

PLAINTIFF'S EXHIBIT

CON-85

PARTIAL INSTALLATION
1970 VINTAGE CONGOLEUM
VINYL ASBESTOS TILE
RESIDENTIAL BATHROOM

June 24, 2002
BYI Project #1941A-7237



Boelter & Yates
environmental engineers and scientists

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**PARTIAL INSTALLATION
1970 VINTAGE CONGOLEUM VINYL ASBESTOS TILE
RESIDENTIAL BATHROOM**

EXECUTIVE SUMMARY

Objectives

The purpose of the test was to determine the concentration of fibers in the air while handling and installing 1970 vintage Congoleum vinyl asbestos tile (VAT) in a portion of a residential bathroom.

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N O T E S

Background

The test was performed in a residential bathroom where about one half of the bathroom tile had been removed as part of the preparations for a floor tile repair task. The other half of the bathroom flooring was original 1970's vintage Congoleum VATs. The residence, located at 225 Fremont Avenue in Seaside Heights, New Jersey, was that of Mr. Don Golemme.¹

The test was conducted in an actual residence and therefore is representative of actual conditions. The test was conducted to represent the activities of a worker who would be installing new old stock (N.O.S.) Congoleum vinyl asbestos floor tile (VAT) utilizing pre-1970's techniques. Sampling was performed to reflect the entire term of the activities required to install the VAT.

The test was performed on May 22, 2002 by Mr. Scott Wynder, a professional flooring installer of Dunes Floor Covering in Chesterton, Indiana, and Mr. Fred Boelter, serving as a helper. Also assisting from outside the immediate work area was Mr. John Spencer of Environmental Profiles, Inc. in Baltimore, Maryland. This report presents the results of the test described herein.

Sample Results

All samples measured concentrations of total fibers in air which were well below the current U.S. Department of Labor Occupational Safety and Health Administration (USDOL-OSHA) 8-hr Time Weighted Average (TWA) Permissible Exposure Limit (PEL) of 0.1 fiber per cubic centimeter (f/cc). Subsequent definitive analysis determined there were no asbestos fibers present in any area or personal sample. Sample results are presented in the accompanying tables.

¹ Mr. Golemme is employed by the Congoleum Corporation of Mercerville, New Jersey.

METHODOLOGY

PCM Sampling Procedure

Samples were collected and analyzed by Phase Contrast Microscopy (PCM) following NIOSH Method 7400. Air was drawn through a 25mm, conductive cowl cassette with an 0.8 micron mixed cellulose ester (MCE) filter for collecting airborne particulate. The cassette was connected to a dedicated Gillian servo-drive pump. The pump was used to maintain a flow rate of two (2) liters per minute (lpm) for both personal and area room air samples.

A Brooks rotameter was used to calibrate the pumps prior to and post sample collection. The rotameter was calibrated against a primary standard.

The samples were sealed, labeled and shipped to the laboratory for analysis. Samples were signed, placed in an overnight shipping container, sealed, tracked by Airborne, and arrived at the laboratory by next day air.

"Personal" Samples

Personal samples were collected by attaching the cassette in the breathing zone of the individual performing the work for the duration of the test. The sampling pump was worn on the individual's belt.

Homogeneous Sampling Area

The residence was composed of a number of rooms. While the removal activities were actually being performed in the bathroom, the adjacent kitchen was the necessary access point to the bathroom. Consequently, the kitchen (130ft²) and bathroom (about 45ft²) were considered one homogeneous sampling area (HSA) of about 175ft². The total volume of this homogeneous sampling area (HSA) was approximately 1,400ft³. Access to other parts of the residence were prohibited by the closing of doors and windows and the establishment of a dual layer critical barrier between the kitchen and living room.

"Average Room Air" Samples

To determine the "average room air" concentration, four (4) random locations were selected in the bathroom and four (4) random locations were selected in the kitchen. A sampling pump and cassette was placed in each of the eight (8) locations for the duration of the test.

"Background Air" Samples for TEM Analysis

Prior to conducting the test, the room was sampled to verify cleanliness. Ten (10) samples were collected (five inside the HSA and five outside the residence) following a modified AHERA Protocol. Three (3) blanks were also reserved. Analysis was performed by transmission electron microscopy (TEM) following AHERA Protocol.

Prior of conducting the background test, the horizontal surfaces of the bathroom and kitchen were wet wiped. Since this was an actual residence, utilization of "aggressive leaf blower" techniques was judged impractical. Consequently, samples were collected under static conditions. This static collection of samples is what modifies the technique from AHERA.

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Air was drawn through a 25mm, conductive cowl cassette with an 0.45 micron mixed cellulose ester (MCE) filter for collecting airborne fibers. The cassette was connected to a dedicated Gast high volume pump. The pump was used to maintain a flow rate of 10 liters per minute (lpm).

A BGI rotameter was used to calibrate the pumps prior to, during, and post sample collection. The rotameter was calibrated against a primary standard.

The samples were sealed, labeled and shipped to the laboratory for analysis. Samples were signed, placed in an overnight shipping container, sealed, tracked by Airborne, and arrived at the laboratory by next day air.

PCM Light Microscopy Analysis

Samples were analyzed in accordance with NIOSH Method 7400. Total fiber counts were determined by phase contrast microscopy (PCM) in accordance with the NIOSH Manual of Analytical Methods, Fourth Edition, dated 8/15/94, A Rules. Values for PCM analysis are provided in the Appendix A and Appendix B spreadsheets.

The only fibers which are counted are those which are longer than 5 microns and have a length to width ratio equal to or greater than 3:1. PCM analysis counts all fibers meeting the specified dimensions. The analysis is not specific for asbestos but is the method specified to be used in the OSHA regulations.

The PCM laboratory reports are presented in Appendix C.

Fiber Type Determination by Electron Microscopy

Air samples were subsequently analyzed in accordance with NIOSH Method 7402. Specific fiber types were determined by transmission electron microscopy (TEM) in accordance with the NIOSH Manual of Analytical Methods, Fourth Edition, dated 8/15/94, ASBESTOS by TEM. Values for TEM analysis are provided in the Appendix A and Appendix B spreadsheets.

The only fibers which are counted are those which are longer than 5 microns and have a length to width ratio equal to or greater than 3:1. The specific fiber types were determined as a "fraction of optically visible asbestos fibers on the filter". The TEM laboratory reports are presented in Appendix C.

AHERA Electron Microscopy Analysis

AHERA Protocol transmission electron microscopy (TEM) analysis was performed on all background samples to verify the cleanliness of the HSA prior to beginning the test. The sample analysis was performed as described in the Federal Register Vol. 52, No. 210, the Asbestos Hazard Emergency Response Act (AHERA Protocol).

Small squares were cut from each filter, processed appropriately, placed onto 200 mesh copper screens (grids) and transferred to a modified Jaffe Wick Washer containing acetone solvent. After the appropriate processing time, the grids were examined with a JEOL 1200EX or 100CX TEM. Grid openings from each sample were scanned at 20,000X. When fibers or structures of various shapes were encountered, they were assessed for morphological characteristics and crystalline structure with selected area electron diffraction (SAED).

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The TEM laboratory reports are presented in Appendix D.

PLM Light Microscopy Analysis

Bulk samples were analyzed for asbestos by Polarized Light Microscopy (PLM) in accordance with guidelines set forth in the EPA Method for Determination of Asbestos in Bulk Building Materials, U.S. EPA/600/R-93-116 (7/93 Edition).

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The PLM laboratory reports are presented in Appendix E.

Statistical Comparisons

Data was formatted in spreadsheets for analysis. Statistical functions were performed including maximum, average, minimum, standard deviation, and variance.

The spreadsheets in Appendices A and B presents the data and summarize the statistical analyses performed.

Laboratory Accreditation

The samples were shipped to and analyzed by R. J. Lee Group, Inc. in their Monroeville, Pennsylvania laboratory. R. J. Lee is accredited for TEM analysis by the National Institute of Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program (NVLAP) as Lab #101208. R. J. Lee is also accredited for PCM analysis by the American Industrial Hygiene Association (AIHA) as Lab #8204.

Video Recording

The entire process was video recorded. A Sony Digital Handycam DCR-TRV11 was used to record the activities from various vantage points in the bathroom.



Boelter & Yates
environmental engineers and scientists

**PARTIAL INSTALLATION
1970 VINTAGE CONGOLEUM VINYL ASBESTOS TILE
RESIDENTIAL BATHROOM**

Boelter & Yates, Inc.

1300 Higgins Road
Suite 301
Park Ridge, Illinois
60068-5772

847/ 692-4700

Fax
847/ 692-3127

June 24, 2002
BYI Project #1941A-7237

DISCUSSION OF FINDINGS

Residential Setting

Testing was performed in an actual bathroom located in a residence at 225 Fremont Avenue in Seaside Heights, New Jersey. The bathroom is an area of about 45ft² (360ft³) with a configuration as shown in Figure 1.



Figure 2 - View from kitchen to bathroom

The bathroom is located just off the kitchen of the residence (see Figure 2). Figure 3 shows the residence layout. Since access to the bathroom is through the kitchen, these two rooms were established as the homogeneous sampling area (HSA).

An airtight critical barrier was constructed of a double layer of 6 mil polyethylene sheeting to physically separate the kitchen from the livingroom. One layer was constructed on the kitchen side and one layer was constructed on the living room side. Access to the kitchen was gained through the rear porch.

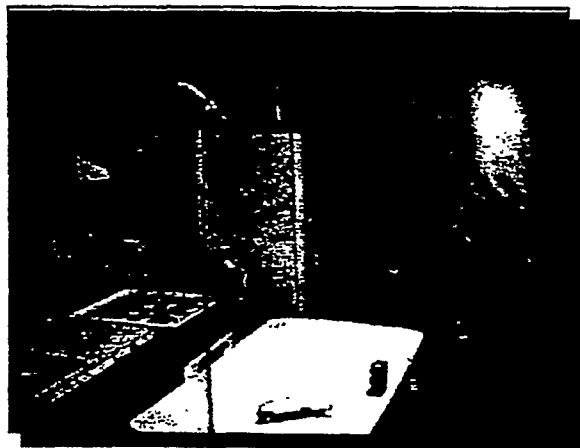


Figure 4 - View of kitchen from bathroom

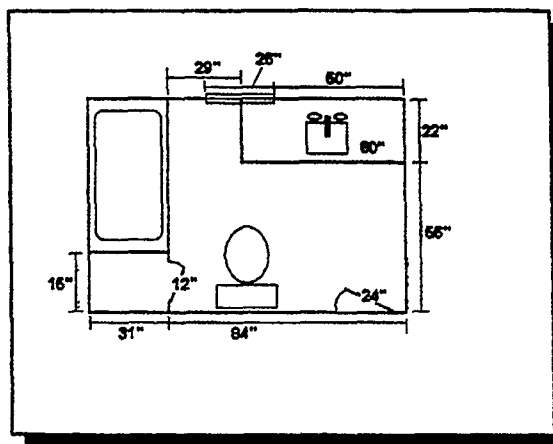


Figure 1 - Bathroom configuration

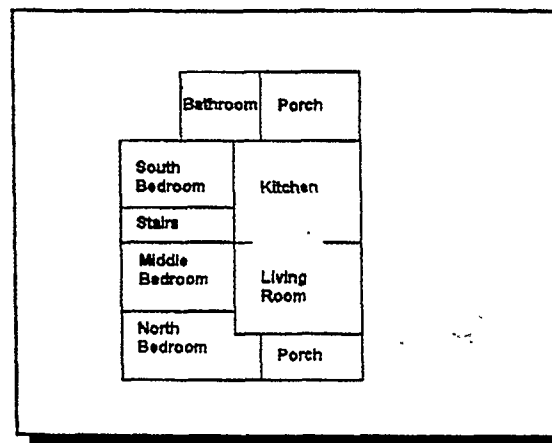


Figure 3 - Residence configuration and HSA

All other openings such as doors and windows were closed. The critical barrier is visible in the view from the bathroom to the kitchen shown in Figure 4.

Background Sampling Results

The bathroom had been the subject of a test involving the partial removal of existing tile. Prior to conducting the partial removal test, horizontal surfaces in the homogeneous sampling area were systematically wet wiped.

Following the cleaning, a series of background samples were analyzed from five (5) area sampling locations inside the homogeneous sampling area in accordance with a modified AHERA protocol.

Background samples were collected under "static" conditions with analysis by AHERA TEM in accordance with AHERA Protocol.

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Results of the Pre-Test Background sampling are shown in the following Table I:

STATISTICAL FUNCTION *****	Modified AHERA (Static) Method	
	AHERA TEM (s/mm ²) - Background for 5/21 - *****	NIOSH 7400 PCM (f/cc) - Background for 5/21 - *****
MAXIMUM	15.4	0.055
AVERAGE	<15.4	0.020
MINIMUM	<15.4	0.006
STAND. DEV.	0.0	0.018
COUNT	5	5

The levels met the AHERA Clearance Criteria of an average of less than seventy structures per millimeter squared (<70 s/mm²) for the 5 samples analyzed and the homogeneous sampling areas was considered clean. Results are shown in the spreadsheet presented in Appendix B.

Results of the During-Test, Outdoor Area Background sampling are shown in the following Table II:

STATISTICAL FUNCTION *****	NIOSH 7402 TEM (asbestos f/cc) - Background on 5/22 PM - *****	NIOSH 7400 PCM (total f/cc) - Background on 5/22 PM - *****
MAXIMUM	0	<0.011
AVERAGE	0	<0.011
MINIMUM	0	<0.011
STAND. DEV.	0.0	0.0
COUNT	5	5

The results indicate that roof removal activities across the street (see Figure 5) did not adversely impact on the outdoor air quality around the residence where testing was being performed. Consequently, the outdoor air was not an influencing factor in the indoor tests. Results are shown in the spreadsheet presented in Appendix B.



Figure 5 - Roof removal activities across the street.

Existing Congoleum VAT

The existing bathroom tile, part of which had been removed in an earlier test, is shown with its corresponding bulk sample in Figure 6. The tile is found in a 1972 Congoleum Corporation pattern book as 12" x 12" Supertile "Libra" VAT with stock number VA-938. A copy of the page from the pattern book is shown in Appendix E.

The bathroom was added to the residence in 1972. The 1972 vintage of the tile is consistent with the date of construction of this bathroom.

The tile was bulk sampled (i.d. MFM-0502-401) and analyzed. The asbestos content of the Libra VAT was determined to be 0.0% chrysotile. The vinyl baseboard was also bulk sampled (i.d. MFM-0502-404) and analyzed. The asbestos content of the baseboard was determined to be 0.0% chrysotile. Additionally, bulk samples were analyzed of the mastics for both the VAT (i.d. MFM-0502-402M) and baseboard (i.d. MFM-0502-405M). The asbestos content of both mastics were determined to be 0.0% chrysotile. See Appendix E for bulk sample data.

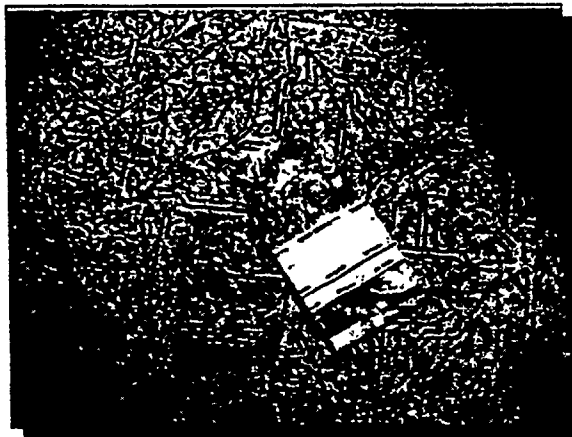


Figure 6 - Existing bathroom Congoleum VAT.

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NOTES

Congoleum VAT Used for Installation

About thirty (30) tiles of two (2) different Congoleum Corporation patterns were available for the partial installation testing. These tiles are the same tiles which were used in a tile installation test performed in the isolation test chamber on May 14, 2002.

The numbers of different tiles available for the testing are listed below:

- 7 tiles - 12x12 1972 White Ventura VAT
- 1 tile - 12x12 1972 Brown Ventura VAT
- 5 & 2/3 tile - 12x12 1972 Beige Ventura VAT
- 17 tiles - 12x12 1970-71 Aztec VAT

One style (See Figure 7) is known as Congoleum Aztec with stock number VA-412. This particular tile is a 1970 to 1971 vintage 12"x 12" vinyl asbestos tile. It is orange with a star pattern. This tile had been previously bulk sampled (i.d. MFM-0698-004) and analyzed². The asbestos content of the Aztec VAT was determined to be 0.02% chrysotile. See Appendix E for bulk sample data.

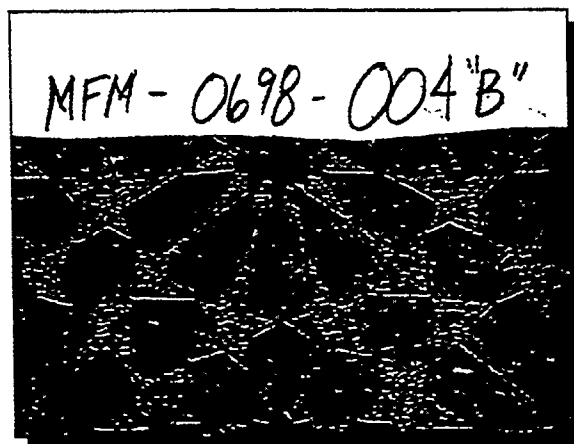


Figure 7 - Congoleum Aztec vinyl asbestos tile.

² Refer to Boelter & Yates report entitled, "ASBESTOS CONTENT OF FLOOR TILES", dated July 17, 1998, Project #1941A-5385

A second style (See Figure 8) is known as Congoleum Ventura with stock number VA-491. This particular tile is a 1972 vintage 12"x12" vinyl asbestos tile. It has a hexagonal pattern and there were three different colors provided. This tile had been previously bulk sampled (i.d. MFM-0698-007) and analyzed³. The asbestos content of the Ventura VAT was determined to be 0.0% chrysotile. See Appendix E for bulk sample data.



