	
Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth
65	Surf.	63.5	Surf.	65	Surf.	64	Surf.	64	Surf.
65	7	64	6	66	5	65	7	63	12
64	10	65	7	66	15	65	18	63	20
		66	8	65	22	64	23	64	34
		67	9					63	45
		66	19						
		65	20						
		64	24						
Time:	1522D	1524D							
Temp.	Depth	Temp.	Depth						
63.5	Surf.	63	Surf.						
64	7	62	9						
63	15	55	26-38						
63	24	56	40						
63	40	57	41						
		58	47-59						
		57	63						
		56	64						
		55	65						

Cruise Number 208

Date: 7-20-55

237

Cruise Description: Controlled samples for bacterial counts were collected, dredge hauls were taken on the central Santa Monica shelf, and a detailed temperature and surface water profile was made in the Hyperion area. Fathograms were made and surface water patterns observed.

Time ↓	0825	0958	0958	1000	1030	1035	1039	1041	1044	1046	1048	1051	1053	1057	1059	*	*	*	*				
72°																							
71																							
70																							
69										04	0												
68								68.3	68.5			68.1	68.2										
								8	4	5	6	7	4	0									
67						67.2		9	9	9	9	8	9	80-9									
						2																	
66						9		11	10	10	13	11	11	13	13								
65																							
64																							
63						63.5																	
						20																	
62		62.5	62.5	62.5	62.8																		
	0	8	4	5	10	21	23	25	31	26	24	26	26	21	20	16	0	7					
61		10																					
	5	17	9	14	28	23	25	28	33	28	28	32	27	23	22	17	5	23					
60		11																					
	9	39	21	23	31	25	29	32	34	30	31	34	29	25	25	20	36	30					
59	10	47	23	33	32	31	33	33	35	32	33	38	35	35	30	29	43	32					
58	11	50	24	45	40	38	36	36	36	37	40	42	38	38	34	32	45	36					
57	20	52	26	56	45	40	38	40	39	46	45	45	44	41	36	38	48	39					
56	22	59	35	63	54	43	44	43	44	53	51	50	48	45	40	44	50	49					
55	25	64	45	79	59	48	48	45	45	57	55	55	52	48	43	52	70	66					
54	29	65	48	80	62	54	51	48	50	60	61	62	56	57	45	60							
53	50	70	57	84	77	62	62	54	57	68	70	73	65	68	80								
52	65	72	60	88	88	67	70	60	66	84	85	81	76	84									
51	67	75	65	91	96	76	85	82	91	103	104	95	90	100									
50	107	89	89	109	133	115	108	105	109	122	122	112	109										
49	155	174	174	172	190	170	160	170	150	160	170												
48	186																						

TEMPERATURE INVERSIONS

Cruise 208

Date: 7-20-55

Time: Temp.	1059	1100		1102		1104	
	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth
65.5	Surf.	63	Surf.	62	Surf.	63	Surf.
66	8	63	7	61	5	62	7
66	9	63	15	61	8	63	10
65	10			62	10	63	12
64	11			62	16	62	15
63	12			61	21	61	23
63	13						
64	14						
65	15						
65	18						
64	19						
63	20						
62	22						
61	23						
60	28						
59	31						
58	33						
57	34						
56	37						
55	38						
54	42						

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Date: 7-28-55

Location: See corresponding Hydrographic Stations.

[illegible]

Cruise Number 209

Date: 7-29-55

Cruise Description: A bathythermograph survey was made in the area of the Hyperion Outfall. Six hydrographic stations were occupied, snapper sediment samples were collected, and water transparency and sea color were recorded.

[illegible]

Cruise Number 209

Date: 7-29-55

242

[illegible]

TEMPERATURE INVERSIONS

Cruise 209

Date: 7-29-55

Time: 0956
Temp. Depth

64.2 Surf.

64 3

64 4

65 5

65 11

64 25

63 27

Santa Monica Bay
Cruise 211
August 10, 1955

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Date: 8-10-55

Cruise Description: A Bathythermograph traverse was run over the Santa Monica Bay area and underway surface water samples were collected. Fathometer profiles were obtained on several courses crossing the shelf.

[illegible]

APPENDIX TO CRUISES

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Cruise Number 211

Date: 8-10-55

246

Time →	1000	1006	1010	1015	*1020	1021	*1025	1026	1030	1035	1040	1050	1100	1108	1115	1120	1125	1130	1135	1138	1142	1144	
72°																							
71																							
70																							
69																							
68																							
67																							
66															0	0	0				664 4		
65				0							03	0	655 10	659 20	35	6		655 5	654 11	5	0	8	0
64	645 11	644 8	647 6	3			645 7		646 35	649 13	6	28	35	41	48	20	10	16	8	13	11	7	
63	13	17	15	5	3	3	7	4	44	20	13	30	39	43	49	41	14	18	10	17	14	14	
62	17	19	17	7	4	4	7	5	54	24	17	31	40	47	52	43	20	20	14	24	18	17	
61	22	21	22	8	5	5	7	9	56	27	18	32	42	48	53	44	32	25	22	28	20	21	
60	34	24	24	10	5	8	7	11	61	28	20	36	44	49	54	45	35	30	23	29	22	25	
59	41	29	25	11	8	16	7	14	63	31	21	38	47	51	55	46	42	36	26	32	23	26	
58	43	35	28	12	27	18	18	15	65	33	22	39	48	52	57	49	47	42	35	35	28	27	
57	48	57	30	17	28	19	19	17	67	35	24	41	53	53	60	58	50	47	42	43	37	28	
56	51	60	36	30	28	20	21	18	69	38	31	46	57	54	65	65	60	55	45	46	43	30	
55	54	62	49	44	28	25	25	25	70	40	38	55	64	56	73	69	63	60	48	48	45	47	
54	60	66	54	50	35	35	31	31	71	42	44	62	67	67	96	73	67	70	54	55	55	50	
53	76	83	67	72	52	52	40	40	74	48	61	79	83	86	106	88	77	87	75	66	65	53	
52	82	101	82	105	68	68	51	51	76	55	70	89	106	105	114	105	100	118	85	80	82	63	
51	115	112	108	115	100	100	68	68	82	68	90	114	121	125	140	135	130	142	100	110	100	85	
50	160	154	130	121	135	135	128	128	132	127	160	158	169	140	174	170	158	175	150	140	125	106	
49		183	190	195	175	175	195	195	170	199	181	177	200	170	200	187	185	200	185	160	170	118	
48		190							220		220	202		210		225	210	222	220	210	209	160	

APPENDIX TO CRUISES

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Cruise Number 211

Date: 8-10-55

247

Time →	1146	1148	1152	1154	1157	1200	1202	1204	1210	1217	1225	1227	1230	1233	1236	1239	1242	1245	1248	1251	1254	1257
72°																						
71																						
70																						
69																						
68																						
67					0				0													
66	664 6	665 8	663 3	665 3	5				8	0												
65	7	11	8	9	10	658 6	655 7	655 5	12	3	0	0				0-50-5	653 5	651 5	0-4	552 3	0	
64	11	13	14	12	13	12	18	11	17	10	12	13	0-9	644 5	645 5	8	7	6	7	6	7	19
63	13	14	17	16	15	14	23	15	24	17	19	18	12	17	11	10	13	8	9	12	11	28
62	14	15	18	18	17	15	27	18	32	24	27	24	15	19	15	12	20	20	16	17	17	32
61	15	17	19	19	18	17	29	20	33	30	38	30	24	23	24	20	27	30	25	22	20	36
60	17	20	21	22	21	20	30	22	34	34	43	47	32	25	28	25	30	35	35	38	25	40
59	22	22	26	25	28	25	31	23	35	37	47	49	45	31	34	29	33	38	38	43	30	43
58	25	25	29	29	31	28	35	26	39	39	54	50	51	45	38	31	38	40	41	46	35	45
57	26	28	31	32	42	38	38	34	41	43	55	52	56	54	48	35	42	42	45	47	39	52
56	28	32	35	38	49	39	41	39	45	52	57	56	59	63	54	39	48	48	52	54	42	55
55	35	37	42	42	53	40	43	50	54	57		60	63	68	63	41	52	53	57	65	51	65
54	41	43	45	45	62		55		63					73	66	54	56	56	64	72	60	75
53	59	55	52	65										75	69	59	65	61	70	89	79	93
52	67	68	83											85	80	74	76	69	84	110	89	99
51	80	96	92												96	103	95	92	102	128	111	125
50	105	113	115													125	115	110	121	155	143	155
49	145	133	145														150	130	143	175	170	185
48	185	175	188																200	225	215	210

APPENDIX TO CRUISES

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

248

Cruise Number 211

Date: 8-10-55

Time	1301	1304	1307	1310	1312	1315	1318	1322	1326	1329	1331	1335	1336	1339	1342	1345	1350	1355	1400	1405	1410	1415
72°																						
71																						
70																						
69																						
68																						
67																						
66																						
65	65.5 7			65.4 0 6			00-50-50							65.2 0 8	65.2 7	65.3 15		65.3 5	65.2 3	65.2 4		65.2 0 10
64	19	64.5 6	12	14	19	14		6 10	54.4 7	0-7	64.2 8	0-28	7	15	11	20	64.6 20	9	19	19	14	18
63	27	9	25	16	26	16		9 16	11	14	17	31	17	19	17	23	32	18	24	31	20	26
62	34	15	30	22	30	18		17 19	15	15	18	34	25	26	20	26	38	20	26	37	25	32
61	37	23	36	25	33	26		20 24	18	18	21	37	28	32	37	30	41	29	31	40	29	38
60	39	28	42	31	40	31		25 26	21	20	24	39	32	35	40	60	43	36	38	43	33	42
59	48	30	47	38	46	37		27 29	27	29	28	41	34	36	44	62	50	40	39	50	36	48
58	50	38	48	42	49	40		28 35	30	40	38	44	37	37	45	64	78	46	41	65	42	54
57	53	44	56	46	51	42		32 41	38	50	45	50	39	39	47	65	82	51	45	71	52	57
56	55	47	60	49	54	45		34 45	48	59	49	61	40	42	48	67	85	65	55	84	60	61
55	62	50	70	54	61	48		37 47	51	63	52	64	44	44	51	68	91	85	70	87	67	67
54	70	57	76	64	67	61		49 55	55	68	57	68	51	49	54	73	95	99	85	95	78	78
53	89	67	87	76	79	69		59 64	69	74	68	75	66	59	61	82	113	113	104	105	89	86
52	97	94	110	90	86	74		73 75	87		79	87	76	72	65	92	125	124	109	114	97	93
51	130	127	153	113	105	100		100 103	96				114	110	85	110	136	140	130	126	116	100
50	153	162	175	149	132	130		117 140								136	145	130	139	154	180	166
49	182	185	195	175	152	184		175									185	180	200	212	220	190
48	212				205	200												202	216			

