Guidelines for Enhanced Management of Asbestos in Water at Ordered Demolitions, Appendices

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Guidelines for Enhanced Management of Asbestos in Water at Ordered Demolitions, Appendices

U.S. Environmental Protection Agency
Office of Air Quality Planning and Standards
Sector Policies and Programs Division
Research Triangle Park, NC

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APPENDICES

A-1. Relevant Asbestos Regulations

A-2. Relevant Guidance Documents

A-3. Example Work Plans

A-1. Relevant Asbestos Regulations

A-1-1. EPA Regulations

The National Emission Standard for Hazardous Air Pollutants (NESHAP) for Asbestos demolition standard

https://www.gpo.gov/fdsys/pkg/CFR-2011-title40-vol8/pdf/CFR-2011-title40-vol8-sec61-145.pdf

The Asbestos NESHAP waste disposal requirements

https://www.gpo.gov/fdsys/pkg/CFR-2011-title40-vol8/pdf/CFR-2011-title40-vol8-sec61-150.pdf

The Clean Water Act (CWA)

https://www.epa.gov/laws-regulations/summary-clean-water-act

The Comprehensive Emergency Response, Compensation, and Liability Act (CERCLA) of 1980, definitions and rules governing reportable quantities of asbestos

This law, also known as Superfund, was enacted to address abandoned hazardous waste sites in the U.S. The law has subsequently been amended, by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and the Small Business Liability Relief and Brownfields Revitalization Act of 2002. CERCLA authority may be appropriate to respond to the release or potential release of asbestos into the environment.

http://www.ecfr.gov/cgi-bin/text-idx?SID=7b27c58c5ffd5506a5eff0dd58ffca4f&node=pt40.28.302&rgn=div5

The Asbestos Hazard Emergency Response Act

https://www.gpo.gov/fdsys/pkg/CFR-2011-title40-vol31/pdf/CFR-2011-title40-vol31-part763-subpartE.pdf

The Model Accreditation Plan under AHERA

https://www.gpo.gov/fdsys/pkg/CFR-2011-title40-vol31/pdf/CFR-2011-title40-vol31-part763-subpartE-appC.pdf

Worker protection requirements under the Toxics Substances and Control Act (TSCA) include the EPA's Worker Protection Rule

https://www.gpo.gov/fdsys/pkg/CFR-2011-title40-vol31/pdf/CFR-2011-title40-vol31-part763-subpartG.pdf

1990 Asbestos Information Act FR Notice

https://www.gpo.gov/fdsys/pkg/USCODE-2011-title15/pdf/USCODE-2011-title15-chap53-subchapI-sec2607.pdf

Results of the AIA, which were published in the FR, are included under Appendix A-2, Relevant Guidance.

A-1-2. OSHA Regulations

OSHA oversees the working conditions for U.S. workers by implementing and managing occupational safety and health standards. The following regulations pertain to handling asbestos in the workplace:

OSHA Worker Protection General Standard

https://www.gpo.gov/fdsys/pkg/CFR-2011-title29-vol6/pdf/CFR-2011-title29-vol6-sec1910-1001.pdf

OSHA Construction and Waste Disposal Standard

https://www.gpo.gov/fdsys/pkg/CFR-2011-title29-vol8/pdf/CFR-2011-title29-vol8-sec1926-1101.pdf

A-1-3. DOT Regulations

https://www.fmcsa.dot.gov/regulations/hazardous-materials/how-comply-federal-hazardous-materials-regulations

A-1-3. RCRA Regulations

RCRA Rules Governing Disposal of Asbestos Waste

https://www.gpo.gov/fdsys/pkg/CFR-2011-title40-vol31/pdf/CFR-2011-title40-vol31-part763-subpartE-appD.pdf

A-2. RELEVANT GUIDANCE DOCUMENTS

A-2-1. EPA GUIDANCE

1- Bob Perciasepe Signed Memo on Asbestos and Superfund
https://www.epa.gov/sites/production/files/documents/nps5da.pdf

2- Superfund and Asbestos Guidance
https://www.epa.gov/superfund/superfund-policy-guidance-and-laws

3- Correspondence From EPA Regarding the Applicability of the Asbestos NESHAP to Residential Demolition Projects
https://www.epa.gov/large-scale-residential-demolition/correspondence-about-applicability-asbestos-neshap-residential

4- Municipal Demolitions and the Asbestos NESHAP
https://www.epa.gov/large-scale-residential-demolition/municipal-demolitions-and-asbestos-neshap-june-2011

5- Notification of Rules and Regulations Regarding the Demolition of Asbestos-Containing Structures
https://www.epa.gov/sites/production/files/documents/nps5da.pdf

6- 1990 Common Questions on the Asbestos NESHAP
http://nepis.epa.gov/Exe/ZyNET.exe/50000M0R.TXT?ZyActionD=ZyDocument&Client=EPA&Index=1986+Thru+1990&Docs=&Query=&Time=&EndTime=&SearchMethod=1&TocRestrict=n&Toc=&TocEntry=&QField=&QFieldYear=&QFieldMonth=&QFieldDay=&IntQFieldOp=0&ExtQFieldOp=0&XmlQuery=&File=D%3A%5Czyfiles%5CIndex%20Data%5C86thru90%5CTxt%5C00000006%5C50000M0R.txt&User=ANONYMOUS&Password=anonymous&SortMethod=h%7C-&MaximumDocuments=1&FuzzyDegree=0&ImageQuality=r75g8/r75g8/x150y150g16/i425&Display=p%7Cf&DefSeekPage=x&SearchBack=ZyActionL&Back=ZyActionS&BackDesc=Results%20page&MaximumPages=1&ZyEntry=1&SeekPage=x&ZyPURL

7- EPA's 1985 Purple Book
https://www.wbdg.org/ccb/EPA/epa_560585024.pdf

8- Setting the Stage for Leveraging Resources for Brownfields Revitalization. Guidance Document, Office of Land and Emergency Management (5105T), EPA 560-K-16-001. April 2016
https://www.epa.gov/sites/production/files/2016-04/documents/final_leveraging_guide_document_4-19-16.pdf

9- Sensible Guide for Healthier School renovations. Key Environmental Health Considerations When Renovating Schools. EPA-909-R-15-002. January 2016.
http://www2.epa.gov/children

10- FR Notice of Response to Section 114 Request for Asbestos Content of Materials. 55 FR 5144 (February 13, 1990).

federal register

Tuesday
February 13, 1990

Part V

Environmental Protection Agency

Asbestos; Publication of Identifying Information; Notice

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ENVIRONMENTAL PROTECTION AGENCY

[OPTS-62085; FRL-3687-9]

Asbestos; Publication of Identifying Information

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice.

SUMMARY: This notice provides summaries of the information submitted to EPA by manufacturers and processors of certain asbestos products in accordance with the Asbestos Information Act of 1988 (the Act). It also explains how individuals may obtain more or all of the information submitted to EPA.

FOR FURTHER INFORMATION CONTACT: Michael M. Stahl, Director, Environmental Assistance Division (TS-799), Office of Toxic Substances, Environmental Protection Agency, Rm. E-545, 401 M St., SW, Washington, DC 20460, (202) 554-1404, TDD: (202) 554-0551.

SUPPLEMENTARY INFORMATION:

I. Background

On October 31, 1988, the President signed into law the Asbestos Information Act of 1988, Pub. L. 100-577 (the Act), which requires former and current manufacturers and processors of certain asbestos products to submit information identifying their products to EPA and requires EPA to organize and publish the submitted information. EPA issued a notice in the **Federal Register** of April 18, 1989 (54 FR 15622), which explained how and where these manufacturers and processors were to submit the information required by the Act. On August 7, 1989, EPA issued a notice in the **Federal Register** (54 FR 32430) which established a deadline of October 6, 1989, for these manufacturers and processors to submit to EPA the information required by the Act. On September 20, 1989, EPA issued a notice in the **Federal Register** (54 FR 38736) which informed submitters of information under the Act that EPA will not accept claims of business confidentiality.

II. Summaries of Information Submitted to EPA

Most of the manufacturers which submitted information to EPA provided a summary of the required information in the order that the Agency requested in Unit II of the April 18, 1989 **Federal Register** notice. EPA requested summaries from the manufacturers, because the Agency anticipated that the total amount of information submitted would be too voluminous to publish easily. That has proven to be the case. Therefore, EPA has decided to publish in this **Federal Register** notice only summaries of the information submitted. Instructions on how to obtain any or all additional information submitted to EPA are available in Unit III of this notice.

In some cases, EPA has reorganized the submitted information into a uniform summary format for inclusion in this **Federal Register** notice. However, the substance of the information submitted to EPA has not been altered.

Summaries of the information submitted to EPA before November 17, 1989 are included below in alphabetical order by name of manufacturer:

1. The Amtico Division of American Biltrite Inc.

(a) *Name and address of manufacturer.* The Amtico Division of American Biltrite Inc., 3131 Princeton Pike, Lawrenceville, NJ 08648. Prior to American Biltrite's purchase of the assets for producing vinyl asbestos tile and asphalt tile in Hamilton Township, NJ from Bonafide Mills Inc. on January 1, 1961, Bonafide Mills manufactured vinyl asbestos tile, asphalt tile (containing asbestos), and sheet vinyl flooring utilizing an "asbestos felt backing" at this same location. American Biltrite Inc. has no records regarding dates or patterns of vinyl asbestos tile manufactured by Bonafide Mills prior to American Biltrite's purchase on January 1, 1961. Prior to American Biltrite's purchase of the assets for producing sheet vinyl flooring in Norwood, MA from New London Mills in 1974, New London Mills manufactured sheet vinyl flooring utilizing an "asbestos felt backing" at this same location. American Biltrite has no records regarding dates or patterns of sheet vinyl flooring produced by New London Mills prior to American Biltrite's purchase in 1974.

(b) *Years of manufacture.* 1961 through 1980.

(c) *Types or classes of products.* Vinyl asbestos floor tile, asphalt tile (containing asbestos), and sheet vinyl flooring (utilizing an asbestos felt backing).

(d) *Other identifying characteristics.* Vinyl asbestos floor tile (produced January 1, 1961 through early December 1985) was available in a variety of colors, patterns, and surface textures. Many of the same colors, patterns, and surface textures produced prior to December 1985, which contained asbestos, have subsequently been produced in the non-asbestos tile construction after December 1985 and have the same visual appearance as the former asbestos-containing tile.

Asphalt tile containing asbestos (produced January 1, 1961 through 1970) was also marketed as plastic asphalt floor tile. It was available in a variety of colors, patterns, and surface textures, including: travatile, dot, cork, and marbleized.

Sheet vinyl flooring (produced January 1, 1962 to 1968, and 1974 through 1980) utilized an "asbestos felt backing" (flooring felt containing asbestos) bonded to the under side of the vinyl sheet flooring. It was available in a variety of colors, patterns, and surface textures; among the styles were: Casa Royale, Sun Court, Sunfire, Serenata, Natural State, Forum, Chatam Square, Royal Clan, Suntide, Contessa, and Kings Inn.

(e) *Additional information.* Additional information is available.

2. Armstrong World Industries, Inc.

(a) *Name and address of manufacturer.* Armstrong World Industries, Inc., formerly known as Armstrong Cork Company, P.O. Box 3001, Liberty and Charlotte Streets, Lancaster, PA 17604. Predecessors: Forms + Surfaces, Inc., Box 5215, Santa Barbara, CA 93150; and The W. W. Henry Company, 5608 Soto Street, Huntington Park, CA 90255.

(b) *Years of manufacture.* 1909 through April 1987.

(c) *Types or classes of products.* Thermal system insulation material, fire-resistant vapor barrier and adhesive for cork, resilient floor tile, lining felt and backing for sheet vinyl, asphalt "cutback" floor tile adhesive, acoustic cement, and decorative wall treatment.

(d) *Other identifying characteristics.* Nonpareil High Pressure Covering, Block, and Cement (produced 1909 to 1932 by Armstrong) were high temperature thermal system insulations for pipe covering and block and cement. These products were last offered more than 50 years ago. The only formula information available to Armstrong is that which is taken from the United States Patent Office documents.

LT Cork Covering (produced with asbestos 1956 to 1959 by Armstrong) was a low temperature thermal system cork insulation. It was a wrap-around insulation consisting of wedge-shaped cork segments cemented to a laminate consisting of aluminum foil and asbestos paper. It is unique in its appearance and can be easily distinguished visually by its physical structure.

Armaspray (produced 1966 to 1968 by Armstrong) was a spray- on thermal system insulation.

CC Navy Sealer (LT Sealer) (produced approximately 1942 to 1962 by Armstrong) was a fire-resistant vapor barrier and adhesive for cork. CC Navy Sealer was light tan in color and had a trowel and brush consistency; LT Sealer was white and had a trowel and brush consistency.

Vinyl Composition Tile (produced with asbestos 1954 to June 1981 in a commercial grade and 1954 to 1982 in a residential grade by Armstrong) was a resilient floor tile made of non- friable material. Visual identification may be possible using designated pattern book volumes.

Rubber Tile (produced with asbestos 1955 to 1966 by Armstrong) was a resilient floor tile made of non-friable material. Visual identification may be possible using designated pattern book volumes.

Asphalt Tile (produced 1931 to 1972 by Armstrong) was a resilient floor tile made of non-friable material. Visual identification may be possible using designated pattern book volumes.

Hydrocord (produced 1955 to 1983 by Armstrong) was a lining felt and backing for sheet vinyl made of non-friable material.

S–89 (produced with asbestos 1965 to January 1983 by Armstrong) was an asphalt "cutback" floor tile adhesive. It was non-friable, black in color, and had a dried consistency of a heavy-bodied tar.

S–90 (produced with asbestos 1934 to January 1983 by Armstrong) was an asphalt "cutback" floor tile adhesive. It was non-friable, black in color, and had a dried consistency of a heavy-bodied tar.

Acoustic Cement, also known as 314 Acoustic Cement, (produced as an asbestos-containing material 1945 to 1953 by Armstrong) was an adhesive for acoustical tile installation. It was used for chemical bonding of the acoustic ceiling tiles to a structural member.

"Bonded Bronze" Panels (produced 1970 to 1971 by Forms + Surfaces) used a commercially available asbestos cement board as a backing material and had an end use as decorative wall treatment. Forms + Surfaces was not the manufacturer of the asbestos cement board and, therefore, the type and percentage of asbestos and other formula information is unknown.

#232 Asphalt Cutback Adhesive (produced with asbestos November 1965 to April 1987 by The W. W. Henry Company) was a floor tile adhesive. It was a non-friable asphalt cutback adhesive, black in color with a dried consistency of a heavy- bodied tar. Formula information for #232 Asphalt Cutback Adhesive is as follows: 63% asphalt by weight, 5% chrysotile asbestos, and 32% solvent.

(e) *Additional information.* Additional information is available.

3. The BFGoodrich Company

(a) *Name and address of manufacturer.* The BFGoodrich Company, 3925 Embassy Parkway, Akron, OH 44313.

(b) *Years of manufacture.* Approximately 1945 through 1963.

(c) *Types or classes of products.* Floor tile.

(d) *Other identifying characteristics.* Self-explanatory by class description.

(e) *Additional information.* No additional information is available.

4. The Celotex Corporation

(a) *Name and address of manufacturer.* The Celotex Corporation, P.O. Box 31602, Tampa, FL 33631–3062. Predecessors: Panacon Corporation, Briggs Manufacturing Corporation, Philip Carey Corporation, Smith & Kanzler Company, Glen Alden Corporation, and Philip Carey Manufacturing Company.

(b) *Years of manufacture.* 1906 through 1984.

(c) *Types or classes of products.* Surfacing material, thermal system insulation (pipe coverings and block, cements, accessory products), and miscellaneous materials (boards, other).

(d) *Other identifying characteristics.* Spraycraft surfacing material (produced 1969 to 1971) was 35% asbestos, 60% mineral wool, 2.5% white cement, 2.5% clay.

