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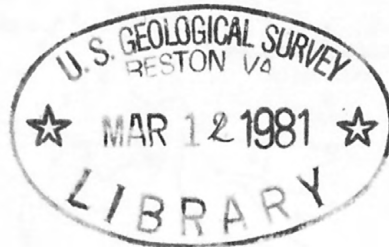
SAMPLE CATALOG FOR CORE CL-80-1,  
CLEAR LAKE, LAKE COUNTY, CALIFORNIA

by

Michael J. Rymer, John D. Sims, Charles W. Hedel,  
William D. Bridge, Richard S. Makdisi, Gary A. Mannshardt

1981

*transal*



This report is preliminary and has not been reviewed  
for conformity with U.S. Geological Survey editorial standards

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Introduction

A 177-m-long core designated CL-80-1 was taken from Clear Lake, Calif., during July and August, 1980, at latitude 39.08°N, longitude 122.84°W (fig. 1). The core was removed from Clear Lake for interdisciplinary studies and regional correlation of paleoclimates, paleoecologies, paleolimnology, Quaternary dating techniques, and frequency of volcanic eruptions. This catalog is designed to help investigators identify samples taken from the core that are most appropriate for their discipline.

The core was taken using wireline continuous coring methods with a truck-mounted drill rig stationed on a barge. The core is 6 cm in diameter and is in 3.05-m-long segments that are stored in plastic half-rounds. For field handling, two half-rounds (top and bottom) were taped together and then sealed in a 6-mil polyethylene bag to prevent core desiccation or disruption during transport and storage. Table 1 gives the depth from the top of the lake sediment to each segment top and bottom and the recovery for the sampled interval.

Core subsampling was conducted at a field laboratory for analyses listed in table 2. The core was first split lengthwise, and the two core halves were photographed on black-and-white and color film. An 8-mm-thick slice from the center of the core was then removed and X-ray radiographed. After the radiograph was developed and examined to determine the extent of sediment disruption and the amount of contained debris, the core slice and one of the core halves were cut up for individual samples according to the plan shown in figure 2 (described below). The remaining core half was sampled for paleomagnetic analysis and sealed in a 6-mil polyethylene bag as an archive sample.

Specifically, the subsampling proceeded as follows: Palynology (Pln) and weight loss (WtL) samples were removed from the working core half; these are volumetric samples, using methods described in Beaver and others (1976).

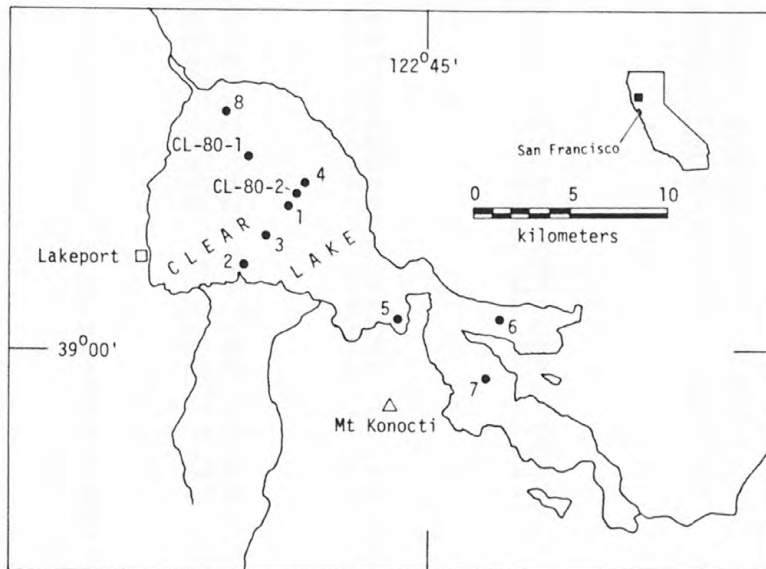


Figure 1. Location of core CL-80-1 with respect to other cores from Clear Lake. Cores at locations shown by single-digit numbers 1 through 8 are the core series taken in 1973 (Sims, 1976).

Table 1. Depth to top and bottom of segments and the length of core recovered from each segment interval.

Segment No.	Segment Top (m)	Sample Interval (m)	Length of Recovery (m)	Bottom of Retrieved Segment (m)
1	0	3.05	1.70	1.70
2	3.05	3.05	1.14	4.19
3	6.10	3.05	2.87	8.87
4	9.14	3.05	2.57	11.71
5	12.19	3.05	1.01	13.20
6	15.24	1.00	1.77	16.24
7	-	2.00	0	-
8	18.27	1.00	0.73	19.00
9	19.20	2.44	2.85	20.67
10	21.64	2.44	1.48	22.83
11	-	2.44 <sup>1/</sup>	1.45	- <sup>2/</sup>
12	27.74	2.59	0.84	28.43
13	30.33	2.89	1.58	31.62
14	-	2.29	- <sup>2/</sup>	-
15	-	1.52	0	-
16	36.42	1.52	1.57	36.42
17	37.95	3.05	1.51	39.46
18	41.00	3.05	1.83	42.54
19	44.04	3.05	2.13	44.99
20	47.09	3.05	2.19	48.99
21	50.14	3.05	2.00	52.14
22	53.19	3.05	1.22	53.76
23	56.24	3.05	3.04	56.59
24	59.28	3.05	2.32	61.44
25	62.33	3.05	1.30	63.63
26	65.38	3.05	2.37	67.31
27	68.43	1.52	0.60	68.64
28	69.95	1.52	1.35	70.00
29	-	3.05	- <sup>2/</sup>	-
30	74.52	3.05	2.70	75.52
31	77.57	3.05	2.33	79.78
32	80.62	3.05	3.01	83.63
33	83.67	3.05	2.31	85.98
34	86.72	3.05	1.79	88.51
35	89.76	3.05	3.09	92.85
36	92.81	2.74	2.00	94.71
37	95.55	3.05	2.76	98.34
38	98.60	3.05	2.34	100.94
39	101.65	3.05	2.56	104.11
40	104.70	3.05	1.66	106.36
41	107.75	2.59	2.49	110.24
42	110.34	3.05	2.77	113.18
43	113.39	3.05	2.32	115.71
44	116.43	2.29	2.42	118.85
45	118.72	3.05	1.54	120.26
46	121.77	1.52	1.41	123.18
47	123.29	2.74	3.04	126.33
48	126.03	3.05	2.63	128.66
49	129.08	3.05	3.19	132.27
50	132.13	3.05	3.05	135.18
51	135.18	3.20	3.06	138.24
52	138.38	3.35	0.36	138.74
53	141.73	2.90	3.04	144.77
54	144.63	3.05	3.01	147.64
55	147.68	3.05	2.99	150.67
56	150.72	3.05	1.20	151.92
57	153.77	1.52	0.32	154.09
58	155.30	3.05	1.16	156.46
59	158.34	3.05	2.05	160.39
60	161.39	3.05	3.04	164.44
61	164.44	3.05	2.92	167.36
62	167.49	3.05	1.16	168.65
63	170.54	3.05	0	-
64	173.58	0.30	0	-
65	173.89	3.05	0.10	-

<sup>1/</sup> 1.22 m interval not cored between segments 10 and 11.

