

PLAINTIFF'S EXHIBIT

CON-83

INSTALLATION
1970 VINTAGE CONGOLEUM
VINYL ASBESTOS TILE

June 20, 2002
BYI Project #1941A-7237



Boelter & Yates
environmental engineers and scientists



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ISOLATION TEST CHAMBER**

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INSTALLATION
1970 VINTAGE CONGOLEUM VINYL ASBESTOS TILE
ISOLATION TEST CHAMBER

EXECUTIVE SUMMARY

Objectives

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

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N O T E S

Background

The test was performed using two different patterns of 1970's vintage, new-old-stock (N.O.S.) Congoleum VATs. The tiles were obtained from Mr. Don Golemme of the Congoleum Corporation located in Mercerville, New Jersey. The tiles had not previously been used.

The test was conducted in an isolation chamber to eliminate outside influences. The test was conducted to represent the activities of a worker who would be installing flooring materials utilizing pre-1970's techniques. Sampling was performed to reflect the entire term of the activities required to install the floor.

The test was performed on May 14, 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 isolation test chamber 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.

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 Gilian 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.

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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 UPS, 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.

"Average Room Air" Samples

The isolation chamber was subdivided into 1,170 one cubic foot (1ft³) modules. For purposes of identification, each module was assigned a discrete, consecutive number.

To determine the "average room air" concentration, eight (8) of the modules were selected using a random number generator. A sample cassette was located in the center of the respective module 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 isolation chamber and five outside the isolation chamber) following AHERA Protocol. Three (3) blanks were also reserved. Analysis was performed by transmission electron microscopy (TEM) following AHERA Protocol.

Just prior to collecting the samples, a "leaf blower" was utilized to aggressively disturb the isolation chamber's interior surfaces. During the sampling, a 19-inch diameter fan was used to circulate the air in the room.

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 UPS, and arrived at the laboratory by next day air.

PCM Light Microscopy Analysis

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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 isolation chamber 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).

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 as seen through the plexiglass viewing window.

DISCUSSION OF FINDINGS

Isolation Test Chamber

Testing was performed in an Isolation Test Chamber built at the offices of the Hillcrest Construction Corporation. The chamber is 10 feet wide by 13 feet deep and is 9 feet in height. The chamber was constructed of 6 mil polyethylene sheeting to physically separate the activity being tested from "outside of the chamber" influences. The chamber configuration is shown in Figure 1.

The chamber was a static environment. During the test, there was no air movement into the chamber and there was no air movement out of the chamber. Entry into the chamber was only through an access airlock.

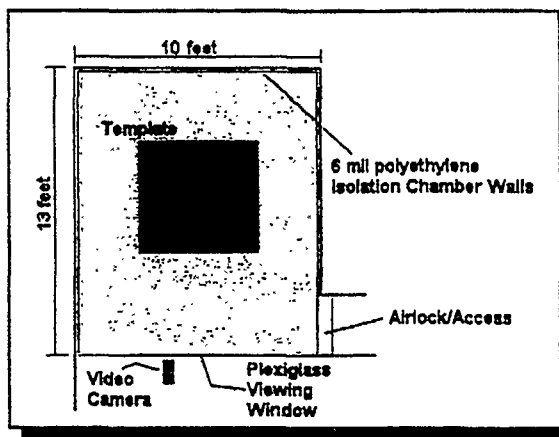


Figure 1 - Isolation Test Chamber

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Background Sampling Results

Prior to conducting any tests, the isolation chamber was systematically cleaned. Following the cleaning, a series of background samples were analyzed from five (5) area sampling locations inside the chamber in accordance with AHERA protocol.

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

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

STATISTICAL FUNCTION *****	Aggressive Air AHERA Method	
	AHERA TEM (s/mm ²) - Background for 5/13 - *****	NIOSH 7400 PCM (f/cc) - Background for 5/13 - *****
MAXIMUM	<15.8	0.032
AVERAGE	<15.8	0.023
MINIMUM	<15.8	0.005
STAND. DEV.	0.0	0.010
COUNT	4	5

The levels met the AHERA Clearance Criteria of an average of less than seventy structures per millimeter squared ($<70 \text{ s/mm}^2$) for the 4 samples analyzed and the room was considered clean. Note: The filter in one AHERA TEM sample cassette was damaged and was unable to be analyzed. Results are shown in the spreadsheet presented in Appendix B.

Congoleum VAT

About thirty (30) tiles of two (2) different Congoleum Corporation patterns were available for the testing. 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 2) 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 analyzed¹. The asbestos content of the Aztec VAT was determined to be 0.02% chrysotile. See Appendix E for bulk sample data.

A second style (See Figure 3) 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 analyzed². The asbestos content of the Ventura VAT was determined to be 0.0% chrysotile. See Appendix E for bulk sample data.

Tile Installation Test

There were a limited number of N.O.S. Congoleum vinyl asbestos tile available for the testing. Consequently, it was decided to conduct testing in such a way that the tile could be reused for several tests. Also, since there were a limited number of tile, the scale of the testing was limited to the number of tile available. The test was performed in a prescribed area typical of a small

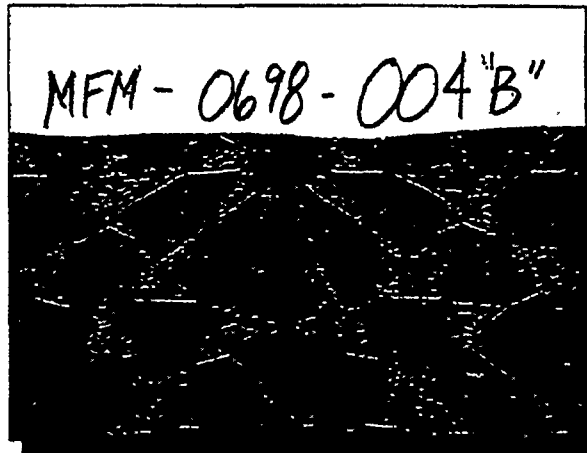


Figure 2 - Congoleum Aztec vinyl asbestos tile.

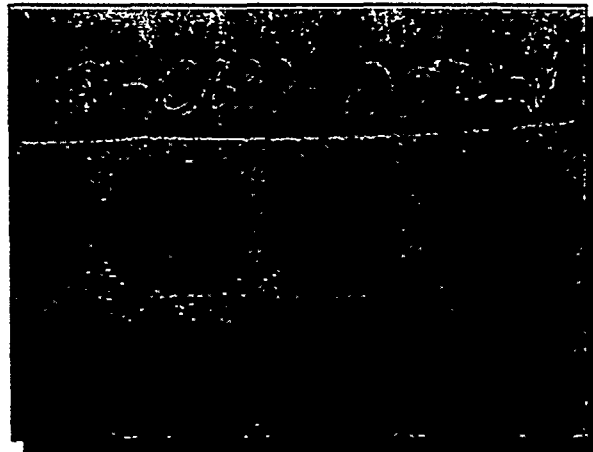


Figure 3 - Congoleum Ventura vinyl asbestos tile.

¹ Refer to Boelter & Yates report entitled, "ASBESTOS CONTENT OF FLOOR TILES", dated July 17, 1998, Project #1941A-5385

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

bathroom or elevator cab. Two templates, A & B, were created. Template A was 5.5 feet by 5.5 feet and template B was 5.25 feet by 5.25 feet (27.5 square feet) in size. The templates would provide the "wall edges" around which and the "door opening" through which the installer would work (see Figure 4).

The activity was performed in an isolation test chamber. This would represent a worst case as there was no ventilation in the chamber.

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 isolation chamber except the author and his helper.

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	Clean floor and sweep floor of debris	
3	Measure off and snap a center line	
4	Trowel adhesive on one half of floor and then on the second half of floor	Figure 5
5	Allow adhesive to "tack up"	
6	Lay whole tiles	
7	Measure cut and lay partial tiles	Figure 6 & 7
8	Clean tools and cleanup debris	

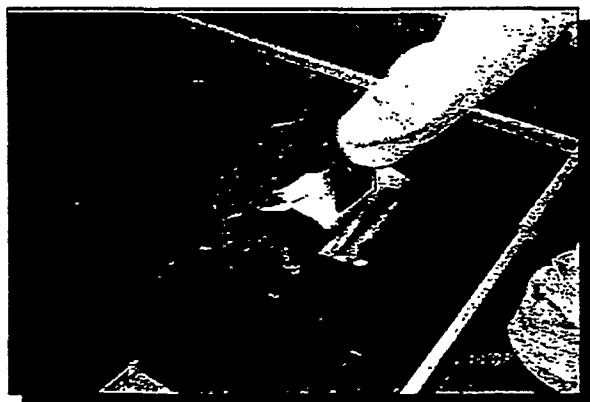


Figure 5 - Adhesive application. Template A.

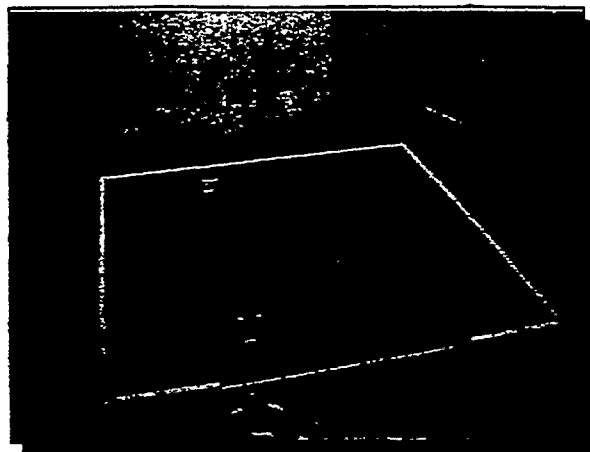


Figure 4 - Template A for use with adhesive. In the background is the underside of template B which was used for VAT installation.

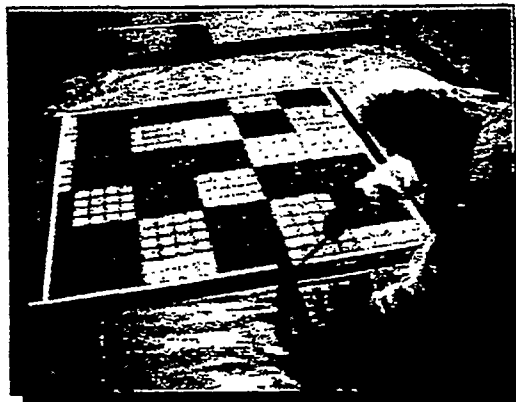


Figure 6 - Using a tile cutter.

