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# ASBESTOS SURVEY REPORT

**Barricks  
(ID: Building 148)**

NASA-AMES

Moffett Field

Mt. View, CA

BUILDING INSPECTIONS

ENVIRONMENTAL ENGINEERING

SPECIALIZED TRAINING

CONTRACT MANAGEMENT

Prepared for:  
NASA - AMES (PAI CORPORATION)  
Nasa-ames Research Center  
Mt. View, CA 94035-1000

Prepared by:  
Benchmark Environmental Engineering  
December 12, 2001  
Project Number: **E01-448-A-SU**

Prepared By:

\_\_\_\_\_  
Terri MacFarlane  
a California Certified Asbestos Consultant  
90-2747

Reviewed By:

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## Table of Contents

### Section:

	Executive Summary
1	Introduction
2	Description of Building Construction and Systems
3	Summary of Findings for Suspect Materials
4	Material Information Tables
5	Removal Cost Estimate Summary

### Appendices:

A	Definitions of Terms and Assessment Criteria
B	Bulk Sampling Protocol and Analytical Methods
C	Laboratory Bulk Sampling Reports
D	Summary of Regulatory Requirements
E	AHERA Building Inspector Certifications
F	Drawings Indicating Material Locations

## Executive Summary

Benchmark Environmental Engineering (Benchmark) was retained by NASA - Ames (PAI Corporation) to perform an Asbestos Hazard Emergency Response Act (AHERA) style asbestos survey of the Barricks (Building ID: Building 148), to determine the locations of accessible and to the extent feasible, inaccessible friable and non-friable asbestos containing building materials (ACBM).

This inspection included interior and exterior materials. Pre-existing survey data was used to help provide a picture of existing condition of this building. Benchmark collected additional samples of the construction material to help supplement existing data, to contradict existing data or to provide additional data of materials not perviously identified.

Asbestos was detected in the following friable (or jacketed friable) materials:

- Pipe Elbows
- Pipe Insulation

Asbestos was detected in the following non-friable materials:

- Floor - Mastic
- Floor Tile
- Roofing Material
- Sink Undercoating
- Wallboard

The following materials were assumed to contain asbestos:

- Fire Door

## Section 1 Introduction

Benchmark Environmental Engineering (Benchmark) performed an Asbestos Hazard Emergency Response Act (AHERA) style asbestos survey of the Barricks located at Moffett Field, Mt. View, CA, to identify ACBM. This report identifies the locations and asbestos content of friable and non-friable ACBM, provides assessment of the friable ACBM in relation to the material's hazard potential to building occupants and provides removal cost estimates.

This inspection included interior and exterior materials. Pre-existing survey data was used to help provide a picture of existing condition of this building. Benchmark collected additional samples of the construction material to help supplement existing data, to contradict existing data or to provide additional data of materials not perviously identified.

All identified suspect asbestos-containing materials are summarized in Section 3. Materials testing positive for asbestos including material assessments, recommended response actions, and quantities are described in Section 4. Removal cost estimates for asbestos-containing materials are included in Section 5.

Removal cost estimates (Section 5) are for budgeting purposes only and should not be used as a quote for removal of the materials. It is not our recommendation to remove these materials unless they are beyond repair, or planned demolition or renovation activities will disturb the materials. Estimates are based on recent pricing we have received from contractors performing similar work and may vary from actual prices obtained due to the actual scope of work, quantity of material removed, control measures specified and contractor work loads.

On Monday, July 2, 2001 Terri MacFarlane ( 90-2747 ) , a California Certified Asbestos Consultant, from Benchmark, performed an asbestos survey of the building(s) in accordance with the Asbestos Hazard and Emergency Response Act of 1987 (AHERA).

### DISCLAIMER

This report is prepared for the express use and benefit of NASA - Ames (PAI Corporation), its agents and employees. The information in this report or portions thereof may be required to be included in notifications to employees, contractors or other visitors to the building(s). This report is not intended to be used as a specification or work plan for any of the work suggested or recommended in this report.

This report is based upon conditions observed at the property and information made available to the surveyor. This report does not intend to identify all hazards or unsafe conditions, nor to indicate that other hazards or unsafe conditions do not exist at the

premises.

## Section 2 Description of Building Construction and Systems

**Number of Floors:** 2+      **Year Built:** 1953  
basement

**Structural components consist of:** Concrete Foundation

**Exterior Wall construction components consist of:** Concrete

**Interior Wall construction components consist of:** Drywall

**Interior ceiling components consist of:** Ceiling Tile  
Drywall

**Roofing construction components consist of:** Rolled Composite

### **Building Description/Comments:**

Building 148 is a 2 story building with a basement.

### **Comments:**

A previous asbestos report was conducted in 1993 by Tetra Tech Corporation.

### Section 3 Summary of Findings for Suspect Materials

The following table is a list of all materials at this building which were tested for the presence of asbestos or were assumed to contain asbestos along with overall sample results. Complete information on asbestos containing materials is included in Section 4 of this report.

Each unique material within the building is assigned a unique HM number by the surveyor at the time the survey is performed.

Section 3 and Section 4 are organized by building, surfacing, thermal systems insulation, flooring, walls, ceilings, roofing and miscellaneous materials.

*Site Information*

**Barricks (Site ID: Parcel 5)**

Moffett Field  
Mt. View, CA

*Client Information*

NASA - Ames (PAI Corporation)  
NASA-Ames Research Center  
Mt. View, CA 94035-1000

*Survey Performed By*

Benchmark Environmental Engineering

*Inspector*

Terri MacFarlane

*Inspection Date*

Monday, July 2, 2001

*Job Number*

E01-448-A-SU

<i>Suspect Material</i>	<i>Category</i>	<i>HM Number</i>	<i>Material Location(s)</i>	<i>Asbestos Present?</i>
Roofing Material	Roofing	RM-1		Yes
12" Tan Floor Tile	Flooring	FT-2	THROUGHOUT THE BULDING	No
Baseboard Adhesive	Flooring	BA-3	THROUGHOUT THE BULDING	No
2'x4' Pinhole Ceiling Tile	Ceilings	CT-4	THROUGHOUT THE BULDING	No
Wallboard		WLBD-5	THROUGHOUT THE BULDING	Yes
Plaster	Surfacing	PL-6	THROUGHOUT THE BULDING	No
1" Pipe Run TSI Pipe Insulation	TSI	PI-7	THROUGHOUT THE BULDING	Yes
1" Pipe Elbows TSI	TSI	PE-8	THROUGHOUT THE BULDING	Yes
2" TSI Pipe Insulation	TSI	PI-9	THROUGHOUT THE BULDING	Yes
2" TSI Pipe Elbows	TSI	PE-10	THROUGHOUT THE BULDING	Yes
9" Brown Floor Tile	Flooring	FT-11	1ST FLOOR CENTER	Yes
Brown Stair Floor Tile	Flooring	FT-12	2ND FLOOR S. CENTER	No
Fire Door	Miscellaneous	FD-13	CENTER	Yes
Floor - Mastic	Flooring	FLMAS-14	THROUGHOUT THE BULDING	Yes
Sink Undercoating	Miscellaneous	SK-15	CENTER	Yes
9 x 9 Red Brown Floor Tile	Flooring	FT-16		Yes

# Section 4 Material Information Tables

Site Information  
**Barricks (Site ID: Parcel 5)**  
 Moffett Field  
 Mt. View, CA

Client Information  
 NASA - Ames (PAI Corporation)  
 NASA-Ames Research Center  
 Mt. View, CA 94035-1000

Survey Performed By  
 Benchmark Environmental Engineering

Inspector  
 Terri MacFarlane

Inspection Date  
 Monday, July 2, 2001

Job Number  
 E01-448-A-SU

<b>Material Description</b> Roofing Material		<b>Material Number</b> RM-1	<b>Asbestos Present?</b> Yes
<b>Material Category</b> Roofing	<b>Friable Classification</b> Non-Friable	<b>EPA Category</b> Category I	<b>Total Quantity</b> 15,785
<b>General Condition</b> Good	<b>Damage Category</b>	<b>Overall Material Assessment</b> Not Assessed under AHERA	<b>Unit of Measure</b> Square Feet
<b>General Material Comments</b>		<b>Recommended Response</b> Abate Prior to Demolition	
<b>Material Location(s)</b>			

