ASBESTOS-CONTAINING MATERIALS AND LEAD-BASED PAINT SURVEY DAVENPORT POST OFFICE DAVENPORT, FLORIDA 33837-9998

Prepared for:
United States Postal Service
Suncoast District
P.O. Box 22810
Tampa, FL 33622-2810

Project No. H12291

UNITED STATES POSTAL SERVICE™

DECEMBER 1995

Prepared by:
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Contract No. 475450-94-B-0326

WESTON® MANAGERS DESIGNERS/CONSULTANTS

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ASBESTOS SURVEY AND ASSESSMENT
OF
DAVENPORT POST OFFICE
1 SOUTH BOULEVARD EAST
DAVENPORT, FLORIDA 33837-9998

Prepared For
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DECEMBER 1995

WESTON
MANAGERS DESIGNERS/CONSULTANTS

ASBESTOS SURVEY TITLE SHEET

User Agency	USPS
Facility Name	Davenport Post Office
Finance/Sublocation No.	112070/G01
Facility Address	1 South Boulevard East
City, State, Zip	Davenport, Florida 33837-9998
Date of Survey	8 December 1995
Consulting Firm Name	Roy F. Weston, Inc. (WESTON®)
Consulting Firm Address	1635 Pumphrey Avenue
City, State, Zip	Auburn, AL 36830-4303
Consulting Firm Telephone No.	(334) 826-6100

I hereby certify that the survey and inspection referenced by this report, and the report itself, were conducted in accordance with intent of the AHERA regulations, to the best of my ability and knowledge.

Mike Kindley
Management Planner
Safe State Accreditation No. PL0695K3641

I have reviewed this report and hereby certify that the information contained within satisfies the intent of the AHERA regulations, to the best of my ability and knowledge.

Ralph Arcangeli, P.E.
Florida Asbestos Consultant
License No. AX0000004

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SECTION 1
EXECUTIVE SUMMARY

1.1 GENERAL

Roy F. Weston, Inc. (WESTON®) was retained by the United States Postal Service/Suncoast District to conduct an asbestos-containing materials (ACM) survey of the Davenport facility. The objectives of the survey were to identify and analyze materials suspected of containing asbestos, to document the locations where ACM was found, and to determine fiber concentration currently present in the air within the facility.

The USPS Davenport Post Office in Davenport, Florida, is a 13,611 square foot brick structure with a metal roof constructed in 1990. The interior walls are primarily of cinder block and dry wall. The facility was surveyed by a WESTON building inspector on 8 December 1995. A copy of the inspector's accreditation is included in Appendix G. Two types of samples were taken to determine asbestos content: bulk samples of suspect ACM and air samples in representative areas within the facility. The bulk samples were analyzed by polarized light microscopy with dispersion staining (PLM/DS) and the air samples by phase contrast microscopy (PCM) and transmission electron microscopy (TEM). A copy of the laboratory accreditation and QA/QC program is included in Appendix J.

1.2 ASBESTOS-CONTAINING MATERIALS (ACM)

Six distinct and different types of suspect ACM were identified throughout the building during the inspection survey. Each distinct area of these materials is called a "homogeneous area" (HA). A total of eighteen bulk samples from six HAs were collected and analyzed.

As described in Section 2.4.5, a material that is either damaged or can be readily crumbled under hand pressure is called "friable" and a material that is in good condition and is not readily crumbled under hand pressure is called "nonfriable." ACM found at the Davenport facility consists of the following material:

- **Friable** - No friable materials were found
- **Nonfriable** - Baseboard Mastic

Table 1-1 presents a summary of ACM found in the building. Sample locations and the extent of ACM are indicated on the floor plans in Appendices D and E respectively. Photographs of

suspect material identified are presented at the end of Section 3. The location, description, and analytical results of each bulk sample are shown in Appendix C.

TABLE 1-1
ASBESTOS-CONTAINING MATERIALS

Area	HA	Material Description	Quantity	Units	Asbestos %
Carrier Vestibule	002	Baseboard Mastic	14	SF	03 - 05
Electrical Room	002	Baseboard Mastic	10	SF	03 - 05
General Storage	002	Baseboard Mastic	17	SF	03 - 05
Janitor's Closet	002	Baseboard Mastic	17	SF	03 - 05
Lunch Room	002	Baseboard Mastic	27	SF	03 - 05
Mail Vestibule	002	Baseboard Mastic	24	SF	03 - 05
Mechanical Room	002	Baseboard Mastic	26	SF	03 - 05
Mens' Locker Room	002	Baseboard Mastic	16	SF	03 - 05
Postal Equipment	002	Baseboard Mastic	15	SF	03 - 05
Postmaster's Office	002	Baseboard Mastic	16	SF	03 - 05
Service Closet	002	Baseboard Mastic	5	SF	03 - 05
Stamped Envelope	002	Baseboard Mastic	16	SF	03 - 05
Supervisor's Office	002	Baseboard Mastic	15	SF	03 - 05
Training Room	002	Baseboard Mastic	16	SF	03 - 05
Women's Locker Room	002	Baseboard Mastic	16	SF	03 - 05
Work Room	002	Baseboard Mastic	240	SF	03 - 05

AP - Assumed Positive LF - Linear Feet SF - Square Feet CF - Cubic Feet EA - Each

Six air samples were taken within the facility to evaluate employee exposure to airborne fibers. Three samples were analyzed by phase contrast microscopy. The results of the samples analyzed

using PCM are presented in Table 1-2. The results of the PCM samples were well below OSHA's Permissible Exposure Limit (PEL) of 0.1 fibers per cubic centimeter (f/cc); however, two samples exceeded 0.01 f/cc. As per USPS specifications, one of the remaining three samples collected was submitted to the laboratory for transmission electron microscopy (TEM) analysis. TEM analysis did not detect any asbestos structures in the sample. TEM and PCM analysis results are included in Appendix I.

TABLE 1-2
PCM ANALYSIS

Sample	Field ID	Detection Limit (f/cc)	Concentration (f/cc)	Confidence Limits (f/cc)
DQ767	3026	0.002	0.006	0.003-0.018
DQ768	3027	0.002	0.017	0.002-0.069
DQ769	3028	0.002	0.011	0.007-0.018

1.3 ASSESSMENTS AND RECOMMENDATIONS

The nonfriable baseboard mastic found at the facility is in good condition and poses little risk of exposure provided it is maintained in good repair. No immediate removal of ACM is required.

Since the asbestos-containing material remaining in the facility is nonfriable and inaccessible to building occupants, operations and maintenance (O&M) practices generally recommended for in-place management of ACM are not required for this facility.

Prior to renovation activities, all nonfriable ACM that would potentially be disturbed by those activities must be removed. Nonfriable asbestos-containing material (baseboard mastic) may remain in place during building demolition in most instances. Under federal law, all ACM abatement activities must be designed by an EPA-certified project designer and must be performed by EPA-certified project supervisors and project workers. For work in public buildings, the State of Florida has additional requirements that all ACM abatement activities must be designed by a licensed Florida asbestos consultant and must be performed by a licensed Florida asbestos contractor.

WESTON recommends that this report be kept with permanent records of the facility.

SECTION 2
METHODOLOGY

2.1 PURPOSE AND OBJECTIVES

The United States Postal Service is engaged in efforts to improve the safety and working environments of people associated with its facilities. As an ongoing part of these efforts, Roy F. Weston, Inc. (WESTON®) was engaged to survey the USPS Davenport Post Office facility in Davenport, Florida, for the presence of asbestos. Background information on asbestos is included in Appendix F.

The objectives of this survey were to:

- Review existing facility records to determine use of asbestos-containing materials.
- Visually inspect the facility to assess and identify suspect ACM locations and quantities.
- Sample and analyze suspect friable and nonfriable ACM using AHERA protocols to determine whether or not they contain asbestos.
- Identify sample locations and the extent of ACM using supporting floor plans and photographs.

2.2 SUMMARY OF WORK

2.2.1 General

The survey of the Davenport facility was conducted on 8 December 1995. The inspection was performed by WESTON personnel trained through an Environmental Protection Agency (EPA)-approved AHERA asbestos inspector course. Copies of the Building Inspector's and Management Planner's accreditations are included in Appendix G.

2.2.2 Asbestos Sampling

The inspector conducted a preliminary walk-through of each area in the building in order to develop a building-specific inspection strategy based on the homogeneous sampling areas present. A homogeneous area (HA) is an area of material that is uniform in color, texture, and appearance. After the homogeneous areas were defined, the inspector collected random bulk samples from each

sampling area in accordance with the sampling requirements for suspect ACM identified in Table 2-1. The location of each bulk sample is shown on floor plans included in Appendix D. Photographs of homogeneous areas are included at the end of Section 3. Bulk samples were collected in a manner that reduced the potential for fiber release and exposure, using wet methods and personal protective equipment. Material description and quantity data were recorded.

TABLE 2-1
BULK MATERIAL SAMPLING REQUIREMENTS

Material	Homogeneous Area	Units	Minimum Number of Samples
Friable Surfacing	≤ 1000	SF	3
	> 1000 to ≤ 5000	SF	5
	> 5000	SF	7
TSI (Thermal System Insulation)	--	LF/Ea	3
Miscellaneous Materials	--	LF/SF/Ea	2

After collecting bulk samples from a homogeneous sampling area, the inspector assessed the physical condition of the suspect material and potential for fiber release. Assessment data included information on the types, extent of, and suspected cause(s) of damage to the suspect material, and the potential for contact, vibration, and air erosion.

One PCM and one TEM air sample were collected for each 5,000 square feet of area in a facility to determine airborne fiber concentrations in the building and to establish an initial exposure assessment which can be evaluated against OSHA's Permissible Exposure Limit (PEL). A minimum of four (two PCM and two TEM) air samples were collected per building.

Collected samples remained in the control of the inspector until delivery to the laboratory for analysis. Appropriate chain-of-custody protocols were utilized for all sample transfers.

2.3 REPORT FORMAT AND ELECTRONIC DATA

This report is divided into sections to facilitate managing the information. Section 1.0, entitled "Executive Summary," delineates the scope of work for the project, and summarizes survey findings and recommendations. The "Methodology" found in Section 2.0 explains in detail the survey strategy. Section 3, entitled "Findings and Recommendations," describes the friable and nonfriable asbestos-containing and the non-asbestos-containing materials found at the facility and recommends environmental response actions. Following Section 3 are appendices containing a description of the Decision Tree Flow Chart and Hazard Assessment Protocols (Appendix A), copies of Bulk Material Data Forms (Appendix B), Polarized Light Microscopy Sample Analysis

Summary (Appendix C), Sample Location Drawing (Appendix D), Extent of Material Drawing (Appendix E), Background Information on Asbestos (Appendix F), Personnel Certifications (Appendix G), Glossary/Definition of Terms (Appendix H), Air Monitoring Results (Appendix I), and Laboratory Certification & QA/QC Program (Appendix J).

Electronic data is submitted in the enclosed compact disk (CD) in Microsoft Office® format. Each facility directory is subdivided into asbestos and lead subdirectories which present the data following the report format.

2.4 TERMINOLOGY AND DEFINITIONS

The following subsections define terminology used throughout this report. A general glossary of terms pertinent to asbestos is included in Appendix H.

2.4.1 Suspect ACM vs. Asbestos-Containing Materials

For every type of material that contains asbestos there are similar or equivalent materials that do not contain asbestos. As a result, all such material (e.g. floor tile or insulation on tanks, fittings, pipes, and air ducts) is considered suspect material until actual asbestos content is determined. Laboratory analysis by a qualified microscopist is necessary to distinguish ACM from non-asbestos materials. Any suspect material of unknown asbestos content should be handled as if it were ACM.

The sampling program was designed to collect bulk samples from each homogeneous area of suspect material. Results reported in Section 3 identify suspect materials that tested positive for asbestos and should be treated as ACM.

2.4.2 Homogeneous Area (HA)

A homogeneous area, as defined by EPA, is an area of surfacing material, thermal system insulation, or miscellaneous material that is uniform in color and texture. WESTON's inspectors subdivided the suspect materials found during the survey into separate homogeneous areas and assigned each HA a specific number.

2.4.3 Positive vs. Negative Analytical Results

A "positive" analytical result signifies a material contains asbestos and should be considered ACM for the purposes of remedial action. Suspect materials are grouped into homogeneous areas for the purpose of sampling. Based on the type of material and its quantity, between one and seven samples may be collected. If any of the samples constituting a homogeneous area of material test positive for asbestos, all instances of the material are considered as being ACM, even if other samples of the sample material test negative.