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NOTES



Figure 7 - Using a tile cutter.

Figure 8 shows the finished floor after all the tile has been laid. In all, a total of twenty (20) whole tiles were placed and seventeen (17) cuts were made for tile to fit around the perimeter.

Following the completion of the testing, the tiles were matched and reassembled by taping the reverse side with clear packaging tape. The whole tiles and reassembled tiles were placed into a box for use with another test.

Additionally, the technique of cutting VAT with a utility knife and snips after heating was demonstrated. This technique was used at the "door" to make cuts to fit around trim (Figure 7). During the testing, the tiles which were cut were labeled such that they could be reassembled. Also, the tiles were not placed on template A which had the adhesive but rather on template B which was dry.

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N O T E S

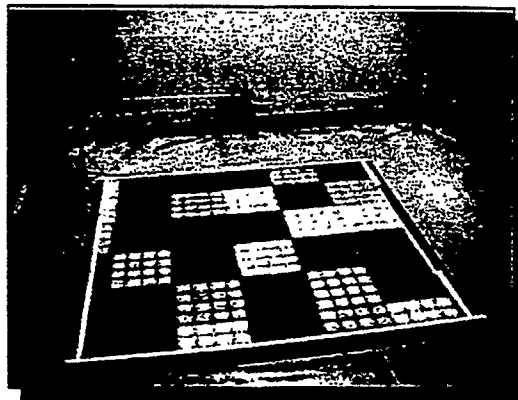


Figure 8 - Finished floor. Template B.

Sampling Results During Test

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

STATISTICAL FUNCTION	5/14/01 - PCM Total f/cc by NIOSH 7400 -		5/14/01 - TEM Asbestos f/cc by NIOSH 7402	
	- Personal Samples -	- Average Room Air -	- Personal Samples -	- Average Room Air -
MAXIMUM	0.035	0.039	0.0	0.0
AVERAGE	0.032	0.031	0.0	0.0
MINIMUM	0.030	0.023	0.0	0.0
STAND. DEV.	0.002	0.005	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, however, 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.

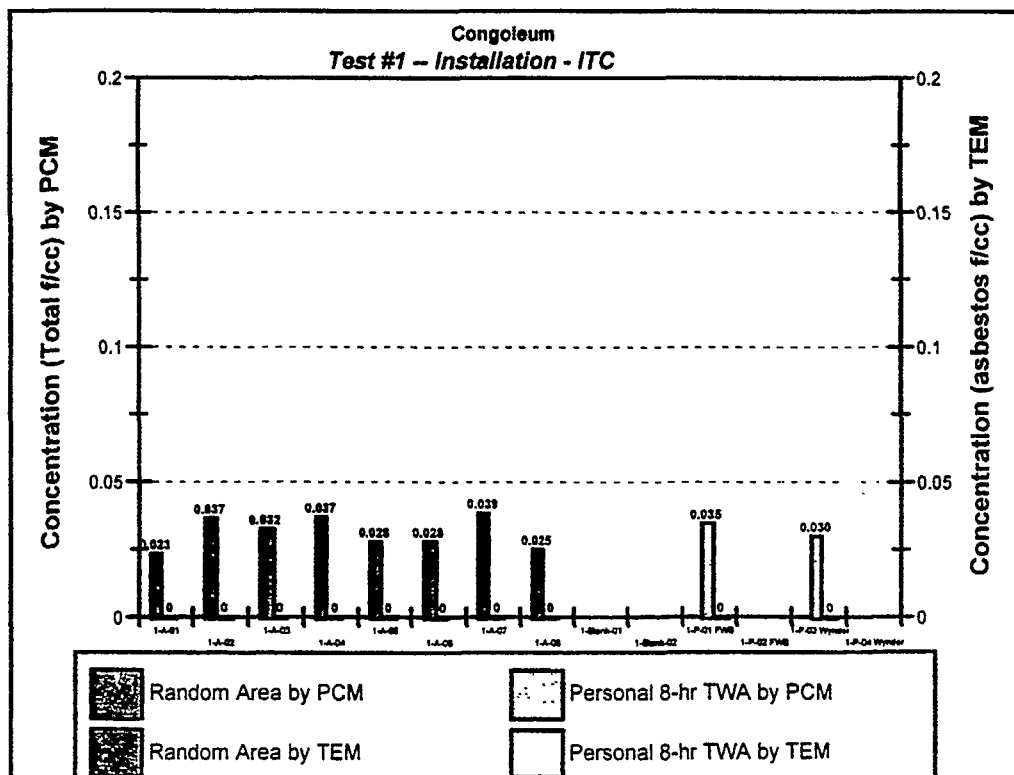
Results of 30-min Short Term Exposure Limit (STEL) Permissible Exposure Limit (PEL) sampling is shown in the following table:

STATISTICAL FUNCTION	5/14/01 - PCM Total f/cc by NIOSH 7400 -		5/14/01 - TEM Asbestos f/cc by NIOSH 7402	
	- Personal Samples -	- Average Room Air -	- Personal Samples -	- Average Room Air -
MAXIMUM	0.082	None taken	0.0	None taken
AVERAGE	0.052		0.0	
MINIMUM	0.023		0.0	
STAND. DEV.	0.030		0.0	
COUNT	2		2	

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All sample results indicate that while there were some total fiber concentrations as detected by PCM NIOSH 7400. There were, however, no asbestos fibers detected when the samples were analyzed by TEM NIOSH 7402. Clearly, the results are well below the current OSHA 30-min Short Term Exposure Limit (STEL) Permissible Exposure Limit of 1.0 f/cc.

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



CONCLUSIONS

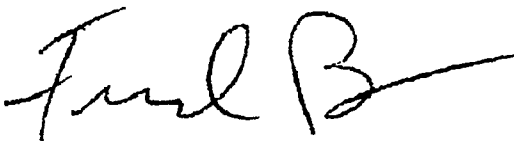
A 27.5 square foot area was demarked on a template as the prescribed area for testing the fiber release during the installation of 1970's vintage Congoleum Corporation vinyl asbestos tile (VAT). The entire installation process was demonstrated including preparing the surface, troweling the adhesive, 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. There were also two (2), thirty minute short term samples collected during the cutting and tile laying activities.

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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

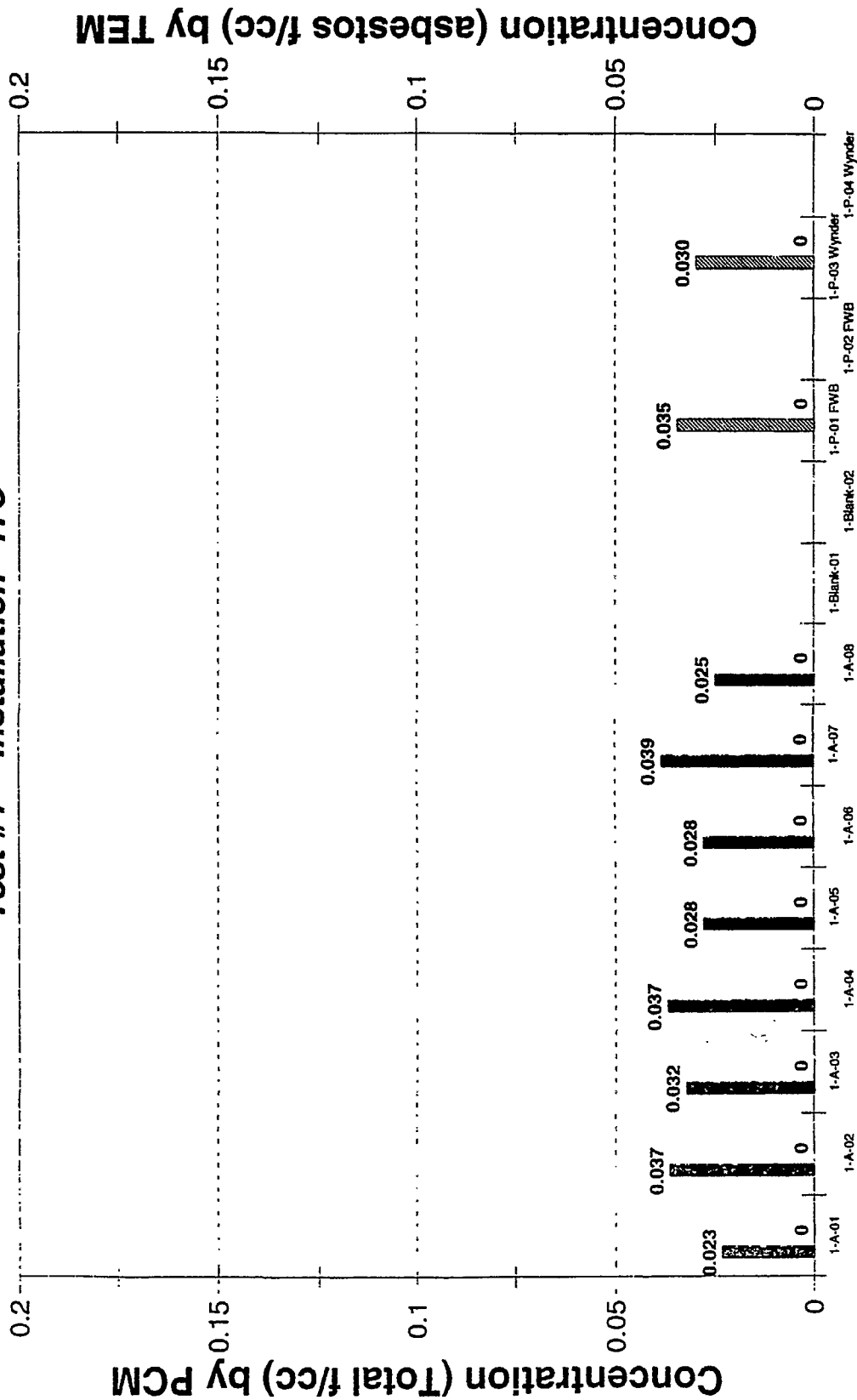
**Compilation Spreadsheets and Graphs
NIOSH 7400 and NIOSH 7402 TESTING RESULTS**

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826
827
828
829
830
831
832
833
834
835
836
837
838
839
840
84

