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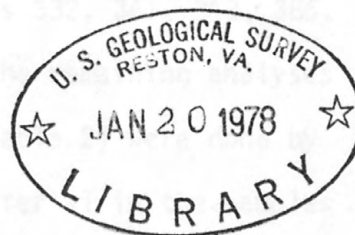
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Mercury Analyses of Sediments from Cores in Clear Lake,  
Lake County, California

by



John D. Sims

1978

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This report is preliminary and has not been edited or reviewed for  
conformity with Geological Survey standards.

MERCURY ANALYSES FROM CORES OF SEDIMENTS IN  
CLEAR LAKE, LAKE COUNTY, CALIFORNIA

John D. Sims

Cores of late Quaternary sediments were collected from several sites in Clear Lake (fig. 1). Samples from two of these cores (fig. 2, 3) have been analyzed for their mercury content as part of a study on the time of emplacement of the mercury ore body at the nearby Sulphur Bank mine (fig. 1). The samples were analyzed in laboratories of the U.S. Geological Survey by the mercury vapor detector method (Vaughn and McCarthy, 1964; Vaughn, 1967). The analyses of core 6, except samples 332, 341, 343, 386, 406, and 462, were done by Mr. Kam Leong (Table 1); the remaining analyses were done by Mr. Allen Meier. Analyses of core 10 (table 2) were done by Mr. Meier. Meier reported interference by organic material in the samples he analyzed. Because the two sets of data are not in agreement, most of the samples submitted to Leong and Meier are being reanalyzed.