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
RM-1-01-6598-148-1	Roof Core East		Yes	0	1) Roofing core 2) 3)	Non Detected
RM-1-01-6599-148-2	Roof Core Southwest		Yes	0	1) Roofing core 2) 3)	Non Detected
RM-1-01-6600-148-3	Roof Patch Northeast		Yes	0	1) Roofing material 2) 3)	Non Detected
RM-1-01-6601-148-4	Roof Penetration North		Yes	0	1) Roof penetration 2) 3)	Non Detected
RM-1-01-6602-148-5	Roof Penetration South		Yes	10%	1) Roof penetration 2) 3)	10 % Chrysotile



# Section 4 Material Information Tables

Site Information

**Barricks (Site ID: Parcel 5)**

Inspection Date  
Monday, July 2, 2001

<b>Material Description</b> 12" Tan Floor Tile			<b>Material Number</b> FT-2	<b>Asbestos Present?</b> No
<b>Material Category</b> Flooring	<b>Friable Classification</b> Non-Friable	<b>EPA Category</b> Category I	<b>Total Quantity</b> 4,250	<b>Unit of Measure</b> Square Feet
<b>General Condition</b>	<b>Damage Category</b>	<b>Overall Material Assessment</b> No Assessment, Non-asbestos	<b>Recommended Response</b>	
<b>General Material Comments</b>				
<b>Material Location(s)</b> THROUGHOUT THE BUILDING				

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
ft-2-01-4428-148-1	1st Floor South Entry Hallway		Yes	0%	1) Floor Tile 2) 3)	Non Detected
ft-2-01-4429-148-2	1st Floor Hallway Near 107		Yes	0%	1) Floor Tile 2) 3)	Non Detected
ft-2-01-4430-148-3	2nd Floor Hallway, Near South Bathroom		Yes	0%	1) Floor Tile 2) 3)	Non Detected

<b>Material Description</b> Baseboard Adhesive			<b>Material Number</b> BA-3	<b>Asbestos Present?</b> No
<b>Material Category</b> Flooring	<b>Friable Classification</b> Non-Friable	<b>EPA Category</b> Category I	<b>Total Quantity</b> 680	<b>Unit of Measure</b> Linear Feet
<b>General Condition</b>	<b>Damage Category</b>	<b>Overall Material Assessment</b> No Assessment, Non-asbestos	<b>Recommended Response</b>	
<b>General Material Comments</b>				
<b>Material Location(s)</b> THROUGHOUT THE BUILDING				

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
ba-3-01-4431-148-4	1st Floor Hallway Across From Duty Officer Office		Yes	0%	1) Adhesive 2) 3)	Non Detected
ba-3-01-4432-148-5	1st Floor Dining Area Near East Door		Yes	0%	1) Adhesive 2) 3)	Non Detected
ba-3-01-4433-148-6	2nd Floor Room 210 North Wall		Yes	0%	1) Adhesive 2) 3)	Non Detected

# Section 4 Material Information Tables

Site Information

**Barricks (Site ID: Parcel 5)**

Inspection Date

Monday, July 2, 2001

Material Description

**2'x4' Pinhole Ceiling Tile**

Material Number

**CT-4**

Asbestos Present?

**No**

Material Category

**Ceilings**

Friable Classification

**Friable**

EPA Category

**Friable**

Total Quantity

**3,050**

Unit of Measure

**Square Feet**

General Condition

Damage Category

Overall Material Assessment

**No Assessment, Non-asbestos**

Recommended Response

General Material Comments

Material Location(s)

**THROUGHOUT THE BULDING**

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
ct-4-148-HO4-A			Yes	0%	1) Ceiling Tile 2) 3)	0
ct-4-148-HO4-B			Yes	0%	1) Ceiling Tile 2) 3)	0
ct-4-148-HO4-C			Yes	0%	1) Ceiling Tile 2) 3)	0
ct-4-148-HO4-D			Yes	0%	1) Ceiling Tile 2) 3)	0
ct-4-148-HO4-E			Yes	0%	1) Ceiling Tile 2) 3)	0

# Section 4 Material Information Tables

Site Information  
**Barricks (Site ID: Parcel 5)**

Inspection Date  
 Monday, July 2, 2001

Material Description <b>Wallboard</b>			Material Number <b>WLBD-5</b>	Asbestos Present? <b>Yes</b>
Material Category	Friable Classification <b>Non-Friable</b>	EPA Category <b>Category II</b>	Total Quantity <b>15,100</b>	Unit of Measure <b>Square Feet</b>
General Condition	Damage Category	Overall Material Assessment <b>Not Assessed under AHERA</b>	Recommended Response <b>Abate Prior to Demolition</b>	

General Material Comments

Material Location(s)  
**THROUGHOUT THE BULDING**

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
WLBD-5-148-HO5-A			Yes	0%	1) Drywall 2) 3)	0
WLBD-5-148-HO5-B			Yes	0%	1) Drywall 2) 3)	0
WLBD-5-148-HO5-C			Yes	0%	1) Drywall 2) 3)	0
WLBD-5-148-HO5-D			Yes	Trace	1) Drywall 2) 3)	<1 % Chrysotile
WLBD-5-148-HO5-E			Yes	0%	1) Drywall 2) 3)	0
WLBD-5-148-HO5-F			Yes	0%	1) Drywall 2) 3)	0
WLBD-5-148-HO5-G			Yes	0%	1) Drywall 2) 3)	0
WLBD-5-148-HO5-H			Yes	0%	1) Drywall 2) 3)	0
WLBD-5-148-HO5-I			Yes	0%	1) Drywall 2) 3)	0
WLBD-5-148-HO5-J			Yes	Trace	1) Drywall 2) 3)	<1 % Chrysotile

# Section 4 Material Information Tables

Site Information

**Barricks (Site ID: Parcel 5)**

Inspection Date

Monday, July 2, 2001

<b>Material Description</b> Plaster			<b>Material Number</b> PL-6	<b>Asbestos Present?</b> No
<b>Material Category</b> Surfacing	<b>Friable Classification</b> Friable	<b>EPA Category</b> Friable	<b>Total Quantity</b> 6,900	<b>Unit of Measure</b> Square Feet
<b>General Condition</b>	<b>Damage Category</b>	<b>Overall Material Assessment</b> No Assessment, Non-asbestos	<b>Recommended Response</b>	
<b>General Material Comments</b>				

**Material Location(s)**  
THROUGHOUT THE BULDING

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
pl-6-148-HO6-A			Yes	0%	1) Wall Plaster 2) Wall Plaster 3) Wall Plaster	0
pl-6-148-HO6-B			Yes	0%	1) Wall Plaster 2) Wall Plaster 3) Wall Plaster	0
pl-6-148-HO6-C			Yes	0%	1) Wall Plaster 2) Wall Plaster 3) Wall Plaster	0
pl-6-148-HO6-D			Yes	0%	1) Wall Plaster 2) Wall Plaster 3) Wall Plaster	0
pl-6-148-HO6-F			Yes	0%	1) Wall Plaster 2) Wall Plaster 3) Wall Plaster	0
pl-6-148-HO6-G			Yes	0%	1) Wall Plaster 2) Wall Plaster 3) Wall Plaster	0

# Section 4 Material Information Tables

Site Information

**Barricks (Site ID: Parcel 5)**

Inspection Date

Monday, July 2, 2001

<b>Material Description</b> 1" Pipe Run TSI Pipe Insulation			<b>Material Number</b> PI-7	<b>Asbestos Present?</b> Yes
<b>Material Category</b> TSI	<b>Friable Classification</b> Friable	<b>EPA Category</b> Friable	<b>Total Quantity</b> 1,400	<b>Unit of Measure</b> Linear Feet
<b>General Condition</b> Fair	<b>Damage Category</b>	<b>Overall Material Assessment</b>	<b>Recommended Response</b> Abate Prior to Demolition	
<b>General Material Comments</b>				

**Material Location(s)**  
THROUGHOUT THE BULDING

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
pi-7-148-HO7-A			Yes	20%	1) Pipe Insulation 2) Pipe Insulation 3)	10-20 % Chrysotile 5-10 % Amosite
pi-7-148-HO7-B			No	Not Avail.	1) Pipe Insulation 2) 3)	
pi-7-148-HO7-C			No	Not Avail.	1) Pipe Insulation 2) 3)	
pi-7-01-4443-148-16	1st Floor, Reception Area Across from Duty Officer Office		Yes	5%	1) Pipe Insulation 2) Pipe Insulation 3)	5 % Amosite 5 % Chrysotile
pi-7-01-4444-148-17	1st Floor, Room 107, Right of Radiator Unit		Yes	0%	1) Pipe Insulation 2) 3)	Non Detected