BYI Project #1841A-7237

TEST	TEST DATE	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE TIME	SAMPLE RATE	SAMPLE VOLUME	TESTING		TESTING		TESTING		asbestos /cc - Personal STEL -	asbestos /cc - Personal chr -	asbestos /cc - Area chr -
							PCM (Total fcc) - Personal STEL -	PCM (Total fcc) - Personal chr -	TEM (asbestos/other) - Area 2 -	TEM (asbestos/other) - Area 2 -					
Test 1 - Test Chamber	May 14, 2002	1-A-01	RANDOM AREA	390	2	780				0.023	0		0		0
Test 1 - Test Chamber	May 14, 2002	1-A-02	RANDOM AREA	390	2	780				0.037	0		0		0
Test 1 - Test Chamber	May 14, 2002	1-A-03	RANDOM AREA	390	2	780				0.032	0		0		0
Test 1 - Test Chamber	May 14, 2002	1-A-04	RANDOM AREA	390	2	780				0.037	0		0		0
Test 1 - Test Chamber	May 14, 2002	1-A-05	RANDOM AREA	390	2	780				0.028	0		0		0
Test 1 - Test Chamber	May 14, 2002	1-A-06	RANDOM AREA	390	2	780				0.028	0		0		0
Test 1 - Test Chamber	May 14, 2002	1-A-07	RANDOM AREA	390	2	780				0.039	0		0		0
Test 1 - Test Chamber	May 14, 2002	1-A-08	RANDOM AREA	390	2	780				0.025	0		0		0
Test 1 - Test Chamber	May 14, 2002	1-Blank-01	BLANK	0	0	0									
Test 1 - Test Chamber	May 14, 2002	1-Blank-02	BLANK	0	0	0									
Test 1 - Test Chamber	May 14, 2002	1-P-01 PWB	PERSONAL - STEL	390	2	780			0.035		0		0		
Test 1 - Test Chamber	May 14, 2002	1-P-02 PWB	PERSONAL	390	2	60			0.023		0		0		
Test 1 - Test Chamber	May 14, 2002	1-P-03 Wynder	PERSONAL - STEL	390	2	780			0.030		0		0		
Test 1 - Test Chamber	May 14, 2002	1-P-04 Wynder	PERSONAL - STEL	30	2	60			0.062		0		0		
MAXIMUM AVERAGE									0.062		0.035		0.000		0.000
MINIMUM									0.032		0.032		0.000		0.000
STAND. DEV.									0.023		0.030		0.000		0.000
VARIANCE									0.030		0.002		0.000		0.000
COUNT									0.001		0.000		0.000		0.000
									2		2		2		2
									8		8		8		8

Congoleum Test #1 -- Installation - ITC



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

Congoleum

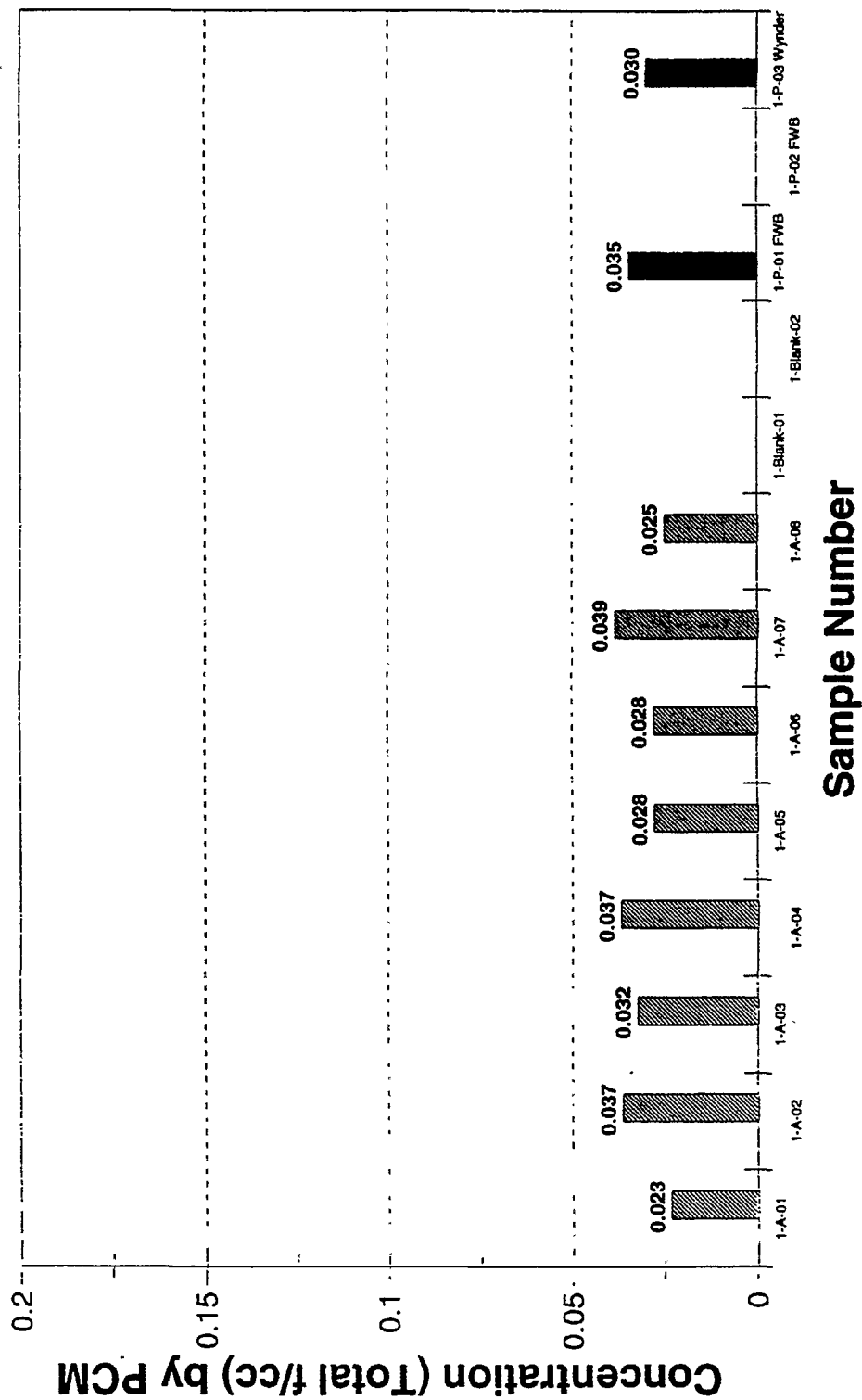
Test #1 -- Installation - ITC



Random Area

Personal 8-hr TWA

Congoleum
Test #1 -- Installation - ITC



Random Area - 8hr TWA

Personal 8-hr TWA

Test Chamber
Congoleum
BYI Project #1941A-7237

TEST NUMBER TEST DATE SAMPLE NUMBER SAMPLE TYPE SAMPLE LOCATION SAMPLE TIME SAMPLE RATE SAMPLE VOLUME TEM RESULTS (Total Asbestos s/mm2) (avg <70 s/mm2) LESS THAN LIMIT OF ANALYTICAL SENSITIVITY (<14.2 s/mm2)

Test 1 - Test Chamber 13-May-02 1-B-01 AREA NW5 130 10 1300 7.9 <15.8 s/mm2
Test 1 - Test Chamber 13-May-02 1-B-02 AREA NE5 130 10 1300 N/A
Test 1 - Test Chamber 13-May-02 1-B-03 AREA CENTER 130 10 1300 7.9 <15.8 s/mm2
Test 1 - Test Chamber 13-May-02 1-B-04 AREA SW5 130 10 1300 7.9 <15.8 s/mm2
Test 1 - Test Chamber 13-May-02 1-B-05 AREA SE5 130 10 1300 7.9 <15.8 s/mm2
Test 1 - Test Chamber 13-May-02 1-B-06 BLANK
Test 1 - Test Chamber 13-May-02 1-B-07 BLANK
Test 1 - Test Chamber 13-May-02 1-B-08 BLANK

MAXIMUM 7.9
AVERAGE 7.9
MINIMUM 7.9
STAND. DEV. 0.0
VARIANCE 0.0
COUNT 4

TEST NUMBER TEST DATE SAMPLE NUMBER SAMPLE TYPE SAMPLE LOCATION SAMPLE TIME SAMPLE RATE SAMPLE VOLUME PCM RESULTS (Total f/cc) LIMIT OF QUANTIFICATION

Test 1 - Test Chamber 13-May-02 1-B-01 AREA NW5 130 2 280 0.0052 0.0104
Test 1 - Test Chamber 13-May-02 1-B-02 AREA NE5 130 2 280 0.0284 0.0104
Test 1 - Test Chamber 13-May-02 1-B-03 AREA CENTER 130 2 280 0.0321 0.0104
Test 1 - Test Chamber 13-May-02 1-B-04 AREA SW5 130 2 280 0.0179 0.0104
Test 1 - Test Chamber 13-May-02 1-B-05 AREA SE5 130 2 280 0.0283 0.0104
Test 1 - Test Chamber 13-May-02 1-B-06 BLANK
Test 1 - Test Chamber 13-May-02 1-B-07 BLANK

MAXIMUM 0.032
AVERAGE 0.022
MINIMUM 0.005
STAND. DEV. 0.010
VARIANCE 0.000
COUNT 5
COUNT 5

APPENDIX B

**Compilation Spreadsheets and Graphs
PRE-TEST BACKGROUND RESULTS**

Test Chamber

Congoletum

BYI Project #1941A-7237

TEST NUMBER	TEST DATE	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE LOCATION	SAMPLE TIME	SAMPLE RATE	SAMPLE VOLUME	PCMR RESULTS (Total Asbestos s/mm2) (avg <70 s/mm2)	PCMR RESULTS (Total Asbestos s/mm2) (avg <70 s/mm2)	ANALYTICAL SENSITIVITY (<14.2 s/mm2)	LESS THAN LIMIT OF
Test 1 - Test Chamber	13-May-02	1-B-01	AREA	NW5	130	10	1300	7.9	<15.8 s/mm2	7.9	<15.8 s/mm2
Test 1 - Test Chamber	13-May-02	1-B-02	AREA	NE5	130	10	1300	7.9	<15.8 s/mm2	7.9	<15.8 s/mm2
Test 1 - Test Chamber	13-May-02	1-B-03	AREA	CENTER	130	10	1300	7.9	<15.8 s/mm2	7.9	<15.8 s/mm2
Test 1 - Test Chamber	13-May-02	1-B-04	AREA	SW5	130	10	1300	7.9	<15.8 s/mm2	7.9	<15.8 s/mm2
Test 1 - Test Chamber	13-May-02	1-B-05	AREA	SE5	130	10	1300	7.9	<15.8 s/mm2	7.9	<15.8 s/mm2
Test 1 - Test Chamber	13-May-02	1-B-06	BLANK								
Test 1 - Test Chamber	13-May-02	1-B-07	BLANK								
Test 1 - Test Chamber	13-May-02	1-B-08	BLANK								

