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ASBESTOS-CONTAINING MATERIAL RE-INSPECTION FOR BUILDING 1001 VOLUME 15  
CNC CHARLESTON SC  
1/15/2000  
BAT ASSOCIATES, INC.

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Volume 15

**Asbestos-Containing Material Re-inspection  
For Building 1001  
Charleston Naval Shipyard  
Charleston, South Carolina**

Contract No. N2467-96-D-0998  
Delivery Order No. 0013

*Prepared for:*

Department of the Navy  
Southern Division  
NAVFACENGCOM  
245 Eagle Drive  
North Charleston, SC 29419

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*Prepared by:*

BAT Associates, Inc.  
541 Brook Hollow Parkway  
Suite 250  
Norcross, Georgia 30071  
(770) 242-3908

January 15, 2000

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Volume 15

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January 15, 2000

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## **1.0 EXECUTIVE SUMMARY**

BAT Associates, Inc. (BAT) was retained by the U.S. Department of the Navy, Southern Division (SouthDiv), Naval Facilities Engineering Command (NAVFACENGCOM) to perform an asbestos-containing material (ACM) re-inspection of Building 1001 located at the Charleston Naval Shipyard in Charleston, South Carolina.

**No asbestos-containing materials were identified in this building.**

## 2.0 BUILDING INSPECTION INFORMATION FORM

**Building Name:** Storage Shed  
**Building Number:** 1001  
**Facility:** Charleston Naval Shipyard  
**Building Area (square footage):** 1,500  
**Year Built:** 1972  
**Building Type:** Storage  
**No. of Floors in Building:** One  
**Purpose of ACM Survey:** Re-Inspection  
**Facility Unit Identification Code (UIC):** N/A

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**Building Contact:** Mr. William A. Drawdy  
**Contact's Telephone No.:** (843) 743-9985  
**Building Survey Date(s):** November 17, 1999

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**Asbestos Inspector's Name:** Mr. Jason McGlashan  
**Asbestos Inspector's Accreditation No:** GA2594  
**Inspection Company:** BAT Associates, Inc.  
**Company Telephone No.** (770) 242-3908

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### 3.0 INTRODUCTION

BAT Associates, Inc. (BAT) was retained by the U.S. Department of the Navy, Southern Division (SouthDiv), Naval Facilities Engineering Command (NAVFACENGCOM) to perform an asbestos-containing material (ACM) re-inspection of all buildings located at the Charleston Naval Shipyard in Charleston, South Carolina. The purpose of this re-inspection was to:

1. Perform a comprehensive ACM re-inspection of 34 buildings in accordance with Federal and U.S. Navy requirements;
2. Assess the condition of previously identified friable and non-friable ACM; and
3. Provide a preliminary cost estimate for the removal of identified ACM.

The re-inspection was performed in accordance with the Navy's Asbestos Facility Inventory/Assessment Protocol (NEESA 70.2-010) and the U.S. Environmental Protection Agency's (USEPA) Asbestos Hazard Emergency Response Act (AHERA) and the Asbestos School Hazard Abatement Reauthorization Act (ASHARA).

The results of the re-inspection survey are presented in 23 separate volume reports. This report describes the results for Building 1001.

This re-inspection survey was performed by Mr. Jason McGlashan, under the direct supervision of Mr. Douglas J. Milton, CIH, on November 17, 1999. Mr. McGlashan is an accredited asbestos building inspector. Mr. Milton, a Certified Industrial Hygienist, is an accredited asbestos inspector, management planner, and project designer.

This report discusses the sampling methodology used during the re-inspection and assessment (Section 4.0); a list of all identified suspect materials (Section 5.0); a summary of the bulk sample analysis results (Section 6.0); results of quality control sampling; (Section 7.0); physical assessments of the identified ACM (Section 8.0); a hazard assessment of the identified ACM (Section 9.0); and conclusions (Section 10.0). Appendix A contains drawings identifying the locations of collected bulk samples. Appendix B contains laboratory analysis results. Appendix C contains personnel and laboratory accreditations.

