



April 19, 2016

United Mining Industries  
Shaukat Parkar  
United Mining Industries  
Light Industrial Area, Al Razi St.  
Yanbu Al Sinaiyah  
SAUDIA ARABIA

Dear Shaurkat:

Thank you for choosing UL Environment and its ISO/IEC 17025 accredited testing laboratories for your analytical needs. Attached is the final report, which presents the test protocols and resulting data. The analysis of the submitted product identified as "Fiber Cement Board, 16mm" (18360-010AA) was an assessment following EPA/600/R-93/116 satisfying applicable requirements of the USEPA's "Interim Method for the Determination of Asbestos in Bulk Insulation Sample", EPA-600/M4-82-020, December 1982, published as Appendix E to Subpart E of 40CFR763. This analysis was completed by Bureau Veritas North America, Inc., Kennesaw, GA.

Based on the Bureau Veritas report for Project 9078-11235971, the analysis gave a result of "none detected."

We appreciate this opportunity to assist you. If you have any questions or wish to discuss your results, please feel free to contact us at (888) 485-4733.

Sincerely,

A handwritten signature in black ink, appearing to read 'W. Elliott Horner'.

W. Elliott Horner, PhD, LEED® AP  
Lead Scientist

Attachment



April 18, 2016

Melany Atwell  
UL ENVIRONMENT  
2211 Newmark Pkwy.  
Suite 106  
Marietta, GA 30067

Bureau Veritas Work Order No. A1604096

Reference: 9078-11235971

Dear Melany Atwell:

Bureau Veritas North America, Inc. received 1 sample on April 11, 2016 for the analyses presented in the following report.

The results apply only to the samples analyzed in this project. Please note that any unused portion of the samples will be discarded after a sixty-day holding period, unless you have requested otherwise.

This material is confidential and is intended solely for the person to whom it is addressed. If this is received in error, please contact the number provided below.

We appreciate the opportunity to assist you. If you have any questions concerning the report, please contact the analyst whose name appears on the report or myself at (770) 499-7701.

Sincerely,

Jon Perrenoud

Senior Microscopist

Electronic signature authorized through password protection

**Bureau Veritas North America, Inc.**

*Health, Safety, and Environmental Services*  
3380 Chastain Meadows Parkway, Suite 300  
Kennesaw, GA 30144

Main: (770) 499-7701  
Fax: (770) 499-7511  
[www.us.bureauveritas.com](http://www.us.bureauveritas.com)



## CASE NARRATIVE

Date: 18-Apr-16

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**CLIENT:** UL ENVIRONMENT

**Project:** 9078-11235971

**Work Order No** A1604096

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### ANALYTICAL METHOD FOR ASBESTOS IN BULK SAMPLES USING POLARIZED LIGHT MICROSCOPY (PLM)

The results of this report relate only to the samples listed in the body of this report.

Unless otherwise noted below, the following statements apply: 1) all samples were received in acceptable condition, 2) all quality control results associated with this sample set were within acceptable limits and/or do not adversely affect the reported results, and 3) the industrial hygiene results have not been blank corrected unless otherwise noted.

Use of EPA/600/R-93/116 satisfies applicable requirements of the USEPA's "Interim Method for the Determination of Asbestos in Bulk Insulation Sample", EPA-600/M4-82-020, December 1982, published as Appendix E to Subpart E of 40CFR763. Bulk samples analyzed by New York State methods follow stratified point counting methods (198.1) or Method 198.6 for PLM non-friable organically bound materials (NYSDOH Lab Code -11645). Percentages are visual estimations of asbestos >10:1 aspect ratio. The reliable limit of quantitation of the method is 1%, although asbestos may be qualitatively detected at concentrations less than 1%. Samples for which asbestos is detected at <1% are reported as trace, "<1%". "None Detected" indicates that no asbestos fibers were observed. NESHAP requires point counting of a bulk sample when the result is <10% by a method other than point counting. EPA, however states that if 3 mounts of the sample are analyzed and the asbestos percentage is <10% by visual estimation, the client may elect to assume the amount to be greater than 1% or require verification by point counting. If the result by point counting is different than the result obtained by visual estimation, the point count result will be used. Sample friability or non-friability noted on the report is a requirement for the State of California and refers only to the condition of the sample under macroscopic examination. It does not imply friability or non-friability for the sample as collected or observed in the field as determined by the person collecting the sample. The Kennesaw, Georgia lab is accredited by NVLAP -Lab Code 101125-0.

