CC: JAG, VK, EM, CES, Capco, MET

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February 1, 1979

PLAINTIFF'S EXHIBIT
CAP-251

Mr. John Herr
Johns-Manville Sales Corporation
R&D Center
Ken-Caryl Ranch
Denver, CO 80217

Mr. Victor Puskar
ASARCO
South Plainfield, NJ 07080

Gentlemen:

In our meeting in November, we talked of aggressive waters and attack on A/C pipe as measured by weight loss of A/C or hardness change in water, and we discussed work done by JM and K&M on attack on A/C by aggressive waters, which work came to contradictory conclusions. I was asked to draw up a plan for tests of aggressive waters in consultation with John Herr. The study was to be similar to either the JM or K&M tests and would not measure fiber release from the A/C directly but would infer it from attack on the A/C. After the meeting, I received a copy of the Kanarek thesis and copies of some JM work on evaluating fiber release from A/C. On studying these and discussing the problem, I came to the conclusion that the problem is not attack on A/C but fiber release from A/C and that indirect measurements of fiber release would not be acceptable. The number of fibers released must be measured.

Kanarek Thesis Cancer Data

First a diversion, the Kanarek thesis reported a correlation for asbestos-content in water and cancer of the following types:

Cancer	White Male	White Female
Peritonium	Significant	Significant
Lung	Significant	--
Gall Bladder	--	Significant (1)

Cancer	White Male	White Female
Pancreas	--	Significant
Stomach	Marginally Significant	Marginally Significant
Pleura	--	Marginally Significant
Kidney	--	Marginally Significant

Significant $p < 0.01$

Marginally Significant $(0.01 < p < 0.05)$

(1) Significant in one method of classifying asbestos counts not in the other.

An interesting observation is the total number of cancers compared to the number in which asbestos fiber counts are deemed positively correlated.

	White Male	White Female
Total Cancers	10,244	12,169
Peritonium	42	38
Lung	2,580	--
Gall Bladder	--	130
Pancreas	--	371
Stomach	564	366
Pleura	--	4
Kidney	--	201

Asbestos industry experience is that lung cancer is predominately among smokers with a much higher frequency than in the general public while non-smokers have about the same risks as the general public, I would discount the correlation between fiber counts in the water and lung cancer. The other significant

relationships for peritonium, gall bladder, and pancreas cancers are based on small total numbers and the difference between significance and non-significance depends on a small number of cases and makes one wonder if just normal scatter were responsible. Saying there is a positive correlation with asbestos and pleura cancer when there are only four cases is ridiculous.

Missing from the report is a map with the locations of the census tracts and also any mention of other possible pollutants than asbestos. An analysis of the environment in the high asbestos fiber census tracts should be made to determine if other factors such as high automotive or industrial pollution could be involved. In addition, the high fiber counts seem to be mostly in waters with aggressive indices between 9.9 and 10.5 where counts reached 10^7. From the data given, it is difficult to determine if there was much A/C pipe involved in the high fiber count water system. See pages 184, 187, 188 of Table A-1 appended. These waters are moderately aggressive to A/C pipe and would cause a higher degree of corrosion of metallic pipe. This suggests that the high fiber count waters may have contained higher amounts of toxic metals from corrosion of distribution and plumbing lines than the lower fiber count waters. Possibly examining the data with respect to chemicals in the water would show more correlations than with asbestos counts.

Pick-Up of Fibers From A/C

In the Kanarek thesis, an attempt was made to see if A/C pipe contributed to the fiber counts. (Data are given in Appendix A-18 attached). Pipe lines carrying water with aggressive indices of 11.3 to 12.5 were checked. (Some of the aggressive indices were estimated). These waters are moderately to non-aggressive to A/C. The aggressive indices, where a factor of 10 increase fiber count occurred, varied from 11.8 to 12.5. Out of 40 determinations, only 16 showed a 10 fold increase in fiber count. A great many more determinations would have to be made before proving or disproving fiber pick-up from A/C pipe.

The data on fiber counts bounce around so much it is difficult to conceive how they can be used to separate the census tracts into 4 fiber count levels as was done in the "Fine Arithmetic Mean" analysis of the data. With the uncertainty of whether a census tract has high or moderate fiber counts, how can one be sure the the basic comparison of the tracts is valid?

Treated water varied in fiber content which suggests break-throughs in the filtration process and further complicates assigning increased fiber contents to A/C. (See Appendix A-19 attached).

This work also shows the difficulty in making meaningful fiber counts.

Kanarek could not draw from this data a fiber content increase caused by flowing through A/C pipe.

JM Work Measuring Weight of Fiber Released from Pipe

Now turning to the JM Report No. 425-T-1360 in the laboratory with chemically adjusted water pumped through pipe lines. No relation was found between pH which varied from 4.9 to 7.4 or hardness on the weight of fiber released from the pipe.

In these tests, hardness was controlled by a water softener and pH by adding dilute sulphuric acid. Perhaps these additions did something to the water to stabilize any attack on A/C. The data were reported as micrograms per gallon. Could these be converted to number of fibers per liter? No aggressive indices were given in the report.

JM report E404-77 covers two asbestos-cement water systems. In one system, the well water contained considerable asbestos while the other source was relatively asbestos free. The water properties and the increase in asbestos levels are given below.

	M	G
Calcium Hardness (ppm $CaCO_3$)	27	61
Alkalinity (ppm $CaCO_3$)	110	114
pH	7.8	8.0
Aggressive Index	11.3	11.8
Initial Fiber Level μg/gal	0.17	0.023
Fiber Increase After A/C Pipe μg/gal	0.28	0.015

There is not a great deal of difference between the aggressive indices but the increase in fiber content was 18 times greater in the line which had the highest level of fibers in the source water. It doesn't seem that there should be such differences and the question can be asked - is the increased fiber from the A/C pipe or is it due to sampling techniques, or changing amounts of fiber in the source water. The method of sampling was to filter a few hundred gallons of water. Could the high flow rate at the tap be cleaning asbestos off the pipe walls, or off the service lines? When water flows through a pipe and some is tapped off to supply users, are the fiber counts in the tapped water the same as in the pipe?

Laboratory Work

The studies JM and K&M did in the laboratory by exposing small pieces of asbestos cement to large volumes of water gave contradictory results. K&M measured weight loss of A/C coupons which were used as stirrers and change in the alkalinity and pH of the water. JM measured weight change, surface hardness, physical dimensions. Alkalinity of the water was checked and the water was changed if the water composition changed greatly. The JM samples had a small surface area and

there was no stirring. JM used made-up water while K&M used water from municipal systems. JM decided pH was the determining factor, K&M decided the attack was in proportion to the hardness of the water. This points out the difficulties in laboratory and field work.

Discussion

In my opinion, it would be useless to repeat the K&M or JM laboratory studies as they do not measure fiber release. I would concede that some fibers would be released from pipe at aggressive indices between 10 and 12. After an aggressive index of 12 is reached, some fiber may or may not be released from the pipes. With the great power of electron microscopes, I think someone looking hard enough could find some fibers from A/C pipe even at an aggressive index of 12. This I am not certain of and should be studied carefully. John Herr has conferred with the JM research personnel and they recommend field studies rather than laboratory work and this is reasonable when the difficulties of handling significant amounts of sample waters from water systems and the lack of success with chemically adjusted waters are considered.

Both JM and CT have sold bitumin lined pipe in New England and JM has sold vinyl lined pipe there for use with aggressive waters. This offers us a chance to evaluate these linings for preventing loss of asbestos and for their projected useful life. I don't know if any lined pipe has been sold in this country to be used with water with an aggressive index of 12 or higher, but in Great Britain pressure pipe has been dipped in bitumin for many years and their experience should be tapped for both this aggressive index and for aggressive indices below 12.

Recommendations

I recommend that we undertake a study of fiber release which would consist of the following:

1. Determine if sampling techniques are adequate. Test for fibers in a metal or plastic line which is carrying water containing asbestos from natural sources. Test inlet, center and end of run at times of high flow and minimum flow to determine if flow influences the amount of asbestos. Specific times could be:

    1. Low flow after several hours of low flow
    2. High flow after 1/2 hour of high flow
    3. Repeat once or twice

    This work may be a nice to have rather than a got to have, but it seems important to me at this time.

2. Count fibers entering and leaving an A/C line carrying water with an aggressive index of 12. Take enough samples to be representative using information from step 1.

3. In a pipe line lined with bitumin by CT carrying water with an aggressive index of 10 to 11, measure fiber increase.

    a. Could get pipe with 5, 10 or 15 years service to see how the bitumin lining holds up.

4. In a pipe line lined with bitumin by JM. Same as step 3, I believe CT and JM used different sources of bitumin. Probably these would all have long service.

5. In a pipe line lined with vinyl by JM. As in 3.

6. Find out from Great Britain if any fiber release data is available on their bitumin lined pipe. If not available, see if we can test pipe lines carrying water with aggressive indices of 10-11 and 12. This would test a different bitumin and a different way of application, dipped instead of sprayed.

I suggest you discuss this in your companies and then follow-up through the ACPPA.

Sincerely yours,

CertainTeed Corporation
Pipe and Plastics Group

F. E. Hawkins

F. E. Hawkins
Director - A/C Research & Development

FEH/kel

Enclosures:

Kanarek Thesis
Table A-1 Water Samples and Analysis for Asbestos Content
Table A-18 Asbestos Samples Before and After Asbestos-Cement Pipe
Table A-19 Removal of Asbestos Fibers by Treatment Plants

cc: Mr. L. C. Ambler - CT
Mr. R. P. Korobij - CT
Mr. J. C. Jackson - ACPPA

TABLE A-1 Water Samples and Analyses for Asbestos Content

SAN FRANCISCO WATER DEPARTMENT

No.[a]	Location	Date	Type	Volume Filtered ml	Turb.	pH	Alk., mg/l $CaCO_3$	Calcium Hardness mg/l $CaCO_3$	Aggressiveness Index	Chrysotile Asbestos f/l	Possible Amphibole Asbestos[aa] f/l	Lowest Detectable Limit, f/l	AC Pipe ft
4342C	Cistern at Kearny and Merchant	Mixture 1906-1953	Tap	100	0.62	11.7				BDL	BDL	5×10^4	
4343B	Cistern at Buchannon and California	1908	Tap	100	0.425	8.5				8×10^5	5×10^4	5×10^4	
4344 SA	Cistern at Civic Center Plaza	1960	Tap	250	0.21	8.0				1.4×10^5	2×10^4	2×10^4	
4112A SA	U.C.S.F. Med. School, Hilberry Union, Emerg. Service Water	Early 1964	Tap	25	1.1	7.3				1.8×10^6	4×10^5	2×10^5	
† CS	100 California St.	6/73	Tap							1×10^6	BDL	6.7×10^4?	
† CS	100 California St.	7/24/74	Tap							2×10^5	BDL	6.7×10^4	
† CS	100 California St.	12/74	Tap							1.54×10^6	BDL	6.7×10^4?	
	San Andreas Res.	7/1/74	Finished							BDL	BDL	1×10^5	

[a] Numbered samples were run by Hurchio, sampled by Jackson.

[aa] These fibers could be in the tremolite-antiophyllite-actinolite series of amphibole asbestos fibers but cannot be positively identified by electron microscopy. Fibers which were most likely "amosite" asbestos were observed in some samples. A few fibers are most likely fibrous talc.

† Pre-project analyses run by Hurchio, sampled by Hurchio and Scott (formerly EPA, S.F.).

†† Pre-project analyses run in Cincinnati by Millette, sampled by Scott.