The assessment protocol for ACM involved three distinct steps:

1. Performed preliminary walk-through of the building to identify suspect ACM and to determine the amount of suspect ACM, to define the number of samples to be collected, to identify access problems (e.g., collection of samples in a limited access pipe chase below the building), and to determine the degree of personal protection necessary for the bulk sample collection.
2. Visually inspected the building for ACM to identify the location of the suspect ACM and to determine if the material was friable or non-friable. Suspect materials were then categorized according to the EPA National Emission Standards for

Hazardous Air Pollutants (NESHAP) for asbestos as: Category I non-friable materials, Category II non-friable materials, and Regulated (friable) Asbestos-Containing Materials (RACM).

3. Collected bulk samples for the analysis for asbestos content (see Section 4.0, *Sampling Methodology*, for details).

#### 4.0 SAMPLE METHODOLOGY

Representative, randomly selected bulk samples were collected in accordance with the Navy's and AHERA sampling protocol, as described in 40 CFR 763.86, and in accordance with BAT's contract requirements.

The minimum number of samples collected from each homogeneous area was as follows:

1. *Friable Spray-Applied or Trowel-Applied Material* (including plaster)
  - a. Less than or equal to 1,000 Square Feet (S.F.) = 3 samples
  - b. Greater than 1,000 S.F. and less than or equal to 5,000 S.F. = 5 samples
  - c. Greater than 5,000 = 7 samples

2. *Pipe and Duct Insulation*

- a. Three samples per homogeneous area of insulation.

3. *Elbows, Valves, Fittings and Connection Mud*

Three representative samples from each type of insulated elbow, valve, fitting, and connection mud.

4. *Boiler, Tanks and Furnaces*

A minimum of 3 samples per unit.

5. *Patchwork*

Patchwork is defined as a patch or repair to existing material based on the following quantities:

- a. Surfacing material patches are limited to a maximum of 6 S.F.
- b. Pipe and duct insulation patches are limited to a maximum of 6 Linear Feet (L.F.) or 6 S.F.
- c. Boiler, tank, and furnace patches are limited to 6 S.F.

If the patchwork exceeded the limits prescribed above, it was sampled

according to the homogeneous area protocol in items 1 to 4 above. If a material qualifies as patchwork, a single sample was collected per patch.

6. *Ceiling or Acoustical Tile*

3 samples

7. *Miscellaneous Friable Material*

3 samples

8. *Non-Friable Material*

Non-friable materials for purpose of this survey included Transite-type panels, floor tiles, floor tile mastic, and other miscellaneous materials.

Minimum of 3 samples.

The procedures followed for collection of each bulk sample is outlined briefly below:

1. The accredited inspector collecting the sample was equipped with the appropriate personal protective equipment. This included a half-mask air-purifying respirator, protective gloves and protective eyewear.
2. The surface of the material being sampled was wetted with amended water (containing a surfactant to aid penetration) mist to lessen the risk of fiber release during sampling.
3. Each sample was extracted using the appropriate equipment, (e.g., a sample container, knife, core borer). Care was taken to insure that all layers of the suspect materials, down to the substrate, were included in the sample.
4. Each sample was placed in an individual container which was then sealed and labeled with a unique identification number which was also recorded on the sample data log-in sheet.
5. After each sample was collected, the area immediately surrounding the sampling location was inspected for debris and wet-cleaned as necessary to lessen the risk of an airborne fiber release.
6. All necessary data were recorded on the BAT Suspect Material Inventory Form including sample number, sample location, type of suspect material, name of inspector collecting the sample and other relevant information.

**5.0 ASBESTOS INVENTORY AND ASSESSMENT**

Table 1.0 describes the suspect ACM identified in and around Building 1001.

**Table 1.0  
 Summary of Identified Suspect ACM**

HA No.	Description of Suspect ACM	Location of Suspect ACM	AHERA Category of Material
1	Floor Tile, 12" x 12" yellow with brown streaks w/ black mastic	Northwest corner office	N/A

Notes: N/A = Not Applicable

**6.0 SUMMARY OF SAMPLE ANALYSIS RESULTS**

Table 2.0 contains a summary of the bulk sample analysis results for suspect ACM identified in this building.

