Table 8: Analytical Results for Simulation Using Modified Attic and Living Room Conducted Using One Vermiculite Product (Phase 2)

Simulation Phase	Air Sample Locations		Sample Type	Sample ID	PCM[1] (NIOSH 7400) Results (fibers/cc)	PCM[1] (NIOSH 7400) Detection Limits (fibers/cc)	TEM[2] (EPA Level II) Results Asbestos Fibers <5mm	5-10mm	>10mm	>5mm	total	Fiber Type Observed	Analytical Sensitivity
Background Prior to Simulation No. 1	Inside Main Containment	Living Space	Stationary	AI-169-A	0.016	0.001					<0.0025	ND	0.0025
			Stationary	AI-170-A	0.013	0.001					<0.0026	ND	0.0026
		Attic Space	Stationary	AI-171-A	0.014	0.001					<0.0026	ND	0.0026
			Stationary	AI-172-A	0.005	0.001					<0.0025	ND	0.0025
	Inside Small Containment	Change Room	Stationary	AI-173-A	0.008	0.001					<0.0025	ND	0.0025
			Stationary	AI-174-A	0.004	0.001	0.0076	0.0203	0.0076	0.0280	0.0356	actinolite	0.0025
Simulation No. 1 Dry Disturbance No cutting	Inside Main Containment	Attic Space	Stationary	AI-175-A	0.194	0.006	0.0569	0.0854	0.0142	0.0997	0.1566	actinolite	0.0142
			Stationary	AI-176-A	0.229	0.006	0.0850	0.1275	0.0567	0.1842	0.2692	actinolite	0.0142
			Personal	AI-184-A	1.195	0.043	0.6999	0.1000	0.1000	0.2000	0.8999	actinolite	0.1000
			Personal	AI-185-A	1.308	0.042	1.6547	2.4821	0.1655	2.6476	4.3023	actinolite	0.1655
		Living Space	Stationary	AI-177-A	0.250	0.006	0.1700	0.0708	0.0142	0.0850	0.2550	actinolite	0.0142
			Stationary	AI-178-A	0.188	0.006	0.1282	0.1567	0.0855	0.2422	0.3704	actinolite	0.0142
	Outside containment		Background	AI-181-A	<0.006	0.006	0.0698	0.0279	<0.0140	0.0280	0.0978	actinolite	0.0140
4-Hour Samples After Simulation	Inside Main Containment	Living Space	Stationary	AI-182-A	0.035	0.001	0.1195	0.1063	<0.0133	0.1063	0.2258	actinolite	0.0133
			Stationary	AI-183-A	0.029	0.001	0.0267	0.0053	0.0027	0.0080	0.0347	actinolite	0.0027
	Inside Small Containment	Change Room	Stationary	AI-179-A	0.008	0.001	0.0293	0.0346	0.0106	0.0452	0.0745	actinolite	0.0027
			Stationary	AI-180-A	0.016	0.001	0.0186	0.0186	0.0080	0.0267	0.0453	actinolite	0.0027
Background Prior to Simulation No. 2	Inside Main Containment	Living Space	Stationary	AI-190-A	<0.001	0.001					<0.0027	ND	0.0027
			Stationary	AI-191-A	<0.001	0.001	<0.0027	0.0027	<0.0027	0.0027	0.0027	actinolite	0.0027
		Attic Space	Stationary	AI-192-A	<0.001	0.001					<0.0027	ND	0.0027
			Stationary	AI-193-A	<0.001	0.001					<0.0026	ND	0.0026
	Inside Small Containment	Change Room	Stationary	AI-194-A	<0.001	0.001					<0.0026	ND	0.0026
			Stationary	AI-195-A	<0.001	0.001					<0.0026	ND	0.0026
Simulation No. 2 Dry Disturbance Hole cut in drywall from attic	Inside Main Containment	Attic Space	Stationary	AI-198-A	0.135	0.007	0.0845	0.1183	0.0507	0.1689	0.2534	actinolite	0.0169
			Stationary	AI-199-A	0.092	0.007	0.0506	0.0675	0.0169	0.0844	0.1350	actinolite	0.0169
			Personal	AI-202-A	0.931	0.043					<0.1019	ND	0.1019
			Personal	AI-203-A	0.855	0.044					<0.1023	ND	0.1023
		Living Space	Stationary	AI-196-A	0.185	0.007					<0.0174	ND	0.0174
			Stationary	AI-197-A	0.081	0.007	<0.0174	<0.0174	0.0174	0.0174	0.0174	actinolite	0.0174
	Outside containment		Background	AI-204-A	0.010	0.006					<0.0139	ND	0.0139
4-Hour Samples After Simulation	Inside Main Containment	Living Space	Stationary	AI-205-A	0.023	0.001					<0.0027	ND	0.0027
			Stationary	AI-206-A	0.020	0.001	<0.0027	0.0027	<0.0027	0.0027	0.0027	actinolite	0.0027
	Inside Small Containment	Change Room	Stationary	AI-200-A	0.003	0.001	<0.0026	0.0053	<0.0026	0.0053	0.0053	actinolite	0.0026
			Stationary	AI-201-A	0.006	0.001	0.0027	<0.0027	<0.0027	<0.0027	0.0027	actinolite	0.0027