The following were pipe covering and block products:

85% Magnesia (produced 1906 to 1961) was 85% magnesia, 11 to 15% asbestos (filter molded);

Super Light 85% Magnesia (produced 1951 to 1958) contained normal carbonate magnesium, 15% asbestos (precision molded);

Alltemp (produced 1954 to 1958) was 60% perlite, 20% magnesia plastic, 10% bentonite clay, 10 to 12% asbestos;

Careytemp (produced 1958 to 1969, asbestos removed 1969) was 90% perlite, 6 to 7% asbestos and binders;

Paper Pipe Products (produced 1906 to the early 1970's) contained approximately 60% asbestos, 25% organic fiber, 15% silicate. Product names: Aircel, Careycel, Carocel, Defendex, Excel, Glosscell, Multi-Ply.

Asbestos Sponge contained 60% asbestos, 2 to 3% asbestos sponge, organic felt, and silicate.

Fyrex contained 60+% asbestos, organic material, and silicate.

Other Pipe Coverings (produced 1906 to February 1967): Tempcheck—20% magnesium plastic, 60% diatomaceous earth, 20% asbestos; Hi-temp #19—60% diatomaceous earth, 20% asbestos; Hi-temp #12 and #15—60% diatomaceous earth, 20% magnesia plastic, 20% asbestos; Careytemp Aluminum Jacketed and Traced Pipe Insulation—Careytemp with aluminum or stainless steel jacket; Careytemp 2000—93.6% diatomaceous earth, 6.4% asbestos; Dual Careytemp—2% bentonite clay, 17% starch, 19% phenolic resin, 10% asbestos; 62% perlite.

The following were cement products:

707 Cement (produced 1906 to 1960) contained 43% asbestos, 57% ground gypsum;

Super 606 Cement (produced 1906 to 1960) contained 20% bentonite, 10% kaolin clay, 10% asbestos, 60% mineral wool;

100 Cement (produced 1906 to 1967) contained 55% asbestos, 50% gypsum;

303 Cement (produced 1906 to 1967) contained 55% asbestos, 35% gypsum, 10% kaolin clay;

Careytemp Finishing Cement (produced 1966 to 1968) contained cement, bentonite clay, perlite, 22% asbestos, limestone, silica, wetting agent;

MW–0 Cement (produced 1950 to 1952) contained 70% mineral wool, 10% asbestos, 20% bentonite clay;

MW–0 Cement (produced 1940 to 1967) contained 90% mineral wool, 10% asbestos;

LF–0 Asbestos Cement (exact date manufacture began is unknown; manufactured up to 1967) contained 60 to 70% asbestos, kaolin clay, hardeners;

Vitricel Cement (#10 and #19) (produced 1940 to 1967) contained 15 to 25% asbestos, 50% cement/slate flour;

A–01 Cement (produced 1906 to 1967) contained 100% asbestos;

7M–0 Asbestos Shorts Cement (produced 1950 to 1977, brokered) contained 100% asbestos.

The following are accessory products:

45-pound Asbestos Waterproof Jacket (produced 1906 to 1982) contained 85% asbestos, asphalt, organic paper fillers;

Asbestos Rope and Wick (produced 1925 to 1945) contained 85% asbestos, 15% cotton fiber;

Asbestos Papers and Roll Boards (produced 1906 to February 1982) contained 60 to 80% asbestos, organic fiber, silicate;

Asbestos Tank Jackets (produced 1906 to 1945) contained 60% asbestos, 25% organic fiber, 15% silicate;

Thermalite (produced 1906 to 1937) contained 85% asbestos, 15% sodium silicate;

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Firefoil Board and Panel (produced 1940 to 1960) contained 60% asbestos, 25% organic fiber, 15% silicate;

Vitricel Asbestos Sheets (produced 1941 to 1960) contained 60% asbestos, organic fiber, silicate, waterproofing solution;

Thermotex-B (produced 1906 to 1984) contained 14% asbestos, asphalt and mineral stabilizer;

228 Fibrated Emulsion (manufacture began 1906, exact date manufacture stopped is unknown) contained bentonite clay, asphalt, 3.6% asbestos;

Insulation Seal (produced 1930 to 1984) contained 20% asbestos, asphalt cutback, naphtha, mineral spirits;

Fire Resistant Insul Seal (years of production unknown) contained 20% asbestos, asphalt and chlorinated solvent;

Fibrous Adhesive (1906 to 1984) contained 85% sodium silicate, 15% asbestos;

BTU Cement (produced 1930 to 1965) contained 25 to 30% asbestos, asphalt cutback;

Careytemp Adhesive (produced 1961 to 1968) contained 80% silicate, 15% asbestos, 4.8% diatomaceous earth, 2% wetting agent.

The following are miscellaneous materials:

Thermo-bord (produced 1925 to 1969) contained non-asbestos insul covered with A–C sheets (20% asbestos);

Industrial A–C Boards (produced 1925 to 1970) contained 78% cement, 22% asbestos;

Cemesto Board (produced 1930's to early 1960's) was similar to Thermo-bord;

Marine Panel (produced 1941 to 1950) contained Aircel and asbestos cement (60% asbestos);

Millboards (produced 1906 to February 1982) had various formulations: 65 to 97% asbestos and cement, clay, or starch;

Careyduct (produced 1940 to 1955) contained 60 to 85% asbestos, 15 to 40% starch;

Carey Asphalt Floor Tiles (produced 1930's to 1975) contained 40% asbestos, 60% asphalt and sand;

Careyduct Adhesive (produced 1940 to 1955) contained 15% asbestos, 85% sodium silicate;

Ceiling Tiles (produced 1960 to 1975) contained 1.5 to 3% asbestos, 70 to 72% mineral wool, 18% clay, 7% starch, and 1 to 2% wax.

(e) *Additional information.* No additional information is available.

5. Congoleum Corporation

(a) *Name and address of manufacturer.* Congoleum Corporation, P.O. Box 3127, Trenton, NJ 08619.

(b) *Years of manufacture.* 1947 through 1983.

(c) *Types or classes of products.* Counter tops, asphalt tile, vinyl asbestos tile, 6 foot sheet flooring, sheet flooring with asbestos felt.

(d) *Other identifying characteristics.* Counter tops (produced 1952 to 1960) were available in a variety of patterns and styles, including: Vinyl Top, Nairon Top, Viscount, and Marble.

Asphalt Tile (produced 1952 to 1971) was available in a variety of patterns and styles, including: Gala, Corkette, Tweed Texture, Featherveining, and Sequin.

Vinyl Asbestos Tile (produced 1959 to 1975) was available in a variety of patterns and styles, including: Thru Style, Grandview, Corinthian, Selected Color Series, Cameo, Samara, Fontenay, Shelburne, Regalwood, Sunburst, Bedford Slate, Canyon Stone, English Brick, Park Ridge, Sonoma, Caribbean, Catalina, Woodgrain, Cimarron, Parthenon, Capella, Orion, El Camino, Feathervein, Brushwood, Sparklewood, Gala, Vinylstone, Romanaire, Rondelle, Dominique, Woodgrain, Travertine, Ranch Tile, Corsicana, Corinthian, Dominique, Carillon, Manorwood, Aztec, San Paulo, Libra, Capella, Venus, Orion, Fontenay, Ventura, and Shelburne.

Tile (produced 1952 to 1962) was available in a variety of patterns and styles, including: Standard, Venetian, Designer, Bermuda Hues, Tiffany Vinyl Tile, Translucent Vinyl Tile, Vinyl Dynasty Tiles and Tile Inserts, Berylstone, Sequin, Venetian, and Marble.

Asbestos Sheet Flooring (produced 1974 to 1977; 1981 to 1983) was available in a variety of patterns and styles, including: Ultraflor, Ultraflor Majestic, Ultraflor Regal, Reflection, Fashionflor, Prestige, Dynasty, Pavillion, Spring, Highlight, Cushionflor Supreme, Villager, Pacemaker, Profile, and Flor-Ever.

6 Foot Sheet Flooring (produced 1952 to 1954) was available in a variety of patterns and styles, including: Vinylflor, Berylstone, Marble, and Picnic.

Sheet Flooring with Asbestos Felt (produced 1965 to 1980) was available in a variety of patterns and styles, including: Pebble, Brick, Colony Square, Georgian Marble, Persian Tile, Casa Grande, Town & Country, Williamsburg Brick, The Rembrandt, The Stuart, The Degas, The Goya, Caliente, Hampstead Brick, Royal Court, Westbury, Fairmont, Topaz, La Mesa, Colonnade, Majesty, Espana, Pennhurst, Camelot, Italian Terrazzo, and Willowbrook.

(e) *Additional information.* Additional information is available.

6. Eagle-Picher Industries, Inc.

(a) *Name and address of manufacturer.* Eagle-Picher Industries, Inc., 580 Walnut Street, Cincinnati, OH 45202. Corporate Predecessors: The Eagle-Picher Company, The Eagle-Picher Lead Company.

(b) *Years of production.* 1930 through 1971.

(c) *Types or classes of products.* Insulating cement, insulating and finishing cement,

(d) *Identifying characteristics.* Super "66" asbestos-containing insulating cement, formerly called Eagle "66," was manufactured from 1930 to August 1971. Super "66" was an insulating cement which dried to a grayish-white color with dark mineral wool fiber nodules of generally uniform size (¼" to ½"), evenly dispersed through the binder, and compressible and resilient when pressed between the fingers. Super "66" was formulated as follows: 42 to 67% granulated mineral wool (dark) fiber nodules by weight; 22 to 33% (1931 to 1963) and 44 to 52% (1963 to 1971) bentonite clay by weight; 8 to 10% (1931 to 1963) and 3 to 4% (1964 to 1971) chrysotile asbestos fibers by weight; less than 5% other ingredients by weight.

One-Cote Insulating and Finishing Cement was manufactured from 1960 to August 1971. One-Cote was a hydraulic setting insulating and finishing cement which dried to a smooth, white to off-white, hard finish with high compressive strength and abrasion resistance. It contained dark mineral wool fiber nodules of generally uniform size (⅛" to ⅜"), evenly disbursed through the binder, and compressible and resilient when pressed between the fingers. One-Cote was formulated as follows: 19 to 31% granulated mineral wool (dark) fiber nodules by weight; 27 to 33% portland cement by weight; 5 to 18% (1960 to 1966) and 23 to 35% (1967 to 1971) bentonite clay by weight; 24 to 30% (1960 to 1966) and 7 to 14% (1967 to 1971) diatomaceous earth by weight; 5 to 6% (April 1960 to 1967) and 2 to 5% (1968 to August 1971) chrysotile asbestos fibers by weight (product did not contain asbestos prior to April 1960 or after August 1971); less than 4% other ingredients by weight.

Eagle-Picher has developed an extensive set of analytical procedures and testing protocols specifically designed for precise identification of distinguishing characteristics of Eagle-Picher's Super "66" and One-Cote in the laboratory setting. For further information and assistance in performing the analytical procedures

contact James A. Ralston at the address provided above in 6(a).

(e) *Additional information.* No additional information is available.

7. Fibreboard Corporation

(a) *Name and address of manufacturer.* Fibreboard Corporation, 1000 Burnett, Galaxy Office Park, Concord, CA 94520. Formerly Fibreboard Paper Products and Pabco Corporation.

(b) *Years of production.* 1920 to 1971.

(c) *Types or classes of products.* Block, pipe- covering, and cement thermal insulation, thermal insulating cement, floor covering, cement products, roof paint, floor- coating asphalt saturated felts or roll roofings with asbestos- containing base sheets, caulking compounds, plastic cements, gypsum board, taping and finishing compounds, insulating tape, and gaskets and packings.

(d) *Identifying characteristics.* Prasco, a block, pipe-covering, and cement thermal insulation manufactured from about 1928 to 1957, contained 85% diatomaceous earth and binders and about 15% asbestos (color: yellow or red).

85% magnesia block, pipe-covering, and cement thermal insulation manufactured from about 1928 to 1966, contained about 85% or more basic magnesium carbonate and 15% or less asbestos (color: white).

Caltemp (or Caltherm), a block, pipe-covering, and cement thermal insulation manufactured from about 1952 to 1968, contained about 88% calcium silicate and about 12% asbestos (color: pink until mid-1960's, then white or gray).

Supercaltemp, a block, pipe-covering, and cement thermal insulation manufactured from the late 1960's until 1971, contained calcium silicate and other non-asbestos material increasing from about 88% to 96½%, and asbestos material decreasing from about 12% to 3½% (color: white or gray).

FI thermal insulating cement, manufactured from about 1963 to 1966, contained about 95% calcium silicate and binders and about 5% asbestos (color: pink until mid-1960's, then white or gray).

No. 127 thermal insulating cement, manufactured from about 1966 to 1971, contained about 95% calcium silicate and binders and about 5% asbestos (color: white or gray).

Aircell or asbestos paper insulation, manufactured prior to 1948, was composed of asbestos paper and sodium silicate (color: grayish).

Kaylo; LK Insulation, and Pyrocal, block and pipe-covering thermal insulation, under rebrand agreements and specifications for Owens-Corning Fiberglas, Armstrong Contracting and Supply, and PPG Industries, respectively, were manufactured 1960 to 1971, 1964 to 1971, and 1968 to 1971.

Pabco Floron floor covering, manufactured from about 1952 to 1954, contained about 15% asbestos.

Colorok, Stormlap, Pabflex, and Stonite asbestos-cement products, manufactured from about 1948 to 1963, contained portland cement and about 15–20% asbestos.

Alumishield roof paint, manufactured from about 1946 to 1968, and Gripdeck floor-coating, manufactured from about 1942 to 1968, contained paint vehicles, pigments, and about 5 to 10% asbestos.

Asphalt-saturated felts or roll roofings, manufactured sporadically from 1920 to 1968 at various locations, may have had asbestos-containing base sheets.

Caulking compounds, plastic cements, and roof coatings manufactured until 1968 may have contained about 5 to 10% asbestos.

Flamecurb gypsum board, manufactured from about 1951 to 1960, contained a small percentage of asbestos.

Gypsum board and lath, manufactured for a few months in 1954, contained 0.2 to 0.3% asbestos.

Taping and finishing compounds, manufactured from about 1951 to 1960, contained about 5 to 10% asbestos.

Insulating tape manufactured in the 1940's may have contained some asbestos.

Gaskets, packings, and a product called Asbestofelt manufactured by a predecessor prior to 1948 may have contained some asbestos, and said predecessor may have sold some asbestos- cement roofing, siding, refractories, textiles, paper, millboard, or other materials manufactured by others which may have contained some asbestos.

(e) *Additional information.* Additional information is available.

8. The Flintkote Company

(a) *Name and address of manufacturer.* The Flintkote Company, 100 The Embarcadero, Third Floor, San Francisco, CA 94105.

(b) *Years of manufacture.* 1945 through 1982.

(c) *Types or classes of products.* Vinyl asbestos floor tile, floor tile cements.

(d) *Other identifying characteristics.* Vinyl Asbestos Floor Tile (produced 1945 to November 1980) was manufactured and sold in hundreds of patterns and color combinations. The amount of chrysotile fiber contained in the product varied, but generally ranged from 5 to 25%. No physical or chemical testing protocol is known for Flintkote floor tile, however, it can be identified through visual inspection by persons knowledgeable in the trade.

GF–8/R–14–C Floor Tile Cements (produced 1945 to approximately 1982) contained chrysotile. The amount of chrysotile fibers contained in these products ranged from approximately 5 to 11%. No physical or chemical testing protocol is known for Flintkote floor tile cements.

9. GAF Building Materials

(a) *Name and address of manufacturer.* GAF Building Materials Corporation, 1361 Alps Road, Wayne, NJ 07470. Predecessor: The Ruberoid Company.

(b) *Years of manufacture.* 1928 through 1981.

(c) *Types or classes of products.* Pipe covering, asbestos paper and millboard products, and insulating cements.