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Figure 8 - Congoleum Ventura vinyl asbestos tile.

Tile Installation Test

The particular test being performed was the installation of tile as would be typical for a repair activity. An approximately 25ft² area of the original Congoleum VAT as shown in Figure 9 was previously removed by Mr. Wynder. This same area would be subject to a partial installation task.

During the test, there was no deliberate air movement into or out of the residence. No doors or windows were opened during the testing nor was any mechanical ventilation operated before, during or after any of the test cycles. Since this is an actual residence, however, it is likely that there is a natural ventilation rate due to building envelop leakage. This would represent an actual exposure while performing the tasks.

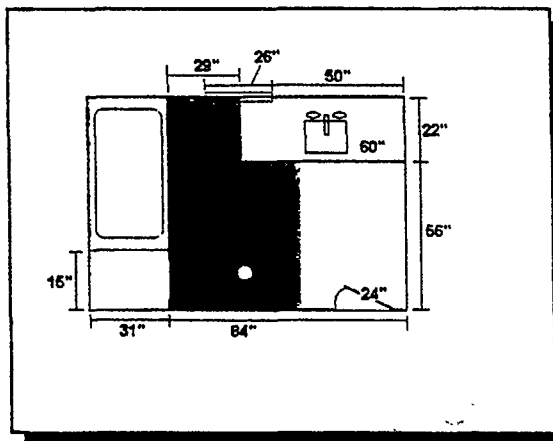


Figure 9 - Area prepared for partial installation

Mr. Scott Wynder, the professional flooring installer, was asked to perform the activities using typical pre-1970's techniques, tools and methods.

Personal and average room air samplers were started prior to beginning the testing. The samplers were stopped after completion of the testing. The samplers were operated for the period of time indicated. During the test cycle, no one left or entered the homogeneous sampling area.

³ Refer to Boelter & Yates report entitled, "ASBESTOS CONTENT OF FLOOR TILES", dated July 17, 1998, Project #1941A-5385

During the sampling event, similar procedures were followed as described in Table II:

TABLE II - SEQUENCE		
STEP	ACTIVITY	PHOTO
1	Prepare and stage tools and tiles	
2	Trowel on the adhesive	Figure 10
3	Allow mastic to "tack up"	
4	Lay whole tiles	
5	Measure cut and lay partial tiles	Figure 11
6	Replace fixtures	Figure 12
7	Clean tools and clean debris	

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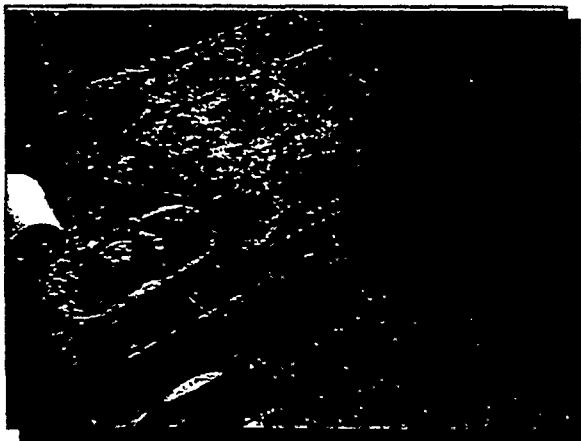


Figure 10 - Adhesive "tacking up".

The first step in the installation of tile is the troweling of adhesive (Armstrong S-750 Premium Floor Tile Adhesive). Once the adhesive has been applied, it is allowed to "tack up" (Figure 10). The length of time this takes varies on conditions such as temperature and humidity. Since no other activities can be performed in the room while the adhesive is tacking up, a professional installer tries to time this period to coincide with a break or lunch.



Figure 11 - Laying whole tiles. Tile cutter is near his feet.

When the adhesive is ready, the installation of whole tiles begins off of the existing line of tiles.

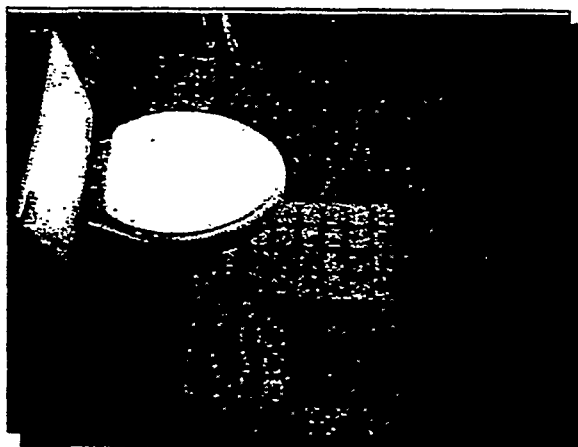


Figure 12 - Completed partial installation.

After the whole tiles have been laid, measurements and cuts would be made to finish the installation. Straight cuts were made using a vintage tile cutter shown in Figure 11. Cuts around the waste line were made with a utility knife.

Figure 12 shows the mosaic of tile patterns which resulted from completion of the partial installation task.

Partial Installation - 1970 Vintage Congoleum VAT - Residential Bathroom

June 25, 2002

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Sampling Results During Test

Results of 8-hr Time Weighted Average (TWA) Permissible Exposure Limit (PEL) sampling is shown in the following table:

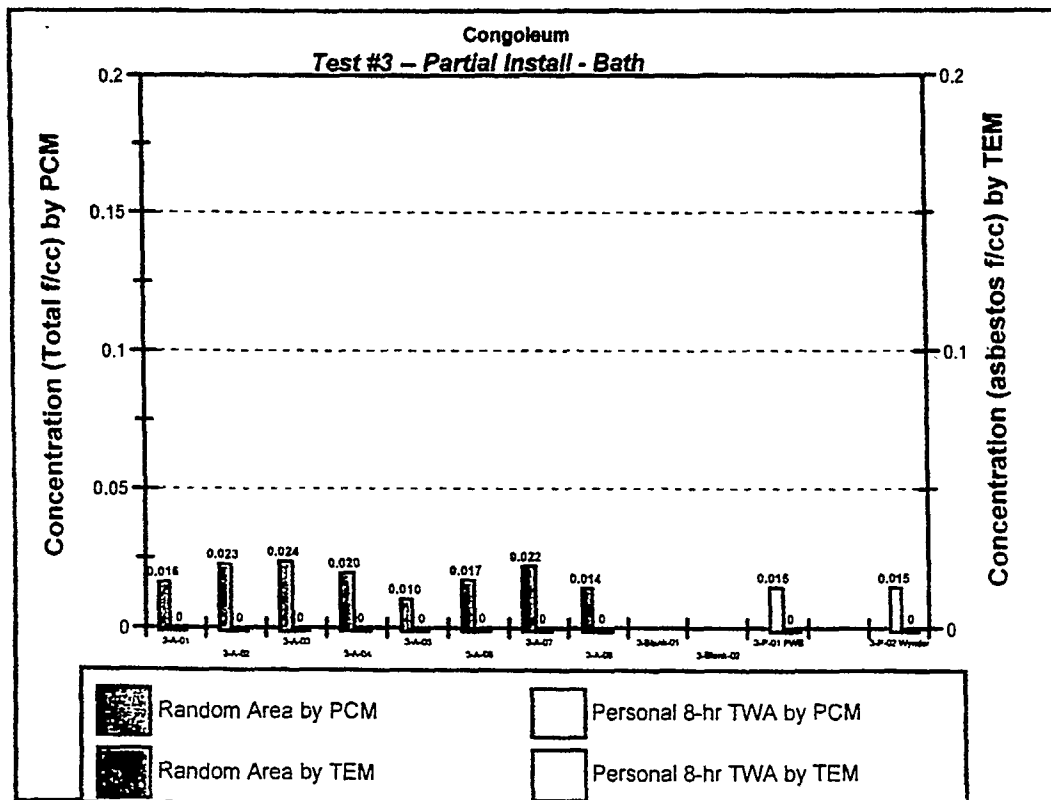
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STATISTICAL FUNCTION	5/22/01 - PCM Total f/cc by NIOSH 7400 -		5/22/01 - TEM Asbestos f/cc by NIOSH 7402	
	- Personal Samples -	- Average Room Air -	- Personal Samples -	- Average Room Air -
MAXIMUM	0.015	0.024	0.0	0.0
AVERAGE	0.015	0.018	0.0	0.0
MINIMUM	0.015	0.010	0.0	0.0
STAND. DEV.	0.000	0.004	0.0	0.0
COUNT	2	8	2	8

All sample results indicate that while there were some total fiber concentrations as detected by PCM NIOSH 7400, there were no asbestos fibers detected when the samples were analyzed by TEM NIOSH 7402. Clearly, the results are well below the current OSHA 8-hr Time Weighted Average (TWA) Permissible Exposure Limit of 0.1 f/cc.

The Appendix A spreadsheets summarized in the above tables are also depicted graphically in the Appendix A.



CONCLUSIONS

An approximately 25 square foot area was identified for repair and installation in the bathroom of an actual residence while testing for the fiber release from 1970's vintage Congoleum Corporation vinyl asbestos tile (VAT). The entire installation process was demonstrated including preparing the surface, troweling the adhesive, as well as cutting and laying the tile. Eight (8) room air samples and two (2) long term personal samples were collected during the process during each test. The process as tested took slightly less than 3 hours to perform.

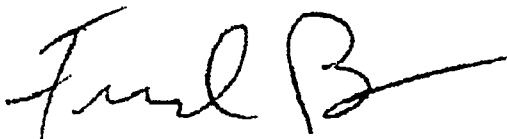
Boelter & Yates, Inc.

N O T E S
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All sample results show the total airborne concentrations of total fibers to be well below the current OSHA 8-hr Time Weighted Average (TWA) Permissible Exposure Limit (PEL) of 0.1 f/cc. Furthermore, all samples showed zero (0) asbestos fibers when analyzed by definitive analytical techniques.

Respectfully submitted,

BOELTER & YATES, INC.



Frederick W. Boelter, CIH, PE

Reviewed by,



John W. Spencer, CIH, CSP

Enclosures



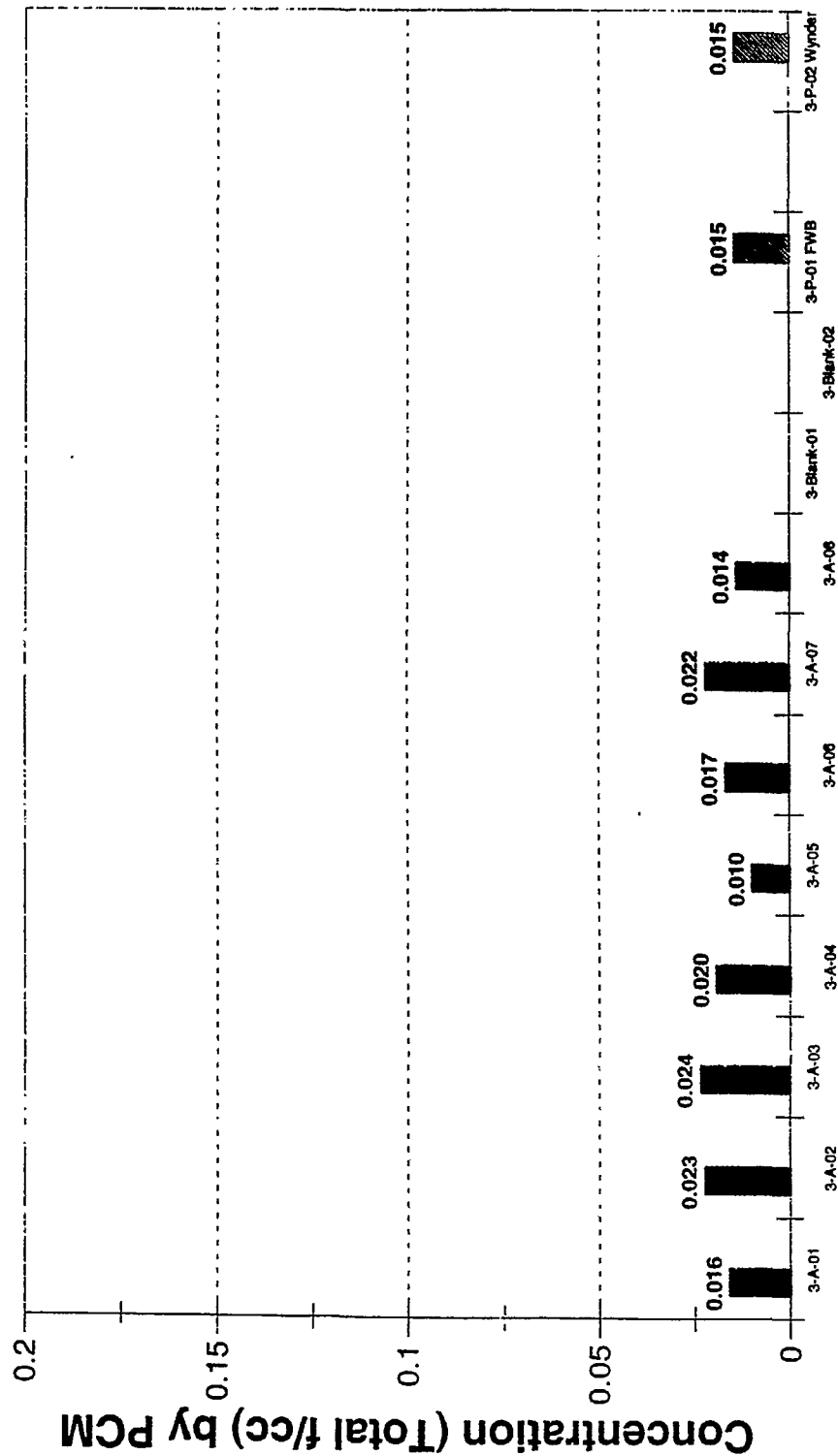
APPENDIX A

**Compilation Spreadsheets and Graphs
NIOSH 7400 and NIOSH 7402 TESTING RESULTS**

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TEST	TEST DATE	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE TIME	SAMPLE RATE	SAMPLE VOLUME	TESTING PCM (Total f/cc) - Personal Actual - Area 2 -	TESTING PCM (Total f/cc) - Personal 8hr - Area 2 -	TESTING TEM (asbestos/other)	asbestos f/cc - Personal 8hr -	asbestos f/cc - Area 8hr -
Test 3 - Partial Install	May 22, 2002	3-A-01	RANDOM AREA	175	2	350	0.045	0.016	0	0	0
Test 3 - Partial Install	May 22, 2002	3-A-02	RANDOM AREA	176	2	352	0.062	0.023	0	0	0
Test 3 - Partial Install	May 22, 2002	3-A-03	RANDOM AREA	176	2	352	0.065	0.024	0	0	0
Test 3 - Partial Install	May 22, 2002	3-A-04	RANDOM AREA	176	2	352	0.054	0.020	0	0	0
Test 3 - Partial Install	May 22, 2002	3-A-05	RANDOM AREA	176	2	352	0.028	0.010	0	0	0
Test 3 - Partial Install	May 22, 2002	3-A-06	RANDOM AREA	176	2	352	0.047	0.017	0	0	0
Test 3 - Partial Install	May 22, 2002	3-A-07	RANDOM AREA	176	2	352	0.061	0.022	0	0	0
Test 3 - Partial Install	May 22, 2002	3-A-08	RANDOM AREA	176	2	352	0.039	0.014	0	0	0
Test 3 - Partial Install	May 22, 2002	3-Blank-01	BLANK	0	0	0					
Test 3 - Partial Install	May 22, 2002	3-Blank-02	BLANK	0	0	0					
Test 3 - Partial Install	May 22, 2002	3-P-01 FWB	PERSONAL	168	2	336	0.042	0.015	0	0	0
Test 3 - Partial Install	May 22, 2002				2	0	0.042	0.015	0	0	0
Test 3 - Partial Install	May 22, 2002	3-P-02 Wynder	PERSONAL	168	2	336					
Test 3 - Partial Install	May 22, 2002				2	0					
MAXIMUM							0.065	0.024		0.000	0.000
AVERAGE							0.042	0.015		0.000	0.000
MINIMUM							0.028	0.010		0.000	0.000
STAND. DEV.							0.012	0.004		0.000	0.000
VARIANCE							0.000	0.000		0.000	0.000
COUNT							2	2		2	8