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TABLE A-1 (continued)
SAN FRANCISCO WATER DEPARTMENT

No.*	Location	Date	Type	Volume Filtered ml	Turb.	pH	Alk., mg/l $CaCO_3$	Calcium Hardness mg/l $CaCO_3$	Aggressiveness Index	Chrysotile Asbestos f/l	Possible Amphibole Asbestos** f/l	Lowest Detectable Limit, f/l	AC Pipe ft
†	Lower Crystal Springs Res. - Composite	1/22/75	Finished							4.7×10^6	BDL	6.7×10^4	
†	Alameda East Portal	3/5/75	Finished							BDL	BDL	2.2×10^5	
†	San Antonio Res.	3/5/75	Raw							5.6×10^5	5.6×10^5	Less than 5 fibers detected	
†	Calaveras Res.	3/5/75	Raw							2.4×10^8	4.5×10^7	Less than 5 fibers detected	
†	Lower Crystal Springs Res.	3/5/75	Finished						duplicates	1.8×10^8 7.1×10^7	4.3×10^6 4.1×10^6	—— ——	
†	San Andreas Res.	3/5/75	Raw							EDL?	4.1×10^6	——	
†	San Andreas Res.	3/5/75	Finished							BDL	BDL	5×10^4	
†	Pilarcitos Res.	3/5/75	Raw							BDL	BDL	2.5×10^6	
††	Alameda East Portal	5/75	Raw							4.9×10^5	BDL	——	
††	San Antonio Res.	5/75	Raw							3.6×10^5	BDL	——	
††	Calaveras Res.	5/75	Raw							6.17×10^7	BDL	——	
††	Lower Crystal Springs Res.	5/75	Raw							2.48×10^6	BDL	——	
†† CS	University Mound Res.	5/75	Finished							3.6×10^5	BDL	——	

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TABLE A-1 (continued)

SAN FRANCISCO WATER DEPARTMENT

[illegible]	Location	Date	Type	Volume Filtered ml	Turb.	pH	Alk., mg/l $CaCO_3$	Calcium Hardness mg/l $CaCO_3$	Aggressiveness Index	Chrysotile Asbestos f/l	Possible Amphibole Asbestos[a,b] f/l	Lowest Detectable Limit, f/l	AC Pipe ft
[illegible]	Lombard and Broderick Res.	5/75	Finished							3.70×10^6	BDL	——	
[illegible]	San Andreas Res.	5/75	Raw							3.49×10^6	BDL	——	
[illegible]	San Andreas Res.	5/75	Finished							1.42×10^6	BDL	——	
[illegible]	Lower Crystal Springs Res. Middle and Bottom Adit	5/24/76	Finished	50						1.3×10^8	BDL	1×10^6	
[illegible]	Lower Crystal Springs Res. Surface	5/24/76	Raw	50						6×10^7	BDL	4×10^5	
[illegible]	San Andreas Filter Plant after chlorination	12/14/76	Raw	250	0.63	7.5				Estimate 3.7×10^6	BDL	8×10^4	
[illegible]	San Andreas Filter Plant before caustic soda	12/14/76	Partial Treatment	250	0.25	7.5				3.4×10^6	8×10^4	8×10^4	
[illegible]	San Andreas Filter Plant clear well	12/14/76	Finished	250	0.30	8.7				1.4×10^6	3.2×10^5	4×10^4	
[illegible]	Alameda East Portal	12/20/76	Finished	100	0.35	9.5				5×10^4	BDL	5×10^4	
[illegible]	Calaveras Res. Surface	12/20/76	Raw	50	2.00	7.9				3×10^7	BDL	4×10^5	
[illegible]	University Mound Res. Outlet #1	12/20/76	Finished	100	0.35	8.3				5.3×10^5	BDL	5×10^4	

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TABLE A-1 (continued)

SAN FRANCISCO WATER DEPARTMENT

No.*	Location	Date	Type	Volume Filtered ml	Turb.	pH	Alk., mg/l $CaCO_3$	Calcium Hardness mg/l $CaCO_3$	Aggressiveness Index	Chrysotile Asbestos f/l	Possible Amphibole Asbestos** f/l	Lowest Detectable Limit, f/l	AC Pipe ft
4387 Blend SA & ByPass	Sunset System 1	12/20/76	Tap	100	0.36	8.2				$2x10^3$	$1x10^3$	$5x10^4$	
4384 SA	Sunset System 3, Bernal Heights Branch Library	12/20/76	Tap	200	0.28	8.2				$2.3x10^6$ plus four large tangles	$1x10^3$	$3.4x10^4$	
4391 SA	Sunset System 4, Standard Station, Moriega and 30th	12/20/76	Tap	100	0.3	8.0				$1.4x10^6$	$1x10^3$	$5x10^4$	
4396 SA	Sunset System 8, ARCO Station, Geneva and Naples	12/20/76	Tap	200	0.2	8.0				$7.8x10^3$	$7.5x10^4$	$2.5x10^4$	
4388 SA	Merced Manor System 2, Union Station at Lincoln and La Playa	12/20/76	Tap	100	0.3	8.2				$1.8x10^6$	$1.5x10^3$	$5x10^4$	
4399 SA	Stanford Heights System 2	12/20/76	Tap	200	0.22	7.9				$5x10^3$	BDL	$2.5x10^3$	
4437 SA	S.F. Med. School Cafeteria (most likely blend Sunset & Stanford)	5/17/77	Tap	100	.5	7.0	68.4	22.9	10.2	2.2×10^7	4×10^3 amph-fibrous talc	2×10^3	

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TABLE A-1 (continued)

SAN FRANCISCO WATER DEPARTMENT

No.[a]	Location	Date	Type	Volume Filtered ml	Turb.	pH	Alk., mg/l $CaCO_3$	Calcium Hardness mg/l $CaCO_3$	Aggressiveness Index	Chrysotile Asbestos f/l	Possible Amphibole Asbestos[bc] f/l	Lowest Detectable Limit, f/l	AC Pipe ft
4393 ByPass	University Mound Res. Outlet #2 Bolston and Geven	12/20/76	Finished	100	0.43	8.4				2.5×10^3	1×10^3 (Includes 1 amosite fiber)	5×10^4	
4386 ByPass	University Mound System 1	12/20/76	Tap	100	0.6	8.5				5×10^3	5×10^4	5×10^4	
4382 ByPass	University Mound System 6, Hunters Point, Innes and Earl	12/20/76	Tap	100	0.39	7.9				5×10^3	BDL	5×10^4	
4383 ByPass	University Mound System 5, ARCO Station at Lombard and Gough	12/20/76	Tap	100	0.7	8.5				6.5×10^3	5×10^4	5×10^4	
4390 SA	Sutro #1	12/20/76	Tap	200	0.29	7.4				5×10^3	BDL	5×10^4	
4395 SA	Sutro #4	12/20/76	Tap	50	0.61	9.1				1×10^3	BDL	1×10^3	
4389 ByPass	Lombard System, Mobile Station, Powell and Pacific	12/20/76	Tap	100	0.33	8.0				2.5×10^3	5×10^4	5×10^4	
4381	Potrero Heights System, 20th and Missouri	12/20/76	Tap	200	0.22	7.8				1.8×10^6	1.5×10^3	2.5×10^4	
4394 blend SA & ByPass	College Hill System 1, General Hospital, 22nd and Potrero	12/20/76	Tap	200	0.23	8.0				9.8×10^3	1×10^3 (Includes 1 amosite fiber)	2.5×10^4	

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TABLE A-1 (continued)

SAN FRANCISCO WATER DEPARTMENT

No.*	Location	Date	Type	Volume Filtered ml	Turb.	pH	Alk., mg/l $CaCO_3$	Calcium Hardness mg/l $CaCO_3$	Aggressiveness Index	Chrysotile Asbestos f/l	Possible Amphibole Asbestos** f/l	Lowest Detectable Limit, f/l	AC Pipe ft
4750 mix	Sunset System 1	8/11/77	Tap	100	.51	7.0	68.4	23.3	10.2	3.8×10^7	1×10^6	3.35×10^5	
4762 SA	Sunset System 3	8/11/77	Tap	200	.24	7.3	68.4	34.4	10.7	1.6×10^7	BDL	1.7×10^5	
4816	Bernal Heights Branch Library, Sunset System 3	2/17/77	Tap	100	.23	7.6				4×10^5 (5×10^5 - EPA check)	BDL	5×10^4	
4751 SA	Sunset System 4	8/11/77	Tap	50	.73	6.3	68.4	22.9	9.5	3.8×10^7	3.2×10^6	4×10^5	
4754 SA	Sunset System 7	8/11/77	Tap	100	.57	6.9	68.4	22.9	10.1	2.4×10^7	3×10^5	2.5×10^5	
4749 SA	Merced Manor System 2	8/11/77	Tap	100	.64	7.4	68.4	22.9	10.6	3.8×10^7	BDL	3.35×10^5	
4753 SA	Stanford Heights System 2	8/11/77	Tap	100	.46	7.2	68.4	22.9	10.4	2.3×10^7	1.3×10^6	2.5×10^5	

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TABLE A-1 (continued)

SAN FRANCISCO WATER DEPARTMENT

No.*	Location	Date	Type	Volume Filtered ml	Turb.	pH	Alk., mg/l $CaCO_3$	Calcium Hardness mg/l $CaCO_3$	Aggressiveness Index	Chrysotile Asbestos f/l	Possible Amphibole Asbestos** f/l	Lowest Detectable Limit, f/l	AC Pipe ft
4376 EA	Block 1: 2908 Fillmore	7/12/77	Tap	100	.55	6.9	51.3	22.9	10.0	1.4×10^7	2×10^5	2×10^5	
4377	Block 2: 1207 Third	7/12/77	Tap	50	.75	7.0	51.3	22.9	10.1	2.4×10^7	EDL	3.35×10^5	
4381	Block 3: 2945 Lincoln	7/12/77	Tap	50	.72	7.0	51.3	22.9	10.1	5.5×10^7	EDL	5×10^5	
4384	Block 4 & 6: 3015 Judah	7/12/77	Tap	100	.67	6.9	51.3	22.9	10.0	2×10^7	EDL	2×10^5	
4378	Block 5: Judah & 28th	7/12/77	Tap	100	.55	6.8	51.3	22.9	9.9	1.3×10^7	6×10^5 amph?	2×10^5	
4379	Block 7: 2629 Judah	7/12/77	Tap	100	.51	6.8	51.3	22.9	9.9	1.4×10^7	2×10^5 amph?	2×10^5	
4373	Block 8: 2022 Noriega	7/12/77	Tap	50	.72	7.0	51.3	22.9	10.1	5.8×10^7	6×10^5 amph?	6×10^5	
4372	Block 9: 3128 Irving	7/12/77	Tap	100	.54	6.9	51.3	22.9	10.0	1.3×10^7	EDL	2×10^5	
4371	Block 10: 1384 21st Ave.	7/12/77	Tap	100	.63	6.9	51.3	22.9	10.0	2.6×10^7	EDL	2.5×10^5	
4370	Block 11: 2600 Noriega	7/12/77	Tap	100	.57	6.8	51.3	22.9	9.9	4.4×10^7	2.5×10^6	5×10^5	

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TABLE A-1 (continued)

SAN FRANCISCO WATER DEPARTMENT

No.*	Location	Date	Type	Volume Filtered ml	Turb.	pH	Alk., mg/l $CaCO_3$	Calcium Hardness mg/l $CaCO_3$	Aggressiveness Index	Chrysotile Asbestos f/l	Possible Amphibole Asbestos** f/l	Lowest Detectable Limit, f/l	AC Pipe ft
4767	Alameda East Portal	8/15/77	Finished	100	.37	9.1	68.4	15.4	12.1	2×10^5	5×10^4	5×10^4	
4759 CS	University Mound Res. Outlet #1	8/11/77	Tap	100	.49	7.0	68.4	23.6	10.2	2.3×10^7	2.5×10^5 !	2.5×10^5	
4758 CS	University Mound Res. Outlet #2	8/11/77	Tap	100	.44	7.0	68.4	23.6	10.2	3×10^7	2.5×10^5 !	2.5×10^5	
4746 CS	University Mound System 1	8/11/77	Tap	100	.46	7.2	68.4	23.6	10.4	3×10^7	1.7×10^6	3.35×10^5	
4748 CS	University Mound System 6, Hunters Point	8/11/77	Tap	100	.44	7.2	68.4	23.6	10.4	3.1×10^7	BDL	3.35×10^5	
4757 CS	University Mound System 4	8/11/77	Tap	100	.43	7.1	68.4	23.6	10.3	3.2×10^7	BDL	3.35×10^5	
4752 SA	Sutro #1	8/11/77	Tap	100	.44	7.2	63.4	22.9	10.4	2.7×10^7	5×10^5	2.5×10^5	
4755 SA	Sutro #4	8/11/77	Tap	100	.61	7.1	68.4	22.9	10.3	7×10^7	3.3×10^5 !	3.3×10^5	
4761 CS	Lombard System, Powell & Pacific	8/11/77	Tap	100	.46	7.0	68.4	23.6	10.2	2.1×10^7	2×10^5	2×10^5	
4753 CS	Potrero Heights System, 20th & Missien	8/11/77	Tap	100	.40	7.5	68.4	23.6	10.7	1.5×10^7	8×10^5	2×10^5	
4760 SA	College Hill System 1	8/11/77	Tap	200	.25	7.6	68.4	22.9	10.8	1×10^7	3×10^5 !	1×10^5	

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TABLE A-1 (continued)