MAXIMUM
AVERAGE
MINIMUM
STAND. DEV.
VARIANCE
COUNT

7.9
7.9
7.9
0.0
0.0
4

TEST NUMBER	TEST DATE	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE LOCATION	SAMPLE TIME	SAMPLE RATE	SAMPLE VOLUME	PCMR RESULTS (Total f/cc)	PCMR RESULTS (Total f/cc)	ANALYTICAL SENSITIVITY (<14.2 s/mm2)	LESS THAN LIMIT OF
Test 1 - Test Chamber	13-May-02	1-B-01	AREA	NW5	130	2	260	0.0052	0.0052	0.0104	0.0104
Test 1 - Test Chamber	13-May-02	1-B-02	AREA	NE5	130	2	260	0.0284	0.0284	0.0104	0.0104
Test 1 - Test Chamber	13-May-02	1-B-03	AREA	CENTER	130	2	260	0.0321	0.0321	0.0104	0.0104
Test 1 - Test Chamber	13-May-02	1-B-04	AREA	SW5	130	2	260	0.0179	0.0179	0.0104	0.0104
Test 1 - Test Chamber	13-May-02	1-B-05	AREA	SE5	130	2	260	0.0283	0.0283	0.0104	0.0104
Test 1 - Test Chamber	13-May-02	1-B-06	BLANK								
Test 1 - Test Chamber	13-May-02	1-B-07	BLANK								

MAXIMUM
AVERAGE
MINIMUM
STAND. DEV.
VARIANCE
COUNT

0.032
0.022
0.005
0.010
0.000
5
5

APPENDIX C

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

RJ Lee Group, Inc.

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

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

Laboratory Report

Report Date 5/16/2002
Sample Receipt Date 5/15/2002
RJ Lee Group Job No AOH205539
Client Job No. 1941A-7237
Authorization/P.O. No. 1941A-7237

Analysis: Fibers (>= 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)	Concentration (f/mL)	95% Upper Confidence Limit (f/mL)	Limit of Quantitation (f/mL)	Analyst	Analysis Date	Comment
2602569.HPC	1-A-01	780	37	100	47.1	0.0233	0.0332	0.0035	BAS	5/16/2002	
2602570.HPC	1-A-02	780	58	100	73.9	0.0365	0.0498	0.0035	BAS	5/16/2002	
2602571.HPC	1-A-03	780	51.5	100	65.6	0.0324	0.0447	0.0035	BAS	5/16/2002	
2602572.HPC	1-A-04	782	59	100	75.2	0.037	0.0505	0.0034	BAS	5/16/2002	
2602573.HPC	1-A-05	782	44.5	100	56.7	0.0279	0.0391	0.0034	BAS	5/16/2002	

Authorized Signature

Barbara A. Smith

Barbara A. Smith, 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: AOH205539
Client Job No: 1941A-7237

RJLG Sample Number	Client Sample Number	Volume (Liters)	Fibers	Fields	Fiber Density (fibers/mm ²)	Uncorrected Fiber Concentrations			Analyst	Analysis Date	Comment
						Fiber Density (fibers/mm ²)	95% Upper Confidence Limit (f/mL)	Limit of Quantitation (f/mL)			
2602574.HPC	1-A-06	782	44.5	100	56.7	0.0279	0.0391	0.0034	BAS	5/16/2002	
2602575.HPC	1-A-07	784	61.5	100	78.3	0.0385	0.0523	0.0034	BAS	5/16/2002	
2602576.HPC	1-A-08	784	40	100	51	0.023	0.0354	0.0034	BAS	5/16/2002	
2602577.HPC	1-P-01	780	55	100	70.1	0.0346	0.0475	0.0035	BAS	5/16/2002	
2602578.HPC	1-P-02	60	2	100	<7	<0.045	<0.0668	0.0449	BAS	5/16/2002	
2602579.HPC	1-P-03	780	47.5	100	60.5	0.0299	0.0416	0.0035	BAS	5/16/2002	
2602580.HPC	1-P-04	60	10	100	12.7	0.0817	0.1364	0.0449	BAS	5/16/2002	
2602581.HPC	1-BLANK-01	0	2	100	<7	-	-	-	BAS	5/16/2002	
2602582.HPC	1-BLANK-02	0	0	100	<7	-	-	-	BAS	5/16/2002	

Authorized Signature

Barbara A. Smith

Barbara A. Smith, 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/mm² is used to calculate the quantitation limit.
4. Samples will be held for 90 days and then disposed of per Federal regulations.



AIR SAMPLE ANALYSIS DATA/CHAIN OF CUSTODY SHEET
DATE: 5-14-02 COLLECTED BY: Mark F. Meyer
PROJECT NO.: 1941A-7237 ANALYZED BY:
TURNAROUND TIME: 8HR 12HR 24HR 72HR

Page 1 of 2

SAMPLE ID NO.	SAMPLE TYPE	WORKER NAME AND SS NO. OR LOCATION	ACTIVITY	RESPIRATOR TYPE
1-A-01	1A	Isolation Test Chamber - SE sect (12, 8, 1)	X, Y, Z coordinates w/ SW bottom cube P.O.C.	
1-A-02	1A	" " Central (9, 4, 8)	X = E/W (15')	
1-A-03	1A	" " South (8, 1, 1)	Y = N/S (10')	
1-A-04	1A	" " SW (8, 2, 3)	Z = Height (9')	
1-A-05	1A	" " NW (1, 10, 1)		
1-A-06	1A	" " North (7, 8, 9)	TEST #1	
1-A-07	1A	" " North (8, 8, 6)		
1-A-08	1A	" " NE (11, 8, 8)		
1-P-01	PRS	FRED BOELTER		
1-P-02	PRS (STEL)	JOHN SPENCER - Fred Boelter		

ANALYTICAL DATA ANALYSIS REQUIRED: TEM ☐ or PCM ☐ Effective Filter Collection Area ☐ Graduate Field Area ☐

Sample ID No.	Start Time	Stop Time AM	Total Time (minutes)	Final Flow Rate (L/min)	Total Volume (Liters)	Filter/Field	Filter/Field (blank cost)	LOQ (ppm/cc)	Direction/Time (TEM only)	Filter/Field (blank cost)
1-A-01	0921	1551	390	2.0	780					
1-A-02	0921	1551	390	2.0	780					
1-A-03	0921	1551	390	2.0	780					
1-A-04	0921	1552	391	2.0	782					
1-A-05	0921	1552	391	2.0	782					
1-A-06	0921	1552	391	2.0	782					
1-A-07	0921	1553	392	2.0	784					
1-A-08	0921	1553	392	2.0	784					
1-P-01	0928	1558	390	2.0	780					
1-P-02	1041	1111	30	2.0	60					

BLANKS - SAMPLE ID NO.

Key to Abbreviations				NYS Passed Air Purifying	
APR	Air Purifying Respirator	BY	Background	MDX	MDEA Exhaust
SPB	Background	EX	Exhaust	MB	Mid Blank
MBL	Bag Leak Out	FE	Field Blank	IC	Inside Containment
CL	Chamber	FT	Field Test	QA	Quality Assurance
CLM	Chamber	GB	Ground Bag	OC	Outside Containment
1A	Inside Isolation Test Chamber				

NOTE: Sampling media used is 25mm O.D. MCE filter unless otherwise noted.
LOQ = Limit of Quantitation. The method assumes the lowest quantifiable concentration is 10 mg/m³/100 fads and is volume dependent. Samples below the LOQ are non-quantifiable and therefore are non-reliable.
*Sample ID Example: BML (sample initial, 04 - Month, 07 - Year, 01 - Sequence No.)

Relinquished by: Mark F. Meyer	Received by: [Signature]
Company: Boelter	Company: [Signature]
Date/Time: 5-14-02	Date/Time: [Signature]
Relinquished by: [Signature]	Received by: [Signature]
Company: [Signature]	Company: [Signature]
Date/Time: [Signature]	Date/Time: [Signature]
Relinquished by: [Signature]	Received by: [Signature]
Company: [Signature]	Company: [Signature]
Date/Time: [Signature]	Date/Time: [Signature]



ADK205539

AIR SAMPLE ANALYSIS DATA/CHAIN OF CUSTODY SHEET
DATE: 5-14-02
PROJECT NO.: 1941A-7237
TURNAROUND TIME: 8HR 12HR 24HR 72HR

COLLECTED BY: Math 7. May
ANALYZED BY: _____

Page 2 of 2

SAMPLE ID NO.	SAMPLE TYPE	WORKER NAME AND ES NO. OR LOCATION	ACTIVITY	RESPIRATOR TYPE
1-P-03	PRS	SCOTT WYNDER	Test #1	
1-P-04	PRS-9EL	SCOTT WYNDER	↓	
1-Blank-01	—	BLANK		
1-Blank-02	—	BLANK		

ANALYTICAL DATA ANALYSIS REQUIRED: TEM ☐ or PCM ☐ Effective Filter Collection Area mm² Graticule Field Area mm²

Sample ID No.	Start Time	Stop Time	Total Time (min)	Flow Rate (L/min)	Total Volume (L)	Filter/FMID	Fluorescence (blank only)	LOQ (Fluorescence)	Scatter/absorbance (TEM only)	Fiber/loss (blank only)
1-P-03	0928	1558	396	2.0	780					
1-P-04	1041	1111	30	2.0	60					
1-Blank-01	—	—	—	—	—					
1-Blank-02	—	—	—	—	—					

BLANKS - SAMPLE ID NO. 1

KEY TO ABBREVIATIONS				PAPR: Powered Air Purifying Respirator	
APR	Air Purifying Respirator	BN	Biohazardous	HC	HCA Exhaust
BB	Background	CK	Control	HE	High Efficiency
WBL	Wet Load Out	FF	Field Blank	IC	Inhalation Counter
CL	Control	FF	Field Blank	GA	Gas Analysis
CLR	Clear Up	GLB	Glass Bag	OC	Oxygen Consumption
				SA	Supplied Air
				SLS	Sealed Lab Blank

Relinquished by: <u>Math 7 May</u>	Received By: _____
Company: <u>Boelter</u>	Company: _____
Date/Time: <u>5-14-02</u>	Date/Time: _____
Relinquished by: _____	Received By: _____
Company: _____	Company: _____
Date/Time: _____	Date/Time: _____
Received at Laboratory By: _____	
Company: _____	
Date/Time: _____	

NOTE: Sampling media used is 25mm O.D. MCE filter unless otherwise noted.
LOQ = Limit of Quantitation. The method assumes the lowest quantitative concentration is 10 fibers/100 fibers and is volume dependent. Samples below the LOQ are non-quantifiable and therefore are non-reliable.
*Sample ID Example: PBL Sample ID: 04 = Month; 07 = Year; 01 = Sequence No.