(d) *Other identifying characteristics.* Calsilite (produced from approximately 1944 to June 1947 for the U.S. Navy; from July 10, 1947 to March 7, 1949 by Ruberoid on an experimental basis; from March 7, 1949 to 1967 by Ruberoid on a commercial basis; in 1967 by Aniline & Film Corporation on a commercial basis; and from 1968 to October 1971 by GAF Corporation on a commercial basis) was a pipe covering and block insulation. Calsilite was a lightweight, hard, calcium silicate insulation designed to withstand temperatures up to 1250 °F. Calsilite pipe covering was manufactured in 3 foot lengths and in varying thicknesses. It was available in half-sectional pieces, and, at various times, in three-segmental and regular segmental shapes, for assembly around a pipe in single or double layers. Pipe covering normally was provided with standard weight cotton or canvas jackets applied with silicate of soda. No "T's," elbows or joints were produced. Flat Calsilite blocks were manufactured, at various times, in 18" or 36" lengths, in widths from 3" to 36", and in thicknesses up to 4". Six-inch wide curved segmental blocks, capable of contouring more easily for insulation of large pipes and circular vessels, also were available. Calsilite was manufactured by a "pan-molding" method until 1964 when Ruberoid began using a "filter-press" method or process.

Pan-molded Calsilite was grayish-white and relatively smooth, with some small holes. Calsilite filter press was grayish-white with screen marks on the outer surfaces. Calsilite-Hi, developed in or around 1960, could withstand temperatures up to 1,800 °F. In the mid-

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to-late 1960's, Ruberoid developed Calsilite SS, an "inhibited" product designed specifically to prevent stress corrosion and cracking of stainless steel piping. In addition to formula changes made in connection with product development, the Calsilite formula was adjusted often in order to compensate for changes in the quality and availability of raw materials.

Asbestos Paper and Millboard Products (produced by Ruberoid from 1928 to 1967, by General Aniline & Film Corporation in 1967, and by GAF Corporation from 1968 to 1981). Asbestos paper was designed to be used alone or in the manufacture of other products. It was manufactured in various thicknesses, according to customer specifications. Asbestos paper had a temperature limit of 250 °F. Its primary constituent was chrysotile asbestos, generally a mixture of grades 5 to 7. Other constituents included sulphite pulp, diatomaceous earth, and starch, although in the early years of manufacture this product may have consisted only of chrysotile and starch (which was sometimes in the form of tapioca).

Rollboard was an asbestos paper product, consisting of plies of asbestos paper bonded together without glue to create thicknesses varying from 1/16" to 1/8". Rollboard had a temperature limit of 250 °F.

Millboard was a stiffer product than asbestos paper or rollboard and was manufactured in sheets of varying thicknesses according to customer specifications. Millboard consisted generally of chrysotile asbestos, (usually grades 5D, 5R, and 6D), sulphite pulp and often other constituents, bonded with portland cement and/or starch. In later years, at least as early as 1974, latex was added as a binder.

Corrugated asbestos paper was designed to be used alone or in the manufacture of other products. It was made in three types: ¼" thickness per ply (4 plies per inch); ⅛" thickness per ply (6 plies per inch); and 1/16" thickness per ply (8 plies per inch). It was manufactured by adhering 36" to 37½" wide flat sheets of asbestos paper (usually 6 lb. paper) with silicate of soda to sheets of the same paper which had been corrugated using characteristic "Roman Arch" shaped corrugations, 26 to 28 to the inch. Its constituents were those of the asbestos paper from which it was constructed. Corrugated asbestos paper was sold in 250 and 500 square foot rolls.

Air Cell was a corrugated asbestos paper product manufactured from 1928 to approximately 1958. It was constructed of layers to the thickness specified by the customer of 36 or 37½" wide flat asbestos paper which was adhered to corrugated asbestos paper with silicate of soda. The corrugations of this product had a characteristic "Roman Arch" shape. As of 1938, the corrugated paper component had 28 corrugations per lineal foot. Each ply was ¼" thick and air cell came in three standard thicknesses—2-ply, 3-ply, and 4-ply. Air cell pipe covering, sheets and blocks were sold. Often a canvas, cloth, or pyroxiline jacket was applied to the outer surface of air cell pipe covering with an adhesive, usually a starch or cereal paste. 2½ brass lacquered bands were provided for each canvas-jacketed section of air cell pipe covering to hold it to the pipe. With the pyroxiline jacket, three 1" wide black japan bands were supplied with each section. Air cell had a temperature limit of 250° to 350 °F. Prior to 1935, air cell may have been sold only under the name "Celasbestos," which was available in 5, 6, 7, and 8-ply versions and well as 1–4 ply versions.

Watocell was a corrugated asbestos paper product manufactured as Watcocel from 1928 to 1934, as Supercell from 1935 to 1942, and as Watcocell from 1942 to 1960. In 8-ply per inch Watcocell, the corrugations were 1/16" thick; in 6-ply, the corrugations measure about ⅛" thickness. Watcocell was sold in rolls, sheets, and blocks. Watcocell's temperature limit was 250 °F.

Imperial insulation was manufactured from at least 1936 to approximately 1960. It had a temperature limit of 500° to 700 °F. Imperial paper consisted of two plies of flat asbestos paper which were passed through an indenting roll resulting in a waffle-like appearance with closely spaced square indentations.

Imperial pipe covering was wound on a mandrel to achieve the desired thickness and canvas-covered. In early years of production, layers of Imperial may have been stapled together or stitched with strands of wire rather than wound on a mandrel. Imperial sheets and blocks were made of layers of Imperial paper glued to the desired thickness with a fireproof glue, such as silicate of soda. This product was sold with a canvas, asphalted felt, or pyroxylin jacket.

Aristo Insulation was listed for sale in and around 1940, but the years of manufacture of Aristo Insulation are unknown. It was a corrugated asbestos paper product with carefully measured indentations and 23 to 25 laminations per inch of thickness. Its temperature limit was 700° to 750 °F. The asbestos paper used in this product was treated with a surface treatment, possibly Bennett size. This product was sold in a standard thickness of one inch, but often was used in thicknesses up to and exceeding three inches. Standard canvas and waterproof jackets were available for this product.

Sponge felt was manufactured from 1936 to approximately 1960. It consisted of asbestos sponge paper made by imbedding small pieces of sponge into asbestos paper. Its temperature limit was 750 °F. It was sold in 36" wide rolls, sheets, and blocks which were produced in the same manner as Imperial products.

Woolfelt, a wool or rag felt insulation manufactured from 1928 to approximately 1959, did not contain asbestos, but was sometimes sold with an asbestos paper liner or backing paper. Tar-lined woolfelt was sold with a tar paper liner which did not contain asbestos. Twin-purpose woolfelt was sold with a liner of asphalt coated asbestos paper.

Anti-Sweat Pipe Covering was manufactured until approximately 1958, and intended exclusively for residential use on cold water pipes. At least as early as 1936 this product was composed of an inner layer of asphalt-saturated asbestos paper followed by a ½" layer of woolfelt, two layers of asphalt- saturated asbestos paper, another ½" layer of woolfelt, and two final layers of asphalt-saturated asbestos paper. The outermost layer had a flap extending at least 3 inches beyond the longitudinal joint. GAF does not know whether a jacket was ever provided with this product. This product was sold in 36" wide rolls and had a temperature limit of 50 °F.

Frost-Proof Pipe Covering was apparently constructed of a layer of felt made from cattle, goat, or other animal hair with layers of asphalt-saturated asbestos paper and a layer of woolfelt. Its years of manufacture, appearance, and temperature limit are unknown to GAF.

Range Boiler Jacket consisted of a series of plies of corrugated asbestos paper built up to the required thickness on mandrels that were the same size as the range boilers the product was designed to fit. The corrugated paper used was a coarse variety with 4 plies per inch of thickness. These jackets were furnished in two sections—upper half and lower half. Five extra-wide bands were provided to attach the jacket to the range boiler. The outside surface was painted or covered with canvas. GAF does not know the years of manufacture of this product.

115 Insulation Cement was a chrysotile asbestos product which, in some instances, was produced at Ruberoid/GAF's Vermont facility and in

other instances was purchased from various other asbestos suppliers and resold. Some of the product purchased from other suppliers may have been milled again at Ruberoid/GAF's Vermont facility prior to resale. Asbestos insulation cements produced at GAF's Vermont facility could generally be distinguished from asbestos insulation cements produced by other manufacturers inasmuch as the Vermont product was a slip chrysotile asbestos rather than a cross vein asbestos and was generally of a lower grade and contained a greater percentage of impurities, such as dirt and rock particles. It is believed that this product was sold from at least as early as 1937 to 1975. It is believed that the "115" designation was employed from approximately 1950 to 1975 and the designation "Grade B" was also employed in years prior to 1950. The basic ingredients of this cement product were: chrysotile determined to pass the 0–0– 1–15 Quebec test, and impurities (dirt, rock, earth). The particular formulas utilized by entities which purchased this product for construction are not known by GAF, but this product was normally mixed with portland cement, water, and/or other substances.

214 Insulation Cement was also a chrysotile asbestos product which, in some instances, was produced at GAF's Vermont facility and in other instances was purchased from various other asbestos suppliers and resold. Some of the product purchased from other suppliers may have been milled again at Ruberoid/GAF's Vermont facility prior to resale. Ruberoid/GAF's Vermont product was a lower grade cement which contained a greater percentage of impurities, such as dirt and rock particles, making it lightly mottled and giving it an overall darker appearance. It is believed that this product was sold from at least as early as 1937 to 1975. It is believed that the "214" designation was employed from approximately 1950 to 1975 and the designation "Grade BB" was also employed in years prior to 1950. The basic ingredients of this cement product were: chrysotile determined to pass the 0–0–2–14 Quebec test, and impurities (dirt, rock, earth). The particular formulas utilized by entities which purchased this product for construction are not known by GAF, but this product was normally mixed with portland cement, water and/or other substances.

Calsilite Insulation Cement was a combination of chrysotile asbestos fiber, ground Calsilite pipe covering or block, and portland and other cements. It is believed that this product was made with Vermont-produced asbestos and thus contained certain impurities, such as rock, dirt and earth particles. This product was never widely or frequently sold. To the extent that such sales took place, they ceased completely in or around 1960.

Grade AA Insulating Cement was manufactured by Ruberoid using a high grade of pure asbestos fiber together with suitable binding materials that had low conductivity. It was designed to yield a hard, durable surface. Its temperature limit was 1,200 °F.

Grade A Insulating Cement was a factory-prepared cement consisting of fibers which were not as long as those used in the better grade AA, together with suitable binding materials. Its temperature limit was 1,000 °F.

Grade H F—Hard Finish—was a hard finish cement designed to be used as a final protective coating over other coats of cement. It had a smooth, glossy, hard finish. Grade HF was recommended to be applied in a ¼" thick layer. It had a temperature limit of 1,500 °F and was a prepared cement manufactured by Ruberoid.

Grade H. T.—High Temperature—Cement was designed to withstand temperatures of 1,600° to 1,800 °F. This material was not designed to be used for finishing purposes.

Grade 203 Insulating Cement was a 100% chrysotile cement which had a screen test of approximately 0–0–1–16 which made it the lowest grade cement sold by Ruberoid/GAF.

Satin Finish Cement consisted of 87% chrysotile, 10% portland cement, and 3% Medusa cement.

Grade A–11 Insulating Cement consisted of vermiculite, chrysotile, and binding substances. It was recommended for temperatures up to 1,500 °F, or 1,800 °F if the applicator did not intend to reclaim the material. Grade A–11 was designed to be an insulation material, not a finishing cement.

Coverkote was designed to be a weatherproofing coating for insulated surfaces, rather than an insulating cement. It was a combination of emulsified asphalt and 25 to 28% chrysotile. It was a black plastic material particularly designed for protection of insulation on large tanks and vessels and for insulated equipment such as smoke breechings and ducts. The temperature limit for Coverkote was 400 °F.

Rock Wool Cement was apparently available from Ruberoid in the late 1940's and early 1950's. It consisted of a mixture of rock wool and chrysotile asbestos and had a temperature limit of 1,500 °F.

(e) *Additional information.* Additional information is available.

10. General Refractories Company

(a) *Name and address of manufacturer.* General Refractories Company, Valley Forge Corporate Center, 2661 Audubon Road, Valley Forge, PA 19403. General Refractories Company purchased certain assets from Ohio Lime Company, located in Woodville, OH in August 1967 and formed OLC.

(b) *Years of manufacture.* 1955 through 1973.

(c) *Types or classes of products.* Hydraulic setting insulating castable, paste-like silicate cement, acoustical plaster, decorative spray coating.

(d) *Other identifying characteristics.* Litecast 30 (produced 1962 to 1968; 1970 to 1973 by General Refractories Company) was a hydraulic setting insulating castable. Constituent composition of Litecast 30 by weight of each constituent: 40% expanded Perlite Grade P–38; 23% chrysotile asbestos 7K 15; 36% Lumnite Cement; and 1% bentonite. Litecast 30 was shipped dry in 30 lb. valve type bags. It was mixed with water, then cast or sprayed onto a furnace surface for use in the aluminum and petrochemical industry. Litecast 30 was manufactured at the Company's facilities in Sproul, PA and in Troup, TX.

Fibrous Adhesive (produced 1955 to 1972 by General Refractories Company) was a paste-like silicate cement used to hold refractory insulating block to which General added 14% chrysotile asbestos. Constituent composition of Fibrous Adhesive by weight of each constituent: 86% Sodium Silicate; 14% chrysotile asbestos. Fibrous Adhesive was sold in 1 gallon, 32 gallon, or 55 gallon drums, 24 or 36 drums per pallet.

Mute Acoustical Plaster (produced from October 1961 to May 1964 by OLC) contained approximately 15% asbestos. It was packaged for sale in 10 lb. Kraft paper sewn end bags with blue lettering.

Decorative Spray Coating, "DSC," (produced from approximately February 1969 to January 1973 by OLC) contained 16.4% asbestos, consisting of asbestos short fibers, purchased from Cary of Canada. DSC was packaged in 50 lb. bleached Kraft paper bags with red lettering. Total production of DSC was a little over 300 tons.

(e) *Additional information.* No additional information is available.

11. Georgia-Pacific Corporation

(a) *Name and address of manufacturer.* Georgia-Pacific

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Corporation, 133 Peachtree Street, N.E., P.O. Box 105605, Atlanta, GA 30348. Predecessor: Bestwall Gypsum Company.

(b) *Years of manufacture.* 1956 through 1977.

(c) *Types or classes of products.* Acoustical plaster, joint compounds, textures, and specialty products.

(d) *Other identifying characteristics.* Trowel Applied Acoustical Plaster was manufactured from 1956 to 1959. It was off-white in color, if not painted, and was applied on smooth or textured surfaces, normally ceilings. The components of this product were approximately 2.5% asbestos; 28% gypsum; and 70% pumice.

Machine Applied Acoustical Plaster was manufactured from 1958 to 1963. It was off-white in color, if not painted, and was applied on smooth or textured white surfaces; normally ceilings. The components of this product were approximately 25 to 30% asbestos; 13 to 15% clay, and 50 to 60% perlite.

Dry Mixed Joint Compound was manufactured from 1956 to 1977. It was off-white in color, if not painted, and was applied on smooth or textured white surfaces. Normally, it was applied over bedding or taping compounds over joints, fastener heads, corners, and entire areas of a gypsum board on interior walls and ceiling surfaces. The components of this product were approximately 2.5 to 7% asbestos; 50 to 90% calcium carbonate (limestone); or 80 to 90% calcium sulfate (gypsum); 5 to 20% mica; and 2 to 6% casein and/or vinyl binder(s).

Wet Mixed Joint Compound was manufactured from 1963 to 1977. It was off-white in color, if not painted, and was applied on smooth or textured surfaces. Normally the texture was applied as a taping, finishing, or texturing material over joints, fastener heads, corners and entire areas of gypsum board in walls and ceilings. The components of this product were approximately 1.5 to 5% asbestos; 45 to 70% calcium carbonate (limestone); or 45 to 70% calcium sulfate (gypsum); 5 to 10% mica; 2 to 5% vinyl binder(s); and 30 to 40% water.