<sup>2/</sup> Sample composed of all debris.

Table 2. Sample types, status, and volume and the sampling interval.

Mnemonic	Analysis	Status <sup>1/</sup>	Sample Vol. (cm <sup>3</sup> ) <sup>2/</sup>	Sample Interval (m) <sup>3/</sup>
Org	Organic geochemistry	F	10	1
PPg	Plant pigments	F	10	1
Hg	Mercury content	F	5	1
AAc	Amino Acid	F	140	10
GrS	Grain size	W	5	1
Cly	Clay Mineralogy	W	5	1
Pln	Palynology	W <sup>4/</sup>	4.4	0.25
Dtm	Diatoms	W	5	2
Ost	Ostracods	W	140	2
MFs	Macrofossils	W <sup>4/</sup>	140	1
Xbm	X-ray bulk mineralogy	W	5	1
WtL	Weight loss	D	1.7	1
Iso	Isotopes	W	5	1
Mag	Paleomagnetism	S	6.6	variable
C14	Radiocarbon date <sup>5/</sup>			
ash	Ash	W	variable	variable
IW	Interstitial water	F	550	10
EX	Extra	W	140	variable

<sup>1/</sup> F = frozen, W = wet and unrefrigerated, D = dry, S = special techniques; paleomagnetism is volumetric in clear plastic boxes 2.1x2.1x1.5 cm inside dimensions and refrigerated at 5°C; interstitial water is a 5 ml sample squeezed from a 5-cm-long section of core, or samples frozen for later squeezing.

<sup>2/</sup> Approximate volumes except for palynology, weight loss, and paleomagnetism.

<sup>3/</sup> Sample intervals are to closest stated distance between samples. Adjustment of sample interval was made for unrecovered core. See catalog for exact sample intervals.

<sup>4/</sup> Palynology and macrofossil samples have 10 ml and 40 ml, respectively, of 95 percent denatured ethyl alcohol added to retard mold growth.

<sup>5/</sup> No radiocarbon samples were taken at the field laboratory.

Other samples (Org, PPg, Hg, AAc, GrS, Cly, Dtm, Ost, MFs, Xbm, and Iso) shown in figure 2 were then removed at the appropriate sample intervals and sealed in polyethylene bags. Both palynology (Pln) and macrofossil (MFs) sample bags have added ethyl alcohol to retard mold growth. Samples for organic geochemistry, plant pigments, mercury, and amino acid analyses (Org, PPg, Hg, and AAc) are frozen.

Samples for paleomagnetic analysis (Mag) were cut from sample horizons with their orientation relative to the horizontal and the core top preserved. The samples were placed in plastic sample boxes (2.1x2.1x1.5 cm), which were marked with the sample orientation and number. Series of samples for paleomagnetic analysis were collected and sealed in a polyethylene bag and refrigerated at 5°C until shipment to Woods Hole Oceanographic Institute for measurement by J. C. Liddicoat (Liddicoat and others, in press).



Samples marked EX (extra) consist of a 10-cm-long segment of core that is a remainder of the sampled core half. These, like most other samples, are sealed in polyethylene bags. The depth to the top of the "extra" sample is determined by the depth listed for the sample. For example, for sample 0064 the depth to the top of the sample is 3070 cm and to the bottom is 3080 cm (3070 + 10 cm). In some cases the "extra" sample is greater than 10 cm long and then the top and bottom of the sample are given; for example, for sample 0057, the top is 2786 cm and the bottom is 2799 cm from the top of the core. Local unique samples were removed from the core and are also marked in the EX column. The objects so removed are indicated to the far right in the catalog.

Only two other types of samples were taken while at Clear Lake, interstitial water (IW) and volcanic ash (ash). Interstitial water samples were removed from the bottom of a core segment at the coring site as soon as the segment was recovered. A 5-cm-long section of the core was bottled and frozen for later analysis. Volcanic ash samples were removed from the core after examination of the X-ray radiographs because not all ash beds are apparent on the split core surfaces. Ash samples were taken from both core halves and the core slice in order to obtain as much volcanic material as possible.

In five cases the length of core segment recovered is greater than the length of the interval cored; this is due to sediment expansion. The increased length results in segment overlap, but the apparent stratigraphic

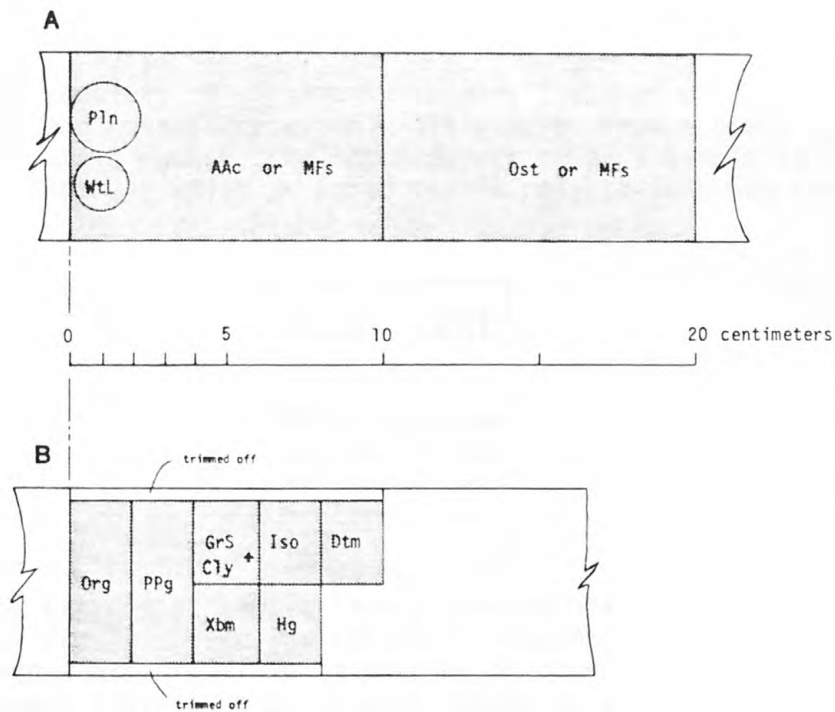


Figure 2. Plan view of a sampled interval from working core half (A) and 8-mm-thick core (radiograph) slice (B). Core top is to the left. At sample depth, here marked 0 cm on the scale, subsamples are taken in order shown. However, not all the samples in every sampled interval were necessarily taken; see table 1 for sample intervals. In the case where less than the maximum number of samples were taken then the samples are taken closer to the recorded depth.

Table 3. Core segments having post retrieval expansion in length that results in overlap with the next lower segment.

