

Harding Lawson Associates

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A Report Prepared for

Thornton-Anderson Architects
60 Federal Street, Suite 555
San Francisco, California 94107

ASBESTOS INVESTIGATION
HUNTERS POINT ANNEX
SAN FRANCISCO, CALIFORNIA

HLA Job No. 18,288,001.04

by

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December 22, 1987

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INTRODUCTION

In accordance with our agreement of July 7 and November 24, 1987 a survey for asbestos-containing materials was performed at Building 439, Hunters Point Annex, San Francisco, California. This report presents the results of that asbestos survey.

The survey was conducted by Stevan Raye, Project Manager, and Chris Corpuz, Industrial Hygienist, of Harding Lawson Associates (HLA), Novato, California on October 29, 1987. The scope of our services included the following:

1. Performing a walkthrough survey in and immediately outside Building 439.
2. Obtaining samples of suspect asbestos-containing material (ACM).
3. Performing laboratory tests on samples to measure asbestos content.
4. Presenting in a final report the survey locations, observations, and laboratory test results.

INVESTIGATION

Twenty-four samples were collected for bulk asbestos analysis. The area sampled was initially identified and less than 1 cubic centimeter of the suspect ACM was cut away with a utility knife. The suspect ACM was then sealed in plastic containers. The suspect ACM samples were collected from deteriorating or damaged materials. A chain-of-custody record for the samples was prepared and is presented in Appendix A. Areas investigated included the floors, walls, ceiling, roof, and piping and other materials that frequently contain asbestos.

The asbestos content, location, and description of each sample are listed in Table 1. The laboratory test results are shown in Appendix B. The asbestos content of the samples was determined by Fireman's Fund Environmental Laboratory which is an accredited laboratory using the EPA Test Method 600/M4-82-020, December 1982, for the detection of asbestos in bulk samples. This method is based upon polarized light microscopy.

AREAS CONTAINING ASBESTOS

The following areas were found to contain asbestos in varying quantities and types. Recommendations for abatement of the materials are presented at the end of each area defined.

Area I Asbestos Paneling, Transite-like (Production Area Walls)

Friability: 40 percent chrysotile, nonfriable, cementitious.
Amount: Approximately 3,000 square feet.
Condition: Good condition, some damaged areas.
Recommendations: Material should be wetted with an acceptable wetting agent before and during maintenance and removal to avoid release of fibers caused by breakage or rough handling. Panels should be removed intact, if possible.

Area II Pipe Lagging (Plating Room)

Friability: Highly friable, 20 percent amosite, 40 percent chrysotile.
Amount: Limited to elbows and tees of pipes. May be some asbestos on pipe lengths.
Condition: Fair, some exposed areas, rips, and tears in lagging.
Recommendations: Can be removed using approved glovebag techniques for asbestos pipe insulation.

Area III Pipe Insulation and Boiler
Insulation (Outside of Building)

Friability: Highly friable, 80 percent amosite, 20-40 percent chrysotile.
Condition: Areas are deteriorating, exposed insulation material on some piping.
Recommendations: The boiler/water heater may require that an enclosure with a negative air containment system be constructed around it during removal to prevent released asbestos fibers into the surrounding atmosphere.

Area IV Gasket Materials in Heaters and Exhaust
Blower Units (Roof Mounted)

Friability: Very friable. 40-85 percent chrysotile.
Amount: Small gaskets and insulation within units.
Condition: Old, deteriorating sections.
Recommendations: Monitor air inside duct system to determine if fiber release from duct insulation contained asbestos.

CONCLUSIONS AND RECOMMENDATIONS

Based upon our walkthrough survey and laboratory testing, we conclude that within and outside of Building 439, several sources of ACM are present in the pipe lagging and other insulation, transite-like siding, and gasket materials. The survey and sampling of these areas revealed that a number of the materials tested contained asbestos in quantities of 20 percent or more by weight. The test results showed detectable concentrations of asbestos in levels up to 90 percent in 16 of the 24 samples collected. Most of the ACM has been violated and is friable.

Removal of these ACM materials that are violated and friable is recommended. Where it may be degraded by cutting, sawing, grinding, and/or

sanding, it will produce asbestos fibers. We recommend that as a minimum, any asbestos contractor's employees use Environmental Protection Agency Level C protection which includes protective footwear, Tyvek coveralls, hard hats, safety eyewear, and respiratory protection based upon the employee exposure during the abatement process.

All employees at the site should be educated of the presence and location of ACM and avoid violating or otherwise degrading such material.