Textures were manufactured from 1956 to 1974. The color appeared white to off-white with aggregate particles providing a rough surface. Normally the texture was applied as a decorative finish over drywall, sprayed-on or trowel applied. The components of this product were approximately 2 to 12% asbestos; 25 to 90% calcium carbonate (limestone), or 25 to 90% calcium sulfate (gypsum); 5 to 15% clay; 4 to 30% expanded perlite; 10 to 15% expanded vermiculite; 2% shredded expanded polystyrene; 2 to 9% casein, vinyl and/or starch binder(s); and 7 to 15% mica.

Patching was manufactured from 1956 to 1975. This product was off-white, unless painted, and smooth. It was normally applied to repair plaster cracks and holes in wall and ceiling surfaces. The components of this product were approximately 2% asbestos, and 98% calcium sulfate (gypsum).

Spackling was manufactured from 1956 to 1971. This product was off-white and smooth. It was normally applied to patch fine cracks in plaster surfaces. The components of this product were approximately 5% asbestos; 70% calcium carbonate (limestone); 16% mica; and 2 to 4.5% casein or vinyl binder(s).

Laminating Compound was manufactured in 1969. It was white to off-white in color, and was normally applied between two layers of gypsum board in special multi-layer applications. The components of this product were approximately 4% asbestos; 80% calcium carbonate (limestone); and 2 to 8% vinyl binder(s).

Drywall Adhesive was manufactured in 1972. It was white to off-white in color; and was normally applied between gypsum board and framing member. The components of this product were approximately 1% asbestos; 80% calcium carbonate (limestone); and 2 to 8% organic binder(s).

(e) *Additional information.* No additional information is available.

12. H. K. Porter Co., Inc.

(a) *Name and address of manufacturer.* H. K. Porter Co., Inc., Porter Building, Pittsburgh, PA 15219. (Predecessor of Emhart Glass of Laclede Christy Clay Products Company, P.O. Box 580, Owensville, MO 65066.)

(b) *Years of manufacture.* 1970 through 1973.

(c) *Types or classes of products.* Wet cement.

(d) *Other identifying characteristics.* Porter Bonding Mortar #20.

(e) *Additional information.* No additional information is available.

13. Kaiser Cement Corporation

(a) *Name and address of manufacturer.* Kaiser Cement Corporation, 1333 North California Blvd., Suite 445, Walnut Creek, CA 94596-1209. Formerly Kaiser Cement & Gypsum Corporation (1964 to 1979), and Permanente Cement Company (1939 to 1964).

(b) *Years of manufacture.* 1944 through 1946, and 1959 through 1979.

(c) *Types or classes of products.* Plastic gun cement, plastic cement, masonry cement, stucco.

(d) *Other identifying characteristics.* Kaiser Permanente Plastic Gun Cement (produced 1959 to 1976) was a grey powder composed primarily of portland cement and plasticizing and air-entraining agents. Sold in sacks, the product was used to make stucco for building exteriors and was applied by gun with a plastering machine. The product contained a small amount of chrysotile asbestos. Plastic gun cement was sold primarily in California, but also in several other Pacific Coast States and Nebraska.

Kaiser Permanente Plastic Cement (Hand) (produced 1961 to 1973) had the same composition and use as plastic gun cement, with the exception that it was applied manually with a trowel. The distribution area for sales of this product was the same as for the plastic gun cement.

Kaiser Permanente Masonry Cement (produced 1973) was sold in 78 lb. bags and used as mortar in building construction. The product's ingredients included a trace amount of chrysotile asbestos, probably less than 1% when product was applied, and was primarily composed of a combination of portland cement and air-entraining additives. This masonry cement was manufactured and sold in the Phoenix, AZ area.

Plastite (produced 1944 to 1945) was sold in 100 lb. sacks, and used to make manually applied stucco for building exteriors. The product was primarily composed of portland cement, adhesive, plasterizing and water repellant agents, and contained a small amount of asbestos. It was sold in Northern California and in Washington.

(e) *Additional information.* No additional information is available.

14. Kaiser Gypsum Company, Inc.

(a) *Name and address of manufacturer.* Kaiser Gypsum Company, Inc., 1333 North California Blvd., Suite 445, Walnut Creek, CA 94596-1209.

(b) *Years of manufacture.* 1952 through 1976.

(c) *Types or classes of products.* Texture paints, joint compounds, joint compound premixes, mineral fiber acoustical ceiling tile and lay-in board, specialized surface- finish products.

(d) *Other identifying characteristics.* Cover-Tex, Spray-Tex, Spray Cover-Tex, and Kaiser-Tex were produced 1952 to 1967. These texture paints were sold by the bag in dry powder form and were composed of casein, limestone, mica and a small amount of chrysotile asbestos.

Cover-Tex Wall Texture, (TSS), (produced 1968 to 1975) was similar to the other texture paints described

above. K-Spray Ceiling Texture (KSV or KSP and KSS) were produced 1961 to 1975. Ceiling texture paints were manufactured in dry form and had the same primary composition as the texture paints described above.

Joint Compound-Powder, Finishing Compound-Powder, One-Day Joint Compound-Powder, and 3-Purpose Compound-Powder were produced 1953 to 1975. Joint compounds were sold by the bag in dry form and were primarily composed of casein or polyvinyl, clay, talc, limestone and mica, with a small amount of chrysotile asbestos.

Premix Joint Compound, Premix Finishing Compound, Dual Purpose Premix Compound, and Premix Topping Compound were produced 1959 to 1976. Joint compound premixes were sold in paste form in cartons or pails and composition was essentially the same as dry form with the addition of a liquefying agent.

Kaiser Mineral Fiberboard UL-Fire Rated (Underwriters' Laboratories, Inc. Design) was produced 1963 to 1974. Mineral fiber acoustical ceiling tile and lay-in board contained a small amount of chrysotile asbestos and was primarily composed of mineral wool and various wool fibers, clays and starch. Sold in boxes, the face side had a fissured or swirl, or pin-punched design for acoustical treatment.

"Laminating Compound," an adhesive for laminating wallboard to wallboard or to sound deadening board, was primarily composed of soya flour and limestone.

"Filler Compound," for covering radiant heat system ceiling surfaces, was primarily composed of limestone and mica.

"Radiant Heat Compound," for covering radiant heat cables stapled to ceiling surfaces, was primarily composed of sand and white portland cement.

"Radiant Heat Surfacing Compound," for covering radiant heat cables embedded in ceiling surfaces, was primarily composed of silica, flour and mica, as was "Radiant Heat Scrimless Surfacing Compound."

"Radiant Heat Joint Compound," for filling cracks and embedded tape grooves in radiant heat gypsum wallboard ceiling surfaces, was primarily composed of casein, clay, mica and limestone.

"X-Terior Premix Prefill Compound," for prefilling joints in gypsum wallboard, was primarily composed of raw gypsum, PVA emulsion and mica.

"X-Terior Premix Wall Texture Compound," for providing surface texture to gypsum wallboard installed on building exteriors only, was primarily composed of limestone, acrylic emulsion, and mica. The only form of asbestos used in these products was chrysotile.

(e) *Additional information.* No additional information is available.

15. Keene Corporation

(a) *Name and address of manufacturer.* Keene Corporation, 200 Park Avenue, New York, NY 10017. Former subsidiary: Keene Building Products Corporation ("KBPC"). KBPC's corporate predecessors: Baldwin-Ehret-Hill, Inc. ("BEH"), a Pennsylvania Corporation; Ehret Magnesia Manufacturing Company ("EHRET"), a Pennsylvania Corporation; Baldwin Hill Company ("B-H"), a New Jersey Corporation.

(b) *Years of manufacture.* 1904 through approximately 1972.

(c) *Types or classes of products.* Pipe and block covering, cement, insulation materials, insulated pipe, spray-on acoustical coverings, acoustical ceiling tiles.

(d) *Other identifying characteristics.* 85% Magnesia (Thermalite) Pipe and Block Covering (produced 1904 to 1964 by Ehret and BEH) was a molded insulation for use on hot surfaces having temperatures up to 600 °F. Little information exists on the product, and the best estimate is that it was composed primarily of magnesium carbonate (85%). Although there has been diverse testimony on the product, the best information is that up until World War II it contained 10 to 15% asbestos fiber, composed primarily of amosite and a small amount of chrysotile. Thereafter, it contained 10 to 15% amosite. It was manufactured in cylindrical sections and in curved segments. It was also made in the form of blocks. The product was packaged in corrugated cardboard boxes according to size. The remnants from the molding and shaping process were sold as 85% Magnesia Cement or Thermalite Cement for use in sealing joints between the block and pipe covering, which was packaged in multiwall open mouth paper bags in 60 lb. weights and 75 lb. barrels (85% Magnesia Cement) and in multiwall open mouth paper bags in 50 lb. weights (Thermalite Cement). Investigation of this product is ongoing.

No. 1 Plus Cement/No. 1 Cement (produced 1938 to 1971 by B–H, BEH, and KBPC) was a dry mixture of spun mineral wool granules, bentonite clay binder, chrysotile asbestos fiber (7.5%) and other ingredients. Mixed with water and applied with a trowel, it formed a thermal insulation capable of withstanding temperatures from 1,800° to 2,100 °F. Asbestos was removed from this product in 1971. The product was packaged in paper bags by 40 or 50 lb. weights. For approximately 1 year around 1970, a Military Formulation of No. 1 Plus Cement was manufactured. Investigation of this product is ongoing.

Mono-Block (produced 1941 to 1968 by B–H and BEH) was a lightweight, moisture-resistant, non-corrosive, incombustible and chemically stable insulation product. Mono-Block contained 0.95% amosite asbestos, which amount was removed in 1968. The product was packaged in corrugated cardboard boxes according to size. Investigation of this product is ongoing.

Thermasil Pipe & Block Covering and Cement (produced 1956 to 1972 by Ehret, BEH, and KBPC) was a lightweight, molded, hydrous calcium silicate insulation, manufactured from a blend of special inorganic ingredients, reinforced with amosite asbestos fibers. Although one witness testified it contained chrysotile, the best available information is that Thermasil contained approximately 10% amosite asbestos fiber from 1956 to February 1969. The amount was reduced to approximately 8.6% until 1970, when the amount was further reduced to 2%. In November 1972, all remaining amounts of asbestos fiber were removed and KBPC purchased a license to manufacture an asbestos-free calcium silicate product. The product was packaged in corrugated cardboard boxes according to size. The remnants from the molding process were sold as Thermasil cement. Investigation of this product is ongoing.

Military Formulation of Super Powerhouse Cement (produced 1957 to 1971 by B–H, BEH, and KBPC) contained 5% chrysotile asbestos and was developed to conform to government specification. This product was manufactured and sold exclusively for U.S. government military installations. The commercial formulation without asbestos continued in production. Both products were dry, mixtures containing spun mineral-wool, hydraulic setting binders, clays and other ingredients. Asbestos was removed from the military formulation in 1971. Super Powerhouse Cement was sold in dry mixture in 50 lb. bags. Investigation of this product is ongoing.

Enduro Pipe Covering and Block Cement (produced 1924 to 1955 by Ehret) consisted of specially selected pre-calcined diatomaceous earth, clays, and asbestos fibers. Enduro is believed to have contained a blend of 1.1% No. 373 chrysotile asbestos and 8.7% amosite fiber. The dry formula of this product was sold as Enduro Cement. Investigation of this product is ongoing.

Durant Insulated Pipe (produced 1938 to 1945 by Durant) was a piping system exclusively for outdoor and underground use. Durant was metal piping insulated with 85% magnesia and then protected with a thick layer of a special high melting point asphalt which was cast inside of a heavy sheet metal jacket. Investigation of this product is ongoing.

Pyrospray Types I, T & S (produced 1963 to the early 1970's by BEH and KBPC) were packaged in multiwall open mouth paper bags in 40 or 50 lb. weights. Pyrospray Type I was a dry mixture of mineral wool, 32% chrysotile asbestos and inorganic binders and inhibitors which was mixed with water at a nozzle and applied pneumatically. Pyrospray Type T was a combination of dry mineral wool, 15% asbestos and inorganic binders and inhibitors, which was mixed with water at a nozzle and applied pneumatically. Pyrospray Type S (also known as Uni-Coustic) was a dry mixture of mineral wool, 22% chrysotile asbestos, and hydraulic setting binders and inhibitors, which was mixed with water at a nozzle and applied pneumatically. Asbestos was removed from all three types of Pyrospray prior to 1972. Investigation of these products is ongoing.

Mono-spray (produced 1963 to 1970 by BEH) was a dry-mixed blend of mineral wool with asbestos fibers and inorganic binders which was mixed with water at a nozzle and applied pneumatically. Mono-Spray contained 13% chrysotile asbestos from 1963 to 1968, and 12.5% chrysotile asbestos from 1968 to 1970. Production was terminated in 1970. The product was packaged in multiwall open mouth paper bags in 40 lb. weights. Investigation of this product is ongoing.

Mono-K (produced from 1964 to 1968 by BEH) is a high temperature insulating material which was manufactured by laminating asbestos-free mineral wool felts to Mono-Block. Mono- Block contained 0.95% amosite asbestos. Mono-K was discontinued for lack of a sales market. Investigation of this product is ongoing. Styltone AF, FR–2, and FR–3 (produced from 1957 to 1972 by B–H, BEH, and KBPC) were acoustical ceiling tiles which are believed to have contained approximately 4.3% amosite asbestos fiber. Sales of asbestos containing Styltone ceased in 1972. Styltone AF, FR–2 and FR–3 was a preformed, natural fissured, ridged mineral fiber acoustical tile for use on mechanical suspension systems. Styletone also was produced as a non-asbestos containing product from 1957 to 1975. Investigation of this product is ongoing.

(e) *Additional information.* No additional information is available.

16. Kentile Floors Inc.

(a) *Name and address of manufacturer.* Kentile Floors Inc., 58 Second Avenue, Brooklyn, NY 11215.

(b) *Years of manufacture.* 1907 through 1986.

(c) *Types or classes of products.* Resilient flooring—tiles and sheet goods.

(d) *Other identifying characteristics.* Kentile Asphalt Tile: Asbestos Filler; Standard size: 9″×9″; Thickness: ⅛″ and 3/16″ (heavy duty); Border size: 18″×24″; Edging: 1″×18″; 25 Tile Colors; 3 Styles: Regular marbleized Kentile noted for its uniform marbleization, Carnival Kentile noted for multi-color mottling, and Corktone Kentile which has a cork look.

KenFlex Vinyl Asbestos Tile: Blend of vinyl and asbestos fibers; Size: 9″×9″; Thickness: 1/16″ and ⅛″ (heavy duty); Styles include: Regular, Carnival, Corktone, Terrazzo Style, Woven Tones, Woodgrain KenFlex Vinyl Asbestos Tiles.

Kentile Vinyl Sheet Flooring: Styles vary in width of rolls and thickness.

(e) *Additional information.* Additional information is available.

17. Mannington Mills, Inc.

(a) *Name and address of manufacturer.* Mannington Mills, Inc., P.O. Box 30, Salem, NJ 08079.

(b) *Years of manufacture.* 1963 through 1983.

(c) *Types or classes of products.* Cushioned vinyl floor covering sheet goods, counter top coverings.

(d) *Other identifying characteristics.* The following styles of cushioned vinyl floor covering sheet goods contained asbestos backing: Royal Air (produced from approximately 1967 to 1977; unavailable 1967, 1968, 1977, and 1978); Marquis (produced from approximately 1968 to 1983); Vinyl-Ease 100 (produced from approximately 1968 to 1983; unavailable 1971 and 1973); Million Air (produced from approximately 1970 to 1983); Vega (produced from approximately 1970 to 1983; unavailable 1971 and 1973); Aristocon (produced from 1974 to 1983); Lustrecon (produced from approximately 1976 to 1983); Classicon (produced from approximately 1975 to 1983; unavailable 1976); Decora (produced from approximately 1975 to 1983; unavailable from 1976 to 1983); Architect's Choice (produced from 1977 to 1983; unavailable 1977); Duracon (produced 1981 to 1983); Special "Y" (produced 1980 to 1981; unavailable 1980 and 1981); Price Buster (produced 1981 to 1983; unavailable 1981 to 1983); Boca (produced 1983; unavailable).