According to AHERA protocol, all samples within a homogeneous area must have an asbestos content of one percent or less by weight using Polarized Light Microscopy (PLM) analysis before the material can be categorized as non-asbestos-containing. If one sample is determined as asbestos-containing using PLM analysis, the entire homogeneous area must be classified asbestos-containing.

**Table 2.0  
 Summary of Sample Analysis Results**

HA No.	Sample ID No.	Suspect Material Description	Asbestos Content	Friability
1	1001-1-1, 1001-102, 1001-103	Floor Tile, 12" x 12" yellow with brown streaks w/ black mastic	NAD	N/A

Notes: NAD = No Asbestos Detected N/A = Not Applicable

## **7.0 RESULTS OF QUALITY CONTROL SAMPLING**

The purpose of quality control (QC) sampling was to ensure reproducibility of the primary laboratory analysis results. Duplicate samples were collected for ten percent of the total building samples for QC purposes.

**Table 3.0  
Validation of Quality Control Sampling**

**No quality control samples were collected for this building.**

## **8.0 PHYSICAL ASSESSMENT OF IDENTIFIED ACM**

**No physical assessments are required since no asbestos-containing materials were identified in this building.**

## **9.0 HAZARD ASSESSMENT OF IDENTIFIED ACM**

**No hazard assessments are required since no asbestos-containing materials were identified in this building.**

## 10.0 CONCLUSIONS

Inspection of Building 1001 and confirmatory laboratory bulk sample analysis of selected samples identified the following materials with asbestos concentrations greater than one percent.

<u>Identified ACM</u>	<u>Quantity</u>	<u>NESHAP Category</u>
None.		

The following materials were not sampled in order to avoid disrupting their integrity, and they were assumed to contain asbestos:

<u>Assumed ACM</u>	<u>Quantity</u>	<u>NESHAP Category</u>
None.		

**APPENDIX A**  
**SAMPLE LOCATION DRAWINGS**

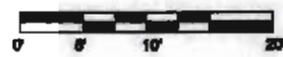
1001-1-1 (-)  
1001-1-2 (-)  
1001-1-3 (-)



**NOTE: No Asbestos-Containing  
Materials Identified  
In This Building.**

**BUILDING 1001**  
**Sample and Asbestos-Containing  
Material Location**

**LEGEND**  
• - Sample Location  
(-) - Non-Asbestos-Containing  
Sample Location



**BAT Associates, Inc.**  
ENVIRONMENTAL, HEALTH & SAFETY SERVICES  
3151 BROOK HOLLOW PARKWAY, SUITE 250  
NORCROSS, GA 30071

**APPENDIX B**  
**LABORATORY ANALYSIS RESULTS**

**POLARIZED LIGHT MICROSCOPY (PLM)  
BULK SAMPLE ANALYSIS REPORT**

CLIENT NAME: BAT ASSOCIATES LAB JOB NO: B9323  
PROJECT NAME: CHARLESTON NSY / 971001-13.03 DATE RECEIVED: 12/6/99  
PROJECT NO: L802Z.000 REPORT ISSUED: 12/14/99  
SAMPLE FIELD ID: 1001-1-1 LAB ID: 927141  
SAMPLE INFO: DATE ANALYZED: 12/13/99

**SAMPLE DESCRIPTION**

LAYERED: NO

APPEARANCE: BROWN HARD RESILIENT TO GRANULAR WITH BLACK MASTIC

**RESULT OF ANALYSIS IN VOLUME PERCENTAGE (BY VISUAL ESTIMATE)**

ASBESTOS FIBERS	NONASBESTOS FIBERS	NONFIBROUS COMPONENTS	OTHER COMPONENTS
CHRYSTOLE	CELLULOSE	VERMICULITE/MICA	BITUMEN/TAR 3
AMOSITE	GLASS FIBERS	PERLITE	SAND/AGGR. 30
CROCIDOLITE	SYNTHETICS 1	EXPANDED GLASS	GLUE/CAULK
TREMOLITE	WOLLASTONITE	SYNTHETIC FOAM	VINYL
ACTINOLITE	TALC	ALUMINUM/METAL	CORK
ANTHOPHYLLITE		FOAM RUBBER	LATEX/RUBBER
			PAINT/OTHER 66

