

November 19, 2002

REPORT: Full Building Survey

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SUBJECT: Asbestos Material Survey - Boynton Health
EH&S Project No: 070-93-144
Client Project No: For Data Base

Scope of Work: A full building asbestos material survey was conducted between October 21 and December 21, 1993. The purpose of the survey was to identify asbestos-containing materials (ACM) as defined by the Environmental Protection Agency (EPA). Any material that is greater than 1% asbestos is considered to be ACM. The intent of the survey was to identify both friable and nonfriable suspect ACM, identify nonfriable ACM that may become friable under demolition or renovation conditions, and to provide approximate cost estimates for the removal of identified ACM prior to an entire renovation project.

Project Description: Three hundred and thirty two (332) bulk samples of suspect ACM were collected on-site and two hundred and sixty eight (268) were analyzed via polarized light microscopy (PLM) for asbestos content. Results of analyses are listed in Appendix I of this report. Appendix I is formatted to provide a room by room inventory of suspect ACM, the asbestos content of each material listed, and friability. An explanation of the tables and abbreviations used in the tables is included with Appendix I. Appendix II is a room by room listing of only those suspect materials that tested >1% asbestos. Minnesota Department of Health (MDH) Asbestos Rules regulate only friable ACM (material may be reduced to powder or dust under hand pressure) while the EPA regulates ACM that may become friable under demolition or renovation conditions.

The following friable or potentially friable materials tested positive as ACM:

- <4" white fibrous pipe insulation (PI) and associated pipe fitting insulation (PFI)
- 4"-8" white fibrous pipe insulation and associated pipe fitting insulation
- 4"-8" fibrous PFI on fiberglass with tar
- <4" fibrous pipe fitting insulation fiberglass with tar PI
- 9"-14" fibrous PFI on fiberglass with tar
- <4" aircell PI and associated PFI
- 4"-8" aircell PI and associated PFI
- <4" felt with tar PI and associated PFI
- 4"-8" felt with tar PI and associated PFI
- spray-on fireproofing
- white fibrous duct insulation
- 9"x9" beige with cream FT
- 9"x9" mustard with mayo and catsup FT
- 9"x9" beige with brown and cream FT
- 9"x9" white with grey sprinkles FT
- 9"x9" tan with beige and white streak FT
- 9"x9" white with grey speckles FT
- 12"x12" cream with tan smears FT
- 12"x12" multi color swirl FT
- 12"x12" black with cream large streak FT
- 9"x9" navy grey with cream and black large streak FT

- 9"x9" grey green with cream and black streak FT
- 12"x12" navy grey with cream and black large streak FT
- 12"x12" tan with dark brown, brown and cream smudges FT
- 9"x9" black with cream FT
- 9"x9" beige with white, dark beige and rust streaks FT
- 12"x12" white with beige splotches FT
- 9"x9" ground toffee FT
- black border FT
- square pattern linoleum
- blue, beige, and cream plaid linoleum
- pistachio linoleum
- egg salad linoleum
- grey pebble linoleum
- white with beige fleck linoleum
- toffee, beige and grey pebble linoleum
- 2'x2' bumpy white ceiling tile (CT)
- 12"x12" pinhole worm CT
- 2'x2' pin/pencil hole worm CT
- 2'x2' pinhole worm CT
- transite
- canvass vibration joint
- black cork ceiling
- white spray-on insulation
- white fibrous tank insulation

The following friable or potentially friable materials tested less than 1% asbestos.