BIOHAZARD/HAZARDOUS

RJ LeeGroup, Inc.

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

The Materials Characterization Specialists

May 23, 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. : ATH205261
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
ATH205261
May 23, 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 black ink, appearing to read "Kimberly A. Allison". The signature is fluid and cursive, with the first name being the most prominent.

Kimberly A. Allison
Manager - TEM Analysis

KAA/slb

Enclosures

Test Report

Asbestos Concentrations and Fiber Ratios

NIOSH 7402 Analysis

Project ATH205261

RJ Lee Group Sample Number	Client Sample Number	Area		Asbestos		Analytical Sensitivity (f/cc)	Asbestos Concentration (f/cc)	Total Fibers (Fs)	Fiber Ratio (fs/Fs)	Analysis Date
		Filter Area (sq mm)	Volume ± Analyzed (Liters)	Chr	Amp					
0127529HT	1-A-01	385	780.00	0.0	0.0	0.0013	<0.0013*	24.5	0	5/22/2
0127530HT	1-A-02	385	780.00	0.0	0.0	0.0013	<0.0013*	20.0	0	5/22/2
0127531HT	1-A-03	385	780.00	0.0	0.0	0.0013	<0.0013*	19.0	0	5/22/2
0127532HT	1-A-04	385	782.00	0.0	0.0	0.0013	<0.0013*	22.5	0	5/22/2
0127533HT	1-A-05	385	782.00	0.0	0.0	0.0013	<0.0013*	33.5	0	5/22/2
0127534HT	1-A-06	385	782.00	0.0	0.0	0.0013	<0.0013*	21.0	0	5/22/2
0127535HT	1-A-07	385	784.00	0.0	0.0	0.0013	<0.0013*	15.5	0	5/22/2
0127536HT	1-A-08	385	784.00	0.0	0.0	0.0013	<0.0013*	15.0	0	5/22/2
0127537HT	1-P-01	385	780.00	0.0	0.0	0.0013	<0.0013*	39.0	0	5/22/2
0127538HT	1-P-02	385	60.00	0.0	0.0	0.0173	<0.0173*	3.5	0	5/22/2
0127539HT	1-P-03	385	780.00	0.0	0.0	0.0013	<0.0013*	18.0	0	5/22/2
0127540HT	1-P-04	385	60.00	0.0	0.0	0.0173	<0.0173*	6.5	0	5/22/2

† 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: Monday, May 20, 2002

RJ Lee Group, Inc.
Headquarters

350 Hochberg Road
Monroeville, PA 15146

Test Report Page: 1 of 1

Authorized Signature

Kimberly A. Allison

Kimberly A. Allison, Manager-TEM Analysis

Date

Thursday, May 23, 2002

Phone

(724) 325-1776

Fax

(724) 733-1799



April 1990

SALES & ANALYSIS OF TODAY'S TECHNOLOGY

COLLECTED BY: Matthew F. Myer

Page 1 of 2

Boelter & Yates
environmental engineers and scientists

DATE: 5-14-02
PROJECT NO.: 1941A-7237
TURNAROUND TIME: 8HR 12HR

ANALYZED BY: Matthew F. Myer
24HR 72HR

ATH 205261

SAMPLE ID NO.	SAMPLE TYPE	WORKER NAME AND SS NO. OR LOCATION	ACTIVITY	RESPIRATOR TYPE
1-A-01	1A	Isolation Test Chamber - SE sect (12, 3, 1)	on x, y, z coordinate w/ SW bottom cube (0, 0, 0)	
1-A-02	1A	" " - Central (9, 4, 8)	X = ELW (13')	
1-A-03	1A	" " - South (8, 1, 1)	Y = NPS (10')	
1-A-04	1A	" " - SW (3, 2, 3)	Z = Height (9')	
1-A-05	1A	" " - HW (1, 10, 1)		
1-A-06	1A	" " - North (7, 8, 7)	TEST #1	
1-A-07	1A	" " - North (8, 8, 6)		
1-A-08	1A	" " - NE (11, 8, 8)		
1-P-01	PRS	FRED BOELTER		
1-P-02	PRS (STEL)	JOHN SPENCER - Fred Boelter		

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

Sample ID No.*	Start Time	Stop Time	Total Time (minutes)	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)
1-A-01	0921	1551	390	2.0	780					
1-A-02	0921	1551	390	2.0	780					
1-A-03	0921	1551	390	2.0	780					
1-A-04	0921	1552	391	2.0	782					
1-A-05	0921	1552	391	2.0	782					
1-A-06	0921	1552	391	2.0	782					
1-A-07	0921	1553	392	2.0	784					
1-A-08	0921	1553	392	2.0	784					
1-P-01	0928	1558	390	2.0	780					
1-P-02	1041	1111	30	2.0	60					

BLANKS - SAMPLE ID NO.

Key to Abbreviations	HEPA Exhaust	PAPR	Powered Air Purifying
APR	Environmental	HEX	Respirator
BOD	Excursion	HM	PREP Site Preparation
BGLD	Field Blank	IC	PRS Personal
CL	Full Face	OA	REM Removal
CLN	Glove Bag	OC	SA Supplied Air
1A	Isolation Test Chamber	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 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; 97 = Year; 01 = Sequence No.

5991MISCAIRCHAIN DATILEW

Relinquished by: Matthew F. Myer

Company: Boelter

Date/Time: 5-14-02

Relinquished by:

Company:

Date/Time:

Received at Laboratory By:

Company:

Date/Time:

Received By: Debbie L. Ryan

Company:

Date/Time:

Received By:

Company:

Date/Time:



Boelcor & Yates
environmental engineers and scientists

Page 2 of 2

AIR SAMPLE ANALYSIS DATA/CHAIN OF CUSTODY SHEET
DATE: 5-14-02 COLLECTED BY: Martha F. Magg
PROJECT NO.: 1941A-7237 ANALYZED BY: 24HR 72HR
TURNAROUND TIME: 8HR 12HR

SAMPLE ID NO.	SAMPLE TYPE	WORKER NAME AND SS NO. OR LOCATION	ACTIVITY	RESPIRATOR TYPE
1-P-03	PRS	SCOTT WYNDER	Test #1	
1-P-04	PRS-STEL	SCOTT WYNDER	↓	
1-Blank-01	---	BLANKS		
1-Blank-02	---			

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

Sample ID No.*	Start Time	Stop Time	Total Time (minutes)	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)
1-P-03	0928	1558	390	2.0	780					
1-P-04	1041	1111	30	2.0	60					
1-Blank-01	---	---	---	---	---					
1-Blank-02	---	---	---	---	---					

BLANKS - SAMPLE ID NO.

Key to Abbreviations									
APR	Air Purifying Respirator	ENV	Environmental	HEX	HEPA Exhaust	PAPR	Powered Air Purifying		
BGD	Background	EX	Excursion	HM	Half Mask	PREP	Respirator		
BGLO	Bag Load Out	FB	Field Blank	IC	Inside Containment	PRSP	Site Preparation		
CL	Clearance	FF	Full Face	OA	Outside Area	PRSP	Personal		
CLN	Clean Up	GLBG	Glove Bag	OC	Outside Containment	REM	Removal		
						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 (sampler initials), 04 = Month; 97 = Year; 01 = Sequence No.

899MISC/CHAIN.DAT/LEW

Relinquished by: Martha F. Magg	Received By:
Company: Boelcor	Company:
Date/Time: 5-14-02	Date/Time:

Relinquished by:	Received By:
Company:	Company:
Date/Time:	Date/Time:

Received at Laboratory By:
Company:
Date/Time:

APPENDIX D

AHERA TEM Laboratory Reports

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 P. Meyer
Telephone: 847-692-1700

Report Date 5/16/2002
Sample Receipt Date 5/15/2002
RJ Lee Group Job No. AOH205338
Client Job No. 1941A-7237
Authorization/P.O. No. 1941A-7237

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

Blank Correction: 0 f/zum⁵

Oraticule: 00785 mm²

Uncorrected Fiber Concentrations

HJLG Sample Number	Client Sample Number	Volume (Liters)	Fibers	Folds	Fiber Density (f/cm ²)	Concentration (f/mL)	95% Upper Limit of Concentration (f/mL)	Analysis Date	Comment
2602562.HPC	1-BOD-PCM-01	260	5	100	<7	<0.0104	<0.0154	BAS 5/15/2002	
2602563.HPC	1-BOD-PCM-02	260	14	100	17.8	0.0264	0.0421	BAS 5/15/2002	
2602564.HPC	1-BOD-PCM-03	260	17	100	21.2	0.0321	0.05	BAS 5/15/2002	
2602565.HPC	1-BOD-PCM-04	260	9.5	100	12.1	0.0179	0.0301	BAS 5/15/2002	
2602566.HPC	1-BOD-PCM-05	260	15	100	19.1	0.0283	0.0448	BAS 5/15/2002	

Authorized Signature

Barbara A. Smith

Barbara A. Smith, 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. "N" indicates the fiber density is below the detection limit. A fiber density of "7 Dnum" 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: AOH205538
Client Job No: 1941A-7237

Uncorrected Fiber Concentrations

RJLG Sample Number	Client Sample Number	Volume (Liters)	Fibers	Fields	Fiber Density Concentration (fibers/mm ²)	95% Upper Limit of Confidence Quantitation		Analyst	Date	Comment
						(fibers/mm ²)	(fibers/mm ²)			
202567.HPC	I-RGD-PCM-06	0	1	100	<7	-	-	BAS	5/15/2002	
202568.HPC	I-RGD-PCM-07	0	2	100	<7	-	-	BAS	5/16/2002	

Authorized Signature

Barbara A. Smith

Barbara A. Smith, 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/mm² is used to calculate the quantitation limit.
4. Samples will be held for 90 days and then disposed of per Federal regulations.