The following styles from Mannington Mills Inc.'s Vinyl-1 line contained asbestos backing: Estoril (produced 1967 to approximately 1970; unavailable 1967 and 1968); Laurentian (produced 1966 to approximately 1970; unavailable 1967 to 1969); Tahiti (produced 1963 to 1967; unavailable 1963, 1965 to 1967); Pebble Beach (produced 1963 to 1971; unavailable 1963, 1967 to 1971); Castanet (produced 1964 to approximately 1970; unavailable 1967 to 1970); Costa Bella (produced 1966 to 1971; unavailable 1966 to 1968, and 1971); Marvel Air (produced 1969 to 1971; unavailable 1971); Villa Madrid (produced 1969 to 1971; unavailable 1971).

The following styles of Mannington Mills, Inc. products also contained asbestos: Counter Top (produced 1963 to 1972; unavailable 1971 and 1972); Casina (produced 1969 to 1971; unavailable 1969 to 1971); Sea Isle (produced 1969 to 1971; unavailable 1969 to 1971); Marvel Air (produced 1969 to 1971; unavailable 1971).

(e) *Additional information.* Additional information is available.

18. Manville Corporation

(a) *Name and address of manufacturer.* Manville Corporation, P.O. Box 5108, Denver, CO 80217 (1982 to the present). Predecessor: Johns Manville Corporation, Ken-Caryl Ranch, Denver, CO 80217 (1972 to 1981), 22 East 40th Street, New York, NY 10016 (1907 to 1971).

(b) *Years of manufacture.* 1891 through 1983.

(c) *Types or classes of products.* Packing, insulation, construction materials, friction materials, asbestos-cement pipe, and asbestos fiber.

(d) *Other identifying characteristics.* Chempac: 2012, 2011, 2009, 2008, 2006, 2013, 2014, 2024, 2005, 2004, 587, and Valve Stem Packing (produced 1891 to 1983) was a packing which contained white asbestos yarns, 0 to 90%; blue asbestos yarns, 0 to 90%, commercial grade T asbestos, 0 to 90%; TFE, 0 to 10%; mineral oil, 0 to 1%; wax and oil, 0 to 1%. Description: braid-over-braid, square cross section; braided in the interlocked pattern; twisted to form a round cross section.

Interlocked: 255, 253, 263, 270, 257, 254, 2009 (produced 1891 to 1983) was a packing which contained white asbestos yarns, 60 to 98%; petroleum base wax, 0 to 35%; petroleum base oil, 0 to 1%; neoprene cement, 0 to 35%; inorganic fillers, 0 to 10%; copper wire 0 to 10%; graphite finish, 0 to 1%. Description: square cross section; a resilient braided packing, its construction of interlocking

braided asbestos yarn prevents unraveling or coming apart.

Centripac: 4, 7, 11, 18, 19, 2018, 2021, 2036, 350, 351, 2022 (produced 1891 to 1983) was a packing which contained white asbestos yarns, 0 to 90%; blue asbestos yarns, 0 to 90%; petroleum base wax, 0 to 35%; petroleum base oil, 0 to 1%; mineral oil, 0 to 2%; inorganic fillers, 0 to 10%; lead ribbon, 0 to 10%; copper wire, 0 to 10%; graphite finish, 0 to 1%. Description: square plaited cross section.

Thermacore: 398, 397, 399 (produced 1891 to 1983) was a packing which contained white asbestos yarns, 50 to 90%; inconel wire, 0 to 10%; neoprene, 0 to 30%; mica, 0 to 1%; graphite finish, 1 to 2%. Description: braid-over asbestos/plastic core, with a square cross section.

Rajah: 6, 2 (produced 1891 to 1983) was a packing which contained white asbestos yarns, 95 to 98%; natural and buna-S rubbers, 0 to 2%; graphite finish, 1 to 2%. Description: braid-over-braid, with square or round cross-section.

Mogul: 223, 222 (produced 1891 to 1983) was a packing which contained white asbestos yarns, 95 to 98%; light petroleum base oil, 1 to 2%; graphite finish, 1 to 2%. Description: braid-over-braid, and calendered to a square cross-section.

Braided: 2020, 10 Jewett, 55, 2053, 323, 14, 322, 2017 (produced 1891 to 1983) was a packing which contained white asbestos yarns, 0 to 98%; blue asbestos yarns, 0 to 98%; petroleum base waxes, 0 to 2%; petroleum base oils, 0 to 2%; inert inorganic fillers, 0 to 2%; copper wire, 0 to 5%; lead ribbon, 0 to 10%; neoprene base cement, 0 to 5%; graphite finish, 0 to 2%. Description: Braid-over-braid, and calendered to a square cross-section.

Asbestos-metallic: 344, 360, 379, 392, 393 (produced 1891 to 1983) was a packing which contained white asbestos yarns, 25 to 60%; blue asbestos yarns, 25 to 60%; copper mesh, 45 to 60%; antimony-lead ribbon, 45 to 60%; lead-alloy ribbon, 45 to 60%; aluminum foil, 45 to 60%; lead foil, 45 to 60%, petroleum base oil, 0 to 2%; hydrocarbon waxes, 0 to 2%; graphite, 1 to 2%. Description: constructions include braid-over-braid, square plaited twisted foil, knitted mesh, spiral and others.

Asbestos fabrics: 166 Kearsarge, 167 Superheat Steam, 168 Kearsarge (produced 1891 to 1983) were packings which contained asbestos cloth, 90 to 94%; natural and buna-S rubber compound, 5 to 8%; graphite finish, 0 to 2%; mica, 0 to 1%. Description: Square cross-section.

Groove: 17, 790, 872, 216 (produced 1891 to 1983) was a packing which contained white asbestos yarns, 98 to 100%; copper wire, 1 to 2%; copper wire mesh, 0 to 2%; buna-S cement, 0 to 1%; graphite finish, 0 to 1%. Description: braided, square, or rectangular cross-section.

Inconel mesh core groove: 164, 163 (produced 1891 to 1983) was a packing which contained asbestos yarns, 90 to 94%; inconel mesh, 5 to 10%, buna-S and neoprene cement, 0 to 5%; viton cement, 0 to 5%; graphite finish, 0 to 2%. Description: asbestos cloth wrapped around inconel core, form to a square or rectangular form.

Folded groove: 176, 177, 128, 129 (produced 1891 to 1983) was a packing which contained asbestos cloth, 94 to 98%; buna-S cement, 0 to 4%; copper wire, 0 to 2%. Description: asbestos cloth wrapped around asbestos rope; or asbestos folded core, in square or rectangular cross-section.

165 Moulded autoclave packing (produced 1891 to 1983) was a packing which contained asbestos yarns, 90 to 94%; buna-S and neoprene rubbers, 3 to 6%; inconel wire, 1–5 to 4%. Description: variety of cross-sectional shapes. Supplied also in rings.

124 Tubular gasketing (produced 1891 to 1983) was a packing which contained asbestos cloth, 94 to 96%; brass wire, 2 to 4%; lead insert, 2 to 4%; natural and buna-S rubber cement, 2 to 4%. Description: round cross-section with hollow core.

Thermo-Pac rope: 500, 750, 1000, Blue (produced 1891 to 1983) was a packing which contained asbestos fibers, 0 to 100%; blue asbestos fiber, 0 to 98%; nylon thread, 0 to 1%. Description: soft, twisted, felted strands.

Braided rope: 566, 702, 733, 787, 788, 873, 857, 869 (produced 1891 to 1983) was a packing which contained 95 to 98% asbestos fibers. Description: braided jacket over twisted core, or jacket, with round or square cross-section.

Asbestos wick: 4180, 4197, 4198, 4199, 195, 535 (produced 1891 to 1983) was a packing which contained 95 to 99% asbestos fibers. Description: twisted strands of rovings or felted strips of asbestos, ¼" to ⅜" in size. Twisted rope: 4185, 4186, 4188, 4196, 4200 (produced 1891 to 1983) was a packing which contained 95 to 99% asbestos fibers. Description: asbestos roving twisted together, into ⅜" and up.

Gasketing tape: 122, 121, 119, 2032, 132, 131, 142, 141, Besto-Tak, 120 (produced 1891 to 1983) was a packing which contained asbestos fibers, 80 to 98%; natural and buna-S rubber cement, 0 to 4%; TFE, 0 to 5%; silicone cement, 0 to 5%; adhesive backing. Description: Strip of woven or folded asbestos material sometimes wire-inserted and impregnated with sealants; used to seal joints or closure in mechanical equipment; for applications where design does not permit use of cut or preformed gaskets.

Tadpole tapes: 123, 191, 150, 151, 152, 153, 154, 155, 156, 157, 160, 192 (produced 1891 to 1983) were packings which contained asbestos rope, 0 to 30%; asbestos cloth, 50 to 70%; brass wire, 0 to 5%; inconel mesh, 0 to 5%; inconel wire, 0 to 5%; natural and buna-S rubber, 0 to 10%; neoprene base compound, 0 to 10%; silicone rubber, 0 to 10%; aluminum finish, 0 to 2%; teflon suspensoid, 0 to 5%. Description: Tadpole packing is made by wrapping a core with asbestos cloth cover. The edges of the cloth are stitched or cemented together to form a tail structure.

Compressed asbestos sheets: style 60, 61, 70, 70C, 71, 78, 86A, 52, 76 (produced 1891 to 1983) were packings which contained white chrysotile asbestos, 60 to 80%; SBR rubber compound, 0 to 20%; neoprene compound, 0 to 20%; nitrile, buna-N compound, 0 to 20%. Description: compressed asbestos sheets, with thickness from 1/64" to ¼".

Felted asbestos sheets: 219, 83 B (produced 1891 to 1983) were packings which contained white chrysotile asbestos, 95 to 98%; inorganic binder, 2 to 5%. Description: asbestos sheets, with thicknesses from ⅛" to ½".

Flexible asbestos firewall sheets: 95, 96, 89, 88 (produced 1891 to 1983) were packings which contained asbestos fabric, 90 to 98%; brass wire, 0 to 2%, inconel, 0 to 2%, neoprene compound, 0 to 10%; fluoro elastomer compound, 0 to 10%. Description: flexible flameproof asbestos sheets, supplied in three thicknesses: 3/64", 1/16", ⅛".

Asbestos textiles (produced 1891 to 1983) were packings which contained carded asbestos fibers, 97 to 98%; cotton fiber, 0 to 2%; rayon fiber, 0 to 2%. Description: asbestos fiber twisted, woven or felted into cloth, yarn, tape, tubing, etc.; usually a small percentage of organic fiber such as cotton or rayon is woven in with the asbestos.

Molded packings: Conepac, Cumpac, Uneepac, O-ring, V-ring, Clipper seal (produced 1891 to 1983) were packings which contained asbestos fibers, 0 to 40%; elastomer compound, 0 to 40%; natural rubber compound, 0 to 40%; inorganic fillers, 0 to 20%. Description: packing precision-molded from rubber compounds, often combined with asbestos fiber, cotton duck, etc. Furnished in three basic shapes: Type "A", Type "U", and hat-shaped.

Clutch facings: HDM, STM, Spiral Wound, Gear Tooth, SWAB, UHS, Asbestos-Metallic (produced 1892 to 1972) were friction materials which contained asbestos fiber, 40 to 50%;

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friction particles, 20 to 30%; brass chips, 2 to 10%; phenol-elastomer compound, 15 to 25%. Description: Metallic facings designed for truck, car and other industrial applications. They are engineered to resist high temperatures, fade or slipping and wear on mating surfaces; has good spin strength and torque capacity.

Brake blocks: high, medium and low friction levels, Asbestos Metallic, Trailiners, Trukliners (produced 1892 to 1972) were friction materials which contained asbestos fiber, 20 to 30%; brass chips, 10 to 15%; phenol-elastomer compound, 40 to 50%. Description: molded blocks of friction element for commercial service on trucks, buses, and industrial equipment.

Brake linings: Custom Four Star, WK (produced 1892 to 1972) were friction materials which contained asbestos fiber, 45 to 60%; friction particles, 20 to 30%; phenol-elastomer compound, 30 to 40%. Description: molded materials that can be drilled, bonded, and rivetted on braking shoe for cars and trucks.

Railroad brake block and lining: Cobra (produced 1892 to 1980) were friction materials which contained asbestos fiber, 45 to 60%; friction particles, 0 to 30%, metallic chips, 0 to 10%; phenol-elastomer compound, 40 to 50%. Description: an incombustible mineral, found in nature, which separates into fibers. Sold in fiber form packaged in bags.

Transite Ring-Tite water pipes (produced 1929 to 1983) were asbestos-cement pipes which contained asbestos fibers, 15 to 25%; silica flour, 25 to 35%; portland cement, 45 to 55%. Description: asbestos-cement pipes of various diameter sizes.

Transite electrical ducts: Conduit Type II, Korduct Type II (produced 1929 to 1983) were asbestos-cement pipes which contained: asbestos fibers, 15 to 25%; silica flour, 25 to 35%, portland cement, 45 to 55%. Description: asbestos-cement pipes from 2" in diameter to 6" in diameter.

Transite telephone ducts (produced 1902 to 1983) were asbestos-cement pipes which contained: asbestos fibers, 15 to 25%; silica flour, 25 to 35%; portland cement, 45 to 55%. Description: asbestos-cement pipes from 2" in diameter to 6" in diameter.

Magnesia, 85% High Temperature Insulation: Pipe covering and block form (produced 1902 to 1970) was an insulation which contained: asbestos fibers, 12 to 18%; ground clay, 2 to 5%; basic magnesia carbonate, 85 to 90%. Description: white pipe covering and block form.

Superex M & Superex 1900: Pipe covering and block form (produced 1922 to 1972) was an insulation which contained asbestos fibers, 8 to 14%; celite, 55 to 60%; magnesia, 25 to 35%. Description: grey-white pipe covering and block forms, used for high temperature insulation.

Thermobestos: Pipe covering and block form (produced 1939 to 1973) was an insulation which contained asbestos fibers, 5 to 10%; diatomaceous earth, 45 to 50%; quicklime, 40 to 46%. Description: white pipe covering and block forms.

Asbestos Millboard: C, 101, 102, 103, 104, 105, 106, 106–B, 106–H, 219, Type A, XXX (produced 1878 to 1980) was an insulation which contained asbestos fibers, 65 to 75%; clay and lime, 15 to 25%; starch, 2 to 8%; sodium silicate, 2 to 5%. Description: sheets or board furnished in thicknesses 1/32" to 1/2".

Asbestos-Binder cements: 0352, 300, 301, 302, 304, 319, 340, 352, 364, 400, 450, 500, 678, Superex, 85% Magnesia (produced 1930 to 1973) was an insulation which contained asbestos, 10 to 100%; diatomaceous earth, 0 to 30%; clay, 0 to 30%; portland cement, 0 to 30%; mineral wool, 0 to 30%. Description: off-white to grey in color. Packaged in cans or pails.

Putty-like Sealing Compound: Albaseal, Body Sealer, Branchtite, Duxseal, Nordseal, Stove Putty, TranolSeal, Navaseal, Uniseal (produced 1957 to 1977) was an insulation which contained asbestos, 25 to 65%; butane polymer, 0 to 40%; calcium carbonate, 0 to 20%; titanium dioxide, 0 to 5%; carbon black, 0 to 1%; castor oil, 0 to 40%; magnesium oxide, 0 to 1%; chlorinated paraffin, 0 to 55%; stearic acid, 0 to 1%. Description: Pugs-packaged in fiberboard cartons.

Asbestos Pipe Blanket (produced 1898 to 1960) was an insulation which contained asbestos fiber, 95 to 98%. Description: blanket.

Asbestos Roll Fire Felt: Vitro Firefelt, Gold Line (produced 1891 to 1973) was an insulation which contained asbestos fiber, 95 to 98%. Description: felt.