The WESTON bulk laboratory is certified through the National Institute of Standards Technology/National Voluntary Laboratory Accreditation Program (NIST/NVLAP). A copy of the laboratory certification and its QA/QC program is included in Appendix J.

The United States Environmental Protection Agency (USEPA) defines ACM as material which contains greater than one percent asbestos. Material with one percent or less is technically not considered ACM and may be excluded from any plan of remedial action. In many instances, however, a single sample of suspect material actually consists of several layers of different material. As an example, a sample collected from a resilient floor tile may actually consist of two layers: a mastic layer and a tile layer. The two layers may have significantly different concentrations and the total content would be affected by the volume of each layer. In some cases, even though a mastic layer on the floor tile contains asbestos, the layer comprises such a small percentage of the total floor tile sample that the asbestos content of the whole sample might be recorded as one percent asbestos, which is technically considered non-ACM by EPA definitions. WESTON, however, recommends that due to the inability to effectively separate layers during abatement, any sample with a distinct layer or component containing greater than one percent asbestos be considered as ACM, regardless of the results of the total sample. Samples in which the total results are one percent or less and have no distinct layers containing greater than one percent asbestos will be considered non-ACM.

When all samples collected from an HA of friable material are considered negative, but one or more of the samples show concentrations of <1 percent or 1 percent, these samples are resubmitted to the laboratory for additional analysis (by point counting) to confirm that the material is negative.

Sample locations and positive or negative analytical results are indicated on the floor plans included in Appendix D. Photographs of homogeneous areas are included at the end of Section 3. The laboratory analysis results for bulk samples are included in Appendix C.

2.4.4 Quality Assurance/Quality Control Samples

Side-by-side QA/QC samples were collected at a rate of five percent of the total samples and submitted as blind duplicates to the WESTON laboratory to test the reproducibility of the analytical laboratory methods and results. QA/QC samples B003 and B013 passed laboratory quality control criteria.

2.4.5 Friable vs. Nonfriable Asbestos-Containing Materials

A friable material is one that is easily crumbled, pulverized, or reduced to a powder under hand pressure. This is a gradational attribute and constitutes an important aspect of ACM because of a relationship between friability and the likelihood of asbestos fibers becoming airborne. As friable material is reduced to a powder, asbestos fibers within the material become readily airborne, resulting in a potential respiratory hazard to building occupants. Conversely, a nonfriable material

in good condition presents a relatively lower potential hazard, since asbestos fibers are locked down by the enclosing matrix.

2.5 REMEDIAL ACTION -- ASBESTOS ABATEMENT OPTIONS

In the area of remedial action for ACM, current state-of-the-art methods for reduction of airborne asbestos fibers consist of three options:

- **Encapsulation**: Coating the exterior surface of ACM with a compound ("encapsulant") for the purpose of locking down any fibers that would otherwise become airborne.

- **Enclosure**: The construction of airtight barriers to isolate ACM from the rest of the building interior.

- **Removal**: The removal of ACM and usual replacement with non-asbestos materials. This is usually done by enclosing and isolating the entire building area to perform "gross removal" or, for jobs of a small scale, isolation of the material in specially designed plastic bags for "glove bag removal."

Ultimately, removal is the only solution to asbestos hazards, since ACM continues to remain in place under the options of encapsulation and enclosure. The National Emissions Standard for Hazardous Air Pollutants (NESHAP; 40 CFR 61 Part M, Amended 20 November 1990) regulates the removal and disposal of ACM. This regulation separates ACM into three categories based on the material's friability and/or physical condition:

- Friable ACM
- Category I nonfriable ACM
- Category II nonfriable ACM

Category I nonfriable ACM includes gaskets, valve packings, resilient vinyl floor coverings (floor tile and "linoleum"), and asphalt roofing material containing more than one percent asbestos by volume. Category II nonfriable ACM is any other nonfriable material with more than one percent asbestos by volume. An example of a Category II nonfriable material would be asbestos-cement board ("transite").

Regulated ACM includes.

- Friable ACM.
- Category I nonfriable ACM that has become friable.

- Category I nonfriable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading.
- Category II nonfriable ACM that has a high probability of becoming friable or can be rendered friable by the forces expected to act on the material during demolition activities.

When asbestos-containing dry wall joint compound is found on non-ACM dry wall, EPA deems the entire "wall system" to be a single material described with a composite (weighted average) analysis. When the composite analysis for such a wall system is one percent or less asbestos, NESHAP classifies the material as non-ACM. However, since OSHA regulations do not necessarily agree with the NESHAP definitions, WESTON classifies the material as Category II nonfriable ACM. Thus, for management purposes, special work practices should be used when drilling or cutting the joint compound to prevent potential contamination of the environment. However, prior to demolition of the material, WESTON recommends a reconsideration of the statutory restrictions at that time by a certified asbestos abatement designer.

Under the NESHAP regulations, all regulated ACM (RACM) must be removed from a structure prior to demolition of that structure, unless the material is encased in concrete or was not discovered until after demolition commenced and therefore cannot be safely removed. Category I nonfriable material in good condition can remain in a structure that is being demolished and be disposed of as ordinary (non-contaminated) building debris if the demolition process does not include burning. Category II nonfriable material can also remain in a structure that is being demolished if the material will not be rendered friable during the demolition. As an exception, EPA requires removal of Category II nonfriable ACM prior to demolition if the demolition process would cause breakage of the material.

In view of the changing regulatory requirement, inquiry with the state of Florida may be considered to verify any subsequent change in the acceptability of leaving the following materials in place:

- Floor tile that is still in good condition and is not about to be made friable.
- Roofing that is still in good condition and is not about to be made friable.
- Valve packing and pipe gaskets that are still in good condition and are not about to be made friable.

Presented in Table 2-2 is a list of ACM identified in the Davenport facility and the NESHAP category of each material. Materials that were assumed to contain asbestos are also included in Table 2-2. The asbestos coordinator should determine the condition of ACM that is present prior to demolition.

TABLE 2-2
NESHAP CATEGORIES

HA	Material Description	NESHAP Category
002	Baseboard Mastic	Category I, nonfriable ACM

2.6 MATERIAL ASSESSMENT

Suspect friable materials were assessed using the criteria in the Asbestos Hazard Emergency Response Act (AHERA; 40 CFR 763). A copy of the assessment decision tree and a description of the evaluation criteria is included in Appendix A. Assessment data for each type of suspect material was collected and recorded on material evaluation forms.

A priority response action number is generated for all rooms or areas in a building (functional spaces) which contain a homogeneous area of material that tests positive for asbestos, based on the current condition of the material and the potential for future damage. Table 2-3 lists the priority numbers and the response actions associated with each range. Since the AHERA assessment methodology does not include nonfriable ACM in good condition, the assessment for nonfriable materials was recorded so that Response Action 8 was produced in all instances.

TABLE 2-3
ACM RESPONSE ACTIONS

Current Condition	Potential for Disturbance	Category	Response Action
Significantly Damaged	Any	1	Isolate area and restrict access. Remove ACM as soon as possible.
Damaged	High	2	Repair, remove, or reduce exposure potential as soon as possible. Unless removed, follow with O&M practices.
Damaged	Moderate	3	Repair and implement O&M practices.
Damaged	Low	4	Implement O&M and schedule future repair.
Not Damaged	High	5	Reduce disturbance potential as soon as possible and implement O&M.
Not Damaged	Moderate	6	Implement O&M and consider reducing disturbance potential.
Not Damaged	Low	7	Implement O&M.
Not Damaged	None (Nonfriable)	8	Maintain as nonfriable.
Not Applicable	Not Applicable	9	Non-asbestos material. Inventory for future reference.

Response actions recommended by WESTON use AHERA methodology and USPS environmental response policies as the basis of the analysis of the Davenport facility.

2.7 LOCATING ACM ON FLOOR PLANS

The locations where suspect materials were sampled are indicated on the schematic floor plans included in Appendix D. Positive sample locations are circled while negative sample locations are boxed on the plans. The extent of ACM in the building is indicated by various bordering in a separate schematic floor plan included in Appendix E.

SECTION 3
FINDINGS AND RECOMMENDATIONS

3.1 FRIABLE MATERIALS

As discussed in Section 2.4.5, friable materials are those materials which can be easily crumbled or reduced to powder under hand pressure. No friable asbestos-containing materials were found at the Davenport Post Office.

3.1.1 Thermal System Insulation (TSI)

No friable asbestos-containing thermal system insulation was found at the Davenport Post Office.

3.1.2 Surfacing Materials

No friable asbestos-containing spray-applied acoustical finish was found at the Davenport Post Office.

3.1.3 Miscellaneous Materials

No other friable asbestos-containing materials were found at the Davenport Post Office.

3.1.4 Assumed Materials

In cases where sampling a suspect material would breach the integrity of the structure or its components, the material is assumed to contain asbestos. No suspect friable materials were assumed to contain asbestos in the Davenport Post Office.

3.2 NONFRIABLE MATERIALS

As discussed in Section 2.4.5, nonfriable materials are those materials which cannot be easily crumbled or reduced to powder under hand pressure. The following subsections describe the nonfriable asbestos-containing materials found at the Davenport Post Office. Photographs of each of the nonfriable asbestos-containing materials are included at the end of this section. The photographs are arranged by HA number.

3.2.1 Thermal System Insulation (TSI)

No nonfriable asbestos-containing thermal system insulation was found at the Davenport Post Office.

3.2.2 Surfacing Materials

No nonfriable asbestos-containing plaster wall and ceiling finish was found at the Davenport Post Office.

3.2.3 Miscellaneous Materials

The following nonfriable miscellaneous asbestos-containing materials were found at the Davenport Post Office:

- HA 002 Baseboard Mastic was found in Carrier Vestibule, Electrical Room, General Storage, Janitor's Closet, Lunch Room, Mail Vestibule, Mechanical Room, Men's Locker Room, Postal Equipment, Postmaster's Office, Service Closet, Stamped Envelope, Supervisor's Office, Women's Locker Room, Training Room, and Work Room. The material was in good condition.

3.2.4 Assumed Materials

In cases where sampling a suspect material would breach the integrity of the structure or its components, the material is assumed to contain asbestos. No nonfriable suspect materials were assumed to contain asbestos in the Davenport Post Office.

3.3 NON-ASBESTOS CONTAINING MATERIALS

Non-asbestos containing materials, are those materials which contain asbestos in concentrations of one percent or less. The following homogeneous areas of non-asbestos-containing materials were found at the Davenport Post Office. Photographs of each of these materials are included at the end of this section. The photographs are arranged by HA number.

- HA 001 White 2'X2' Acoustic Tile
- HA 003 12"X24" Floor Tile
- HA 004 12"X12" Floor Tile
- HA 005 Dry Wall & Joint Compound
- HA 006 Black Building Felt

3.4 RECOMMENDATIONS

The following paragraphs describe WESTON's recommendations concerning management of asbestos-containing materials found at the Davenport Post Office. In recommending response actions, WESTON has taken into consideration the AHERA assessment protocol and USPS Management Instruction EL-810-94-3. Table 3-1 presents the Material Evaluation Summary which is based on the methodology described in Section 2 and on the decision tree included in Appendix A. Response action categories 1, 2, or 3 are those requiring attention as soon as possible. To highlight this information, these category entries are shown in boldface type.

TABLE 3-1
MATERIAL EVALUATION SUMMARY

HA	Area	Material Description	Category	Response
002	Carrier Vestibule	Baseboard Mastic	8	Maintain as nonfriable.
002	Electrical Room	Baseboard Mastic	8	Maintain as nonfriable.
002	General Storage	Baseboard Mastic	8	Maintain as nonfriable.
002	Janitor's Closet	Baseboard Mastic	8	Maintain as nonfriable.
002	Lunch Room	Baseboard Mastic	8	Maintain as nonfriable.
002	Mail Vestibule	Baseboard Mastic	8	Maintain as nonfriable.
002	Mechanical Room	Baseboard Mastic	8	Maintain as nonfriable.
002	Mens' Locker Room	Baseboard Mastic	8	Maintain as nonfriable.
002	Postal Equipment	Baseboard Mastic	8	Maintain as nonfriable.
002	Postmaster's Office	Baseboard Mastic	8	Maintain as nonfriable.
002	Service Closet	Baseboard Mastic	8	Maintain as nonfriable.
002	Stamped Envelope	Baseboard Mastic	8	Maintain as nonfriable.
002	Supervisor's Office	Baseboard Mastic	8	Maintain as nonfriable.
002	Training Room	Baseboard Mastic	8	Maintain as nonfriable.
002	Women's Locker Room	Baseboard Mastic	8	Maintain as nonfriable.
002	Work Room	Baseboard Mastic	8	Maintain as nonfriable.