*** PCM** **ADH2000 38**

AIR SAMPLE ANALYSIS DATA/CHAIN OF CUSTODY SHEET

DATE: 5-13-02 COLLECTED BY: Walter J. May Page 1 of 1

PROJECT NO.: 1941A-7239 ANALYZED BY: Walter J. May

TURNAROUND TIME: 8HR 12HR 24HR 72HR

Boelter & Yates
environmental engineering and science

SAMPLE ID NO.	SAMPLE TYPE	WORKER NAME AND SS NO. OR LOCATION	ACTIVITY	RESPIRATOR TYPE
1-BGD-PCM-01	CLP	Exhalation Test Chamber - SE	Aggressive Air	
1-BGD-PCM-02	CLP	- SW		
1-BGD-PCM-03	CLP	- NW		
1-BGD-PCM-04	CLP	- NE		
1-BGD-PCM-05	CLP	- Center		
1-BGD-PCM-06	BLANK			
1-BGD-PCM-07	BLANK			

ANALYTICAL DATA ANALYSIS REQUIRED: TGM ☐ PCM ☒ (Effective Filter Collection Area _____ mm² Grains/ft³ Area _____ ft²)

Sample ID No.	Start Time	Stop Time	Total Time (min)	Flow Rate (L/min)	Total Volume (L)	Flow Rate (L/min)	Flow Rate (L/min)	LOD (µg/m ³)	Concentration (PCM only)	Concentration (Blank only)
1-BGD-PCM-01	1411	1621	130	2.0	260					
02	1411	1621	130	2.0	260					
03	1411	1621	130	2.0	260					
04	1412	1622	130	2.0	260					
05	1412	1622	130	2.0	260					
06			Blank							
1-BGD-PCM-07			Blank							

BLANKS - SAMPLE ID NO. 1

APR Air Pumping Apparatus	SW Sample Weighing	MSR Moisture Sorption	PMR Particle Air Pumping
ASB Air Sampling Bag	SC Sample Container	MSR Moisture Sorption	PMR Particle Air Pumping
ASB Air Sampling Bag	SC Sample Container	MSR Moisture Sorption	PMR Particle Air Pumping
ASB Air Sampling Bag	SC Sample Container	MSR Moisture Sorption	PMR Particle Air Pumping
ASB Air Sampling Bag	SC Sample Container	MSR Moisture Sorption	PMR Particle Air Pumping
ASB Air Sampling Bag	SC Sample Container	MSR Moisture Sorption	PMR Particle Air Pumping
ASB Air Sampling Bag	SC Sample Container	MSR Moisture Sorption	PMR Particle Air Pumping
ASB Air Sampling Bag	SC Sample Container	MSR Moisture Sorption	PMR Particle Air Pumping
ASB Air Sampling Bag	SC Sample Container	MSR Moisture Sorption	PMR Particle Air Pumping
ASB Air Sampling Bag	SC Sample Container	MSR Moisture Sorption	PMR Particle Air Pumping

NOTE: Sampling media used is 25mm Ø, 0.5µm PCE MCF which is not used.

LOD = Limit of Detection. The method assumes the lowest quantitative concentration is 10 µg/m³. LOD is a value dependent. Samples below the LOD are not quantifiable and therefore are reported as ND.

*Sample ID Example: 1941, Sample ID, 04 = Month; 37 = Year; 01 = Sequence No.

Boelter & Yates

RJ LeeGroup, Inc.

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

The Materials Characterization Specialists

May 16, 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. : ATH205246
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. The filter for sample TEM-02 was damaged and could not be prepared for TEM analysis.

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

Test Report

Total Asbestos Structure Concentration TEM AHERA Analysis

Project ATH205246

RJ Lee Group Sample Number	Client Sample Number	Filter Area (sq mm)	Volume† (Liters)	Area		Structures Chr Amp	Analytical Sensitivity † (S/sq. mm)	Concentration	
				Analyzed (sq. mm)	(S/cc)			(S/sq. mm)	Analysis Date
0127409HT	1-BGD-TEM-01	385	1300.00	0.0631	0.0047	0 0	15.8	<15.8*	5/15/2
0127410HT	1-BGD-TEM-02	385	1300.00	N/A	-	-	-	-	-
0127411HT	1-BGD-TEM-03	385	1300.00	0.0631	0.0047	0 0	15.8	<15.8*	5/15/2
0127412HT	1-BGD-TEM-04	385	1300.00	0.0631	0.0047	0 0	15.8	<15.8*	5/15/2
0127413HT	1-BGD-TEM-05	385	1300.00	0.0631	0.0047	0 0	15.8	<15.8*	5/15/2
0127414HT	1-BGD-TEM-06	385	Blank	N/A	-	-	-	-	-
0127415HT	1-BGD-TEM-07	385	Blank	N/A	-	-	-	-	-
0127416HT	1-BGD-TEM-08	385	Blank	N/A	-	-	-	-	-

Sample TEM-02 - Filter damaged unable to be prepared.

‡ 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: Wednesday, May 15, 2002

Chr - Chrysotile, Amp - Amphibole

* Results Less Than Analytical Sensitivity.

N/A - Sample not analyzed.

Authorized Signature

Kimberly A. Allison
Kimberly A. Allison, Manager-TEM Analysis
Date Thursday, May 16, 2002

RJ Lee Group, Inc.
Headquarters

350 Hochberg Road
Monroeville, PA 15146
Test Report Page: 1 of 1

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

FIBER COUNT SHEET

B = Bundle

C = Cluster

M = Matrix

Appendix A

Asbestos Content of Floor Tiles
Congoleum Litigation Related
Project #1941A-5385
Page 5

~~PRIVILEGED AND CONFIDENTIAL~~
~~ATTORNEY WORK PRODUCT~~

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-I)	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 Nairn	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.

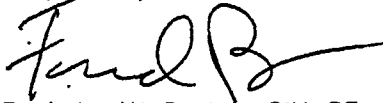
CONCLUSIONS

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
▼

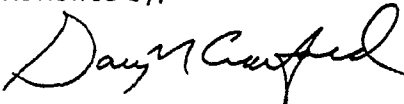
- No asbestos was detected in four of the floor tile samples. One of these non-asbestos tiles was identified by the manufacturer as "vinyl asbestos tile" and one of the tiles was identified as "vinylbest tile." The remaining two non asbestos tiles were labeled as non-asbestos.
- A small percentage (<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

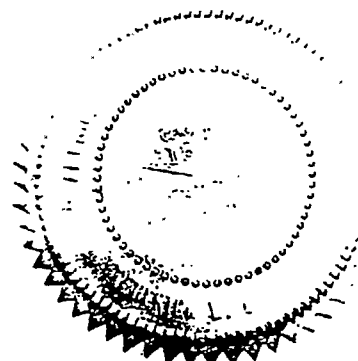
Reviewed by,



Gary N. Crawford, CIH

Enclosures

EXPERT-W\19415345\19415385.VAT



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.

330 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.: 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-0698-001	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	0.816	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 724/733-1799

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	2.88	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
CONGOLEUM - 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 Congoleum project. Fred had received a box of floor tile samples (TOTAL OF ~~24~~^{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 samples 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 sheet (and photographs) document the sample handling + transmittal.

Copies: _____

Boelter & Yates, Inc.

Matthew F. Meyer

PAGE 1 of 5

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: Congoleum
19414 5385

To: file

Re: _____

Attn: _____

noted

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 1/2 of the cracked pieces were sent to lab - we retained the other ~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 ~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

1300 Higgins Road, Suite 301

Park Ridge, IL 60068-5772

847/692-4700 • Fax 847/692-3127

Date: 6-4-98

Project No: Congoleum
1941A 5385

To: file

Re: _____

Attn: _____

cont'd

<u>SAMPLE #</u>	<u>DESCRIPTION</u>	<u>MANUFACTURERS LABEL INFO.</u>	<u>COMMENTS</u>
IFM-0698-001	FLOOR TILE -	AMTICO 1964 VAT	TILE WAS partially
AND 001*B	9" x 9" OFF WHITE	DOT PATTERN	CRACKED, BUT
	w/ light + dark	9 x 9 x 1/16	INTACT
	BROWN SPOTS	AVS 602	
MFM-0698-002	FLOOR TILE -	AMTICO 1967	Tile has some
AND 002*B	9" x 9" OFF WHITE	Solid VINYL FLOORING	dirt smudges
	w/ yellow, pink,	9 x 9 x 1/16	
	+ blue streaks	NON ASBESTOS	
MFM-0698-003	FLOOR TILE -	AMTICO 1967 VAT	Tile has some black
AND 003*B	9" x 9" OFF WHITE	Metallic Series	smudges - possibly
	w/ gold + silver	9 x 9 x 1/16	MASTIC - smudged
	SPARKLES	Sparkling Pearl	portion of sample kept
		AVC 103	by US - NOT sent to lab
MFM-0698-004	FLOOR TILE -	Congoleum AZTEC	Tile was partially
AND 004*B	12" x 12" ORANGE	VINYL ASBESTOS TILE	CRACKED, BUT
	w/ STAR PATTERN	VA-412	INTACT
		1970-71	

Copies: _____

Boelter & Yates, Inc.

Matthew F. May

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: Congoleum
1941A 5385

To: file

Re: _____

Attn: _____

<u>Sample #</u>	<u>DESCRIPTION</u>	<u>MANUFACTURERS LABEL INFO</u>	<u>COMMENTS</u>
MM-0698- 005 AND 005 "B"	FLOOR TILE - 12" X 12" grey w/ white splotches & rectangle pattern	Congoleum Naich RANCH TILE VA-827 Vinyl Asbestos TILE 1967-69	Tile cracked, but intact - black splotches (MASTIC?) on back side - tile w/ splotches NOT sent to LAB
FM-0698- 006 AND 006 "B"	Floor Tile - 9" x 9" off white w/ yellow pink & blue streaks	Amico 1967 Solid Vinyl Flooring 9 x 9 x 1/16	Tile a little dirty & discolored
NON-ASBESTOS			
FM-0698- 007 AND 007 "B"	Floor Tile - 12" x 12" white & gold w/ hexagon (?) pattern	Congoleum Ventura VINYLBEST TILE VA-491 1972	Tile cracked but intact
FM-0698- 008 AND 008 "B"	Floor Tile - 9" x 9" off-white w/ light & dark brown spots	AMICO 1964 VAT DOT pattern 9 x 9 x 1/16 AVS 602	Tile cracked but intact

Copies: _____

Boelter & Yates, Inc.