Congoleum
Test #3 -- Partial Install - Bathroom



Sample Number



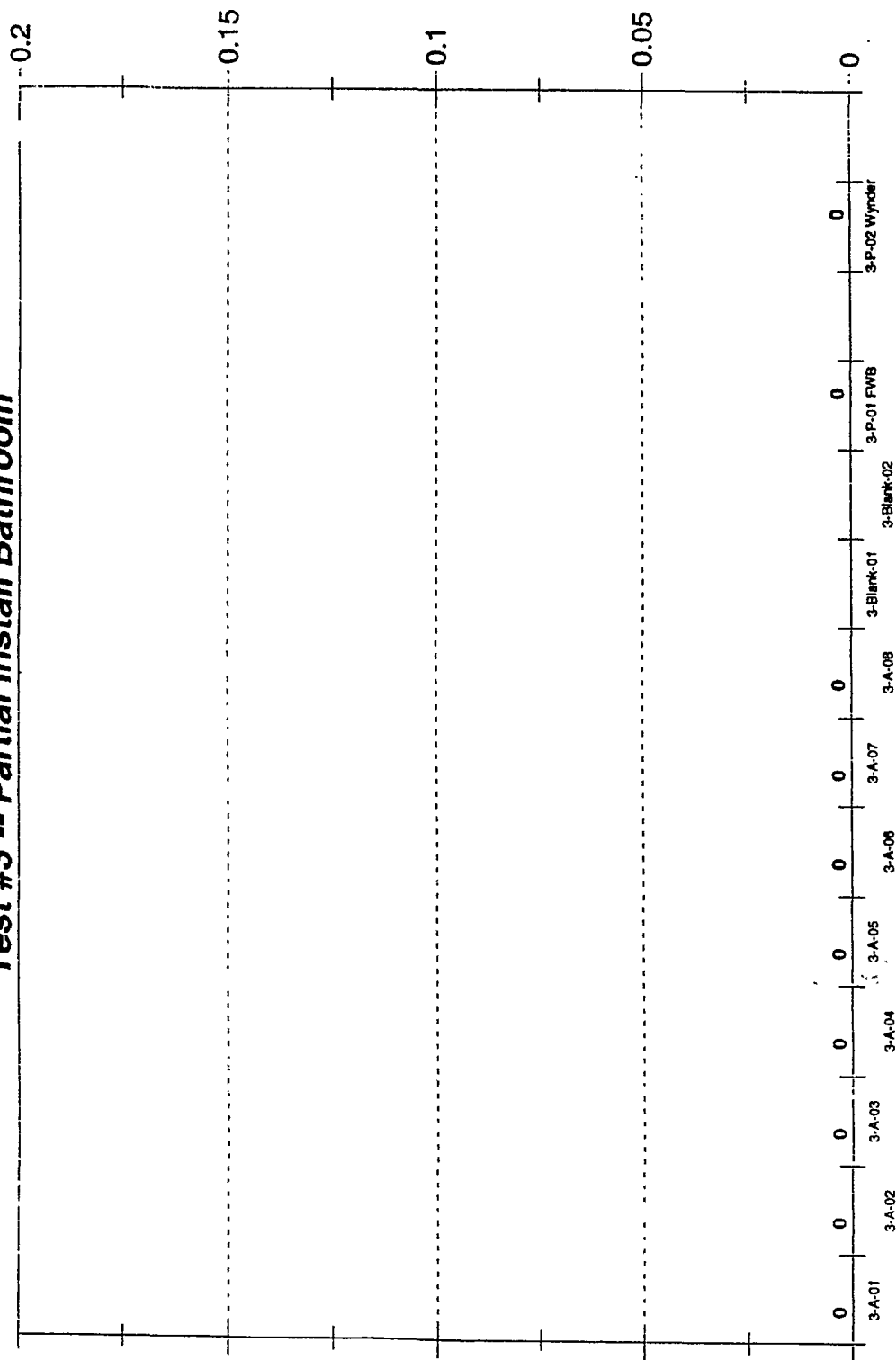
Personal 8-hr TWA



Random Area - 8hr TWA

Congoleum
Test #3 -- Partial Install Bathroom

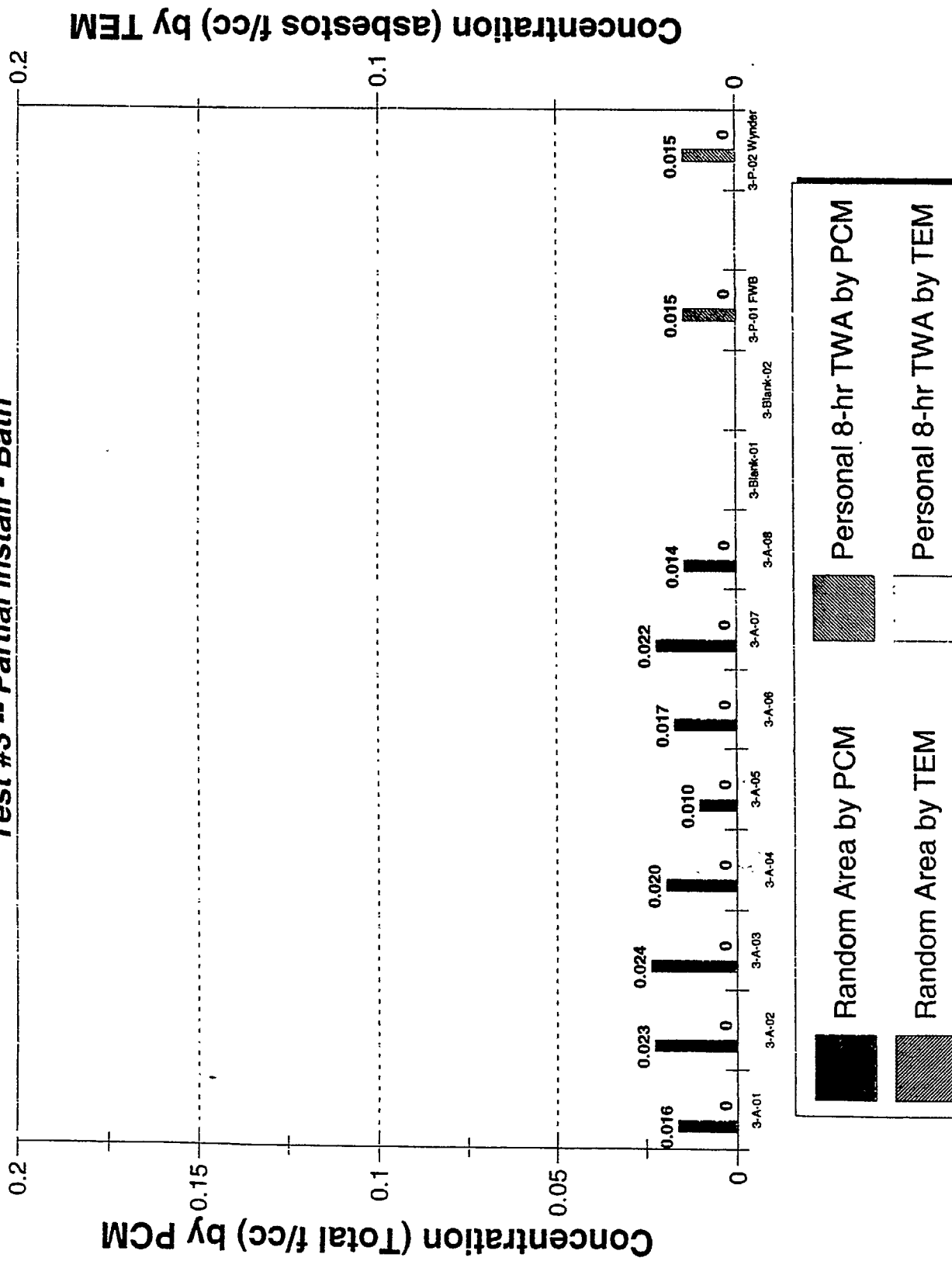
Concentration (asbestos f/cc) by TEM



Sample Number

 Random Area	 Personal 8-hr TWA
--	--

Congoleum Test #3 -- Partial Install - Bath



Random Area by PCM
Personal 8-hr TWA by PCM
Random Area by TEM
Personal 8-hr TWA by TEM

APPENDIX B

Compilation Spreadsheets and Graphs
PRE-TEST BACKGROUND RESULTS
and
DURING-TEST OUTDOOR AREA RESULTS

APPENDIX C

**NIOSH 7400 PCM Laboratory Reports
and
NIOSH 7402 TEM Laboratory Reports**

RJ Lee Group, Inc.

AIHA Accreditation No. 460 NVLAP Accreditation No. 101208-0

350 Hochberg Road • Monroeville, PA 15146
Voice 724-325-1776 • Fax 724-733-1795

Laboratory Report

Boelter & Yates, Inc.
O'Hare Corporate Center
1300 Higgins Road Suite 301
Park Ridge, IL 60068-5772
Attention: Mr. Matthew F. Meyer
Telephone: 847-692-4700

Report Date 5/23/2002
Sample Receipt Date 5/23/2002
RJ Lee Group Job No ACH205592
Client Job No. 1941A-7237
Authorization/P.O. No. 1941A-7237

Analysis: Fibers ($\geq$ 5 um long) on Mixed Cellulose Ester Filters
Method: NIOSH 7400, Issue # 2
Filter Size: 25 mm

Blank Correction: 0 f/mm²

Graticule: .00785 mm²

Uncorrected Fiber Concentrations

RJLG Sample Number	Client Sample Number	Volume (Liters)	Fibers	Fields	Fiber Density (f/mm ²)	Uncorrected Fiber Concentrations			Analysis Date	Analyst	Comment
						95% Upper Limit of Concentration (f/mL)	Confidence (f/mL)	Quantitation (f/mL)			
2602910.HPC	3-BLANK-02	0	0	100	<7	-	-	-	5/23/2002	CBL	
2602909.HPC	3-BLANK-01	0	0	100	<7	-	-	-	5/23/2002	CBL	
2602901.HPC	3-A-01	350	32	100	40.8	0.0448	0.057	0.0077	5/23/2002	CBL	
2602902.HPC	3-A-02	352	44.5	100	56.7	0.062	0.0775	0.0077	5/23/2002	CBL	
2602903.HPC	3-A-03	352	46.5	100	59.2	0.0648	0.0808	0.0077	5/23/2002	CBL	

Authorized Signature

Curtis B. Lysher

Curtis B. Lysher, Microscopist

Notes:

1. Air volumes provided by the client were used to calculate airborne concentrations.
2. These results are submitted pursuant to RJ Lee Group's current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions. No responsibility or liability is assumed for the manner in which these results are used or interpreted.
3. "<" indicates the fiber density is below the detection limit. A fiber density of 7 f/mm² is used to calculate the quantitation limit.
4. Samples will be held for 90 days and then disposed of per Federal regulations.

RJ Lee Group, Inc.

Laboratory Report (cont.)

RJ Lee Group Job No: AOH205582
Client Job No: 1941A-7237

RJLG Sample Number	Client Sample Number	Volume (Liters)	Fibers	Fields	Uncorrected Fiber Concentrations				Analysis Date	Analyst	Comment
					Fiber Density (f/mm ²)	Concentration (f/mL)	95% Upper Confidence Limit (f/mL)	Limit of Quantitation (f/mL)			
2602904.HPC	3-A-04	352	38.5	100	49	0.0536	0.0675	0.0077	5/23/2002	CBL	
2602905.HPC	3-A-05	352	20	100	25.5	0.0279	0.0364	0.0077	5/23/2002	CBL	
2602906.HPC	3-A-06	352	33.5	100	42.7	0.0467	0.0592	0.0077	5/23/2002	CBL	
2602907.HPC	3-A-07	352	43.5	100	55.4	0.0606	0.0758	0.0077	5/23/2002	CBL	
2602908.HPC	3-A-08	352	28	100	35.7	0.039	0.05	0.0077	5/23/2002	CBL	

Authorized Signature

Curtis B. Lysher

Curtis B. Lysher, Microscopist

Notes:

1. Air volumes provided by the client were used to calculate airborne concentrations.
2. These results are submitted pursuant to RJ Lee Group's current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions. No responsibility or liability is assumed for the manner in which these results are used or interpreted.
3. "<" indicates the fiber density is below the detection limit. A fiber density of 7 f/mm² is used to calculate the quantitation limit.
4. Samples will be held for 90 days and then disposed of per Federal regulations.

Oelker & Yates

AIR SAMPLE ANALYSIS DATA/CHAIN OF CUSTODY SHEET

DATE: <u>5-22-02</u>	COLLECTED BY: <u>1</u>
PROJECT NO.: <u>141A-7237</u>	ANALYZED BY: <u> </u>
TURNAROUND TIME: 8HR 12HR	24HR (72HR)

COLLECTED BY:

ANALYZED BY:

24HR (72HR)

Page 1 of 1

SAMPLE ID NO.	SAMPLE TYPE	WORKER NAME AND SS NO. OR LOCATION	ACTIVITY	RESPIRATOR TYPE
3-A-01		East end of bathroom - 2' off floor	Floor tile installation -	
3-A-02		North end of bathroom - 3' off floor		
3-A-03		SW end of bathroom - 1' 3" off floor		
3-A-04		NW end of bathroom - 6' off floor		
3-A-05		SW section of kitchen - 6' off floor		
3-A-06		NW section of kitchen - 9' off floor		
3-A-07		NE section of kitchen - 11' off floor		
3-A-08		East section of kitchen - 8' off floor		
3-Blank-01		BLANK		
3-Blank-02		BLANK		

LYTICAL DATA ANALYSIS REQUIRED: TEM () or PCM (X) Effective Filter Collection Area _____ mm² Graticule Field Area _____ mm²

Sample ID No.*	Start Time	Stop Time	Total Time (min)	Initial Flow Rate (L/min)	Final Flow Rate (L/min)	Total Volume (L/min)	Fluores* (blank cell)	Fluores* (blank cell)	LOC (Fluores*)	Recombination* (TMR cell)	Fluores* (blank cell)
3-A-01	1131	1426	175	2.0	2.0	350					
3-A-02	1131	1427	176	2.0	2.0	352					
3-A-03	1131	1427	176	2.0	2.0	352					
3-A-04	1132	1428	176	2.0	2.0	352					
3-A-05	1132	1428	176	2.0	2.0	352					
3-A-06	1132	1428	176	2.0	2.0	352					
3-A-07	1133	1429	176	2.0	2.0	352					
3-A-08	1133	1429	176	2.0	2.0	352					
3-blank-01	—	—	—	—	—	—					
3-blank-02	—	—	—	—	—	—					

Alt	Filling Employee	DOB	SSN	Full Name	POB	Site	Proposed
Background	OK	Screened	OK	John Christopher	PAK	Remond	
Pay Last Set	PS	Full Rate	OK	Grady Ann	MM	Remond	
Cleanest	FF	Full Rate	OK	Grady Christopher	OK	Suppld NY	
Check My	OK	Good Day	PAK	Forward Alt Filling	OK	Grady Lth West	
Notes				Summary			

Multiplied by: Martin F. Hagg
Company: Eastco
Date/Time: 5-22-82

Received By: Leanne Hoffman
Company: _____
Date/Time: 5/23 11:30

RelayShield by: _____
Company: _____
Date/Time: _____

Received By: _____
Company: _____
Date/Time: _____

Received at Laboratory of

Company: _____

Data/Tone: _____

1. Sampling media used is 25mm 0.8u MCE that unless otherwise noted.
 1 = Unit of Countdown. The method assumes the lowest quantifiable concentration is 10 (ten) TBO
 a and is volume dependent. Examples below the LDC are non-quantifiable and therefore are non-splittable.
 split ID Example: R/L, transfer failed, 04 = Month; 04 = Year; 01, 02, etc. = Sequence No.

800/635-2647

RJ Lee Group, Inc.

AHA Accreditation No. 460 NVLAP Accreditation No. 101208-0

350 Hochberg Road • Monroeville, PA 15146
Voice 724-325-1776 • Fax 724-733-1795

Laboratory Report

Boelter & Yates, Inc.
O'Hare Corporate Center
1300 Higgins Road Suite 301
Park Ridge, IL 60068-5772
Attention: Mr. Matthew F. Meyer
Telephone: 847-692-4700

Report Date 5/23/2002
Sample Receipt Date 5/23/2002
RJ Lee Group Job No ACH205583
Client Job No. 1941S-7237
Authorization/P.O. No. 1941S-7237

Analysis: Fibers (≥ 5 um long) on Mixed Cellulose Ester Filters
Method: NIOSH 7400, Issue # 2
Filter Size: 25 mm

Graticule: .00785 mm²

Blank Correction: 0 f/mm²

Uncorrected Fiber Concentrations

RJLG Sample Number	Client Sample Number	Volume (Liters)	Fibers	Fields	Fiber Density (f/mm ²)	95% Upper Limit of Confidence Quantitation			Analysis Date	Comment
						Concentration (f/mL)	(f/mL)	(f/mL)		
2602914.HPC	3-BLANK-04	0	0	100	<7	-	-	-	CBL 5/23/2002	
2602913.HPC	3-BLANK-03	0	0	100	<7	-	-	-	CBL 5/23/2002	
2602911.HPC	3-P-01	336	28.5	100	36.3	0.0416	0.0332	0.008	CBL 5/23/2002	
2602912.HPC	3-P-02	336	28.5	100	36.3	0.0416	0.0332	0.008	CBL 5/23/2002	

Authorized Signature

Curtis B. Lysher

Curtis B. Lysher, Microscopist

Notes:

1. Air volumes provided by the client were used to calculate airborne concentrations.
2. These results are submitted pursuant to RJ Lee Group's current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions. No responsibility or liability is assumed for the manner in which these results are used or interpreted.
3. "<" indicates the fiber density is below the detection limit. A fiber density of 7 f/mm² is used to calculate the quantitation limit.
4. Samples will be held for 90 days and then disposed of per Federal regulations.

Boelter & Yates

DATE 5-22-02

PROJECT NO.: 1941A-7237

TURNAROUND TIME: 8HR 12HR

AIR SAMPLE ANALYSIS DATA/CHAIN OF CUSTODY SHEET

COLLECTED BY:

ANALYZED BY :

24HR 72HR

Page 1 of 1

[illegible]ANALYTICAL DATA ANALYSIS REQUIRED: TEM () or POM (X) - Effective Filter Collection Area _____ mm² Graticule Field Area _____ mm²[illegible]

112

Key to Abbreviations							
WSP	At-Pooling Sampler	ENV	Seawater	HC	Hot Blank	FPD	Gas Proportion
WSP	Background	SL	Seawater	CC	Isotopic Calibration	MS	Prevalent
WSP	Big Leaf Out	FS	Field Blank	GA	Gas/Air Blank	MSM	Standard
FL-2	Chlorophyll	PAF	PAF Blank	CC	Quality Calibration	GA	Sampled Air
SL	Chlorophyll	GLB	Glove Box	WSP	Prevalent Air Pooling	SL	Sampled Lab Blank
SL	Blank				Prevalent		

NOTE: Sampling mode used is 25mm 0.9u MCE (for values otherwise noted)

DO = Units of Quantification: The method assumes the lowest quantifiable concentration is 10 items/100 trials and is volume dependent. Examples below the LOQ are non-quantifiable and therefore are non-reportable.