3.4.1 Response Actions For Friable Thermal System Insulation

No friable thermal system insulation was found at the facility; therefore, no environmental response action is recommended.

3.4.2 Response Actions For Friable Surfacing Materials

No friable surfacing materials were found at the facility; therefore, no environmental response action is recommended.

3.4.3 Response Actions For Friable Miscellaneous Materials

No friable miscellaneous asbestos-containing materials were found at the facility; therefore, no environmental response action is recommended.

3.4.4 Response Actions For Friable Assumed Materials

No friable materials were assumed to contain asbestos; therefore, no environmental response action is required.

3.4.5 Response Actions For Nonfriable Thermal System Insulation

No nonfriable thermal system insulation was found at the facility; therefore, no environmental response action is recommended.

3.4.6 Response Actions For Nonfriable Surfacing Materials

No nonfriable surfacing materials were found at the facility; therefore, no environmental response action is recommended.

3.4.7 Response Actions For Nonfriable Miscellaneous Materials

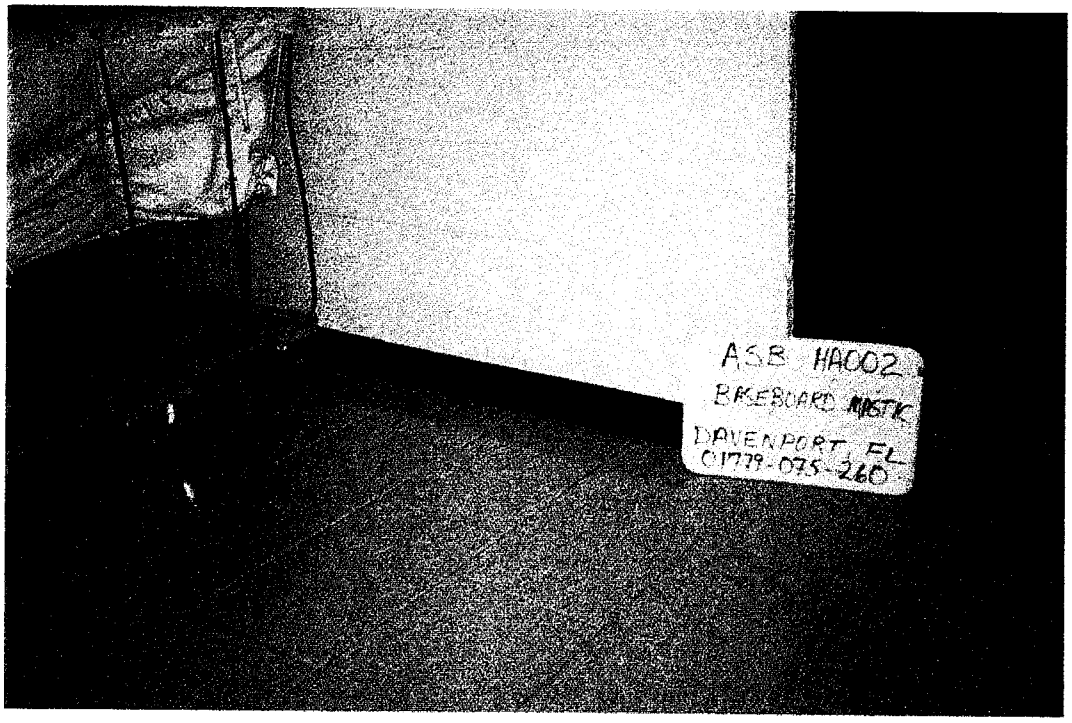
The nonfriable miscellaneous material (baseboard mastic) found at the Davenport facility is in good condition and may be managed in place. This material poses little risk of exposure provided it is maintained in good repair. Since the material is nonfriable and is inaccessible to building occupants, the operations and maintenance practices usually recommended for in-place management of ACM is not required for this material. As a Category I nonfriable material (as defined by NESHAP Table 2-2) in good condition, this material may remain in place until and during building demolition if the material is not crumbled, pulverized, or reduced to a powder

during demolition. However, this material should be removed prior to renovation activities that would directly impact the material.

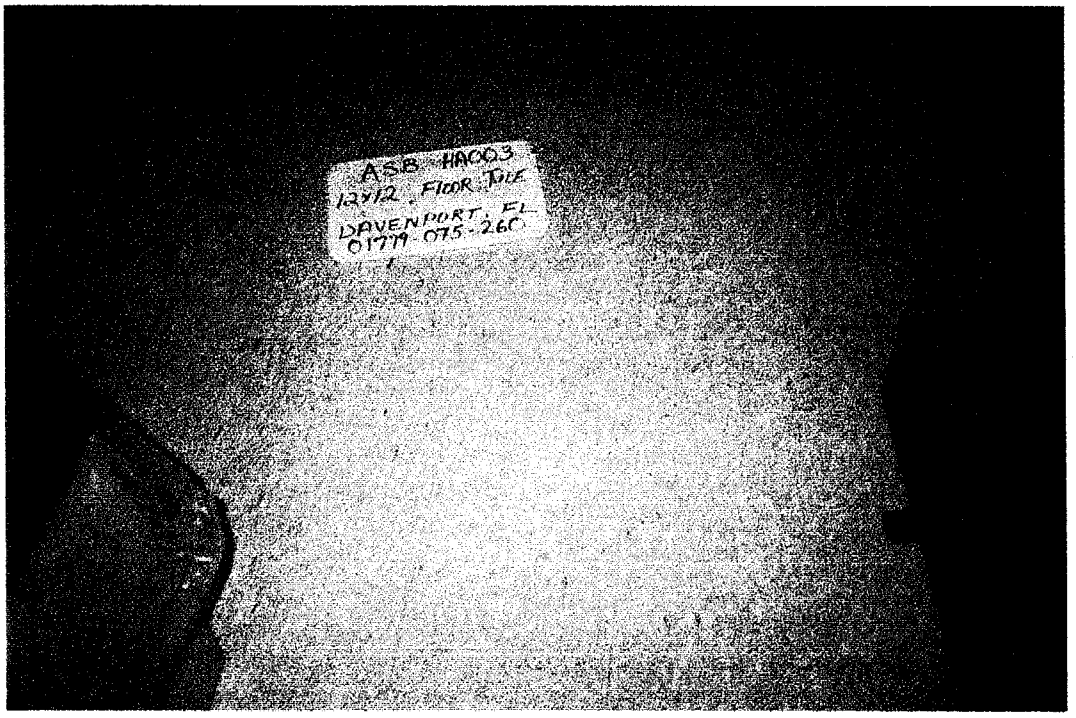
3.4.8 Response Actions For Nonfriable Assumed Materials

No nonfriable materials were assumed to contain asbestos; therefore, no environmental response action is required.

HA 001 - 2X2 White Acoustic Tile which tested negative for asbestos.



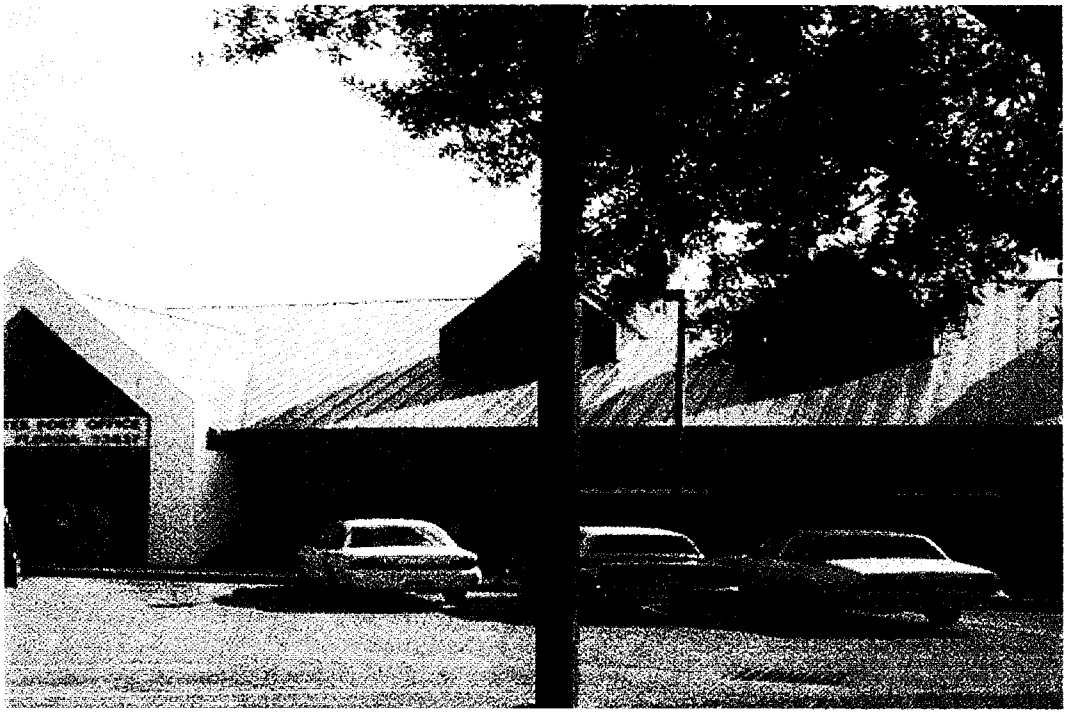
HA 002 - Baseboard Mastic which tested positive for asbestos.



HA 003 - 12X24 Floor Tile which tested negative for asbestos.

HA 004 - 12X12 Floor Tile which tested negative for asbestos.

HA 005 - Dry Wall which tested negative for asbestos.



HA 006 - Black Building Felt which tested negative for asbestos.

APPENDIX A
DECISION TREE FLOW CHART
AND
HAZARD ASSESSMENT PROTOCOL

DECISION TREE FLOW CHART AND HAZARD ASSESSMENT PROTOCOLS

DECISION TREE FLOW CHART

All suspect friable materials were assessed according to the Asbestos Hazard Emergency Response Act (AHERA) material evaluation method. A response action number corresponding to the condition of the material and its potential for future damage is then generated for all suspect friable material in each functional space. Recommended response actions for all ACM identified in each functional space in the building are based on the logic diagram presented in Figure A-1. Since the AHERA assessment methodology is not applicable to nonfriable ACM such as floor tile and underlayment, the assessments for nonfriable materials were recorded so that in-place management through special O&M procedures, intended to maintain the material as nonfriable, was produced in all instances (Action 8).

HAZARD ASSESSMENT PROTOCOL

Factors described in the following subsections were considered during the evaluation of each suspect material found at the facility.