SAN MATEO COUNTY

No.*	Location	Date	Type	Volume Filtered ml	Turb.	pH	Alk., mg/l $CaCO_3$	Calcium Hardness mg/l $CaCO_3$	Aggressiveness Index	Chrysotile Asbestos f/l	Possible Amphibole Asbestos** f/l	Lowest Detectable Limit, f/l	AC Pipe ft
†	Livermore Lawrence Lab	5/29/74	Tap							BDL	BDL	6.7×10^4	
†	Redwood City Water Department, 1017 Middlefield Rd. 82% Hetch Hetchy lines 1 & 2; 18% Calaveras	7/1/74	Tap							BDL	BDL	3.3×10^4	
†	Burlingame, 260 El Camino Real, Hetch Hetchy By Pass	7/1/74	Tap							BDL	BDL	3.3×10^4	
4345A	Livermore, Lawrence Lab	11/9/76	Tap	100	<1	9.2				2×10^5	BDL	3×10^4	4,500
4368A By Pass	Millbrae, SFWD Chem Lab	12/14/76	Tap	100	0.48	8.9				2×10^5	1.5×10^5	3×10^4	
4369A SA	Millbrae Recreation Center, 477 Lincoln Circle	12/14/76	Tap	100	0.55	9.0				1.7×10^6	2×10^5	1×10^5	
4372 By Pass	Millbrae, City Hall, 621 Magnolia	12/14/76	Tap	250	0.32	9.1				2.4×10^5	1.6×10^5 tremolite?	8×10^4	
4370 SA	San Bruno, Willard R. Engvall School	12/14/76	Tap	250	0.41	8.7				6.8×10^5	4×10^4	4×10^4	
4371 SA	San Bruno, Bayhill Shopping Center	12/14/76	Tap	250	0.25	7.8				2.2×10^6	1.2×10^5	4×10^4	

ASARCO ALV 0001355

TABLE A-1 (continued)

SAN MATEO COUNTY

No.[a]	Location	Date	Type	Volume Filtered ml	Turb.	pH	Alk., mg/l $CaCO_3$	Calcium Hardness mg/l $CaCO_3$	Aggressiveness Index	Chrysotile Asbestos f/l	Possible Amphibole Asbestos[bb] f/l	Lowest Detectable Limit, f/l	AC Pipe ft
4374 SM 164	Menlo Park, & Sunset and Monte Rosa	12/17/76	Tap	100	0.44	9.6				$6x10^5$	BDL	$5x10^4$	
4375 SM 162	Menlo Park Civic Center	12/17/76	Tap	100	0.5	9.6				$8x10^5$	$5x10^4$ trem tale	$5x10^4$	~700 (1967)
4376 By Pass	Foster City, Civic Center, Public Works Office	12/17/76	Tap	100	0.34	9.2				$1.1x10^6$	Trem - two large masses	$5x10^4$	3,600 50% time
4378 By Pass	Foster City, Elementary School, Polynesia Dr.	12/17/76	Tap	100	0.47	9.5				$6.7x10^4$	$1.3x10^5$ trem tale	$6.7x10^4$	2,800
4373 162	Redwood City, 3720 Page St.	12/17/76	Tap	100	0.55	9.5				$5.5x10^5$	$4x10^5$ trem tale	$5x10^4$	2,420 (3", 1974)
4317 364	Redwood City, Kennedy School	12/17/76	Tap	100	0.44	9.2				BDL	BDL	$5x10^4$	
4379 162	Redwood City, Mmal Service Center, 1400 Broadway	12/17/76	Tap	200	0.38	9.6				$4x10^5$	$2.8x10^5$ trem tale	$2.5x10^4$	400 (8", 1969)
4380 162	Redwood City, McKinley School	12/17/76	Tap	50	1.6	9.4				$4x10^5$	$3x10^5$ trem tale	$1x10^5$	

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TABLE A-1 (continued)

SAN MATEO COUNTY

[illegible]	Location	Date	Type	Volume Filtered ml	Turb.	pH	Alk., mg/l $CaCO_3$	Calcium Hardness mg/l $CaCO_3$	Aggressiveness Index	Chrysotile Asbestos f/l	Possible Amphibole Asbestos** f/l	Lowest Detectable Limit, f/l	AC Pipe ft
[illegible]	San Andreas Treatment Plant	2/17/77	Finished	200	.15	8.5				1.9×10^6 (1.5×10^6) EPA Check	BDL	2.5×10^5	
[illegible]	San Andreas T.P. after clear well	5/26/77 9:35 AM	Finished	200	0.12	7.4	68.4	34.4	10.8	4×10^5	BDL	2.5×10^4	
4400	San Andreas T.P. after clear well	5/26/77 9:35 AM	Finished	200	0.12	7.7	68.4	34.4	11.1	8×10^5	5×10^4	2.5×10^4	
[illegible]	San Andreas T.P. after clear well.	5/26/77 9:35 AM	Finished	200	0.11	7.3	85.5	34.4	10.8	3.2×10^5	BDL	2.5×10^4	
[illegible] S.A.	San Bruno Tagwell Jr. High	5/26/77	Tap	200	.13	7.6	68.4	34.4	11.0	6×10^5	BDL	2.5×10^4	
[illegible] S.A.	San Bruno Tayhill Shopping Center	5/26/77	Tap	200	.33	7.6	60.4	34.4	11.0	7.5×10^4	BDL	2.5×10^4	
[illegible]	San Bruno City Hall, well water	5/26/77	Tap	200	.16	7.8	239.4	94.1	12.1	BDL	BDL	2.5×10^4	
4157	San Bruno Public Library, 701 W. Angus, well water	5/26/77	Tap	200	.13	7.6	222.3	102.6	12.0	BDL	BDL	2.5×10^4	
[illegible] S.A.	[illegible] - Chem. Lab [illegible] El Camino Millbrae	5/26/77	Tap	100	.03	7.2	68.4	23.6	10.4	2.2×10^7	BDL	2×10^5	
[illegible]	Millbrae City Hall, 621 Magnolia	5/26/77	Tap	100	.03	6.9	51.3	23.6	10.0	1.1×10^7	2×10^5	2×10^5	
[illegible]	Millbrae Recreation Center, 477 Lincoln	5/26/77	Tap	100	.8	7.3	68.4	34.4	10.7	3.2×10^7	BDL	2.5×10^5	

ASARCO ALV 0001357

TABLE A-1 (continued)

SAN MATEO COUNTY

Mail	Location	Date	Type	Volume Filtered ml	Turb.	pH	Alk., mg/l $CaCO_3$	Calcium Hardness mg/l $CaCO_3$	Aggressiveness Index	Chrysotile Asbestos f/l	Possible Amphibole Asbestos[a] f/l	Lowest Detectable Limit, f/l	AC Pipe ft
4461 C.S.	Burlingame City Hall, 501 Primrose	5/26/77	Tap	100	.95	7.4	68.4	23.6	10.6	1.5×10^7	BDL	2×10^5	
4462 C.S.	Burlingame 1791 El Camino	5/26/77	Tap	100	.83	7.2	68.4	23.6	10.4	1.4×10^7	BDL	2×10^5	
4464 C.S.	Burlingame 630 Burlingame Ave.	5/26/77	Tap	100	.84	7.3	68.4	23.6	10.5	1.4×10^7	BDL	2×10^5	Yes
4465 C.S.	Burlingame 1361 N. Corelan Ave.	5/26/77	Outside Spigot	100	.45	7.3	68.4	35.4	10.7	9.2×10^6	BDL	2×10^5	Yes
4467 C.S.	San Mateo 55 W. 3rd	5/26/77	Tap	100	.88	7.2	51.3	23.6	10.3	1.6×10^7	BDL	2×10^5	
4872 SA	Pacifica Chamber of Commerce, Sharp Park	7/5/77	Tap	200	.21	8.4	68.4	34.4	11.8	3.5×10^5	BDL	2.5×10^4	
4866 SA	Pacifica, Edgemart 423 Ferry Ave.	7/5/77	Tap	200	.18	7.3	85.5	34.4	10.8	7.5×10^5	BDL	3×10^4	Possible
4873 SA	Pacifica, Linda Mar Dist., Linda Mar Blvd.	7/5/77	Tap	200	.18	8.0	68.4	34.4	11.4	3.8×10^5	2.5×10^4?	2.5×10^4	Yes
4867 CS	Hillsborough El Camino and Floribunda	7/5/77	Tap	100	.61	7.6	68.4	23.6	10.8	4.4×10^7	1.5×10^6	5×10^5	
4874 CS	Hillsborough 945 Culebras Rd.	7/11/77	Tap	100	.53	7.4	51.3	23.6	10.5	2×10^7	BDL	2×10^5	
4713 SA	Broadmoor Washington and Sullivan	7/7/77	Tap	200	.28	7.6	68.4	34.4	11.0	1.25×10^5	BDL	2.5×10^4	

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TABLE A-1 (continued)

TABLE A-1 (continued)

SAN MATEO COUNTY

No.*	Location	Date	Type	Volume Filtered ml	Turb.	pH	Alk., mg/l $CaCO_3$	Calcium Hardness mg/l $CaCO_3$	Aggressiveness Index	Chrysotile Asbestos f/l	Possible Amphibole Asbestos** f/l	Lowest Detectable Limit, f/l	AC Pipe ft
47[illegible]	Daly City: San Andreas turnout, Hickey Blvd.	7/7/77	Finished	200	.31	7.3	68.4	34.4	10.7	1.25×10^5	BDL	2.5×10^4	
4714	Daly City [illegible]: blend, 35[illegible] and 65% well water	7/7/77	Tap	200	.26	7.6	153.9	82.9	11.7	7×10^6	BDL	1×10^5	
4716	Daly City: 792 Niantic Ave. well water	7/7/77	Finished	200	.13	8.0	102.6	53.4	11.7	2×10^5	BDL	2.5×10^4	
4715 SA	Westborough Water District: 2263 Westborough Blvd., South San Francisco	7/7/77	Tap	50	1.5	9.4	85.5	34.4	12.9	4×10^5	BDL	1×10^5	6,300 (14", 1965)
47[illegible] SA	South San Francisco: 2530 Bentry	7/7/77	Tap	200	.23	7.7	102.6	34.4	11.2	1.5×10^5	BDL	2.5×10^4	6,300 (14", 1966) 14,200 (12")
47[illegible] SA	South San Francisco: Westborough and Callan	7/7/77	Tap	100	.37	7.7	68.4	34.4	11.1	2×10^5	1.5×10^5 amph-tren? talc?	5×10^4	6,300 (14") 8,000 (12")
47[illegible]	South San Francisco: Del Paso and Bonita near S.A. turnout	7/7/77	Tap	200	.28	7.6	68.4	34.4	11.0	3×10^5	7.5×10^4 amph-tren?	2.5×10^4	
47[illegible]	South San Francisco, well water	7/7/77	Finished	200	.22	7.4	307.8	193.4	12.2	1.5×10^6	BDL	2.5×10^4	
47[illegible]	South San Francisco: mixture, well water (25-30%) and San Andreas	7/7/77	Finished	200	.39	7.6	188.1	121.1	12.0	4×10^6	5×10^4	5×10^4	

ASARCO ALV 0001359

TABLE A-1 (continued)
SAN MATEO COUNTY

No.*	Location	Date	Type	Volume Filtered ml	Turb.	pH	Alk., mg/l $CaCO_3$	Calcium Hardness mg/l $CaCO_3$	Aggressiveness Index	Chrysotile Asbestos f/l	Fecatible Amphibole Asbestos** f/l	Lowest Detectable Limit, f/l	AC Pipe ft
4687 N.H.Line 1 & 2	Menlo Park Civic Center	7/14/77	Tap	100	.51	9.4	51.3	15.4	12.3	1.5×10^5	BDL	3×10^4	~700 (1967)
4856 3 & 4	Menlo Park: 4 Sunset and Monte Rosa	7/14/77	Tap	200	.30	9.3	51.3	15.4	12.2	7.5×10^4	BDL	2.5×10^4	
4688 3 & 4	Redwood City: 2322 Goodwin	7/14/77	Tap	200	.31	9.3	51.3	15.4	12.2	BDL 2.5×10^4	2.5×10^4 f 2.5×10^4	2.5×10^4	
4686 1 & 2	Redwood City: 1400 Broadway	7/14/77	Tap	200	.37	9.5	51.3	30.8	12.7	1.6×10^6	7.4×10^4 amph-croc	3.33×10^4	400 (8", 1969)
4685 1 & 2	Redwood City: 3719 Page St.	7/14/77	Tap	200	.31	9.4	68.4	15.4	12.4	2.5×10^4	BDL	2.5×10^4	2,420 (8", 1974)
4690 1 & 2	San Carlos turnout N.H. (also Redwood City)	7/14/77	Turnout	50	.87	9.3	51.3	15.4	12.2	2×10^5	BDL	1×10^5	
4689 1 & 2	San Carlos: 961 McCue	7/14/77	Tap	200	.31	9.2	51.3	30.8	12.4	6×10^6	BDL	1×10^5	~16,000 (16", 14", 12", 8", 6")
4691 1 & 2	San Carlos: 50 Laurel St.	7/14/77	Tap	200	.28	9.4	51.3	30.8	12.6	6.4×10^6	8.4×10^5	8.4×10^4	~17,600 (16", 14", 12", 8", 6")
4693 1 & 2 3 & 4	Pulgas Water Temple, Hetch Hetchy inflow to Crystal Springs Reservoir	7/14/77	Finished	200	.26	9.3	68.4	15.4	12.3	BDL 2.5×10^4	BDL BDL	2.5×10^4	
4694	Outlet of Crystal Springs Reservoir at dam	7/14/77	Finished	50	.73	7.3	68.4	23.6	10.5	3.2×10^7	BDL	5×10^5	