Recompiled by: Walter J. M.

Company: Boji TV

Outfile: 5-22-03

Manufactured by:

Company:

Deputy Director:

Fluoridized

Company

Dead/Flank _____

Number of

Company

BestTime:

Revised at Laboratory for

Comments:

Product:

RJ LeeGroup, Inc.

350 Hochberg Road
Monroeville, PA 15146
Tel: (724) 325-1776
Fax: (724) 733-1799

The Materials Characterization Specialists

May 31, 2002

Mr. Fred W. Boelter
Boelter & Yates, Inc.
1300 Higgins Road
Suite 301
Park Ridge, IL 60068-5772

RE: TEM Asbestos Results for Samples as Shown on the Test Report
RJ Lee Group, Inc. Job No. : ATH205290
Client Purchase Order No. : 1941A-7237

Dear Mr. Boelter :

Enclosed are the results from the transmission electron microscopy (TEM) asbestos analysis of the above referenced samples using the counting rules established by the NIOSH Method 7402, Issue #2, 8/15/94. The samples and volume information were provided by Boelter & Yates, Inc. personnel.

The analysis for asbestos fibers consisted of fiber morphology, visual selected area electron diffraction (SAED) and elemental chemical analysis by energy dispersive spectroscopy (EDS), supplemented by the measurement and interpretation of micrographs of several selected area electron diffraction patterns (SAED). The samples were analyzed at a magnification of 1000X. Particles meeting the definition of a fiber $> 5\mu\text{m}$ in length, $> 0.25\mu\text{m}$ in diameter and having a length to width aspect ratio $\geq 3:1$ were classified as chrysotile or amphibole. The electron microscopes used for the analysis were a JEOL 2000 FX and 1200 EX equipped with Gresham PEDX system.

The Test Report lists each sample identification number, filter area, volume, area analyzed, asbestos fiber counts (f_s), analytical sensitivity, concentration of asbestos in fibers per cubic centimeters (f/cc), Total Fibers (F_s), and Fiber Ratio (f_s/F_s).

RJ Lee Group, Inc. is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for selected test methods for airborne asbestos fiber analysis (TEM), asbestos fiber analysis (PLM), New York State Department of Health Environmental Laboratory Approval Program (ELAP), and by the American Industrial Hygiene Association (AIHA). This test report only relates to the items tested. NVLAP accreditation does not imply endorsement by NVLAP or any agency of the U.S. Government. The report shall not be reproduced except in full.

Mr. Boelter
Page 2
ATH205290
May 31, 2002

These results are submitted pursuant to RJ Lee Group's current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions and no responsibility or liability is assumed for the manner in which the results are used or interpreted. Unless notified in writing to return the samples covered by this report, RJ Lee Group will store the samples for a period of thirty (30) days before discarding. A shipping and handling fee will be assessed for the return of any samples.

If you have any questions, feel free to call me.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Kimberly A. Allison".

Kimberly A. Allison
Manager - TEM Analysis

KAA/slb

Enclosures

Test Report

Asbestos Concentrations and Fiber Ratios NIOSH 7402 Analysis

Project ATH205290

RJ Lee Group Sample Number	Client Sample Number	Filter Area (sq mm)	Volume ‡ (Liters)	Area Analyzed (sq mm)	Asbestos Fibers (fs) Chr Amp	Analytical Sensitivity (f/cc)	Asbestos Concentration (f/cc)	Total Fibers (Fs)	Fiber Ratio (fs/Fs)	Analysis Date
0127770HT	2-A-01	385	80.00	0.3708	0.0 0.0	0.0130	<0.0130*	32.0	0	5/30/2
0127771HT	2-A-02	385	80.00	0.3708	0.0 0.0	0.0130	<0.0130*	14.5	0	5/30/2
0127772HT	2-A-03	385	80.00	0.3708	0.0 0.0	0.0130	<0.0130*	20.0	0	5/30/2
0127773HT	2-A-04	385	80.00	0.3708	0.0 0.0	0.0130	<0.0130*	11.0	0	5/30/2
0127774HT	2-A-05	385	80.00	0.3708	0.0 0.0	0.0130	<0.0130*	1.5	0	5/30/2
0127775HT	2-A-06	385	80.00	0.3708	0.0 0.0	0.0130	<0.0130*	8.0	0	5/30/2
0127776HT	2-A-07	385	80.00	0.3708	0.0 0.0	0.0130	<0.0130*	10.0	0	5/30/2
0127777HT	2-A-08	385	80.00	0.3708	0.0 0.0	0.0130	<0.0130*	4.0	0	5/30/2
0127778HT	2-BLANK-01	385	Blank	0.3708	0.0 0.0	-	-	0.0	0.00	5/31/2
0127779HT	2-BLANK-02	385	Blank	0.3708	0.0 0.0	-	-	0.0	0.00	5/31/2
0127780HT	2-P-01	385	72.00	0.3708	0.0 0.0	0.0144	<0.0144*	5.5	0	5/30/2
0127781HT	2-P-02	385	72.00	0.3708	0.0 0.0	0.0144	<0.0144*	3.5	0	5/30/2
0127782HT	2-BLANK-03	385	Blank	0.3708	0.0 0.0	-	-	1.0	0	5/31/2
0127783HT	2-BLANK-04	385	Blank	0.3708	0.0 0.0	-	-	0.0	0.00	5/30/2
0127784HT	3-A-01	385	350.00	0.3708	0.0 0.0	0.0030	<0.0030*	15.5	0	5/29/2

‡ Volumes provided by Boelter & Yates, Inc. for Project 1941A-7237 were used to calculate analytical results and sensitivities.
† Analytical sensitivity is the calculated concentration based on one structure in the area analyzed.

Chr - Chrysotile, Amp - Amphibole
* Results Less Than Analytical Sensitivity.
N/A - Sample not analyzed.

Samples received on: Tuesday, May 28, 2002

RJ Lee Group, Inc.
Headquarters

350 Hochberg Road
Monroeville, PA 15146

Test Report Page: 1 of 2

Authorized Signature

Kimberly A. Allison
Kimberly A. Allison, Manager-TEM Analysis

Phone (724) 325-1776
Fax (724) 733-1799

Test Report

Asbestos Concentrations and Fiber Ratios

NIOSH 7402 Analysis

Project ATH205290

RJ Lee Group Sample Number	Client Sample Number	Filter Area (sq mm)	Volume ‡ (Liters)	Area Analyzed (sq mm)	Asbestos Fibers (fs) Chr Amp	Analytical Sensitivity (f/cc)	Asbestos Concentration (f/cc)	Total Fibers (Fs)	Fiber Ratio (fs/Fs)	Analysis Date
0127785HT	3-A-02	385	352.00	0.3708	0.0	0.0	<0.0029*	18.5	0	5/30/2
0127786HT	3-A-03	385	352.00	0.3708	0.0	0.0	<0.0029*	15.5	0	5/30/2
0127787HT	3-A-04	385	352.00	0.3708	0.0	0.0	<0.0029*	21.5	0	5/30/2
0127788HT	3-A-05	385	352.00	0.3708	0.0	0.0	<0.0029*	17.0	0	5/30/2
0127789HT	3-A-06	385	352.00	0.3708	0.0	0.0	<0.0029*	18.0	0	5/30/2
0127790HT	3-A-07	385	352.00	0.3708	0.0	0.0	<0.0029*	16.5	0	5/30/2
0127791HT	3-A-08	385	352.00	0.3708	0.0	0.0	<0.0029*	12.5	0	5/30/2
0127792HT	3-BLANK-01	385	Blank	0.3708	0.0	-	-	3.5	0	5/30/2
0127793HT	3-BLANK-02	385	Blank	0.3708	0.0	-	-	2.0	0	5/30/2
0127794HT	3-P-01	385	336.00	0.3708	0.0	0.0	<0.0031*	14.0	0	5/30/2
0127795HT	3-P-02	385	336.00	0.3708	0.0	0.0	<0.0031*	13.5	0	5/30/2
0127796HT	3-BLANK-03	385	Blank	0.3708	0.0	0.0	-	2.5	0	5/30/2
0127797HT	3-BLANK-04	385	Blank	0.3708	0.0	0.0	-	0.0	0.00	5/30/2

‡ Volumes provided by Boelter & Yates, Inc. for Project 1941A-7237 were used to calculate analytical results and sensitivities.
 † Analytical sensitivity is the calculated concentration based on one structure in the area analyzed.

Chr - Chrysotile, Amp - Amphibole

* Results Less Than Analytical Sensitivity.

N/A - Sample not analyzed.

Samples received on: Tuesday, May 28, 2002

RJ Lee Group, Inc.
 Headquarters

350 Hochberg Road
 Monroeville, PA 15146

Test Report Page: 2 of 2

Authorized Signature 
 Kimberly A. Allison, Manager-TEM Analysis
 Date Friday, May 31, 2002

Phone (724) 325-1776
 Fax (724) 733-1799



Bocker & Yates
Environmental Engineers, Inc. & Lab.

Aug 29 1993

AIR SAMPLE ANALYSIS DATA/CHAIN OF CUSTODY SHEET
DATE: 5-22-02
PROJECT NO.: 1941A-7237
TURNAROUND TIME: 8HR 12HR 24HR 72HR
COLLECTED BY: Martin F. Meyer
ANALYZED BY: Martin F. Meyer

SAMPLE ID NO.	SAMPLE TYPE	WORKER NAME AND SS NO. OR LOCATION	ACTIVITY	RESPIRATOR TYPE
2-A-01		East side of bathroom - 4' off floor	Floor tile removed in bathroom	
2-A-02		South side of bathroom - 5' off floor		
2-A-03		SW side of bathroom - 1-6' off floor		
2-A-04		NW side of bathroom - 6' off floor		
2-A-05		SW side of kitchen - 6' off floor		
2-A-06		NW side of kitchen - 7' off floor		
2-A-07		NE section of kitchen - 1' off floor		
2-A-08		Center sect. of kitchen - 3' off floor		
2-A-09		Blank-01		
2-A-10		Blank-02		

ANALYTICAL DATA ANALYSIS REQUIRED: TEM () or PCM (X)

ANALYTICAL DATA ANALYSIS REQUIRED: TEM () or <u>CM (X)</u> Effective Filter Collection Area _____ mm ² Graticule Field Area _____ mm ² Fibers/cm ² (blank corr)											
Sample ID No. *	Start Time	Stop Time	Total Time (minutes)	Initial Flow Rate (L/min)	Final Flow Rate (L/min)	Total Volume (Liters)	Fibers/Field	Fibers/mm ² (blank corr)	LOQ (Fibers/cm ²)	Structures/mm ² (TEM only)	Fibers/cm ² (blank corr)
2-A-01	1016	1056	40	2.0	2.0	80					
2-A-02	1016	1056	40	2.0	2.0	80					
2-A-03	1016	1056	40	2.0	2.0	80					
2-A-04	1017	1057	40	2.0	2.0	80					
2-A-05	1017	1057	40	2.0	2.0	80					
2-A-06	1017	1057	40	2.0	2.0	80					
2-A-07	1018	1058	40	2.0	2.0	80					
2-A-08	1018	1058	40	2.0	2.0	80					
2-Blank-01	—	—	—	BLANKS							
2-Blank-02	—	—	—								

NOTES:

APR Air Purifying Respirator		ENV Background		EX Field Blank		FF Full Face		GLO Glove Bag		PAPR Powered Air Purifying SLS		Respirator	
BOD Bag Lead Out		CL Clearance		CU Clean Up		DCU Decon		Kev 10 Abbreviations		HM Half Mask		PPE Site Preparation	
ECC Excursion		FAC Field Blank		GLO Glove Bag		PAPR Powered Air Purifying SLS		Respirator		PPE Personal		REM Removal	
ECC Excursion		FAC Field Blank		GLO Glove Bag		PAPR Powered Air Purifying SLS		Respirator		PPE Personal		REM Removal	
ECC Excursion		FAC Field Blank		GLO Glove Bag		PAPR Powered Air Purifying SLS		Respirator		PPE Personal		REM Removal	

NOTE: Sampling media used is 25mm 0.8u MCE filter unless otherwise noted.
LOQ = Limit of Quantitation: The method assumes the lowest quantitative concentration is 10 fibers/100 fields and is volume dependent. Samples below the LOQ are non-quantifiable and therefore are non-reliable.
*Sample ID Example: RML (sample initials), 04 = Month; 01 = Year; 01, 02, etc. = Sequence No.

Relinquished by: Martin F. Meyer	Received By: Denise K. Meyer
Company: B&Y	Company: B&Y
Date/Time: 5-22-02	Date/Time: 5-23-02 11:30am
Relinquished by:	Received By:
Company:	Company:
Date/Time:	Date/Time:
Relinquished at Laboratory By:	Received at Laboratory By:
Company:	Company:
Date/Time:	Date/Time:

0201GLOSSARYFORMS/ARCHAINSDI

Boelter & Yates

[illegible]ANALYTICAL DATA ANALYSIS REQUIRED; TEM () or PCM (X) Effective Filter Collection Area mm² Graticule Field Area mm²[illegible]**VOTES:**

Key to Abbreviations									
APR	Air Purifying Respirator	ENV	Environmental	HM	Half Mask	PREP	Site Preparation		
BOG	Background	EX	Excursion	IC	Inside Containment	PRS	Personal		
BOLO	Bag Lead Out	FB	Field Blank	OA	Outside Area	REM	Removal		
CL	Clearance	FF	Full Face	OC	Outside Containment	SA	Supplied Air		
CLN	Clean Up	GLBG	Glove Bag	PAPR	Powered Air Purifying Respirator	SLS	Sealed Lab Blank		
DCU	Down								

NOTE: Sampling media used is 25mm 0.8u MCE filter unless otherwise noted.
 LOQ = Limit of Quantitation: The method assumes the lowest quantifiable concentration is 10 fibers/100 fields and is volume dependent. Samples below the LOQ are non-quantifiable and therefore are non-reliable.
 Sample ID Example: RML (sample Initials), OA = Month; 01 = Year; 01, 02, etc. = Sequence No.

NOTE: Sampling media used is 25mm Ø, 1MCE filter unless otherwise noted.

NOTE: sampling media used is ZOTTI 0.60 µm MC filter unless otherwise noted.

* Sample ID Example: BM1 (smaller initials), 04 = Month: 01 = Year: 01. 02. etc. = Sequence No.

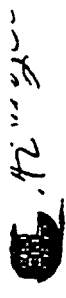
Relinquished by: Matthew F Myers
Company: Exceller
Date/Time: 3-22-07

Received By: _____
Company: _____
Date/Time: _____

Received By: _____
Company: _____
Date/Time: _____

Received at Laboratory By: _____
Company: _____
Date/Time: _____

D2011 GLOSSARY FORMS VARIATION



Boelter & Yates
an environmental engineering and consulting firm

DATE: 5-22-02
PROJECT NO.: 1941A-7237
TURNAROUND TIME: 8HR 12HR 24HR 72HR

AIR SAMPLE ANALYSIS DATA/CHAIN OF CUSTODY SHEET
COLLECTED BY: Maureen F. Myer
ANALYZED BY: Maureen F. Myer

SAMPLE ID NO.	SAMPLE TYPE	WORKER NAME AND SS NO. OR LOCATION	ACTIVITY	RESPIRATOR TYPE
3-A-01		East side of bathroom - 4' off floor	Floor tile installation	
3-A-02		North side of bathroom - 5' off floor		
3-A-03		SW side of bathroom - 1'-6" off floor		
3-A-04		NW side of bathroom - 6' off floor		
3-A-05		SW side of kitchen - 6' off floor		
3-A-06		NW side of kitchen - 9' off floor		
3-A-07		NE side of kitchen - 1' off floor		
3-A-08		Center section of kitchen - 3' off floor		
3-Blank-01		BLANK		
3-Blank-02		BLANK		

Sample ID No.	Start Time	Stop Time	Total Time (minutes)	Initial Flow Rate (L/min)	Final Flow Rate (L/min)	Total Volume (liters)	Fibers/Field	Fibers/cm ² (blank corr)	LOQ (Fibers/cm ²)	Structures/mm ² (TEM only)	Fibers/cm ² (blank corr)
3-A-01	1131	1426	175	2.0	2.0	350					
3-A-02	1131	1427	176	2.0	2.0	352					
3-A-03	1131	1427	176	2.0	2.0	352					
3-A-04	1132	1428	176	2.0	2.0	352					
3-A-05	1132	1428	176	2.0	2.0	352					
3-A-06	1132	1428	176	2.0	2.0	352					
3-A-07	1133	1429	176	2.0	2.0	352					
3-A-08	1133	1429	176	2.0	2.0	352					
3-Blank-01											
3-Blank-02											

NOTES:

Key to Abbreviations Air Purifying Respirator: ENV, EX, FB, GLBG, Decon Background: BGD Clearance: CL Clean Up: CLN Deco: DCU Half Mask: HM Inside Containment: IC Outside Area: OA Outside Containment: OC Powered Air Purifying: PAP Sealed Lab Blank: SLB Site Preparation: PSEP Personal Removal: REM Supplied Air: SA Respirator: RES		Relinquished by: <u>Maureen F. Myer</u> Company: <u>Boelter & Yates</u> Date/Time: <u>5-22-02</u>	Received By: <u>Danise Kelly</u> Company: <u>Boelter & Yates</u> Date/Time: <u>5/23/02</u>
Relinquished by: <u>Maureen F. Myer</u> Company: <u>Boelter & Yates</u> Date/Time: <u>5-22-02</u>		Relinquished by: <u>Maureen F. Myer</u> Company: <u>Boelter & Yates</u> Date/Time: <u>5-22-02</u>	Received By: <u>Maureen F. Myer</u> Company: <u>Boelter & Yates</u> Date/Time: <u>5-22-02</u>
Received at Laboratory By: <u>Maureen F. Myer</u> Company: <u>Boelter & Yates</u> Date/Time: <u>5-22-02</u>			

NOTE: Sampling media used is 25mm 0.8u MCE filter unless otherwise noted.
 LOQ = Limit of Quantitation: The method assumes the lowest quantifiable concentration is 10 fibers/100 fields and is volume dependent. Samples below the LOQ are non-quantifiable and therefore are non-reliable.
 *Sample ID Example: RML (sample Initials), 04 = Month; 01 = Year; 01, 02, etc. = Sequence No.