MATERIAL FRIABILITY

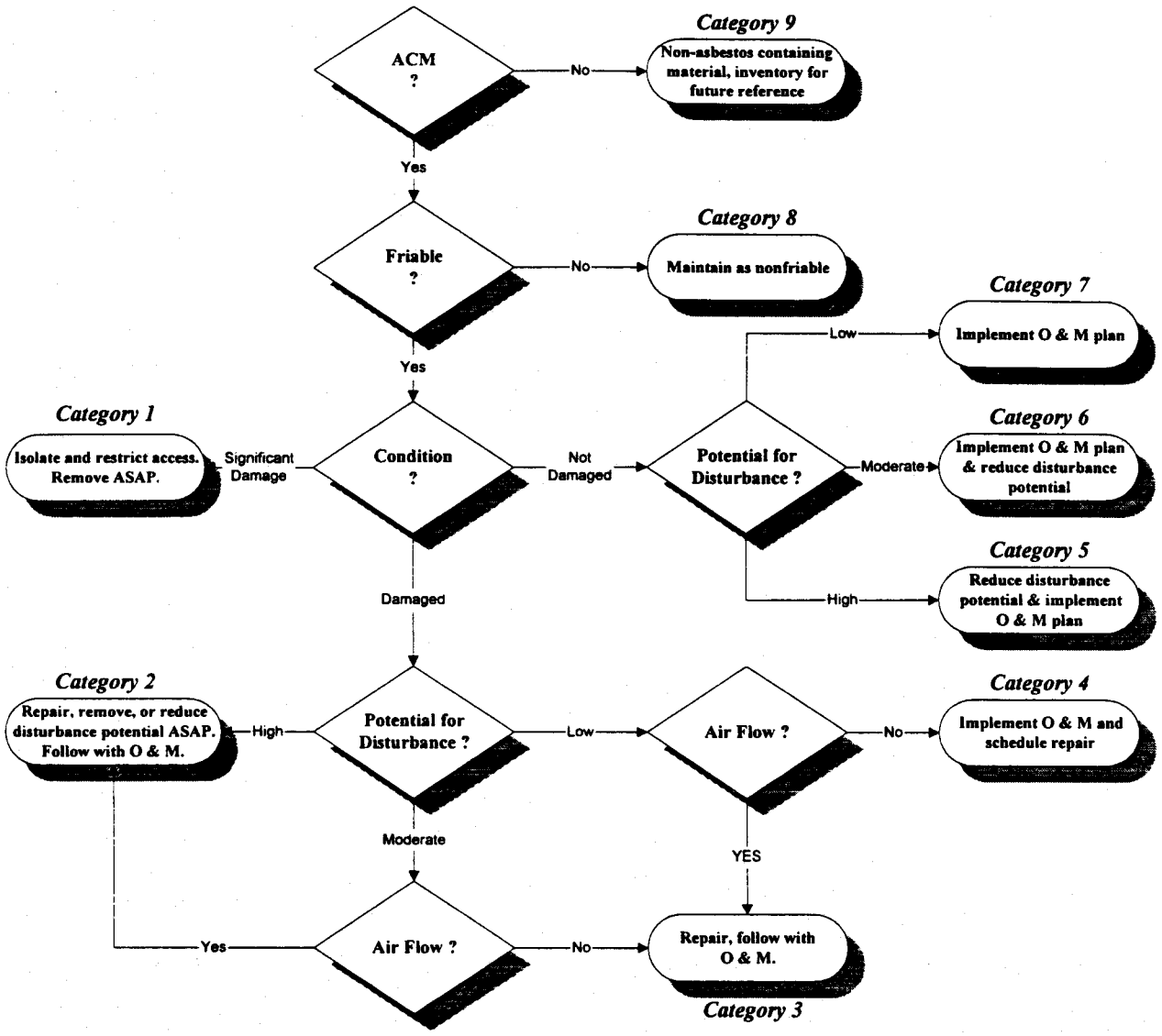
The materials' friability, or propensity to crumble under hand pressure was evaluated. The assessment is based on in-place properties, not the bulk sample itself. For instance, plaster walls are assessed as nonfriable, even though the sample itself becomes powdered during the sample collection process. The potential responses for the friability factor are friable and nonfriable.

MATERIAL CONDITION

The materials' condition, either not damaged, damaged, or significantly damaged was evaluated based on the characteristics described in the following paragraphs.

FIGURE A-1
AHERA DECISION TREE

Response Action Categories



TYPE OF DAMAGE

The type of damage was evaluated. For example, deterioration may be caused by age and the general wear and tear on a material, water damage may occur through leaking pipes or roofs, and physical damage may be incurred by accidentally bumping into the material, or by maintenance workers damaging the material during the course of their duties.

Surfacing materials rated significantly damaged exhibit one or more of the following characteristics: (1) The surface is crumbling or blistered over at least one-tenth of the surface if the damage is evenly distributed (one-quarter of the surface if the damage is localized); (2) Large areas of material are hanging from the surface, delaminated, or showing adhesive failure; and (3) Water stains, gouges, or mars are present over at least one-tenth of the surface if the damage is evenly distributed (one-quarter of the surface if the damage is localized). Accumulation of powder, dust, or debris similar in appearance to the suspect material on surfaces beneath the material can be used as confirming evidence.

Surfacing materials rated fair or damaged exhibit the following characteristics: The surface is crumbling, blistered, stained, gouged, marred, or otherwise abraded over an area of less than one-tenth of the surface if the damage is evenly distributed (one-quarter of the surface if the damage is localized). Accumulation of powder, dust, or debris similar to appearance to the suspect material on surfaces beneath the material can be used as confirming evidence.

Surfacing materials rated in good condition or not damaged show no visible damage or deterioration or show only very limited damage or deterioration.

Significantly damaged thermal system insulation (TSI) exhibits one or both of the following characteristics: (1) Missing jackets; and (2) Crushed or heavily gouged or punctured insulation on a least one-tenth of pipe runs/risers or fittings if the damage is evenly distributed (one-quarter if the damage is localized). Accumulation of powder, dust, or debris similar in appearance to the suspect material on surfaces beneath the material can be used as confirming evidence.

TSI materials graded damaged exhibit one or both of the following characteristics: (1) A few water stains or sections of missing jackets; and/or (2) Crushed insulation, water stains, gouges, punctures, or mars on up to one-tenth of the insulation if the damage is evenly distributed (or up to one-quarter of the insulation if the damage is localized). Accumulation of powder, dust, or, debris similar in appearance to the suspect material on surfaces beneath the material can be used as confirming evidence.

TSI materials rated good or not damaged are those with no visible damage or deterioration or showing only very limited damage or deterioration.

The condition of miscellaneous friable suspect material was assessed by using the more appropriate of the two rating systems presented above, based on material characteristics.

POTENTIAL FOR DISTURBANCE

The potential for disturbance portion of the evaluation is based upon four factors: accessibility, potential for contact, vibration, and air erosion.

ACCESSIBILITY

The material is accessible if it can be contacted by customers, postal employees, or custodial/maintenance staff (service workers), either directly or with equipment or other objects.

The potential for contact rated as high, moderate, or low, based on the following criteria:

- High - Postal employees work in the vicinity of the material more than once a day, or the material is in a public area and accessible to postal customers.
- Moderate - Postal employees work in the vicinity of the material weekly.
- Low - Postal employees work in the vicinity of the material less than once per week.

The influence of vibration is rated as high, moderate, or low, based on the following criteria:

- High - Loud motors or engines present, intrusive noises or easily sensed vibration.
- Moderate - Motors or engines present but not obtrusive, or occasional loud sounds (e.g., loading docks).
- Low - None of the above.

The potential for air erosion is rated as high, moderate, or low, based on the following criteria:

- High - Large volume of high velocity air (e.g., elevator shaft, fan room).
- Moderate - Noticeable movement of air (e.g., air shaft, ventilator air stream).
- Low - None of the above.

AIR FLOW

While not an AHERA-Category, the asbestos exposure risk is greater in areas connected to the general building utilization. The factor is affirmative when the material is located in a building air plenum.

APPENDIX B
BULK MATERIAL DATA FORM

ASBESTOS BULK SAMPLE DATA

Client:	United States Postal Service	**WESTON W.O.:**	01779-075 -260- 9929
Facility:	DAVENPORT FL	**Date:** 12-8-95	**Finance/Sub-Loc:** 112070 - G01
Requested Turnaround:	5 Days	**Send Results To:**	Alex Muncie

	Received From	Received By	Date	Time	No. Samples
1	Brad C. Missildine				
2	EXPRESS MAIL	J. Desh	12-11-95	1345	16
3					
4					

Sample Number	~~Building~~ LAB ID	HA No	Matl	Sys	Loc	Size	Color	Additional Description (Material Type, if Mat = Z)	FN
B001	IT 158	001	E		SC	2x2	WH		F
B002	159	001	E		SC	〃	〃		F
B003	160	001	E		SC	〃	〃		F
B013	161	001	E		SC	〃	〃		F
B004	162	003	N		FL	12x24		Asphalt material painted	N
B005	163	003	N		FL	〃		GRAY.	N
B006	164	003	N		FL	〃			N
B007	165	004	N		FL	12x12		GRAY	N
B008	166	004	N		FL	〃			N
B009	167	004	N		FL	〃			N
B010	168	005	F		WL			NOT A CODE !!	N
B011	169	005	F		WL				N
B012	170	005	F		SC				N
B014	171	002	O		WL			Baseboard MASTIC	N
B015	172	002	O		WL				N
B016	173	002	O		WL				N

Material Codes

A Pipe Fitting Ins.	F Dry Wall	K Gaskets	P Shingles
B Pipe Run Ins.	G Plaster	L Boiler/Tank Ins	Q Building Felt
C Transite Pipe	H Spray/Trowel	M Sheet Flooring	R Blown-In Ins.
D Transite Panel	I Air Handle/Duct Ins.	N Floor Tile	S Tape
E Acoustic Tile	J Expansion Joint	O Mastic	Y Debris
	Z Other		

Color Codes

BK - Black	GR - Green	RD - Red
BL - Blue	OR - Orange	TN - Tan
BR - Brown	PK - Pink	WH - White
GY - Gray	PR - Purple	YL - Yellow
	CL - Colorless	

System (Sys) Codes

CDW Cold Domestic Water	HDW Hot Domestic Water
CPR Cold Process	HPR Hot Process
CHW Chilled Water	HTW Heating Water
REF Refrigerant	DRN Drain

Location (Loc) Codes

AC Above Ceiling	PR Pipe Rack
CC Clip-in Ceiling	RF Roof
FC Flush Ceiling	RM In Room
SC Suspended Ceiling	WL Wall
FL Floor	EX Exterior
PC Pipe Chase	

LOT # 8-27707

LOT # 8-27707

ASBESTOS BULK SAMPLE DATA

Client:	**United States Postal Service**	**WESTON W.O.:**	**01779-075-260-9995**
Facility:	Davenport, FL	**Date:**	11/16/95
Finance/Sub-Loc:	112070 G81		
Requested Turnaround:	1 Days	**Send Results To:**	

	Received From	Received By	Date	Time	No. Samples
1		[signature]	11/16/95	10:00	2
2					
3					
4					

8-2523

Sample Number	WESTON ~~Building~~ ID	HA No	Matl	Sys	Loc	Size	Color	Additional Description (Material Type, if Mat = Z)	FN
B017	IS 105	9a.6	Q		PF		BK		N
B018	IS 106	9a.6	Q		UL		BK		N

Material Codes

A Pipe Fitting Ins.	F Dry Wall	K Gaskets	P Shingles
B Pipe Run Ins.	G Plaster	L Boiler/Tank Ins	Q Building Felt
C Transite Pipe	H Spray/Trowel	M Sheet Flooring	R Blown-In Ins.
D Transite Panel	I Air Handle/Duct Ins.	N Floor Tile	S Tape
E Acoustic Tile	J Expansion Joint	O Mastic	Y Debris

Z Other

Color Codes

BK - Black	GR - Green	RD - Red
BL - Blue	OR - Orange	TN - Tan
BR - Brown	PK - Pink	WH - White
GY - Gray	PR - Purple	YL - Yellow

CL - Colorless

System (Sys) Codes

CDW Cold Domestic Water	HDW Hot Domestic Water
CPR Cold Process	HPR Hot Process
CHW Chilled Water	HTW Heating Water
REF Refrigerant	DRN Drain

Location (Loc) Codes

AC Above Ceiling	PR Pipe Rack
CC Clip-in Ceiling	RF Roof
FC Flush Ceiling	RM In Room
SC Suspended Ceiling	WL Wall
FL Floor	EX Exterior
PC Pipe Chase	