Cruise Number 211

Date: 8-10-55

249

[illegible]

TEMPERATURE INVERSIONS

Cruise 211

Date: 8-10-55

Time:	0945	0950		1020		1025		1425D	
Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth
63.1	Surf.	63.5	Surf.	63.5	Surf.	64.5	Surf.	67	Surf.
64	8	63	3	63	3	64	7	66	4
64	11	63	15	62	4	63	7	65	7
63	24	64	22	61	5	62	7	64	10
		64	29	60	5	61	7	65	13
		63	32	59	8	60	7	65	15
				60	11	59	7	64	17
				61	12	60	9		
				62	16	61	10		
				62	20	62	11		
				61	23	63	12		
				60	24	62	13		
				59	26	61	15		
						60	16		
						59	17		

APPENDIX TO CRUISES

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

251

Cruise Number 211

Date: 8-11-55

Location: See corresponding Hydrographic Stations.

Cruise Description: A series of snapper bottom sediment samples was obtained for bacteriological analysis. Water samples, water temperature profiles, plankton hauls, and water transparency readings were made.

Station No.	*3329-D	*3329-U	*3330-D	*3330-U	3331	3332	3333	3334	3335	3336	3337-D	3337-U	3338	3339	3340	3341	3342	3343	3344	3345	*3346	3347
72°																						
71																						
70																						
69																						
68																						
67																						
66																						
65								652	651	653												
								10	21	13			0									
64					0	0	647	12	25	16	36	19	643	640	3	642			641	644		0
																			3	6		
63	635	635			13	25	29	18	37	22	12	5	34	26	637	635	634	635			635	
	2	15	0	0											29	7	13	15	29	8	30	27
62	17	27	20	13	22	27	32	20	38	28	13	6	37	34	33	23	20	19	38	12	34	32
61	17	28	23	21	27	42	39	26	39	36	15	7	41	38	35	28	29	27	40	22	37	41
60	24	28	43	40	28	45	44	42	40	39	18	16	45	41	37	35	41	34	42	40	43	44
59	24	29	48	45	30	46	48	54		44	28	33	47	47	39	39	51	38	43	43	46	47
58	29	32	50	47	32	48	52	60		48	37	42	52	51	43	54	54	40	45	45	48	52
57	31	33	52	48	37	50	55	68		52	44	51	55	58	54	57	57	42	49	55	54	55
56	43	37	55	50	40	63	61	75		55	52	58	60	65	56	58	63	44	53	62	66	58
55	52	40	62	56	45	78	66	80		69	60	69	64	68	60	60	76	50	60	74	73	63
54	54	50	70	64	49	81	98	85			90	95	67	69	67	71	94	52	85	88	74	65
53	61	57	75	72	56	85	112				98	103	69	72	74	75	100	54	96	97	82	82
52	66	62	87	85	70	94	119				101	107	98	83	78	82	104	79	101	103	92	95
51	80	80	92	92	85	145	125				105		136	85	84	86	109	128	109	108	102	111
50	124	124	130	130	102	158							142	120	100	114	137	150	140	137	125	122
49	180	180	168	168	165									155	138	136	190	172	175	155	140	160
48															160	195			215	180	180	

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Cruise Number 211

Date: 8-11-55

252

[illegible]

TEMPERATURE INVERSIONS

Cruise 211

Date: 8-11-55

Station: 3329D		3329U		3330D		3330U		3346	
Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth
63.5	Surf.	63.5	Surf.	63	Surf.	63	Surf.	63.5	Surf.
63	2	63	15	63	10	63	11	64	20
63	4	62	22	63	19	62	13	63	30
63	9	62	24	62	20	61	21		
63	11	62	27	61	23	60	40		
62	17	61	28	60	43	59	45		
61	17	60	28			58	47		
60	18	59	29						
61	22	58	29						
61	23	58	32						
60	24	57	33						
59	24	56	37						
58	24	55	40						
57	25								
57	26								
58	29								
57	31								

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Cruise Number 212

Date: ~~8~~^{Jul} 16-55

Cruise Description: Thirty Hydrographic stations were occupied.

Studies made at each station included: samples of bottom sediment, Plankton Hauls, Water transparency and color, dissolved oxygen and phosphate content of the water, and Bathythermograph traces.

[illegible]

APPENDIX TO CRUISES

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

255

Cruise Number 212

Date: 8-17-55

Location: See corresponding Hydrographic stations.

Cruise Description: Thirty Hydrographic Stations were occupied.

Studies made at each station included: samples of bottom sediment, plankton hauls, water transparency and color, dissolved oxygen and phosphate content of the water, and Bathythermograph traces.

Station No. →	3366	3367	*3368	3369	3370	3371	3372	3373	3374	3375	3376	3377	3378	3379	3380	3381	3382	3383	3384			
72°																						
71																						
70																						
69																						
68																						
67							67.3 3		0				67.2 3									
66						66.4 2	17	66.6 40	7	0			15									
65					65.2 3	12	20	43	36	15	5	15	32	0- 17				65.5 14				
64		64.5 10		64.3 14	20	28	22	45	42	30	22	25	42	25	0- 16	0- 14	64.2 10	19				
63	63.9 24	28	63.5 48	21	22	29	25	48	43	38	32	32	45	32	22	35	18	24	0- 15			
62	29	34	54	27	24	30	29	50	45	43	36	34	47	34	30	36	25	27	20			
61	33	37	57	30	25	31	31	52	47	46	42	35	50	37	34	37	28	28	22			
60	37	38	58	33	28	33	33	53	48	47	46	37	52	38	35	38	30	29	23			
59	38	39	59	35	29	34	34	59	51	48	47	41	53	39	37	39	33	30	24			
58	40	43	60	47	34	35	37	63	53	52	49	47	54	40	38	39	35	32	25			
57	44	45	61	58	38	37	40	69	57	64	52	54	57	42	40	40	37	34	29			
56	62	52	62	61	52	44	45	77	63	68	54	57	64	49	42	45	44	36	33			
55	63	53	63	64	63	48	52	84	67	74	56	60	74	57	47	49	47	42	44			
54	73	56	65	66	87	53	71	88	77	77	59	64	78	75	56	50		50	48			
53	78	58		77	93	80	82	96	84	79	67	82	87	88	64	52		65	54			
52	86	65		83	104	90	100	108	98	85	73	87	92	96	73			83	69			
51	98			93	110	96	125	120	109	104	80	98	97	112	95			108	84			
50	116			125	117	111	143	133	145	124	100	110	119	121	123			135	110			
49				158	171	175	155	165	150	155	120	145	185	142				164				
48					200		215	220	210	215	150	190		200				220				

TEMPERATURE INVERSIONS

Cruise 212

Date: 8-17-55

Station:	3368
Temp.	Depth
63.5	Surf.
64	7'
64	31
63	48

Santa Monica Bay
Cruise 212
August 18, 1955

APPENDIX TO CRUISES

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

258

Cruise Number 212

Date: 8-18-55

Cruise Description: Bathythermograph traverses were made, normal to the coast, over the Santa Monica Bay area.

Ave. surface temp. 65.5.

Time	0807	0810	0815	0820	0825	0830	0835	0840	0845	0850	0855	0900	0905	0910	0915	0920	0922	0925	0927	0930	0933	0936
72°																						
71																						
70																						
69																						
68																						
67				672	672																	
				3	4																	
66			667			669																
			4	5	5	7																
65			5	5	6	8																
64	64.6	64.9				64.9							64.2	64.2								
	9	10	9	11	12	12	4						2	2								
63	17	15	16	12	15	25	18	6	5		63.2	63.5			63.8	63.8	63.2	63.1	63.5	63.7	63.7	63.5
											7	27	29	29	30	3	2	1	2	6	7	3
62	20	17	17	15	20	27	19	7	6	10	24	30	34	33	34	26	12	12	5	9	13	13
61	22	19	20	16	23	28	20	8	7	28	26	32	36	36	38	38	24	44	8	13	14	16
60	23	23	22	17	25	29	21	9	8	34	27	34	37	37	39	41	28	47	10	15	15	18
59	27	29	27	19	27	30	22	10	9	37	28	35	42	40	41	42	43	51	13	16	17	25
58	28	32	28	23	28	31	23	13	11	40	31	37	45	45	45	44	49	53	14	17	18	32
57	36	33	30	24	29	32	24	15	12	47	42	38	47	47	58	69	54	55	15	19	21	34
56	48	38	33	27	30	34	29	20	13	59	48	42	53	59	62	74	57	56	17	29	25	40
55	50	45	38	33	34	36	38	27	14	61	65	59	67	73	67	78	59	57	19	41	30	53
54	52	49	44		70	40	48	47	20	62	79	63	83	87	82	80	60	66	45	48	33	55
53			49				54	50	30	78	101	78	105	100	98	84	85	85	49	52	53	58
52							61	60	68	90	115	92	116	118	129	111	95	93	60	78	67	62
51								71	77	123	133	133	138	140	151	124	112	112	91	87	74	72
50								93	100	134	141	144	147	163	160	143	135	135	117	106		
49								122	157	167	185	164	195	184	160	151	150					
48												190	220	205	200							117