Asbestos Sponge Felted (produced 1890 to 1961) was an insulation which contained asbestos fiber, 95 to 98%. Description: felt. Asbestos Turbine Blankets (produced 1951 to 1973) were insulation which contained asbestos fiber, 95 to 98%; stainless steel tufting discs, 1 to 2%; monel wire, 1 to 2%. Description: blanket.

Asbestos Weatherproof Felt: 50 Asbestos Weatherproofing, 15A Asbestos Jacket, 45A Asbestos Jacket, 7700 Coated Asbestos Jacket (produced 1931 to 1989) was an insulation which contained asbestos fiber, 95 to 98%. Description: felt and jacket.

White Surface Asbestos Jacket (produced 1931 to 1968) was an insulation which contained asbestos fiber, 95 to 98%. Description: felt.

Asbestos Felts-Corrugated: Vitrobestos, VitroFire Felt (produced 1907 to 1959) was an insulation which contained asbestos fiber, 95 to 98%. Description: corrugated felt.

Neoprene coated asbestos: Thermotape, Thermowrap (produced 1951 to 1964) was an insulation which contained asbestos fiber, 95 to 98%; neoprene, 2 to 5%. Description: neoprene coated pad and blanket.

Asbestos Firefelt, Asbestos Firetard (produced 1891 to 1962) was an insulation which contained asbestos, 95 to 98%; inorganic binder, 2 to 5%; asphalt, 0 to 10%. Description: asbestos felt.

Asbestos paper and rollboard: Armaturo, Doublex, Fibroid, Long Fiber, Microbestos, Non-Burn, Welding Paper (produced 1900 to 1965) was an insulation which contained asbestos, 40 to 99%; inorganic binder, 1 to 60%.

Fibrous adhesive (produced 1930 to 1981) was an insulation which contained asbestos fiber, 15 to 20%; sodium silicate, 80 to 85%. Description: off-white liquid, packaged in cans, pails, or drums.

Refractory cement: Firelite Furnace Cement, Heat Treating Cement (produced 1954 to 1973) was an insulation which contained asbestos fiber, 1 to 3%; silica sand, 55 to 65%; sodium silicate, 25 to 35%; clay, 4 to 6%; water, 1 to 3%. Description: liquid, packaged in cans, pails, or drums.

Asbestos Bitumen cement: Insulkote, Duplex, Asbestile, Laptite (produced 1952 to 1984) was an insulation which contained asbestos fiber, 5 to 10%; asphaltic emulsion, 0 to 30%; limestone, 0 to 20%; clay, 0 to 3%, asphalt, 0 to 45%; mineral spirits, 0 to 35%. Description: black thick liquid, packaged in cans, pails, or drums.

Asbestos calcium silicate sheet: Marimet 45, Marinite, Marinite 23, 36, 65, Metal Veneered, Veneered, Molten Metal, Imperial, Heat Treated 30 (produced 1936 to 1978) was an insulation which contained asbestos fiber, 25 to 65%; lime, 20 to 36%, diatomaceous earth, 20 to 35%; clay, 10 to 15%. Description: grey-brownish sheet.

Molded: Min-K 1301, 2000, 500. Min-Klad; Blanket: Min-K Flexible, High Temp, Standard (produced 1958 to 1974) was an insulation which contained asbestos fiber, 5 to 20%; colloidal silica, 70 to 80%; carbon black, 0 to 10%; titanium dioxide, 0 to 20%; phenol-formaldehyde resin, 0 to 6%; silicon metal powder, 0 to 20%; glass clothes, 0 to 30%; glassfiber thread, 0 to 4%.

Description: solid form for molded Min-K and flexible blankets.

Electrical insulation paper and millboard: Quinorgo, Quinorgobord, Quinterra, Quinterrabord, Quintex, Quintexbord (exact date manufacture began is unknown; manufactured up to 1975) was an insulation which contained asbestos fiber, 80 to 95%; starch, 8 to 12%; kraft pulp, 0 to 10%; nitrile rubber, 0 to 10%. Description: paper and board that has good electrical insulation properties.

Marinite veneer-aluminum: Reeferite (produced 1950 to 1974) was an insulation which contained asbestos fiber, 25 to 35%; portland cement, 40 to 45%; silica, 25 to 30%; aluminum sheet, 1 to 3%. Description: solid sheet.

Molded Insulation: Sonite (produced 1969 to 1974) was an insulation which contained asbestos fiber, 3 to 8%; colloidal silica, 85 to 95%; phenol-formaldehyde resin, 3 to 8%. Description: Molded solid used for acoustical insulation.

Molded felt sheet and molding compound: Thermomat (produced 1963 to 1970) was an insulation which contained asbestos fiber, 90 to 98%; phenol-formaldehyde resin, 2 to 5%. Description: in sheet or tape form.

Asbestos cement sheet: Marine Veneer, Pallite, Transite Core Plate, Dekeran Transite Board (produced 1938 to 1978) was an insulation which contained asbestos fiber, 5 to 50%; portland cement, 40 to 45%; silica, 25 to 30%. Description: asbestos- cement sheet or board.

Asbestos-cement: corrugated and flat transite, transite acoustical panel (produced 1930 to 1982) was a construction product which contained asbestos fiber, 25 to 35%; portland cement, 40 to 45%; silica, 25 to 30%.

Asbestos-cement Architectural Panel: Splitwood, Stonehenge, Transitop, Transifoam, Thermocore, Thermostone, Agean, Santone (produced 1907 to 1982) was a construction product which contained asbestos fiber, 25 to 50%; portland cement, 30 to 50%; silica, 10 to 15%; pigment, 2 to 10%; wood fiber 0 to 25%; asphaltic compounds, 0 to 25%; expanded polystyrene board, 0 to 10%, fesco board, 0 to 10%. Description: Gray or colored, flat or perforated panels.

Asbestos-cement extrusion products: ACE Stone, Colorsil, Corspan, Facespan (produced 1907 to 1976) were construction products which contained asbestos fiber, 25 to 50%; portland cement, 30 to 50%; silica, 10 to 15%. Description: Flat or wedge shaped window sills, stools.

Asbestos-cement sheet: Asbestoboard, Asbestos Ebony, Chemstone, Colorceran, Colorlith, Electrobestos, Flexboard (produced 1934 to 1987) was a construction product which contained asbestos fiber, 40 to 70%; portland cement, 15 to 50%; dry asphalt size, 0 to 8%; pigment, 0 to 12%. Description: Gray or colored smooth sheets or boards.

Asbestos-cement shingles: Cedargrain, Salem Colonial, Salem American, Durosbestos, Rock-Shakes, Western Shade Corrgrain, Deepgrain, Trugrain (produced 1907 to 1976) was a construction material which contained asbestos fiber, 15 to 30%; portland cement, 20 to 60%; silica, 15 to 50%; pigment, 5 to 10%. Description: roof and sidewall shingles.

Asbestos Roofing felts: Centurian, Blue Chip Felts, Asbestos finishing felts, coated asbestos base felts, ventsulation felts (produced 1907 to 1979) was a construction product which contained asbestos fiber, 50 to 70%; asphalt saturant, 30 to 50%; inorganic filler, 0 to 10%; sand, 0 to 20%. Description: asphalt-impregnated asbestos felts.

Asbestos-asphalt roofing shingles: Fire-Glass Seal-O-Matic, Fire-King Seal-O-Matic, Flexbetos, FGA, Townsend Seal-O-Matic (produced 1907 to 1979) were construction products which contained asbestos fiber, 30 to 50%; fiberglass, 20 to 40%; asphalt saturant, 30 to 50%; inorganic filler, 0 to 5%; sand, 0 to 10%. Description: asphalt-impregnated asbestos-fiberglass- reinforced shingles.

Asbestos-vinyl floor tile: Terraflex, Terraschip, Allegro, Seastone, Granada, Larado, Abode (produced 1933 to 1969) was a construction product which contained asbestos fiber, 30 to 50%; Gilsonite, 5 to 15%; Vinyl resin, 20 to 30%; plasticizer, 10 to 20%; inorganic fillers, 20 to 40%; pigments, 0 to 20%. Description: vinyl floor tiles of various colors and design backed with asbestos reinforced asphalt adhesive. Asbestos fiber available in over 60 standard and special grades. Each designation defines a distinct grade that is suitable for certain industrial applications. These grades are further defines as to textural characteristics. It is used in a variety of products such as textiles, paper, plastics, cement products, friction materials, coatings, caulkings, to name a few. Produced 1912 to 1983. Contained 80 to 100% asbestos fiber. Description: Asbestos fiber is inorganic, fibrous, strong, flexible, and nonflammable. It bulks, reinforces, adds flexibility, provides dimensional stability, and resists time, weather, and fire.

(e) *Additional information.* No additional information is available.

19. National Gypsum Company

(a) *Name and address of manufacturer.* National Gypsum Company, 4500 Lincoln Plaza, 500 North Akard Street, Dallas, TX.

(b) *Years of manufacture.* 1933 through 1972.

(c) *Types or classes of products.* Acoustical plasters, acoustical treatment, fireproofing.

(d) *Other identifying characteristics.* Rockwall Acoustic Plaster (produced 1936 to 1940) contained the following ingredients: molding plaster, 35.5% (by weight); pumice, 53.2%; asbestos, 6.4%; cork, 2.5%; retarder, 2%, fiber, 2.1%.

Standard Gold Bond Macoustic (produced 1933 to 1936) contained the following ingredients: asbestos, 39.90% (by weight); rock wool, 9.98%; slag, 24.94%; stucco, 24.94%; aluminum sulphate, 0.05%; retarder, 0.20%. This product was available in colors; the pigments used are not listed in the above formula or accounted for in calculations.

New Smooth Trowel Finish Macoustic (also called New Trowel Finish Macoustic and Trowel Finish Macoustic) had varied formulations. The formula for September 27, 1935 was: pumice, 34.94% (by weight); cork, 11.98%; asbestos, 17.97%; hydrated finish lime, 24.96%; keenes cement, 9.99%; soap bark powdered, 0.15%. The formula for October 8, 1936 was: pumice, 35.95% (by weight); cork, 11.98%; asbestos, 3.99%; hydrated finish lime, 29.96%; keenes cement, 14.98%; soap bark powdered, 0.15%; ground paper, 1.50%; wood fiber, 1.50%. The formula for March 8, 1937 was: pumice, 35.30% (by weight); cork, 11.98%; asbestos, 5.99%; hydrated finish lime, 29.96%; keenes cement, 14.98%; soap bark powdered, 0.15%; ground paper, 1.50%; wood fiber, 1.50%. The formula for October 7, 1943 was: pumice, 42.42% (by weight); cork, 14.47%; asbestos, 7.49%; hydrated finish lime, 12.47%; keenes cement, 18.71%; ground paper, 1.88%; wood fiber, 1.88%; Nacconal Hg, 0.19%. This product was available in colors; pigments used are not listed in the above formulas or accounted for in calculations.

Macoustic Plaster (produced 1942 to 1947) had varied formulations over the years. The formula for October 5, 1942 was: moulding plaster, 33.47% (by weight); pumice, 54.39%; asbestos, 10.88%; wood fiber, 0.84%; Naccanol Hg, 0.16%; retarder, 0.25%. The formula for January 23, 1946 was: moulding plaster, 29.24% (by weight); pumice, 62.38%; asbestos, 5.85%; wood fiber, 2.34%; retarder, 0.16%; Duponol Me Dry, 0.04%. The formula for February 18, 1946 was: moulding plaster, 29.43% (by weight); pumice, 60.17%; asbestos, 7.85%; wood fiber, 2.35%; retarder, 0.16%; Duponol Me Dry, 0.04%. The formula for December

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30, 1947 was: moulding plaster, 28.62% (by weight); pumice, 61.07%; asbestos, 7.63%; wood fiber, 2.29%; powdered locust gum, 0.25%; arctic syntex M beads, 0.08%; Dowicide G, 0.05%. This product was available in colors; the pigments are not listed in the above formulas or accounted for in calculations.

Perlite Macoustic (also called Perlite Acoustical Plaster and Acoustical Plaster) contained the following ingredients: stucco, 48.63% (by weight); asbestos, 12.97%; wood fiber, 3.89%; perlite, 33.72%; powdered locust gum, 0.43%; arctic syntex M beads, 0.27%; Dowicide G, 0.08%; retarder, as required. This product was available in colors; pigments used are not listed in the above formula or accounted for in calculations.

Thermacoustic (produced 1949 to 1957) had varied formulations. The formula for August 10, 1949 was: mineral wool, 80% (by weight); asbestos, 12%; starch, 8%. The formula for December 22, 1949 was: mineral wool, 79.84% (by weight); asbestos, 11.98%; starch, 7.98%; cut fungicide, 0.2%. The formula for January 24, 1951 was: mineral wool, 70.67% (by weight); asbestos, 18.90%; portland cement, 4.52%; starch, 5.75%; cut fungicide, 0.16%. The formula for January 12, 1953 was: mineral wool, 70.67% (by weight); asbestos, 18.90%; portland cement, 4.52%; starch, 4.96%; cut fungicide, 0.99%. The formula for August 23, 1956 was: mineral wool, 65.09% (by weight); asbestos, 21.16%; portland cement, 4.88%; starch, 2.85%; cut fungicide, 1.22%; diethylene glycol, 1.95%; vegetable cellulose adhesive, 2.85%.

Fire-Shield Plaster (produced 1958 to 1970) was also known as Steel Deck Fireproofing Plaster for Spray. The product had varied formulations over the years. The formula for August 27, 1958 was: perlite, 36.89% (by weight); stucco, 50.44%; asbestos, 12.61%; Monad G, 0.05%. The formula for February 4, 1959 was the same. The formula for April 11, 1960 was the same, except for the asbestos content, which increased to 24.37% (by weight), and the Monad G content, which increased to 0.06%. The formula for May 1, 1968 was the same. The formula for September 30, 1968 was: perlite, 23.74% (by weight); stucco, 50.23%; asbestos, 24.35%; bentonite, 1.52%; Monad G, 0.15%.

White Spray-On Acoustical Plaster (produced 1955 to 1956) had two formulations. The formula for October 6, 1955 was: perlite, 59.32% (by weight); bentonite, 15.21%; asbestos, 7.60%; limestone, 15.21%; titanium dioxide, 2.09%; Monad G, 0.57%. The formula for December 15, 1955 was: perlite, 59.04%; bentonite, 15.14%; asbestos, 7.57%; limestone, 15.14%; titanium dioxide, 2.08%; Monad G, 0.57%; sodium nitrite, 0.47%.

Superwhite Sprayolite (produced 1956 to 1968) had varied formulations. The formula for April 6, 1956 was: perlite, 59.04% (by weight); bentonite, 15.14%; asbestos, 7.57%; calcium carbonate, 15.14%; asbestos, 7.57%; calcium carbonate, 15.14%; titanium dioxide, 2.08%; Monad G, 0.57%; sodium nitrate, 0.47%. The formula for September 3, 1956 was: perlite, 58.87% (by weight); bentonite, 15.09%; asbestos, 7.55%; calcium carbonate, 15.09%; titanium dioxide, 2.08; Monad G, 0.57; sodium nitrite, 0.47%; boric acid, 0.28%. The formula for January 21, 1958 was the same. The formula for March 27, 1958 was: perlite, 63.20% (by weight); bentonite, 13.50%; titanium dioxide, 1.86%; Monad G, 0.51%; sodium nitrate, 0.42%; boric acid, 0.25%. The formula for July 30, 1958 was perlite, 58.37% (by weight); bentonite, 12.47%; asbestos, 9.35%; calcium carbonate, 18.71%; Monad G, 0.47%; sodium nitrite, 0.39%; boric acid, 0.23%.

Gold Bond Acoustical Plaster Type C (produced 1952 to 1956) was also called Gold Bond Acoustical Plaster High Humidity. The formula for this product was: asbestos, 6.95% (by weight); Monad G, 0.35%; white portland cement, 23.17%; pumice, 69.52%.

(e) *Additional information.* Additional information is available.