Segment	Cored Interval (m)		Expected Recovery (m)	Recorded Recovery (m)	Maximum Adjustment Factor
	Top	Bottom			
35	89.76	92.81	3.05	3.09	0.987
44	116.43	118.72	2.29	2.42	0.946
47	123.29	126.03	2.74	3.04	0.901
49	129.08	132.13	3.05	3.19	0.956
53	141.73	144.63	2.90	3.04	0.954

reversal is solely due to the sediment expansion. Segments involved are numbers 35, 44, 47, 49, and 53; however, only at the bottoms of segments 47 and 53 are there samples with apparent stratigraphic reversals. Samples affected by this apparent stratigraphic reversal are 0490 (126.25 m) and 0493 (126.05 m), segments 47 and 48 respectively, and 0574 (144.76 m) and 0576 (144.75 m), segments 53 and 54 respectively. Sample depths for these segments have not been adjusted for post-retrieval expansion of the sediment. Adjustments may be made according to the factors in table 3.

#### Use of catalog

This catalog consists of segment by segment listings of sample types, their sample number, and respective depth. All samples from a given depth interval have the same sample number; the intended use of each sample is noted on the sample label (fig. 3), which is taped to the polyethylene bag containing the

**CLEAR LAKE**

CORE \_\_\_\_\_ SEG \_\_\_\_\_

DEPTH \_\_\_\_\_ m

ost    min    FS    ash  
mag   pollen   D   macro

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**NO**

Figure 3. Example of sample label, showing blank spaces for core name (CL-80-1 for this core and catalog), segment number, and depth. Depths given are always relative to the top of core CL-80-1 and not the top of the respective segment. Sample number is recorded at the bottom of the label. Between the depth and sample number spaces there are abbreviations for sub-samples; the appropriate abbreviation is circled for each sample taken. The abbreviations respectively correspond to the mnemonics in the catalog as follows: Ost, Xbm, GrS, ash, Mag, Pln, Dtm, and MFs. The appropriate mnemonic for other samples (Org, PPg, Hg, AAC, and Iso) is written in the space below the abbreviations when a sample is taken for the respective analysis.

sample. The existence of a sample is noted in the catalog by an x-mark in the respective sample column and the depth and sample number are specified in the same row in the left-hand column of the page. All samples except paleomagnetism samples have a serial four-digit number, ranging from 0001 to 0663. Paleomagnetism samples are numbered serially and prefixed with an "M", ranging from M1 to M519. The number of radiographs required to cover a segment is noted in the far right-hand column, entitled "Radiograph", of each segment in the sample catalog.

To determine if a sample or sample suite exists for a specific interval first consult figure 4, which summarizes core recovery. If core was recovered for the interval in question, go to the catalog and search until the desired depth is found. Then, the mnemonic columns may be consulted to see what samples exist for the interval in question. If no samples exist, one may request additional sampling from:

Dr. John D. Sims  
U.S. Geological Survey  
345 Middlefield Road, MS 77  
Menlo Park, CA 94025.

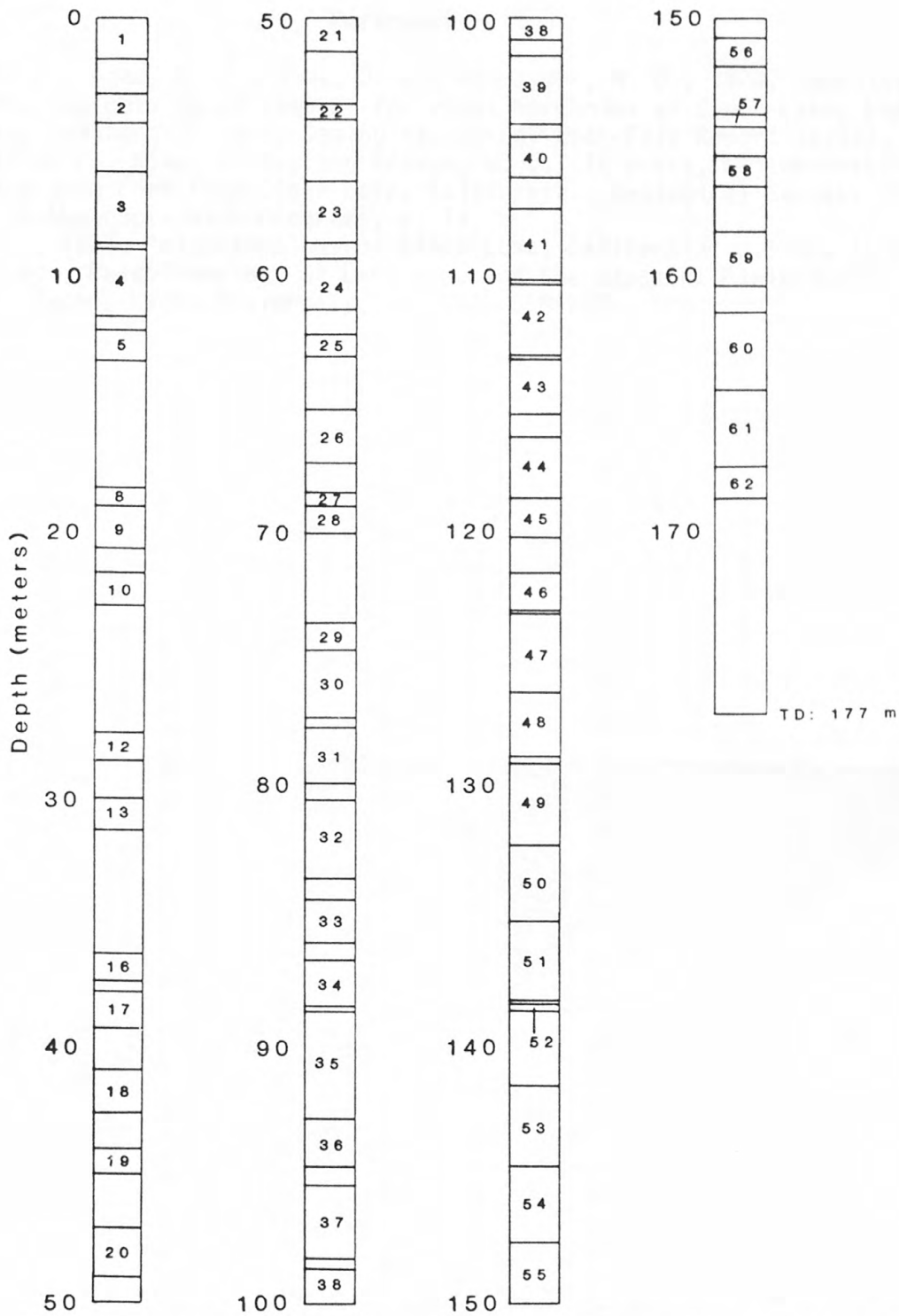


Figure 4. Recovered intervals for core CL-80-1. Numbered sections represent recovered intervals and correspond to segment numbers in the catalog. Unnumbered sections represent intervals of no recovery. Total recovery for the core is 66.5 percent.