APPENDIX TO CRUISES

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Cruise Number 212

Date: 8-18-55

259

Time	0935	0943	0951	0951	0955	0955	0958	1001	1006	1011	1016	1021	1033	1040	1045	1050	1055	1058	1101	1104	1110	1117
72°																						
71																						71.4 6
70																						6
69																						7
68																				68.2 4	68.2 3	8
67		0	67.0 3																	5	4	11
66	66.4 4	4	4																	5	4	14
65	7	5	5									65.2 3	0	65.1 3				0	0	6	5	15
64	10	8	6		64.3 1				0	64.2 3	64.9 5	20	30	7		64.4 3	64.5 3	4	36	16	15	19
63	37	29	36	63.2 1	63.9 27	4	63.5 5	63.3 2	9	24	27	26	37	34	63.5 4	10	6	6	7	27	21	21
62	41	38	37	37	37	31	29	8	28	31	30	29	42	43	8	18	12	14	11	37	24	23
61	42	39	38	38	41	34	42	22	31	34	32	32	45	46	35	21	22	21	13	40	27	25
60	43	40	38	38	45	39	45	29	34	36	34	33	48	48	61	24	23	23	22	41	28	27
59	44	42	39	39	49	44	47	34	41	37	35	36	49	50	65	27	25	25	24	42	35	28
58	44	43	40	40	53	45	50	36	44	43	37	37	52	53	67	28	32	27	26	43	40	32
57	45	44	42	42	54	47	55	37	45	55	43	48	63	60	75	37	33	30	34	44	43	33
56	46	45			65	57	58	50	46	58	53	54	72	72	80	45	36	32	47	44	47	42
55	48	47			70	63	65	60	57	60	63	58	85	85	85	48	39	38	52	47	50	45
54		51			73	66	69	70	73	80	66	74	89	93	103	52	46	50	55	51	53	48
53					74	67	88	75	84	91	96	105	95	99	107	57	48	59	58		57	49
52					75	71	92	84	88	97	104	111	98	103	111	65	66	68	67			53
51					80	80	94	101	104	108	113	125	108	109	113	88	83	79	78			
50							110	120	127	127	127	137	125	121	120	114	87	115				
49								135	160	150	156	156	155	175	135	140	140					
48										192		195	211	210	160	199						

APPENDIX TO CRUISES

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

260

Cruise Number 212

Date: 8-18-55

Time	1122-D.	1122-U.	1127	1132	1139	1142	1147	1152	1159	1205	1210	1215	1220	1225	1235	1240	1245	1250	1254-D	1254-U	1258-D	1258-U
72°																						
71															71.3							
70															7	70.5						
69															8	4						
68															8	5	0-4					
67	67.3	67.2											67.5	0-4	9	6	5	0				
66	10	6	66.4								0	66.0	5	6	12	7	6	5	0-4	0		
65	11	7	5	65.6			65.2	65.5	65.3	65.5		4	15	7	13	8	7	10	7	5	0-6	66.8
64	15	8	8	3	0-4	0-4	4	3	4	5	4	15	7	9	13	9	7	14	9	9	6	10
63	18	10	24	9	7	5	9	31	7	9	10	28	20	10	13	10	11	17	15	24	19	22
62	26	23	26	20	24	18	46	41	36	18	15	30	26	13	14	13	12	19	18	26	20	27
61	27	23	28	22	39	40	48	44	38	33	21	31	30	15	16	14	14	22	21	27	21	29
60	28	23	30	35	40	42	53	45	42	38	29	33	34	18	17	15	17	23	22	28	22	30
59	30	24	37	36	41	44	54	46	43	39	34	37	36	19	19	17	18	24	23	29	24	32
58	30	25	38	37	42	47	55	47	45	40	36	40	37	21	21	18	20	25	27	32	28	33
57	31	27	40	41	43	48	58	49	46	42	37	42	38	24	22	19	22	27	32	34	28	34
56	32	28	41	50	57	54	61	52	58	50	43	45	41	30	23	20	25	30	36	36	29	35
55	33	29	42	52	61	70	75	70	64	52	45	50	43	33	24	21	27	33	38	38	30	36
54	43	39	43	53	64	74	80	74	69	54	48	52	45	38	27	25	29	41	45	45	33	40
53	45	40	46	55	68	78	85	80	73	58	52	55	49	44	34	29	34	51	50	50	48	48
52	49	44	50	59	70	87	93	92	77	69	67	68	58	48	45	44	45	58	62	62	57	57
51	52	48	54	70	76	98	97	100	90	80	83	75	63	51	52	60	68	82	90	90	63	63
50	62	57	62	83	97	110	108	113	102	106	95	91	78	62	75		113	110	120	120	95	95
49	67	67	76	101	120	125	123	138	116	127	130	107	96	78	125			135	148	148	140	140
48	105	105	100	132	156	158	166	169	168	157	156		145	110	150							
				165	195	185	212	212		212	195		205	175								

TEMPERATURE INVERSIONS

Cruise 212

Date: 8-18-55

Time: 0951D Temp. Depth		0951U Temp. Depth		0955D Temp. Depth		0955U Temp. Depth		1122D Temp. Depth	
67	Surf.	63.2	Surf.	63.9	Surf.	64.3	Surf.	67.3	Surf.
64	6'	63	1'	64	1'	63	4'	68	1'
64	12	63	6	65	2	63	5	69	2
64	18-27	64	7	65	12	63	9	70	3
63	36	65	8	64	13			69	5
		64	14	63	27			68	8
								67	10
Time: 1254U Temp. Depth		1258D Temp. Depth							
67	Surf.	66	Surf.						
66	5'	65	6'						
65	9	64	7						
64	11	63	8						
63	12	62	9						
62	13	61	10						
61	14	60	11						
61	17	61	12						
62	18	62	12						
63	21	63	13						
64	24	64	13						
63	26	65	13						
62	27	66	14						
61	28	67	15						
		66	16						
		65	17						
		64	19						
		63	20						

TEMPERATURE INVERSIONS

Cruise 214

Date: 8-23-55

Time: 1445
Temp. Depth

64	Surf.
63	9'
62	10
61	11
60	12
60	14
61	15
62	16
63	19
63	24
62	25
61	35
60	36
59	37

Santa Monica Bay
Cruise 214
August 24, 1955

THIS PAGE VOIDED

Cruise Number 214

Date: 8-24-55

266

Cruise Description: On this bathythermograph run, fathometer traces were made while the ship followed the Bt traverse. Surface water samples and temperature readings were taken at frequent intervals and several snapper sediment samples were obtained.

[illegible]

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Cruise Number 214

Date: 8-24-55

[illegible]

268

Date: 8-24-55

[illegible]

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Date: 8-24-55

269

[illegible]

TEMPERATURE INVERSIONS

Cruise 214

Date: 8-24-55

Time: 0945		0949		1302	
Temp.	Depth	Temp.	Depth	Temp.	Depth
60.5	Surf.	62	Surf.	60.2	Surf.
61	4'	63	6'	60	1'
62	5	63	9	59	4
62	8	62	13	58	6
61	10	61	15	59	9
				60	13
				59	15

APPENDIX TO CRUISES

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

273

Cruise Number 216

Date: 8-30-31-55

[illegible]

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Cruise Number 217

Date: 9-7-55

Location: See corresponding Hydrographic Stations.

Cruise Description: A series of bottom sediment samples were obtained in areas of changing sediment type. Three detailed hydrographic stations were also occupied. At all stations, Plankton transparency and BT casts were made. Fathometer profiles were recorded.

[illegible]

TEMPERATURE INVERSIONS

Cruise 217

Date: 9-7-55

Station: 3416U		3423		3425	
Temp.	Depth	Temp.	Depth	Temp.	Depth
64	Surf.	60	Surf.	61	Surf.
63	4	61	7'	62	10'
62	5	61	14	62	13
62	8	60	16	61	17
63	11	59	17	60	20
64	13			60	36
64	35			60	45
63	38				

Santa Monica Bay
Cruise 217
September 8, 1955

APPENDIX TO CRUISES

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

278

Cruise Number 217

Date: 9-8-55

Cruise Description: A Bathythermograph Traverse was run normal to the coast. Water samples were collected and 450 drift cards were released.

Time →	0815	0825	0830	0835	0840	0845	0850	0910	0915	0920	0925	0927	0935	0940	0945	0950	0955	1000	1005	1009	1015	1020
72°																						
71																						
70																						
69																						
68																						
67																						
66																						
65																						
64				642 6	643 8																	
63	0	639 6		10	10															0	0	0
62	29	8	628 8	15	15	7						0	0					0	0	5	10	3
61	34	15	12	20	17	18	61.5 4	61.2 10	61.5 8	61.9 10	61.8 4	5	11	61.2 2	0	0	61.5 5	10	7	10	22	23
60	37	17	23	24	23	25	25	18	10	15	5	6	14	8	7	8	9	24	16	25	28	27
59	38	18	27	30	25	28	30	30	17	19	6	7	15	15	8	16	35	35	34	38	41	28
58	42	22	30	33	26	29	37	42	32	25	8	8	17	17	11	39	41	45	39	42	45	30
57	45	26	33	34	28	31	43	53	41	32	9	9	21	23	15	44	47	52	42	45	49	36
56	48	30	35	38	31	35	51	63	46	40	27	16	25	25	21	52	62	55	47	50	60	42
55	52	34	38	50	44	44	60	72	60	45	32	28	33	27	36	57	67	58	50	58	66	49
54	55		69			60	65	83	66	55	38	43	54	39	65	63	71	67	58	65	74	70
53						85	90	94	94	80	42	48	58	51	75	72	75	84	66	85	90	
52							125	116	117	104	70	74	83	92	109	131	100	115	95	109		
51								140	140	125	105	120	122	111	136	155	125	142	127			
50								175	188	195	170	172	176	167	165	199	205	151				
49								198	222				212	215	215		220	175				
48																		185				

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Date: 9-8-55

279

[illegible]

APPENDIX TO CRUISES

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

280

Cruise Number 217

Date: 9-8-55

[illegible]

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Date: 9-8-55

281

[illegible]

TEMPERATURE INVERSIONS

282

Cruise 217

Date: 9-8-55

Time: 1023

Temp. Depth

62 Surf.

63 4 /

63 7

62 12

62 15

62 25

61 30

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Cruise Number 217

Date: 9-9-55

Cruise Description: Bottom sediments were collected for bacteria study. Plankton, bathytherms, and water transparency were noted, and fathometer traces were recorded.