Boelter & Yates, Inc.

Environmental Engineers and Scientists

Date: 6-4-98
Project No: Congoleum
1941A 5385

1300 Higgins Road, Suite 301
Park Ridge, IL 60068-5772
847/692-4700 • Fax 847/692-3127

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

Project # _____
 Date _____
 Date Collected _____

**** call Fred Boelter to DISCUSS SAMPLES BEFORE ANALYSIS ****

Name: **FRED BOELTER** (HFM)
 Boelter & Yates, Inc.
 1200 Higgins Road, Suite 301
 Park Ridge, IL 60068-5772
 Tel: 708/333-1117
 Fax: 708/333-1117
 Telex: 247082
 Post: 708/333-1117
 Chain of Custody: _____
 Date: 12-1-98
 Time: 10:00 AM
 Location: _____
 Quantity: _____
 Material: _____
 Comments: _____

Sample #	HSA Group #	Analytical Results	Material Description	Quantity Estimate	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, purple 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 splatters 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

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THE
FEDERAL
BUREAU OF
INVESTIGATION
U. S. DEPARTMENT OF JUSTICE

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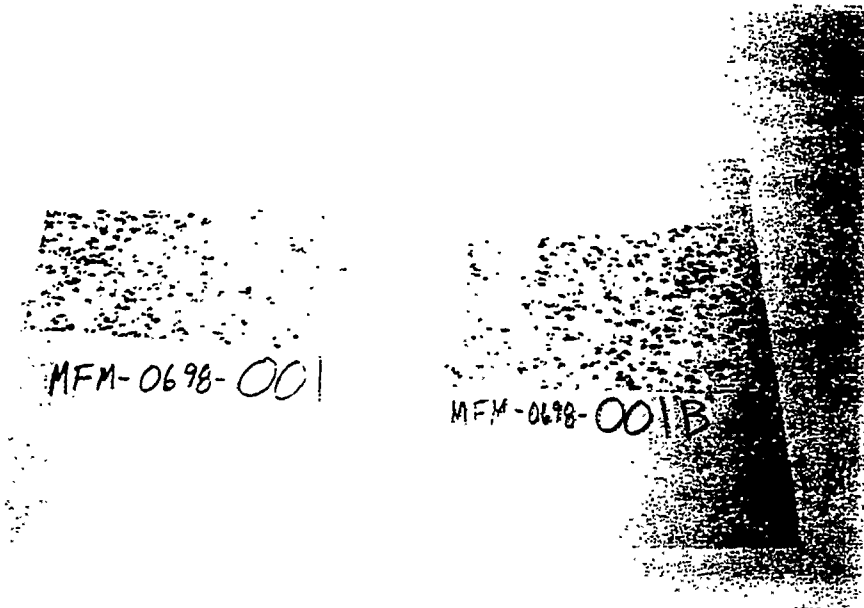
Boelter & Yates, In
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▼

APPENDIX C

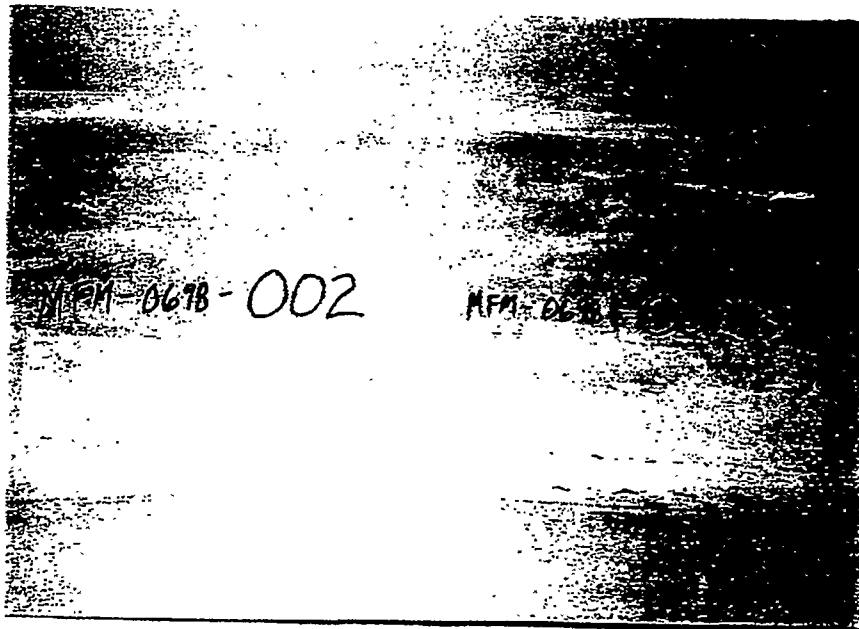
Photographs

Boelter & Yates, Inc.

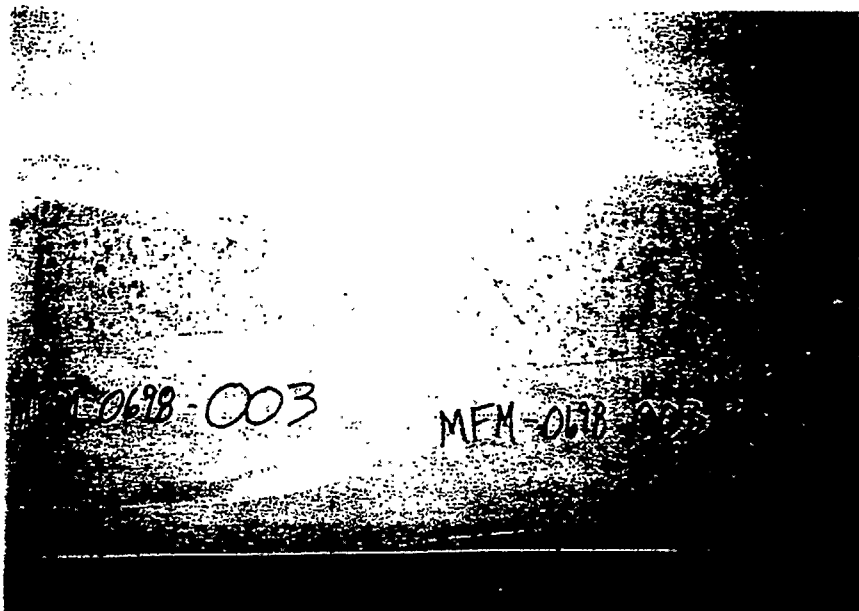
-Photo 1-
Amtico VAT - AVS 602
Dot Pattern, 1964
Sample #MFM-0698-001



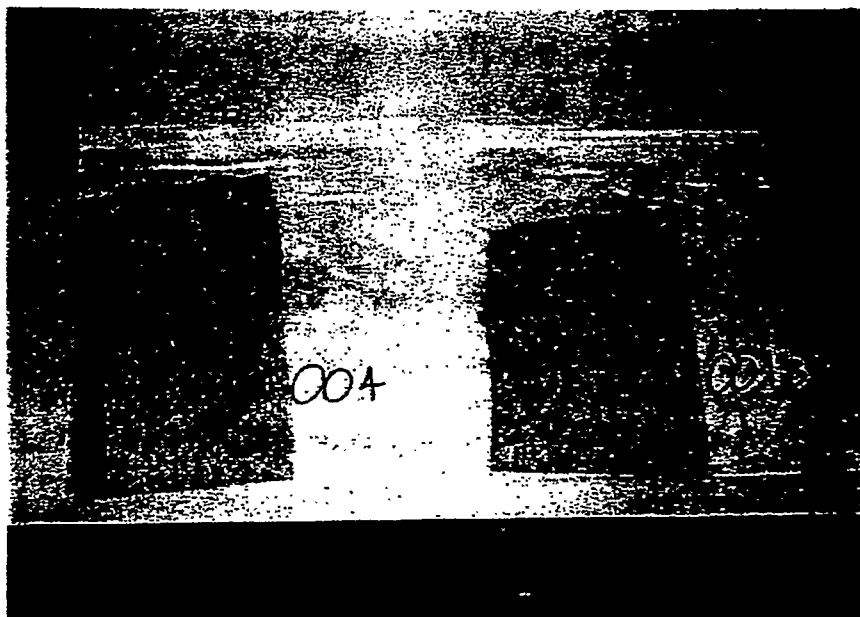
-Photo 2-
Amtico - Non-Asbestos
Solid Vinyl Flooring, 1967
Sample #MFM-0698-002



Boelter & Yates, Inc.