COLLECTED BY: W. H. S. + M. H. S.

Boulet & Yates

Boelter & Yates

ANALYTICAL DATA ANALYSIS REQUIRED: TEM () or PGM (X) mm² Effective Filter Collection Area mm² Graticule Field Area mm²

NOTES:

Relinquished by: <u>Marta F Myer</u>	Received By: <u>Dorine Hoffmann</u>
Company: <u>BacLTC</u>	Company: _____
Date/Time: <u>5-22-03</u>	Date/Time: <u>5/22/02 11:50</u>
Relinquished by: _____	Received By: _____
Company: _____	Company: _____
Date/Time: _____	Date/Time: _____
Received at Laboratory By: _____	
Company: _____	
Date/Time: _____	

NOTE: Sampling media used is 25mm 0.8u MCE filter unless otherwise noted.
 LOO = Limit of Quantitation: The method assumes the lowest quantifiable concentration is 10 fibers/100 fields and is volume dependent. Samples below the LOO are non-quantifiable and therefore are non-reliable.
 *Sample ID Example: RMI (sample type), 04 = Month; 01 = Year; 01 = 02, etc. = Sequence No.

APPENDIX D

AHERA TEM Laboratory Reports

RJ Lee Group, Inc.

AHA Accreditation No. 460 NVLAP Accreditation No. 101208-0

Laboratory Report

350 Hochberg Road • Monroeville, PA 15146
Voice 724-325-1776 • Fax 724-733-1795

Report Date 5/23/2002
Sample Receipt Date 5/23/2002
RJ Lee Group Job No AOH205384
Client Job No. 194A-7237
Authorization/P.O. No. 194A-7237

Boeller & Yates, Inc.
O'Hare Corporate Center
1300 Higgins Road Suite 301
Park Ridge, IL 60068-5772
Attention: Mr. Matthew F. Meyer
Telephone: 847-692-4700

Analysis: Fibers ($\geq$ 5 μ m long) on Mixed Cellulose Ester Filters
Method: NIOSH 7400, Issue # 2
Filter Size: 25 mm

Blank Correction: 0 f/mm²

Graticule: .00785 mm²

Uncorrected Fiber Concentrations

RJL Sample Number	Client Sample Number	Volume (Liters)	Fibers	Fields	Fiber Density (f/mm ²)	Concentration (f/mL)	95% Upper Confidence Limit (f/mL)	Link of	Analysis Date	Analyst	Comment
2602921.HPC	2-BGD-PCM-12	0	0	100	<7	-	-	-	5/23/2002	CBL	
2602920.HPC	2-BGD-PCM-11	0	0	100	<7	-	-	-	5/23/2002	CBL	
2602915.HPC	2-BGD-PCM-01	240	1.5	100	<7	<0.0112	<0.0128	0.0112	5/23/2002	CBL	
2602916.HPC	2-BGD-PCM-02	244	5.5	100	7	0.0111	0.0137	0.0111	5/23/2002	CBL	
2602917.HPC	2-BGD-PCM-03	246	7	100	8.9	0.014	0.0195	0.011	5/23/2002	CBL	

Authorized Signature

Curtis B. Lysher

Curtis B. Lysher, Microscopist

Notes:

1. Air volumes provided by the client were used to calculate airborne concentrations.
2. These results are submitted pursuant to RJ Lee Group's current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions. No responsibility or liability is assumed for the manner in which these results are used or interpreted.
3. "<" indicates the fiber density is below the detection limit. A fiber density of 7 f/mm² is used to calculate the quantitation limit.
4. Samples will be held for 90 days and then disposed of per Federal regulations.

RJ Lee Group, Inc.

Laboratory Report (cont.)

RJ Lee Group Job No: AOH205584
Client Job No: 194A-7237

RJLG Sample Number	Client Sample Number	Volume (Liters)	Fibers	Fields	Fiber Density (fibers/cm ²)	Uncorrected Fiber Concentrations			Analysis Date	Comment
						Fiber Density (fibers/cm ²)	95% Upper Confidence Limit (f/mL)	Limit of Quantitation (f/mL)		
2602918.HPC	2-BGD-PCM-04	244	6	100	7.6	0.0121	0.017	0.011	CBL	5/23/2002
2602919.HPC	2-BGD-PCM-05	246	2	100	<7	<0.011	<0.0125	0.011	CBL	5/23/2002

Curtis B. Lysher

Authorized Signature

Curtis B. Lysher, Microscopist

Notes:

1. Air volumes provided by the client were used to calculate airborne concentrations.
2. These results are submitted pursuant to RJ Lee Group's current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions. No responsibility or liability is assumed for the manner in which these results are used or interpreted.
3. "<" indicates the fiber density is below the detection limit. A fiber density of 7 fibers/cm² is used to calculate the quantitation limit.
4. Samples will be held for 90 days and then disposed of per Federal regulations.

oelter & Yates

AD120554

AIR SAMPLE ANALYSIS DATA/CHAIN OF CUSTODY SHEET

DATE: 5-21-02

PROJECT NO.: 1941A-7237

TURNAROUND TIME: 8HR 12HR

COLLECTED BY:

ANALYZED BY:

24HR 72HR

Page 1 of 1

SAMPLE ID NO.	SAMPLE TYPE	WORKER NAME AND IN NO. ON LOCATION	ACTIVITY	RESPIRATOR TYPE
2-26b-PCM-01	Background	Bethmann - NE ducts	Background	
02		Bethmann - SE ducts		
03		Bethmann - W ducts		
04		Kircher - E ducts		
05		Kircher - SW ducts		
11	BLANK			
2-26b-PCM-12	BLANK			

ANALYTICAL DATA ANALYSIS REQUIRED: TEM () or SEM (X) Effective Filter Collection Area _____ mm² Graticule Field Area _____ mm²

[illegible]

LINKS - SAMPLE ID NO.:

Key to Abbreviations										PPM Personal Air Purifying		Relinquished by: <u>Philip F. M...</u>		Received By: <u>Wanda Hoffman</u>	
APR	Air Purifying Respirator	DET	Decontamination	HEX	Hexachlorobenzene	HEPA	Exhaust	Respirator		Company:	<u>Bally</u>	Company:			
BK	Background	CK	Control	MM	Mill	MM	Mill	PPM	Parts Per Million	Date/Time:	<u>5-7-77</u>	Date/Time:			
BELO	Bag Leak Out	FD	Field Dress	IC	Inside Contamination	PM	Personal								
CL	"Clothes"	FF	Full Face	GA	Outside Area	HEE	Exhaust								
CLL	"Clean Up"	BLM	Blast Bag	GC	Outside Contamination	SA	Supplied Air								
				SL	Shifted Air										
NOTE: Sampling media used is 25mm O.D. MCE (Note unless otherwise noted). LOD = Limit of Quantitation: The method assumes the lowest quantifiable concentration is 10 times/100 feet and is volume dependent. Samples below the LOD are non-quantifiable and therefore are non-detectable. *Sample ID Example: NAL (sample initials), 04 = Month; 87 = Year; 01 = Sequence No.										Relinquished by: _____ Company: _____ Date/Time: _____		Received By: <u>5/23/72 11:34</u> Company: _____ Date/Time: _____			
Received at Laboratory By: _____ Company: _____ Date/Time: _____															

RJ Lee Group, Inc.

AHA Accreditation No. 460 NVLAP Accreditation No. 101208-0

Laboratory Report

Boelter & Yates, Inc.
O'Hare Corporate Center
1300 Higgins Road Suite 301
Park Ridge, IL 60068-5772
Attention: Mr. Matthew F. Meyer
Telephone: 847-692-4700

350 Hochberg Road • Monroeville, PA 15146
Voice 724-325-1776 • Fax 724-733-1795

Report Date 6/17/2002
Sample Receipt Date 6/17/2002
RJ Lee Group Job No AOH206728
Client Job No. 1941A-7237
Authorization/P.O. No. 1941A-7237

Analysis: Fibers (≥ 5 μ m long) on Mixed Cellulose Ester Filters
Method: NIOSH 7400, Issue # 2
Filter Size: 25 mm

Blank Correction: 0 f/mm²

Graticule: .00785 mm²

Uncorrected Fiber Concentrations

RJLG Sample Number	Client Sample Number	Volume (Liters)	Fibers	Fields	Fiber Density (f/mm ²)	95% Upper Limit of Confidence Quantitation			Analysis Date	Analyst	Comment
						Concentration (f/mL)	(f/mL)	(f/mL)			
2604398.HPC	2-BGD-PCM-06	240	1.5	100	<7	<0.0112	<0.0126	0.0112	6/17/2002	BJW	
2604399.HPC	2-BGD-PCM-07	240	.5	100	<7	<0.0112	<0.0126	0.0112	6/17/2002	BJW	
2604400.HPC	2-BGD-PCM-08	240	1	100	<7	<0.0112	<0.0126	0.0112	6/17/2002	BJW	
2604401.HPC	2-BGD-PCM-09	240	1	100	<7	<0.0112	<0.0126	0.0112	6/17/2002	BJW	
2604402.HPC	2-BGD-PCM-10	240	1	100	<7	<0.0112	<0.0126	0.0112	6/17/2002	BJW	

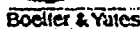
Authorized Signature

Barbara J. Woodside

Barbara J. Woodside, Microscopist

Notes:

1. Air volumes provided by the client were used to calculate airborne concentrations.
2. These results are submitted pursuant to RJ Lee Group's current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions. No responsibility or liability is assumed for the manner in which these results are used or interpreted.
3. "<" indicates the fiber density is below the detection limit. A fiber density of 7 f/mm² is used to calculate the quantitation limit.
4. Samples will be held for 90 days and then disposed of per Federal regulations.



PCMA ADH206728
DATE: AIR SAMPLE ANALY
5-21-02

AIR SAMPLE ANALYSIS DATA/CHAIN OF CUSTODY SHEET

DATE: 5-21-02
PROJECT NO.: 1941A-7237
TURNAROUND TIME: PHB 12HR

COLLECTED BY: Math. F. M. Jr
ANALYZED BY: _____
24HR (72HR)

Page 2 of 2

[illegible]

8 WASH 7402
ANALYTICAL DATA

ANALYTICAL DATA ANALYSIS REQUIRED:

TEMI X 14 PM X

Effective Filter Collection Area	sqm ²	Condensate Field Area	sqm ²
----------------------------------	------------------	-----------------------	------------------

[illegible]**NOTES**

Key to Abbreviations									
APR	As Picking Reaches	REV	Unemployment	RM	Real Month	FRSP	Star Perspective		
BSB	Subsequent	WE	Seasonal	IC	Index Continued	POS	Percent		
BSA	Big Lead On	FW	Full Month	SA	South Area	NSM	Season		
CL	Closest	FF	Full Year	SC	South Continued	SA	Quarter 2		
CSH	Cost Yr	GLSP	Green Bay	PWS	Present As Picking	SLB	Global Lab Month		
CSV	Chart				Indicator				

NOTE: Sampling media used is 25mm CLEPCE filter unless otherwise noted.
 LOQ = Limit of Quantitation. This method assumes the lowest quantifiable concentration is 10 Microg/100
 Solids and is volume dependent. Samples below the LOQ are non-quantifiable and therefore are non-detect.
 *Example ID Sample: NER, Sampled 04/04/00, 04-14000; 01 = 01, 02, etc. = Sample No.

Reproduced by: Meath FM
Company: Rae Her
Date: 5-2-12

Policy: 10-10-10
 Company: Boyle
 Date: 10/14/02

Received By Wanda J. Jones
Company 1/28

Received By: _____
Company: _____
Date/Time: _____

Received at Laboratory By: _____
Company: _____
Date/Time: _____

AMERICAN RECOVERY FOR ALL CHILDREN



Boettler & Yates
Environmental Engineering & Consulting

* PCM 10/20/02

DATE: 5-21-02
PROJECT NO.: 1941A-7237
TURNAROUND TIME: 8HR 12HR 24HR (24HR)

COLLECTED BY: Matt F. Myers
ANALYZED BY: Matt F. Myers

SAMPLE ID NO.	SAMPLE TYPE	WORKER NAME AND/OR NO. OR LOCATION	ACTIVITY	RESPIRATOR TYPE
Z-BGD-PCM-01	IA	Bedroom - HE section	Sent to RS for analysis separate COC 5-22-02	
Z-BGD-PCM-02	IA	Bedroom - SE section		
Z-BGD-PCM-03	IA	Bedroom - W section		
Z-BGD-PCM-04	IA	Kitchen - E section		
Z-BGD-PCM-05	IA	Kitchen - SW section		
Z-BGD-PCM-06	EXT.	Exterior - South side		
Z-BGD-PCM-07	EXT.	Exterior - SE side		
Z-BGD-PCM-08	EXT.	Exterior - SE side		
Z-BGD-PCM-09	EXT.	Exterior - NE side		
Z-BGD-PCM-10	EXT.	Exterior - N side		

* NIOSH 7402

ANALYTICAL DATA ANALYSIS REQUIRED: TER (X) PCM (X) Effective Filter Collection Area _____ mm² Graticule Field Area _____ mm²

Sample ID No.	Start Time	Stop Time	Total Time (min)	Initial Flow Rate (L/min)	Final Flow Rate (L/min)	Total Volume (L)	Filter/Fold	Fluorescence (blank corr)	LOQ (Fluorescence)	Stratification (TER only)	Fluorescence (blank corr)
Z-BGD-PCM-01	1700	1900	120	2.0	2.0	240					
02	1701	1903	122	2.0	2.0	244					
03	1702	1905	123	2.0	2.0	246					
04	1704	1906	122	2.0	2.0	244					
05	1705	1908	123	2.0	2.0	246					
06	1711	1911	120	2.0	2.0	240					
07	1714	1914	120	2.0	2.0	240					
08	1716	1916	120	2.0	2.0	240					
09	1719	1919	120	2.0	2.0	240					
10	1721	1921	120	2.0	2.0	240					

NOTES:

Key to Abbreviations											
APL	At Pulping Respirometer	SW	Background	EC	Exhaust	IC	Initial Concentration	PRE	Prepared	PPM	Per Part Per Million
DEL	Day Load Test	PE	Per Part Per Million	SA	Sample Area	SSR	Sample Size	SSR	Sample Size	SSR	Sample Size
CL	Control	IF	Full Flow	OC	Outside Concentration	SA	Sample Area	SA	Sample Area	SA	Sample Area
CLL	Control Load	OC	Outside Concentration	SA	Sample Area	SA	Sample Area	SA	Sample Area	SA	Sample Area
SCN	Scrubber	OC	Outside Concentration	SA	Sample Area	SA	Sample Area	SA	Sample Area	SA	Sample Area

Collected by: Matt F. Myers
Company: Boettler & Yates
Date/Time: 5-22-02
Received by: [Signature]
Company: [Signature]
Date/Time: 6/11/02 11:00

NOTE: Sampling made using a 25mm 6.35 MCE filter unless otherwise noted.
LOQ = Limit of Quantitation: The smallest amount the lowest quantitative concentration is 10 fmoles/1000
Units and is volume dependent. Samples below the LOQ are non-quantifiable and therefore are non-detectable.
*Sample ID Example: 104, (sample ID), 04 - Month, 04 - Year, 01, 02, etc. - Sequence No.

Received at Laboratory by: _____
Company: _____
Date/Time: _____

RJ LeeGroup, Inc.

350 Hochberg Road
Monroeville, PA 15146
Tel: (724) 325-1776
Fax: (724) 733-1799

The Materials Characterization Specialists

May 28, 2002

Mr. Fred W. Boelter
Boelter & Yates, Inc.
1300 Higgins Road
Suite 301
Park Ridge, IL 60068-5772

RE: TEM Asbestos Results for Samples as Shown on the Test Report
RJ Lee Group Job No. : ATH205277
Client Purchase Order No. : 1941A-7237

Dear Mr. Boelter :

Enclosed are the results from the transmission electron microscopy (TEM) asbestos analysis of the above referenced samples. The samples and volume information were provided by Boelter & Yates, Inc. personnel. As per your request, counting rules as described by the AHERA Method published in the Federal Register, 40 CFR, Part 763, October 30, 1987 were used for the analysis.*

The Test Report lists each sample identification number, area analyzed, sample volume, structure counts, analytical sensitivity, and the concentration of asbestos.

Copies of the count sheets are presented in Appendix A. Each count sheet contains sample information pertaining to structure identification, dimensions, magnification, filter size and type.

RJ Lee Group, Inc. is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for selected test methods for airborne asbestos fiber analysis (TEM), asbestos fiber analysis (PLM), New York State Department of Health Environmental Laboratory Approval Program (ELAP), and by the American Industrial Hygiene Association (AIHA). This test report only relates to the items tested. NVLAP accreditation does not imply endorsement by NVLAP or any agency of the U.S. Government. The report shall not be reproduced except in full.

These results are submitted pursuant to RJ Lee Group's current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions and no responsibility or liability is assumed for the manner in which the results are used or interpreted. Unless notified in writing to return the samples covered by this report, RJ Lee Group will store the samples for a period of thirty (30) days before discarding. A shipping and handling fee will be assessed for the return of any samples.

If you have any questions, feel free to call me.