**COMMENTS:**

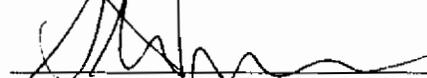
SAMPLE WAS ANALYZED BY PLM USING DISPERSION STAINING TECHNIQUES IN ACCORDANCE WITH U.S. EPA METHOD 40CFR Ch. I (7-1-92) PT. 763, SUBPT. F, APP. A. LAST CALIBRATION OF EQUIPMENT WAS PERFORMED ON: 12/13/99 FOR ALL HETEROGENEOUS AND LAYERED SAMPLES EASILY SEPARATED INTO SUBLAYERS, EACH LAYER IS ANALYZED SEPARATELY.  
REPORT 1 OF 1

ANALYST



ALEKSEY REZNIK

QUALITY CONTROL



STEVE JARVIS

**POLARIZED LIGHT MICROSCOPY (PLM)  
BULK SAMPLE ANALYSIS REPORT**

CLIENT NAME: BAT ASSOCIATES LAB JOB NO: B9323  
PROJECT NAME: CHARLESTON NSY / 971001-13.03 DATE RECEIVED: 12/6/99  
PROJECT NO: L802Z.000 REPORT ISSUED: 12/14/99  
SAMPLE FIELD ID: 1001-1-2 LAB ID: 927142  
SAMPLE INFO: DATE ANALYZED: 12/13/99

**SAMPLE DESCRIPTION**

LAYERED: NO

APPEARANCE: BROWN HARD RESILIENT TO GRANULAR WITH BLACK MASTIC

**RESULT OF ANALYSIS IN VOLUME PERCENTAGE (BY VISUAL ESTIMATE)**

ASBESTOS FIBERS		NONASBESTOS FIBERS		NONFIBROUS COMPONENTS		OTHER COMPONENTS	
CHRYSTOTILE		CELLULOSE	1	VERMICULITE/MICA		BITUMEN/TAR	3
AMOSITE		GLASS FIBERS		PERLITE		SAND/AGGR.	30
CROCIDOLITE		SYNTHETICS	1	EXPANDED GLASS		GLUE/CAULK	
TREMOLITE		WOLLASTONITE		SYNTHETIC FOAM		VINYL	
ACTINOLITE		TALC		ALUMINUM/METAL		CORK	
ANTHOPHYLLITE				FOAM RUBBER		LATEX/RUBBER	
						PAINT/OTHER	65

**COMMENTS:**

SAMPLE WAS ANALYZED BY PLM USING DISPERSION STAINING TECHNIQUES IN ACCORDANCE WITH U.S. EPA METHOD 40CFR Ch. I (7-1-92 ) PT. 763, SUBPT. F, APP. A. LAST CALIBRATION OF EQUIPMENT WAS PERFORMED ON: 12/13/99 FOR ALL HETEROGENEOUS AND LAYERED SAMPLES EASILY SEPARATED INTO SUBLAYERS, EACH LAYER IS ANALYZED SEPARATELY. REPORT 1 OF 1

ANALYST

  
ALEKSEY REZNIK

QUALITY CONTROL

  
STEVE JARVIS

**POLARIZED LIGHT MICROSCOPY (PLM)  
BULK SAMPLE ANALYSIS REPORT**

CLIENT NAME: BAT ASSOCIATES LAB JOB NO: B9323  
 PROJECT NAME: CHARLESTON NSY / 971001-13.03 DATE RECEIVED: 12/6/99  
 PROJECT NO: L802Z.000 REPORT ISSUED: 12/14/99  
 SAMPLE FIELD ID: 1001-1-3 LAB ID: 927143  
 SAMPLE INFO: \_\_\_\_\_ DATE ANALYZED: 12/13/99