- 12"x12" cream with olive streaks FT
- 2'x4' pinhole pencil worm CT
- ceiling plaster Room N-521

The following suspect materials tested none detected (ND) as ACM:

- 4"-8" fiberglass with tar PI
- 4"-8" fibrous PFI on fiberglass no tar
- 9"-14" fibrous PFI on fiberglass no tar
- 9"-14" felt with tar PI and associated PFI
- fiberglass duct insulation no tar
- fiberglass duct insulation with tar paper
- baseboard adhesive, brown
- sheetrock and taping compound
- ceiling plaster
- wall plaster
- pyrobar mortar
- spray-on fireproofing (Rooms B-3 and N-10)
- trowelled on beam plaster
- spray-on plaster
- 12"x12" cream with tan and green big streak floor tile (FT)
- 12"x12" grey with dark grey and white fleck FT
- 12"x12" grey with dark grey and white large fleck FT
- 12"x12" grey with black and white fleck FT
- 12"x12" cream with mustard smears FT
- 12"x12" beige with sparkles FT
- 12"x12" grey-green with rust and white smears FT
- 12"x12" white with charcoal and grey spots FT
- 12"x12" light grey multi-color with traction sparkles FT

- 12"x12" white with charcoal and grey flecks FT
- 12"x12" light grey with dark grey and white splatter FT
- 12"x12" cream with beige and light brown smears FT
- 9"x9" fudge marble ft
- 12"x12" light grey with charcoal and white stains FT
- 12"x12" beige with brown and cream FT
- 12"x12" beige with grey, tan and cream molting FT
- 12"x12" cream with beige and big brown spots FT
- 12"x12" cream with white and olive splotches FT
- 12"x12" olive grey with yellow FT
- brown flooring
- grey with rust and white linoleum
- cream small swirl linoleum
- 12"x12" white fissure CT and adhesive
- 2'x2' pinhole fissure CT
- 2'x2' nail crater CT
- 2'x2' drop crater CT
- 2'x4' white fissure nail CT
- 2'x2' dropped textured CT
- 2'x2' pinhole crater CT
- 12"x12" pencil hole CT
- 2'x2' pinhole small crater CT
- 2'x2' nail small crater CT
- 2'x2' nail mini fissure CT
- 2'x2' contact paper CT
- 2'x2' nail mini worm CT
- 2'x2' sheetrock CT
- concrete block mortar
- paper putty in wall
- red clay tile mortar
- clay tile mortar
- black mastic
- grey lab tops
- grey mastic and tape on ducts
- adhesive on acoustical foam
- ceiling tile mastic on hatches
- grey fibrous duct insulation
- black pumice and mastic
- red brick mortar
- trowelled on fireproofing
- brown wall tile mastic
- brown ceiling tile mastic

The following nonfriable with low potential to become friable materials tested positive as ACM:

- **<4" fiberglass with tar PI**
- **9"-14" fiberglass with tar PI**
- **black tar on duct**
- **floor tile adhesive**
- **ceiling tile adhesive**
- **pipe putty**
- **black lab tops**
- **tar layer on fiberglass batting**
- **grey mastic on duct**

For Room locations of above noted materials, refer to Appendices.

Observations and Recommendations to:

Facilities Management:

Although no roof sampling was done, complete roof sampling is recommended at a time when a qualified roofing contractor is on-site to patch core sample holes in roofing.

Sample #43, which is described as 12"x12" cream with tan smears FT, is listed as positive in the Appendices. Mixed results were recorded during sample analysis, therefore, all materials matching this description were referenced to be positive.

The overspray in hall W-20 to B3 is negative. Please refer to historical data for sample results.

Stored ceiling tiles and floor tiles were found in Room B3. None were marked as being asbestos containing. No samples were taken.

Floor tile mastic was noted under the carpet in Room W30. No samples were taken of this material.

W49 on the map refers to W47 on the wall. Similarly, S33 on the map refers to office S32 on the wall.

According to Terry Leach, Rooms B3, N10, 55, W63, S65, 601, 603, and 605 have been abated.

After the survey, it was reported that abatement of PFI on fiberglass had occurred in Room 116E. Therefore, the quantities listed in the Appendices may vary from actual quantities.

The quantity of each floor tile listed for W241 was estimated due to the presence of carpet.

The type of floor tile for Rooms 415, 419, 425, 434 and 443 could not be determined without significantly damaging the existing carpet. Only black border FT is listed for these Rooms.

Since the paper backing on positive linoleum is friable, it is assumed that some ACM may remain on the mastic once the linoleum is removed. Thus, the mastic should be treated as positive even though it tested negative.