ASARCO ALV 0001360

TABLE A-1 (continued)

TABLE A-1 (continued)

SAN MATEO COUNTY

No.*	Location	Date	Type	Volume Filtered ml	Turb.	pH	Alk., mg/l $CaCO_3$	Calcium Hardness mg/l $CaCO_3$	Aggressiveness Index	Chrysotile Asbestos f/l	Possible Amphibole Asbestos** f/l	Lowest Detectable Limit, f/l	AC Pipe ft
4893	San Mateo: 4021 Beresford (southernmost)	7/14/77	Tap	50	.72	6.7	51.3	23.6	9.8	5×10^7	5×10^5 (trem.?)	5×10^5	Yes
4892 CS	San Mateo: 2243 Norfolk	7/14/77	Tap	100	.66	6.9	68.4	23.6	10.1	3.1×10^7	1×10^6 (Amph + trem + talc?)	3.35×10^5	Yes
4868	San Mateo: Hillsdale Mall, Civil Defense stored water (source unknown)	Late '63 or early '64 (collected 7/5/77)	Tap	100	.47	7.6	85.5	68.4†	11.37	BDL BDL	BDL BDL	5×10^4	?
4774	San Mateo: Hillsdale Mall, repeat of 4868	Collected 11/17/77	Tap	200	.37	7.0	68.4	23.6	10.2	5×10^4	BDL	2.5×10^4	?
4725 CS	Foster City Civic Center	7/27/77	Tap	100	.45	7.0	68.4	23.6	10.2	6×10^6	2×10^5	2×10^5	3,600 (50% of the time)
4726 CS	Foster City Elementary School, Polynesian Ave.	7/27/77	Tap	100	.60	7.2	68.4	23.6	10.4	4.3×10^7	3.35×10^5	3.35×10^5	2,800 (1965)
4722 By Pass	Belmont: turnout from By Pass before Belmark grid	7/27/77	Finished	200	.37	9.0	68.4	15.4	12.0	BDL	2.5×10^4	2.5×10^4	No
4724 By Pass	Belmont: 2445 Belmark	7/27/77	Tap	200	.35	9.8	51.3	30.8	13.0	5×10^4	BDL	2.5×10^4	Yes (<5,000)
4899 (Blend, primarily By Pass)	Belmont: extremity of zone 4, 2520 Lincoln	7/27/77	Tap	200	.38	8.8	68.4	30.8	12.1	5×10^4	BDL	2.5×10^4	No

†Total hardness, mg/l $CaCO_3$

ASARCO ALV 0001361

TABLE A-1 (continued)

SAN MATEO COUNTY

No.*	Location	Date	Type	Volume Filtered ml	Turb.	pH	Alk., mg/l $CaCO_3$	Calcium Hardness mg/l $CaCO_3$	Aggressiveness Index	Chrysotile Asbestos f/l	Possible Amphibole Asbestos** f/l	Lowest Detectable Limit, f/l	AC Pipe ft
4723 Redwood M.H. 1 & 2	Belmont: source M.H. turnout, Taylor Rd. east of Old Country Rd.	7/27/77	Hydrant	25	1.16	9.1	51.3	15.4	12.0	4×10^5 two bundles	BDL	2×10^5	
4721 Redwood M.H. 1 & 2	Belmont: extremity #2, 531 Davey Glenn	7/27/77	Tap	100	.44	9.0	68.4	15.4	12.0	BDL	BDL	5×10^4	
4723 3 & 4	Atherton: Alpine Rd. Connection	7/28/77	Tap	200	.33	9.1	51.3	15.4	12.0	BDL	BDL	2.5×10^4	
4725 1 & 2	Atherton: near Bay-road and Marsh connection	7/28/77	Tap	100	.39	9.2	51.3	15.4	12.1	5×10^4	BDL	5×10^4	2,100 (16")
4727	Atherton, Bear Gulch Reservoir	7/28/77	Raw	100	.41	9.4	136.8	89.8	13.5	Impossible to analyze			
4732 M.H.1 & 2	East Palo Alto Water District Office: 2277 University	7/28/77	Tap	200	.29	9.2	51.3	15.4	12.1	BDL	2.5×10^4	2.5×10^4	
4730 1 & 2	Terminal East Palo Alto Water, O'Conner School, Menlo Park	7/28/77	Tap	100	.40	9.9	51.3	30.8	13.1	2×10^7	2×10^5 trace	2×10^5	3,500 (8", 1956)
4731 1 & 2	East Palo Alto, Extremity, Woodland Ave.	7/28/77	Tap	100	.42	9.2	51.3	15.4	12.1	1.45×10^6	5×10^4 trace	5×10^4	2,000 (8", 1950)
4747 CS	SFWD Chem. Lab, Millbrae	8/11/77	Tap	100	.5	7.2	51.3	23.6	10.3	2.3×10^7	5×10^5	2.5×10^5	

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TABLE A-1 (continued)

SAN MATEO COUNTY

No.*	Location	Date	Type	Volume Filtered ml	Turb.	pH	Alk., mg/l $CaCO_3$	Calcium Hardness mg/l $CaCO_3$	Aggressiveness Index	Chrysotile Asbestos f/l	Possible Amphibole Asbestos** f/l	Lowest Detectable Limit, f/l	AS Pipe ft
4766	San Andreas Treatment Plant, after clear well	8/17/77	Finished	200	.14	8.2	83.5	34.4	11.7	9.3×10^5	5×10^4	2.5×10^4	
4777	Daly City: 792 Miantic Ave, well water	12/6/77	Finished	100	.46	7.8	136.8	53.4	11.7	1.5×10^5	BDL	5×10^4	
4778	Daly City Res.5: blend 50% SA and 50% well water	12/6/77	Tap	100	.4	7.3	136.8	83.1	11.4	1.4×10^7 1.5×10^7	BDL 6×10^5	2×10^5 2×10^5	
4779	San Carlos: 1047 McCue	12/6/77	Tap	100	.64	9.2	68.4	30.8	12.5	1.2×10^7	BDL	2×10^5	same as 4889
4780	San Carlos: 50 Laurel St.	12/6/77	Tap	100	.48	7.2	68.4	30.8	10.5	1.9×10^7	BDL	2×10^5	same as 4891.
4788	San Andreas Treatment Plant, after clear well	1/11/78	Finished		.15	8.4	68.4	34.4	11.8	7×10^5	BDL	2.5×10^4	
4789	EPHD Chem. Lab, Millbrae: 60% Crystal Springs 31% Hetch Hetchy 9% San Antonio (South Bay, Hetch Hetchy, and local runoff)	1/11/78	Tap	100	1.3	7.4	68.4	25.6	10.6	4.3×10^7	BDL	5×10^5	
4787	Crystal Springs Reservoir (before installing EPA Nuclepore filter	1/11/78	Finished	100	1.6	7.2	68.4	33.6	10.6	6×10^7	BDL trem? 5×10^5	5×10^5	
4790	Crystal Springs Reservoir	1/12/78	Finished	100	2.4	7.0	68.4	23.6	10.2	8.3×10^6 (difficult to diffract)	2×10^5 trem?	5×10^5	

ASARCO ALV 0001363

TABLE A-1 (continued)

ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

No.[A]	Location	Date	Type	Volume Filtered ml	Turb.	pH	Alk., mg/l $CaCO_3$	Calcium Hardness mg/l $CaCO_3$	Aggressiveness Index	Chrysotile Asbestos f/l	Possible Amphibole Asbestos[AA] f/l	Lowest Detectable Limit, f/l	AC Pipe ft
4783	Patterson treatment plant (source, South Bay Aqueduct)	1/9/78	Finished	100	0.4	7.9	136.8	86	12.0	2.1×10^6	5×10^4 trem	5×10^4	
4734	Hacho well #1, Pleasanton	1/9/78	Finished	200	.28	7.4	256.5	184	12.1	1.6×10^6	1.3×10^5 amph	5×10^4	
4601	Hacho well #1, Pleasanton	2/28/78	Finished	100	.37	7.6	203.2	117	12.0	1.4×10^6	2×10^5 trem?	5×10^4	
4603	Hacho well #2, Pleasanton	2/28/78	Finished	200	.25	7.3	342	240	12.2	BDL	BDL	2.5×10^4	
4602	Shipyard well #1, Pleasanton	2/28/78	Finished	200	.17	7.3	410.4	198	12.2	1×10^5	5×10^4 trem?	2.5×10^4	

CALIFORNIA WATER SERVICE COMPANY, LIVERMORE

4600	Well #2401, Faret & Olivina, Livermore	2/28/78	Finished	200	.21	7.6	256.5	44	11.8	2.5×10^4	5×10^4	2.5×10^4	

ASARCO ALV 0001364

Livermore

TABLE A-1 (continued)

ALAMEDA COUNTY WATER DISTRICT, FREMONT

No.*	Location	Date	Type	Volume Filtered ml	Turb.	pH	Alk., mg/l $CaCO_3$	Calcium Hardness mg/l $CaCO_3$	Aggressiveness Index	Chrysotile Asbestos f/l	Possible Amphibole Asbestos** f/l	Lowest Detectable Limit, f/l	AC Pipe ft
4804	Mission San Jose Water Treatment Plant	4/27/77	Finished	200	.17	8.4	76	128	12.4	2.5×10^4	EDL	2.5×10^4	
4805	Linda Vista School Irvington District	4/27/77	Tap	200	.29	8.0	88.6	128	12.1	2×10^5	EDL	2.5×10^4	10,000 (6", 1957)
4806	M.J. Bernardo Water Softening Plant	4/27/77	Finished	200	.08	7.8	222	43.8	11.8	EDL	EDL	2.5×10^4	
4807	Fremont Medical Center 2147 Mowry	4/27/77	Tap	200	.18	8.1	102.6	98.5	12.1	1.3×10^5	EDL	2.5×10^4	
4808	Newark - Morris School	4/27/77	Tap	200	.3	8.0	136.8	87.6	12.1	4.5×10^5	EDL	2.5×10^4	
4809	ACWD Chem Lab 43010 Fremont Blvd.	4/27/77	Tap	100	.49	8.0	119.7	65.7	11.9	3×10^5	EDL	5×10^4	2,500 (12", 1972)
4810	Fremont Central & Cherry Match-Matchy Line	4/27/77	Tap	25	3.3	8.8	51.3	30.8	12.0	EDL	EDL	2.5×10^5	
4703	Fremont, 549 Rancho Arroyo Parkway	7/7/77	Tap, before reverse osmosis	100	.61	7.3	205.2	76.6	11.7	2.5×10^5	EDL	5×10^4	
4707, 20	Fremont, 549 Rancho Arroyo Parkway	7/7/77	Tap, after reverse osmosis	200	.12	6.5	51.3			EDL	EDL	2.5×10^4	

ASARCO ALV 0001365

TABLE A-1 (continued)

CITY OF HAYWARD

No.*	Location	Date	Type	Volume Filtered ml	Turb.	pH	Alk., mg/l $CaCO_3$	Calcium Hardness mg/l $CaCO_3$	Aggressiveness Index	Chrysotile Asbestos f/l	Possible Amphibole Asbestos** f/l	Lowest Detectable Limit, f/l	AC Pipe ft
4733	Reducing Station, 28521 Hesperian Blvd.	8/1/77	Tap	100	.40	8.8	51.3	15.4	11.7	5×10^4	BDL	5×10^4	
4734	Decoto Booster Station, 33775 Mission Blvd.	8/1/77	Tap	5	13.00	8.9	68.4	30.8	12.2	BDL	BDL	1×10^6	
4735	West extremity, Azalea Court	8/1/77	Tap	100	.45	9.3	68.4	30.8	12.8	6.2×10^6	Amph 2×10^5 Trem 1×10^5	1×10^5	=8000 (8", 1950-68; '75 last section)
4736	Extremity, 1785 D Street	8/1/77	Tap	200	.32	9.3	51.3	30.8	12.5	3.4×10^7	BDL	2.5×10^5	=3600
4737	Extremity, 28595 Hayward Blvd.	8/1/77	Tap	100	.38	9.3	51.3	30.8	12.5	2.5×10^6	6.7×10^4 Trem?	6.7×10^4	16,800 (mixture AC and cast iron).
4738	Middle of district 27300 Patrick Ave.	8/1/77	Tap	5	12.8	8.7	51.3	30.8	11.9	BDL	BDL	1×10^6	5300-7500 loop
4855	San Lorenzo Community Center; EBMUD (but, due to drought, sand Hatch Untchy supply as Hayward)	6/21/77	Tap	100	.43	9.2	68.4	30.8	12.5	6.5×10^5	BDL	5×10^4	Extensive