(a)Polarized- light microscopy is not consistently reliable in detecting asbestos in floor coverings, similar non-friable organically bound materials, soil and vermiculite. Quantitative electron microscopy is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing. When analysis of such materials by PLM yields results negative for the presence of asbestos, Bureau Veritas recommends utilizing quantitative transmission electron microscopy (TEM). For more information, contact the laboratory.

References

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**CLIENT:** UL ENVIRONMENT

**Project:** 9078-11235971

**Work Order No** A1604096

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McCrone, Walter C. 1980. The Asbestos Particle Atlas. Ann Arbor, MI: Ann Arbor Science Publishers, Inc.

United States Environmental Protection Agency. Environmental Monitoring Systems Laboratory. 1982. Interim Method for the Determination of Asbestos in Bulk Insulation Samples. EPA-600/M4-82-020. Washington: GPO, December.

United States Environmental Protection Agency. Method for the Determination of Asbestos in Bulk Building Materials. EPA-600/R-93/116, July 1993 (PLM)

Fed. Reg. Vol. 55, No.224, 11/20/90, p.48415 (NESHAP)  
EPA Memorandum 5/8/1991 –NESHAP Clarifications

NYSDOH Methods 198.1/198.6



# ANALYTICAL RESULTS

Date: 18-Apr-16

CLIENT: UL ENVIRONMENT

Sample Type: Bulk

Work Order No.: A1604096

Date Received: 4/11/2016

Client Reference: 9078-11235971

Report Date: 18-Apr-16

Method Reference: EPA-600/M4-82-020/EPA/600/R-93/116/NYELAP 198.1

Lab ID	Client Sample ID	Analyst	Date Sampled	Date Analyzed
<u>001A</u>	<b>FIBER CEMENT BOARD 16MM</b>	KH		04/15/2016

Layer	POB	Sample Morphology	Asbestos	%	Other Fibers	%	Particulate
(1)	100	Homogeneous Beige Fibrous Board	None Detected		Cellulose fiber Fibrous glass	35% 1%	Binder/Filler

### Laboratory Limits

#### Kevin HONGKHAM ( KH)

Range	R Limit	Quartile Limit
0.1-1	100	+/- 1.482
10-100	100	+/- 26.676
1-10	100	+/- 5.928
Trace	100	+/- 1.482

#### Laboratory

Range	R Limit	Quartile Limit
0.1-1	100	+/- 1.482
10-100	100	+/- 22.23
1-10	100	+/- 7.41
Trace	100	+/- 1.482

The reliable limit of quantitation of the method is 1%, although asbestos may be qualitatively detected at concentrations less than 1%. Samples for asbestos is detected at <1% are reported as trace, "<1%". "None Detected" indicates that no asbestos fibers were observed.

Analyst(s) Name/Date: KA 4/18/2016



**Request for Laboratory Analytical Services**

Page: 1 of 1  
For Lab Use Only  
Lab Project #:

**Bureau Veritas North America, Inc.**

**Report results to:** Client Project Number: 90783 - 11235971 Send invoice to: P.O. No. \_\_\_\_\_  
Name: Melany Atwell Name: Melany Atwell  
Company: UL Environment Company: UL Environment  
Mailing Address: 2211 Newmark Pkwy, Ste 106 Address: 2211 Newmark Pkwy, Ste 106  
City, State, Zip: Marietta, GA 30067 City, State, Zip: Marietta, GA 30067  
Telephone No.: (678) 444-4079 Fax No. \_\_\_\_\_

AL624096

**Asbestos/Soil samples only: Which state are these from?** Saudi Arabia

Special instructions and/or specific regulatory requirements: (method, limit of detection, etc.)