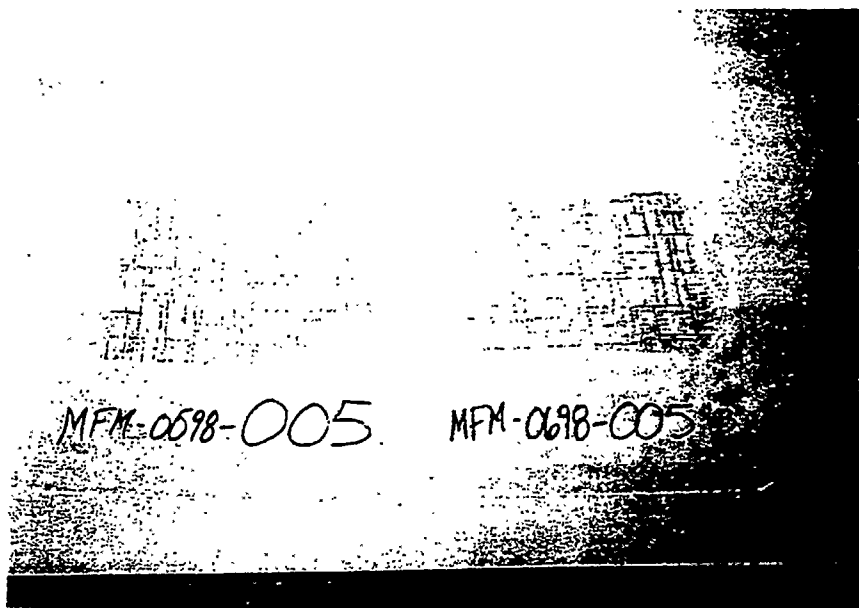


-Photo 3-
Amtico VAT - AVC 103
Metallic Series, Sparkling
Pearl 1967
Sample #MFM-0698-003

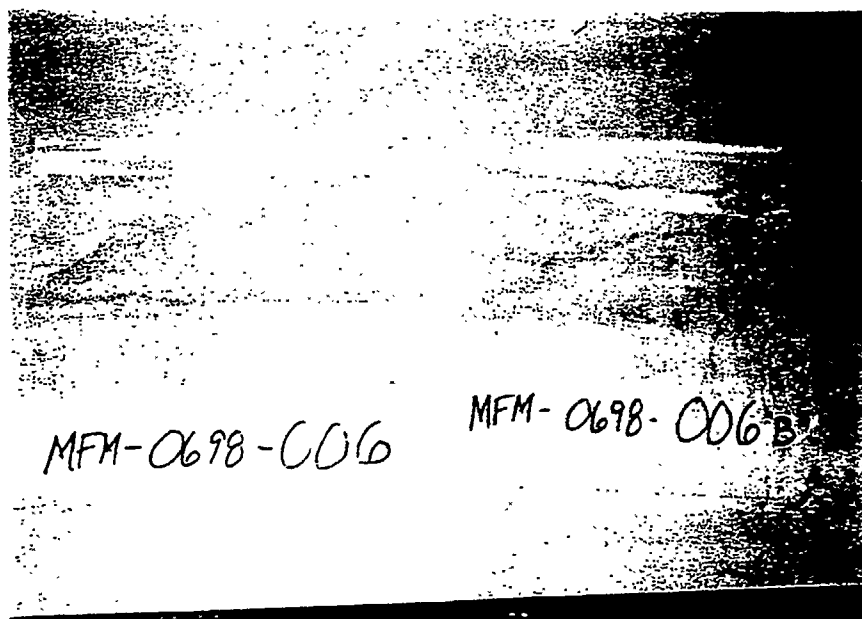


-Photo 4-
Congoleum Aztec - VA-412
Vinyl Asbestos Tile -
1970-1971
Sample #MFM-0698-004

Boelter & Yates, Inc.

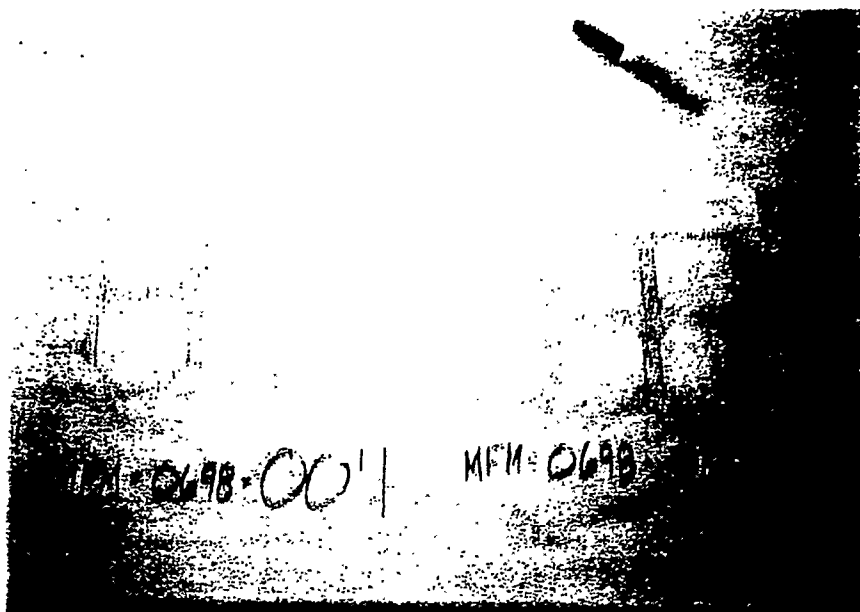


-Photo 5-
Congoleum Nairn - VA827
Vinyl Asbestos Tile -
1967-1969
MFM-0698-005

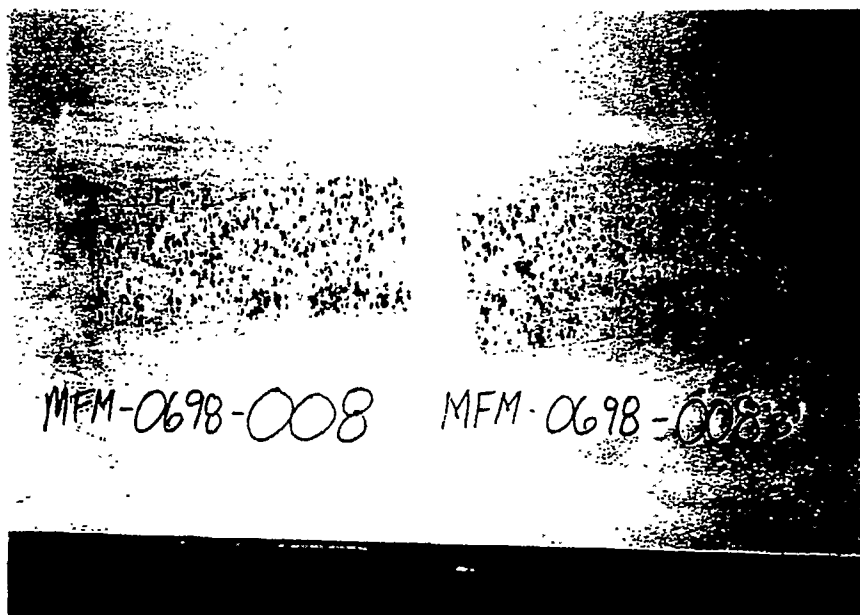


-Photo 6-
Amtico - Non-Asbestos
Solid Vinyl Flooring, 1967
Sample #MFM-0698-006

Boelter & Yates, Inc

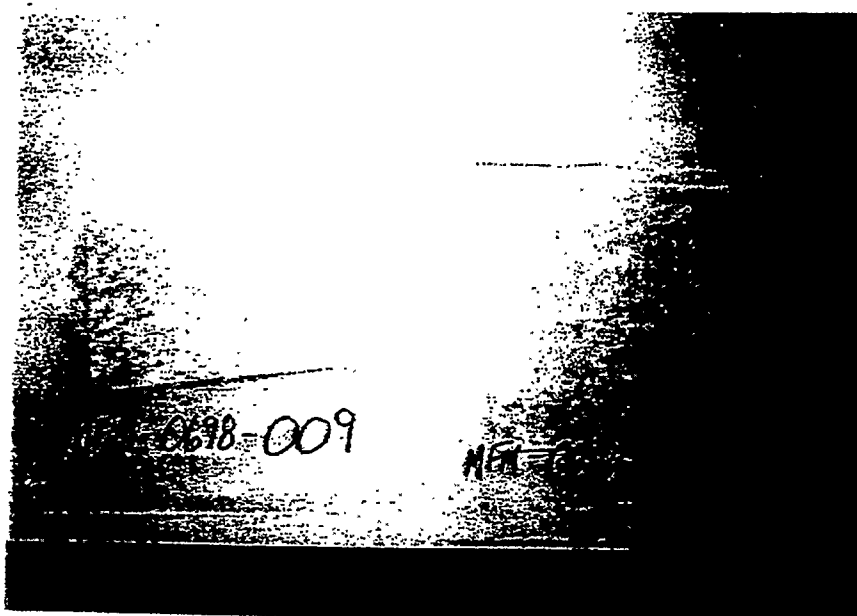


-Photo 7-
Congoleum Ventura -
VA-491
Vinylbest Tile - 1972
Sample #MFM-0698-007



-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

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Boelter & Yates, Inc.

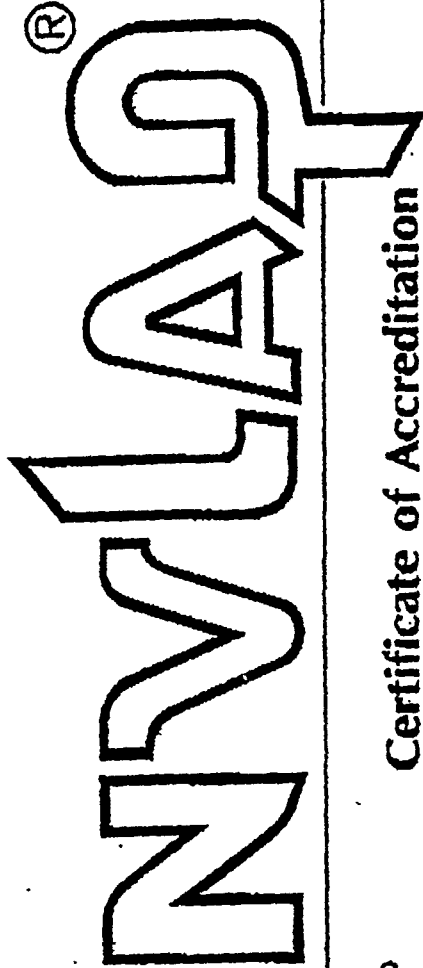
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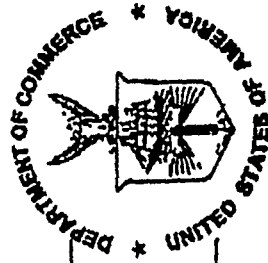
APPENDIX D

Certifications

United States Department of Commerce
National Institute of Standards and Technology



ISO/IEC GUIDE 25:1990
ISO 9002:1987



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	CATEGORY	ID NUMBER
05/15/99	5319	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

THIS LICENSE IS NOT VALID IF YOUR IDPH

REFRESHER COURSE CERTIFICATE IS NOT CURRENT

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

MATTHEW

MEYER

INSPECTOR

MANAGEMENT PLANNI
PROJECT MANAGER
AIR SAMPLING PROFESSIONA



Occupational Training & Supply, Inc.

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

Matthew F. Meyer

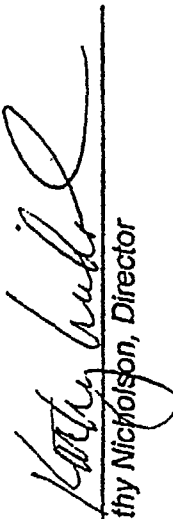
344-60-4613

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

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