TABLE A-1 (continued)

EAST BAY MUNICIPAL UTILITY DISTRICT

ASARCO ALV 0001366

TABLE A-1 (continued)

EAST BAY MUNICIPAL UTILITY DISTRICT

No.*	Location	Date	Type	Volume Filtered ml	Turb.	pH	Alk., mg/l $CaCO_3$	Calcium Hardness mg/l $CaCO_3$	Aggressiveness Index	Chrysotile Asbestos f/l	Possible Amphibole Asbestos** f/l	Lowest Detectable Limit, f/l	AC Pipe ft
43174	Berkeley, Fire Warren Hall, UC3, Stored Emergency Service Water (Orinda Filter Plant)	Spring 1963-64	Tap	100	0.22	7.2				BDL	BDL	$5x10^4$	
4313	Oakland Civil Defense Office Basement, Reclamation Amphitheater, Joaquin Miller Park	4/11/63	Tap	100	0.32	7.7				$1.5x10^5$	BDL	$5x10^4$	10 (4", 1956) 510 (6", 1956) 8,500 (8", 1950)
4731 4771	Albany, Sunset View Mausoleum, Civil Defense stored water	3/61 (collected 9/22/77)	Tap	200	.20	7.6	83.5	24.6	10.9	BDL BDL	BDL BDL	$2x10^4$ $2.5x10^4$	None
4771 4772	Concord, Naval Weapons Sta., Civil Defense stored water	late 1959 (collected 9/22/77)	Tap	200	.11	7.7	83.5	28.4	11.1	BDL BDL	BDL BDL	$2.5x10^4$ $2.5x10^4$	†
†	Oakland, 3215 Fruitvale before AC Pipe (Orinda Filter Plant)	7/29/74	Tap							BDL	BDL	$2x10^4$	
†	Oakland, 2835 Fruitvale after AC Pipe	7/29/74	Tap							BDL	BDL	$2x10^4$	1,800 (8", 1961)
†	Sobrante, 650 Andrews before AC Pipe	7/29/74	Tap							BDL	BDL	$1x10^4$	

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TABLE A-1 (continued)

EAST BAY MUNICIPAL UTILITY DISTRICT

No.*	Location	Date	Type	Volume Filtered ml	Turb.	pH	Alk., mg/l $CaCO_3$	Calcium Hardness mg/l $CaCO_3$	Aggressiveness Index	Chrysotile Asbestos f/l	Possible Amphibole Asbestos** f/l	Lowest Detectable Limit, f/l	AC Pipe ft
†	Sobrante, 2351 Rancho Dr. after AC Pipe	7/29/74	Tap							BDL	BDL	2×10^4	1,900
†	San Leandro, Memorial Hospital 2200 Benedict before AC Pipe (Upper San Leandro Treatment Plant)	7/29/74	Tap							BDL	BDL	1×10^4 (.8 M.F.) 2×10^4 (.2 M.F.)	
†	San Leandro, 1222 Montrose after AC Pipe	7/29/74	Tap							BDL	BDL	2×10^4 (.8 M.F.) 4×10^4 (.2 M.F.)	1,710 (6", 1957) 470 (3", 1951)
4322A	Berkeley, 115 Earl Warren Hall	9/9/76	Tap	100	1.1	9.4				1.5×10^5	4×10^5?	5×10^4	
4330B	Orinda Filter Plant	9/23/76	Finished	100 (settled 5 days)	0.66	9.74				2.5×10^5	3×10^5 Trem.?	5×10^4	
4332B	Oakland, 3215 Fruitvale before AC Pipe	9/23/76	Tap	100 (settled 5 days)	0.63	9.6				2×10^5	2.5×10^5 Trem.?	5×10^4	
4333B	Oakland, 2855 Fruitvale after AC Pipe	9/23/76	Tap	100 (settled 5 days)	0.63	9.6				1.5×10^5	1.5×10^5 Trem.?	5×10^4	1,800 (8", 1951)

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TABLE A-1 (continued)

EAST BAY MUNICIPAL UTILITY DISTRICT

No.[a]	Location	Date	Type	Volume Filtered ml	Turb.	pH	Alk., mg/l $CaCO_3$	Calcium Hardness mg/l $CaCO_3$	Aggressiveness Index	Chrysotile Asbestos f/l	Possible Amphibole Asbestos[aa] f/l	Lowest Detectable Limit, f/l	AC Pipe ft
61318	Oakland Civil Defense Office, Joaquin Miller Park	9/23/76	Tap	100	0.85	9.5				$2x10^5$	$5.5x10^5$ Amph. trem. Talc?	$5x10^4$	10 (4", 1956) 910 (6", 1956) 8,580 (8", 1930)
61323	San Pablo Filter Plant, clear well	9/23/76	Finished	250	0.22	8.8				$6.4x10^4$	BDL	$1.6x10^4$	
61326B	Sobrante Filter Plant. Settled five days.	9/23/76	Finished	500	0.08	8.7				$1.6x10^4$	BDL	$8x10^3$	
61328	Sobrante, 6550 Andrews before AC Pipe	9/23/76	Tap	250	0.10	8.7				$6x10^4$	BDL	$.2x10^4$	
61332	Sobrante, 2251 Rancho Dr., after AC Pipe	9/23/76	Tap	250 (settled 5 days)	0.11	8.7				BDL	$4x10^4$ Amph.?	$2x10^4$	1,900
61327	Pinole, Kerry Hills School, after AC Pipe (Sobrante Filter Plant).	9/23/76	Tap	250 (settled 5 days)	0.11	8.8				$3.2x10^4$	BDL	$1.6x10^4$	1,150 (8", 1963) 1,760 (6", 1964)
61342	Walnut Creek Filter Plant	10/7/76	Raw	50	1.4	9.9				$4x10^5$	$6x10^5$ Tren.?	$1x10^5$	
61335	Walnut Creek Filter Plant	10/7/76	Finished	250	0.7	9.8				BDL	$4x10^4$ Trem?	$2x10^4$	
61336	Walnut Creek, 201 Margarido Dr.	10/7/76	Tap	250	0.65	9.8				BDL	BDL	$2x10^4$	800 (8", 1954) or 830 (6", 1954) 120 (4", 1951)

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TABLE A-1 (continued)

EAST BAY MUNICIPAL UTILITY DISTRICT

No.[a]	Location	Date	Type	Volume Filtered ml	Turb.	pH	Alk., mg/l $CaCO_3$	Calcium Hardness mg/l $CaCO_3$	Aggressiveness Index	Chrysotile Asbestos f/l	Possible Amphibole Asbestos[4e] f/l	Lowest Detectable Limit, f/l	AC Pipe ft
4337	Lafayette Filter Plant	10/7/76	Finished	250 (settled 5 days)	.7	9.7				BDL	1.4×10^5 Trem.?	2×10^4	
4338	Upper San Leandro Filter Plant	10/7/76	Finished	250 (settled 5 days)	.2	8.4				BDL	1.6×10^4 Trem.?	1.6×10^4	
4340	San Leandro 2800 Benedict, before AC Pipe	10/7/76	Tap	250	.38	8.4				BDL	BDL	2×10^4	
4339	San Leandro, 1276 Montrose, after AC Pipe	10/7/76	Tap	250	.2	8.4				1.4×10^5	BDL	1.6×10^4	1,710 (8", 1957) 470 (8", 1961)
4361	Berkeley, 1217 Spruce St.	12/13/76	Tap	50	1.1	8.9				1×10^5	2×10^5	1×10^5	
4364	Berkeley, 1909 Rose St.	12/13/76	Tap	50	.76	9.2				1.2×10^6	2.2×10^6 Amph. or Talc.?	1×10^5	
4832	Walnut Creek, 16 Arbutus Ct.	1/27/77 6:45 AM	Tap	50	2.1	9.3				1×10^5	3×10^5	1×10^5	1,940 (6", 1966)
4813	Orinda Filter Plant	1/27/77 7:30 AM	Finished	50	2.4	9.5				5×10^5	6×10^5 possible	1×10^5	
4814	Orinda Filter Plant	1/27/77 7:30 AM	Finished	50	2.4	9.5				3×10^5	7×10^5	1×10^5	

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TABLE A-1 (continued)
EAST BAY MUNICIPAL UTILITY DISTRICT

[illegible]	Location	Date	Type	Volume Filtered ml	Turb.	pH	Alk., mg/l $CaCO_3$	Calcium Hardness mg/l $CaCO_3$	Aggressiveness Index	Chrysotile Asbestos f/l	Possible Amphibole Asbestos[a] f/l	Lowest Detectable Limit, f/l	AC Pipe ft
[illegible]	Orinda, 141 La Cuesta	1/27/77 7:05 AM	Tap	50	1.8	9.4				BDL	BDL	$1x10^3$	270 (8", 1973)
[illegible]	Orinda, 73 Brookwood Rd., #8	1/27/77 9:15 AM	Tap	50	2.2	9.5				$1x10^3$	BDL	$1x10^3$	
[illegible]	Berkeley, 320 Panoramic	1/27/77 7:05 AM	Tap	50	1.5	9.25				BDL	$1x10^6$ Tale-Trem.? (One fiber may be amosite)	$1x10^3$	
[illegible]	Berkeley, 1963 Yosemite	1/27/77 8:00 AM	Tap	50	2.3	9.3				$6x10^3$	BDL	$1x10^3$	
[illegible]	Berkeley, 1423 1/2 Oxford	1/27/77 8:30 AM	Tap	50	2.2	9.3				$4x10^3$	BDL	$1x10^3$	
[illegible]	Berkeley, 1817 Spruce	1/27/77 8:30 AM	Tap	50	2.2	9.3				$2x10^3$	$1x10^6$ Tale-Trem.? (Includes $2x10^3$ amosite)	$1x10^3$	
4201	Berkeley, 116 Warren Hall	1/27/77 9:00 AM	Tap	50	2.3	9.3				$2x10^3$	BDL	$1x10^3$	
[illegible]	Berkeley, 2236 Channing	1/27/77 8:45 AM	Tap	50	2.2	9.3				$6x10^3$	BDL	$1x10^3$	
[illegible]	Berkeley, 1909 Rose	1/27/77 8:04 AM	Tap	50	2.2	9.4				$8x10^3$	BDL	$1x10^3$	

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TABLE A-1 (continued)

EAST BAY MUNICIPAL UTILITY DISTRICT

No.[a]	Location	Date	Type	Volume Filtered ml	Turb.	pH	Alk., mg/l $CaCO_3$	Calcium Hardness mg/l $CaCO_3$	Aggressiveness Index	Chrysotile Asbestos f/l	Possible Amphibole Asbestos[aa] f/l	Lowest Detectable Limit, f/l	AC Pipe ft
4808	Berkeley 1909 Rose	1/27/77 4:55 PM	Tap	50	2.3	9.4				2.7×10^5	BDL	1.3×10^5	
4811	Albany 833 1/2 Adams	1/27/77 8:05 AM	Tap	50	2.3	9.39				4×10^5	BDL	1×10^5	possible 200 (8", 1948) 1,810 (8", 1952)
4812	Albany 833 1/2 Adams	1/27/77 6:26 PM	Tap	50	2.3	9.4				2×10^5	BDL	1×10^5	possible 200 (8", 1948) 1,810 (8", 1952)
4810	San Pablo Filter Plant	1/27/77 morning	Finished	250	0.26	8.1				BDL	BDL	2×10^4	
4817	Berkeley 1817 Spruce	2/22/77	Tap	50	2.0	9.38				1×10^5 (1×10^6) EPA	BDL	1×10^5	

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EAST BAY MUNICIPAL UTILITY DISTRICT