APPENDIX C
POLARIZED LIGHT MICROSCOPY ANALYSIS RESULTS

POLARIZED LIGHT MICROSCOPY SAMPLE ANALYSIS SUMMARY

Roy F. Weston, Inc.
1635 Pumphrey Avenue
Auburn, AL. 36830-4303

Weston W.O. No. 01779-075-260-9999

AO LAB ID NO.	CLIENT/CLIENT ID	BLDG	HA	MATERIAL DESCRIPTION and REMARKS	FRIABILITY	RESULTS CH	AM	CR	OT	TL	ANALYST	ANALYZED
IS105	112070-G01/B017		006	BUILDING FELT, BLACK, ROOF	NON-FRIABLE	-	-	-	-	-	12728	/ /
IS106	112070-G01/B018		006	BUILDING FELT, BLACK, WALL	NON-FRIABLE	-	-	-	-	-	12728	/ /
IT158	112070-G01/B001		001	ACOUSTIC TILE, WHITE 2X2, SUSPENDED CEILING	FRIABLE	-	-	-	-	-	10808	/ /
Layer 1				FIBROUS, MATTED, GRAY		-	-	-	-	-		/ /
Layer 2				PAINT, WHITE		-	-	-	-	-		/ /
IT159	112070-G01/B002		001	ACOUSTIC TILE, WHITE 2X2, SUSPENDED CEILING	FRIABLE	-	-	-	-	-	10808	/ /
Layer 1				FIBROUS, MATTED, GRAY		-	-	-	-	-		/ /
Layer 2				PAINT, WHITE		-	-	-	-	-		/ /
IT160	112070-G01/B003		001	ACOUSTIC TILE, WHITE 2X2, SUSPENDED CEILING	FRIABLE	-	-	-	-	-	10808	/ /
Layer 1				FIBROUS, MATTED, GRAY		-	-	-	-	-		/ /
Layer 2				PAINT, WHITE		-	-	-	-	-		/ /
IT161	112070-G01/B013		001	ACOUSTIC TILE, WHITE 2X2, SUSPENDED CEILING	FRIABLE	-	-	-	-	-	10808	/ /
Layer 1				TILE, BLACK		-	-	-	-	-		/ /
Layer 2				PAINT, GRAY		-	-	-	-	-		/ /
IT162	112070-G01/B004		003	FLOOR TILE, 12X24, FLOOR	NON-FRIABLE	-	-	-	-	-	10808	/ /
Layer 1				TILE, BLACK		-	-	-	-	-		/ /
Layer 2				PAINT, GRAY		-	-	-	-	-		/ /
IT163	112070-G01/B005		003	FLOOR TILE, 12X24, FLOOR	NON-FRIABLE	-	-	-	-	-	10808	/ /
IT164	112070-G01/B006		003	FLOOR TILE, 12X24, FLOOR	NON-FRIABLE	-	-	-	-	-	10808	/ /
IT165	112070-G01/B007		004	FLOOR TILE, 12X12, FLOOR	NON-FRIABLE	-	-	-	-	-	10808	/ /
Layer 1				TILE, GRAY		-	-	-	-	-		/ /
Layer 2				MASTIC, TAN		-	-	-	-	-		/ /
IT166	112070-G01/B008		004	FLOOR TILE, 12X12, FLOOR	NON-FRIABLE	-	-	-	-	-	10808	/ /
Layer 1				TILE, GRAY		-	-	-	-	-		/ /
Layer 2				MASTIC, TAN		-	-	-	-	-		/ /
IT167	112070-G01/B009		004	FLOOR TILE, 12X12, FLOOR	NON-FRIABLE	-	-	-	-	-	10808	/ /
Layer 1				FIBROUS, MATTED, GRAY		-	-	-	-	-		/ /

RESULTS LEGEND

CH - Chrysotile AM - Amosite CR - Crocidolite OT - Other TL - Total - - None Detected **Bold** - Results of the Sample as a Whole

POLARIZED LIGHT MICROSCOPY SAMPLE ANALYSIS SUMMARY

Roy F. Weston, Inc.
1635 Pumphrey Avenue
Auburn, AL. 36830-4303

Weston W.O. No. 01779-075-260-9999

AO LAB ID NO.	CLIENT/CLIENT ID	BLDG	HA	MATERIAL DESCRIPTION and REMARKS	FRIABILITY	RESULTS CH	AM	CR	OT	TL	ANALYST	ANALYZED
Layer 2				FIBROUS, MATTED, BROWN		-	-	-	-	-		/ /
Layer 3				PAINT, TAN		-	-	-	-	-		/ /
IT168	112070-G01/B010		005	DRY WALL, WALL	NON-FRIABLE	-	-	-	-	-	10808	/ /
Layer 1				FIBROUS, MATTED, GRAY		-	-	-	-	-		/ /
Layer 2				FIBROUS, MATTED, BROWN		-	-	-	-	-		/ /
Layer 3				PAINT, TAN		-	-	-	-	-		/ /
Layer 4				NON-FIBROUS, GRAY		-	-	-	-	-		/ /
IT169	112070-G01/B011		005	DRY WALL, WALL	NON-FRIABLE	-	-	-	-	-	10808	/ /
Layer 1				FIBROUS, MATTED, GRAY		-	-	-	-	-		/ /
Layer 2				PAPER, TAN		-	-	-	-	-		/ /
Layer 3				PAINT, WHITE		-	-	-	-	-		/ /
IT170	112070-G01/B012		005	DRY WALL	NON-FRIABLE	-	-	-	-	-	10808	/ /
Layer 1				FIBROUS, MATTED, GRAY		-	-	-	-	-		/ /
Layer 2				PAINT, WHITE		-	-	-	-	-		/ /
IT171	112070-G01/B014		002	MASTIC/SEALANT, WALL	NON-FRIABLE	-	-	-	**05**	**05**	10808	/ /
IT172	112070-G01/B015		002	MASTIC/SEALANT, WALL	NON-FRIABLE	-	-	-	**05**	**05**	10808	/ /
IT173	112070-G01/B016		002	MASTIC/SEALANT, WALL	NON-FRIABLE	-	-	-	**04**	**04**	10808	/ /
Layer 1				MASTIC, TAN		-	-	-	05	05		/ /
Layer 2				PAINT, WHITE		-	-	-	03	03		/ /

C-2

RESULTS LEGEND

CH - Chrysotile AM - Amosite CR - Crocidolite OT - Other TL - Total - - None Detected **Bold** - Results of the Sample as a Whole

POLARIZED LIGHT MICROSCOPY SAMPLE ANALYSIS SUMMARY
(Continued)

Weston W.O. No. 01779-075-260-9999

Roy F. Weston, Inc.
1635 Pumphrey Avenue
Auburn, AL. 36830-4303

AO LAB ID NO.	CLIENT/CLIENT ID	BLDG	HA	MATERIAL DESCRIPTION and REMARKS	FRIABILITY	RESULTS CH	AM	CR	OT	TL	ANALYST	ANALYZED

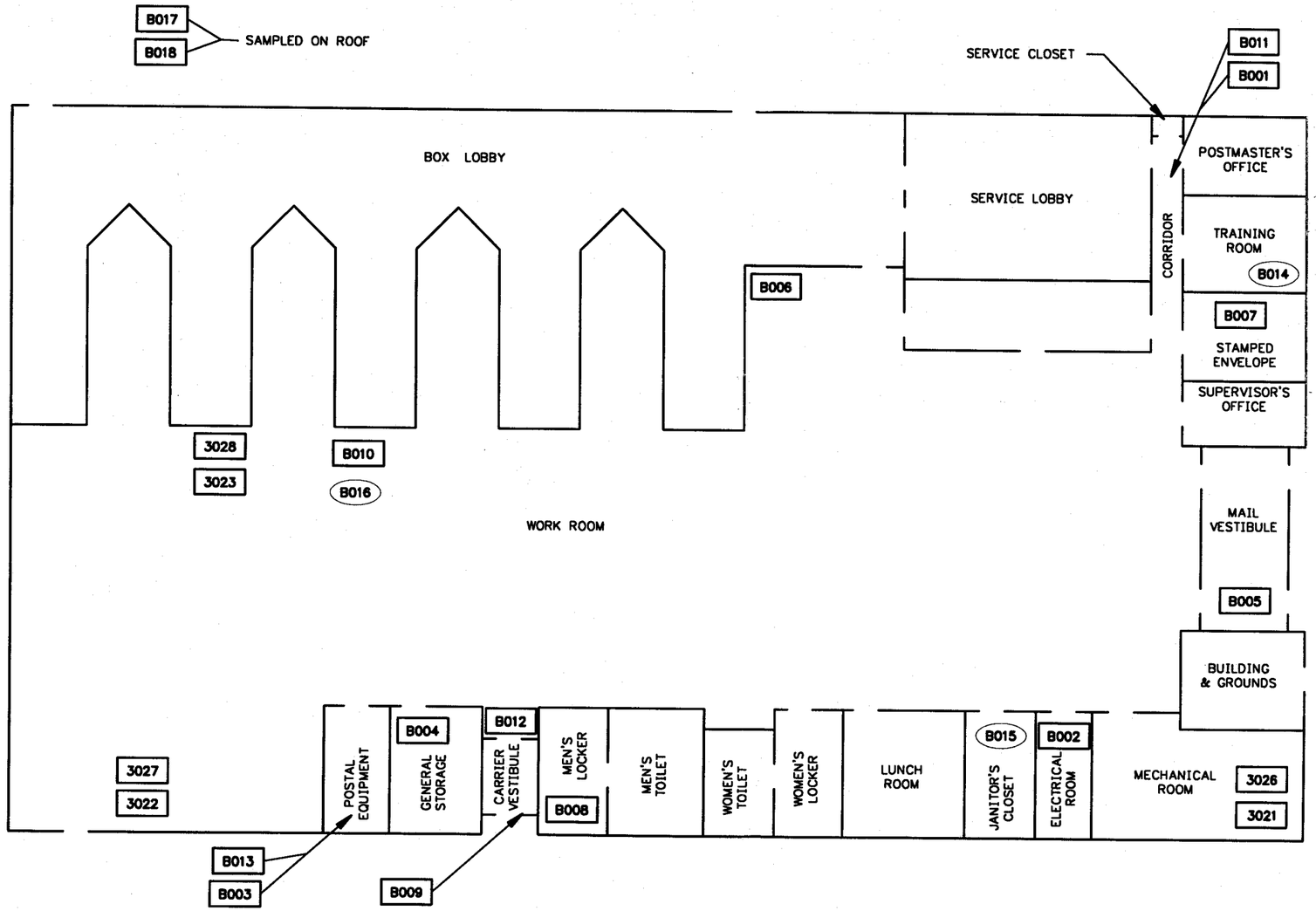
C-3

Results Approved for Transmittal by:

Thomas Hodges
Assistant Project Scientist

February 12, 1996

APPENDIX D
SAMPLE LOCATION DRAWING(S)



ASBESTOS SAMPLE LEGEND

(NNNN)	DENOTES LOCATION OF AIR SAMPLE WHICH TESTED POSITIVE FOR ASBESTOS
[NNNN]	DENOTES LOCATION OF AIR SAMPLE WHICH TESTED NEGATIVE FOR ASBESTOS
(ZZNNN)	DENOTES LOCATION OF MATERIAL WHICH IS ASSUMED POSITIVE ACM
(BNNN)	DENOTES LOCATION OF BULK SAMPLE WHICH TESTED POSITIVE FOR ASBESTOS
[BNNN]	DENOTES LOCATION OF BULK SAMPLE WHICH TESTED NEGATIVE FOR ASBESTOS

1/16"=1'-0"

SCALE 16 8 0 16 32 FEET

12/29/95 17:06

DAVPRTAS.DWG

WESTON MANAGERS — DESIGNERS/CONSULTANTS — ALABAMA — AUBURN

CHECKED BY: J. CARCACHE	DATE 12/95	CONTRACT NUMBER 475450-94-B-0326	POST OFFICE W.O. NUMBER 260.00
APPROVED BY: R. ARCANGELI	12/95		
PROJ. MGR.: A. MUNCIE	12/95		
DRAWN BY: S. MURRAY	12/95	SUB LOCATION G01	
FINANCE NUMBER 112070			