Location: See corresponding hydrographic stations.

[illegible]

TEMPERATURE INVERSIONS

Cruise 217

Date: 9-9-55

Station: 3448

Temp. Depth

65.5 Surf.

66 5'

66 10

65 13

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Date: 9-14-55 285

Location: See corresponding hydrographic stations.

[illegible]

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Date: 9-15-55

286

Location: See corresponding hydrographic stations.

[illegible]

Santa Monica Bay
Cruise 218
September 15, 16, 1955

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Cruise Number 218

Date: 9-15, 16-55

[illegible]

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Cruise Number 218

Date: 9-15, 16-55

[illegible]

APPENDIX TO CRUISES

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

290

Cruise Number 218

Date: 9-6-55

[illegible]

APPENDIX TO CRUISES

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Cruise Number 218

Date: 9-16-55

291

[illegible]

TEMPERATURE INVERSIONS

Cruise 218

Date: 9-15,16-55

Time: 0850		0855		1000		1015		1020	
Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth
65.5	Surf.	65.5	Surf.	65.5	Surf.	66	Surf.	65.5	Surf.
66	10'	66	3'	66	8'	66	4'	66	7'
67	18	66	17	66	23	67	6	67	9
66	22	65	23			68	8	68	11
						67	15	68	16
						66	16	67	20
						65	17	66	22
						64	22	65	24
						64	28		
						65	29		
						64	33		

Santa Monica Bay
Cruise 220
September 29, 1955

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Date: 9-29-55

Cruise Description: A series of drift bottle drops were made at Stations in Santa Monica Bay. Coincidentally, a Bathythermograph survey was run and surface water samples collected.

APPENDIX TO CRUISES

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Cruise Number 220

Date: 9-29-55

295

[illegible]

APPENDIX TO CRUISES

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Cruise Number 220

Date: 9-29-55

296

[illegible]

APPENDIX TO CRUISES

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

297

Cruise Number 220

Date: 9-30-55

Location: See corresponding Hydrographic Stations.

Cruise Description: Two detailed Hydrographic Stations were occupied along with a series of Bottom Sediment Sample Stations.
Ave. Surface Temp. 63.1

[illegible]

Santa Monica Bay
Cruise 222
October 13, 1955

APPENDIX TO CRUISES

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Cruise Number 222

Date: 10-13-55

Cruise Description: Bathythermograph traces were made throughout the Southern part of Santa Monica Bay and off Palos Verdes. Fathograms were also obtained.

Ave. surface temp. 60.5

[illegible]

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Date: 10-13-55

[illegible]

APPENDIX TO CRUISES

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Cruise Number 222

Date: 10-13-55 301

[illegible]

APPENDIX TO CRUISES

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Cruise Number 222

Date: 10-13-55

302

Time ↓	1540	1605	1620	1635
72°				
71				
70				
69				
68				
67				
66				
65				
64				
63				
62				
61	61.5 100-14	61.2 15	61.2 12	
60	55	55	54	40
59	63	73	63	64
58	78	88	66	80
57	101	94	74	85
56	105	99	82	95
55	125	106	95	107
54	150	126	104	114
53	190	150		127
52		180		
51		210		
50				
49				
48				

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Date: 10-13-55

303

Ave. Surface Temp. 61.0

[illegible]

APPENDIX TO CRUISES

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Cruise Number 222

Date: 10-13-55

304

[illegible]

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Date: 10-13-55

305

Cruise Description: Bathytherms were obtained by Bureau of Sanitation observers. Hyperion BT correction is + 0.6°F. 1° F must be added to the Hyperion reading to allow comparison with U.S.N. readings.

[illegible]

APPENDIX TO CRUISES

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Cruise Number 222

Date: 10-13-55

306

[illegible]

APPENDIX TO CRUISES

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Cruise Number 222

Date: 10-13-55 308

[illegible]

APPENDIX TO CRUISES

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

309

Cruise Number 222

Date: 10-13-55

[illegible]

TEMPERATURE INVERSIONS

Cruise 224

Date: 10-21-55

Station: 3556

Temp. Depth

61	Surf.
60	23'
59	30
58	38
57	40
56	45
55	56
54	69
54	90
54	115
53	134
52	163

Cruise Number 226

Date: 11-3-55

Location: See corresponding Hydrographic Stations.

Cruise Description: Eight Hydrographic Stations were occupied Southwest of the Los Angeles County Outfall. Bacteria surface and subsurface samples were obtained from an inner boil and cores were taken for bacterial analysis. Determination of nutrients was made.

[illegible]

TEMPERATURE INVERSIONS

Cruise 226

Date: 11-3-55

Station: 3628

Temp. Depth

58.7 Surf.

59 20'

60 43

59 92

58 121

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Cruise Number 226

Location: See corresponding hydrographic stations.

Cruise Description: Nine hydrographic and bacteria stations were occupied in a line extending downcoast from the Orange County sewer outfall. Water and sediment samples were analyzed for nutrients and bacteria. A dye patch, placed in the boil, was followed.

[illegible]

317

Date: 11-17, 18-55

Cruise Description: On the 17th, divers and cores were employed in the vicinity of the L.A. County Sewer outfall to determine the extent of the sewage field and bacteria therein. On the 18th, Hydrographic and Bacterial Stations were occupied near the Orange County outfall. Water samples were taken for Bacterial and nutrient study.

[illegible]

Santa Monica Bay
Cruise 229
November 22, 23, 1955

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Cruise Number 229

Date: 11-22, 23-55

Cruise Description: On the first day of the cruise, water transparency measurements were made using the Hydrophotometer. In addition, several Bathytherms were obtained. On the second day, a Bathythermograph and surface salinity was run over the entire area of Santa Monica Bay.

[illegible]

Cruise Number 229

Date: 11-22, 23-55

[illegible]

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

321

Date: 11-22, 23-55

[illegible]

Cruise Number 229

Date: 11-22, 23-55

[illegible]

TEMPERATURE INVERSIONS

Cruise 229

Date: 11-22,23-55

Time: 0925		0927		0930	
Temp.	Depth	Temp.	Depth	Temp.	Depth
59	Surf.	59.4	Surf.	59	Surf. - 5'
59	10'	60	25'	60	10
59	43	59	44	59	38

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Cruise Number 233

Date: 12-19, 20-55

Location: See corresponding hydrographic stations.

Cruise Description: Both days were spent in the vicinity of the Orange County Sewer Outfall using dye marker to trace portions of the sewage field. Water samples were obtained for bacteria and nutrient determinations. Hydrophotometer and Plankton Casts were made at each station.

[illegible]

APPENDIX TO CRUISES

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Cruise Number 233

Date: 12-19, 20-55

325

[illegible]

Santa Monica Bay
Cruise 234
December 29, 1955

BT cast - •
Surface salinity - ○

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Cruise Number 234

Date: 12-29-55

Cruise Description: Detailed Bathythermograph traverses were run in Santa Monica Bay normal to the shoreline. In addition, three lines of drift card stations, paralleling the coast, were occupied.

[illegible]

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Date: 12-29-55³²⁸

328

[illegible]

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Date: 12-29-55 ³²⁹

[illegible]

Santa Monica Bay
Cruise 236
January 18, 1956

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Date: 1-18-56

Cruise Description: Bathytherms were made along six profiles normal to the coast of Santa Monica Bay. Surface water samples and temperatures along the run were obtained, and fathograms recorded. 490 Drift cards were released.

[illegible]

APPENDIX TO CRUISES

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Cruise Number 236

Date: 1-18-56

332

[illegible]

APPENDIX TO CRUISES

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

333

Cruise Number 236

Date: 1-18-56

[illegible]

APPENDIX TO CRUISES

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Cruise Number 237

Date: 2-2, 3-56³³⁴

334

Location: See corresponding hydrographic stations.

Cruise Description: Both days were spent obtaining water samples for Bacterial and Nutrient determinations in the vicinity of the L. A. County Sewer outfall. A dye patch placed in the boil of the nearshore outfall was followed on both days.

[illegible]

TEMPERATURE INVERSIONS

335

Cruise 237

Date: 2-2,3-56

Station: 3883		3884		3890		3896-2	
Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth
55.5	Surf.	55.5	Surf.	55	Surf.	55	Surf.
55	60'	55	60'	55	45'	55	30'
54	70	54	75	55.5	80	55.5	65
54	80	54	100	55	120	55	75
55	88						
54	95						

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

336

Cruise Number 238

Date: 2-12-56

Location: See corresponding hydrographic stations.

Cruise Description: A dye patch, released into the inner sewage boil at Whites Point, was followed for 6 hours. Ten hydrographic, bacteria, and hydrophotometer stations were occupied in a line paralleling the coast. Water samples were obtained for Bacteria and Nutrient determination and Plankton and Bathythermograph casts were made at each station.