No.*	Location	Date	Type	Volume Filtered ml	Turb.	pH	Alk., mg/l $CaCO_3$	Calcium Hardness mg/l $CaCO_3$	Aggressiveness Index	Chrysotile Asbestos f/l	Possible Amphibole Asbestos** f/l	Lowest Detectable Limit, f/l	AC Pipe ft
4847	Walnut Creek Treatment Plant	6/20/77	Finished	100	.57	8.9	88.4	56.8	12.5	5×10^4	BDL	5×10^4	
4844	Lafayette Treatment Plant	6/20/77	Finished	100	.61	8.9	85.5	42.6	12.5	5×10^4	BDL	5×10^4	
4841	Orinda Treatment Plant	6/20/77	Finished	100	.63	8.4	85.5	42.6	12.0	5×10^4	BDL	5×10^4	
4842	Danville 247 So. Hartz	6/20/77	Tap	100	.63	9.7	88.4	42.6	13.2	5×10^4	BDL	5×10^4	575 (8", 1958)
4843	San Ramon 9803 Davona	6/20/77	Tap	100	.66	9.5	85.5	42.6	13.1	3.5×10^5	5×10^4	5×10^4	1800 (8") or 2900 (6") 4543 (8", 1956-76) 11220 (12", 1962-69) 5930 (6")
4839	San Ramon Alcosta & Fircrest Lane	6/20/77	Tap	50	.83	9.4	85.5	42.6	13.0	5×10^5	2×10^5 trace	1×10^5	
4846	Sobrante Treatment Plant	6/20/77	Finished	200	.12	8.6	85.5	47.9	12.2	BDL	BDL	2.5×10^4	
4845	El Sobrante 600 Andrews before AC (water purifying unit on tap)	6/20/77	Tap	200	.13	8.7	85.5	47.9	12.3	BDL	BDL	2.5×10^4	
4840	El Sobrante 2221 Rancho after 1100 AC	6/20/77	Tap	50	.72	8.6	85.5	47.9	12.2	BDL	BDL	1×10^5	1900
4851	Cabot Treatment Plant	6/21/77	Finished	200	.13	7.7	171	90.8	11.9	3×10^5	BDL	2.5×10^4	

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TABLE A-1 (continued)
EAST BAY MUNICIPAL UTILITY DISTRICT

No.*	Location	Date	Type	Volume Filtered ml	Turb.	pH	Alk., mg/l $CaCO_3$	Calcium Hardness mg/l $CaCO_3$	Aggressiveness Index	Chrysotile Asbestos f/l	Possible Amphibole Asbestos** f/l	Lowest Detectable Limit, f/l	AC Pipe ft
4856	Upper San Leandro treatment plant	6/21/77	Finished	100	.3	8.0	102.6	54.7	11.8	BDL	BDL	5×10^4	
4857	San Leandro 2800 Benedict before AC	6/21/77	Tap	100	.39	8.2	119.7	54.7	12.0	1×10^5	BDL	5×10^4	
4860 Line not flushed very well	San Leandro 1222 Montrose after AC	6/21/77	Tap	25	3.2	8.4	119.7	54.7	12.2	2×10^6	2×10^5	2×10^5 trem	2400
4853	Castro Valley Chamber of Commerce	6/21/77	Tap	50	.68	8.5	83.5	32.8	12.0	8×10^5	BDL	1×10^5	260 (8", 1961) or 240 (8", 1957) 900 (8", 1963)
4851	Alameda Chamber of Commerce	6/21/77	Tap	50	.9	8.9	83.5	42.6	12.5	6×10^5	BDL	1×10^5	Possible
4859	Oakland 3215 Fruitvale before AC,	6/21/77	Tap	50	.7	8.1	83.5	42.6	11.7	1×10^5	5×10^3 talc-trem	1×10^5	
4858	Oakland 2855 Fruitvale after 1800' AC	6/21/77	Tap	50	.71	8.0	83.5	42.6	11.6	3×10^5	1×10^3; amosite; 3×10^3 talc-trem	1×10^5	1800
4850	Oakland Foothill and High	6/21/77	Tap	50	.69	8.9	83.5	42.6	12.5	6×10^5	BDL	1×10^5	Yes, not extensive
4852	Oakland Brookfield Rec. Center	6/21/77	Tap	50	.94	8.8	83.5	56.8	12.5	5×10^5	3×10^5 talc-trem	1×10^5	Yes

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TABLE A-1 (continued)

EAST BAY MUNICIPAL UTILITY DISTRICT

[illegible]	Location	Date	Type	Volume Filtered ml	Turb.	pH	Alk., mg/l $CaCO_3$	Calcium Hardness mg/l $CaCO_3$	Aggressiveness Index	Chrysotile Asbestos f/l	Possible Amphibole Asbestos[a] f/l	Lowest Detectable Limit, f/l	AC Pipe ft
[illegible]	Oakland 13th Ave. & E. 18th St.	6/22/77	Tap	50	.9	8.7	85.5	42.6	12.3	9×10^5	2×10^5 ? talc-trem	1×10^5	Possible (6", 1959-60)
[illegible]	Oakland 7th & Broadway	6/22/77	Tap	25	1.1	8.7	68.4	42.6	12.2	BDL	4×10^5 amph?	2×10^5	Possible
[illegible]	Oakland Adeline & 18th St.	6/22/77	Tap	50	.78	8.6	68.4	42.6	12.1	2×10^5 (incomplete patterns)	BDL	1×10^5	Possible
[illegible]	Oakland Piedmont & 41st St.	6/22/77	Tap	25	1.5	8.3	68.4	42.6	11.8	1×10^6	4×10^5 amph	$.2 \times 10^5$	Possible (6", 1956)
[illegible]	Piedmont - Davie Memorial Tennis Stadium	6/22/77	Tap	25	1.4	9.0	68.4	42.6	12.5	8×10^5	4×10^5 amph;	2×10^5	225 (6", 1966) 900 (6", 1960) or 230 (6", 1960)
[illegible]	Oakland 2516 Stockbridge	7/19/77	Tap	100	.57	9.2	102.6	42.4	12.8	BDL	BDL	$.5 \times 10^4$	50 (at least) (1955)
[illegible]	San Pablo Treatment Plant	6/22/77	Finished	200	.21	9.1	85.5	49.2	12.7	1.5×10^5	BDL	2.5×10^4	
[illegible]	Richmond, SERL	6/22/77	Tap	100	.54	8.6	85.5	49.2	12.2	1×10^5	BDL	5×10^4	2645 (at least)
[illegible]	Emeryville, San Pablo and 67th	8/12/77	Tap	200	.26	8.2	85.5	56.3	11.9	7.5×10^4	BDL	2.5×10^4	Possible
[illegible]	Oakland, 1111 Jackson	8/12/77	Tap	200	.38	8.4	68.4	42.6	11.9	1.8×10^5	2.5×10^4 trem?-talc	2.5×10^4	Possible

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TABLE A-1 (continued)

EAST BAY MUNICIPAL UTILITY DISTRICT

No.*	Location	Date	Type	Volume Filtered ml	Turb.	pH	Alk., mg/l $CaCO_3$	Calcium Hardness mg/l $CaCO_3$	Aggressiveness Index	Chrysotile Asbestos f/l	Possible Amphibole Asbestos** f/l	Lowest Detectable Limit, f/l	AC Pipe ft
4610	Inflow, Orinda treatment plant, Mokelumne aqueduct	4/4/78	Raw	25	1.2	9.2	68.4	42.6	12.7	BDL	BDL	8×10^5	
4611	Orinda treatment plant	4/4/78	Finished	100	.23	8.3	51.3	42.6	11.6	BDL	6.7×10^4?	6.7×10^4	
4612	Inflow, Sobrante treatment plant, San Pablo Reservoir	4/6/78	Raw			8.5				5×10^5	BDL	5×10^5	
4613	Sobrante treatment plant	4/6/78	Finished			7.7				2×10^6	BDL	2×10^6	
	DILUTION AND RINSE WATER USED IN THE FILTRATION OF EACH SAMPLE												
4452	Glass distilled water, Warren Hall supply room	5/26/77	Distilled	500	0.08	7.01	34.2	Soft	8.5	BDL	BDL	4×10^3	
4720	Glass Distilled Water Warren Hall	6/2/77	Distilled	1000	.09	7.2				BDL	BDL	5×10^3	
4863	Glass Distilled Warren Hall	6/22/77	Distilled	200	.1	7.6	34.2			1.25×10^4	BDL	1.25×10^4	
4719	Glass Distilled Botony	7/7/77	Distilled	1000	.08	7.5				BDL	BDL	2.5×10^3	
4897	Glass Distilled Water Warren Hall	7/15/77	Distilled	1000						BDL	BDL	5×10^3	
4775	Glass Distilled Water, Botany	12/7/77	Distilled	1000						BDL	BDL	5×10^3	

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TABLE A-1 (continued)

CONTRA COSTA COUNTY

No.[a]	Location	Date	Type	Volume Filtered ml	Turb.	pH	Alk., mg/l $CaCO_3$	Calcium Hardness mg/l $CaCO_3$	Aggressiveness Index	Chrysotile Asbestos f/l	Possible Amphibole Asbestos[aa] f/l	Lowest Detectable Limit, f/l	AC Pipe ft
4773	Martinez, Waterman[b] Administration Hospital, Civil Defense stored water	10/69 (collected 9/22/77)	Tap	200	0.14	8.1	136.8	65	12.0	BDL	2.5×10^4 trem?	2.5×10^4	
†	Concord, Mallard Reservoir, inflow Bollman treatment plant	12/10/74	Raw							3×10^4 (.2 M.F.)	BDL	3×10^4 (.8 M.F.) 3×10^4 (.2 M.F.)	
†	Bollman treatment plant	12/10/74	Finished							BDL	BDL	3×10^3 (.8 M.F.) 1×10^4 (.2 M.F.)	
†	Clayton, end of Morgan Territory Road, southeastern extremity CCCWD	12/10/74	Tap							BDL	BDL	7×10^3 (.8 M.F.) 1×10^4 (.2 M.F.)	14,256 (8")
†	Walnut Creek, end of North Wiget Lane, southern extremity CCCWD	12/10/74	Tap							BDL	BDL	2.5×10^4 (.8 M.F.) 1×10^4 (.2 M.F.)	3,162 (12")
†	North Inlet, Mallard Reservoir	10/13/75	Raw	30						6×10^5 (Estimate. Particulates make counting identification almost impossible.)	2×10^3?	2×10^3	
†	Bollman treatment plant	10/15/75	Finished	1000						1.3×10^3	BDL	3×10^3	

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TABLE A-1 (continued)

CONTRA COSTA COUNTY

No.*	Location	Date	Type	Volume Filtered ml	Turb.	pH	Alk., mg/l $CaCO_3$	Calcium Hardness mg/l $CaCO_3$	Aggressiveness Index	Chrysotile Asbestos f/l	Possible Amphibole Asbestos** f/l	Lowest Detectable Limit, f/l	AC Pipe ft
4314	Contra Costa Canal at Antioch	8/13/76	Raw	25	14	7.6				$8x10^6$	$8x10^5$	$8x10^5$	
4310	Antioch treatment plant	8/12/76	Finished	250	0.12	7.5				$2.6x10^5$	BDL	$2x10^4$	
4311	Antioch, Longview Rd. at Contra Loma Blvd.	8/12/76	Hydrant	100	1.7					$2x10^5$	BDL	$5x10^4$	1,980 (14")
4316	Contra Costa Canal at Pittsburg	8/13/76	Raw	25	26	7.6				Present (Impossible to count)	Present		
4307	Pittsburg treatment plant	8/13/76	Finished	250	0.26	7.6		98		$7.6x10^5$	$4x10^4$	$4x10^4$	
4303	Pittsburg Park	8/13/76	Tap	100	1.3	7.5				$2x10^5$	$5x10^4$	$5x10^4$	10,560 (18")
4309	Pittsburg, K & B Ranch, Willow Pass Rd.	8/13/76	Tap	250	0.21	7.6				$4x10^5$	$1x10^5$	$2x10^4$	10,560 (18") 10,560 (18")
4315	Contra Costa Canal at Clyde	8/13/76	Raw	25	25	7.9				Present (Impossible to count)	Present		
4312	Bollman treatment plant clear well	8/13/76	Finished	500	0.05	8.1				$1.6x10^5$	$1x10^4$	$1x10^4$	
4313	Concord, Elks Lodge, Willow Pass Rd.	8/12/76	Tap	250	0.11					$5.4x10^5$	$4x10^4$	$2x10^4$	1,000 (6", 1953) 18,000 (12", 1960)
43238 43248	Old River at Rock Slough, 3 miles from Contra Costa Canal intake	9/14/76	Raw	5 10	8.5	7.7				$4.9x10^7$ $1.8x10^7$	$3x10^6$ $2x10^6$	$1x10^6$ $1x10^6$	

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TABLE A-1 (continued)