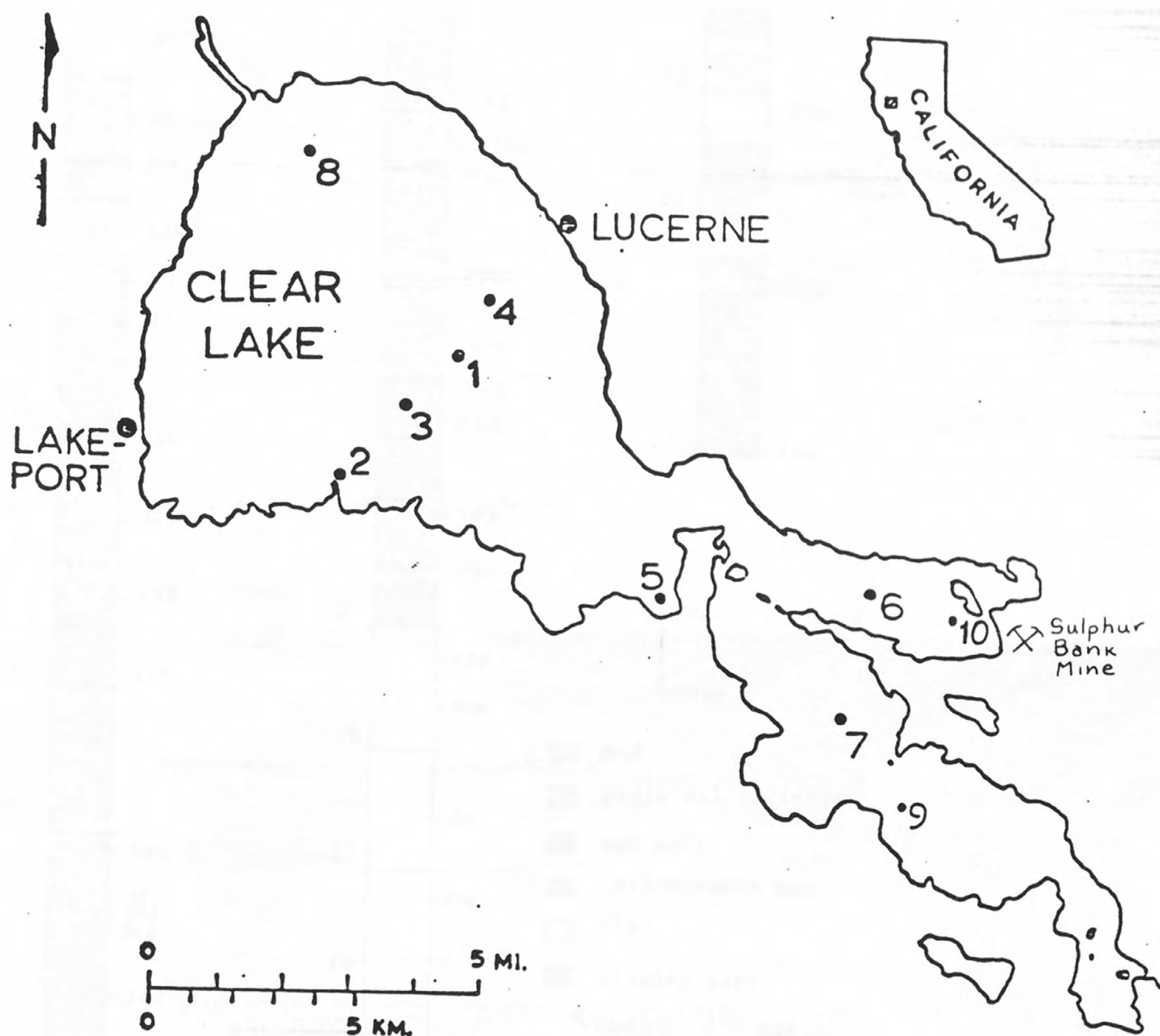


Figure 1. Map showing location of cores in Clear Lake, California.

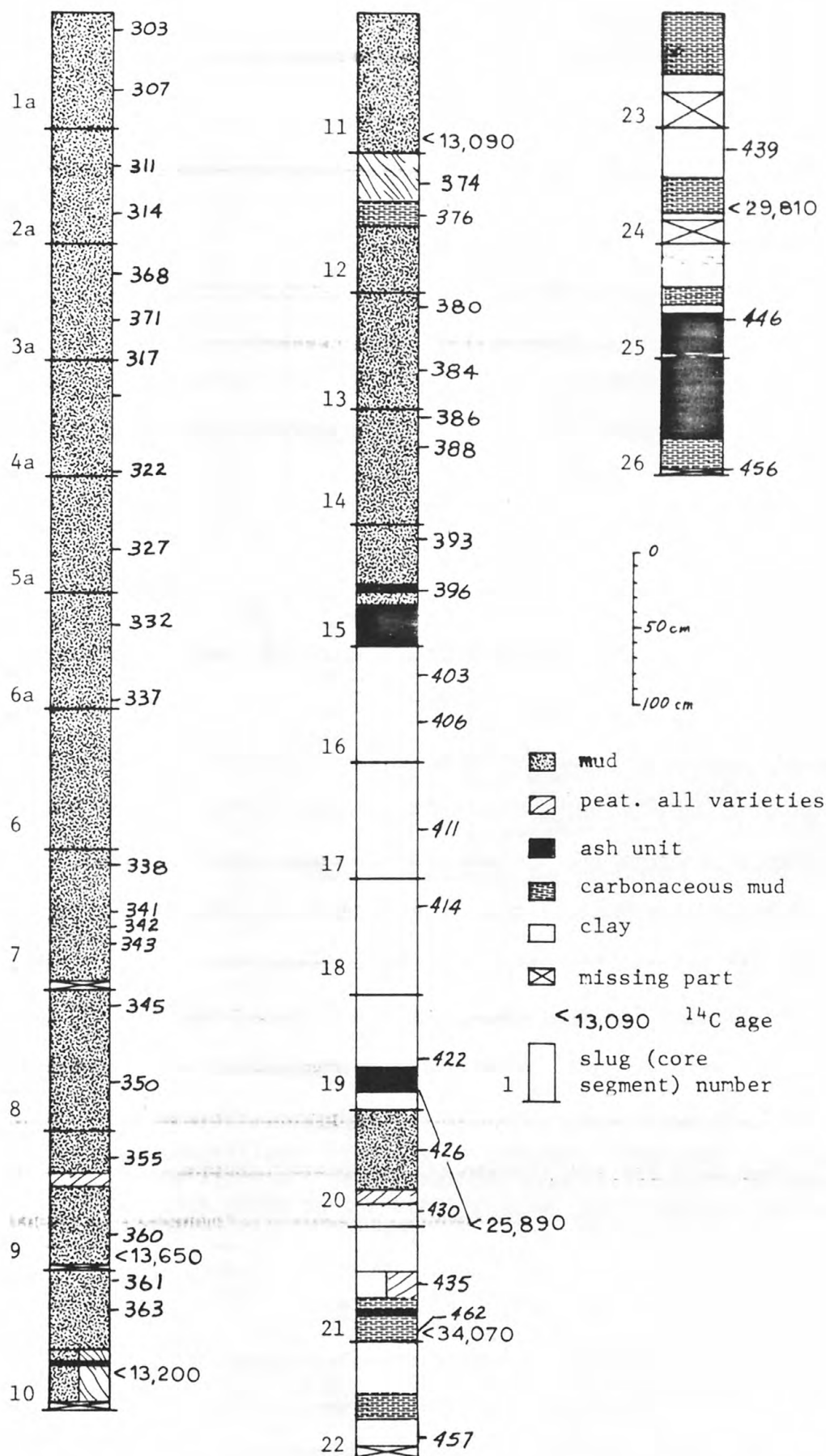


Figure 2. Generalized lithology of sediments from Core 6, Clear Lake, California. A vertical line within a slug represents interbedding of the respective lithologies. Sample numbers used in Table 1 are opposite tick marks on the right side of the lithologic column. (After Sims and Rymer, 1975)