melany.atwell@ul.com  
Water samples are: Drinking water  
Groundwater  
Wastewater

Client Sample Identification	Date Sampled	Time Sampled	Matrix/Media	Air Volume (Liters)	# of Jars	ANALYSIS REQUESTED (List each analyte on the lines below, multiple analytes per line)
Fiber Cement Board, 16mm						Asbestos

Collected by: [Signature] Date/Time: 04/11/16 Collector's Signature: [Signature] Date/Time: 4/11/2016  
Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
Method of Shipment: \_\_\_\_\_ Sample Condition on Receipt: \_\_\_\_\_  
Authorized by: \_\_\_\_\_ Other: 110  
[Signature] (Explain)

**Ship to:**

<b>Detroit Lab</b> 22345 Roethel Drive Novi, MI 48375 248.344.2652 800.806.5887 Fax: 248.344.2655	<b>Atlanta Lab</b> 3380 Chastain Meadows Pkwy., Ste 300 Kennesaw, GA 30144 770.499.7701 800.252.9919 Fax: 770.499.7511	<b>Chicago Lab</b> 95 Oakwood Road Lake Zurich, IL 60047 888.576.7522 847.726.3320 Fax: 847.726.3323	<b>Canadian Clients</b> 1415 Janette Ave Windsor, ON N8X 1Z1 <b>Visit our Website:</b> <a href="http://www.BureauVeritasLabs.com">www.BureauVeritasLabs.com</a>
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# Request for Laboratory Analytical Services

Page: 1 of 1

For Lab Use Only  
Lab Project #:

AL624096

**IMPORTANT:** Date results required:

Rush charges authorized? Yes  No   
E-mail results   
Fax or  E-mail results   
E-mail Address:

**Bureau Veritas North America, Inc.**

Report results to: Client Project Number: 90783 - 11235971 P.O. No. \_\_\_\_\_

Name Melany Atwell  
Company UL Environment  
Mailing Address 2211 Newmark Pkwy, Ste 106  
City, State, Zip Marietta, GA 30067  
Telephone No. (678) 444-4079 Fax No. \_\_\_\_\_

**Send invoice to:**

Name Melany Atwell  
Company UL Environment  
Address 2211 Newmark Pkwy, Ste 106  
City, State, Zip Marietta, GA 30067

Special instructions and/or specific regulatory requirements:  
(method, limit of detection, etc.)  
melany.atwell@ul.com

**Asbestos/Soil samples only: Which state are these from?** Saudi Arabia

Water samples are:  
Drinking water \_\_\_\_\_  
Wastewater \_\_\_\_\_  
Groundwater \_\_\_\_\_

Client Sample Identification	Date Sampled	Time Sampled	Matrix/Media	Air Volume (Liters)	# of Jars	ANALYSIS REQUESTED (List each analyte on the lines below, multiple analytes per line)
Fiber Cement Board, 16mm						Asbestos

Collected by: [Signature] Date/Time 04/11/16 Collector's Signature: [Signature] Date/Time 4/11/2016  
 Relinquished by: \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by: \_\_\_\_\_ Date/Time \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by: \_\_\_\_\_ Date/Time \_\_\_\_\_  
 Method of Shipment: \_\_\_\_\_ Sample Condition on Receipt: \_\_\_\_\_  
 Authorized by: \_\_\_\_\_ (Signature MUST accompany request) Other: Acceptable  
110 [Signature]

**Ship to:** **Detroit Lab** 22345 Roethel Drive  
Novi, MI 48375  
248.344.2652  
800.806.5887  
Fax: 248.344.2655

**Atlanta Lab** 3380 Chastain Meadows Pkwy., Ste 300  
Kennesaw, GA 30144  
770.499.7701  
800.252.9919  
Fax: 770.499.7511

**Chicago Lab** 95 Oakwood Road  
Lake Zurich, IL 60047  
888.576.7522  
847.726.3320  
Fax: 847.726.3323

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Windsor, ON N8X 1Z1  
**Visit our Website:**  
[www.BureauVeritasLabs.com](http://www.BureauVeritasLabs.com)