CLIENT: UNITED STATES POSTAL SERVICE
SUNCOAST DISTRICT
TAMPA, FLORIDA 33622-2810

PROJECT TITLE: ACM ASSESSMENT OF THE UNITED STATES POST OFFICE DAVENPORT, FL 33837

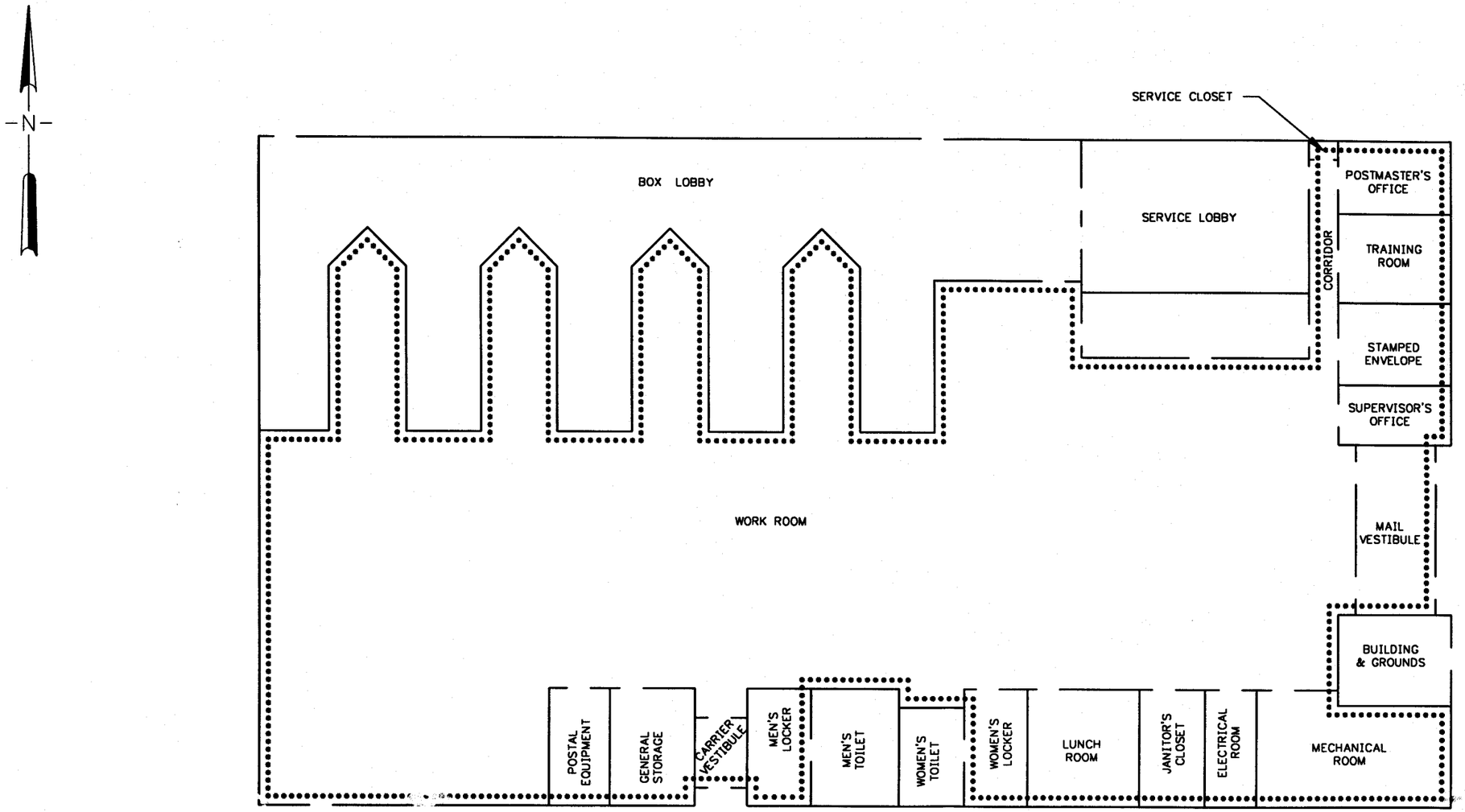
DRAWING TITLE: ASBESTOS SAMPLE LOCATIONS - FLOOR PLAN

W.O. NUMBER 01779-075-260

TASK NUMBER 0001

DRAWING NUMBER D-1

APPENDIX E
EXTENT OF MATERIAL DRAWING(S)



ASBESTOS MATERIAL LEGEND

- PIPE RUNS
- PIPE FITTINGS
- AIR DUCT MATERIAL
- FLOOR TILE AND MASTIC
- BASEBOARD MASTIC
- SPRAY / TROWEL MATERIAL
- CEILING TILE
- TRANSITE MATERIAL
- OTHER (AS NOTED)

1/16"=1'-0"

16 8 0 16 32

SCALE FEET

WESTON MANAGERS — ALABAMA — AUBURN

CHECKED BY: J. CARCACHE	12/95	
APPROVED BY: R. ARCANGELI	12/95	
PROJ. MGR.: A. MUNCIE	12/95	
DRAWN BY: S. MURRAY	12/95	
FINANCE NUMBER 1112070	SUB LOCATION G01	CONTRACT NUMBER 475450-94-B-0326
		POST OFFICE W.O. NUMBER 260.00

CLIENT: UNITED STATES POSTAL SERVICE
SUNCOAST DISTRICT
TAMPA, FLORIDA 33622-2810

PROJECT TITLE: ACM ASSESSMENT OF THE UNITED STATES POST OFFICE DAVENPORT, FL 33837

DRAWING TITLE: EXTENT OF ASBESTOS MATERIALS - FLOOR PLAN

W.O. NUMBER 01779-075-260

TASK NUMBER 0001

DRAWING NUMBER E-1

12/29/95 16:56

DAVPRTAE.DWG

APPENDIX F
BACKGROUND INFORMATION ON ASBESTOS

BACKGROUND INFORMATION ON ASBESTOS

The following is an excerpt from Appendix H to 29 CFR 1915.1001 - Substance Technical Information For Asbestos and an excerpt from Appendix I to 29 CFR 1926.58 - Medical Surveillance Guidelines For Asbestos.

SUBSTANCE TECHNICAL INFORMATION FOR ASBESTOS

I. Substance Identification

A. Substance: "Asbestos" is the name of a class of magnesium-silicate minerals that occur in fibrous form. Minerals that are included in this group are chrysotile, crocidolite, amosite, anthophyllite asbestos, tremolite asbestos, and actinolite asbestos.

B. Asbestos is and was used in the manufacture of heat-resistant clothing, automotive brake and clutch linings, and a variety of building materials including floor tiles, roofing felts, ceiling tiles, asbestos-cement pipe and sheet, and fire-resistant drywall. Asbestos is also present in pipe and boiler insulation materials and in sprayed-on materials located on beams, in crawlspaces, and between walls.

C. The potential for an asbestos-containing product to release breathable fibers depends largely on its degree of friability. Friable means that the material can be crumbled with hand pressure and is therefore likely to emit fibers. The fibrous fluffy sprayed-on materials used for fireproofing, insulation, or sound proofing are considered to be friable, and they readily release airborne fibers if disturbed. Materials such as vinyl-asbestos floor tile or roofing felt are considered non-friable if intact and generally do not emit airborne fibers unless subjected to sanding, sawing and other aggressive operations. Asbestos-cement pipe or sheet can emit airborne fibers if the materials are cut or sawed, or if they are broken.

D. Permissible exposure: Exposure to airborne asbestos fibers may not exceed 0.1 fibers per cubic centimeter of air (0.1 f/cc) averaged over the 8-hour workday, and 1 fiber per cubic centimeter of air (1.0 f/cc) averaged over a 30 minute work period.

II. Health Hazard Data

A. Asbestos can cause disabling respiratory disease and various types of cancers if the fibers are inhaled. Inhaling or ingesting fibers from contaminated clothing or skin can

also result in these diseases. The symptoms of these diseases generally do not appear for 20 or more years after initial exposure.

B. Exposure to asbestos has been shown to cause lung cancer, mesothelioma, and cancer of the stomach and colon. Mesothelioma is a rare cancer of the thin membrane lining of the chest and abdomen. Symptoms of mesothelioma include shortness of breath, pain in the walls of the chest, and/or abdominal pain.

III. Respirators and Protective Clothing

A. Respirators: You are required to wear a respirator when performing tasks that result in asbestos exposure that exceeds the permissible exposure limit (PEL) of 0.1 f/cc and when performing certain designated operations. Air-purifying respirators equipped with a high-efficiency particulate air (HEPA) filter can be used where airborne asbestos fiber concentrations do not exceed 1.0 f/cc; otherwise, more protective respirators such as air-supplied, positive-pressure, full facepiece respirators must be used. Disposable respirators or dust masks are not permitted to be used for asbestos work. For effective protection, respirators must fit your face and head snugly. Your employer is required to conduct fit test when you are first assigned a respirator and every 6 months thereafter. Respirators should not be loosened or removed in work situations where their use is required.

B. Protective Clothing: You are required to wear protective clothing in work areas where asbestos fiber concentrations exceed the permissible exposure limit (PEL) of 0.1 f/cc.

IV. Disposal Procedures and Clean-up

A. Wastes that are generated by processes where asbestos is present include:

1. Empty asbestos shipping containers.
2. Process wastes such as cuttings, trimmings, or reject materials.
3. Housekeeping waste from wet-sweeping or HEPA-vacuuming.
4. Asbestos fireproofing or insulating material that is removed from buildings.
5. Asbestos-containing building products removed during building renovation or demolition.
6. Contaminated disposable protective clothing.

B. Empty shipping bags can be flattened under exhaust hoods and packed into airtight containers for disposal. Empty shipping drums are difficult to clean and should be sealed.

C. Vacuum bags or disposable paper filters should not be cleaned, but should be sprayed with a fine water mist and placed into a labeled waste container.

D. Process waste and housekeeping waste should be wetted with water or a mixture of water and surfactant prior to packaging in disposable containers.

E. Asbestos-containing material that if removed from buildings must be disposed of in leak-tight 6-mil plastic bags, plastic-lined cardboard containers, or plastic-lined metal containers. These wastes, which are removed while wet, should be sealed in containers before they dry out to minimize the release of asbestos fibers during handling.

V. Access to Information

A. Each year, your employer is required to inform you of the information contained in this standard and appendices for asbestos. In addition, your employer must instruct you in the proper work practices for handling asbestos-containing materials, and the correct use of protective equipment.

B. Your employer is required to determine whether you are being exposed to asbestos. Your employer must treat exposure to thermal system insulation and sprayed-on and trowled-on surfacing material as asbestos exposure, unless results of laboratory analysis show that the material does not contain asbestos. You or your representative has the right to observe employee measurements and to record the results obtained. Your employer is required to inform you of your exposure, and, if you are exposed above the permissible exposure limit, he or she is required to inform you of the actions that are being taken to reduce your exposure to within the permissible limit.

C. Your employer is required to keep records of your exposures and medical examinations. These exposure records must be kept for at least thirty (30) years. Medical records must be kept for the period of your employment plus thirty (30) years.

D. Your employer is required to release your exposure and medical records to your physician or designated representative upon your written request.

MEDICAL SURVEILLANCE GUIDELINES FOR ASBESTOS

I. Route of Entry

Inhalation, ingestion.

II. Toxicology

Clinical evidence of the adverse effects associated with exposure to asbestos is present in the form of several well-conducted epidemiological studies of occupationally exposed workers, family contacts of workers, and persons living near asbestos mines. These studies have shown a definite association between exposure to asbestos and an increased incidence of lung cancer, pleural and peritoneal mesothelioma, gastrointestinal cancer, and asbestosis. The latter is a disabling fibrotic lung disease that is caused only by exposure to asbestos. Exposure to asbestos has also been associated with an increased incidence of esophageal, kidney, laryngeal, pharyngeal, and buccal cavity cancers. As with other known chronic occupational diseases, disease associated with asbestos generally appears about 20 years following the first occurrence of exposure: There are no known acute effects associated with exposure to asbestos.

Epidemiological studies indicate that the risk of lung cancer among exposed workers who smoke cigarettes is greatly increased over the risk of lung cancer among non-exposed smokers or exposed nonsmokers. These studies suggest that cessation of smoking will reduce the risk of lung cancer for a person exposed to asbestos but will not reduce it to the same level of risk as that existing for an exposed worker who has never smoked.

III. Signs and Symptoms of Exposure-Related Disease

The signs and symptoms of lung cancer or gastrointestinal cancer induced by exposure to asbestos are not unique, except that a chest X-ray of an exposed patient with lung cancer may show pleural plaques, pleural calcification, or pleural fibrosis. Symptoms characteristic of mesothelioma include shortness of breath, pain in the walls of the chest, or abdominal pain. Mesothelioma has a much longer latency period compared with lung cancer (40 years versus 15-20 years), and mesothelioma is therefore more likely to be found among workers who were first exposed to asbestos at an early age. Mesothelioma is always fatal.

Asbestosis is pulmonary fibrosis caused by the accumulation of asbestos fibers in the lungs. Symptoms include shortness of breath, coughing, fatigue, and vague feelings of sickness. When the fibrosis worsens, shortness of breath occurs even at rest. The diagnosis of asbestosis is based on a history of exposure to asbestos, the presence of characteristics radiological changes, end-inspiratory crackles (rales), and other clinical features of fibrosing lung disease. Pleural plaques and thickening are observed on X-rays taken during the early stages of the disease.

Asbestosis is often a progressive disease even in the absence of continued exposure, although this appears to be a highly individualized characteristic. In severe cases, death may be caused by respiratory or cardiac failure.

IV. Surveillance and Preventive Considerations

As noted above, exposure to asbestos has been linked to an increased risk of lung cancer, mesothelioma, gastrointestinal cancer, and asbestosis among occupationally exposed workers. Adequate screening tests to determine an employee's potential for developing serious chronic diseases, such as a cancer, from exposure to asbestos do not presently exist. However, some tests, particularly chest X-rays and pulmonary function tests, may indicate that an employee has been overexposed to asbestos increasing his or her risk of developing exposure related chronic diseases. It is important for the physician to become familiar with the operating conditions in which occupational exposure to asbestos is likely to occur. This is particularly important in evaluating medical and work histories and in conducting physical examinations. When an active employee has been identified as having been overexposed to asbestos measures taken by the employer to eliminate or mitigate further exposure should also lower the risk of serious long-term consequences.