Table 8: Analytical Results for Simulation Using Modified Attic and Living Room Conducted Using One Vermiculite Product (Phase 2)

Simulation Phase	Air Sample Locations		Sample Type	Sample ID	PCM[1] (NIOSH 7400) Results (fibers/cc)	PCM[1] (NIOSH 7400) Detection Limits (fibers/cc)	TEM[2] (EPA Level II) Results Asbestos Fibers <5mm	5-10mm	>10mm	>5mm	total	Fiber Type Observed	Analytical Sensitivity
Background Prior to Simulation No. 3	Inside Main Containment	Living Space	Stationary	AI-211-A	0.019	0.001					<0.0024	ND	0.0024
			Stationary	AI-212-A	0.007	0.001					<0.0024	ND	0.0024
		Attic Space	Stationary	AI-213-A	0.004	0.001					<0.0024	ND	0.0024
			Stationary	AI-214-A	0.004	0.001					<0.0024	ND	0.0024
	Inside Small Containment	Change Room	Stationary	AI-215-A	0.004	0.001					<0.0024	ND	0.0024
			Stationary	AI-216-A	0.006	0.001					<0.0024	ND	0.0024
Simulation No. 3 Dry Disturbance Hole cut in drywall from living space	Inside Main Containment	Attic Space	Stationary	AI-219-A	0.127	0.006	0.0418	0.0139	0.0139	0.0278	0.0696	actinolite	0.0139
			Stationary	AI-220-A	0.141	0.006	0.0140	0.0559	0.0140	0.0698	0.0838	actinolite	0.0140
			Personal	AI-223-A	0.891	0.043	<0.0997	<0.0997	0.1994	0.1994	0.1994	actinolite	0.0997
			Personal	AI-224-A	1.092	0.043	<0.0998	0.0998	0.0998	0.1996	0.1996	actinolite	0.0998
		Living Space	Stationary	AI-217-A	0.106	0.006					<0.0140	ND	0.0140
			Stationary	AI-218-A	0.125	0.006	<0.0140	0.1121	0.0280	0.1401	0.1401	actinolite	0.0140
	Outside containment		Background	AI-225-A	0.021	0.006					<0.129	ND	0.1290
4-Hour Samples After Simulation	Inside Main Containment	Living Space	Stationary	AI-226-A	0.018	0.001	<0.0027	0.0109	<0.0027	0.0109	0.0109	actinolite	0.0027
			Stationary	AI-227-A	0.017	0.001	<0.0027	0.0027	0.0082	0.0109	0.0110	actinolite	0.0027
	Inside Small Containment	Change Room	Stationary	AI-221-A	0.018	0.001					<0.0026	ND	0.0026
			Stationary	AI-222-A	0.006	0.001					<0.0027	ND	0.0027
Background Prior to Simulation No. 4	Inside Main Containment	Living Space	Stationary	AI-232-A	0.011	0.001					<0.0025	ND	0.0025
			Stationary	AI-233-A	0.008	0.001					<0.0025	ND	0.0025
		Attic Space	Stationary	AI-234-A	0.007	0.001	0.0026	<0.0026	<0.0026	<0.0026	0.0026	actinolite	0.0026
			Stationary	AI-235-A	0.007	0.001	<0.0025	0.0025	<0.0025	0.0025	0.0025	actinolite	0.0025
	Inside Small Containment	Change Room	Stationary	AI-236-A	0.006	0.001					<0.0026	ND	0.0026
			Stationary	AI-237-A	0.009	0.001					<0.0026	ND	0.0026
Simulation No. 4 Wet Disturbance No cutting	Inside Main Containment	Attic Space	Stationary	AI-240-A	0.198	0.006	0.0714	0.0714	0.0429	0.1144	0.1858	actinolite	0.0143
			Stationary	AI-241-A	0.165	0.006	0.0285	0.0998	0.0570	0.1568	0.1853	actinolite	0.0143
			Personal	AI-242-A	0.761	0.043	<0.1000	0.5000	0.2000	0.7000	0.6999	actinolite	0.1000
			Personal	AI-243-A	0.907	0.043	0.4002	0.5002	0.5002	1.0003	1.4005	actinolite	0.1000
		Living Space	Stationary	AI-238-A	0.168	0.006	<0.0143	<0.0143	0.0143	0.0143	0.0143	actinolite	0.0143
			Stationary	AI-239-A	0.097	0.006	0.0143	0.0285	<0.0143	0.0285	0.0428	actinolite	0.0143
	Outside containment		Background	AI-244-A	0.044	0.005					<0.0129	ND	0.0129
4-Hour Samples After Simulation	Inside Main Containment	Living Space	Stationary	AI-247-A	0.023	0.001	0.0054	<0.0027	0.0027	0.0026	0.0080	actinolite	0.0027
			Stationary	AI-248-A	0.019	0.001	0.0027	0.0027	<0.0027	0.0027	0.0054	actinolite	0.0027
	Inside Small Containment	Change Room	Stationary	AI-245-A	0.021	0.001	<0.0030	0.0030	<0.0030	0.0030	0.0030	actinolite	0.0030
			Stationary	AI-246-A	0.017	0.001	<0.0027	0.0054	0.0027	0.0081	0.0081	actinolite	0.0027