# Section 4 Material Information Tables

Site Information

**Barricks (Site ID: Parcel 5)**

Inspection Date

Monday, July 2, 2001

<b>Material Description</b> 1" Pipe Elbows TSI			<b>Material Number</b> PE-8	<b>Asbestos Present?</b> Yes
<b>Material Category</b> TSI	<b>Friable Classification</b> Friable	<b>EPA Category</b> Friable	<b>Total Quantity</b> 215	<b>Unit of Measure</b> Linear Feet
<b>General Condition</b> Fair	<b>Damage Category</b>	<b>Overall Material Assessment</b>	<b>Recommended Response</b> Abate Prior to Demolition	
<b>General Material Comments</b>				

**Material Location(s)**  
THROUGHOUT THE BULDING

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
pe-8-148-HO8-A			Yes	20%	1) TSI Elbow 2) TSI Elbow 3)	10-20 % Amosite 5-10 % Chrysotile
pe-8-148-HO8-B			No	Not Avail.	1) TSI Elbow 2) 3)	
pe-8-148-HO8-C			No	Not Avail.	1) TSI Elbow 2) 3)	
pe-8-01-4445-148-18	1st Floor, Reception Area Across From Duty Officer Office		Yes	10%	1) TSI Elbow 2) TSI Elbow 3)	7 % Amosite 10 % Chrysotile
pe-8-01-4446-148-19	1st Floor, Reception Area Across From Duty Officer Office		Yes	10%	1) TSI Elbow 2) 3)	10 % Chrysotile 10 % Amosite

# Section 4 Material Information Tables

Site Information

**Barricks (Site ID: Parcel 5)**

Inspection Date  
Monday, July 2, 2001

<b>Material Description</b> 2" TSI Pipe Insulation			<b>Material Number</b> PI-9	<b>Asbestos Present?</b> Yes
<b>Material Category</b> TSI	<b>Friable Classification</b> Friable	<b>EPA Category</b> Friable	<b>Total Quantity</b> 700	<b>Unit of Measure</b> Linear Feet
<b>General Condition</b>	<b>Damage Category</b>	<b>Overall Material Assessment</b>	<b>Recommended Response</b> Abate Prior to Demolition	

General Material Comments

Material Location(s)  
THROUGHOUT THE BULDING

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
pi-9-148-HO9-A			Yes	20%	1) Pipe Insulation 2) Pipe Insulation 3)	10-20 % Chrysotile 5-10 % Amosite
pi-9-148-HO9-B			No	Not Avail.	1) Pipe Insulation 2) 3)	
pi-9-148-HO9-C			No	Not Avail.	1) Pipe Insulation 2) 3)	
pi-9-01-4447-148-20	1st Floor, Reception Area Across From Duty Officer Office		Yes	12%	1) Pipe Insulation 2) Pipe Insulation 3)	8 % Amosite 12 % Chrysotile
pi-9-01-4448-148-21	1st Floor Dining Area, S/W Corner		Yes	12%	1) Pipe Insulation 2) Pipe Insulation 3)	12 % Amosite 10 % Chrysotile

# Section 4 Material Information Tables

Site Information

Barricks (Site ID: Parcel 5)

Inspection Date  
Monday, July 2, 2001

Material Description <b>2" TSI Pipe Elbows</b>			Material Number <b>PE-10</b>	Asbestos Present? <b>Yes</b>
Material Category <b>TSI</b>	Friable Classification <b>Friable</b>	EPA Category <b>Friable</b>	Total Quantity <b>11</b>	Unit of Measure <b>Linear Feet</b>
General Condition <b>Good</b>	Damage Category	Overall Material Assessment	Recommended Response <b>Abate Prior to Demolition</b>	
General Material Comments				
Material Location(s) <b>THROUGHOUT THE BULDING</b>				

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
pe-10-148-H10-A			Yes	20%	1) TSI Elbow 2) TSI Elbow 3)	10-20 % Chrysotile 5-10 % Amosite
pe-10-148-H10-B			No	Not Avail.	1) TSI Elbow 2) 3)	
pe-10-148-H10-C			No	Not Avail.	1) TSI Elbow 2) 3)	
pe-10-01-4449-148-22	1st Floor Reception Area Across From Duty Officer Office		Yes	13%	1) TSI Elbow 2) TSI Elbow 3)	12 % Amosite 13 % Chrysotile
pe-10-01-4450-148-23	1st Floor, Duty Officer Office		Yes	10%	1) TSI Elbow 2) TSI Elbow 3)	10 % Amosite 10 % Chrysotile

Material Description <b>9" Brown Floor Tile</b>			Material Number <b>FT-11</b>	Asbestos Present? <b>Yes</b>
Material Category <b>Flooring</b>	Friable Classification <b>Non-Friable</b>	EPA Category <b>Category I</b>	Total Quantity <b>40</b>	Unit of Measure <b>Square Feet</b>
General Condition	Damage Category	Overall Material Assessment <b>Not Assessed under AHERA</b>	Recommended Response <b>Abate Prior to Demolition</b>	
General Material Comments				
Material Location(s) <b>1ST FLOOR CENTER</b>				

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
ft-11-01-4434-148-7	2nd Floor, Room 207		No	Not Avail.	1) Floor Tile 2) 3)	10 % Chrysotile
ft-11-01-4435-148-8	2nd Floor, Room 206		Yes	9%	1) Floor Tile 2) 3)	9 % Chrysotile
ft-11-01-4436-148-9	1st Floor, Duty Office 1/2 Bath		Yes	12%	1) Floor Tile 2) 3)	12 % Chrysotile



# Section 4 Material Information Tables

Site Information

Barricks (Site ID: Parcel 5)

Inspection Date

Monday, July 2, 2001

<b>Material Description</b> Brown Stair Floor Tile			<b>Material Number</b> FT-12	<b>Asbestos Present?</b> No
<b>Material Category</b> Flooring	<b>Friable Classification</b> Non-Friable	<b>EPA Category</b> Category I	<b>Total Quantity</b> 400	<b>Unit of Measure</b> Square Feet
<b>General Condition</b>	<b>Damage Category</b>	<b>Overall Material Assessment</b> No Assessment, Non-asbestos	<b>Recommended Response</b>	
<b>General Material Comments</b>				
<b>Material Location(s)</b> 2ND FLOOR S. CENTER				

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
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<b>Material Description</b> Fire Door			<b>Material Number</b> FD-13	<b>Asbestos Present?</b> Yes (assumed)
<b>Material Category</b> Miscellaneous	<b>Friable Classification</b> Non-Friable	<b>EPA Category</b> Category II	<b>Total Quantity</b> 400	<b>Unit of Measure</b> Square Feet
<b>General Condition</b>	<b>Damage Category</b>	<b>Overall Material Assessment</b> Not Assessed under AHERA	<b>Recommended Response</b> Abate Prior to Demolition	
<b>General Material Comments</b>				
<b>Material Location(s)</b> CENTER				

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
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# Section 4 Material Information Tables

Site Information

**Barricks (Site ID: Parcel 5)**

Inspection Date

Monday, July 2, 2001

<b>Material Description</b> Floor - Mastic			<b>Material Number</b> FLMAS-14	<b>Asbestos Present?</b> Yes
<b>Material Category</b> Flooring	<b>Friable Classification</b> Non-Friable	<b>EPA Category</b> Category I	<b>Total Quantity</b> 4,690	<b>Unit of Measure</b> Square Feet
<b>General Condition</b> Good	<b>Damage Category</b>	<b>Overall Material Assessment</b> Not Assessed under AHERA	<b>Recommended Response</b> Abate Prior to Demolition	
<b>General Material Comments</b>				

**Material Location(s)**  
THROUGHOUT THE BULDING

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
FLMAS-14-01-4440-148-13	1st Floor South Entry Hallway		Yes	0%	1) Mastic 2) 3)	Non Detected
FLMAS-14-01-4441-148-14	2nd Floor, Rom 207		Yes	5%	1) Mastic 2) 3)	5 % Chrysotile
FLMAS-14-01-4442-148-15	1st Floor Hallway		Yes	5%	1) Mastic 2) 3)	5 % Chrysotile

<b>Material Description</b> Sink Undercoating			<b>Material Number</b> SK-15	<b>Asbestos Present?</b> Yes
<b>Material Category</b> Miscellaneous	<b>Friable Classification</b> Non-Friable	<b>EPA Category</b> Category I	<b>Total Quantity</b> 5	<b>Unit of Measure</b> Square Feet
<b>General Condition</b> Good	<b>Damage Category</b>	<b>Overall Material Assessment</b> Not Assessed under AHERA	<b>Recommended Response</b> Abate Prior to Demolition	
<b>General Material Comments</b>				