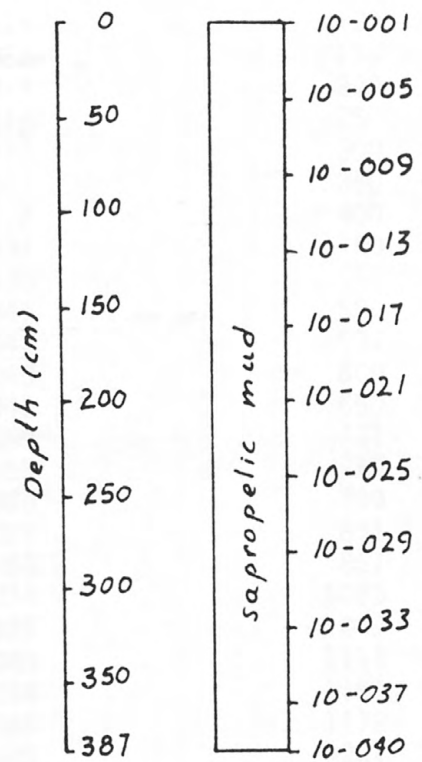


Figure 3. Generalized lithology of sediments from core 10, Clear Lake, California. Sample numbers used in Table 2 are opposite tick marks on the right side of the lithologic column.

Table 1. Results of Mercury Analyses from Clear Lake, Core 6  
[Analysts Kam Leong and Allan Meier]

<u>Sample No.</u> <sup>1/</sup>	<u>Depth (cm)</u>	<u>Hg (ppm)</u>
303	10	75
307	50	30
311	100	17
314	130	6.0
368	170	1.3
371	200	12.0
317	250	2.8
322	300	12.0
327	350	4.4
332	400	0.20 <sup>2/</sup>
337	450	2.8
338	559	9.0
341	589	0.35 <sup>2/</sup>
342	599	65
343	609	0.10 <sup>2/</sup>
345	650	2.8
350	701	12.0
355	749	3.4
360	799	0.9
361	831	5.4
363	851	3.4
374	1029	1.8
376	1049	7.0
380	1111	0.9
384	1151	0.85
386	1178	0.14 <sup>2/</sup>
388	1201	17
393	1262	3.8
396	1294	3.4
403	1352	0.4
406	1382	tr <sup>2/</sup>
411	1452	0.4
414	1502	3.8
422	1598	1.3
426	1663	0.4
430	1693	0.5
435	1753	0.85
462	1801	0.10 <sup>2/</sup>
457	1851	0.4
439	1953	0.4
446	2057	0.85
456	2159	0.4

<sup>1/</sup> Sample numbers are those shown in fig. 2 and are the same numbers used to identify samples described in Sims and Rymer (1975), Appendix A.

<sup>2/</sup> Sample analyzed by Allan Meier, USGS. Results reported as having significant interference from organic carbon present in the sample.

Table 2. Results of Mercury Analyses from Clear Lake, Core 10  
[Analyst Allan Meier, USGS]

<u>Sample No.</u> <sup>1/</sup>	<u>Depth (cm)</u>	<u>Hg (ppm)</u> <sup>2/</sup>
10-001	0	0.04
10-005	40	0.18
10-009	80	0.12
10-013	120	0.30
10-017	160	0.22
10-021	200	0.26
10-025	240	0.40
10-029	280	0.35
10-033	320	0.28
10-037	360	0.20
10-040	387	0.12

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<sup>1/</sup> Sample numbers refer to fig. 3.

<sup>2/</sup> Results of analyses are reported as having significant interference from organic carbon present in the sample.

References cited

- Sims, J.D. and Rymer, M.J., 1975, Preliminary description and interpretation of cores and radiographs from Clear Lake, Lake County, California:  
Core 6: U.S. Geol. Survey Open-file Report 75-569.
- Vaughn, W.W., 1967, A simple mercury vapor detector for geochemical prospecting:  
U.S. Geol. Survey Circular 540, 8 p.
- Vaughn, W.W. and McCarthy, J.H., Jr., 1964, An instrumental technique for the determination of submicrogram concentrations of mercury in soils, rocks, and gas: U.S. Geol. Survey Prof. Paper 501-D, p. D123-D127.



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