Table 8: Analytical Results for Simulation Using Modified Attic and Living Room Conducted Using One Vermiculite Product (Phase 2)

Simulation Phase	Air Sample Locations		Sample Type	Sample ID	PCM[1] (NIOSH 7400) Results (fibers/cc)	PCM[1] (NIOSH 7400) Detection Limits (fibers/cc)	TEM[2] (EPA Level II) Results Asbestos Fibers <5mm	5-10mm	>10mm	>5mm	total	Fiber Type Observed	Analytical Sensitivity
Background Prior to Simulation No. 5	Inside Main Containment	Living Space	Stationary	AI-253-A	0.010	0.001	0.0024	<0.0024	<0.0024	<0.0024	0.0024	actinolite	0.0024
			Stationary	AI-254-A	0.010	0.001					<0.0027	ND	0.0027
		Attic Space	Stationary	AI-255-A	0.009	0.001					<0.0024	ND	0.0024
			Stationary	AI-256-A	0.014	0.001					<0.0024	ND	0.0024
	Inside Small Containment	Change Room	Stationary	AI-257-A	0.006	0.001					<0.0024	ND	0.0024
			Stationary	AI-258-A	0.005	0.001					<0.0024	ND	0.0024
Simulation No. 5 Wet Disturbance Hole cut in drywall from attic	Inside Main Containment	Attic Space	Stationary	AI-261-A	0.164	0.006	0.0283	0.1133	0.1558	0.2692	0.2975	actinolite	0.0142
			Stationary	AI-262-A	0.129	0.006	0.0563	0.1969	0.1688	0.3657	0.4220	actinolite	0.0141
			Personal	AI-263-A	1.083	0.042	0.0993	0.1987	0.2980	0.4967	0.5960	actinolite	0.0993
			Personal	AI-264-A	0.928	0.042	<0.0993	<0.0993	0.1986	0.1986	0.1986	actinolite	0.0993
		Living Space	Stationary	AI-259-A	0.074	0.006	0.0141	<0.0141	0.0283	0.0283	0.0424	actinolite	0.0141
			Stationary	AI-260-A	0.081	0.006	<0.0142	0.0569	0.0142	0.0711	0.0711	actinolite	0.0142
	Outside containment		Background	AI-265-A	0.020	0.006					<0.0135	ND	0.0135
4-Hour Samples After Simulation	Inside Main Containment	Living Space	Stationary	AI-266-A	0.018	0.001	0.0106	0.0159	<0.0027	0.0160	0.0266	actinolite	0.0027
			Stationary	AI-267-A	0.016	0.001	0.0161	0.0054	0.0107	0.0160	0.0321	actinolite	0.0027
	Inside Small Containment	Change Room	Stationary	AI-268-A	0.010	0.001	0.0027	0.0053	<0.0027	0.0053	0.0080	actinolite	0.0027
			Stationary	AI-269-A	0.011	0.001					<0.0026	ND	0.0026
Background Prior to Simulation No. 6	Inside Main Containment	Living Space	Stationary	AI-274-A	0.004	0.001					<0.0026	ND	0.0026
			Stationary	AI-275-A	0.005	0.001					<0.0025	ND	0.0025
		Attic Space	Stationary	AI-276-A	0.008	0.001	0.0025	<0.0025	<0.0025	<0.0025	0.0025	chrysotile	0.0025
			Stationary	AI-277-A	0.009	0.001					<0.0025	ND	0.0025
	Inside Small Containment	Change Room	Stationary	AI-278-A	0.002	0.001					<0.0026	ND	0.0026
			Stationary	AI-279-A	0.004	0.001					<0.0026	ND	0.0026
Simulation No. 6 Wet Disturbance Hole cut in drywall from living space	Inside Main Containment	Attic Space	Stationary	AI-282-A	0.150	0.006	<0.0143	0.0572	0.0572	0.1144	0.1143	actinolite	0.0143
			Stationary	AI-283-A	0.126	0.006	0.0143	0.0286	<0.0143	0.0286	0.0429	actinolite	0.0143
			Personal	AI-284-A	0.386	0.042					<0.0993	ND	0.0993
			Personal	AI-285-A	0.462	0.042					<0.0990	ND	0.0990
		Living Space	Stationary	AI-280-A	0.061	0.006	0.0143	0.0143	0.0143	0.0286	0.0429	actinolite	0.0143
			Stationary	AI-281-A	0.057	0.006					<0.0142	ND	0.0142
	Outside containment		Background	AI-286-A	0.028	0.006					<0.0131	ND	0.0131
4-Hour Samples After Simulation	Inside Main Containment	Living Space	Stationary	AI-289-A	0.007	0.001					<0.0027	ND	0.0027
			Stationary	AI-290-A	0.006	0.001					<0.0027	ND	0.0027
	Inside Small Containment	Change Room	Stationary	AI-287-A	0.002	0.001					<0.0028	ND	0.0028
			Stationary	AI-288-A	0.004	0.001					<0.0027	ND	0.0027