Suspect beam material was discovered in the top of the north elevator shaft. Access to the material could not be achieved. The material is therefore listed as positive in the Appendices.

As for the <4" fiberglass with tar PI, mixed results were recorded. All <4" fiberglass with tar is listed as positive in the Appendices. Before beginning extensive removal of this material, it is recommended that project specific sampling be conducted to determine appropriate disposal techniques. Otherwise, this material must be disposed of as ACM.

Access to the crawl space between fourth and fifth floors was extremely restricted. Therefore all quantities listed were visible at the time of the survey. Please refer to hall 500 floor hatch and hall 533-563 floor hatch for more information.

Access to the crawl space below Hall 500-534 could not be achieved. This is the connecting link to Mayo. It is listed as Hall 500 - Inaccessible in the Appendices.

The shaft from Room W-475 to S-65 wall hatch could not be fully accessed. Quantities listed reflect the amount visible from the top and the bottom of the shaft.

The northeast stairs were included with Room N10.

Positive spray-on fireproofing and overspray were found on some beams in the fifth floor. Access to this area was restricted to ceiling hatches making identification and quantification difficult. Listed quantities may vary from actual quantities. It appears as if the positive material was primarily applied to areas immediately adjacent to the corridors. Negative spray applied plaster and overspray are also present in these areas. Due to the presence of the spray applied plaster as well as the restricted access, it should be assumed that the positive spray-on material is present above all ceilings on the fifth floor. The positive material is friable and grey. The negative material is white and cementitious. Any work or access above the ceiling on the fifth floor should follow proper O&M procedures for positive spray-on material.

Environmental Health and Safety:

Please refer to condition assessments for specific damaged areas. In general, materials were found to be in good to excellent shape and do not pose serious health threats to the building occupants.

General:

In the Appendices, sample numbers with the preface **R** refer to samples referenced from previous surveys conducted by Delta Environmental Consultants or by the Department of Environmental Health & Safety. The original sample date is given following the material description.

Due to limited access points in the plaster ceilings and walls, some pipe chases were completely inaccessible or only slightly visible. As a result, the quantities listed reflect the visibility of materials at the time of the survey. Vertical fiberglass lines below plaster ceilings and certain splined CT may indicate the presence of ACM above the ceiling. Care should be used when accessing these areas.

Ceiling plaster in Room N521 tested less than 1% asbestos by PLM analysis. Point counting methods were then used to confirm that less than 1% asbestos was present in the sample.

Cost Information: The approximate cost for the removal of all ACM is itemized below. These figures are based on the assumption that all friable and potentially friable ACM are going to be removed. For project specific removal costs, contact this office with your project requirements and unit costs can be calculated for the impacted areas.

MATERIAL TYPE	LOW RANGE	HIGH RANGE
• transite	\$19,299	\$27,570
• spray-on fireproofing	66,220	108,360
• ceiling tile	35,310	70,602
• floor tile & adhesive	116,853	162,036
• thermal system insulation	167,415	206,863
TOTAL	\$405,097	\$575,431

All ACM removal must be performed by a Minnesota licensed asbestos abatement contractor. All asbestos removal shall be performed within the specified procedures as outlined in the University of Minnesota Technical Specification for Asbestos Abatement. Please note that removal costs are highly variable and dependent on such factors as contractor availability, accessibility of work areas and site specific work plans.

Air monitoring is required for many asbestos-related projects. Environmental Health and Safety (EH&S) is available to provide this service. The estimated cost for EH&S to complete air monitoring requirements for specific projects will be made available upon request. The cost of air monitoring is a function of contractor on-site days and may vary dependent upon project specific scope of work. EH&S will provide labor, equipment and project oversight as necessary. Project management and contract administration will be provided by the Facilities Management Project Development Group.

EH&S also recommends that throughout the general renovation activities associated with this building, precautions and work practices should be implemented to minimize nuisance dust levels. Dust suppression techniques (misting the air with water and keeping materials wet) should be required of the general contractor.

If any further information is required, or other questions arise regarding this request, please contact Greg Archer at 627-4861.

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