## References Cited

- Beaver, C. K., Adam, D. P., Sims, J. D., and Rymer, M. J., 1976, Sampling procedures and catalog of samples for eight boreholes at Clear Lake, Lake County, California: U.S. Geological Survey Open-File Report 76-157, 14 p.
- Liddicoat, J. C., Sims, J. D., and Bridge, W. D., in press, Paleomagnetism of a 177-m-long core from Clear Lake, California: Geological Society of America Abstracts with Programs, v. 13.
- Sims, J. D., 1976, Paleolimnology of Clear Lake, California, U.S.A., in Horie, Soji, ed., Paleolimnology of Lake Biwa and the Japanese Pleistocene: Kyoto, Japan, Kyoto University, v. 4, p. 658-702.

LAKE Clear Lake, Calif. CORE CL-80-1 SEGMENT NO. 1 SAMPLED BY mjr DATE 7/10/80

DEPTH (cm)	SPL. NO.	FROZEN				WET								SPECIAL					Number of Radiographs=1
		Org	PPg	Hg	AAC	GrS	ClY	Pln	Dtm	Ost	MFs	Xbm	WtL	Iso	Mag	Cl4	ash	IW	
25	0001	x	x	x		x	x	x	x			x	x	x					
50	0002							x											
75	0003							x											
100	0004	x	x	x		x	x	x		x	x	x	x	x					
125	0005							x											
150	0006							x											
000-170	0011										x								
136	M1																		x
139	M2																		x
154	M3																		x
156	M4																		x

LAKE Clear Lake, Calif. CORE CL-80-1 SEGMENT NO. 2 SAMPLED BY mjr DATE 7/11/80

DEPTH (cm)	SPL. NO.	FROZEN				WET								SPECIAL					Number of Radiographs=1
		Org	PPg	Hg	AAC	GrS	ClY	Pln	Dtm	Ost	MFs	Xbm	WtL	Iso	Mag	Cl4	ash	IW	
325	0007	x	x	x		x	x	x	x	x	x	x	x	x					
350	0008				x			x											
375	0009							x											
400	0010	x	x	x		x	x	x			x	x	x						
326-366	0012										x								
315	M5																		x
317	M6																		x
336	M7																		x
388	M8																		x
413	M9																		x
415	M10																		x







segment 5, continued

DEPTH (cm)	SPL. NO.	FROZEN				WET								SPECIAL					
		Org	PPg	Hg	AAc	GrS	ClY	PIn	Dtm	Ost	MFs	Xbm	WtL	Iso	Mag	Cl4	ash	IW	EX
1293	M41																		x
1314	M42																		x
1316	M43																		x

LAKE Clear Lake, Calif. CORE CL-80-1 SEGMENT NO. 8 SAMPLED BY mjr DATE 7/14/80

DEPTH (cm)	SPL. NO.	FROZEN				WET								SPECIAL					Number of Radiographs=
		Org	PPg	Hg	AAc	GrS	ClY	PIn	Dtm	Ost	MFs	Xbm	WtL	Iso	Mag	Cl4	ash	IW	
1840	0040	x	x	x		x	x	x			x	x	x	x					
1860	0041							x	x	x									
1890	0042	x	x	x		x	x	x			x	x	x	x					
1833	M44																		x
1835	M45																		x
1865	M46																		x
1895	M47																		x
1897	M48																		x

LAKE Clear Lake, Calif. CORE CL-80-1 SEGMENT NO. 9 SAMPLED BY mjr DATE 7/16/80

DEPTH (cm)	SPL. NO.	FROZEN				WET								SPECIAL					Number of Radiographs=
		Org	PPg	Hg	AAc	GrS	ClY	PIn	Dtm	Ost	MFs	Xbm	WtL	Iso	Mag	Cl4	ash	IW	
1941	0043	x	x	x		x	x	x	x	x	x	x	x	x					
1966	0044				x			x											
1991	0045							x			x								
2016	0046							x			x								
2041	0047	x	x	x		x	x	x			x	x	x						
2066	0048							x											
1920	M49																		x
1922	M50																		x
1949	M51																		x
1976	M52																		x



segment 12, continued

DEPTH (cm)	SPL. NO.	FROZEN				WET								SPECIAL					
		Org	PPg	Hg	AAC	GrS	Cly	Pln	Dtm	Ost	MFs	Xbm	WtL	Iso	Mag	C14	ash	IW	EX
2815-2824	0058				x														
2816	M65														x				
2834	M66														x				
2836	M67														x				

LAKE Clear Lake, Calif. CORE CL-80-1 SEGMENT NO. 13 SAMPLED BY mjr DATE 7/17/80

DEPTH (cm)	SPL. NO.	FROZEN				WET								SPECIAL					Number of Radiographs= 2
		Org	PPg	Hg	AAC	GrS	Cly	Pln	Dtm	Ost	MFs	Xbm	WtL	Iso	Mag	C14	ash	IW	
3054	0059	x	x	x		x	x	x	x	x	x	x	x	x					
3079	0060							x											
3104	0061							x											
3129	0062							x											
3154	0063	x	x	x		x	x	x			x	x	x	x					
3070	0064																		x
3080	0065																		x
3090	0066																		x
3100	0067																		x
3110	0068																		x
3120	0069																		x
3130	0070																		x
3140	0071																		x
3038	M68														x				
3040	M69														x				
3066	M70														x				
3095	M71														x				
3097	M72														x				
3125	M73														x				
3150	M74														x				
3156	M75														x				









segment 19, continued

DEPTH (cm)	SPL. NO.	FROZEN				WET								SPECIAL					
		Org	PPg	Hg	AAC	GrS	ClY	Pln	Dtm	Ost	MFs	Xbm	WtL	Iso	Mag	C14	ash	IW	EX
4472	M106														x				
4492	M107														x				
4495	M108														x				

LAKE Clear Lake, Calif. CORE CL-80-1 SEGMENT NO. 20 SAMPLED BY mjr DATE 7/21/80

DEPTH (cm)	SPL. NO.	FROZEN				WET								SPECIAL					Number of Radiographs= 2
		Org	PPg	Hg	AAC	GrS	ClY	Pln	Dtm	Ost	MFs	Xbm	WtL	Iso	Mag	C14	ash	IW	
4725	0127	x	x	x		x	x	x			x	x	x	x					
4730	0128								x	x									
4750	0129							x											x
4775	0130							x											
4800	0131	x	x	x		x	x	x			x	x	x	x					
4825	0132							x											
4850	0133							x											x
4875	0134	x	x	x		x	x	x			x	x	x	x					
4890	0135								x	x							x		
4710	0136																		x
4720	0137																		x
4740	0138																		x
4760	0139																		x
4770	0140																		x
4780	0141																		x
4790	0142																		x
4810	0143																		x
4820	0144																		x
4830	0145																		x
4840	0146																		x
4860	0147																		x
4870	0148																		x
4880	0149																		x
4718	M109														x				
4720	M110														x				
4745	M111														x				

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LAKE Clear Lake, Calif. CORE CL-80-1 SEGMENT NO. 23 SAMPLED BY mjr DATE 7/22/80