[illegible]

TEMPERATURE INVERSIONS

Cruise 238

Date: 2-12-56

Station: 3898		3901		3903		3904		3905	
Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth
55.2	Surf.	55.2	Surf.	55.2	Surf.	55.2	Surf.	55.5	Surf.
56	15'	56	25'	56	35-90'	56	50-75'	56	60-70'
55	29	56	75	55	125	55	120	55	125
55	60	55	90						

Station: 3907	
Temp.	Depth
55.5	Surf.
56	60-80'
55	105

Santa Monica Bay
*Cruise 239
February 16, 1956

Santa Monica Bay
Cruise 240
February 22, 1956

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Cruise Number 240

Date: 2-22-56

Cruise Description: Six Bathythermograph lines were run perpendicular to the shore of Santa Monica Bay. Drift cards were released at various points on the traverses and surface water samples were collected at drift card stations for salinity determinations.

[illegible]

Santa Monica Bay
Cruise 244
March 21, 1956

BT cast - •
Surface salinity - o

Santa Monica Bay
Cruise 244
March 22, 23, 1956

APPENDIX TO CRUISES

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Cruise Number 244

Date: 3-21-56

345

[illegible]

APPENDIX TO CRUISES

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Cruise Number 244

Date: 3-21-56 346

[illegible]

Santa Monica Bay
Cruise 250
April 25, 1956

APPENDIX TO CRUISES

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

348

Cruise Number 250

Date: 4-25-56

Cruise Description: The entire day was spent running a Bathythermograph and Drift Card Traverse.

[illegible]

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Date: 4-25-56

349

[illegible]

APPENDIX TO CRUISES

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Cruise Number 250

Date: 4-25-56 ³⁵⁰

[illegible]

APPENDIX TO CRUISES

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Cruise Number 250

Date: 4-25-56

351

[illegible]

TEMPERATURE INVERSIONS

352

Cruise 250

Date: 4-25-56

Time: 1418
 Temp. Depth
 62 Surf.
 61 6'
 60 7-9
 60.5 10-15

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Cruise Number 251

Date: 5-3, 4 - 56

Cruise Description: Two cores were collected along the line of the proposed effluent pipe. Current Floats were dropped at the terminus of the proposed outfall and Bathytherms were taken in the same area.

[illegible]

APPENDIX TO CRUISES

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Cruise Number 251

Date: 5-3, 4-56

354

[illegible]

Santa Monica Bay
Cruise 254
May 23, 24, 1956

BT cast - •
Surface salinity - o

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Date: 5-23, 24-56 356

Cruise Description: After completion of work involving the tracing of Radioactive material released through the sewage outfall, a series of Bathythermograph traverses were run throughout the bay accompanied by Drift Card Releases.

[illegible]

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Date: 5-23, 24-56

357

[illegible]

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

358

Cruise Number 254

Date: 5-23, 24-56

[illegible]

Cruise Number 259

Date: 6-19-56

Cruise Description: Drift cards were dropped along traverses in Santa Monica Bay together with BT casts. At the northern end of the Bay, one Hayward Grab Station was occupied for check purposes for the Biological phases of the survey.

Time	1002	1007	1012	1017-D	1017-U	1022	1027	1032	1037	1042	1047	1052	1057	1102	1107	1117	1122	1127	1132	1137	1142	1147
72 ⁰																						
71																						
70																						
69																						
68																						
67																						
66																						
65																						
64						0-							0-	645	644	0-	0-					
		0			0	15	0					0	20	24	31	33	10					
63	638		632	0-				638	635	634	0-	638						635	635	635	634	
	20	30	27	35	10	22	25	29	40	40	24	35	35	40	34	45	38	45	42	35	34	20
62	26	37	31	37	17	28	33	33	50	47	46	36	42	43	38	58	57	51	48	50	49	47
61	44	41	32	40	26	31	36	43	52	53	47	41	43	46	41	62	63	60	55	54	53	52
60	46	42	35	54	27	40	39	50	57	65	49	43	45	50	45	65	65	62	59	64	70	58
59	56	49	40	65	32	42	44	52	69	78	58	58	52	54	50	70	73	69	66	74	79	65
58	60	56	48	68	33	47	50	57	72	80	74	67	57	60	60	83	86	75	72	90	82	68
57	65	64	53	83	39	55	57	71	79	84	85	75	67	75	72	97	90	80	93	96	85	74
56	78	72	60		60		65	83	93	91	105	90	86	103	95	106	102	85	102	100	89	81
55	87	95	83				71	102	108	110	118	115	108	115	108	120	110	113	107	112	100	95
54		120	107				94	126	125	128	141	127	119	121	118	140	144	143	129	132	120	112
53		153	140				120	140	152	145	158	145	133	143	136	149	160	152	149	150	136	142
52		175					152	170	180	170	179	155	152	165	156	175	172	173	174	169	170	164
51		200					200		220	200	215	205	200		215	220	210	200	210	195		190
50																						
49																						
48																						

subtract 5 ft.

APPENDIX TO CRUISES

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Cruise Number 259

Date: 6-19-56

361

[illegible]

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Date: 6-19-56

362

[illegible]

APPENDIX TO CRUISES

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Cruise Number 259

Date: 6-19-56

363

Time →	1605	1610	1617	1622	1627	1640	1650
72°							
71							
70							
69							
68							
67							
66	66.5 15	66.5 7					
65	20	20	65.5 20	65.5 25	65.5 14	65.3 12	
64	25	24	29	33	25	21	64.5 20
63	32	28	35	36	33	23	32
62	37	29	39	46	38	26	35
61	40	31	45	49	45	33	45
60	45	39	54	53	50	41	55
59	47	44	55	54	51	53	61
58	50	48	60	57	55	69	64
57	59	55	63	60	66	74	70
56	70	65	70	70	85	86	
55	80	73	90	97	102	105	
54	104	92	124	123	122	130	
53	165	170	170	155	145	155	
52				210			
51							
50							
49							
48

TEMPERATURE INVERSIONS

Cruise 259

Date: 6-19-56

Time: 1342
Temp. Depth
64.5 Surf.
65 10'
65 14
64 15
64 20
64 23

APPENDIX TO CRUISES

BATHYTHERMOGRAPH TRAVERSES - SANTA MONICA BAY

Cruise Number 260

Date: 6-28-56

365

Cruise Description: Lobster traps were set out in Santa Monica Bay, followed by current floats.

[illegible]

TEMPERATURE INVERSIONS

366

Cruise 260

Date: 6-28-56

Time: 1210
Temp. Depth

65.2 Surf.

65 5'

66 8

67 10

67 11

66 12

65 18

Santa Monica Bay
 *Cruise 262
 July 26, 27, 1956

APPENDIX TO CRUISES

Drift Cards Cruise 217

Station No.	Lat 33°	Long 118°	Date	Time	Cards Released Serial No.	No.	Recovered No.	%	Area of Recovery and Remarks
3427	58'41"	32'23"	9-8-55	0850	21-24 771-775*	4 5	1 5	25 100	Topanga Canyon
3428	57'53"	34'35"	"	0915	26-30, 33-38, 40, 43-45 776-780*	15 5	4 5	27 100	Topanga Canyon-Playa del Rey
3429	57'07"	36'47"	"	0928	46-50, 53-54, 56-27, 59, 62-63, 65-13 781-785*	5 5	7 5	54 100	Malibu-Playa del Rey
3430	55'13"	35'15"	"	0941	66-69, 72, 76- 82 786-790"	12 5	8 2	67 40	Santa Monica-Redondo
3431	56'09"	32'59"	"	0955	86, 89-98, 100-104 791-795*	16 5	8 0	50 0	Zuma Beach, Malibu Manhattan Malibu
3432	56'48"	30'48"	"	1009	106-125 796-800*	20 5	8 1	40 20	Playa del Rey
3433	57'46"	27'58"	"	1023	126-132, 133- 139-141-145 801-805*	18 5	9 1	50 20	Trancas Beach-Malibu
3434	54'46"	29'33"	"	1052	147-152, 154, 156-165 806-810*	17 5	7 4	41 80	Zuma Beach, Santa Monica, Playa del Rey, Redondo
3435	53'50"	31'44"	"	1107	166-185- 811-815*	20	6	30	Santa Monica, Alamitos Bay.
3436	53'11"	33'59"	"	1120	186-205 816-820*	20 5	7 3	35 60	Malibu, Santa Monica, Redondo
3437	51'34"	33'04"	"	1132	206-218, 220-225 821-825*	19 5	9 4	47 80	

*Unweighted cards

APPENDIX TO CRUISES

Drift Cards Cruise 217

Station	Lat. 33°	Long 118°	Date	Time	Cards Released Serial No.	No.	Recovered No.	%	Area of Recovery and Remarks
3438	52°21"	30°53"	9-8-55	1144	226-245	20	5	25	Malibu, Toponga
3439	53°09"	28°39"	"	1157	826-830*	5	0	0	Canyon, Venice
3440	51°32"	27°49"	"	1240	246-265	20	14	70	Malibu, Venice-
3441	50°43"	30°05"	"	1254	831-835*	5	2	40	Playa del Rey
3442	50°00"	32°18"	"	1306	266-285	20	6	30	Malibu, Ocean Park-
3443	49°02"	29°28"	"	1330	836-840*	5	3	60	Playa del Rey
3444	49°52"	27°16"	"	1344	286-305	20	10	50	Manhattan
3445	48°05"	26°36"	"	1407	841-845*	5	3	60	Malibu, El Segundo-
3506	48°03"	26°34"	9-29-55	1020	306-325	20	9	45	Portuguese Bend
3507	49°45"	27°11"	"	1046	846-850*	5	4	80	Malibu, Santa Monica-
3508	48°56"	29°28"	"	1059	326-345	20	8	40	Playa del Rey
3509	48°11"	31°43"	"	1113	851-855*	5	3	60	Santa Monica-Ocean
3510	49°55"	32°18"	"	1126	346-365	20	13	65	Park, So. of Playa del Rey
3511	50°42"	30°03"	"	1137	856-860*	5	5	100	Manhattan, Hermosa
3512	51°28"	27°48"	"	1150	366-385	20	5	25	North Palos Verdes
					861-865*	5	0	0	Redondo Beach-Palos
					386-405	20	4	20	Verdes, Huntington Beach
					871-785*	5	4	80	Point Vicente, Ocean-
					406-425	20	9	45	side-Encinitas
					876-880*	5	5	100	Corona del Mar-San Diego
					426-445	20	5	25	Huntington Beach-
					881-885*	5	1	20	Encinitas
					446-465	20	7	35	Newport - La Jolla
					891-895*	5	0	0	Redondo - Palos
					466-485	20	8	40	Verdes
					886-890*	5	1	20	
					486-505	20	9	45	
					896-900*	5	3	60	
					506-525	20	7	35	
					901-905*	5	0	0	