This investigation was performed to identify if asbestos is present in the subject building. Any contractor and his subcontractor selected to do work in any areas around the ACM are encouraged to survey the asbestos conditions at the site, perform additional laboratory tests as they deem appropriate, and conclude for themselves the nature of the hazard, location, quantities, specific content, and friability of ACM.

Prior to and during the asbestos abatement effort, the following should be observed and undertaken:

1. Review the abatement plan and specifications
2. Select an experienced asbestos abatement contractor
3. Notify Environmental Protection Agency, local Occupational Safety and Health Administration (OSHA), and Bay Area Air Quality Management District of planned abatement
4. Monitor air quality in the work area during abatement.

Table 1. Sample Location, Conditions, and Laboratory Results
 Asbestos Investigation at Building 439, Hunters Point Annex (October 29, 1987)

<u>Sample Number</u>	<u>Location</u>	<u>Asbestos Content*</u>	<u>Friability**</u>	<u>Remarks</u>
1 HPR	Roofing material	ND	Nonfriable	Similar type material covers entire roof area and roof walkways.
2 HPG	Gasket material in exhaust blower west end of roof	85% chrysotile	Friable	Gasket material and lining of blower present in small quantity.
3 HPG	Gasket material in exhaust blower west end of roof	ND	Nonfriable	This material was not the same type as before. Appeared to be fiberglass.
4 HPHUE	Heater unit east end of roof	40% chrysotile	Friable	Material used as gasket and insulation inside heater.
5 HPHUE	Heater unit east end of roof	90% chrysotile	Friable	Material used as gasket and insulation inside heater.
6 HPHUSE	Heater unit southeast end of roof	90% chrysotile	Friable	Used as gasket and insulation inside heater.
7 HPHUSE	Heater unit southeast end of roof	40% chrysotile	Friable	Used as gasket and insulation material inside heater.
8 HPRW	Roof walkway west side	ND		Used as a walk area on roof.
9 HPHUNW	Heater unit northwest roof area	90% chrysotile	Friable	Same as other heating units.

Table 1. Sample Location, Conditions, and Laboratory Results (continued)
 Asbestos Investigation at Building 439, Hunters Point Annex (October 29, 1987)

<u>Sample Number</u>	<u>Location</u>	<u>Asbestos Content*</u>	<u>Friability**</u>	<u>Remarks</u>
10 HPHUNW	Heating unit northwest on roof area	40% chrysotile	Friable	Same as other heating units.
11 HPTW	Transite-like wall covering northwest end of building (inside)	40% chrysotile	Nonfriable	Wall covering throughout entire building from the floor extending three feet up the walls.
12 HPTW	Drywall behind transite covering northwest end of building (inside)	ND	Friable	Drywall behind transite wall covering.
13 HPTW	Drywall behind transite covering southwest end of building (inside)	ND	Friable	Drywall behind transite wall covering.
14 HPTW	Transite wall covering southwest end of building	40% chrysotile	Nonfriable	Wall covering extends from the floor three feet up the walls.
15 HPTW	Transite wall covering east end of building	40% chrysotile	Nonfriable	Wall covering extends from the floor three feet up the walls.
16 HPTW	Drywall behind transite covering east side of building (inside)	ND	Friable	Drywall behind transite wall covering.
17 HPPR	Plating room, pipe end from steam main	20% amosite	Friable	Entire steam system, elbows and tees, possibly contain asbestos.
18 HPPR	Plating room, pipe end elbow steam line on tanks	40% chrysotile	Friable	Entire steam system, elbows, and tees possibly contain asbestos.

Table 1. Sample Location, Conditions, and Laboratory Results (continued)
 Asbestos Investigation at Building 439, Hunters Point Annex (October 29, 1987)

<u>Sample Number</u>	<u>Location</u>	<u>Asbestos Content*</u>	<u>Friability**</u>	<u>Remarks</u>
19 HPPR	Plating room, pipe elbow from scrap, steam pipe	ND	Friable	None
20 HPOTR	Office telephone switch room ceiling spray-on	ND	Friable	Spray-on material
21 HPOF	Steam pipes (13) elbows front main doors on east side of building	40% chrysotile	Friable	Pipe elbows extending into the ground and possibly under building foundation.
22 HPSTU	Steam transfer unit south end of building (outside)	80% amosite	Friable	Insulation around unit badly deteriorated, asbestos is on all associated piping.
23 HPSH	Steam heater on west side of building (outside)	20% amosite 10% chrysotile	Friable	Insulation around heater is deteriorating along with associated piping.
24 HPSP	Steam pipes attached to heater, 4" and 6" pipes outside going inside to plating room	20% chrysotile	Friable	Poor condition. Rips and tears in lagging throughout.