20. Owens-Corning Fiberglas Corporation

(a) *Name and address of manufacturer.* Owens-Corning Fiberglas Corporation ("OCF"), Fiberglas Tower, Toledo, OH 43659.

(b) *Years of manufacture.* 1938 through 1972.

(c) *Types or classes of products.* Asbestos paper facing for blankets of fiberglass insulation, asbestos yarn ties, high temperature insulation, insulating cement, finishing cement.

(d) *Other identifying characteristics.* Blankets of fiberglass insulation with an asbestos paper facing were produced 1938 to 1941. OCF did not manufacture the asbestos paper, but offered, as a special order option, to sew it on to blankets of its fiberglass insulation.

Asbestos yarn ties were produced 1938 to approximately 1952. OCF sold fiberglass blankets which had a metal mesh attached to the blanket. The metal mesh was affixed to the fiberglass insulation blanket by wire ties. Yarn ties were offered as a special order option for this product.

Kaylo high temperature insulation (produced 1958 to 1972) contained 15% asbestos, quicklime, silica, diatomaceous earth, clay, chromite, limestone, and sodium silicate.

Unarcoboard, later called Fyrcor, (produced 1970 to 1972) was a high temperature industrial insulation, produced in sheet form. It contained a small amount of amosite asbestos and was generally grayish/white in color.

Insulating cement (produced for 6 months in 1951) may have contained asbestos. The modulated insulation was dry mixed with refractory type materials.

Asbestos-containing finishing cement (produced 1940 to 1949) was a light density fibrous material combined with asbestos fibers and suitable binders.

(e) *Additional information.* No additional information is available.

21. Pfizer Inc.

(a) *Name and address of manufacturer.* Pfizer Inc., 235 East 42nd Street, New York, NY 10017. Predecessor: Gibsonburg Lime Products Co. (GLPC).

(b) *Years of manufacture.* January 19, 1962 through December 31, 1964 by GLPC; December 31, 1964 through approximately December 31, 1972 by Pfizer Inc.

(c) *Types or classes of products.* Kilnoise acoustical ceiling plaster.

(d) *Other identifying characteristics.* The formula for Kilnoise was 89.1% hydrated dolomitic lime, 9.9% chrysotile asbestos, 0.25% fiberglass, and 0.75% Duponol (sodium lauryl sulfate). Kilnoise was a white (on rare occasions, cream or buff) powder mixed with water, then trowelled on by hand over gypsum brown coat. After being applied to approximately ¼" thickness, Kilnoise was brush stippled and nail perforated by hand while wet, and then allowed to dry to a hard, uniformly textured surface, which could thereafter be painted if desired. Kilnoise was not a spray-on insulation material.

Rapid screening test: To a 300-mg sample of the building material add 2 to 3 drops of dilute (1 N) hydrochloric acid. If there is not an immediate evolution of gas (carbon dioxide), the sample is not Kilnoise and no further testing is necessary. (Note: If there is only a very small amount of gas evolution, the binder may contain hydrated lime that has reacted with carbon dioxide in the air to form small amounts of carbonate. Lime- based material, however, may be differentiated from dolomitic material on the basis of its greater alkalinity.)

(e) *Additional information.* Additional information is available.

22. Rhone-Poulenc Ag Company

(a) *Name and address of manufacturer.* Rhone-Poulenc Ag Company, or "Rhone-Poulenc", P.O. Box 12014, 2 T.W. Alexander Drive, Research Triangle Park, NC 27709. Predecessor: Achem Products, Inc., formerly American Chemical and Paint Company and Benjamin Foster Company (office address from 1930 to 1946: 1411 Walnut Street, Philadelphia, PA), (factory address from 1930 to 1946: 31st Street and Magazine Lane, Philadelphia, PA), (office and factory address 1946 to 1976: 4635–37 West Girard Avenue, Philadelphia 31, PA).

(b) *Years of manufacture.* Early 1930's through 1976.

(c) *Types or classes of products.* Adhesives, coatings and sealants, and mastics.

(d) *Other identifying characteristics.* The following products which contained small amounts of encapsulated asbestos were manufactured and sold by the Benjamin Foster division of Amchem Products, Inc. and/or its predecessors in interest and may have been used in the construction industry:

Adhesives: Thermas Extruded Heat Transfer Cement (designed 1955); Black Spot Adhesive (designed 1959); INSULFAS (designed 1941); Fibrous Adhesive (designed 1942, 1966, 1957); Fire Resistive Adhesive (designed 1943); Fire Resistive Insulation Adhesive (designed 1959); Metal Adhesive (designed 1959); Black Adhesive; C.C. Adhesive; Fire Resistive Linoleum Adhesive; Cement, Adhesive, Fire Retardant, Type 1; Steel Floor Plate Adhesive, Part A; Insulation Adhesive, Part B; Adhesive Sealer, Charcoal Gray, Part A; Adhesive Sealer, Part A; Adhesive Sealer, White, Part A; Mariner Adhesive; Cold Storage Adhesive; Adhesive; Foster IBM Asphalt Fibre Roof Cement; Black Cat Roof Cement (Asphalt with Asbestos); Foster IBM Red Plastic Roof Cement; Foster IBM Green Plastic Roof Cement; Foster IBM Green Fibre Roof Coating Cement.

Mastics: Sealfas Mastic (designed 1959); Sealfas Mastic, Sand (Temporary) (Low Temperature Grade) (designed 1959); Sealfas Mastic, Mediterranean, Blue (Low Temperature Alt.) (designed 1959); Sealfas Mastic, Sand, (designed 1959); Sealfas Mastic, White, (designed 1959); SEALFAS G–P–M Mastic; Cork-filled Mastic (designed 1959); C.I. Mastic; Fire Resistive Mastic; C.I. Mastic, Aluminum; Fire Resistive Mastic, Aluminum; STACKFAS Mastic (designed 1960); Safetie H. I. Mastic (designed 1955); Hilastic Mastic (designed 1958); Fire Resistive Asphalt Material (designed 1965); Safetie C. I. Mastic (designed 1964); H. I. Mastic (designed 1941); Low Temperature H. I. Mastic (designed 1962); Climastic MASTIC; Sealfas Mastic; Sealfas G–P–M Mastic; Cork-Filled Sealfas; Sealfas Mastic Trowel; Cork Filled Fire Resistive Mastic; Fire Resistive Mastic; Safetee Cork-Filled Fire Resistive Asphalt Mastic; O. C. Mastic.

Sealants: Flame Resistant High Velocity Duct Sealant (designed 1960); Asphalt Seam Sealer (designed 1959); Fire Resistive Navy Sealer (designed 1955); Heat Resistant Sealant (designed 1949); FOAMSEAL Sealant (designed 1960); Insulation Sealant (designed 1963); Contraction Joint Sealant (designed 1969); High Velocity Duct Sealer (designed 1962); Flame Resistant High Velocity Duct Sealant Cartridge Grade (designed 1968); Flashing Compound (designed 1960); Elastolar Sealant (designed 1966); Extruded Sealant Tape; Duct Sealer, Gray; Flame Resistant High Velocity Duct Sealant, Gray; Insulation-Sealer Undercoating; Flexible Joint Sealer; Flextra Sealant (Spray); Gray Caulking Compound; Fitting Filler; Foster Black Caulking Compound-Gun Grade; Joint Filler.

Coatings: Protection Kote (designed 1953); Fire Retardant Vapor Barrier (designed 1955); LAGTONE Coating (designed 1962); Tite-Fit Coating; White Insulation Coating; Lagtone (designed 1956); FOAMSEAL Coating (designed 1972); Masonry Coating; Stackfas-Hi Solids; Heat Resistant Metal Coating; Foster IBM Asphalt Fibre Roof Coating; Black Cat Roof Coating (Asphalt with Asbestos); Foster IBM Red Fibre Roof Coating.

(e) *Additional information.* Additional information is available.

23. The Sherwin-Williams Company

(a) *Name and address of manufacturer.* The Sherwin- Williams Company, 101 Prospect Ave., N.W., Cleveland, OH 44101. Purchased subsidiary: Dutch Boy Group, 101 Prospect Ave., N.W., Cleveland, OH 44101.

(b) *Years of manufacture.* Before 1972. Records were reviewed back to 1964.

(c) *Types or classes of products.* Cement block fillers.

(d) *Other identifying characteristics.* The coatings are used as a thin film and the asbestos is bound in a resin. There usually is a non-asbestos top coat applied over these coatings. The only way to distinguish these products from other manufacturers' is by purchase records.

(e) *Additional information.* No additional information is available.

24. Tremco Incorporated

(a) *Name and address of manufacturer.* Tremco Incorporated, 3735 Green Road, Beachwood, OH 44122. Also operated by Tremco: Adhesives System Division, BFGoodrich Company, 123 West Bartges, Akron, OH 44311.

(b) *Years of production.* 1930 through the present.

(c) *Types or classes of products.* Extruded Butyl Tapes (produced 1955 to the present by Tremco Incorporated); Acrylic Sealant (produced 1961 to the present by Tremco Incorporated); Polyurethane Coatings & Sealants (produced 1979 to the present by Tremco Incorporated); Butyl Sealants (produced 1960 to the present by Tremco Incorporated); Drying Sealants (produced 1950 to the present by Tremco Incorporated); Non-Drying Sealants (produced 1952 to the present by Tremco Incorporated); Oil Based Paints (produced 1930 to 1973 by Tremco Incorporated); Adhesives (produced 1960 to 1983 by Adhesives Systems Division, BFGoodrich Company).

(d) *Identifying characteristics.* The above products contain chrysotile asbestos; identifying characteristics are unavailable.

(e) *Additional information.* No additional information is available.

25. Union Carbide Corporation

(a) *Name and address of manufacturer.* Union Carbide Corporation, 39 Old Ridgebury Road, Danbury, CT 06817–0001. Predecessor: Calidria Corporation, Bakelite Corporation.

(b) *Years of manufacture.* 1939 through approximately 1974.

(c) *Types or classes of products.* Raw chrysotile asbestos, phenolic resin material.

(d) *Other identifying characteristics.* Calidria (initially sold as Union Carbide Asbestos), (produced 1963 to June 30, 1985), consisted entirely of raw chrysotile asbestos in a unique short fiber form. The chemical formula was $Mg_6(OH)_8Si_4O_{10}$. Union Carbide produced four grades of Calidria asbestos: standard, super standard, high purity, and resin grade; the different grades reflect varying degrees of purity of content. Union Carbide packaged some of the Calidria products which were sold by domestic distributors under the following trade names: Arcovis, Imcobest, Oilbestos, Super Visbestos, Telvis, Univis, Visbestos, and Visquick. Calidria asbestos consisted of raw chrysotile asbestos in a unique short fiber form and can thus be

distinguished from other chrysotile asbestos by its short fiber length. Calidria asbestos was sold in fibrous and pelletized forms. In appearance, Calidria was grey (pelletized) or white (fibrous) in color and powdery in substance.

Bakelite (produced from approximately 1939 to mid 1974), was manufactured at Union Carbide's Bound Brook Facility, 1 River Road, Bound Brook, NJ 08805. Union Carbide affiliates also manufactured asbestos containing Bakelite in Monterey and Mexico City, Mexico, and in Belleville, Ontario, Canada, however, none of these facilities sold Bakelite to customers in the United States. Prior to Union Carbide, from 1931 until 1939, Bakelite was manufactured by the Bakelite Corporation at the same Bound Brook facility as Union Carbide's Bakelite plant. The Bakelite Corporation and facility at Bound Brook was formed and created from a merger of the Bakelite Company, originally located at Bloomfield, IN; the General Plastics Company, of Perth Amboy, NJ; and the Redmonal Company, of Chicago, IL. Bakelite consisted of a phenolic resin material, sold to customers in a coarse granular (sand-like) form. Bakelite's purchasers consisted of molders who used the intermediate products sold to additional manufacturers. Bakelite customers would heat and melt the powder to create a molten resin (to which some purchasers would add other substances) and then mold, harden and cool the resin into the finished product. Most Bakelite did not contain asbestos. At its peak, asbestos containing Bakelite comprised 40% of the Bakelite produced by Union Carbide. The great bulk of non-asbestos Bakelite contained wood flour as a filler in lieu of asbestos. Asbestos containing Bakelite fell into three classes of Bakelite, which differed on the basis of the quantity and type of asbestos: General Purpose Bakelite, Heat Resistant Bakelite, and High Impact Heat Resistant.

General Purpose Bakelite contained less than 12% asbestos content. The asbestos consisted of short fiber usually purchased from the Carey-Canada Corporation. General Purpose Bakelite was marketed for use in certain electrical devices such as electrical panels, electrical plug receptacles, and electrical switches. General Purpose Bakelite consisted of the following Bakelite product designations (which differed with respect to either resin components or asbestos proportions): BMMA 5138, BMRS 5314, BMMA 5440, BMMA 5330, BMMC 5333, BMMS 5333, BMRS 5440, BMMA 5441.

Heat Resistant Bakelite contained 25 to 30% asbestos content (with one exception noted below). The asbestos consisted of short fiber asbestos usually purchased from the Carey Canada Corporation. Heat Resistant Bakelite was marketed for high voltage electrical switches or switch boxes and consisted of the following product designations: BMMC 2035; BMMA 5303; BMMD 5303; BMRS 2035; BMRS 5303; BMRC 2035; BMMA 5353 (only 10% asbestos).

High Impact Heat Resistant (only manufactured until the mid 1960's) consisted of 50% asbestos. The asbestos consisted of long fiber African Blue (trade name) Asbestos. High Impact Heat Resistant was marketed for use in or with very high voltage industrial electrical switch gear and consisted of the following product designation: BMMZ 5250.

As indicated above, Bakelite was sold in a granular form. Bakelite was brown; however, a pigment was usually added to give it a black appearance. Some of the long-fiber asbestos had a green hue to it. Asbestos containing Bakelite can be distinguished from Bakelite or other phenolics which contained wood flour as a filler by appearance or weight: the asbestos-containing Bakelite had a smoother appearance and a greater specific gravity (by a factor of approximately 1.3). Asbestos containing Bakelite can only be distinguished from phenolics with asbestos or other, non-asbestos, mineral filler (as opposed to wood flour) by an ash chemical analysis.

Any asbestos contained in general purpose Bakelite or Heat Resistant Bakelite was fully encapsulated by the resin in the Bakelite sold by Union Carbide. Any asbestos in High Impact Heat Resistant Bakelite would be encapsulated when the resin was molded, hardened and cooled into the finished product by the purchasers of Bakelite. Therefore, any asbestos in Bakelite found in buildings is encapsulated and thus not respirable.

(e) *Additional information.* No additional information is available.

26. Uniroyal Holdings, Inc., Textile Division

(a) *Name and address of manufacturer.* Uniroyal Holdings, Inc., Textile Division, 455 Chase Parkway, Waterbury, CT 06708-3392. Formerly named U.S. Rubber Company.

(b) *Years of manufacture.* 1941 through 1976.

(c) *Types or classes of products.* Asbestos cloth.

(d) *Other identifying characteristics.* From about 1941 until 1976, Uniroyal's Textile Division made and marketed asbestos-containing cloth containing a significant quantity by weight and volume of chrysotile asbestos fiber. Uniroyal sold this cloth for a great variety of uses, and did not market it specifically as an insulation material for use in buildings. The chrysotile fibers in the cloth were combined with cotton or other natural or synthetic fibers, and the woven cloth was often coated with resin to achieve a smooth and uniform finish. Uniroyal's asbestos cloth, generally light in weight as compared to other manufacturers' asbestos-containing cloth, was graded depending on the percentage of asbestos in the finished product. Generally speaking, the grades were Underwriters, AA and AAA; the range of gauges .023 to .078; and the weight in pounds per square yards ranged from .75 to 2.5, with the predominant sales in the lighter weight fabric.

(e) *Additional information.* No additional information is available.