COASTAL CANAL SURVEY

No.*	Location	Date	Type	Volume Filtered %	Turb.	pH	Alk., mg/l $CaCO_3$	Calcium Hardness mg/l $CaCO_3$	Aggressiveness Index	Chrysotile Asbestos f/l	Possible Amphibole Asbestos** f/l	Lowest Detectable Limit, f/l	AC Pipe ft
4820	San Joaquin River at Mossdale	3/8/77	Raw	25	8	8.1				LOL	BDL	2×10^3	Above Johns-Manville plant and City of Stockton
4820a	San Joaquin River at Mossdale	3/9/77	Raw	5	(shaken)	8.1				BDL	BDL	1×10^6	
4821	San Joaquin River at Berkeley Cove	3/10/77	Raw	25	16	7.6				4×10^5	4×10^5?	2×10^5	Below Johns-Manville plant and City of Stockton
4821a	San Joaquin River at Berkeley Cove	3/10/77	Raw	2	(shaken)	7.8				2.5×10^6	BDL	2.5×10^6	
4825	Antioch Treatment Plant before clear well	4/18/77	Finished	200	.13	7.6	90	76	11.4	1.3×10^5	BDL	2.5×10^4	
4824	Pittsburg Treatment Plant after clear well	4/18/77	Finished	200	.12	7.5	83.3	81	11.5	5×10^4	BDL	2.5×10^4	
4829	Contra Costa Canal at Clyde, intake for Bollman treatment plant	4/18/77	Raw	2	16	7.9	85	67.5	11.7	1×10^7	BDL	2.5×10^6	
4829a	Contra Costa Canal at Clyde, intake for Bollman treatment plant	4/18/77	Raw	50	3 (settled 8 days)	7.9	85	67.5	11.7	6×10^5	BDL	2×10^5	
4832	Bollman Treatment Plant before clear well	4/18/77	Finished	200	.06	8.0	76	72.5	11.7	2.3×10^4	BDL	2.5×10^4	
4830	Bollman Treatment Plant after clear well	4/18/77	Finished	200	.075	8.1	72	70	11.8	BDL	BDL	2.5×10^4	
4833	Concord, Elks Lodge Willow Pass Rd.	4/18/77	Tap	200	.14	8.3	78	77.5	12.1	1.5×10^5	BDL	2.5×10^4	1000 (3", 1955) 10,000 (2", 1960)

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TABLE A-1 (continued)

CONTRA COSTA COUNTY

No.*	Location	Date	Type	Volume Filtered ml	Turb.	pH	Alk., mg/l $CaCO_3$	Calcium Hardness mg/l $CaCO_3$	Aggressiveness Index	Chrysotile Asbestos f/l	Possible Amphibole Asbestos** f/l	Lowest Detectable Limit, f/l	AC Pipe ft
4831	Pleasant Hill 1895 Oak Park Blvd & Putnam Blvd.	4/18/77	Tap	200	.12	8.3	71	75	12.0	1.8×10^6	2.5×10^4	2.5×10^4	7,125 (24") 5,515 (12") 1,500 (2", 1975 which received some repair in 1976)
4828	Walnut Creek 60 Arboleda Dr. (Zone 2)	4/18/77	Tap	200	.15	8.3	76	75	12.0	5×10^4	BDL	2.5×10^4	3960' (12") 800' (6")
4827	Clayton 6078 Main (Zone 4,5)	4/18/77	Tap	200	.19	8.3	78	80	12.1	BDL	BDL	2.5×10^4	7705'(16") 2800' (12") 300' (8")
4823	Martinez Treatment Plant after clear well	4/18/77	Finished	200	.11	8.0	82	78	11.8	BDL	BDL	2.5×10^4	
4826	Martinez Treatment Plant after clear well, duplicate	4/18/77	Finished	200	.11	8.0	82	78	11.8	2.5×10^4	BDL	2×10^4	
4822	Martinez, Alhambra Valley end of system	4/18/77	Tap	200	.28	8.3	86	80	12.1	2×10^5	BDL	2.5×10^4	~15,840 (18", 1966) and extensive 6", 1948)
4439	Contra Cost Canal at Clyde	3/11/77	Raw	1	25	7.7	136.8	92	11.3	1.5×10^7	BDL	5×10^6	
4440	Pollman Treatment Plant after clear well (after scouring of canal)	3/11/77	Finished	200	.1	8.0	119.7	80	12.0	1.8×10^5	BDL	2.5×10^4	
4438	Pleasanton Hill 1895 Oak Park Blvd.	3/11/77	Tap	200	.16	8.2	119.7	87	12.0	3.8×10^4	BDL	1.2×10^4	same as 4831

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TABLE A-1 (continued)

CONTRA COSTA COUNTY

No.[a]	Location	Date	Type	Volume Filtered ml	Turb.	pH	Alk., mg/l $CaCO_3$	Calcium Hardness mg/l $CaCO_3$	Aggressiveness Index	Chrysotile Asbestos f/l	Possible Amphibole Asbestos[aa] f/l	Lowest Detectable Limit, f/l	AC Pipe ft
4741	Bollman Treatment Plant, after clear well	8/5/77	Finished	100	.40	7.7	119.7	80	11.7	7×10^5	BDL	5×10^4	
4782	Mallard Reservoir fed by Contra Costa Canal at Clyde	1/9/78	Raw	10	12 (settled 3 days)	7.8				4×10^6	BDL	5×10^5	
4781	Bollman treatment plant after clear well	1/9/78	Finished	200	.14	8.2	136.8	102	12.3	BDL	BDL	2.5×10^4	
4609	Mallard Reservoir fed by Mallard Slough	4/4/78	Raw	3	22 (settled 3 days)	7.9	85.5	65	11.6	1.7×10^7	3.3×10^6?	1.7×10^6	
4608	Bollman treatment plant after clear well	4/4/78	Finished	200	.06	8.0	102.6	65	11.8	1.5×10^5	2.5×10^4	2.5×10^4	

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TABLE A-1 (continued)

MARIN MUNICIPAL WATER DISTRICT

No.*	Location	Date	Type	Volume Filtered ml	Turb.	pH	Alk., mg/l $CaCO_3$	Calcium Hardness mg/l $CaCO_3$	Aggressiveness Index	Chrysotile Asbestos f/l	Possible Amphibole Asbestos** f/l	Lowest Detectable Limit, f/l	AC Pipe ft
4138	San Rafael, Civic Center, Stored emergency service water	5/21/71	Tap	250	.12	8.0				BDL	BDL	2×10^4	
†	Stream into Alpine Lake on Serpentine Cliff	2/73	Raw							Present?	——	——	
†	Bon Tempe Treatment Plant	2/73	Raw							Present?	——	——	
†	Kent Lake, San Geronimo Treatment Plant	2/73	Raw							2×10^8	——	——	
4040	Kent Pumps	7/11/73	Raw	150						2.7×10^5	——	——	
† 4041	Kent-Alpine Mix	7/11/73	Raw	200						5×10^5	——	——	
†	San Geronimo Treatment Plant	(12/2/74 12/3/74)	Raw							2×10^6	——	8.4×10^4	
†	San Geronimo Treatment Plant Supplied by Kent Lake	3/6/75	Raw							1.1×10^7	——	5×10^5	
†	San Geronimo Treatment Plant	3/7/75	Finished							2×10^6 (M.F.)	——	1×10^5	
†	San Rafael, 65 Rollingwood Dr.	3/11/75	Tap							9×10^5 (M.F.)	——	1×10^5	

TABLE A-1 (continued)
MARIN MUNICIPAL WATER DISTRICT

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TABLE A-1 (continued)
MARIN MUNICIPAL WATER DISTRICT

No.[a]	Location	Date	Type	Volume Filtered ml	Turb.	pH	Alk., mg/l $CaCO_3$	Calcium Hardness mg/l $CaCO_3$	Aggressiveness Index	Chrysotile Asbestos f/l	Possible Amphibole Asbestos[4a] f/l	Lowest Detectable Limit, f/l	AC Pipe ft
4301 †	Nicasio Reservoir Inflow San Geronimo Treatment Plant	2/23/76	Raw	100	6.5					2.5×10^5	——	3×10^4	
4302 †	Kent Pump, Inflow San Geronimo Treatment Plant	2/23/76	Raw	100	1.3					3×10^5	——	3×10^4	
4300 †	San Geronimo Treatment Plant Kent and Nicasio, before lime	2/23/76	Finished	500	.1					1.4×10^5	——	1×10^4	
4332	San Geronimo Treatment Plant, after clear well	11/12/76	Finished	250	<1	7.1				4×10^4	4×10^4 Possible?	2×10^4	
4330 SG	Corte Madera, Greenbrae Marina 420 Riviera Circle	11/12/76	Tap	250	<1	7.4				4×10^4	1×10^5 Possible?	2×10^4	3,430 (8", 1969)
4346 SG	Corte Madera, MMWD - Chem Lab 220 Nellen	11/10/76	Tap	250	<1	7.3				4×10^4	BDL	2×10^4	
4347 ST	Mill Valley City Hall	11/10/76	Tap	250	<1	8.34				4×10^4	BDL	2×10^4	
4348 ST	Mill Valley City Hall (duplicate)	11/10/76	Tap	250	<1	8.3				BDL	4×10^4? Fosa. Trem.	2×10^4	

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TABLE A-1 (continued)

NORTH MARIN COUNTY WATER DISTRICT

No.[d]	Location	Date	Type	Volume Filtered ml	Turb.	pH	Alk., mg/l $CaCO_3$	Calcium Hardness mg/l $CaCO_3$	Aggressiveness Index	Chrysotile Asbestos f/l	Possible Amphibole Asbestos[4b] f/l	Lowest Detectable Limit, f/l	AC Pipe ft
4606	Stafford Reservoir, Novato (intake of treatment plant)	3/15/78	Raw	1	60	7.4	119.7	51.3	11.2	5×10^6	BDL	5×10^6	
4605	Stafford Treatment Plant, Novato, after clear well	3/15/78	Finished	200	.16	7.5	102.6	56.3	11.3	BDL	BDL	2.5×10^4	
4604	Southern extremity, Skylark Motel, Novato	3/15/78	Tap	25	.93	8.1	171	72.3	12.2	1.6×10^6	BDL	2×10^5	30,960 (14", 12", 10", 8")
4607	Private well, Paladini Road, Novato	3/15/78	Tap	50	0.6	6.4	188.1	56.4	10.4	BDL	1.6×10^6 prob. from; poss. crocidolite or amosite	4×10^5	

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TABLE A-1 (continued)

MARIN MUNICIPAL WATER DISTRICT

No.[a]	Location	Date	Type	Volume Filtered ml	Turb.	pH	Alk., mg/l $CaCO_3$	Calcium Hardness mg/l $CaCO_3$	Aggressiveness Index	Chrysotile Asbestos f/l	Possible Amphibole Asbestos[44] f/l	Lowest Detectable Limit, f/l	AC Pipe ft
4743	San Tempe treatment plant - before lime	8/10/77	Finished (before lime)	100	.44	7.2	119.7	50	11.8	BDL(very hard to count)	BDL	1×10^5	
4744 ST	513 Goodhill Road, Kentwoodland	8/10/77	Tap	100	.47	8.5	119.7	61	12.4	BDL	BDL	5×10^4	
4745 ST	Mill Valley City Hall	8/10/77	Tap	200	.24	8.7	102.6	61	12.5	1×10^5	2.5×10^4?	2.5×10^4	
4768	San Geronimo treatment plant - after clear well	8/17/77	Finished	200	.18	7.4	108	85	11.4	7×10^5	1×10^5	2.5×10^4	
4742 SG	Woodacre (from Kentlake)	8/10/77	Tap	50	1.4	7.3	188.1	103	11.4	7×10^5	1×10^5 trem? 1×10^5	1×10^5	
4786	San Geronimo treatment plant - before lime	1/10/78	Finished	200	.25	7.3	102.6	61	11.1	1.2×10^7	BDL	5×10^5	
4785 SG	Woodacre Marin Co. Fire Station	1/10/78	Tap	200	.29	8.0	102.6	73	11.9	1.1×10^7	BDL	1×10^5	
4791	San Tempe treatment plant before lime	1/14/78	Finished	50	2.2					BDL	BDL	1×10^5	

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TABLE A-16

Asbestos Samples Before and After Asbestos-Cement Pipe

A. EAST BAY MUNICIPAL UTILITIES DISTRICT, PARTS OF CONTRA COSTA AND ALAMEDA COUNTIES

Before AC Pipe			After AC Pipe					Aggressiveness Index	
					AC Pipe				
Date	Location	Chrysotile f/l	Location	Chrysotile f/l	Length ft.	Diameter in.	Year Installed	Before AC Pipe	After AC Pipe
7/29/74	Pre-project analyses, 690 Andrews Way, El Sobrante	BDL (1×10^4)	2351 Rancho Dr., El Sobrante	BDL (2×10^4)	1,900				
9/23/76	43298 - 690 Andrews Way, El Sobrante	6×10^4	4328B - 2351 Rancho Dr., El Sobrante	BDL (2×10^4)	1,900			12.3†	12.3†
			4327 - Kerry Hills School, Pinole	3.2×10^4	1,760 1,150	6 8	1964 1963	12.3†	12.4†
6/20/77	4845 - 690 Andrews Way, El Sobrante	BDL (2.5×10^4)	4840 - 2351 Rancho Dr., El Sobrante	BDL (1×10^5)	1,900			12.3	12.2
7/29/74	Pre-project analyses, 3215 Fruitvale, Oakland	BDL (2×10^4)	2855 Fruitvale, Oakland	BDL (2×10^4)	1,800	8	1961		
9/23/76	43328 - 3215 Fruitvale, Oakland	2×10^5	4333B - 2855 Fruitvale, Oakland	1.5×10^5	1,800	8	1961	12.2†	12.2†
6/21/77	4859 - 3215 Fruitvale, Oakland	1×10^5	4858 - 2855 Fruitvale, Oakland	3×10^5 (1×10^5 amosite)	1,800	8	1961	11.7	11.6
7/29/74	Pre-project analyses, 2800 Benedict Memorial Hospital, San Leandro	BDL (1×10^4)	1222 Montrose, San Leandro	BDL (2×10^4)	2,400			12.2	
10/7/76	4340 - Benedict Memorial Hospital, San Leandro	BDL (2×10^4)	4339 - 1276 Montrose, San Leandro	1.4×10^5	2,400			12.2†	12.2†

† Values calculated from measured pH and estimated alkalinity and hardness.

no data on alk. or hardness.