*Unweighted cards

Drift Cards
Cruise 217

Station No.	Lat 33°	Long 118°	Date	Time	Cards Released Serial No.	Released No.	Recovered No.	%	Area of Recovery and Remarks
3513	53°05"	28°38"	9-29-55	1236	526-545	20	6	30	North Redondo
3514	52°20"	30°52"	"	1250	906-910*	5	3	60	
3515	51°33"	33°04"	"	1305	546-565	20	8	40	Redondo, Point Vicente-
3516	53°08"	33°59"	"	1317	911-915*	5	2	40	Dana Point
3517	53°58"	31°46"	"	1333	566-585	20	3	15	Huntington Beach-
3518	54°41"	29°29"	"	1345	916-920*	5	1	20	Encinitas
3519	56°43"	30°45"	"	1433	586-605	20	11	55	Venice-Redondo,
3520	56°02"	32°37"	"	1447	921-925*	5	5	100	Huntington Beach-La Jolla
3521	55°09"	35°13"	"	1501	606-625	20	15	75	Playa del Rey-
3522	57°03"	36°47"	"	1519	926-930*	5	5	100	Redondo
3523	57°48"	34°28"	"	1533	626-645	20	7	35	Playa del Rey-
3524	58°48"	32°18"	"	1547	931-935*	5	2	40	Redondo
3525	00°58"	33°25"	"	1630	646-665	20	4	20	Ocean Park-Playa del
					936-940*	5	5	100	Rey
					666-685	20	7	35	Playa del Rey-
					941-945*	5	2	40	Manhattan
					686-705	20	5	25	Santa Monica, Manhattan,
					946-950*	5	3	60	Redondo, North of
									Huntington Beach
									Long Beach-Newport
									Malibu-Toponga, 1 recovery
									at sea 1 mi west of
									release points
									Toponga Canyon-
									Santa Monica

*Unweighted cards

APPENDIX TO CRUISES

Drift Cards. Cruise 234

Station	Lat 330	Long 1180	Date	Time	Cards Released Serial No. No.	Recovered No. %	Area of Recovery and Remarks
3762	49°47"	27°15"	12-29-55	1039	1000 - 1015 16	2 13	Laguna, Carlsbad
3763	49°08"	29°37"	"	1051	1016 - 1031 16	1 6	Mission Beach (San Diego)
3764	48°12"	31°42"	"	1101	1032 - 1047 16	2 13	Newport, Capistrano
3765	49°54"	32°17"	"	1117	1048 - 1063 16	3 19	Long Beach, Capistrano, Carlsbad,
3766	50°41"	30°05"	"	1130	1064 - 1079 16	1 6	Newport
3767	51°31"	27°47"	"	1143	1080 - 1095 16	2 13	San Clemente, Oceanside
3768	53°07"	29°37"	"	1227	1096 - 1111 16	2 13	San Clemente, Carlsbad
3769	53°25"	30°54"	"	1237	1112 - 1127 16	3 19	Dana Point, Carlsbad, Encinitas
3770	51°32"	33°04"	"	1254	1128 - 1143 16	2 13	Balboa, Dana Point
3771	53°08"	34°00"	"	1307	1144 - 1159 16	5 31	Balboa, Oceanside - Leucadia
3772	53°52"	31°47"	"	1320	1160 - 1175 16	3 19	Huntington Beach - Corona del Mar
3773	54°43"	29°35"	"	1334	1176 - 1191 16	1 6	Newport
3774	56°48"	30°42"	"	1420	1192 - 1207 16	5 31	Newport-Torrey Pines, 1 two mi.no. of Hyperion
3775	55°57"	33°05"	"	1435	1208 - 1223 16	1 6	Rosarito Beach (B.C.)
3776	55°09"	35°13"	"	1447	1224 - 1239 16	6 38	Laguna, Oceanside, Carlsbad, 1 in water at
3777	57°03"	36°49"	"	1505	1240 - 1255 16	4 25	Avalon Bay, Santa Catalina
3778	57°51"	34°33"	"	1516	1256 - 1271 16	2 13	Balboa, Dana Point, Del Mar, La Jolla
3779	58°38"	32°19"	"	1531	1272 - 1288 17	4 24	Cardiff, Solana Beach, Carlsbad San Diego - 1 in water 2 miles off Venice

APPENDIX TO CRUISES
Drift Cards

Cruise 236

Station No.	Lat 33°	Long 118°	Date	Time	Cards Released Serial No.	Recovered No.	%	Area of Recovery and Remarks
3828	46'22"	27'00"	1-18-56	1105	1289 - 1313	25	0	0
3829	48'05"	26'32"	"	1114	1314 - 1338	25	3	12
3830	49'47"	27'13"	"	1137	1339 - 1363	25	0	0
3831	48'59"	29'26"	"	1150	1364 - 1388	25	2	8
3832	48'12"	31'40"	"	1206	1389 - 1413	25	0	0
3833	49'55"	32'17"	"	1216	1414 - 1438	25	1	4
3834	50'43"	30'00"	"	1230	1439 - 1463	25	2	8
3835	51'30"	27'45"	"	1244	1464 - 1488	25	1	4
3836	53'20"	28'37"	"	1327	1489 - 1513	25	0	0
3837	52'20"	30'48"	"	1341	1514 - 1538	25	0	0
3838	51'33"	33'03"	"	1355	1539 - 1563	25	2	8
3839	53'09"	33'58"	"	1413	1564 - 1588	25	5	20
3840	53'57"	31'42"	"	1420	1589 - 1638	50	1	2
3841	54'42"	29'29"	"	1436	1639 - 1648	10	1	10
3842	56'43"	30'44"	"	1537	1649 - 1659	10	0	0
3843	55'58"	32'53"	"	1549	1660 - 1709	50	0	0
3844	55'10"	35'10"	"	1604	1710 - 1719	10	0	0
3845	57'03"	36'44"	"	1620	1720 - 1729	10	0	0

#1650 missing

APPENDIX TO CRUISES

Drift Cards
Cruise 236

Station No.	Lat 33°	Long 118°	Date	Time	Cards Released Serial No. No.	Recovered No.	Recovered %	Area of Recovery and Remarks
3846	57'33"	34'29"	1-18-56	1635	1730 - 1739	0	0	
3847	58'38"	32'21"	"	1645	1740 - 1749	1	10	Point Dume

APPENDIX TO CRUISES

Drift Cards
Cruise 239

Station No.	Lat 33°	Long 118°	Date	Time	Cards Released Serial No. No.	Recovered No. %	Area of Recovery and Remarks
3931	55°40"	23°28"	2-16-56	0555	1750 - 1769 20	1 5	Lunada Bay (Palos Verdes)
3932	53°13"	32°57"	"	0610	1770 - 1789 20	0 0	
3933	49°47"	31°17"	"	0633	1790 - 1809 20	0 0	

APPENDIX TO CRUISES

Drift Cards Cruise 240

Station No.	Lat 33°	Long 118°	Date	Time	Cards Released Serial No.	No.	Recovered No.	%	Area of Recovery and Remarks
3934	49°43"	25°18"?	2-22-56	1043	1810 - 1823	14	0	0	
3935	49°02"	29°34"	"	1055	1824 - 1837	14	1	7	Malaga Cove
3936	48°17"	31°48"	"	1107	1838 - 1851	14	1	7	" "
3937	49°55"	32°20"	"	1118	1852 - 1865	14	1	7	" "
3938	50°44"	30°05"	"	1131	1866 - 1879	14	1	7	Torrey Pines
3939	51°31"	27°51"	"	1144	1880 - 1893	14	2	14	Hermosa, Redondo
3940	53°11"	28°38"	"	1226	1894 - 1907	14	3	21	" "
3941	52°21"	30°55"	"	1242	1908 - 1921	14	0	0	
3942	51°32"	33°07"	"	1255	1922 - 1935	14	0	0	
3943	53°10"	33°59"	"	1306	1936 - 1949	14	5	36	Manhattan - Redondo
3944	53°56"	31°43"	"	1320	1950 - 1972	23	7	30	E1 Segundo - Hermosa
3945	54°42"	29°32"	"	1332	1973 - 1986	14	3	21	Playa del Rey
3946	56°43"	30°46"	"	1419	1987 - 2000	14	7	50	Venice
3947	55°55"	33°00"	"	1434	2001 - 2023	23	9	39	Venice
3948	55°08"	35°12"	"	1447	2024 - 2037	14	4	29	Playa del Rey
3949	57°03"	36°48"	"	1501	2038 - 2051	14	1	7	Playa del Rey
3950	57°49"	34°35"	"	1516	2052 - 2066	15	4	27	Ocean Park
3951	58°37"	32°13"	"	1529	2067 - 2081	15	6	40	Malibu, Santa Monica Santa Monica