**Material Location(s)**  
CENTER

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
sk-15-148-H15-A			Yes	5%	1) Sink Undercoating 2) 3)	1-5 % Chrysotile

# Section 4 Material Information Tables

Site Information

**Barricks (Site ID: Parcel 5)**

Inspection Date

Monday, July 2, 2001

<b>Material Description</b> 9 x 9 Red Brown Floor Tile			<b>Material Number</b> FT-16	<b>Asbestos Present?</b> Yes
<b>Material Category</b> Flooring	<b>Friable Classification</b> Non-Friable	<b>EPA Category</b> Category I	<b>Total Quantity</b> 4,250	<b>Unit of Measure</b> Square Feet
<b>General Condition</b>	<b>Damage Category</b>	<b>Overall Material Assessment</b> Not Assessed under AHERA	<b>Recommended Response</b> Abate Prior to Demolition	

General Material Comments

Material Location(s)

Sample ID(s)	Sample Location(s)	Floor	Analyzed	Overall Result	Layer(s) Reported by Lab	Results by Layer
ft-16-01-4451-148-24	1st Floor Hallway, Below 12 x 12 Tan		Yes	9%	1) Floor Tile 2) 3)	9 % Chrysotile
ft-16-01-4452-148-25	1st Floor Hall at Room 107		Yes	15%	1) Floor Tile 2) 3)	15 % Chrysotile
ft-16-01-4453-148-26	2nd Floor Hallway, Near South Bathroom		Yes	9%	1) Floor Tile 2) 3)	9 %

## Section 5 Removal Cost Estimate Summary

These estimates are for budgeting purposes only and should not be used as a quote for removal of the materials. It is not our recommendation to remove these materials unless they are beyond repair, or planned demolition or renovation activities will disturb the materials. Estimates are based on recent pricing we have received from contractors performing similar work and may vary from actual prices obtained due to the actual scope of work, quantity of material removed, control measures specified and contractor work loads, etc.

Building	Barricks	HM	EPA Category	Suspect Material	Material Location	QTY. Units Removal Costs (low to high)
		1	Category I	Roofing Material		15,785 Square Feet \$15785 to \$31570
		5	Category II	Wallboard	THROUGHOUT THE BULDING	15,100 Square Feet \$15100 to \$37750
		7	Friable	1" Pipe Run TSI Pipe Insulation	THROUGHOUT THE BULDING	1,400 Linear Feet \$21000 to \$28000
		8	Friable	1" Pipe Elbows TSI	THROUGHOUT THE BULDING	215 Linear Feet \$4300
		9	Friable	2" TSI Pipe Insulation	THROUGHOUT THE BULDING	700 Linear Feet \$10500 to \$14000
		10	Friable	2" TSI Pipe Elbows	THROUGHOUT THE BULDING	11 Linear Feet \$500
		11	Category I	9" Brown Floor Tile	1ST FLOOR CENTER	40 Square Feet \$500

HM	Building EPA Category	Suspect Material	Material Location	QTY. Units Removal Costs (low to high)
13	Category II	Fire Door	CENTER	400 Square Feet \$60000
14	Category I	Floor - Mastic	THROUGHOUT THE BULDING	4,690 Square Feet \$4690 to \$9380
15	Category I	Sink Undercoating	CENTER	5 Square Feet \$500
16	Category I	9 x 9 Red Brown Floor Tile		4,250 Square Feet \$6375 to \$8500
Total Removal Costs:			\$139,250	to \$195,000

Building	Floor	Sample #	Sample Location	Room	Material Sampled	%/Type
148	1	01-4428-148-1	1st Floor South Entry Hallway	Hall	12" Tan Floor Tile	Non Detected
148	1	01-4429-148-2	1st Floor Hallway Near 107	107	12" Tan Floor Tile	Non Detected
148	2	01-4430-148-3	2nd Floor Hallway, Near South Bathroom	hall	12" Tan Floor Tile	Non Detected
148	1	01-4431-148-4	1st Floor Hallway Across From Duty Officer Office	Hall	Baseboard Adhesive	Non Detected
148	1	01-4432-148-5	1st Floor Dining Area Near East Door	Dining	Baseboard Adhesive	Non Detected
148	2	01-4433-148-6	2nd Floor Room 210 North Wall	210	Baseboard Adhesive	Non Detected
148	2	01-4434-148-7	2nd Floor, Room 207	207	9" Brown Floor Tile	Non Detected
148	2	01-4435-148-8	2nd Floor, Room 206	206	9" Brown Floor Tile	10% Chrysotile
148	1	01-4436-148-9	1st Floor, Duty Office 1/2 Bath		9" Brown Floor Tile	9% Chrysotile
148	1	01-4440-148-13	1st Floor South Entry Hallway		9" Brown Floor Tile	12% Chrysotile
148	2	01-4441-148-14	2nd Floor, Rom 207	Hall	Floor - Mastic	Non Detected
148	1	01-4442-148-15	1st Floor Hallway	207	Floor - Mastic	5% Chrysotile
148	1	01-4443-148-16	1st Floor, Reception Area	Hall	Floor - Mastic	5% Chrysotile
148	1	01-4444-148-17	1st Floor, Reception Area Across from Duty Officer Office	Recep	1" Pipe Run TSI Pipe Insulation	5% Chrysotile
148	1	01-4445-148-18	1st Floor, Right of Radiator Unit	107	1" Pipe Run TSI Pipe Insulation	Non Detected
148	1	01-4446-148-19	1st Floor, Reception Area	Recep	1" Pipe Elbows TSI	7% Amosite
148	1	01-4447-148-20	1st Floor, Reception Area	Recep	1" Pipe Elbows TSI	10% Chrysotile
148	1	01-4448-148-21	1st Floor, Reception Area	Recep	2" TSI Pipe Insulation	8-Amesite
148	1	01-4449-148-22	1st Floor Dining Area, S/W Corner	Dining	2" TSI Pipe Insulation	12% Amosite
148	1	01-4450-148-23	1st Floor Reception Area	Recep	2" TSI Pipe Elbows	12% Amosite
148	1	01-4451-148-24	1st Floor, Duty Officer Office		2" TSI Pipe Elbows	10% Amosite
148	1	01-4452-148-25	1st Floor Hallway, Below 12 x 12 Tan	Hall	9 x 9 Red Brown Floor Tile	9% Amosite
148	2	01-4453-148-26	1st Floor Hall at Room 107	Hall	9 x 9 Red Brown Floor Tile	15% Chrysotile
148	Roof	01-6598-148-1	2nd Floor Hallway, Near South Bathroom	Hall	9 x 9 Red Brown Floor Tile	9% Chrysotile
148	Roof	01-6599-148-2	Roof Core East	Roof	Roofing Material	Non Detected
148	Roof	01-6600-148-3	Roof Core Southwest	Roof	Roofing Material	Non Detected
148	Roof	01-6601-148-4	Roof Patch Northeast	Roof	Roofing Material	Non Detected
148	Roof	01-6602-148-5	Roof Penetration North	Roof	Roofing Material	Non Detected
148			Roof Penetration South	Roof	Roofing Material	Non Detected
148			Pre-Existing Survey			10% Chrysotile
148		148-H15-A			Sink Undercoating	1-5% Chrysotile
148		148-HO4-A			2'x4' Pinhole Ceiling Tile	Non Detected
148		148-HO4-B			2'x4' Pinhole Ceiling Tile	Non Detected
148		148-HO4-C			2'x4' Pinhole Ceiling Tile	Non Detected
148		148-HO4-D			2'x4' Pinhole Ceiling Tile	Non Detected
148		148-HO4-E			2'x4' Pinhole Ceiling Tile	Non Detected
148		148-HO5-A			Wallboard	Non Detected