Very truly yours,



Kimberly A. Allison
Manager-TEM Analysis

KAA/slb
Enclosures
*Received 8 samples

Test Report

Total Asbestos Structure Concentration

TEM AHERA Analysis

Project ATH205277

RJ Lee Group Sample Number	Client Sample Number	Filter Area (sq mm)	Volume† (Liters)	Area		Structures Chr Amp	Analytical Sensitivity † (S/sq. mm)	Concentration		Analysis Date
				Analyzed (sq. mm)	Chr			(S/sq. mm)	(S/cc)	
0127654HT	2-BGD-TEM-01	385	1200.00	0.0649	0	0	15.4	0.0049	<15.4*	5/26/2
0127655HT	2-BGD-TEM-02	385	1220.00	0.0649	0	0	15.4	0.0049	<15.4*	5/26/2
0127656HT	2-BGD-TEM-03	385	1230.00	0.0649	0	0	15.4	0.0048	<15.4*	5/26/2
0127657HT	2-BGD-TEM-04	385	1220.00	0.0649	1	0	15.4	0.0049	15.4	5/26/2
0127658HT	2-BGD-TEM-05	385	1230.00	0.0649	0	0	15.4	0.0048	<15.4*	5/26/2
0127659HT	2-BGD-TEM-11	385	Blank	N/A	-	-	-	-	-	-
0127660HT	2-BGD-TEM-12	385	Blank	N/A	-	-	-	-	-	-
0127661HT	2-BGD-TEM-13	385	Blank	N/A	-	-	-	-	-	-

† Volumes provided by Boelter & Yates, Inc. for Project 1941A-7237 were used to calculate analytical results and sensitivities.

† Analytical sensitivity is the calculated concentration based on one structure in the area analyzed.

Samples received on: Thursday, May 23, 2002

Chr - Chrysotile, Amp - Amphibole

* Results Less Than Analytical Sensitivity.

N/A - Sample not analyzed.

Authorized Signature

Kimberly A. Wilson
Kimberly A. Wilson, Manager-TEM Analysis

Date

Tuesday, May 28, 2002

RJ Lee Group, Inc.
Headquarters

350 Hochberg Road
Monroeville, PA 15146

Phone
Fax

(724) 325-1776
(724) 733-1799

Test Report Page: 1 of 1

FIBER COUNT SHEET

B = Bundle

C = Cluster

M = Matrix

Appendix A

**RJ LeeGroup , Inc
Count Sheet**

Client Name Boelter & Yates, Inc.
Project Number ATH205277
RJL Sample # 0127654HT
Client Sample # 2-BGD-TEM-01
Microscope 2000 FX
Accelerating Volt 120 Kv
Magnification 21000 X
Analyst JPM
EDS Disk

RJL QA Number HQ20698
Grid Openings 7
Total Asbestos 0
Total Non-Asbestos 0
Filter CE 385 mm²
Volume 1200.0 Liters
Grid Opening Area 0.0093 mm²

Field	Fiber	<5 µm	≥5 µm	Structure Type	Morph	EDS	Photo	SAED	Amphibole Type	Comment
1	0			NSD						
2	0			NSD						
3	0			NSD						
4	0			NSD						
5	0			NSD						
6	0			NSD						
7	0			NSD						

RJ Lee Group , Inc **Count Sheet**

Client Name Boelter & Yates, Inc.
Project Number ATH205277
RJL Sample # 0127655HT
Client Sample # 2-BGD-TEM-02
Microscope 2000 FX
Accelerating Volt 120 Kv
Magnification 21000 X
Analyst JPM
EDS Disk

RJL QA Number HQ20698
Grid Openings 7
Total Asbestos 0
Total Non-Asbestos 0
Filter CE 385 mm²
Volume 1220.0 Liters
Grid Opening Area 0.0093 mm²

Field	Fiber	< 5 µm	≥ 5 µm	Structure Type	Morph	EDS	Photo	SAED	Amphibole Type	Comment
1	0			NSD						
2	0			NSD						
3	0			NSD						
4	0			NSD						
5	0			NSD						
6	0			NSD						
7	0			NSD						

RJ LeeGroup , Inc Count Sheet

Client Name Boelter & Yates, Inc.
Project Number ATH205277
RJL Sample # 0127656HT
Client Sample # 2-BGD-TEM-03
Microscope 2000 FX
Accelerating Volt 120 Kv
Magnification 21000 X
Analyst JPM
EDS Disk

RJL QA Number HQ20698
Grid Openings 7
Total Asbestos 0
Total Non-Asbestos 0
Filter CE 385 mm²
Volume 1230.0 Liters
Grid Opening Area 0.0093 mm²

Field	Fiber			Structure	Morph	EDS	Photo	SAED	Amphibole	Comment
		< 5 µm	≥ 5 µm	Type					Type	
1	0			NSD						
2	0			NSD						
3	0			NSD						
4	0			NSD						
5	0			NSD						
6	0			NSD						
7	0			NSD						

RJ Lee Group, Inc
Count Sheet

Client Name Boelter & Yates, Inc.
Project Number **ATH205277**
RJL Sample # **0127657HT**
Client Sample # **2-BGD-TEM-04**
Microscope 2000 FX
Accelerating Volt 120 Kv
Magnification 21000 X
Analyst JPM
EDS Disk

RJL QA Number HQ20698
Grid Openings 7
Total Asbestos 1
Total Non-Asbestos 0
Filter CE 385 mm²
Volume 1220.0 Liters
Grid Opening Area 0.0093 mm²

Field	Fiber	< 5 µm	≥ 5 µm	Structure Type	Morph	EDS	Photo	SAED	Amphibole Type	Comment
1	0			NSD						
2	0			NSD						
3	0			NSD						
4	0			NSD						
5	0			NSD						
6	0			NSD						
7	1		X	Chrysotile					X	

RJ LeeGroup, Inc
Count Sheet

Client Name Boelter & Yates, Inc.
 Project Number ATH205277
 RJL Sample # 0127658HT
 Client Sample # 2-BGD-TEM-05
 Microscope 2000 FX
 Accelerating Volt 120 Kv
 Magnification 21000 X
 Analyst JPM
 EDS Disk

RJL QA Number HQ20698
 Grid Openings 7
 Total Asbestos 0
 Total Non-Asbestos 0
 Filter CE 385 mm²
 Volume 1230.0 Liters
 Grid Opening Area 0.0093 mm²

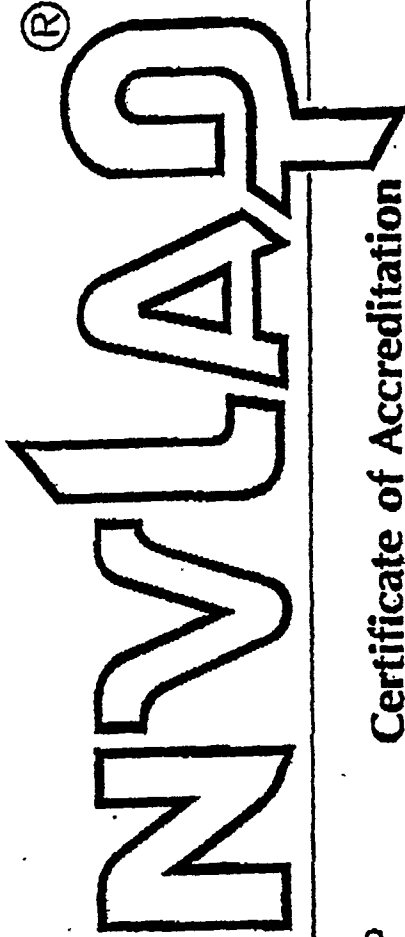
Field	Fiber	< 5 µm	≥ 5 µm	Structure Type	Morph	EDS	Photo	SAED	Amphibole Type	Comment
1	0			NSD						
2	0			NSD						
3	0			NSD						
4	0			NSD						
5	0			NSD						
6	0			NSD						
7	0			NSD						

Boelter & Yates, Inc.
N O T E S
▼

APPENDIX D

Certifications

United States Department of Commerce
National Institute of Standards and Technology



ISO/IEC GUIDE 25:1990
ISO 9002:1987

Certificate of Accreditation

RJ LEE GROUP, INC.
MONROEVILLE, PA

is recognized under the National Voluntary Laboratory Accreditation Program for satisfactory compliance with criteria established in Title 15, Part 285 Code of Federal Regulations. These criteria encompass the requirements of ISO/IEC Guide 25 and the relevant requirements of ISO 9002 (ANSI/ASQC Q92-1987) as suppliers of calibration or test results. Accreditation is awarded for specific services, listed on the Scope of Accreditation for:

BULK ASBESTOS FIBER ANALYSIS

June 30, 1998

Effective through

For the National Institute of Standards and Technology
NVLAP Lab Code: 101208-0



State of Illinois

A 85376

Department of Public Health

LICENSE, PERMIT, CERTIFICATION, REGISTRATION

The person, firm or corporation whose name appears on this certificate has complied with the provisions of the Illinois Statutes and/or rules and regulations and is hereby authorized to engage in the activity as indicated below.

JOHN R. LUMPKIN, M.D.
DIRECTOR

Issued under the authority of
The State of Illinois
Department of Public Health

EXPIRATION DATE 05/15/99	CATEGORY 5319	ID NUMBER 100-0412
MATTHEW MEYER MANAGEMENT PLANNER PROJECT MANAGER INSPECTOR AIR SAMPLING PROFESSIONAL		

BUSINESS ADDRESS

ALTERING THIS CERTIFICATE MAY RESULT IN LEGAL ACTION

MATTHEW MEYER

620 S STONE AVENUE
LAGRANGE IL 60525

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Department of Public Health

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EXPIRATION DATE 05/15/99	CATEGORY 5319	ID NUMBER 100-0412
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MATTHEW

MEYER

INSPECTOR

MANAGEMENT PLANNING
PROJECT MANAGER
AIR SAMPLING PROFESSIONAL



Occupational Training & Supply, Inc.

12601 S. Springfield • Alsip, IL 60803 • 708/385-1325

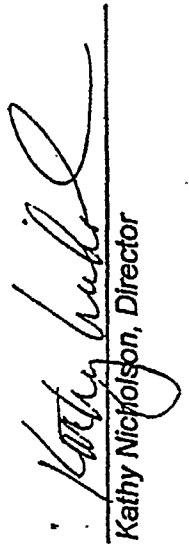
Matthew F. Meyer

344-60-4613

has successfully completed the 4 hour Asbestos Building Inspector Refresher course and has passed the competency exam with a minimum score of 70%. This course is accredited by the Illinois Department of Public Health and the Indiana Department of Environmental Management for purposes of accreditation in accordance with EPA 40 CFR 763, Asbestos Hazard Emergency Response Act (AHERA) and TSCA Title II.

Asbestos Building Inspector Refresher

Course Date: February 20, 1998
Expiration Date: February 20, 1999


Kathy Nicholson, Director

Exam Date: February 20, 1998
Certificate: ASR9802200414

1998

Boelter & Yates, Inc.

-Photo 1-
Amtico VAT - AVS 602
Dot Pattern, 1964
Sample #MFM-0698-001

MFM-0698-001

MFM-0698-001B

-Photo 2-
Amtico - Non-Asbestos
Solid Vinyl Flooring, 1967
Sample #MFM-0698-002

MFM-0698-002

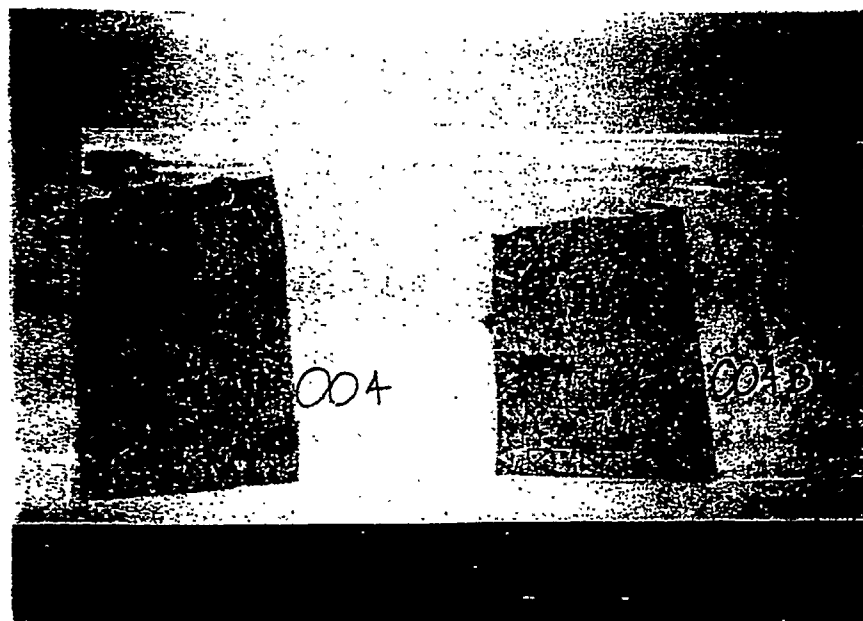
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Boelter & Yates, Inc.

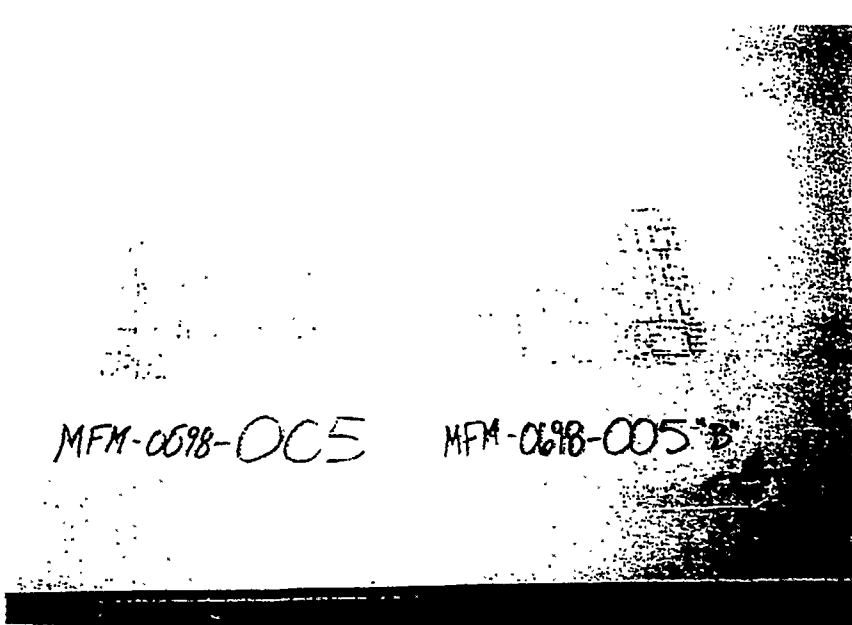
-Photo 3-
Amtico VAT - AVC 103
Metallic Series, Sparkling
Pearl 1967
Sample #MFM-0698-003



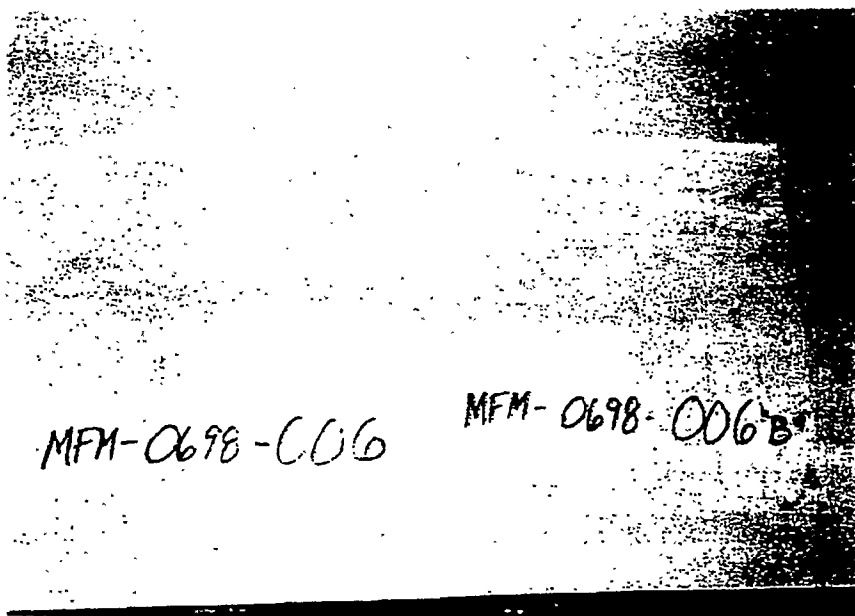
-Photo 4-
Congoleum Aztec - VA-412
Vinyl Asbestos Tile -
1970-1971
Sample #MFM-0698-004



Boelter & Yates, Inc.