DEPTH (cm)	SPL. NO.	FROZEN				WET									SPECIAL					Number of Radiographs=
		Org	PPg	Hg	AAc	GrS	ClY	Pln	Dtm	Ost	MFs	Xbm	WtL	Iso	Mag	C14	ash	IW	EX	
5630	0175	x	x	x		x	x	x			x	x	x	x						1
5650	0176								x	x								x		
5655	0177							x												
5624	0178																			x
5634	0179																			x
5644	0180																			x
5632	M138														x					
5646	M139														x					
5648	M140														x					

LAKE Clear Lake, Calif. CORE CL-80-1 SEGMENT NO. 24 SAMPLED BY mjr DATE 7/23/80

DEPTH (cm)	SPL. NO.	FROZEN				WET									SPECIAL					Number of Radiographs=	
		Org	PPg	Hg	AAc	GrS	ClY	Pln	Dtm	Ost	MFs	Xbm	WtL	Iso	Mag	C14	ash	IW	EX		
5935	0181	x	x	x		x	x	x			x	x	x	x							2
5960	0182							x	x	x											
5985	0183							x													
6010	0184							x													x
6035	0185	x	x	x		x	x	x			x	x	x	x							
6060	0186							x													x
6085	0187							x													
6110	0188							x			x										
6135	0189	x	x	x	x	x	x	x	x	x		x	x	x							
5980	0190																				x
5990	0191																				x
6000	0192																				x
6020	0193																				x
6050	0194																				x
6070	0195																				x
6080	0196																				x
6090	0197																				x
6100	0198																				x





LAKE Clear Lake, Calif. CORE CL-80-1 SEGMENT NO. 26 SAMPLED BY mjr DATE 7/24/80

DEPTH (cm)	SPL. NO.	FROZEN				WET								SPECIAL					Number of Radiographs= 2
		Org	PPg	Hg	AAc	GrS	ClY	Pln	Dtm	Ost	MFs	Xbm	WtL	Iso	Mag	C14	ash	IW	
6550	0208	x	x	x		x	x	x			x	x	x	x					
6575	0209							x	x	x									
6600	0210							x											
6625	0211	x	x	x		x	x	x			x	x	x	x					
6650	0212							x											
6675	0213							x											
6700	0214							x											
6725	0215	x	x	x		x	x	x			x	x	x	x					
6540	0216																		x
6560	0217																		x
6580	0218																		x
6590	0219																		x
6600	0220																		x
6610	0221																		x
6630	0222																		x
6640	0223																		x
6650	0224																		x
6660	0225																		x
6670	0226																		x
6680	0227																		x
6690	0228																		x
6700	0229																		x
6543	M158																		x
6545	M159																		x
6570	M160																		x
6600	M161																		x
6625	M162																		x
6627	M163																		x
6655	M164																		x
6680	M165																		x
6705	M166																		x
6707	M167																		x



segment 30, continued

DEPTH (cm)	SPL. NO.	FROZEN				WET								SPECIAL					
		Org	PPg	Hg	AAC	GrS	ClY	Pln	Dtm	Ost	MFs	Xbm	WtL	Iso	Mag	C14	ash	IW	EX
7575	M173																		x
7607	M174																		x
7625	M175																		x
7627	M176																		x
7652	M177																		x
7676	M178																		x
7703	M179																		x
7705	M180																		x
7707	M181																		x

LAKE Clear Lake, Calif. CORE CL-80-1 SEGMENT NO. 31 SAMPLED BY mjr DATE 7/25/80

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DEPTH (cm)	SPL. NO.	FROZEN				WET								SPECIAL					Number of Radiographs= 2
		Org	PPg	Hg	AAC	GrS	ClY	Pln	Dtm	Ost	MFs	Xbm	WtL	Iso	Mag	C14	ash	IW	
7760	0244	x	x	x		x	x	x			x	x	x	x					
7785	0245																		
7810	0246																		
7835	0247																		
7860	0248	x	x	x		x	x	x			x	x	x	x					
7885	0249								x	x									
7910	0250																		
7935	0251																		
7960	0252	x	x	x		x	x	x			x	x	x	x					
7840	0253																		
7765	M182																		x
7767	M183																		x
7796	M184																		x
7798	M185																		x
7800	M186																		x
7802	M187																		x
7868	M188																		x
7870	M189																		x
7872	M190																		x
7876	M191																		x

x---X-ray opaque

segment 31, continued

DEPTH (cm)	SPL. NO.	FROZEN				WET							SPECIAL						
		Org	PPg	Hg	AAC	GrS	Cl	Pln	Dtm	Ost	MFs	Xbm	WtL	Iso	Mag	C14	ash	IW	EX
7878	M192																		x
7880	M193																		x
7920	M194																		x
7953	M195																		x
7955	M196																		x
7957	M197																		x

LAKE Clear Lake, Calif. CORE CL-80-1 SEGMENT NO. 32 SAMPLED BY mjr DATE 7/25/80

DEPTH (cm)	SPL. NO.	FROZEN				WET							SPECIAL					Number of Radiographs= 2	
		Org	PPg	Hg	AAC	GrS	Cl	Pln	Dtm	Ost	MFs	Xbm	WtL	Iso	Mag	C14	ash		IW
8075	0254	x	x	x		x	x	x			x	x	x	x					
8100	0255							x	x	x									
8125	0256							x											
8150	0257							x											
8175	0258	x	x	x		x	x	x			x	x	x	x					
8200	0259							x											
8225	0260							x											
8250	0261							x											
8275	0262	x	x	x		x	x	x			x	x	x	x					
8300	0263							x	x	x									
8325	0264				x			x											
8350	0265	x	x	x		x	x	x			x	x	x	x					
8072	M198																		x
8074	M199																		x
8076	M200																		x
8147	M201																		x
8174	M202																		x
8203	M203																		x
8205	M204																		x
8206	M205																		x
8208	M206																		x
8232	M207																		x
8275	M208																		x

segment 32, continued

DEPTH (cm)	SPL. NO.	FROZEN				WET								SPECIAL					
		Org	PPg	Hg	AAC	GrS	ClY	Pln	Dtm	Ost	MFs	Xbm	WtL	Iso	Mag	Cl4	ash	IW	EX
8277	M209																		x
8278	M210																		x
8280	M211																		x
8314	M212																		x
8340	M213																		x
8342	M214																		x
8344	M215																		x

LAKE Clear Lake, Calif. CORE CL-80-1 SEGMENT NO. 33 SAMPLED BY mjr DATE 7/26/80

DEPTH (cm)	SPL. NO.	FROZEN				WET								SPECIAL					Number of Radiographs= 2
		Org	PPg	Hg	AAC	GrS	ClY	Pln	Dtm	Ost	MFs	Xbm	WtL	Iso	Mag	Cl4	ash	IW	
8375	0266								x										
8400	0267								x										
8425	0268								x										
8450	0269	x	x	x		x	x	x			x	x	x	x					
8475	0270								x										
8500	0271							x	x	x									
8525	0272								x										
8550	0273	x	x	x		x	x	x			x	x	x	x					
8575	0274								x										
8393	M216																		x
8395	M217																		x
8422	M218																		x
8449	M219																		x
8470	M220																		x
8472	M221																		x
8474	M222																		x
8475	M223																		x
8499	M224																		x
8525	M225																		x
8548	M226																		x
8577	M227																		x
8579	M228																		x