**SAMPLE DESCRIPTION**

LAYERED: NO  
 APPEARANCE: BROWN HARD RESILIENT TO GRANULAR WITH BLACK MASTIC

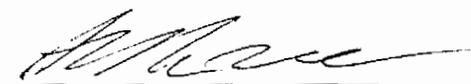
**RESULT OF ANALYSIS IN VOLUME PERCENTAGE (BY VISUAL ESTIMATE)**

ASBESTOS FIBERS		NONASBESTOS FIBERS		NONFIBROUS COMPONENTS		OTHER COMPONENTS	
CHRYSTOLE		CELLULOSE	1	VERMICULITE/MICA		BITUMEN/TAR	3
AMOSITE		GLASS FIBERS		PERLITE		SAND/AGGR.	30
CROCIDOLITE		SYNTHETICS	1	EXPANDED GLASS		GLUE/CAULK	
TREMOLITE		WOLLASTONITE		SYNTHETIC FOAM		VINYL	
ACTINOLITE		TALC		ALUMINUM/METAL		CORK	
ANTHOPHYLLITE				FOAM RUBBER		LATEX/RUBBER	
						PAINT/OTHER	65

**COMMENTS:**

SAMPLE WAS ANALYZED BY PLM USING DISPERSION STAINING TECHNIQUES IN ACCORDANCE WITH U.S. EPA METHOD 40CFR Ch. I (7-1-92 ) PT. 763, SUBPT. F, APP. A. LAST CALIBRATION OF EQUIPMENT WAS PERFORMED ON: 12/13/99 FOR ALL HETEROGENEOUS AND LAYERED SAMPLES EASILY SEPARATED INTO SUBLAYERS, EACH LAYER IS ANALYZED SEPARATELY.  
 REPORT 1 OF 1

ANALYST

  
 ALEKSEY REZNIK

QUALITY CONTROL

  
 STEVE JARVIS

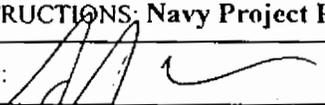
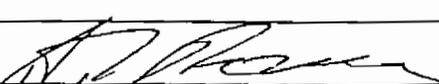
PLM IS NOT CONSISTENTLY RELIABLE IN DETECTING SMALL CONCENTRATION OF ASBESTOS IN FLOOR TILES AND SIMILAR NONFRIABLE MATERIALS. QUANTITATIVE TEM IS CURRENTLY THE ONLY METHOD THAT CAN BE USED TO GET THE CONCLUSIVE ASBESTOS CONTENT. THIS REPORT RELATES ONLY TO THE ITEMS TESTED. THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL, AND NOT WITHOUT WRITTEN APPROVAL OF THE LABORATORY. THIS REPORT SHALL NOT BE USED TO CLAIM ENDORSEMENT BY NVLAP OR ANY AGENCY OF U.S. GOVERNMENT