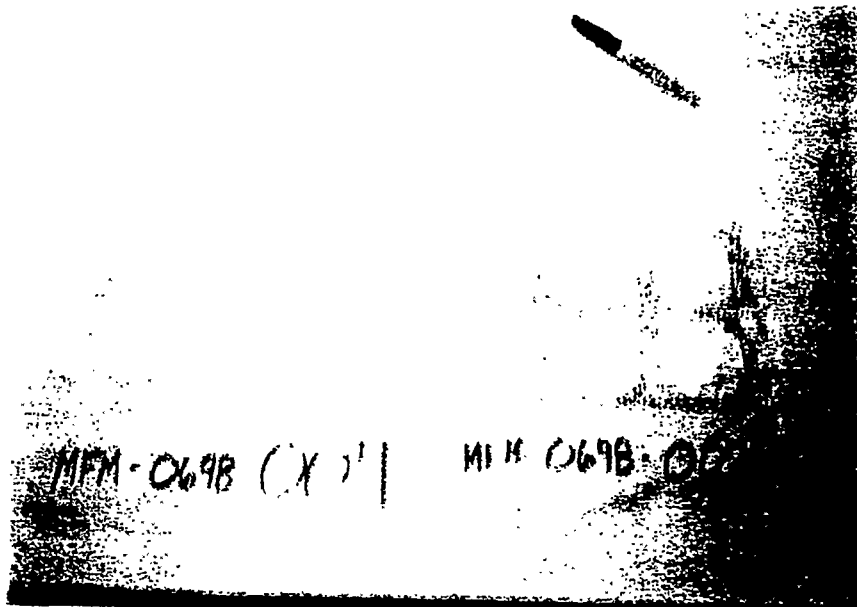
-Photo 5-
Congoleum Nairn - VA827
Vinyl Asbestos Tile -
1967-1969
MFM-0698-005



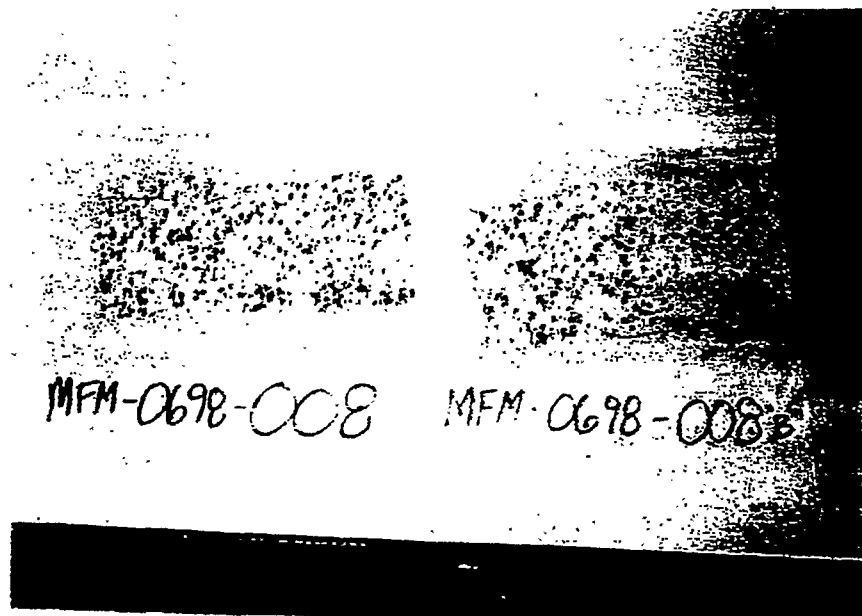
-Photo 6-
Amtico - Non-Asbestos
Solid Vinyl Flooring, 1967
Sample #MFM-0698-006

Boelter & Yates, Inc

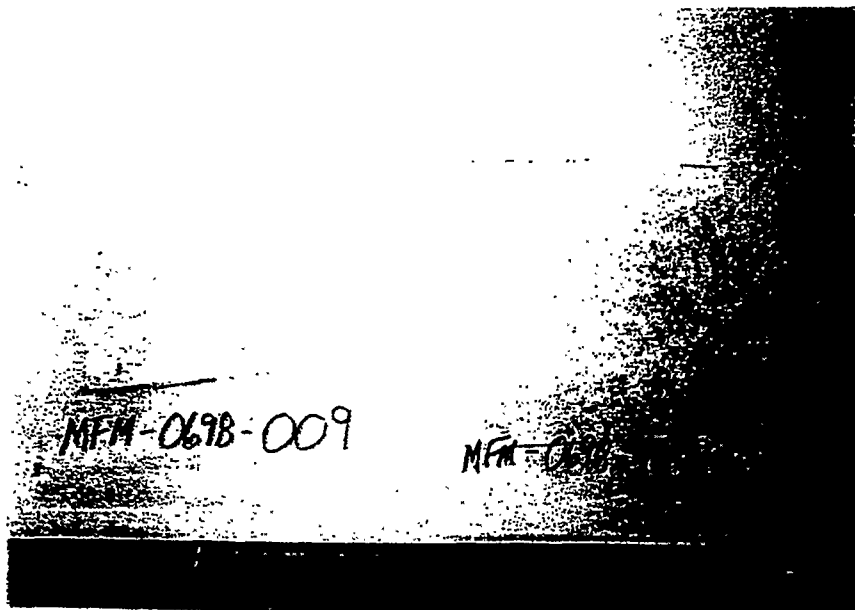
-Photo 7-
Congoleum Ventura -
VA-491
Vinylbest Tile - 1972
Sample #MFM-0698-007



-Photo 8-
Amtico - AVS 602
Dot Pattern - 1964
Sample #MFM-0698-007



Boelter & Yates, Inc



-Photo 9-
Kentile - Stock Number
Not Provided
Vinyl Asbestos Tile -
Year Not Provided
Sample #MFM-0698-009

798\EXPERT-W\19415385.PHO



Boelter & Yates
environmental engineers and scientists

PRIVILEGED AND CONFIDENTIAL
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Boelter & Yates, Inc.

1300 Higgins Road
Suite 301
Park Ridge, Illinois
60068-5772

847/ 692-4700

Fax
847/ 692-3127

**ASBESTOS CONTENT OF FLOOR TILES
CONGOLEUM LITIGATION RELATED**

Prepared for:

Segal, McCambridge, Singer & Mahoney

Prepared by:

Fred W. Boelter, CIH, PE

July 17, 1998
Project #1941A-5385

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**ASBESTOS CONTENT OF FLOOR TILES
CONGOLEUM LITIGATION RELATED**

EXECUTIVE SUMMARY

Objectives

The purpose of the study was to determine, with a 95% degree of confidence, the percentage of asbestos content in a selection of nine (9) older floor tiles.

Boelter & Yates, Inc.
N O T E S
▼

Background

The study was performed using intact floor tiles which were provided to the author. The study was conducted from June 4, 1998 through July 2, 1998. This report presents the results of the study described herein.

Sample Results

All floor tile samples were analyzed for asbestos with results reported at the >95% confidence level. Four (4) tiles did not have any asbestos, two (2) tiles had less than one percent (<1%) asbestos, and three (3) tiles had greater than one percent (>1%) asbestos. Sample results are presented in the accompanying tables.

METHODOLOGY

Bulk Sample Preparation

Floor tile samples were received from Mr. William Mahoney of Segal, McCambridge, Singer & Mahoney via Federal Express.¹ Some of the floor tiles were noted to have broken or cracked in transit.

As received, the tiles were identified by manufacturer on the reverse side. The floor tiles were scored and split in half. One half was retained and one half was logged for shipment to the laboratory. Notes prepared by Mr. Matt Meyer of Boelter & Yates are presented in Appendix B.

The samples were sealed, labeled and shipped via UPS Overnight² to the laboratory for analysis.

Laboratory Preparation of Samples

The tiles were prepared by the Chatfield method. Approximately one (1) gram of each sample was used for preparation. Samples were first ashed at 550°C and digested in 0.5N hydrochloric acid. The residue was then suspended in methanol and re-deposited onto a 47mm 0.4 micrometer (μ m) pore size polycarbonate filter. A portion of the filter with residue was then analyzed by various methods.

Asbestos Analysis by PLM

A portion of the residue was analyzed by polarized light microscopy (PLM) per EPA/600/R-93/116 point count method. The results of these analyses are presented in Table 1 in Appendix B.

Asbestos Analysis by XRD

The PLM analysis indicated the presence of carbonates and required further acid digestion for the X-Ray Diffraction (XRD) analyses. A portion of the residue analyzed by PLM was re-digested and re-deposited onto another polycarbonate filter. A modified NIOSH 9000 method was used for XRD analysis. Approximately 3 milligrams of this residue was then suspended in methanol and deposited onto a 0.45 μ m pore size silver membranes for XRD analysis. The silver membranes were then analyzed using a Philips XRD unit, equipped with graphite monochromatized copper radiation. The chrysotile diffraction peaks at 12.08 and 24.38 degrees two theta were used for quantitative analysis. The diffraction peak intensities were then compared to NBS 1866 Standard Reference Chrysotile specimens prepared on silver membranes and corrected for matrix absorption by examining the 38.12 degree silver diffraction peak. Standards were prepared with loadings of 20, 30, 50, 100, 200, and 500 micrograms (μ g) of NBS 1866 chrysotile.

Boelter & Yates, Inc.
N O T E S
▼

¹ Tracking Number 804008703912; Shipped on 5/27/98.

² Tracking Number 1Z17W6120140217794; Shipped on 6/4/98

Asbestos Content of Floor Tiles
Congoleum Litigation Related
Project #1941A-5385
Page 3

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Confidence Intervals

To achieve a 95% confidence level, three to six specimens were prepared of each sample and analyzed as above. Initially, three (3) specimens from each sample were prepared and analyzed by X-ray diffraction. Upper and lower 95% confidence levels were then calculated using the following formula:

Boelter & Yates, Inc.
N O T E S
▼

$$\bar{x} \pm z \frac{\sigma}{\sqrt{n}}$$

where,

$\sqrt{n}$ = number of values

z = "T" test coefficient

σ = standard deviation

$\bar{x}$ = mean value

Further analyses were deemed necessary for two samples: MFM-0698-002 and MFM-0698-004. Thus, three more specimens were prepared and analyzed for each of these samples. A 95% confidence level was then re-calculated for each re-analyzed sample.

The results are presented in the Discussion Section of this report. Laboratory results sheets are attached in Appendix A.

Laboratory Accreditation

The samples were shipped to R. J. Lee Group, Inc. who performed the analyses in their Monroeville, Pennsylvania laboratory. R. J. Lee is accredited for TEM analysis by the National Institute of Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program (NVLAP) as Lab #101208. R. J. Lee is also accredited for PCM analysis by the American Industrial Hygiene Association (AIHA) as Lab #8204.

DISCUSSION OF FINDINGS

Bulk Samples

Nine (9) floor tiles were provided to Boelter & Yates, Inc. for analysis to determine asbestos content. Information concerning the floor tile manufacturer, stock number, year of manufacture, and a description was provided on a label on the back side of each floor tile. This information was not provided to the laboratory. The floor tile descriptions and the samples submitted for analysis are shown in the following table:

Boelter & Yates, Inc.
 N O T E S
 Y

FLOOR TILES						
Manufacturer	Year	Stock Number	Dimensions	Label Description	Other Description	Number for Lab Submittal
Amtico VAT	1964	AVS 602	9x9x1/16	Dot Pattern VAT	Off white w/ light & dark brown spots	MFM-0698-001
Amtico	1967	Non-Asbestos	9x9x1/16	Solid vinyl flooring	Off white w/ yellow, pink & blue streaks	MFM-0698-002
Amtico VAT	1967	AVC 103	9x9x1/16	Metallic Series, Sparkling Pearl	Off white w/ gold & silver sparkles	MFM-0698-003
Congoleum Aztec	1970-1971	VA-412	12x12	Vinyl asbestos tile	Orange w/ star pattern	MFM-0698-004
Congoleum Nairn	1967-1969	VA-827	12x12	Vinyl asbestos tile	Grey w/ white splotches & rectangle pattern	MFM-0698-005
Amtico	1967	Non-Asbestos	9x9x1/16	Solid vinyl flooring	Off white w/ yellow, pink & blue streaks	MFM-0698-006
Congoleum Ventura	1972	VA-491	12x12	Vinylbest Tile	White & gold w/ hexagonal pattern	MFM-0698-007
Amtico	1964	AVS 602	9x9x1/16	Dot Pattern	Off-white w/ light & dark brown spots	MFM-0698-008
Kentile	not provided	not provided	12x12	Vinyl asbestos tile	Grey mottled pattern	MFM-0698-009

Laboratory Analytical Results

The floor tiles submitted and the results of laboratory analysis are shown in the following table:

Boelter & Yates, Inc.
N O T E S

FLOOR TILES						
Photo	Manufacturer	Year	Description on Label	Sample Number (MFM-0698-J)	Asbestos Present @ > 1%	Asbestos Content
1	Amtico VAT	1964	Vinyl asbestos tile	001	Yes	1.8
2	Amtico	1967	Non-Asbestos	002	No	0.0
3	Amtico VAT	1967	Vinyl asbestos tile	003	No	0.4
4	Congoleum Aztec	1970-1971	Vinyl asbestos tile	004	No	0.02
5	Congoleum Naim	1967-1969	Vinyl asbestos tile	005	No	0.0
6	Amtico	1967	Non-Asbestos	006	No	0.0
7	Congoleum Ventura	1972	Vinylbest tile	007	No	0.0
8	Amtico	1964	Vinyl asbestos tile	008	Yes	4.7
9	Kentile	not provided	Vinyl asbestos tile	009	Yes	4.0

The laboratory report is provided in Appendix A. Photographs of each sample are provided in Appendix C.

CONCLUSIONS

Nine floor tile samples were analyzed for bulk asbestos content by an accredited laboratory using USEPA recognized methods and procedures. In order to obtain a 95% degree of confidence in the analytical results, each sample was analyzed by the laboratory three to six times. Results of analysis identified the following:

Boelter & Yates, Inc.
N O T E S
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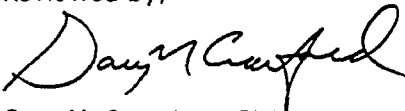
- No asbestos was detected in four of the floor tile samples. One of these non-asbestos tiles was identified by the manufacturer as "vinyl asbestos tile" and one of the tiles was identified as "vinylbest tile." The remaining two non asbestos tiles were labeled as non-asbestos.
- A small percentage (<1%) of asbestos was detected in two of the floor tile samples. Both of these types of tile were identified by the manufacturer as vinyl asbestos tile.
- Greater than 1% asbestos was detected in the remaining three samples. These tiles were identified by the manufacturer as vinyl asbestos tile.

Respectfully submitted,



Frederick W. Boelter, CIH, PE

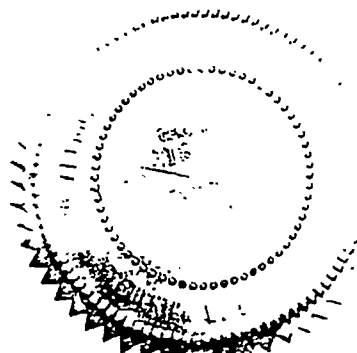
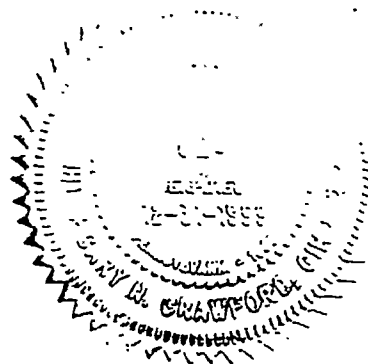
Reviewed by,



Gary N. Crawford, CIH

Enclosures

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Boelter & Yates, Inc.

N O T E S
▼

APPENDIX A

Laboratory Report

RJ Lee Group, Inc.

350 Hochberg Road
Monroeville, PA 15146
Tel: (724) 325-1776
Fax: (724) 733-1799

The Materials Characterization Specialists

July 7, 1998

Mr. Fred W. Boelter
Boelter & Yates, Inc.
1300 Higgins Road, Suite 301
Park Ridge, IL 60068-5772

RJ Lee Group Project ATH806333

Mr. Boelter,

Nine floor tile samples were sent to the RJ Lee Group, Inc. on June 8, 1998 for determination of asbestos content by Boelter & Yates, Inc. The samples were analyzed by polarized light microscopy (PLM) and by X-ray diffraction (XRD) and the results are presented herein.

The tiles were prepared per the Chatfield method. Approximately one gram of each sample was used for preparation. Samples were first ashed at 550 °C and digested in 0.5N hydrochloric acid. The residue was then suspended in methanol and re-deposited onto a 47 mm 0.4-micrometer (μm) pore size, polycarbonate filter. A portion of the residue was then analyzed by PLM per the EPA/600/R-93/116 point count method. The results of these analyses are presented in Table 1.

The PLM analysis indicated the presence of carbonates and required further acid digestion for the XRD analyses. Thus, a portion of the residue analyzed by PLM was re-digested and re-deposited on to another polycarbonate filter. A modified NIOSH 9000 method was used for XRD analysis. Approximately 3 milligrams of this residue was then suspended in methanol and deposited on to 0.45 μm silver membranes for XRD analysis. The silver membranes were then analyzed using a Philips XRD unit, equipped with graphite monochromatized copper radiation. The chrysotile diffraction peaks at 12.08 and 24.38 degrees two theta were used for quantitative analysis. The diffraction peak intensities were then compared to NBS 1866 Standard Reference Chrysotile specimens prepared on silver membranes and corrected for matrix absorption by examining the 38.12 degree silver diffraction peak. Standards were prepared with loadings of 20, 30, 50, 100, 200, and 500 micrograms (μg) of NBS 1866 chrysotile.

To achieve a 95 % confidence level, three to six specimens were prepared of each sample and analyzed as above. The results are presented in Tables 2 and 3.

Sincerely,



Boyd Clark
Technical Manager X-ray Diffraction

Enclosures

RJ Lee Group, Inc.

350 Hochberg Road
Monroeville, PA 15146
Tel: (724) 325-1776
Fax: (724) 733-1799

The Materials Characterization Specialists

July 7, 1998

Boelter & Yates, Inc.
1300 Higgins Road
Suite 301
Park Ridge, IL 60068-5772
Attn: Mr. Fred W. Boelter

RE: PLM Point-Count Analysis
Job: ATH806333
Customer Purchase Order Number: Fred Boelter

Dear Mr. Boelter:

As per your request, the samples were point-counted by polarized light microscopy (PLM). The samples were low-temperature-ashed, treated with .5N hydrochloric acid to remove any carbonates, and were ground in a mortar and pestle. Eight mounts were made from the ground material and point-counted by the EPA/600/R-93/116 methodology, which calls for a total of 400 points (50 per slide) on material. A cross-hair reticle and mechanical stage were used for counting. Stops were made at 1-millimeter (mm) intervals in both the x and y directions which superimposed a grid of points on 1-mm squares on the mounts. This eliminated any bias in the counting and provides a systematic selection of points. The results are as follows:

Table 1

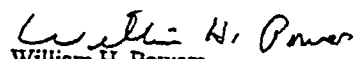
<u>Client #</u>	<u>RJ Lee Group #</u>	<u>Weight Loss, %</u>	<u>% Chrysotile</u>
1	90677HT	77.5	1.8
2	90678HT	87.2	0.0
3	90679HT	83.3	0.4
4	90680HT	91.5	0.02
5	90681HT	87.3	0.0
6	90682HT	82.9	0.0
7	90683HT	95.9	0.0
8	90684HT	52.2	4.7
9	90685HT	52.8	4.0

RJ Lee Group, Inc. is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for selected test methods for airborne asbestos fiber analysis (TEM) and asbestos fiber analysis (PLM). RJ Lee Group's Monroeville laboratory is accredited by the American Industrial Hygiene Association for asbestos, silica and metals.