Building	Floor	Sample #	Sample Location	Room	Material Sampled	%/Type
148		148-HO5-B			Wallboard	Non Detected
148		148-HO5-C			Wallboard	Non Detected
148		148-HO5-D			Wallboard	<1% Chrysotile
148		148-HO5-E			Wallboard	Non Detected
148		148-HO5-F			Wallboard	Non Detected
148		148-HO5-G			Wallboard	Non Detected
148		148-HO5-H			Wallboard	Non Detected
148		148-HO5-I			Wallboard	Non Detected
148		148-HO5-J			Wallboard	<1% Chrysotile
148		148-HO6-A			Plaster	Non Detected
148		148-HO6-B			Plaster	Non Detected
148		148-HO6-C			Plaster	Non Detected
148		148-HO6-D			Plaster	Non Detected
148		148-HO6-F			Plaster	Non Detected
148		148-HO6-G			Plaster	Non Detected
148		148-HO7-A			Plaster	Non Detected
148		148-HO7-B			1" Pipe Run TSI Pipe Insulation	10-20% Chrysotile
148		148-HO7-C			1" Pipe Run TSI Pipe Insulation	Not Analyzed
148		148-HO8-A			1" Pipe Run TSI Pipe Insulation	Not Analyzed
148		148-HO8-B			1" Pipe Elbows TSI	10-20% Amosite
148		148-HO8-C			1" Pipe Elbows TSI	Not Analyzed
148		148-HO9-A			1" Pipe Elbows TSI	Not Analyzed
148		148-HO9-B			2" TSI Pipe Insulation	10-20% Chrysotile
148		148-HO9-C			2" TSI Pipe Insulation	Not Analyzed
148		148-H10-A			2" TSI Pipe Insulation	Not Analyzed
148		148-H10-B			2" TSI Pipe Elbows	10-20% Chrysotile
148		148-H10-C			2" TSI Pipe Elbows	Not Analyzed
148		148-H10-C			2" TSI Pipe Elbows	Not Analyzed

Appendix A  
**Definitions of Terms and Assessment Criteria**



## Definitions of Terms and Assessment Criteria

This survey report organizes information on each suspect ACBM identified in tables located in Section 4. This section describes how to interpret the data found on materials listed in Section 4.

**Material description** contains the description of the suspect homogeneous asbestos containing building material.

**Material Serial Number** is used to reference the material for reinspections, etc..

**Asbestos type and content** describes the type of asbestos and its percentage in the material.

**Asbestos Results** for positive materials are shown as a percentage. Samples having less than 1% asbestos are reported as containing "Trace" amounts of asbestos and samples with no detected asbestos are reported as "BLD" or below limit of detection.

**Sample number(s)** identifies a particular material sample obtained from a specific sample location. Sample numbers are used primarily for laboratory identification.

**Sample Location** identifies where the samples of this material were obtained.

**Material Category** categorizes each material as surfacing, TSI or miscellaneous.

*Surfacing Materials* - Asbestos containing materials that are sprayed-on, trowled-on or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing on structural members, or other materials on surfaces for acoustical, fireproofing, or other purposes.

*Thermal Systems Insulation (TSI)* - Asbestos containing materials applied to pipes, fittings, boilers, breaching, tanks, ducts or other interior structural components to prevent heat loss or gain or water condensation.

*Miscellaneous Materials* - Asbestos containing materials applied to or a part of building components that are not classified as surfacing materials or thermal systems insulation.

**Quantity & Units** reports approximate total quantity per unit of measure for each material.

**Building(s) & Floor(s)** specifies where a material is located.

**Material Location** describes where the material is found throughout the building.

**Material Condition** identifies the material as Friable, Non-friable or Jacketed (for thermal systems insulation only) if asbestos is present.

*Friable* - An asbestos containing material that can be crumbled, pulverized or reduced to powder, when dry, by hand pressure, such as spray applied fireproofing on structural steel members, spray applied acoustical ceiling materials or damaged thermal systems insulation. Friable materials are of greatest concern due to their potential fiber release.

*Non-Friable* - An asbestos containing material where the asbestos is bound tightly in a matrix or sealed by a protective layer. Non-friable materials can become friable by being rendered to a crumbled, pulverized or powdered state, when dry, by crushing, sanding, sawing, shot-blasting, severe weathering or by other mechanically induced means. Common examples of non-friable materials are adhesives, floor tiles, transite and roofing materials.

*Jacketed* - An asbestos containing material applied to thermal systems insulation and "jacketed" with a protective outer layer such as canvas or metal to keep the material in good condition. Undamaged jacketed ACBM is considered non-friable. If the jacketing is damaged, the material is considered friable.

**Damage Category** describes the type of damage, if any, to the material. The following damage categories are used: None, Physical, Air, and Water.

**Material Assessment** identifies the condition of the material in relation to physical and water damage, delamination of the material from its substrate, the extent of the damage and the potential for damage from building conditions, such as, accessibility by building occupants, influence of vibration, etc. The six standard assessment categories ranked by hazard potential, with the first being the lowest hazard are as follows: 1) Potential for Damage, 2) Potential for Significant Damage, 3) Damaged, 4) Damaged with Potential for Damage, 5) Damaged with Potential for Significant Damage, and 6) Significantly Damaged. Only friable materials are assessed under AHERA regulations. Non-friable materials, unless damaged, are not assessed and can be assumed to be in good condition.

*Damaged* - The damage or deterioration of the material results in inadequate cohesion or adhesion with crumbling, blistering, water stains, marring or otherwise abraded over less than one-tenth (1/10) of the surface if the damage is evenly distributed or one-fourth (1/4) if the damage is localized.

*Significant Damage* - The damage or deterioration of the material results in inadequate adhesion or cohesion and the damage is extensive and severe with one or more of the following characteristics: 1) Crumbling or blistering over at least one-tenth (1/10) of the surface if evenly distributed, one-fourth (1/4) if the damage is localized; 2) Areas of the material hanging from the surface, delaminated, or showing adhesive failure; 3) Water stains, gouges or marred.

**Recommended Response** suggests the appropriate options for controlling or maintaining ACBM in a safe manner. There are four options used:

*Operations & Maintenance (O&M)* - A program designed to "manage" asbestos in-place. As long as asbestos containing materials remain in a building, an O&M program should be instituted to alert maintenance personnel, custodial workers and outside vendors of the existence and location of these materials and to set a policy for the maintenance of these materials. The material is usually only required to be removed if it is significantly damaged, prior to demolition of the building or if it will be disturbed by renovation activities.

*Repair* - The restoration of damaged or deteriorated asbestos containing building materials to an intact condition. Once the intact condition is established, the material should be included in an O&M program. The material is usually only required to be removed if it is significantly damaged, prior to demolition of the building or if it will be disturbed by renovation activities.

*Abate Due to Condition* - This material is significantly damaged and is unsafe in its current condition. The access to the area should be restricted to personnel equipped with appropriate personal protection. This material should be properly removed by a licensed contractor using workers trained in the safe removal of asbestos.

*Abate Prior to Renovation* - This material should be properly removed prior to planned renovation activities by a licensed contractor using workers trained in the safe removal of asbestos. This recommendation is usually made only on survey reports prepared prior to planned renovation activities.

**Comments & Damage Description** contains any additional information and or specific details of material damage are noted here.

**EPA Category** provides the appropriate material category as outlined in the NESHAPS regulation. The four options are friable, Category 1, Category 2, and needs determination.

*Friable* - Materials containing greater than 1% asbestos are always considered Regulated Asbestos Containing Materials (RACM) that require removal prior to building renovation or demolition activities that impact the material.

*Category 1* - Materials that are bituminous non-friable and contain more than 1% asbestos that become RACM and require removal only when will be subject to grinding, cutting, sanding or abrading.

Appendix B  
**Bulk Sampling Protocol and Analytical Methods**

## **Bulk Sampling Protocol and Analytical Methods**

Bulk samples of suspect asbestos containing building materials were obtained using standard industrial hygiene techniques including wetting the material to minimize fiber release. Our personnel wore half-face air purifying respirators equipped with high efficiency particulate (HEPA) filters while obtaining samples

Our sampling strategy for suspect friable surfacing materials was based on the guidelines outlined in the EPA publication *Asbestos in Buildings: Simplified Sampling Scheme for Friable Surfacing Materials*, and the procedures outlined in 40 CFR 763, Subpart E (ASHERA). For non-friable suspect materials, ASHERA requires the building inspector to determine the appropriate number of samples to obtain and analyze. Usually one to three samples of non-friable materials are collected.

For each homogeneous material identified by visual inspection as suspect material, random samples are obtained. A single bulk sample is randomly selected from each homogeneous material for first-round testing. If the sample is positive, the remaining samples are not analyzed; if the sample is negative, the other samples are submitted for study. Every sample must be reported negative if the material is to be considered non-asbestos containing.

The bulk samples were delivered to an independent laboratory that participates in the bulk sample proficiency analysis program conducted by the United States Environmental Protection Agency and is accredited by the National Voluntary Laboratory Program (NVLAP). The samples were analyzed using Polarized Light Microscopy (PLM) with dispersion staining to estimate the percent of asbestos composition by volume. Samples with no observable asbestiform minerals are designated as None-Detected. Samples in which asbestiform minerals are observed, but exist in concentrations of less than one percent (<1%), are designated as present in Trace amounts; all other samples are designated as asbestos containing with the appropriate percent of asbestos noted.