The employer is required to institute a medical surveillance program for all employees who are or will be exposed to asbestos at or above the permissible exposure limit (0.1 fiber per cubic centimeter of air). All examinations and procedures must be performed by or under the supervision of a licensed physician, at a reasonable time and place, and at no cost to the employee.

Although broad latitude is given to the physician in prescribing specific tests to be included in the medical surveillance program, OSHA requires inclusion of the following elements in the routine examination:

i) Medical and work histories with special emphasis directed to symptoms of the respiratory system, cardiovascular system, and digestive tract.

ii) Completion of the respiratory disease questionnaire contained in Appendix D.

iii) A physical examination including a chest roentgenogram and pulmonary function test that includes measurement of the employee's forced vital capacity (FVC) and forced expiratory volume at one second (FEV1).

iv) Any laboratory or other test that the examining physician deems by sound medical practice to be necessary.

The employer is required to make the prescribed tests available at least annually to those employees covered; more often than specified if recommended by the examining physician; and upon termination of employment.

The employer is required to provide the physician with the following information: A copy of this standard and appendices; a description of the employee's duties as they relate to asbestos exposure; the employee's representative level of exposure to asbestos; a description of any personal protective and respiratory equipment used; and information from previous medical examinations of the affected employee that is not otherwise available to the physician. Making this information available to the physician will aid in the evaluation of the employee's health in relation to assigned duties and fitness to wear personal protective equipment, if required.

The employer is required to obtain a written opinion from the examining physician containing the results of the medical examination; the physician's opinion as to whether the employee has any detected medical conditions that would place the employee at an increased risk of exposure-related disease; any recommended limitations on the employee or on the use of personal protective equipment; and a statement that the employee has been informed by the physician of the results of the medical examination and of any medical conditions related to asbestos exposure that require further explanation or treatment. This written opinion must not reveal specific findings or diagnoses unrelated to exposure to asbestos, and a copy of the opinion must be provided to the affected employee.

APPENDIX G
PERSONNEL CERTIFICATIONS

safe state

The University of Alabama

has examined the documentation of asbestos training
and qualifications of the person named below and confers this

Certificate of Accreditation

For the Asbestos Contractor Discipline

MANAGEMENT PLANNER

Michael F. Kindley

Alabama Accreditation Number

PL0695K3641

Certificate Expiration Date

June 1, 1996

This certificate has been issued pursuant to the authority granted to the
University of Alabama Safe-State Program
by the Alabama Asbestos Contractor Accreditation Act,
Alabama Act No. 89-517, May, 1989.

William H Weems

Director Safe State Program

Assistant Director
for Environmental Programs

AC. 3316369

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION
ASBESTOS

DATE	LICENSE NO.	BATCH NO.
03/29/95	AX 0000004	94024673

THE ASBESTOS CONSULTANT NAMED BELOW IS LICENSED UNDER THE PROVISIONS OF CHAPTER 469 F.S., FOR THE YEAR EXPIRING NOV 30, 1996

ARCANGELI, RALPH
804 CHEAHA CIRCLE
AUBURN AL 36830

LAWTON CHILES
GOVERNOR

DISPLAY IN A CONSPICUOUS PLACE

GEORGE STUART, JR.
SECRETARY, D.B.P.R.

This is to certify that

Stan Strickland

Has completed coursework and satisfactorily passed an examination that meets all criteria required under TSCA Title II and 40 CFR 763 Subpart E for the EPA-Model Accreditation Course

Inspecting Buildings For Asbestos-Containing Materials

Program Director

WESTON
MANAGERS DESIGNERS/CONSULTANTS
1635 PUMPHREY AVE.
AUBURN, AL 36830-4303
(205) 826-6100

Exam Administrator

January 19, 1995	January 19, 1995	888	January 19, 1996
Course Date	Exam Date	Certificate Number	Expiration Date

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MAIB.DWG

APPENDIX H
GLOSSARY/DEFINITION OF TERMS

Aggressive method - Removal or disturbance of building material by sanding, abrading, grinding or other method that breaks, crumbles, or disintegrates intact ACM.

Amended water - Water to which surfactant (wetting agent) has been added to increase the ability of the liquid to penetrate ACM.

Amosite - (AMMO-site) This type of asbestos may be informally called "Brown Asbestos." Like all of the listed types of asbestos, except for chrysotile, amosite is a variety of asbestos called "amphibole." Amphiboles differ from serpentine in several ways. For example, their fibers are less silky so amphiboles are not well suited for weaving into a cloth although their higher densities and heat capacities make them better suited for high temperature applications.

Anthophyllite, Tremolite, Actinolite - These three types of amphibole asbestos are too rare to occur as anything more than trace contaminants of other amphiboles, chiefly amosite.

Asbestos - Any of the minerals chrysotile, amosite, crocidolite, tremolite asbestos, anthophyllite asbestos, and actinolite asbestos, that have been chemically treated and/or altered. For purposes of this standard, "asbestos" includes PACM, as defined below.

Asbestos-containing material (ACM) - Any material containing more than one percent asbestos.

Asbestos Hazard Emergency Response Act (AHERA) - A law passed by the United States Congress in 1986. This legislative act instructed the US Environmental Protection Agency to develop a regulation to help local education authorities find, assess, and respond to ACM in school buildings.

Asbestos Safety Hazard Abatement Reauthorization Act (ASHARA) - A law signed November 1991 instructed EPA to revise and extend asbestos training requirements to encompass all public and commercial buildings.

Assistant Secretary - The Assistant Secretary of Labor for Occupational Safety and Health, U.S. Department of Labor, or designee.

Authorized person - Any person authorized by the employer and required by work duties to be present in regulated areas.

Building/facility owner - The legal entity, including a lessee, which exercises control over management and record keeping functions relating to a building and/or facility.

Certified Industrial Hygienist (CIH) - One certified in the comprehensive practice of industrial hygiene by the American Board of Industrial Hygiene.

Chrysotile (CHRIS-o-teel) - This type of asbestos is informally called "White Asbestos." Its unique characteristic is that its long, white, silky fibers can be easily woven into cloth. This type of asbestos is the most common of all and it is a variety of asbestos called "serpentine."

Class I asbestos work - Activities involving the removal of TSI and surfacing ACM and PACM.

Class II asbestos work - Activities involving the removal of ACM which is not thermal system insulation or surfacing material. This includes, but is not limited to, the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastics.

Class III asbestos work - Repair and maintenance operations, where "ACM", including thermal system insulation and surfacing material, is likely to be disturbed.

Class IV asbestos work - Maintenance and custodial activities during which employees contact ACM and PACM and activities to clean up waste and debris containing ACM and PACM.

Competent person - In addition to the definition in 29 CFR 1926.32 (f), one who is capable of identifying existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure, who has the authority to take prompt corrective measures to eliminate them, as specified in 29 CFR 1926.32(f): in addition, for Class I and Class II work who is specially trained in a training course which meet the criteria of EPA's Model Accreditation Plan (40 CFR 763) for project designer or supervisor, or its equivalent and, for Class II and Class IV work, who is trained in an operations and maintenance (O&M) course developed by EPA [40 CFR 763.92 (a)(2)].

Demolition - The wrecking or taking out of any load-supporting structural member and any related razing, removing, or stripping of asbestos products.

Disturbance - Contact which releases fibers from ACM or PACM or debris containing ACM or PACM. This term includes activities that disrupt the matrix of ACM or PACM, render ACM or PACM friable, or generate visible debris. Disturbance includes cutting away small amounts of ACM and PACM, no greater than the amount which can be contained in one standard sized glove bag or waste bag in order to access a building component. In no event shall the amount of ACM or PACM so disturbed exceed that which can be contained in one glove bag or waste bag which shall not exceed 60 inches in length and width.

Employee exposure - That exposure to airborne asbestos that would occur if the employee were not using respiratory protective equipment.

Fiber - A particulate form of asbestos 5 micrometers or longer, with a length-to-diameter ratio of at least 3 to 1.

Friability - Refers to how easily a material can be crumbled, pulverized, broken, or reduced to a powder under hand pressure.

Glovebag - An impervious plastic bag-like enclosure affixed around an asbestos-containing material, with glove-like appendages through which material and tools may be handled.

High-efficiency particulate air (HEPA) filter - A filter capable of trapping and retaining at least 99.97 percent of all mono-dispersed particles of 0.3 micrometers in diameter.

Homogeneous area - An area of surfacing material, thermal system insulation, or miscellaneous material that is uniform in color, texture, and appearance.

Industrial hygienist - A professional qualified by education, training, and experience to anticipate, recognize, evaluate and develop controls for occupational health hazards.

Inspection - An activity undertaken in a public and commercial building to determine the presence or location, or to assess the condition of, friable or non-friable asbestos-containing material (ACM) or suspected ACM by visual and physical examination, or by collecting samples of such material.

Intact - ACM that has not crumbled, been pulverized, or otherwise deteriorated so that it is no longer likely to be bound with its matrix.

Negative Initial Exposure Assessment - A demonstration by the employer, which complies with the criteria in paragraph (f)(2)(iii) of 29CFR 1926.1101, that employee exposure during an operation is expected to be consistently below the PELs.

NESHAP (National Emission Standard for Hazardous Air Pollutants) - Regulates the removal and disposal of asbestos materials. It becomes effective whenever any quantity of ACM is involved with major renovation or demolition. This law requires no visible emissions of asbestos dust, regulatory notification, wet removal methods, and disposal at an authorized landfill.

PACM - "Presumed asbestos containing material" thermal system insulation, sprayed on or troweled on surfacing material and debris in work areas where such material is present.

Permissible exposure limit - The permissible exposure limit, (**PEL**), is 0.1 fibers per cubic centimeter (f/cc), time weighted average (TWA). TWA means exposure concentration averaged over the full 8-hour work shift.

Public or commercial buildings - Include office buildings, federal government buildings, government-owned buildings, colleges, museums, airports, hospitals, churches, preschools, stores, warehouses, factories, industrial buildings, and apartment complexes, condominiums and cooperatives of more than 10 units. The only structures exempted from this regulation are schools

already covered under AHERA, private residences and multi-unit dwellings of no more than 10 units.

Regulated area - An area established by the employer to demarcate areas where Class I, II, and III asbestos work is conducted, and any adjoining area where debris and waste from such asbestos work accumulate; and a work area within which airborne concentrations of asbestos, exceed or there is a reasonable possibility they may exceed the permissible exposure limit.

Removal - All operations where ACM and/or PACM is taken out or stripped from structures or substrates, and includes demolition operations.

Renovation - The modifying of any existing structure, or portion thereof.

Repair - Overhauling, rebuilding, reconstructing, or reconditioning of structures or substrates, including encapsulation or other repair of ACM or PACM attached to structures or substrates.

Surfacing material - Material that is sprayed, troweled-on or otherwise applied to surfaces (such as acoustical plaster on ceilings and fireproofing materials on structural members, or other materials on surfaces for acoustical, fireproofing, and other purposes).

Surfacing ACM - Surfacing material which contains more than 1% asbestos.

Thermal system insulation (TSI) - ACM applied to pipes, fittings, boilers, breeching, tanks, ducts or other structural components to prevent heat loss or gain.

Thermal system insulation ACM - Thermal system insulation which contains more than 1% asbestos.

PACM is friable surfacing and thermal system insulation (TSI) that was installed no later than 1980.

APPENDIX I
AIR MONITORING RESULTS

ROY F. WESTON, INC.
1635 PUMPHREY AVE.
AUBURN, AL 36830
PHONE: (334) 826-6100
FAX: (334) 826-8232

PHASE CONTRAST MICROSCOPY RESULTS

Weston W.O. No. 01779-075-260-9999
Receipt Date 12/11/95 through 12/11/95

WESTON ID	CLIENT/CLIENT ID	DATE RECEIVED	VOLUME (liters)	FIBER COUNT	FIBERS /mm² *	DETECTION LIMIT	FIBERS / cc	CONFIDENCE LIMITS
DQ767	112070-G01/3026	12/11/95	1421	19.0	23.75	0.002	0.006	0.003 - 0.018
DQ768	112070-G01/3027	12/11/95	1500	52.5	65.63	0.002	0.017	0.002 - 0.069
DQ769	112070-G01/3028	12/11/95	1531	34.5	43.13	0.002	0.011	0.007 - 0.018

TDTC = Too Dirty To Count SNA = Sample Not Analyzed * Corrected for Blank Count If Blank was Received
Limit of Quantification = 5.5 Fibers / 100 Fields

Results Approved for Transmittal by:

Jamison D. Webb December 13, 1995

 Results were obtained following procedures in NIOSH 7400, Revision #3, 5/15/89. The WESTON Optical Microscopy Laboratory in Auburn, AL. is accredited by AIHA (Laboratory No. 9224).