APPENDIX TO CRUISES

Drift Cards Cruise 245

Station No	Lat 33°	Long 118°	Date	Time	Cards Released Serial No.	Recovered No.	Recovered %	Area of Recovery and Remarks	
4025	46°19"	27°03"	3-28-56	1014	3000 - 3024	25	15	60	Playa del Rey - So. Redondo
4026	48°05"	26°30"	"	1025	3025 - 3049	25	7	28	Hermosa - Malaga Cove
4027	49°47"	27°11"	"	1048	3050 - 3074	25	14	56	El Segundo - So. Redondo
4028	48°58"	29°26"	"	1102	3075 - 3099	25	15	60	El Segundo - Manhattan
4029	48°12"	31°29"	"	1116	3100 - 3124	25	12	48	Hermosa - So. Redondo
4030	49°55"	32°17"	"	1129	3125 - 3149	25	12	48	Santa Monica, Manhattan, Redondo
4031	50°33"	30°00"	"	1143	3150 - 3174	25	10	40	Playa del Rey - Manhattan
4032	51°30"	27°48"	"	1156	3175 - 3199	25	10	40	Playa del Rey - El Segundo
4033	53°05"	28°37"	"	1128	3200 - 3224	25	7	28	Santa Monica - Manhattan
4034	52°17"	30°48"	"	1252	3225 - 3249	25	8	32	Santa Monica - So. Playa del Rey
4035	51°32"	33°00"	"	1300	3250 - 3274	25	15	60	Playa del Rey - Redondo
4036	53°07"	33°56"	"	1315	3275 - 3299	25	18	72	Santa Monica - Manhattan
4037	53°57"	31°45"	"	1329	3300 - 3349	50	28	56	Santa Monica - El Segundo, Manhattan
4038	54°42"	29°28"	"	1341	3350 - 3374	25	9	36	Santa Monica
4039	56°42"	30°43"	"	1423	3375 - 3399	25	6	24	Santa Monica
4040	55°55"	33°48"	"	1437	3400 - 3449	50	21	42	Toponga Canyon - El Segundo
4041	55°08"	35°08"	"	1450	3450 - 3474	25	10	40	Santa Monica
4042	57°02"	36°44"	"	1505	3475 - 3499	25	7	28	El Segundo

APPENDIX TO CRUISES

Drift Cards
Cruise 245

Station No	Lat 33°	Long 118°	Date	Time	Cards Released Serial No. No.	Recovered No. %	Area of Recovery and Remarks
4043	57°51"	34°25"	3-28-56	1518	3500 - 3524 25	11 44	Santa Monica, So. Venice
4044	58°36"	32°07"	"	1532	3525 - 3549 25	9 36	Santa Monica, Venice, Manhattan

APPENDIX TO CRUISES

Drift Cards Cruise 250

Station No.	Lat 33°	Long 118°	Date	Time	Cards Released Serial No.	No.	Recovered No.	%	Area of Recovery and Remarks
4197	47°54"	26°10"	4-25-56	1018	3550 - 3574	25	15	60	Santa Monica, Playa del Rey to Torrance Beach
4198	49°43"	27°15"	"	1054	3575 - 3599	25	14	56	Santa Monica
4199	49°00"	29°28"	"	1102	3600 - 3624	25	15	60	Playa del Rey
4200	48°17"	31°43"	"	1116	3625 - 3649	25	20	80	Playa del Rey, Manhattan
4201	49°53"	32°19"	"	1134	3650 - 3674	25	16	64	E1 Segundo, Manhattan
4202	50°42"	30°03"	"	1144	3675 - 3699	25	11	44	E1 Segundo, Manhattan
4203	51°30"	27°48"	"	1158	3700 - 3724	25	12	48	Redondo
4204	53°03"	28°28"	"	1247	3725 - 3749	25	11	44	Santa Monica, Playa del Rey, E1 Segundo
4205	52°18"	30°48"	"	1259	3750 - 3774	25	12	48	Topanga Canyon to Venice
4206	51°31"	33°05"	"	1312	3775 - 3799	25	13	52	Topanga Canyon, Santa Monica, Playa del Rey
4207	53°05"	33°47"	"	1324	3800 - 3824	25	9	36	Playa del Rey to Manhattan
4208	53°52"	31°45"	"	1335	3825 - 3875	50	18	36	Playa del Rey to E1 Segundo
4209	54°42"	29°34"	"	1350	3876 - 3900	25	18	72	Playa del Rey, E1 Segundo
4210	56°43"	30°43"?	"	1453	3901 - 3925	25	11	44	Playa del Rey, Redondo #3837 missing
4211	55°51"	33°01"	"	1507	3926 - 3975	50	27	54	Santa Monica, Playa del Rey
4212	55°04"	35°11"	"	1519	3976 - 4000	25	12	48	Santa Monica to Playa del Rey
4213	57°00"	36°43"	"	1535	4001 - 4025	25	18	72	Malibu, Venice to Playa del Rey

APPENDIX TO CRUISES

Drift Cards Cruise 250

Station No.	Lat 330	Long 1180	Date	Time	Cards Released Serial No.	Released No.	Recovered %	Area of Recovery and Remarks
4214	57'48"	34'32"	4-25-56	1549	4026 - 4050	25	48*	Malibu Santa Monica to El Segundo
4215	58'35"	32'21"	"	1602	4051 - 4075	25	48	Malibu to Santa Monica, Hermosa

APPENDIX TO CRUISES

Drift Cards Cruise 254

Station No.	Lat 33°	Long 118°	Date	Time	Cards Released Serial No.	Recovered No.	Recovered %	Area of Recovery and Remarks
4248	58°30"	32°19"	5-23-56	2142	4076 - 4085	4	40	Santa Monica to Venice
4249	57°43"	34°29"	"	2155	4086 - 4095	5	50	Santa Monica to Playa del Rey
4250	56°58"	36°42"	"	2208	4096 - 4107	3	30	#4100, 4101 missing
4251	55°05"	35°08"	"	2223	4108 - 4117	7	70	Manhattan, Torrance Beach to Palos Verdes Point
4252	55°49"	33°02"	"	2237	4118 - 4157	20	50	Santa Monica to El Segundo, Manhattan
4253	56°41"	30°41"	"	2252	4158 - 4167	9	90	Hermosa to Malaga Cove
4254	54°35"	29°30"	"	2335	4168 - 4177	5	50	Hermosa to Torrance Beach
4255	53°50"	31°44"	"	2348	4178 - 4217	22	55	Trancas Beach, Hermosa to Rocky Pt., Pt. Vicente
4256	53°12"	33°55"	5-24-56	0002	4218 - 4227	2	20	Redondo, Lunada Bay
4257	51°27"	33°06"	"	0012	4228 - 4237	1	10	San Onofre
4258	52°18"	30°49"	"	0026	4238 - 4247	4	40	Redondo to Rocky Point
4259	53°05"	28°38"	"	0040	4248 - 4257	6	60	Redondo to Torrance Beach
4260	51°27"	27°47"	"	0120	4258 - 4267	6	60	Manhattan to Redondo
4261	50°36"	30°02"	"	0134	4268 - 4277	4	40	Redondo, Portuguese Bend, San Pedro
4262	49°47"	32°15"	"	0148	4278 - 4287	2	40	Redondo, Lunada Bay
4263	48°15"	31°43"	"	0158	4288 - 4297	0	0	No returns
4264	48°57"	29°26"	"	0215	4298 - 4307	2	20	Portuguese Bend
4265	49°43"	27°13"	"	0228	4308 - 4317	5	50	Manhattan to Redondo
4266	47°48"	25°43"	"	0302	4318 - 4329	6	50	Torrance Beach to Rocky Point

APPENDIX TO CRUISES

Drift Cards Cruise 259

Station	Lat 33°	Long 118°	Date	Time	Cards Released Serial No.	No.	Recovered %	Area of Recovery and Remarks	
4297	48°05"	25°56"	6-19-56	1002	4330 - 4354	25	12	48	Malaga Cove to Lunada Bay
4298	49°49"	27°20"	"	1039	4355 - 4379	25	15	60	Torrance Beach to Malaga Cove
4299	49°02"	29°33"	"	1051	4380 - 4404	25	14	56	Manhattan to Palos Verdes Point
4300	48°15"	31°47"	"	1106	4405 - 4429	25	11	44	Venice to Portuguese Bend
4301	49°56"	32°22"	"	1112	4430 - 4454	25	12	48	Topanga, Venice to Malaga Cove, North of Pt. Vicente
4302	50°46"	30°03"	"	1132	4455 - 4479	25	13	52	Venice to Redondo
4303	51°34"	27°50"	"	1145	4480 - 4504	25	13	52	E1 Segundo to Redondo
4304	53°12"	28°41"	"	1223	4505 - 4529	25	12	48	Manhattan to Hermosa
4305	52°21"	30°56"	"	1239	4530 - 4554	25	15	60	Ocean Park to Hermosa
4306	51°33"	33°07"	"	1250	4555 - 4579	25	9	36	Santa Monica to Playa del Rey
4307	53°12"	34°00"	"	1303	4580 - 4604	25	16	64	Venice, South of Playa del Rey
4308	53°58"	31°46"	"	1316	4605 - 4654	50	27	54	Santa Monica to Hermosa
4309	54°43"	29°33"	"	1328	4655 - 4679	25	17	68	Playa del Rey to Hermosa
4310	56°46"	30°44"	"	1342	4680 - 4704	25	16	64	Santa Monica, Venice to Playa del Rey
4311	55°58"	32°57"	"	1412	4705 - 4754	50	26	52	Santa Monica to Playa del Rey and Hermosa
4312	55°10"	35°12"	"	1438	4755 - 4779	25	17	68	Venice to Hermosa