LAKE Clear Lake, Calif. CORE CL-80-1 SEGMENT NO. 34 SAMPLED BY mjr DATE 7/26/80

DEPTH (cm)	SPL. NO.	FROZEN				WET							SPECIAL					Number of Radiographs= 2	
		Org	PPg	Hg	AAC	GrS	ClY	PIn	Dtm	Ost	MFs	Xbm	WtL	Iso	Mag	Cl4	ash		IW
8675	0275																		
8700	0276	x	x	x		x	x	x			x	x	x	x					
8725	0277							x	x										
8750	0278							x											x
8775	0279							x											
8800	0280							x											x
8825	0281	x	x	x		x	x	x			x	x	x	x					
8850	0282					x		x		x			x						
8680	0283																		x
8690	0284																		x
8710	0285																		x
8730	0286																		x
8740	0287																		x
8760	0288																		x
8770	0289																		x
8780	0290																		x
8790	0291																		x
8810	0292																		x
8796	0293																		x
8699	M229																		x
8700	M230																		x
8702	M231																		x
8730	M232																		x
8757	M233																		x
8759	M234																		x
8761	M235																		x
8763	M236																		x
8800	M237																		x
8825	M238																		x
8827	M239																		x
8828	M240																		x

x---X-ray opaque

LAKE Clear Lake, Calif. CORE CL-80-1 SEGMENT NO. 35 SAMPLED BY mjr DATE 7/26/80

DEPTH (cm)	SPL. NO.	FROZEN				WET								SPECIAL					Number of Radiographs= 2
		Org	PPg	Hg	AAC	GrS	ClY	Pln	Dtm	Ost	MFs	Xbm	WtL	Iso	Mag	C14	ash	IW	
8980	0294	x	x	x		x	x	x			x	x	x	x					
9000	0295							x	x	x									
9025	0296							x											
9050	0297							x											
9075	0298	x	x	x		x	x	x			x	x	x	x					
9100	0299							x											
9125	0300							x											
9150	0301							x											
9175	0302	x	x	x		x	x	x			x	x	x	x					
9200	0303							x	x	x									
9225	0304							x											
9250	0305							x											
9275	0306	x	x	x		x	x	x			x	x							x
9270	0307	x	x	x		x	x		x	x	x	x							x
8989	M241																		x
8991	M242																		x
8992	M243																		x
9020	M244																		x
9046	M245																		x
9076	M246																		x
9109	M247																		x
9111	M248																		x
9113	M249																		x
9150	M250																		x
9186	M251																		x
9216	M252																		x
9249	M253																		x
9251	M254																		x
9253	M255																		x

LAKE Clear Lake, Calif. CORE CL-80-1 SEGMENT NO. 36 SAMPLED BY mjr DATE 7/28/80

DEPTH (cm)	SPL. NO.	FROZEN				WET								SPECIAL					Number of Radiographs= 2
		Org	PPg	Hg	AAc	GrS	ClY	PIn	Dtm	Ost	MFs	Xbm	WtL	Iso	Mag	Cl4	ash	IW	
9300	0308							x											
9325	0309				x			x											
9350	0310	x	x	x		x	x	x			x	x	x	x					
9375	0311							x											
9400	0312							x	x	x									
9425	0313							x											
9450	0314	x	x	x		x	x	x			x	x	x	x					
9296	0315																	x	
9320	0316																	x	
9369	0317																	x	
9290	M256													x					
9292	M257													x					
9320	M258													x					
9345	M259													x					
9374	M260													x					
9375	M261													x					
9377	M262													x					
9408	M263													x					
9438	M264													x					
9440	M265													x					
9444	M266													x					

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LAKE Clear Lake, Calif. CORE CL-80-1 SEGMENT NO. 37 SAMPLED BY mjr DATE 7/28/80

DEPTH (cm)	SPL. NO.	FROZEN				WET								SPECIAL					Number of Radiographs= 2
		Org	PPg	Hg	AAc	GrS	ClY	PIn	Dtm	Ost	MFs	Xbm	WtL	Iso	Mag	Cl4	ash	IW	
9560	0318							x											x
9585	0319	x	x	x		x	x	x			x	x	x	x					
9610	0320							x	x	x									
9635	0321							x											
9660	0322							x											x
9685	0323	x	x	x		x	x	x			x	x	x	x					

x--leaf

segment 37, continued

DEPTH (cm)	SPL. NO.	FROZEN				WET							SPECIAL						
		Org	PPg	Hg	AAC	GrS	ClY	Pln	Dtm	Ost	MFs	Xbm	WtL	Iso	Mag	Cl4	ash	IW	EX
9710	0324							x											x
9735	0325							x											
9760	0326							x		x									x
9785	0327	x	x	x		x	x	x			x	x	x	x					
9810	0328								x										
9781	0329																x		
9817-9821	0330																x		
9832	0331															x	x		
9570	0332																		x
9600	0333																		x
9620	0334																		x
9630	0335																		x
9640	0336																		x
9650	0337																		x
9670	0338																		x
9700	0339																		x
9720	0340																		x
9730	0341																		x
9740	0342																		x
9750	0343																		x
9560	M267																		x
9562	M268																		x
9564	M269																		x
9591	M270																		x
9617	M271																		x
9645	M272																		x
9686	M273																		x
9688	M274																		x
9690	M275																		x
9692	M276																		x
9752	M277																		x
9814	M278																		x
9816	M279																		x

LAKE Clear Lake, Calif. CORE CL-80-1 SEGMENT NO. 38 SAMPLED BY mjr DATE 7/29/80

DEPTH (cm)	SPL. NO.	FROZEN				WET								SPECIAL					Number of Radiographs= 2
		Org	PPg	Hg	AAC	GrS	ClY	Pln	Dtm	Ost	MFs	Xbm	WtL	Iso	Mag	Cl4	ash	IW	
9875	0344	x	x	x		x	x	x			x	x	x	x					
9900	0345							x											
9925	0346							x											x
9950	0347							x											
9975	0348	x	x	x		x	x	x			x	x	x	x					
10000	0349							x	x										
10025	0350							x											
10050	0351							x											x
10075	0352	x	x	x		x	x	x			x	x	x	x					
9960	0353																x		
9963	0354																x		
10090	0355																		x---seed
9860	0356																		x
9885	0357																		x
9895	0358																		x
9905	0359																		x
9915	9360																		x
9935	0361																		x
9945	0362																		x
9990	0363																		x
10010	0364																		x
10020	0365																		x
10040	0367																		x
10060	0368																		x
9877	M280																		x
9879	M281																		x
9902	M282																		x
9948	M283																		x
9950	M284																		x
9952	M285																		x
9995	M286																		x
10023	M287																		x
10047	M288																		x
10072	M289																		x
10074	M290																		x