WESTON AIR SAMPLE CHAIN-OF-CUSTODY

Client: United States Postal Service	WESTON W.O.: 01779-075 - 260 - 9999
Facility: DAVENPORT FL	Date: 12-8-95
Finance/Sub-Location: 112070-G01	Sample Collector: Missildine
Description of Samples: PCM SAMPLES	

	Received From	Received By	Date	Time	No. Samples
1	Brett C. Missildine				
2	EXPRESS MAIL	J. Webb	12-11-95	1345	3
3					
4					

Samples Collected

Sample ID	Volume	Sample ID	~~Volume~~ LAB ID
3026	1420.5	(3021)	DQ 767
3027	1500.0	(3022)	768
3028	1531.0	(3023)	769

Sample Description On Back? ______

______ Signed ______ Date

Condition of Samples on Arrival

Shipping Box Damaged? NO

Security Tape Intact? YES

Any Sample Containers Open? NO

Any Sample Containers Damaged? NO

Comments: —

Samples Stored: N/A

Form Complete? NO, NOT SIGNED

J. Webb Signed 12-11-95 Date

Pg. 8 # 107

K:\01779\075\TEMPLATE\SRVYFORM.XLS:Air COC

SciLab Job #: 12-95-1261

Client Name: Roy F. Weston, Inc.

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Table I

Summary of Transmission Electron Microscopy (TEM) Results for Asbestos (air)

Weston W.O. #01779-075-260-9999; Davenport, FL; Sub-Location #112070-G01

SciLab Sample #	Client Sample #	Dilution Factor	Air Filtered (liters)	Area Analyzed (sq. mm.)	* Analytical Sensitivity (struc/cc air)	Asbestos Structures Detected (Microns) 0.5-5.0	>5.0	Total	Structure Density (struc/sq. mm.) >5.0	Total	Structure Concentration (struc/cc air) >5.0	Total	Type of Asbestos
01	3022		1174	.070	0.0047	0	0	0	<14.2	<14.2	<0.0047	<0.0047	NSD

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DEC 18 '95 19:29 SCILAB

* concentration represented by the detection of 1 structure

** not analyzed

NSD: No Asbestos Structures Detected

12-95. 61

AIR SAMPLE CHAIN-OF-CUSTODY

Client: United States Postal Service	**WESTON W.O.:** 01779-075-260-9999
Facility: DAVENPORT, FL	**Date:**
Finance/Sub-Location: 112070-G01	**Sample Collector:**
Description of Samples: TEM AIR - 3-5 DAY TAT	

	Received From	Received By	Date	Time	No. Samples
1	J. Webb	EXPRESS MAIL	12-13-95	1700	1
2		Mel Cook	12-16-95	1100	1
3					
4					

Samples Collected

Sample ID	Volume	Sample ID	Volume
3022	1174.0		

Sample Description On Back? NO

J. Webb — Signed

12-13-95 — Date

Condition of Samples on Arrival

Shipping Box Damaged? _____

Security Tape Intact? _____

Any Sample Containers Open? _____

Any Sample Containers Damaged? _____

Comments: _____

Samples Stored: _____

Form Complete? _____

_____ Signed

_____ Date

APPENDIX J
LABORATORY CERTIFICATION
AND
QA/QC PROGRAM

SECTION 6 QUALITY CONTROL PROGRAM FOR BULK SAMPLE ANALYSIS[1]

In order to ensure data quality, the Optical Microscopy Laboratory employs a strict quality control program for Bulk Sample Analysis.

As samples are received in the laboratory, they are recorded in the Bulk Asbestos Log Book by the Sample Coordinator/Lab Clerk. He/she then separates the samples into individual lots of ten or fewer samples. The lot is then assigned to a primary analyst. The primary analyst, designated as party "A", then performs analyses of all samples within the lot. At least one sample per lot is randomly selected by the QC Coordinator or QC Analyst for QC analysis. The QC analyst, designated as party "B", performs the analysis of the appropriate QC sample.

If the QC Coordinator determines that both "A" and "B" duplicate sample results agree, the QC result and the sample lot results are accepted. If "A" and "B" duplicate sample results do not agree, the appropriate sample is submitted to a third party analyst, designated as party "C". All results are then compared by the QC Coordinator. If party "C" results agree with party "A" results, the sample lot data are accepted. If party "C" results agree with party "B" results, party "A" must reanalyze the sample lot. If party "C" results do not agree with either "A" or "B", parties "A", "B", and "C" convene, discuss that particular sample, and come to a mutual agreement as to asbestos content and type. If, upon resolution, it is determined that party "A" has failed to identify an asbestos type, he/she will reanalyze the sample lot.

The acceptance or rejection of analytical data is to be determined by the QC Coordinator, based upon the Polarized Light Microscopy Quality Control Acceptance Criteria (Table 6-1). In cases where the QCC is not available, a designated alternate will make such determinations. The acceptable Percentage Ranges for Quality Control Analysis are based on results obtained during 1991 duplicate analysis by a second analyst.

As analyses of sample lots are completed, it is the QC Coordinator's responsibility to track results on the QC Computer-Generated Tracking Program.

Besides the ten percent QC tests, the accuracy of the analysts is also tested by internal standards. These standards may be reference materials from past NIST/NVLAP Proficiency Tests or

[1] Excerpted from WESTON's QA/QC procedures manual.

permanently mounted asbestos and non-asbestos reference sets from R.P. Cargille Laboratories, Inc. "Blank" or non-asbestos containing samples are also used to test for contamination of equipment.

A standard (reference) sample will be analyzed at the rate of at least one percent.

Annual calibration and equipment maintenance is essential in ensuring consistent data accuracy. An outside service performs the following activities:

- Cleaning the microscope bodies and optics.
- Cleaning and lubricating the mechanics.
- Collimating of binocular observation tubes and zooms.

As with the ten percent QC tests, it is the responsibility of the QCC to enter, track, and compare QC data.

Section No. 6
Revision No. 5
18 March 1994

TABLE 6-1
POLARIZED LIGHT MICROSCOPY
QUALITY CONTROL ACCEPTANCE CRITERIA

Original Result (%)	Acceptable Range For Quality Control Analysis (%)
ND	ND - <1
<1	ND - 1
1	<1 - 5
2	1 - 7
3	1 - 8
4	1 - 9
5	1 - 10
6	2 - 12
7	2 - 15
8	3 - 17
9	4 - 19
10	5 - 20
15	7 - 25
20	10 - 35
25	15 - 43
30	20 - 50
35	23 - 55
40	25 - 60
45	27 - 65
50	30 - 70
60	40 - 80
70	50 - 90
80	60 - 100
90	70 - 100
100	75 - 100

[a]The acceptable Percentage Ranges for Quality Control Analysis are based on results obtained during 1991 duplicate analyses by a second analyst.

[b]The Acceptable Ranges for samples with results of None Detected (ND) and <1% are arbitrarily assigned.

Test Complaints by Clients

In the event the results of a sample (or samples) are questioned by a client, the laboratory will reanalyze the samples and if necessary, issue an amended report. At the Client's request, the laboratory will have the samples analyzed by TEM for confirmation of the presence or absence of asbestos. In addition, the samples may be shipped to another lab for analysis at the client's request.

External Quality Control Checks

In some cases, the client requires the analysis of a certain number of samples by another lab. The samples are provided to the outside lab in the form of splits made after all samples have been analyzed or in the form of a side by side replicate provided by the field technician. The samples are logged into the sample log book and invoice book. The QC Coordinator packs and ships the splits or replicates to the outside lab.

In the event of conflicts of results, the Project Manager will be notified. The laboratory will resolve the conflict based on guidance provided by the Project Manager.

SECTION 6. QUALITY CONTROL PROCEDURES FOR FIBER COUNTS USING NIOSH 7400 (LABORATORY)

6.1. SCOPE AND APPLICATION

This Quality Control (QC) procedure describes the activities performed to ensure that data generated when using NIOSH Method 7400 are within the prescribed limits of the method. It is applicable to laboratory counting activities.

6.2. SUMMARY OF IN-HOUSE QC PROCEDURE

The in-house procedure requires the preparation of a permanent mount of all samples. In order for results to be released, one sample from each sample lot is subjected to a blind recount and one sample to a recount by a second analyst. In the event a second analyst is not available, the primary analyst will perform two blind recounts. In addition to the recount procedures, each analyst is required to count one reference slide daily.

6.3. SAMPLE AND HANDLING PROCEDURES

Samples are received in the laboratory by conducting an inventory and signing the chain-of-custody. Samples are grouped into lots of not more than ten samples and logged into the PCM log book. One sample is selected for a blind recount (QC1) by the analyst. Another sample (or the same if only one non-blank sample) is selected for counting by a second analyst (QC2). The samples are assigned laboratory sample numbers. These numbers are added to count sheets if provided by the client. Count sheets are prepared in the lab if none are received. A minimum of information is provided on a lab prepared count sheet to insure a blind analysis.

6.4. SAMPLE QC PROCEDURES

QC counts are recorded on a QC Sample Results Sheet. After the analyst has analyzed all samples in a lot, the QC2 count is compared to the original analysis. If the results are within acceptable limits then the analyst is given a re-labeled slide for the blind (QC1) recount. The

results of the original count and recount are compared. If the results are within acceptable limits the results for that sample lot are released.

If the comparison of results of the QC2 and original count is not acceptable then the analyst recounts all samples in the lot except blanks and samples voided due to overloading. Each recount result is compared to the original result and those which are acceptable are released.

If the sample lot has passed on the QC2 count but fails at the QC1 count, then the cause for the failure is determined (bad sample prep for example). The sample lot is reanalyzed and the sample results compared.

6.5. REPORTING DATA

All QC data shall be reported using the standard forms and formats defined in this section. The QC Recounts will be performed and data recorded on the QC Recount Sheet. As many as four recounts may be recorded on that form. The reference sample counts are reported on the NIOSH 7400 Reference Slide count.

6.6. CALCULATIONS

Separate relative standard deviations will be calculated for the following ranges of fiber densities on the reference filters:

- Five to 20 fibers per 100 fields.
- Twenty-one to 50 fibers per 100 fields.
- Fifty-one to 100 fibers per 100 fields.
- Greater than 100 fibers per 100 fields.

Relative standard deviation is calculated using the following formula:

$$s_r = ([x - mi] / [n - 1])^{1/2}$$

where:

s_r is the relative standard deviation.

n is the number of measurements.

x is the mean of all n values.

mi is the i^{th} value.

The acceptability of data will be determined by comparison of the original count to the blind recount. If the difference between the two counts exceeds the value calculated by the following equation, the data are rejected and corrective action implemented.

$$d = 2.8 * x * s^r$$

where:

d is the upper limit of acceptable difference.

x is the mean of the square roots of the two fiber counts.

s_r is one-half the intracounter relative standard deviation for the appropriate count range.

National Institute of Standards and Technology

NVLAP

National Voluntary Laboratory Accreditation Program

ISO/IEC GUIDE 25:1990
ISO/IEC GUIDE 58:1993
ISO 9002:1994

Scope of Accreditation

BULK ASBESTOS FIBER ANALYSIS **NVLAP LAB CODE 1254 00**

Roy F. Weston, Inc.
1635 Pumphrey Avenue
Auburn, AL 36830-7013
Frank Burgess Phone: 334-826-6100

NVLAP Code	*Designation*
18/A01	40 Code of Federal Regulations Chapter I (1-1-87 edition) Part 763, Subpart F, Appendix A or the current U. S. Environmental Protection Agency method for the analysis of asbestos in building materials by polarized light microscopy.

April 1, 1996

Effective until

For the National Institute of Standards and Technology

United States Department of Commerce
National Institute of Standards and Technology

NVLAP®

ISO/IEC GUIDE 25:1990
ISO/IEC GUIDE 58:1993
ISO 9002:1994

Certificate of Accreditation

DEPARTMENT OF COMMERCE ★ UNITED STATES OF AMERICA ★

ROY F. WESTON, INC.
AUBURN, AL

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

April 1, 1996
Effective until

For the National Institute of Standards and Technology

NVLAP LAB C[illegible]: 1254 00

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