Appendix C  
**Laboratory Bulk Sampling Reports**

# SCHNEIDER LABORATORIES

INCORPORATED

2512 W. Cary Street • Richmond, Virginia • 23220-5117  
804-353-6778 • 800-785-LABS (5227) • (FAX) 804-353-6928

*Excellence in Service and Technology*

AIHA/ELLAP 100527, NVLAP 1150, NYELAP 11413, CAELAP 2078, NC 593, SC 93003

## LABORATORY ANALYSIS REPORT

Asbestos Identification by EPA Method 600/R-93/116

ACCOUNT: 2541-01-11  
CLIENT: Benchmark  
ADDRESS: 3732 Charter Park Drive  
San Jose, CA 95136

DATE COLLECTED:  
DATE RECEIVED: 7/ 6/2001  
DATE ANALYZED: 7/ 6/2001  
DATE REPORTED: 7/ 9/2001

PO NO.:  
PROJECT NAME:  
PROJECT NO.: E01-448  
JOB LOCATION: NASA Bldg. 148

Client Sample No.	SLI Sample/ Layer ID	Sample Identification/ Layer Name	Asbestos Detected (Yes/No)	Sample Description
01-4428-148-1	1981390 Layer 1: 100% Non-Asbestos	1st flr S entry hall Floor Tile	No	Homogenous, Tan, Organically Bound NON FIBROUS MATERIAL 100%
01-4429-148-2	1981391 Layer 1: 100% Non-Asbestos	1st flr hall 107 Floor Tile	No	Homogenous, Tan, Organically Bound NON FIBROUS MATERIAL 100%
01-4430-148-3	1981392 Layer 1: 100% Non-Asbestos	2nd flr hall S bath Floor Tile	No	Homogenous, Tan, Organically Bound NON FIBROUS MATERIAL 100%
01-4431-148-4	1981393 Layer 1: 100% Non-Asbestos	1st flr hall duty Mastic	No	Brown, Brittle NON FIBROUS MATERIAL 95%, WOLLASTONITE 5%
01-4432-148-5	1981394 Layer 1: 100% Non-Asbestos	1st flr dining east Mastic	No	Brown, Brittle NON FIBROUS MATERIAL 100%

*Samples analyzed by the EPA Test Method are subject to the inherent limitations of light microscopy including interference by matrix components. Gravimetric reduction and correlative analyses are recommended for all non-friable, organically bound materials. For calibrated visual estimate, 1% is the concentration at which there is a quantitative uncertainty. This report relates only to the items tested, must not be reproduced except in full with the approval of the lab, and must not be used to claim NVLAP or other government agency endorsement.*

Client Sample No.	SLI Sample/ Layer ID	Sample Identification/ Layer Name	Asbestos Detected (Yes/No)	Sample Description
01-4433-148-6	1981395 Layer 1: 100% Non-Asbestos	2nd flr rm 210 N Mastic	No	Brown, Brittle NON FIBROUS MATERIAL 100%
01-4434-148-7	1981396 Layer 1: 10% Asbestos 90% Non-Asbestos	2nd flr rm 207 Floor Tile	Yes	Brown, Organically Bound CHRYSOTILE 10% NON FIBROUS MATERIAL 90%
01-4435-148-8	1981397 Layer 1: 9% Asbestos 91% Non-Asbestos	2nd flr rm 206 Floor Tile	Yes	Brown, Organically Bound CHRYSOTILE 9% NON FIBROUS MATERIAL 91%
01-4436-148-9	1981398 Layer 1: 12% Asbestos 88% Non-Asbestos	1st flr duty 1/2 bth Floor Tile	Yes	Brown, Organically Bound CHRYSOTILE 12% NON FIBROUS MATERIAL 88%
01-4440-148-13	1981402 Layer 1: 100% Non-Asbestos	With sample #1 Mastic	No	Brown, Brittle NON FIBROUS MATERIAL 100%
01-4441-148-14	1981403 Layer 1: 100% Non-Asbestos	With sample #7 Mastic	No	Black, Bituminous NON FIBROUS MATERIAL 100%
01-4442-148-15	1981404 Layer 1: 5% Asbestos 95% Non-Asbestos <i>Layer possibly contaminated by layer 1.</i>	With sample #24 Mastic	Yes	Black, Bituminous CHRYSOTILE 5% NON FIBROUS MATERIAL 95%
01-4443-148-16	1981405 Layer 1: 10% Asbestos 90% Non-Asbestos <i>No Cover Found.</i>	1st flr reception Pipe Insulation	Yes	White, Powdery AMOSITE 5%, CHRYSOTILE 5% NON FIBROUS MATERIAL 90%
01-4444-148-17	1981406 Layer 1: 100% Non-Asbestos	1st flr rm 107 rad. Pipe Insulation	No	Homogenous, White, Granular NON FIBROUS MATERIAL 80%, SYNTHETIC FIBER 20%

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Client Sample No.	SLI Sample/ Layer ID	Sample Identification/ Layer Name	Asbestos Detected (Yes/No)	Sample Description
	Layer 2:	Cover	No	White, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 90%, NON FIBROUS MATERIAL 10%
01-4445-148-18	1981407	1st flr reception		
	Layer 1:	Pipe Insulation	Yes	White, Powdery
	17% Asbestos			AMOSITE 7%, CHRYSOTILE 10%
	83% Non-Asbestos			NON FIBROUS MATERIAL 83%
	No Cover Found.			
01-4446-148-19	1981408	1st flr reception		
	Layer 1:	Pipe Insulation	Yes	White, Powdery
	20% Asbestos			AMOSITE 10%, CHRYSOTILE 10%
	80% Non-Asbestos			NON FIBROUS MATERIAL 80%
	Layer 2:	Cover	No	White, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 90%, NON FIBROUS MATERIAL 10%
01-4447-148-20	1981409	1st flr reception		
	Layer 1:	Pipe Insulation	Yes	White, Powdery
	20% Asbestos			AMOSITE 8%, CHRYSOTILE 12%
	80% Non-Asbestos			NON FIBROUS MATERIAL 80%
	Layer 2:	Cover	No	White, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 90%, NON FIBROUS MATERIAL 10%
01-4448-148-21	1981410	1st flr dining SW		
	Layer 1:	Pipe Insulation	Yes	White, Powdery
	22% Asbestos			AMOSITE 12%, CHRYSOTILE 10%
	78% Non-Asbestos			NON FIBROUS MATERIAL 78%
	Layer 2:	Cover	No	White, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 90%, NON FIBROUS MATERIAL 10%
01-4449-148-22	1981411	1st flr reception		
	Layer 1:	Pipe Insulation	Yes	White, Powdery
	25% Asbestos			AMOSITE 12%, CHRYSOTILE 13%
	75% Non-Asbestos			NON FIBROUS MATERIAL 75%
	Layer 2:	Cover	No	White, Fibrous
	100% Non-Asbestos			CELLULOSE FIBER 90%, NON FIBROUS MATERIAL 10%
01-4450-148-23	1981412	1st flr duty officer		
	Layer 1:	Pipe Insulation	Yes	White, Powdery
	20% Asbestos			AMOSITE 10%, CHRYSOTILE 10%
	80% Non-Asbestos			NON FIBROUS MATERIAL 80%

Samples analyzed by the EPA Test Method are subject to the inherent limitations of light microscopy including interference by matrix components. Gravimetric reduction and correlative analyses are recommended for all non-friable, organically bound materials. For calibrated visual estimate, 1% is the concentration at which there is a quantitative uncertainty. This report relates only to the items tested, must not be reproduced except in full with the approval of the lab, and must not be used to claim NVLAP or other government agency endorsement.