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TABLE A-18A (continued)

Before AC Pipe			After AC Pipe					Aggressiveness Index	
					AC Pipe				
Date	Location	Chrysotile f/l	Location	Chrysotile f/l	Length ft.	Diameter in.	Year Installed	Before AC Pipe	After AC Pipe
6/21/77	4857 - Benedict Memorial Hospital, San Leandro	1×10^5	4860 - 1222 Montrose, San Leandro (line not flushed thoroughly)	2×10^6	2,400			12.0	12.2
10/7/76	4335 - Walnut Creek treatment plant	BDL (2×10^4)	4336 - 201 Margando Dr., Walnut Creek	BDL (2×10^4)	120 880 or 800	4 6 8	1951 1954 1954	12.4†	12.4†
1/27/77	4813, 4814 - Orinda treatment plant	5×10^5 3×10^5	4806 - 141 La Cuesta, Orinda	BDL (1×10^5)	270	8	1975	12.1†	12.1†
6/20/77	4847 - Walnut Creek treatment plant	5×10^4	4842 - 247 So. Hartz, Danville	5×10^4	575	8	1958	12.5	13.2
			4843 - 9803 Davona, San Ramon	3.5×10^5	1,800 2,900 or 4,545 11,220	8 6 8 12	 1966-76 1962-69	12.5	13.1
			4849 - Alcosta and Fircrest Lane, San Ramon	5×10^5	5,950	6		12.5	13.0

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TABLE A-18 (continued)
B. Contra Costa County

Before AC Pipe			After AC Pipe					Aggressiveness Index	
					AC Pipe				
Date	Location	Chrysotile f/l	Location	Chrysotile f/l	Length ft.	Diameter in.	Year Installed	Before AC Pipe	After AC Pipe
12/10/74	Pre-project analyses, Bollman treatment plant	BDL (5×10^3)	End Morgon Territory Road, Clayton	BDL (7×10^3)	14,256	8			
			End North Wigot Lane Concord	BDL (2.5×10^4)	3,168	12			
8/13/76 8/12/76	4312 Bollman treatment plant	1.6×10^5 (includes one large bundle)	4313 Elks Lodge, Willow Pass Road, Concord	5.4×10^5	1,000 18,000	6 12	1955 1960, '62, '67, '71	11.5	
4/18/77	4830 Bollman treatment plant after clear well	BDL (2.5×10^4)	4833 Elks Lodge, Willow Pass Road, Concord	1.5×10^5	1,000 18,000	6 12	1955 1960, '62, '67, '71	11.8	12.1
			4831 - 1895 Oak Park, Pleasant Hill	1.9×10^6	1,500 5,530 7,125	2 12 24	1975	11.8	12.0
			4828 - 60 Arbolado Dr., Walnut Creek	5×10^4	800 3,860	6 12		11.8	12.0
			4827 - 6078 Main, Clayton	BDL (2.5×10^4)	300 2,800 7,705	8 12 16		11.8	12.1
5/11/77	4440 - Bollman treatment plant	1.8×10^5	4438 - 1895 Oak Park, Pleasant Hill	3.8×10^4	1,500 5,530 7,125	2 12 24		12.0	12.0
8/13/76	4307 - Pittsburg treatment plant	7.6×10^5	4308 - Pittsburg Park	2×10^5	10,560	18	1935	11.2	11.1†
			4309 - K & B Ranch, Willow Pass Road, Pittsburg	4×10^5	10,560 10,560	16 18	1971 1935	11.2†	11.2†

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TABLE A-18B (continued)

Before AC Pipe			After AC Pipe					Aggressiveness Index	
					AC Pipe				
Date	Location	Chrysotile f/l	Location	Chrysotile f/l	Length ft.	Diameter in.	Year Installed	Before AC Pipe	After AC Pipe
8/12/76	4310 - Antioch treatment plant	2.6×10^5	4311 - Long View Road at Contra Loma Blvd, Antioch	2×10^5	1,980	16		11.1†	
4/18/77	4823, 4826 - Martinez treatment plant	2.5×10^4	4822 - Alhambra Valley, end of system, Martinez	2×10^5	~15,840 total	Includes extensive 6 and some 8	1948 1966	11.8	12.1

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TABLE A-18 (continued)
C. Alameda County

Before AC Pipe			After AC Pipe					Aggressiveness Index	
					AC Pipe				
Date	Location	Chrysotile f/l	Location	Chrysotile f/l	Length ft.	Diameter in.	Year Installed	Before AC Pipe	After AC Pipe
8/1/77	4733 - Reducing station (inflow into system), 28521 Hesperian Blvd., Hayward	5×10^4	4735 - Northwest extremity, Azalea Court, Hayward	6.2×10^6	≈8600	8	1950-68 1975	11.7	12.8
			4736 - North extremity, 1785 D Street, Hayward	3.4×10^7	≈5800			11.7	12.5
			4737 - Northeast extremity, 28595 Hayward Blvd., Hayward	2.5×10^6 (Mixture AC and cast iron)	16,800			11.7	12.5
			4738 - Middle of district, 27300 Patrick Avenue, Hayward	BDL (1×10^6)	5300-7500 loop			11.7	11.9
4/27/77	4834 - Mission San Jose treatment plant, Fremont	2.5×10^4	4839 - Linda Vista School, Irvington District, Fremont	2×10^5	10,000	6	1957	12.4	12.1
4/27/77	4835 - M.J. Bernardo water softening plant, Fremont	BDL (2.5×10^4)	4836 - ACWD Chem Lab, 38050 Fremont Blvd Fremont	3×10^5	2,500	12	1972	11.8	11.9

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TABLE A-18 (continued)

D. San Mateo County

Before AC Pipe			After AC Pipe					Aggressiveness Index	
					AC Pipe				
Date	Location	Chrysotile f/l	Location	Chrysotile f/l	Length ft.	Diameter in.	Year Installed	Before AC Pipe	After AC Pipe
7/14/77	4890 - Hetch Hetchy turnout, San Carlos and Redwood City	2×10^5	4889 - 961 McCue, San Carlos	6×10^6	≈16,000 total	Includes 6, 8, 12, 14 and 16.		12.2	12.4
			4779 - 50 Laurel St., San Carlos	6.4×10^6	≈17,600	Includes 6, 8, 12, 14 and 16.		12.2	12.5
7/28/77	4732 - 2277 University, East Palo Alto	BDL (2.5×10^4)	4730 - O'Connor School, Menlo Park, terminal East Palo Alto	2×10^7	3,500	8	1956	12.1	13.1
			4731 - Woodland Ave., Extremity, East Palo Alto	1.5×10^6	2,000	8	1950	12.1	12.1
7/27/77	4722 - By Pass turnout, Belmont	2.5×10^4	4724 - 2445 Halmark, Belmont	5×10^4	Yes (<5,280)			12.0	13.0

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TABLE A-18 (continued)
E. Marin County

Before AC Pipe			After AC Pipe					Aggressiveness Index	
					AC Pipe				
Date	Location	Chrysotile f/l	Location	Chrysotile f/l	Length ft.	Diameter in.	Year Installed	Before AC Pipe	After AC Pipe
11/12/76 and 11/10/76	4352 - San Geronimo treatment plant, Woodacre	4×10^4	4350 - 420 Riviera, Corte Madera	4×10^4	3450	8	1969		
3/15/78	4605 - Stafford Lake treatment plant, Novato	BDL (2.5×10^4)	4604 - Southern extremity, Novato	1.6×10^6 ✓	≈36,960 total	Includes 8, 10, 12 and 14.		11.3	12.2

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TABLE A-19

Removal of Asbestos Fibers by Treatment Plants

Treatment Plant	Date	Raw			Finished		
		Chrysotile Asbestos f/l	Amphibole Asbestos f/l	Lowest Detectable Limit f/l	Chrysotile Asbestos f/l	Amphibole Asbestos f/l	Lowest Detectable Limit f/l
Contra Costa County Water District, Bollman Treatment Plant	12/10/74	3×10^4	BDL	3×10^4	BDL	BDL	5×10^3
	10/13/75	6×10^5 estimate (too difficult to count)	2×10^5 ?	2×10^5	1.3×10^5	BDL	5×10^3
	8/13/76	Present (impossible to count)	present (impossible to count)	——	1.6×10^5 (includes 1 large bundle .2 x 12.5μ)	1×10^4 ?	1×10^4
	4/18/77	1×10^7	BDL	2.5×10^6	2.5×10^4 before clear well	BDL	2.5×10^4
		Settled 8 days 6×10^5	BDL	2×10^5	BDL after clear well	BDL	2.5×10^4
	5/11/77	1.5×10^7	BDL	5×10^6	1.8×10^5	BDL	2.5×10^4
	2/9/78	4×10^6	BDL	5×10^5	BDL	BDL	2.5×10^4
	4/4/78	1.7×10^7	3.3×10^6 ?	1.7×10^6	1.5×10^5	2.5×10^4	2.5×10^4
City of Antioch Treatment Plant	8/13/76	8×10^6	8×10^5	8×10^5	2.6×10^5	BDL	2×10^4
	5/8/76	BDL	BDL	4.3×10^6	1.3×10^5	BDL	2×10^4

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TABLE A-19 (continued)

Treatment Plant	Date	Raw			Finished		
		Chrysotile Asbestos f/ℓ	Amphibole Asbestos f/ℓ	Lowest Detectable Limit f/ℓ	Chrysotile Asbestos f/ℓ	Amphibole Asbestos f/ℓ	Lowest Detectable Limit f/ℓ
City of Pittsburg Treatment Plant	8/13/76	Present (impossible to count)	Present	——	7.6×10^5	4×10^4 ?	4×10^4
	5/8/76	2.1×10^7	BDL	4.3×10^6	BDL	BDL	2.6×10^5
East Bay Municipal Utility District	10/7/76	4×10^5	6×10^5 trace?	1×10^5	BDL	4×10^4 trace?	2×10^4
Walnut Creek Filter Plant	5/8/76	2.6×10^5	2.6×10^5	2.6×10^5	BDL	BDL	1.3×10^5
Orinda Filter Plant	4/4/78	BDL	BDL	8×10^5	BDL	6.7×10^4 ?	6.7×10^4
Sobrante Treatment Plant	4/6/78	2×10^6	BDL	1×10^6	5×10^5	BDL	5×10^5
San Francisco City and County Water Department	3/5/75	BDL?	4.1×10^6	——	BDL	BDL	5×10^5
San Andreas Treatment Plant	5/75	3.5×10^6	BDL	——	1.4×10^6	BDL	——
	12/14/76	3.7×10^6 estimate	BDL	8×10^4	1.4×10^6 after filtration, before caustic soda. 1.4×10^6 after clear well	8×10^4 3.2×10^5	8×10^4 4×10^4
	4/12/78	1.5×10^6	BDL	1.3×10^5	3.2×10^5	BDL	6.4×10^4

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TABLE A-19 (continued)

Treatment Plant	Date	Raw			Finished		
		Chrysotile Asbestos f/l	Amphibole Asbestos f/l	Lowest Detectable Limit f/l	Chrysotile Asbestos f/l	Amphibole Asbestos f/l	Lowest Detectable Limit f/l
Marin Municipal Water District, San Geronimo Treatment Plant	3/6/75	1.1×10^7 Kent Reservoir	—	1×10^5	2×10^6 (3/7/75)	—	1×10^5
	2/25/76	2.5×10^5 Nicasio Reservoir	—	5×10^4	1.4×10^5 Kent & Nicasio	—	1×10^4
		3×10^5 Kent Lake	—	5×10^4			
North Marin County Water District, Stafford Treatment Plant	3/15/76	5×10^6	BDL	5×10^6	BDL	BDL	2.5×10^4

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