Based on results of laboratory testing by Firemans Fund presented in Appendix B.

* ND = None detected in sample

** Friable = capable of being crumbled, pulverized, or reduced to powder by hand pressure

Appendix A
CHAIN-OF-CUSTODY FORMS

Appendix B
LABORATORY RESULTS



**FIREMAN'S FUND
INSURANCE COMPANIES**

Environmental Laboratory
3700 Lakeville Highway
Petaluma, CA 94952
800-227-0765
(California 800-227-5889)

ENVIRONMENTAL LABORATORY

Peter Rice
Harding Lawson
7655 Redwood Blvd.
Novato, CA 94947

L A B O R A T O R Y R E S U L T S

Supply/Order No.:
Client's Survey No.: 18288.001.04
Contract/PO No.: NO CONTRACT NUMBER
Release No.:

Laboratory Job No.: 873910
Date Received: 10/30/87
Date Reported: 11/11/87
Client Code: HARD4

ASBESTOS IN BULK MATERIALS (PLM, EPA-600/M4-82-020)

LABNO	SAMPLNO	SMPL TYPE	ASBESTOS %	TYPE	OTHER %	COMPONENTS TYPE
23797	1	BULK	NONE	DETECTED	10 30 60	ROCK GRAVEL FIBERGLASS ORGANIC MATRIX
23798	2	BULK	80	CHRYSOTILE	20	CELLULOSE FIBERS
23799	3	BULK	NONE	DETECTED	90 10	FIBERGLASS ORGANIC MATRIX
23800	4	BULK	40	CHRYSOTILE	60	SYNTHETIC FIBERS
23801	5	BULK	90	CHRYSOTILE	10	CLAY BINDER
23802	6	BULK	90	CHRYSOTILE	10	ORGANIC BINDER
23803	7	BULK	40	CHRYSOTILE	60	SYNTHETIC FIBERS
23804	8	BULK	NONE	DETECTED	30 70	FIBERGLASS ORGANIC MATRIX
23805	9	BULK	90	CHRYSOTILE	10	CLAY BINDER
23806	10	BULK	40	CHRYSOTILE	60	CELLULOSE FIBERS

APPROVED BY
JERRY TUMA, PH.D., CIH
LABORATORY DIRECTOR



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Laboratory Job No.: 873910

LABNO	SMPLNO	SMPL TYPE	ASBESTOS % TYPE	OTHER COMPONENTS % TYPE
23807	11	BULK	40 CHRYSOTILE	50 CALCITE 10 CLAY
23808	12	BULK	NONE DETECTED	10 CELLULOSE FIBERS 10 FIBERGLASS 5 CALCITE 75 GYPSUM
23809	13	BULK	NONE DETECTED	5 CELLULOSE FIBERS 20 FIBERGLASS 5 CALCITE 70 GYPSUM
23810	14	BULK	40 CHRYSOTILE	50 CALCITE 10 CLAY
23811	15	BULK	40 CHRYSOTILE	50 CALCITE 10 CLAY
23812	16	BULK	NONE DETECTED	5 CELLULOSE FIBERS 15 FIBERGLASS 5 CALCITE 75 GYPSUM
23813	17	BULK	20 AMOSITE	10 CLAY 70 CALCITE
23814	18	BULK	40 CHRYSOTILE	60 CALCITE
23815	19	BULK	NONE DETECTED	80 FIBERGLASS 20 ORGANIC MATRIX
23816	20	BULK	NONE DETECTED	40 CALCITE 60 FOAM PLASTIC
23817	21	BULK	40 CHRYSOTILE	60 CALCITE
23818	22	BULK	80 AMOSITE	20 ORGANIC BINDER



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L A B O R A T O R Y R E S U L T S

Laboratory Job No.: 873910

LABNO	SMPLNO	SMPL TYPE	ASBESTOS %	TYPE	OTHER %	COMPONENTS TYPE
23819	23	BULK	10 20	CHRYSOTILE AMOSITE	70	CALCITE
23820	24	BULK	20	CHRYSOTILE	10 70	FIBERGLASS CALCITE

ANALYST:GLENN SMITH

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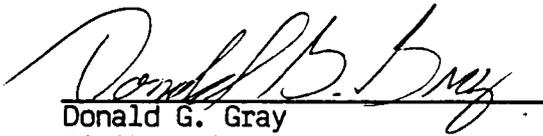
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SAN FRANCISCO, CALIFORNIA
December 22, 1987

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QUALITY CONTROL REVIEWER


Donald G. Gray
Civil Engineer