These results are submitted pursuant to RJ Lee Group's current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions and no responsibility or liability is assumed for the manner in which the results are used or interpreted. Unless notified in writing to return the samples covered by this report, RJ Lee Group will store the samples for a period of ninety (90) days before discarding. A shipping and handling fee will be assessed for the return of any samples.

If you have any questions on this report or if we can be of further assistance, please feel free to call me.

Sincerely,


William H. Powers
Manager, Bulk Materials Analysis
WHP/hg

RJ LeeGroup, Inc.

350 Hochberg Road Monroeville, PA 15146

Voice 724/325-1776 Fax 724/733-1799

LABORATORY REPORT

Table 2

Boelter & Yates, Inc.
1300 Higgins Road
Park Ridge, IL 60068-5772
Attn: Mr. Fred W. Boelter
Phone: (800) 692-3127

REPORT DATE: July 7, 1998
SAMPLES RECEIVED: June 8, 1998
RJ LEE GROUP JOB NO.: ATH906333

ANALYSIS: Chrysotile in Floor Tile
METHODS: X-Ray Diffraction, NIOSH 9000

Sample Identification		Weight of Deposit (mg/filter)	Masses of Chrysotile for each Diffraction Peak (mg/filter)		Weight Percent of Chrysotile for each Diffraction Peak			Percent Weight Loss	Weight Percent Chrysotile in Bulk
Client I.D.	RJ Lee Group		12.1°	24.4°	12.1°	24.4°	Avg		
MFM-0698-001	90677 HT	3.15	0.824	0.895	26.2	28.4	27.3	87.4	3.45
MFM-0698-001	90677 HT	2.85	0.814	0.823	28.5	28.8	28.7	87.4	3.63
MFM-0698-001	90677 HT	2.96	0.783	0.851	26.4	28.7	27.6	87.4	3.48
MFM-0698-002	90678 HT	3.30	0.006	0.006	0.2	0.2	0.2	89.3	0.02
MFM-0698-002	90678 HT	3.42	0.002	0.002	0.1	0.1	0.1	89.3	0.01
MFM-0698-002	90678 HT	3.44	0.000	0.000	0.0	0.0	0.0	89.3	0.00
MFM-0698-002	90678 HT	3.24	0.000	0.003	0.0	0.1	0.0	89.3	0.00
MFM-0698-002	90678 HT	3.61	0.009	0.009	0.2	0.2	0.2	89.3	0.03
MFM-0698-002	90678 HT	3.56	0.017	0.005	0.5	0.2	0.3	89.3	0.03
MFM-0698-003	90679 HT	2.95	1.001	0.856	33.9	29.0	31.5	84.4	4.92
MFM-0698-003	90679 HT	2.93	0.661	0.616	22.6	21.0	21.8	84.4	3.41
MFM-0698-003	90679 HT	2.83	0.816	0.700	28.8	24.7	26.8	84.4	4.19
MFM-0698-004	90680 HT	2.94	0.364	0.352	12.4	11.9	12.1	93.8	0.91
MFM-0698-004	90680 HT	2.82	0.324	0.325	11.5	11.5	11.5	93.8	0.86
MFM-0698-004	90680 HT	3.00	0.352	0.317	11.7	10.5	11.1	93.8	0.84
MFM-0698-004	90680 HT	1.84	0.222	0.247	12.1	13.4	12.8	93.8	0.96
MFM-0698-004	90680 HT	2.05	0.298	0.249	14.5	12.2	13.3	93.8	1.00
MFM-0698-004	90680 HT	2.42	0.341	0.329	14.1	13.6	13.8	93.8	1.04

Stephen A. Brown

Stephen A. Brown
Senior Scientist, X-ray Diffraction

7/7/98
Date

The results are submitted pursuant to RJ Lee Group's current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions. No responsibility or liability is assumed for the manner in which the results are used or interpreted. Unless notified in writing to return the samples covered by this report, RJ Lee Group will store the samples for a period of thirty (30) days before discarding. A shipping and handling fee will be assessed for the return of any samples.

RJ LeeGroup, Inc.

350 Hochberg Road Monroeville, PA 15146
Voice 724/325-1776 Fax 724/753-1799

LABORATORY REPORT Table 3

Boelter & Yates, Inc.
1300 Higgins Road
Park Ridge, IL 60068-5772
Attn: Mr. Fred W. Boelter
Phone: (800) 692 - 3127

REPORT DATE: July 7, 1998
SAMPLES RECEIVED: June 8, 1998
RJ LEE GROUP JOB NO.: ATH806333

ANALYSIS: Chrysotile in Floor Tile
METHODS: X-Ray Diffraction, NIOSH 9000

Sample Identification		Weight of Deposit (mg/filter)	Masses of Chrysotile for each Diffraction Peak (mg/filter)		Weight Percent of Chrysotile for each Diffraction Peak			Percent Weight Loss	Weight Percent Chrysotile in Bulk
Client I.D.	RJ Lee Group		12.1°	24.4°	12.1°	24.4°	Avg		
MFM-0698-005	90681 HT	3.34	0.019	0.020	0.6	0.6	0.6	87.6	0.07
MFM-0698-005	90681 HT	3.47	0.026	0.015	0.7	0.4	0.6	87.6	0.07
MFM-0698-005	90681 HT	3.53	0.014	0.007	0.4	0.2	0.3	87.6	0.04
MFM-0698-006	90682 HT	3.54	0.010	0.000	0.3	0.0	0.1	82.4	0.03
MFM-0698-006	90682 HT	3.38	0.014	0.013	0.4	0.4	0.4	82.4	0.07
MFM-0698-006	90682 HT	3.38	0.009	0.015	0.3	0.4	0.4	82.4	0.06
MFM-0698-007	90683 HT	2.31	0.217	0.225	9.4	9.7	9.5	96.5	0.33
MFM-0698-007	90683 HT	2.98	0.162	0.205	5.4	6.9	6.2	96.5	0.21
MFM-0698-007	90683 HT	2.32	0.161	0.175	6.9	7.5	7.2	96.5	0.25
MFM-0698-008	90684 HT	3.41	0.483	0.439	14.2	12.9	13.5	82.2	2.41
MFM-0698-008	90684 HT	3.38	0.336	0.370	9.9	11.0	10.4	82.2	1.86
MFM-0698-008	90684 HT	3.49	0.542	0.475	15.5	13.6	14.6	82.2	2.59
MFM-0698-009	90685 HT	3.28	0.531	0.483	16.2	14.7	15.4	79.7	3.13
MFM-0698-009	90685 HT	3.44	0.503	0.494	14.6	14.4	14.5	79.7	2.94
MFM-0698-009	90685 HT	3.47	0.504	0.422	14.6	12.2	13.4	79.7	2.71

Stephen A. Brown

Stephen A. Brown
Senior Scientist, X-ray Diffraction

7/7/98

Date

The results are submitted pursuant to RJ Lee Group's current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions. No responsibility or liability is assumed for the manner in which the results are used or interpreted. Unless notified in writing to return the samples covered by this report, RJ Lee Group will store the samples for a period of thirty (30) days before discarding. A shipping and handling fee will be assessed for the return of any samples.

Boelter & Yates, Inc.

N O T E S

APPENDIX B

Chain of Custody Forms and Sample Handling Documentation

Boelter & Yates, Inc.

Environmental Engineers and Scientists

1300 Higgins Road, Suite 301

Park Ridge, IL 60068-5772

847/692-4700 • Fax 847/692-3127

Date: 6-4-98

Project No: 1941A 5385

CONGOREUM - FLOOR TILE

To: FILE

Re: FLOOR TILE SAMPLE
HANDLING + TRANSMITTAL
TO LABORATORY FOR
ANALYSIS

Attn: _____

On June 3, 1998, I (Matt Meyer) met with Fred Boelter regarding the Congoreum project. Fred had received a box of floor tile samples (total of ⁹~~10~~ NINE full floor tile) via Federal Express on May 28, 1998. The box of samples were received from Mr. William Mahoney with the firm of Segal McCombridge Singer et al. The box of samples remained in Fred's office until we met yesterday (6-3-98).

Fred handed me the box of samples and instructed me to properly transmit the sample to R.J. LEE Laboratory for quantitative asbestos analysis. A unique I.D. number was to be assigned to each sample, and a photograph taken of each sample. About one-half of each full floor tile was to be submitted to the laboratory. Our office would retain the other half of each tile.

This log and the attached Bulk Sample Laboratory Request Sheets (and photograph) document the sample handling & transmittal.

Copies: _____

Boelter & Yates, Inc.

Matthew F. Meyer

Boelter & Yates, Inc.

Environmental Engineers and Scientists

1300 Higgins Road, Suite 301

Park Ridge, IL 60068-5772

847/692-4700 • Fax 847/692-3127

Date: 6-4-98

Project No: Concolum
19414 5385

To: file

Re: _____

Attn: _____

Int'l

I took the samples to a conference room in our office today, used a utility knife to score the floor tile in half, assigned sample I.D. #'s, placed the samples in zip-lock bags, took a photograph of each and logged the samples in. The one-half of each sample that we retained has the same sample number as the sample submitted to the lab except for a "B" added on to the end of the sample #. It was noted that some of the floor tile samples had "cracked" into a few different pieces. - all the floor tile was still there (it looked like a puzzle) - About $\frac{1}{2}$ of the cracked pieces were sent to lab - we retained the other $\sim \frac{1}{2}$

* Utility knife was wet-wiped between each "cut".

It was also noted that a label had been placed on the back side of each floor tile which identified the manufacturer code for the type of tile. Our office retained the $\sim \frac{1}{2}$ of tile with the label - It was not sent to the laboratory.

Sample log follows on next sheet

Copies:

Boelter & Yates, Inc.

Matthew F. Meyer

Boelter & Yates, Inc.

Environmental Engineers and Scientists

Date: 6-4-98

Project No: Congoleum
1941A-5385

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Park Ridge, IL 60068-5772
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To: file

Re: _____

Attn: _____

<u>Sample #</u>	<u>Description</u>	<u>MANUFACTURERS LABEL INFO</u>	<u>COMMENTS</u>
MF-0698- 5 AND 005 "B"	FLOOR TILE - 12"X12" grey w/ white splotches & rectangle pattern	Congoleum Naich RANCH TILE VA-B27 Vinyl Asbestos TILE 1967-69	Tile cracked, but intact - black splotches (MASTIC?) on back side - tile w/ splotches NOT SENT TO LAB
MF-0698- 006 AND 006 "B"	Floor Tile - 9"x9" off white w/ yellow pink & blue streaks	AMTICO 1967 Solid Vinyl Flooring 9x9 x 1/16	Tile a little dirty & discolored
NON-ASBESTOS/			
MF-0698- 007 AND 007 "B"	Floor Tile - 12"x12" white & gold w/ hexagon (?) pattern	Congoleum Ventura VINYLBEST TILE VA-491 1972	Tile cracked but intact
MF-0698- 008 AND 008 "B"	Floor Tile - 9"x9" off-white w/ light & dark brown spots	AMTICO 1964 VAT DOT pattern 9x9 x 1/16 AVS 602	Tile cracked but intact

Copies: _____

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Park Ridge, IL 60068-5772
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To: file

Re: _____

(cont'd)

Attn: _____

Sample #	Description	MANUFACTURERS LABEL INFO	COMMENTS
MM-0698-	FLOOR TILE -	KENTILE	Tile was cracked
009 AND	12" x 12" grey	Vinyl ASBESTOS TILE	into 3 different
009 "B"	mottled pattern	12 x 12 x 1/8	pieces, but
			complete

Samples were placed in box and submitted to R.J. Yee Laboratory via UPS overnight.

Laboratory Analysis Request sheets w/ chain of custody signature lines were submitted along w/ samples (see attached) -

These log in sheets were not sent to lab.

Matthew F. Meyer
Licensed Asbestos Bldg. Inspector
100-0412

JUNE 4, 1998

Copies:

Boelter & Yates, Inc.

Matthew F. Meyer

** call Fred Boelter to discuss samples
BEFORE ANALYSIS

FRED BOELTER
Yellow & Yellow, Inc.
300 Highway Road, Suite 301
Ark Ridge, IL 60008-5772

DEQ Project #
Fax Pending
Phone Pending
Page with Results

Refined by: *Wanda J. Boelter*
Refined by:

Method of Custody:

Sample #	HSA Group #	Analytical Results	Material Description	Chemical Elements	Conductivity	Comments
FM-0698-001			Floor Tile - 9" x 9" off-white w/ light & dark brown spots			
FM-0698-002			Floor Tile - 9" x 9" off-white w/ yellow, pink, and blue streaks			
FM-0698-003			Floor Tile - 9" x 9" off-white w/ gold & silver sparkles			
FM-0698-004			Floor Tile - 12" x 12" orange w/ star pattern			
FM-0698-005			Floor Tile - 12" x 12" grey w/ white spots and rectangle pattern			
FM-0698-006			Floor Tile - 9" x 9" off-white w/ yellow, pink, & blue streaks			
FM-0698-007			Floor Tile - 12" x 12" white & gold w/ shaped pattern			
FM-0698-008			Floor Tile - 9" x 9" off-white w/ light & dark brown spots			

Boelter & Yates, Inc.

For Lab Use Only

Page 2 of 2

Profit π _____

Cost c _____

Order quantity q _____

Name: **FRED BOETER** (NAME)
 Office: **At Yonkers, Inc.**
 300 Hightown Road, Suite 301
 York Ridge, IL 60098-5772

REC Project #
 Date
 For Review ☐
 Phone Review ☐
 Face with Results ☐

Type of Analysis:
 Method:
 Summary:

Date:
 By:
 Checked by:

Requalified by:
 Requalified on:

Ref:
 Date:

Sample #	HSA Group #	Analysis Status	Analysis Description	Analysis Location	Analysis Date	Analysis Time
FM-0698-009			Floor Tile - 12" x 12"			
			grey mottled pattern			

ANALYSIS

Boelter & Yates, Inc

N O T E

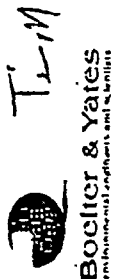


APPENDIX C

Photographs

APPENDIX E

PLM Bulk Sample



Bocker & Yates
Environmental Services, Inc.

TL-M

AIR SAMPLE ANALYSIS DATA/CHAIN OF CUSTODY SHEET
DATE: 5-21-02
PROJECT NO.: 1941A-7237
TURNAROUND TIME: 8HR 12HR 24HR 72HR

COLLECTED BY: Matthew F. Whyte
ANALYZED BY: Matthew F. Whyte

Page 1 of 1

SAMPLE ID NO.	SAMPLE TYPE	WORKER NAME AND SS NO. OR LOCATION	ACTIVITY	RESPIRATOR TYPE
2-BGD-TEM-01	Background	Bathroom - NE section	Background - Test #2	
02		Bathroom - SE section		
03		Bathroom - W section		
04		Bathroom Kitchen - East		
05		Kitchen - SW section		
11	BLANK		BLANKS	
12				
2-BGD-TEM-13				

ANALYTICAL DATA ANALYSIS REQUIRED:

Sample ID No.*	Start Time	Stop Time	Total Time (minutes)	Initial Flow Rate (L/min)	Final Flow Rate (L/min)	Total Volume (Liters)	Fibers/Field	Fibers/mm ² (blank corr)	LOQ (Fibers/cm ²)	Graticule Field Area mm ²	Structures/mm ² (TEM only)	Fibers/cm ² (blank corr)
2-BGD-TEM-01	1700	1900	120	10.0	10.0	1,200						
02	1701	1903	122	10.0	10.0	1,220						
03	1702	1905	123	10.0	10.0	1,230						
04	1704	1906	122	10.0	10.0	1,220						
05	1705	1908	123	10.0	10.0	1,230						
11												
12												
2-BGD-TEM-13												

NOTES:

APR	Air Purifying Respirator	ENV	Half Mask	PREP Site Preparation
BGD	Background	EX	Excursion	IC Inside Containment
BGLO	Bag Load Out	FB	Field Blank	OA Outside Area
CL	Clearance	FF	Full Face	OC Outside Containment
CUN	Clean Up	GLBG	Glove Bag	PAFR Powered Air Purifying Respirator
DCU	Decon			SA Supplied Air
				SLB Sealed Lab Blank

NOTE: Sampling media used is 25mm 0.8u MCE filter unless otherwise noted.
LOQ = Limit of Quantitation: The method assumes the lowest quantifiable concentration is 10 fibers/100 fields and is volume dependent. Samples below the LOQ are non-quantifiable and therefore are non-reliable.
*Sample ID Example: RML (sample initials), 04 = Month; 01 = Year; 01, 02, etc. = Sequence No.

Relinquished by: <u>Matthew F. Whyte</u> Company: <u>Bocker & Yates</u> Date/Time: <u>5-22-02</u>	Received by: <u>Matthew F. Whyte</u> Company: <u>Bocker & Yates</u> Date/Time: <u>5-22-02</u>
Relinquished by: _____ Company: _____ Date/Time: _____	Received by: _____ Company: _____ Date/Time: _____
Relinquished by: _____ Company: _____ Date/Time: _____	Received by: _____ Company: _____ Date/Time: _____

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