Table 8: Analytical Results for Simulation Using Modified Attic and Living Room Conducted Using One Vermiculite Product (Phase 2)

Simulation Phase	Air Sample Locations		Sample Type	Sample ID	PCM[1] (NIOSH 7400) Results (fibers/cc)	PCM[1] (NIOSH 7400) Detection Limits (fibers/cc)	TEM[2] (EPA Level II) Results Asbestos Fibers <5mm	5-10mm	>10mm	>5mm	total	Fiber Type Observed	Analytical Sensitivity
Background Prior to Simulation No. 7	Inside Main Containment	Living Space	Stationary	AI-430-A	0.013	0.001					<0.0028	ND	0.0028
			Stationary	AI-431-A	0.011	0.001					<0.0028	ND	0.0028
		Attic Space	Stationary	AI-428-A	0.001	0.001					<0.0027	ND	0.0027
			Stationary	AI-429-A	0.003	0.001					<0.0028	ND	0.0028
	Inside Small Containment	Change Room	Stationary	AI-432-A	0.005	0.001					<0.0026	ND	0.0026
			Stationary	AI-433-A	0.007	0.001					<0.0026	ND	0.0026
Simulation No. 7 Dry Vermiculite Removal by Homeowner	Inside Main Containment	Attic Space	Stationary	AI-434-A	0.107	0.006	0.0985	0.1548	0.0563	0.2112	0.3097	actinolite	0.0141
			Stationary	AI-435-A	0.134	0.006	0.0565	0.2824	0.1130	0.3954	0.4519	actinolite	0.0141
			Personal	AI-438-A	0.528	0.043	0.2000	0.1000	0.3000	0.4001	0.6001	actinolite	0.1000
			Personal	AI-439-A	0.950	0.043					<0.1002	ND	0.1002
		Living Space	Stationary	AI-436-A	0.046	0.006					<0.0147	ND	0.0147
			Stationary	AI-437-A	0.046	0.006	0.0443	0.0295	0.0590	0.0885	0.1328	actinolite	0.0148
	Outside containment		Background	AI-440-A	0.023	0.005	<0.0122	0.0122	<0.0122	0.0122	0.0122	actinolite	0.0122
4-Hour Samples After Simulation	Inside Main Containment	Living Space	Stationary	AI-441-A	0.021	0.001	0.0083	0.0358	0.0083	0.0440	0.0523	actinolite	0.0028
			Stationary	AI-442-A	0.022	0.001	0.0083	0.0275	0.0110	0.0385	0.0468	actinolite	0.0028
	Inside Small Containment	Change Room	Stationary	AI-443-A	0.009	0.001	0.0026	0.0053	0.0053	0.0105	0.0131	actinolite	0.0026
			Stationary	AI-444-A	0.007	0.001					<0.0026	ND	0.0026

Results for samples taken during simulation activities are in shaded rows

Modified attic and living room, vermiculite product simulations were conducted using the following product:

Bulk Sample ID: 107228
Location of Bulk Purchase/Sample: Renton, WA
Product: Zonolite Vermiculite, Lot# 21I11-2
Bulk Summary: PLM: <1% tremolite; TEM: <0.1% tremolite/actinolite
Date of Simulations: 12/18/01 through 01/14/02
Volume of Vermiculite: Two bags (8 cubic feet)

1 Phase Contrast Microscopy; Detection limits depend on volume of air sampled
2 Transmission Electron Microscopy, and X-Ray Diffraction; Results and analytical sensitivities are presented as fibers/cc
Sensitivity limits for air samples depend on several variables including the volume of air sampled, the number of grids read, and the type of filter used.

ND=None Detected