APPENDIX TO CRUISES

Drift Cards Cruise 259

Station	Lat 33°	Long 118°	Date	Time	Cards Released Serial No.	Released No.	Recovered %	Area of Recovery and Remarks
4313	57°02"	36°48"	6-19-56	1457	4780 - 4804	25	12	48
4314	57°51"	34°31"	"	1508	4805 - 4829	25	12	48
4315	58°37"	32°17"	"	1521	4830 - 4854	25	11	44
								Zuma Beach, Malibu, Santa Monica to Hermosa Venice to Redondo
								Zuma Beach, Malibu, Topanga Canyon to Santa Monica

APPENDIX TO CRUISES

Drift Cards Cruise 260

Station No.	Lat 33°	Long 118°	Date	Time	Cards Released Serial No. No.	Recovered No. %	Area of Recovery and Remarks
4452	56°33"	30°45"	6-29-56	0923	5167-5176 10	3 30	Venice
4453	56°02"	30°31"	"	1001	5177-5186 10	5 50	Ocean Park to Playa del Rey
4454	55°32"	30°17"	"	1005	5187-5196 10	8 80	Santa Monica to Playa del Rey
4455	55°04"	30°06"	"	1044	4856-4861 & 5197-5200 10	8 80	Santa Monica, Playa del Rey
4456	54°35"	29°53"	"	1050	5130-5139 10	9 90	Santa Monica to South Playa del Rey
4457	54°08"	29°41"	"	1125	5140-5149 10	5 50	Venice to Playa del Rey
4458	53°38"	29°27"	"	1128	5150-5160* 10	7 70	Venice to Playa del Rey, El Segundo, Manhattan *5156 missing
4459	53°11"	29°15"	"	1205	5161-5166 & 5065-5068 10	7 70	Venice to El Segundo
4460	52°42"	29°03"	"	1208	5069-5078 10	3 30	Venice to Playa del Rey
4461	52°15"	28°51"	"	1249	5079-5088 10	5 50	Playa del Rey
4462	51°47"	28°38"	"	1252	5089-5099* 10	5 50	*5096 missing Playa del Rey

APPENDIX TO CRUISES

Drift Cards Cruise 262

Station No.	Lat	Long	Date	Time	Cards Released Serial No.	No.	Recovered No.	%	Area of Recovery and Remarks
	34°								
4465	00°10"	39°15"	7-26-56	1914	6000 - 6023	24	11	46	Topanga, Santa Monica
4466	33° 58'30"	38°10"	"	1926	6024 - 6046	23	10	43	Santa Monica to Playa del Rey
4467	59°17" 34°	35°55"	"	1938	6047 - 6069	23	4	17	Santa Monica to Playa del Rey
4468	00°03"	33°42"	"	1951	6070 - 6092	23	5	22	Santa Monica to Playa del Rey
4469	33° 58'10"	31°56"	"	2037	6093 - 6115	23	7	30	Playa del Rey to El Segundo
4470	57°26"	34°10"	"	2050	6116 - 6138	23	10	43	Ocean Park to Manhattan
4471	56°44"	36°08"	"	2102	6139 - 6162	24	15	63	Ocean Park to North Manhattan
4472	54°46"	34°52"	"	2115	6163 - 6185	23	5	22	Playa del Rey to N. Redondo
4473	55°32"	32°40"	"	2129	6186 - 6235	50	30	60	Playa del Rey to Redondo
4474	56°15"	30°28"	"	2141	6236 - 6256	21	9	42	Playa del Rey, Manhattan to
4475	54°13"	29°18"	"	2226	6259 - 6281	23	14	60	Manhattan to Hermosa
4476	53°30"	31°30"	"	2238	6282 - 6331	50	36	72	Manhattan-Redondo, Malaga Cove
4477	52°43"	33°44"	"	2251	6332 - 6354	23	9	39	Manhattan to Rocky Point
4478	50°37"	32°36"	"	2305	6355 - 6377	23	14	60	El Segundo to Lunado Bay, Long Beach
4479	51°23"	30°24"	"	2320	6378 - 6400	23	11	47	Hermosa to Malaga Cove
4480	52°08"	28°08"	"	2333	6401 - 6423	23	16	69	Hermosa to Torrance Beach
4481	49°23"	26°51"	"	0022	6424 - 6446	23	14	56	Redondo to Rocky Point

APPENDIX TO CRUISES

Drift Cards
Cruise 262

Station No.	Lat 33°	Long 118°	Date	Time	Cards Released Serial No.	No.	Recovered No.	%	Area of Recovery and Remarks
4482	48°47"	29°07"	7-26-56	0037	6447 - 6469	23	10	43	Manhattan to Torrance Beach
4483	47°53"	31°16"	"	0047	6470 - 6492	23	10	43	Manhattan to Hermosa, Resort Point to Portuguese Bend, Laguna Beach

APPENDIX TO CRUISES

Drift Cards Cruise 266

Station No.	Lat	Long 1180	Date	Time	Cards Released Serial No.	No.	Recovered No.	%	Area of Recovery and Remarks
	34°								
4495	00°56"	32°46"	8-9-56	1853	6493 - 6515	23	15	65	Santa Monica to Venice
4496	33° 57°00"	36°42"	"	1929	6516 - 6538	23	7	30	Santa Monica to Venice
4497	57°48"	34°28"	"	1943	6539, 6541 - 6562	23	7	30	Topanga to Venice
4498	58°34"	32°20"	"	1956	6563 - 6585	23	10	43	Ocean Park, Playa del Rey
4499	56°42"	30°42"	"	2044	6586 - 6608	23	12	52	Ocean Park to Playa del Rey
4500	55°50"	33°01"	"	2057	6609 - 6658	50	21	46	Santa Monica to Venice
4501	55°02"	35°10"	"	2109	6659 - 6681	23	11	47	Santa Monica to Playa del Rey
4502	53°03"	33°58"	"	2124	6682 - 6704	23	4	17	Portuguese Bend
4503	53°52"	31°45"	"	2137	6705 - 6755	50	20	40	6750 missing Venice to Manhattan
4504	54°40"	29°32"	"	2151	6756 - 6778	23	12	52	Venice to Playa del Rey
4505	53°03"	28°36"	"	2232	6779 - 6801	23	12	52	El Segundo to Hermosa
4506	52°17"	30°47"	"	2244	6802 - 6824	23	9	39	Hermosa to Redondo
4507	51°28"	33°05"	"	2259	6825 - 6847	23	2	8	Avalon, Catalina Island
4508	49°50"	32°19"	"	2308	6848 - 6870	23	2	8	Avalon, Catalina Island
4509	50°40"	30°02"	"	2322	6871 - 6893	23	7	30	Hermosa
4510	51°29"	27°46"	"	2326	6894 - 6916	23	11	47	Manhattan to Hermosa
4511	49°43"	27°15"	8-10-56	0018	6917 - 6939	22	9	41	6957 missing Redondo to Malaga Cove

APPENDIX TO CRUISESDrift Cards
Cruise 266

Station No.	Lat 33°	Long 118°	Date	Time	Cards Released Serial No.	No.	Recovered No.	%	Area of Recovery and Remarks
4512	49°00"	29°27"	8-10-56	0031	6940 - 6963	24	12	50	Hermosa to Torrance Beach, S. of Resort Point, Palos Verdes
4513	48°22"	31°46"	"	0044	6964 - 6986	23	3	13	Long Beach to Huntington Beach

APPENDIX TO CRUISES

Drift Cards Cruise 270

Station No.	Lat 330	Long 1180	Date	Time	Cards Released Serial No.	No.	Recovered No.	%	Area of Recovery and Remarks
4623	58° 22"	32° 14"	8-20-56	2006	4906 - 4929	23	12	52	Topanga Canyon Santa Monica 4913 missing Malibu
4624	57° 52"	34° 28"	"	2019	4930 - 4953	23	1	4	
4625	57° 04"	36° 45"	"	2034	4954 - 4976	23		0	
4626	55° 08"	35° 09"	"	2049	4977 - 4999	23		0	
4627	55° 57"	32° 48"	"	2104	5000 - 5050	50	17	34	Malibu, Topanga Cany. Santa Monica
4628	56° 45"	30° 41"	"	2112	5051 - 5063	23	8	34	5034 missing Malibu,
4629	54° 42"	29° 30"	"	2159	6987 - 6996		15	65	Santa Monica Malibu,
4630	53° 55"	31° 38"	"	2213	7020 - 7069	50	5	10	Santa Monica Zuma Beach, Malibu,
4631	53° 08"	33° 56"	"	2225	7070 - 7092	23		0	Santa Monica
4632	51° 32"	33° 01"	"	2236	7093 - 7115	23	2	8	Malibu, Manhattan
4633	52° 19"	30° 47"	"	2251	7116 - 7138	23	9	39	Zuma Beach, Malibu
4634	53° 07"	38° 33"	"	2304	7139 - 7161	23	11	47	Zuma Beach, Santa Monica
4635	51° 30"	27° 45"	"	2343	7162 - 7184	23	13	56	Playadel Rey, Hermosa
4636	50° 42"	30° 00"	"	2357	7185 - 7207	23	4	17	Malibu, Santa Monica, Venice
4637	49° 55"	32° 14"	8-21-56	0010	7208 - 7230	23	7	30	Zuma Beach, Malibu, Redondo

APPENDIX TO CRUISES

Drift Cards Cruise 270

Station No.	Lat 330	Long 1180	Date	Time	Cards Released Serial No.	No.	Recovered No.	%	Area of Recovery and Remarks
4638	48°13"	31°37"	8-21-56	0010	7231 - 7253	23	7	30	Malibu, Hermosa
4639	48°55"	29°22"	"	0035	7254 - 7276	23	8	34	Santa Monica, Venice,
4640	49°42"	27°10"	"	0049	7277 - 7300	23	9	39	Manhattan, Hermosa
4641	48°03"	26°31"	"	0119	7301 - 7323	23	10	43	7281 missing Manhattan, Hermosa