LAKE Clear Lake, Calif. CORE CL-80-1 SEGMENT NO. 39 SAMPLED BY mjr DATE 7/29/80

DEPTH (cm)	SPL. NO.	FROZEN				WET								SPECIAL					Number of Radiographs= 2
		Org	PPg	Hg	AAc	GrS	ClY	Pln	Dtm	Ost	MFs	Xbm	WtL	Iso	Mag	Cl4	ash	TW	
10175	0369	x	x	x		x	x	x			x	x	x	x					
10200	0370							x											
10225	0371							x										x	
10250	0372							x	x										
10275	0373	x	x	x		x	x	x			x	x	x	x					
10300	0374							x											
10325	0375				x			x											
10350	0376							x											
10375	0377	x	x	x		x	x	x			x	x	x	x					
10400	0378							x											
10381	0379															x			
10165	0380																		x
10185	0381																		x
10195	0382																		x
10205	0382																		x
10215	0384																		x
10235	0385																		x
10245	0386																		x
10255	0387																		x
10265	0388																		x
10285	0389																		x
10295	0390																		x
10305	0391																		x
10315	0392																		x
10335	0393																		x
10345	0394																		x
10365	9395																		x
10193	M291																		x
10195	M292																		x
10220	M293																		x
10303	M294																		x
10305	M295																		x
10311	M296																		x
10313	M297																		x
10314	M298																		x











segment 44, continued

DEPTH (cm)	SPL. NO.	FROZEN				WET								SPECIAL					
		Org	PPg	Hg	AAc	GrS	ClY	Pln	Dtm	Ost	MFs	Xbm	WtL	Iso	Mag	Cl4	ash	IW	EX
11735	M351																		x
11775	M352																		x
11810	M353																		x
11812	M354																		x
11813	M355																		x
11830	M356																		x
11865	M357																		x
11867	M358																		x

LAKE Clear Lake, Calif. CORE CL-80-1 SEGMENT NO. 45 SAMPLED BY mjr DATE 7/31/80

DEPTH (cm)	SPL. NO.	FROZEN				WET								SPECIAL					Number of Radiographs=	
		Org	PPg	Hg	AAc	GrS	ClY	Pln	Dtm	Ost	MFs	Xbm	WtL	Iso	Mag	Cl4	ash	IW		EX
11930	0460	x	x	x		x	x	x			x	x	x	x						
11950	0461							x												
11975	0462							x												
12000	0463							x	x											
12020	0464	x	x	x		x	x	x			x	x	x	x				x		
11973	M359																			x
11975	M360																			x
11977	M361																			x
12010	M362																			x
12012	M363																			x

LAKE Clear Lake, Calif. CORE CL-80-1 SEGMENT NO. 46 SAMPLED BY mjr DATE 7/31/80

DEPTH (cm)	SPL. NO.	FROZEN				WET								SPECIAL					Number of Radiographs= 1
		Org	PPg	Hg	AAC	GrS	ClY	Pln	Dtm	Ost	MFs	Xbm	WtL	Iso	Mag	C14	ash	IW	
12177	0465	x	x	x		x	x	x			x	x	x	x					
12200	0466							x	x	x									
12225	0467							x											
12250	0468							x											x
12275	0469	x	x	x		x	x	x			x	x	x	x					
12300	0470				x			x											
12190	0471																		x
12210	0472																		x
12220	0473																		x
12230	0474																		x
12240	0475																		x
12260	0476																		x
12290	0477																		x
12186	M364														x				
12188	M365														x				
12216	M366														x				
12245	M367														x				
12247	M368														x				
12249	M369														x				
12279	M370														x				
12300	M371														x				
12302	M372														x				

LAKE Clear Lake, Calif. CORE CL-80-1 SEGMENT NO. 47 SAMPLED BY mjr DATE 7/31/80

DEPTH (cm)	SPL. NO.	FROZEN				WET								SPECIAL					Number of Radiographs= 2
		Org	PPg	Hg	AAC	GrS	ClY	Pln	Dtm	Ost	MFs	Xbm	WtL	Iso	Mag	C14	ash	IW	
12330	0478							x											
12350	0479							x											
12375	0480	x	x	x		x	x	x			x	x	x	x					
12400	0481							x	x										
12425	0482							x											
12450	0483							x											
12475	0484	x	x	x		x	x	x			x	x	x	x					
12500	0485							x											
12525	0486							x											
12550	0487							x											
12575	0488	x	x	x		x	x	x			x	x	x	x					
12600	0489							x	x										
12625	0490							x											
12371	0491																x		
12369	0492																		x---X-ray opaque
12339	M373																		x
12341	M374																		x
12364	M375																		x
12392	M376																		x
12419	M377																		x
12450	M378																		x
12478	M379																		x
12480	M380																		x
12481	M381																		x
12523	M382																		x
12553	M383																		x
12582	M384																		x
12611	M385																		x
12613	M386																		x

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LAKE Clear Lake, Calif. CORE CL-80-1 SEGMENT NO. 48 SAMPLED BY mjr DATE 8/1/80

DEPTH (cm)	SPL. NO.	FROZEN				WET							SPECIAL					Number of Radiographs= 2	
		Org	PPg	Hq	AAc	GrS	ClY	Pln	Dtm	Ost	MFs	Xbm	WtL	Iso	Mag	C14	ash		IW
12605	0493							x											
12625	0494							x											
12650	0495	x	x	x		x	x	x			x	x	x	x					
12675	0496							x											
12700	0497							x											
12725	0498							x											
12750	0499	x	x	x		x	x	x			x	x	x	x					
12775	0500							x											
12800	0501							x	x	x									
12825	0502							x											
12850	0503	x	x	x		x	x	x			x	x	x	x					
12620	M387																		x
12622	M388																		x
12657	M389																		x
12693	M390																		x
12727	M391																		x
12755	M392																		x
12757	M393																		x
12758	M394																		x
12790	M395																		x
12814	M396																		x
12838	M397																		x
12840	M398																		x

LAKE Clear Lake, Calif. CORE CL-80-1 SEGMENT NO. 49 SAMPLED BY mjr DATE 8/1/80

DEPTH (cm)	SPL. NO.	FROZEN				WET								SPECIAL					Number of Radiographs= 2
		Org	PPg	Hg	AAC	GrS	ClY	Pln	Dtm	Ost	MFs	Xbm	WtL	Iso	Mag	C14	ash	IW	
12910	0504							x											
12925	0505							x											
12950	0506	x	x	x		x	x	x			x	x	x	x					
12975	0507							x											
13000	0508							x	x										
13025	0509							x											
13050	0510	x	x	x		x	x	x			x	x	x	x					
13075	0511							x			x-----								pelecypod
13100	0512							x											
13125	0513							x											
13150	0514	x	x	x		x	x	x			x	x	x	x					
13175	0515							x											
13200	0516							x	x	x									
12951-12954	0517																		x
12962-12969	0518																		x
13022-13024	0519																		x
13165-13177	0520																		x
12980-12989	0521																		x
13208	0522																		x
12920	M399																		x
12922	M400																		x
12968	M401																		x
12995	M402																		x
13031	M403																		x
13071	M404																		x
13073	M405																		x
13075	M406																		x
13101	M407																		x
13137	M408																		x
13139	M409																		x
13168	M410																		x
13200	M411																		x
13202	M412																		x