# BAT

BAT Associates, Inc.  
ENGINEERS • SCIENTISTS • PLANNERS

5151 Brook Hollow Pkwy., Suite 250  
Norcross, GA 30071  
Phone: (770) 242-3908  
Fax: (770) 242-3912

## CHAIN OF CUSTODY FORM

BAT PROJECT CONTACT <b>DOUGLAS J. MILTON</b>	
BAT JOB NAME <b>Charleston Naval Shipyard</b>	BAT JOB NO. <b>971001</b> TASK NO. <b>13.03</b>
ANALYSIS REQUESTED <input checked="" type="checkbox"/> PLM <input type="checkbox"/> PCM <input type="checkbox"/> AAS For Lead Content <input type="checkbox"/> OTHER _____	
CHECK ONE: <input type="checkbox"/> ROUTINE <input checked="" type="checkbox"/> ROUTINE - FAX (HANDWRITTEN) AS SOON AS POSSIBLE <input type="checkbox"/> RUSH - FAX (HANDWRITTEN) AS SOON AS POSSIBLE	
SAMPLE ID	SAMPLE ID
1. 1886-1-1	16.
2. 1886-1-2	17.
3. 1886-1-3	18.
4. 1886-2-1	19.
5. 1886-2-2	20.
6. 1886-2-3	21.
7. 1886-3-1	22.
8. 1886-3-2	23.
9. 1886-3-3	24.
10. 1886-4-1	25.
11. 1886-4-2	26.
12. 1886-4-3	27.
13. 1001-1-1	28.
14. 1001-1-2	29.
15. 1001-1-3	30.
SPECIAL INSTRUCTIONS: Navy Project Rates	
Relinquished by: 	Received by: 
Date: 12/6/99 Time: 10:00	Date: 12/6/99 Time: 10:00

**APPENDIX C**  
**PERSONNEL AND LABORATORY ACCREDITATIONS**

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# **The Environmental Institute**

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## *Jason McGlashan*

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Social Security Number - 137-62-0377

*Has completed coursework and satisfactorily passed  
an examination that meets all criteria required for  
EPA/AHERA/ASHARA (TSCA Title II) Approved Accreditation  
and NESHAP Regulations Training*

### *Asbestos in Buildings: Inspection and Assessment*

*June 21-23, 1999*

Course Date

*2594*

Certificate Number

*June 23, 1999*

Examination Date

*June 22, 2000*

Expiration Date

*R. A. Short*

Ronald A. Short - Course Director

*Rachel G. McCain*

Rachel G. McCain - Exam Administrator



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# *The Environmental Institute*

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## *Douglas J. Milton*

---

Social Security Number - 266-55-7179

*Has completed coursework and satisfactorily passed  
an examination that meets all criteria required for  
EPA/AHERA/ASHARA (TSCA Title II) Approved Reaccreditation  
and NESHAP Regulations Training*

*Asbestos in Buildings: Inspector & Management  
Planner Refresher*

*December 15, 1999*

Course Date

*6398*

Certificate Number

*December 15, 1999*

Examination Date

*December 14, 2000*

Expiration Date

*Tod A. Dawson*

Tod A. Dawson - Course Director

*Rachel G. McCain*

Rachel G. McCain - Exam Administrator



TEI - 1300 Williams Drive, Suite E - Marietta, Georgia 30066 - (770) 427-3600

The  
American Board of Industrial Hygiene®  
ABIH®



organized to improve the practice of Industrial Hygiene  
proclaims that

***Douglas J. Milton***

having met all requirements through  
education, experience and examination,  
is hereby certified in the

**COMPREHENSIVE PRACTICE  
of  
INDUSTRIAL HYGIENE**

and has the right to use the designations

**CERTIFIED INDUSTRIAL HYGIENIST**

**CIH**

November 12, 1997

date

A handwritten signature in cursive script, reading "J. Kenneth Conroy".

Chair ABIH

CP 7612

certificate  
number

A handwritten signature in cursive script, reading "Robert Conroy".

Secretary ABIH



United States Department of Commerce  
National Institute of Standards and Technology



ISO/IEC GUIDE 25:1990  
ISO 9002:1987

Certificate of Accreditation



CAPE ENVIRONMENTAL MANAGEMENT, INC.  
ATLANTA, GA

*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, 2000

Effective through

A handwritten signature in black ink, appearing to read 'John L. Galt', is written over a horizontal line.

For the National Institute of Standards and Technology

NVLAP Lab Code: 102111-0

United States Department of Commerce  
National Institute of Standards and Technology

**NVLAP**<sup>®</sup>

ISO/IEC GUIDE 25:1990  
ISO 9002:1987

**Certificate of Accreditation**



**ANALYTICAL ENVIRONMENTAL SERVICES, INC.**  
ATLANTA, GA

*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**

September 30, 2000

*Effective through*

*For the National Institute of Standards and Technology*

NVLAP Lab Code: 102033-0