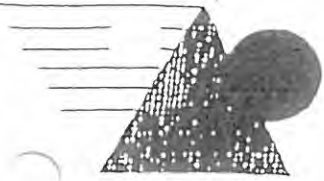
Client Sample No.	SLI Sample/ Layer ID	Sample Identification/ Layer Name	Asbestos Detected (Yes/No)	Sample Description
	Layer 2: 100% Non-Asbestos	Cover	No	White, Fibrous CELLULOSE FIBER 90%, NON FIBROUS MATERIAL 10%
01-4451-148-24	1981413 Layer 1: 9% Asbestos 91% Non-Asbestos	1st flr hallway Floor Tile	Yes	Light Red, Organically Bound CHRYSOTILE 9% NON FIBROUS MATERIAL 91%
01-4452-148-25	1981414 Layer 1: 15% Asbestos 85% Non-Asbestos	1st flr hall rm 107 Floor Tile	Yes	Brown, Organically Bound CHRYSOTILE 15% NON FIBROUS MATERIAL 85%
01-4453-148-26	1981415 Layer 1: 9% Asbestos 91% Non-Asbestos	2nd flr hall S bthrm Floor Tile	Yes	Brown, Organically Bound CHRYSOTILE 9% NON FIBROUS MATERIAL 91%

ANALYST: MARK DELEONARDIS

Total no. of pages in report = 4

  
 REVIEWED BY Beverly A. Schrage, Analyst

*amples analyzed by the EPA Test Method are subject to the inherent limitations of light microscopy including interference by matrix components. Gravimetric reduction and correlative analyses are recommended for all non-friable, organically bound materials. For calibrated visual estimate, 1% is the concentration at which there is a quantitative uncertainty. This report relates only to the items tested, must not be reproduced except in full with the approval of the lab, and must not be used to claim NVLAP or other government agency endorsement.*



# BENCHMARK

Sample Location Worksheet  
Chain Of Custody

2541-01-11

3680 Charter Park Dr Suite E San Jose, CA 95136  
(408) 448-7594 (408) 448-3849 (fax)

Project Number: EO1-448

Date: 7/2/01

Technician: T. McFadden

Project Location: NASA BLDG. 148

Client Name: K. McGLATHLIN Company: PAI

### Project Type

- Asbestos
- Lead-based Paint
- Lead Risk Assessment
- Lead (water)
- Mold/Fungus/Bacteria
- Indoor Air Quality
- Other: \_\_\_\_\_

### Type Of Analysis

- PLM/Bulk (EPA-600)
- EPA SW846-7420, FLAA
- Dust Wipes, Paint Chips
- Air, Soil
- SM313B, GFAA, Water
- TEM/Bulk (Chatfield)
- Other: \_\_\_\_\_

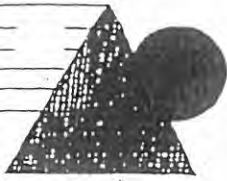
### Turnaround Time

- Same Day 3 Hr 6 Hr
- 24 Hour
- 48 Hour
- 72 Hour
- 5 Day
- Other: \_\_\_\_\_

~~T.I.P. - Test Till Positive~~

Homogenous Material Group	Material / Component	Sample Number	Location Of Samples	Analysis Specification
02	12 x 12 TAN FLOOR TILE	01-4428-148-1	1 <sup>ST</sup> FLOOR SOUTH ENTRY HALLWAY (TOP LAYER)	
		01-4429-148-2	1 <sup>ST</sup> FLOOR HALLWAY, NEAR 107 (TILE ONLY)	
		01-4430-148-3	2 <sup>ND</sup> FLOOR, HALLWAY, NEAR SOUTH BATHROOM (TILE ONLY)	
03	COJING MASTIC	01-4431-148-4	1 <sup>ST</sup> FLOOR HALLWAY, ACCESS FROM DUTY OFFICER OFFICE	
		01-4432-148-5	1 <sup>ST</sup> FLOOR DINING AREA NEAR EAST DOOR	
		01-4433-148-6	2 <sup>ND</sup> FLOOR, ROOM 210 NORTH WALL	
11	9x9 BROWN F.T.	01-4434-148-7	2 <sup>ND</sup> FLOOR, ROOM 207	
		01-4435-148-8	2 <sup>ND</sup> FLOOR, ROOM 206 (TILE ONLY)	
		01-4436-148-9	1 <sup>ST</sup> FLOOR DUTY OFFICER 1/2 BATH (TILE ONLY)	
12	STAIR FLOOR TILE	01-4437-148-10	NOT SUBMITTED	
		01-4438-148-11	PREVIOUSLY REMOVED	
		01-4439-148-12		
14	FLOOR TILE MASTIC	01-4440-148-13	WITH SAMPLE #11, 12 x 12 TAN FLOOR TILE	
		01-4441-148-14	WITH SAMPLE #7, 9x9 BROWN FLOOR TILE	
		01-4442-148-15	WITH SAMPLE #24, 9x9 RED/BROWN BOTTOM LAYER	
Relinquished By: <u>[Signature]</u>		Received By: <u>S. Millett</u>		Date/Time Received: <u>7-6 10<sup>00</sup></u>

FX 8279 4214 5578 (5)



# BENCHMARK

Sample Location Worksheet  
Chain Of Custody

3680 Charter Park Dr Suite E San Jose, CA 95136  
(408) 448-7594 (408) 448-3849 (fax)

pg 2

Project Number: 01-448

Date: 7/2/01

Technician: T. McFarlan

Project Location: NASA BLDG 148

Client Name: K. McGLATHLIN

Company: PAI

**Project Type**

- Asbestos
- Lead-based Paint
- Lead Risk Assessment
- Lead (water)
- Mold/Fungus/Bacteria
- Indoor Air Quality
- Other: \_\_\_\_\_

**Type Of Analysis**

- PLM/Bulk (EPA 600)
- EPA SW846-7420, FLAA
- Dust Wipes, Paint Chips
- Air, Soil
- SM313B, GFAA, Water
- TEM/Bulk (Chatfield)
- Other: \_\_\_\_\_

**Turnaround Time**

- Same Day 3 Hr 6 Hr
- 24 Hour
- 48 Hour
- 72 Hour
- 5 Day
- Other: \_\_\_\_\_

FTP = Test-Fill-Positive

Homogenous Material Group	Material / Component	Sample Number	Location Of Samples	Analysis Specification
07	1" PIPE RUN	01-4443-148-16	1 <sup>ST</sup> FLOOR, RECEPTION AREA ACROSS FROM DUTY OFFICER OFC.	
	↓	01-4444-148-17	1 <sup>ST</sup> FLOOR, ROOM 107, RT OF RADIATOR UNIT	
08	1" PIPE ELBOW	01-4445-148-18	1 <sup>ST</sup> FLOOR, RECEPTION AREA ACROSS FROM DUTY OFFICER OFC.	
	↓	01-4446-148-19	1 <sup>ST</sup> FLOOR, RECEPTION AREA ACROSS FROM DUTY OFFICER OFC.	
09	2" PIPE RUN	01-4447-148-20	1 <sup>ST</sup> FLOOR, RECEPTION AREA ACROSS FROM DUTY OFFICER OFC.	
	↓	01-4448-148-21	1 <sup>ST</sup> FLOOR DINING AREA, S/W CORNER	
10	2" PIPE ELBOW	01-4449-148-22	1 <sup>ST</sup> FLOOR RECEPTION AREA ACROSS FROM DUTY OFFICER OFC.	
	↓	01-4450-148-23	1 <sup>ST</sup> FLOOR, DUTY OFFICER OFFICE	
16	9x9 RED/BROWN FT	01-4451-148-24	1 <sup>ST</sup> FLOOR HALLWAY, BELOW 12x12 TAN F.T.	
	↓	01-4452-148-25	1 <sup>ST</sup> FLOOR HALL AT ROOM 107 (BELOW TAN F.T.) (FLOOR TILE ONLY)	
	↓	01-4453-148-26	2 <sup>ND</sup> FLOOR HALLWAY, NEAR SOUTH BATHROOM BELOW TAN FT (F.T. ONLY)	
01	ROOF	01-51-148-27		
		01-55-148-28		
		01-56-148-29		
		01-57-148-30		
Relinquished By:		Received By:		Date/Time Received
<u>T. McFarlan</u>		<u>[Signature]</u>		<u>7-6 10<sup>00</sup></u>

*Handwritten notes:*  
NOT  
2/2/01/2001

FX

# SCHNEIDER LABORATORIES INCORPORATED

2512 W. Cary Street • Richmond, Virginia • 23220-5117  
804-353-6778 • 800-785-LABS (5227) • (FAX) 804-353-6928

*Excellence in Service and Technology*

AIHA/ELLAP 100527, NVLAP 1150, NYELAP 11413, CAELAP 2078, NC 593, SC 93003

## LABORATORY ANALYSIS REPORT

Asbestos Identification by EPA Method 600/R-93/116

ACCOUNT: 2541-01-339  
CLIENT: Benchmark  
ADDRESS: 3732 Charter Park Drive Suite A  
San Jose, CA 95136