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segment 51, continued

DEPTH (cm)	SPL. NO.	FROZEN				WET							SPECIAL						
		Org	PPg	Hg	AAC	GrS	ClY	Pln	Dtm	Ost	MFs	Xbm	WtL	Iso	Mag	Cl4	ash	IW	EX
13600	0538							x	x	x									
13625	0539							x											
13650	0540	x	x	x		x	x	x			x	x	x	x					
13675	0541							x											
13700	0542							x											
13725	0543							x											
13750	0544	x	x	x		x	x	x			x	x	x	x					
13775	0545							x											
13800	0546							x	x	x									
13647-13648	0547																		x
13714-13715	0548																		x
13800-13805	0549																		x
13565	0550																		x
13575	0551																		x
13615	0552																		x
13670	0553																		x
13690	0554																		x
13700	0555																		x
13730	0556																		x
13740	0557																		x
13770	0558																		x
13780	0559																		x
13799-13800	0571																		x
13534	M425																		x
13536	M426																		x
13564	M727																		x
13600	M428																		x
13630	M429																		x
13667	M430																		x
13670	M431																		x
13705	M432																		x
13707	M433																		x
13709	M434																		x
13740	M435																		x
13775	M436																		x
13808	M437																		x
13810	M438																		x

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LAKE Clear Lake, Calif. CORE CL-80-1 SEGMENT NO. 54 SAMPLED BY mjr DATE 8/5/80

DEPTH (cm)	SPL. NO.	FROZEN				WET							SPECIAL					Number of Radiographs= 2	
		Org	PPg	Hg	AAC	GrS	Cl	Pln	Dtm	Ost	MFs	Xbm	WtL	Iso	Mag	Cl4	ash		IW
14475	0576																		
14500	0577																		
14525	0578	x	x	x		x	x	x			x	x	x	x					
14550	0579																		
14575	0580																		
14600	0581																		
14625	0582	x	x	x		x	x	x	x		x	x	x	x					
14650	0583																		
14675	0584									x									
14700	0585																		
14725	0586	x	x	x		x	x	x			x	x	x	x					
14750	0587																		
14707-14709	0588																		x
14470	M450																		x
14472	M451																		x
14503	M452																		x
14536	M453																		x
14578	M454																		x
14580	M455																		x
14606	M456																		x
14608	M457																		x
14638	M458																		x
14670	M459																		x
14703	M460																		x
14737	M461																		x
14739	M462																		x

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LAKE Clear Lake, Calif. CORE CL-80-1 SEGMENT NO. 55 SAMPLED BY mjr DATE 8/6/80

DEPTH (cm)	SPL. NO.	FROZEN				WET								SPECIAL					Number of Radiographs= 2	
		Org	PPg	Hg	AAc	GrS	Cl	Pln	Dtm	Ost	MFs	Xbm	WtL	Iso	Mag	Cl4	ash	IW		EX
14775	0589																			
14800	0590																			x
14825	0591	x	x	x		x	x	x			x	x	x	x						
14850	0592							x	x											
14875	0593							x												
14900	0594							x												
14925	0595	x	x	x		x	x	x			x	x	x	x						
14950	0596							x												
14975	0597							x												
15000	0598							x												
15025	0599	x	x	x		x	x	x			x	x	x	x						
15050	0600							x	x	x										
14784	M463																			x
14786	M464																			x
14825	M465																			x
14866	M466																			x
14898	M467																			x
14900	M468																			x
14931	M469																			x
14961	M470																			x
14963	M471																			x
14965	M472																			x
15003	M473																			x
15040	M474																			x
15042	M475																			x





LAKE Clear Lake, Calif. CORE CL-80-1 SEGMENT NO. 60 SAMPLED BY mjr DATE 8/8/80

DEPTH (cm)	SPL. NO.	FROZEN				WET								SPECIAL					Number of Radiographs= 2
		Org	PPg	Hg	AAc	GrS	Cl y	PIn	Dtm	Ost	MFs	Xbm	WtL	Iso	Mag	Cl4	ash	IW	
16150	0625	x	x	x		x	x	x			x	x	x	x					
16175	0626							x	x										
16200	0627							x											
16225	0628							x											
16250	0629	x	x	x		x	x	x			x	x	x	x					
16275	0630							x											
16300	0631							x											
16325	0632							x											
16350	0633	x	x	x		x	x	x			x	x	x	x					
16375	0634							x	x										
16400	0635							x											
16425	0636	x	x	x		x	x	x			x	x	x	x					
16148	0637																		x
16214	0638																		x
16207	0639																		x
16366	0640																		x
16404	0641																		x
16166	M492																		x
16168	M493																		x
16200	M494																		x
16238	M495																		x
16283	M496																		x
16285	M497																		x
16312	M498																		x
16360	M499																		x
16402	M500																		x
16428	M501																		x
16430	M502																		x

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LAKE Clear Lake, Calif. CORE CL-80-1 SEGMENT NO. 61 SAMPLED BY mjr DATE 8/9/80

DEPTH (cm)	SPL. NO.	FROZEN				WET								SPECIAL					Number of Radiographs= 2	
		Org	PPg	Hg	AAC	GrS	ClY	Pln	Dtm	Ost	MFs	Xbm	WtL	Iso	Mag	C14	ash	IW		EX
16450	0642																			
16475	0643																			
16500	0644																			
16525	0645	x	x	x		x	x	x			x	x	x	x						
16550	0646																			
16575	0647								x	x										
16600	0648																			
16625	0649	x	x	x		x	x	x			x	x	x	x						
16650	0650																			
16675	0651																			
16700	0652																			
16725	0653	x	x	x		x	x	x			x	x	x	x						x
16521	0654																			x
16641	0655																			x
16450	M503																			x
16452	M504																			x
16498	M505																			x
16536	M506																			x
16560	M507																			x
16600	M508																			x
16602	M509																			x
16605	M510																			x
16640	M511																			x
16660	M512																			x
16697	M513																			x
16718	M514																			x
16720	M515																			x



LAKE Clear Lake, Calif. CORE CL-80-1 SEGMENT NO. 62 SAMPLED BY mjr DATE 8/9/80

DEPTH (cm)	SPL. NO.	FROZEN				WET								SPECIAL					Number of Radiographs=	
		Org	PPg	Hg	AAC	GrS	ClY	Pln	Dtm	Ost	MFs	Xbm	WtL	Iso	Mag	Cl4	ash	IW		EX
16750	0656	x	x	x		x	x	x			x	x	x	x						1
16775	0657							x	x	x										
16800	0658							x												
16825	0659							x												
16850	0660	x	x	x		x	x	x			x	x	x	x						
16805-16807	0661																	x-----	pumice	
16812	0662																	x		
16818-16825	0663																	x		
16770	M516																		x	
16789	M517																		x	
16820	M518																		x	
16845	M519																		x	

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