DATE COLLECTED: 12/5/2001  
DATE RECEIVED: 12/7/2001  
DATE ANALYZED: 12/7/2001  
DATE REPORTED: 12/10/2001

PO NO.:  
PROJECT NAME:  
PROJECT NO.: E01-448  
JOB LOCATION: Bldg 148

Client Sample No.	SLI Sample/ Layer ID	Sample Identification/ Layer Name	Asbestos Detected (Yes/No)	Sample Description
01-6598-148-1	2117136 Layer 1: 100% Non-Asbestos	Core East Core	No	Black, Bituminous CELLULOSE FIBER 30%, NON FIBROUS MATERIAL 70%
01-6599-148-2	2117137 Layer 1: 100% Non-Asbestos	Core SW Core	No	Black, Bituminous CELLULOSE FIBER 30%, NON FIBROUS MATERIAL 70%
01-6600-148-3	2117138 Layer 1: 100% Non-Asbestos	Patch N/E Patch	No	Black, Bituminous NON FIBROUS MATERIAL 100%
01-6601-148-4	2117139 Layer 1: 100% Non-Asbestos	Penetration North Penetration	No	Black, Bituminous NON FIBROUS MATERIAL 100%
01-6602-148-5	2117140 Layer 1: 10% Asbestos 90% Non-Asbestos	Penetration South Penetration	Yes	Black, Bituminous CHRYSTILE 10% NON FIBROUS MATERIAL 90%

ANALYST: SAMI A. HOSN  
Total no. of pages in report = 1

REVIEWED BY

*Lori A. Perez*  
Lori A. Perez, Analyst

Samples analyzed by the EPA Test Method are subject to the inherent limitations of light microscopy including interference by matrix components. Gravimetric reduction and correlative analyses are recommended for all non-friable, organically bound materials. For calibrated visual estimate, 1% is the concentration at which there is a quantitative uncertainty. This report relates only to the items tested, must not be reproduced except in full with the approval of the lab, and must not be used to claim NVLAP or other government agency endorsement.



Appendix D  
**Summary of Regulatory Requirements**

## **Appendix D Summary of Regulatory Requirements**

This appendix provides a summary of building owner and manager requirements under various asbestos regulations promulgated by the Occupational Safety and Health Administration (OSHA) and the Environmental Protection Agency (EPA) to protect building occupants and employees from exposure to asbestos.

### **Survey Requirements**

Prior to any renovation activity, OSHA and EPA regulations require that a complete asbestos survey be performed to determine if asbestos is present in any suspect asbestos containing material that will be present in the construction or work area. This survey report addresses accessible materials. It is recommended that prior to renovation activities, inaccessible areas that could contain asbestos materials be inspected.

### **Notification and Posting Requirements**

Regulatory agencies feel that the building owner or manager should be responsible for knowing and communicating the locations of asbestos in their buildings to building employees, outside contractors and tenants to prevent exposure to asbestos.

Under the California Health and Safety Code, building owners and managers are required to provide annual notifications regarding known asbestos containing materials in their buildings to building employees, tenants, vendors and outside contractors. Therefore, specific information contained in this survey report is required to be included in the notification.

OSHA requires building employees, outside contractors, vendors and construction contractors bidding on or performing work in buildings be provided with notification regarding asbestos containing materials in their work areas. OSHA also requires that asbestos warning signs be posted in mechanical rooms.

### **Removal Requirements**

Under EPA regulations, asbestos containing materials must be properly removed by licensed asbestos abatement contractors prior to renovation or demolition activities that would disturb friable materials or cause non-friable materials to become friable and a regulated material.

### **Repair of Damaged Materials and Cleanup of Debris**

OSHA requires that asbestos containing debris be immediately cleaned up. It is recommended that damaged materials that may release fibers be repaired as soon as possible to prevent fiber release and potential exposures.

### **Training Requirements**

OSHA requires employers whose employees are likely to or required to disturb asbestos to receive an asbestos training course. Refresher training is required to be provided annually.

Appendix E  
**AHERA Building Inspector Certifications**



State of California  
Division of Occupational Safety and Health

Certified Asbestos Consultant

Terri A. MacFarlane



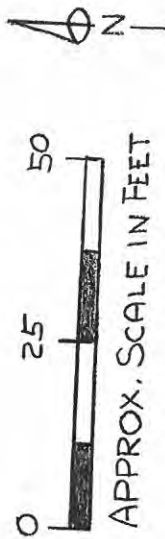
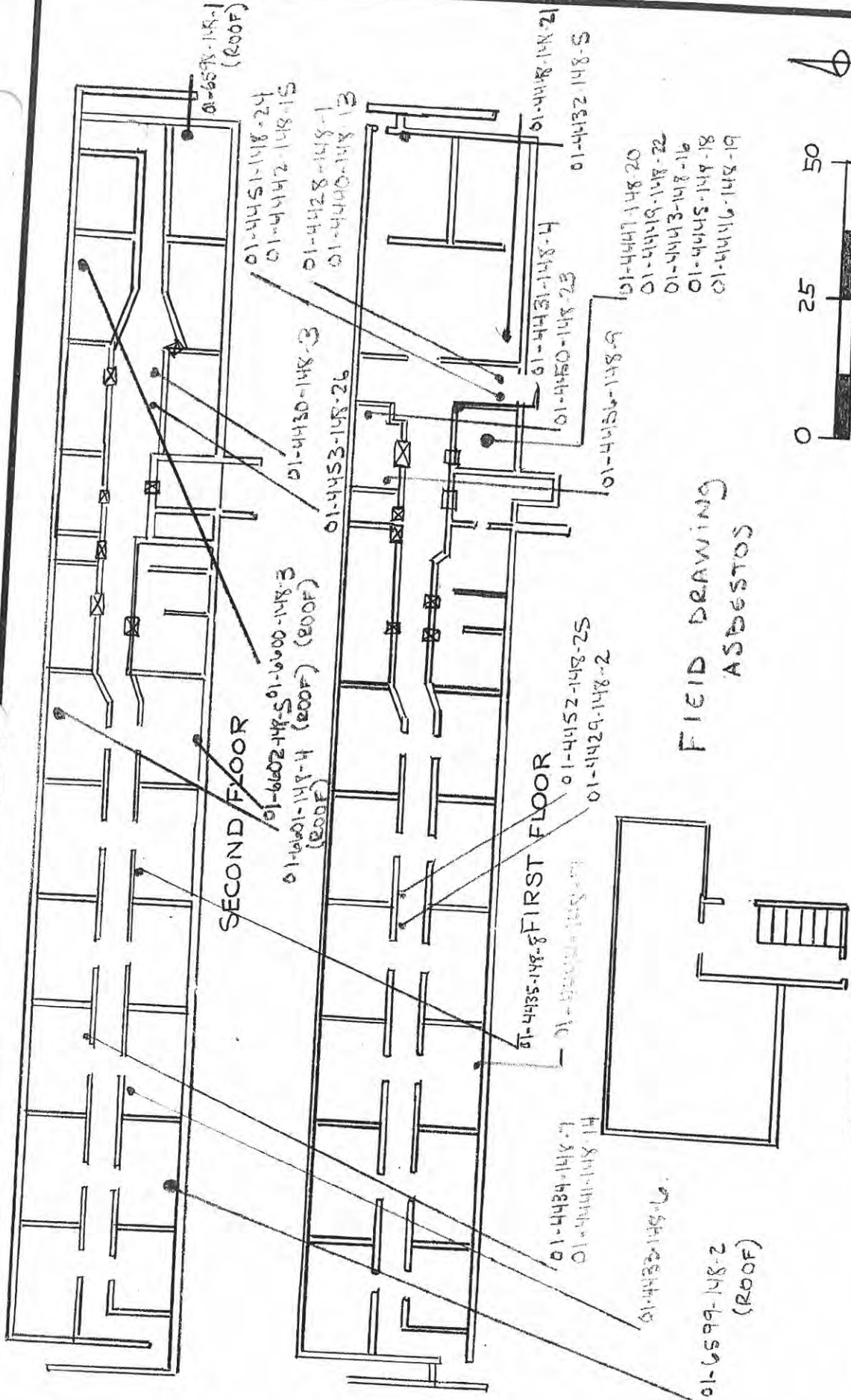
Name

Certification No. 90-2747

Expires on 5/3/2002

This certification was issued by the Division of Occupational Safety and Health as authorized by Sections 7100 et seq. of the Business and Professions Code.

Appendix F  
**Drawings Indicating Sampling Locations**



FIELD DRAWING  
ASBESTOS

	PROJECT NAME: Property Inspections - Environmental Engineering Specialized Training - Contract Management 3732 - A Charter Park Drive San Jose, CA 951366 Phone: (408) 448-7594 - Fax: (408) 448-3849		DRAFT PERSON:  DATE:	DWG. No.
	PROJECT No.			 