27. United States Gypsum Company

(a) *Name and address of manufacturer.* United States Gypsum Company, 101 South Wacker Drive, Chicago, IL 60606. United States Gypsum Company in NJ was incorporated December 27, 1901 and dissolved August 23, 1920. Avery Gypsum Company in NJ was incorporated August 23, 1920 and dissolved October 14, 1927. United States Gypsum Company in IL was incorporated August 12, 1920 and dissolved December 24, 1936. United States Gypsum Company in DE was incorporated December 24, 1936 and dissolved in August 1952. United States Gypsum Company was incorporated August 1952 and dissolved February 4, 1966. USG Corporation in DE was incorporated February 2, 1966 and dissolved July 1, 1966. The United States Gypsum Company in DE was incorporated August 1, 1966.

(b) *Years of manufacture.* 1930 through 1977.

(c) *Types or classes of products.* Ceiling tile, fireproofing plaster, thermal insulation, rigid block insulation, texture, simulated acoustical ceiling texture, paper and felt, and pipe covering.

(d) *Other identifying characteristics.* Acoustone 120 ceiling tile was produced 1968 to 1976 in Gypsum, OH.

Shadowline ceiling tile was produced 1968 to 1976 in Walworth, MI.

Acoustone 180 ceiling tile was produced 1966 to 1975 in Gypsum, OH.

Red Top Firecode Plaster (D) fireproofing plaster was produced 1962 to 1963 in Boston, MA; 1962 to 1963 in

Detroit, MI; 1959 to 1964 in East Chicago, IN; 1960 to 1964 in Empire, NY; 1959 to 1964 in Fort Dodge, IA; 1961 to 1964 in Gypsum, OH; 1959 to 1964 in New Brighton, NY; 1962 to 1963 in Oakfield, NY; 1962 to 1963 in Philadelphia, PA; 1961 to 1963 in Sperry, IA; 1962 to 1963 in Stony Point, NY; 1964 only in Hagersville, CAN.

Red Top Firecode "V" Plaster fireproofing plaster was produced 1965 to 1969 in Baltimore, MD; 1962 to 1963 in Boston, MA; 1962 to 1963 in Detroit, MI; 1962 to 1969 in East Chicago, IN; 1962 to 1969 in Empire, NY; 1964 to 1965 in Fort Dodge, IA; 1962 to 1963 in Galena Park, TX; 1962 to 1968 in Gypsum, OH; 1963 to 1967 in Midland, CA; 1962 to 1969 in New Brighton, NY; 1962 to 1963 in Oakfield, NY; 1962 to 1963 in Philadelphia, PA; 1967 to 1968 in Plaster City, CA; 1962 to 1963 in Stony Point, NY; 1963 to 1969 in Sweetwater, TX; 1963 to 1969 in Hagersville, CAN.

Spraydon Standard A fireproofing plaster was produced 1965 to 1971 in Plainfield, NJ; 1965 to 1971 in Torrance, CA.

Spraydon Standard G fireproofing plaster was produced 1968 to 1970 in Plainfield, NJ; 1968 to 1970 in Torrance, CA. Spraydon

Powercote thermal insulation was produced 1969 to 1971 in Plainfield, NJ; Torrance, CA; and Corsicana, TX.

K–Fac Industrial Insulating Block rigid block insulation was produced 1943 to 1950 in East Chicago, IN.

K–Fac 19 rigid block insulation was produced 1970 to 1973 in Greenville, MS.

Pac-Tex Texture Paint was produced 1962 to 1963 in Dallas, TX; 1943 to 1970 in South Gate, CA; 1949 to 1962 in Sweetwater, TX.

A–B Tex Texture Paint was produced 1959 to 1973 in Chamblee, GA; 1935 to 1949 in Gypsum, OH; 1954 to 1973 in Gypsum, OH; 1973 only in Midway, IL; 1935 to 1949 in New Brighton, NY; 1954 to 1968 in New Brighton, NY; 1943 to 1944 in South Gate, CA; 1954 to 1974 in South Gate, CA; 1948 to 1950 in Sweetwater, TX; 1962 to 1963 in Hagersville, CAN; 1973 only in Hagersville, CAN.

Texture Paint was produced 1959 to 1973 in Chamblee, GA; 1964 to 1973 in Dallas, TX; 1930 to 1973 in Gypsum, OH; 1937 to 1973 in New Brighton, NY; 1948 to 1970 in South Gate, CA; 1948 to 1964 in Sweetwater, TX.

Texolite Dry Fill texture was produced 1959 to 1961 in New Brighton, NY.

Texolite Drywall Surfacer, Aggregated, (renamed Drywall Surfacer, Texture XII in 1965) was produced 1963 to 1965 in Dallas, TX; 1961 to 1977 in Gypsum, OH; 1970 to 1972 in Midway, IL; 1963 to 1965 in New Brighton, NY; 1963 to 1965 in South Gate, CA.

Spray Texture Paint (or Finish) was produced 1961 to 1976 in Chamblee, GA; 1961 to 1976 in Dallas, TX; 1960 to 1976 in Gypsum, OH; 1970 to 1976 in Midway, IL; 1966 to 1968 in New Brighton, NY; 1963 to 1973 in South Gate, CA; 1959 to 1961 in Sweetwater, TX.

Multi-purpose Texture Finish was produced 1964 to 1976 in Chamblee, GA; 1963 to 1976 in Dallas, TX; 1965 to 1976 in Gypsum, OH; 1971 to 1976 in Midway, IL; 1965 to 1966 in New Brighton, NY. Improved Spray Texture B–8 was produced 1963 to 1973 in South Gate, CA.

Sanded, Colored, Texture Paint was produced 1952 to 1953 in New Brighton, NY; 1952 to 1955 in Sweetwater, TX.

Concrete Ceiling Texture was produced 1970 to 1973 in South Gate, CA. Textone Texture Finish was produced 1959 to 1972 in Chamblee, GA; 1962 to 1972 in Dallas, TX; 1928 to 1975 in Gypsum, OH; 1937 to 1972 in New Brighton, NY; 1944 to 1972 in South Gate, CA; 1949 to 1972 in Sweetwater, TX; 1965 to 1977 in Hagersville, CAN.

Texolite Block Filler was produced 1961 to 1966 in Chamblee, GA; 1966 to an unknown date in Dallas, TX; 1958 to an unknown date in Gypsum, OH; 1958 to an unknown date in New Brighton, NY; 1959 to 1966 in South Gate, CA; 1959 to 1966 in Sweetwater, TX.

Sheetrock Smoothcoat texture was produced 1966 to 1974 in Dallas, TX; 1965 to 1974 in Gypsum, OH; 1971 to 1974 in Midway, IL.

Sheetrock Radiant Heat Simulated Acoustical Texture ceiling texture was produced 1970 to 1972 in South Gate, CA.

Special Texture Paint was produced from 1963 to 1964 to Dallas, TX; 1971 to 1972 in Dallas, TX; 1955 only in New Brighton, NY.

Texture XII, Super Vinyl was produced 1970 to 1976 in Gypsum, OH; 1970 to 1976 in Midway, IL.

Aggregated Spray Finish, White texture was produced 1967 to 1968 in Dallas, TX; 1964 to 1968 in Gypsum, OH; 1971 only in Midway, IL.

Smooth Hard Finish texture was produced 1968 to 1969 in South Gate, CA.

Superhard Spray Texture Finish was produced 1963 to 1969 in South Gate, CA.

Exterior Texture Wallboard Finish was produced 1971 to 1973 in Dallas, TX; 1971 to 1972 in South Gate, GA.

Simulated Acoustical Spray Texture/Finish was produced 1964 only in Chamblee, GA; 1963 to 1964 in Dallas, TX; 1959 to 1964 in Gypsum, OH; 1961 to 1964 in New Brighton, NY; 1959 to 1964 in South Gate, CA; 1961 to 1962 in Sweetwater, TX.

"QT" Simulated Acoustical Spray Texture was produced 1963 to 1973 in South Gate, CA.

Imperial "QT" (Spray) Texture Finish-Regular was produced 1964 to 1965 in Dallas, TX; 1967 to 1976 in Dallas, TX; 1964 to 1968 in New Brighton, NY; 1966 only in South Gate, CA; 1968 to 1973 in South Gate, CA.

Imperial "QT (Spray) Texture Finish-LC was produced 1965 to 1968 in Dallas, TX; 1965 to 1968 in Gypsum, OH; 1965 to 1966 in New Brighton, NY; 1965 to 1966 in Hagersville, CAN; 1966 only in Montreal, CAN.

Imperial "QT" (Spray) Texture Finish-NC–LC was produced 1968 to 1976 in Chamblee, GA; 1966 to 1974 in Dallas, TX; 1966 to 1976 in Gypsum, OH; 1966 to 1975 in New Brighton, NY.

Imperial "QT" (Spray) Texture Finish-Extra Hard Fine was produced 1964 to 1974 in Chamblee, GA; 1964 to 1971 in Dallas, TX; 1964 to 1974 in Gypsum, OH; 1964 to 1973 in New Brighton, NY.

Imperial "QT" (Spray) Texture Finish-Vermiculite, Coarse and Regular was produced 1967 to 1976 in Chamblee, GA; 1966 to 1976 in Dallas, TX; 1968 to 1976 in Gypsum, OH; 1970 to 1976 in Midway, IL; 1968 to 1976 in New Brighton.

Imperial "QT" (Spray) Texture Finish-Polystyrene, Coarse and Regular was produced 1967 to 1976 in Dallas, TX.

Imperial "QT" (Spray) Texture Finish-NC4 was produced 1968 to 1972 in Chamblee, GA; 1968 to 1971 in Dallas, TX; 1967 to 1972 in Gypsum, OH; 1970 to 1972 in Midway, IL; 1967 to 1972 in New Brighton, NY.

Ready-Mixed Imperial "QT" Spray Finish was produced 1966 to 1967 in New Brighton, NY.

Asbestos Paper was produced 1938 to 1939 in Jersey City, NJ.

Asbestos Felts and Coverings were produced 1936 to 1939 in Jersey City, NJ.

Commercial Asbestos Paper was produced 1936 to 1939 in Jersey City, NJ.

Asbestos Corrugated Paper-Corrugated Wool Felt was produced 1936 to 1939 in Jersey City, NJ.

Asbestos Air Cell Pipe Covering was produced 1936 to 1939 in Jersey City, NJ.

Corrugated Wool Felt Air Cell Covering was produced 1936 to 1939 in Jersey City, NJ. Wool Felt Pipe Covering was produced 1936 to 1939 in Jersey City, NJ.

Laminated Asbestos & Sponge Pipe Covering was produced 1936 to 1939 in Jersey City, NJ.

Hair & Wool Felt Pipe Covering-Frost Proof was produced 1936 to 1939 in Jersey City, NJ.

Anti-Sweat Pipe Covering was produced 1936 to 1939 in Jersey City, NJ.

Range Boiler Jackets pipe covering was produced 1936 to 1939 in Jersey City, NJ.

Asbestos Air Cell Board pipe covering was produced 1936 to 1938 in Jersey City, NJ.

Laminated Sponge & Asbestos Board pipe covering was produced 1936 to 1939 in Jersey City, NJ.

Asbestos Cement pipe covering was produced 1936 to 1939 in Jersey City, NJ.

Pyrobestos Pipe Covering Board & Stack Lining was produced 1936 to 1939 in Jersey City, NJ.

(e) *Additional information.* Additional information is available.

28. W.R. Grace & Company

(a) *Name and address of manufacturer.* W. R. Grace & Company, Grace Plaza, 1114 Avenue of the Americas, New York, NY 10036–7794.

(b) *Years of manufacture.* Approximately 1938 through 1978; exact years of production for many of the products are unknown.

(c) *Types or classes of products.* Surfacing material, concrete leveler or block filler, window glazing compound or paste, elastomeric caulking and sealing compounds, extrudable chalking compound, non-staining oil base caulking compound, waterproofing compounds, bonding agent, epoxy based adhesive, epoxy resin floor surfacing, slip resistant coating, exterior masonry coating, acrylic sealant, and waterproofing sealant.

(d) *Other identifying characteristics.* Zonolite Acoustical Plaster (produced 1945 to approximately 1972) was a surfacing material which contained approximately 15 to 20% 7M chrysotile asbestos by weight; it did not contain commercially added amphibole asbestos or commercially added glass fibers, mineral wool or rock wool; it contained perlite or vermiculite, but not both; it was spray-applied or trowelled on wet; it was light beige or tan in color. Zonolite Acoustical Plaster may also have been marketed as Zonolite Acoustical Plastic, Vermiculite Acoustical Plaster, and Vermiculite Acoustical Plastic; it may have been manufactured in the 1950's with 6D or 7D chrysotile asbestos.

Zono-Coustic (produced 1960 to 1973) was a surfacing material which contained approximately 10 to 14% 7M chrysotile asbestos by weight; it was an acoustical base coat for walls and ceilings; it did not contain commercially added amphibole asbestos or commercially added glass fibers, mineral wool or rock wool; it contained perlite or vermiculite, but not both; it was spray-applied or trowelled on wet; it was off-white in color. Zono-Coustic may also have been marketed as Zono-Coustic 1, Zono-Coustic 2, Zono-Coustic 3, Zono-Coustic Type Z, and Zono-Coustic (MK-2).

Zonolite Finish Coat (produced 1950 to approximately 1973) was a surfacing material which contained approximately 11 to 14% 7M chrysotile asbestos by weight; was a decorative textured finish for ceilings; it did not contain commercially added amphibole asbestos or commercially added glass fibers, mineral wool or rock wool; it contained perlite or vermiculite, but not both; it was spray-applied wet; it was white in color. Zonolite Finish Coat may also have been marketed as Zonolite Finish coat, Decorator's White, Zonolite Acoustical Finish, and Zonolite Finish Coat Decorator's White Extra Hard.

Zonolite Spra-Tex (produced approximately 1955 to 1972) was a surfacing material which contained approximately 29 to 36% chrysotile asbestos by weight; it was a decorative textured finish for ceilings; it did not contain commercially added amphibole asbestos or commercially added glass fibers, mineral wool or rock wool; it contained perlite or vermiculite, but not both; it was spray-applied wet; it was white in color. Zonolite Spra-Tex may also have been marketed as Zonolite Spra-Tex EH.

Econo-White 70 (produced 1956 to approximately 1970) was a surfacing material which contained approximately 13 to 17% 7M chrysotile asbestos by weight; it was an acoustical plaster for walls and ceilings; it did not contain commercially added amphibole asbestos or commercially added glass fibers, mineral wool or rock wool; it contained perlite or vermiculite, but not both; it was spray-applied or trowelled on wet; it was white in color. Econo-White 70 may also have been marketed as Econo-White Acoustical Texture or Econo-White Super White.

Z–Tex (produced approximately 1958 to 1962) was a surfacing material which contained approximately 13 to 17% 7M chrysotile asbestos by weight; it was a spray acoustical texture product; it did not contain commercially added amphibole asbestos or commercially added glass fibers, mineral wool or rock wool; it contained perlite or vermiculite, but not both; it was spray-applied wet; it was white or beige in color. Z–Tex may also have been marketed as EZ–Tex.

Zonolite Board of Education Texture (produced approximately 1962 or 1963) was a surfacing material which contained approximately 9 to 12% 7M chrysotile asbestos by weight; it was a textured acoustical plaster coat; it did not contain commercially added amphibole asbestos or commercially added glass fibers, mineral wool or rock wool; it contained perlite or vermiculite, but not both; it was spray-applied or trowelled on wet; it was white in color. Zonolite Board of Education Texture was manufactured for one job site only.

Zonolite Mono-Kote MK–1 (produced 1958 to approximately 1962) was a surfacing material which contained approximately 10 to 13% 7M chrysotile asbestos by weight; it was a cementitious fireproofing; it did not contain commercially added amphibole asbestos or commercially added glass fibers, mineral wool or rock wool; it contained perlite or vermiculite, but not both; it was spray-applied or trowelled on wet; it was light beige in color. Zonolite Mono-Kote MK–1 was also sold under the generic name Mono-Kote.

Zonolite Spra-Insulation (produced approximately 1959 to 1973) was a surfacing material which contained approximately 10 to 13% 7M chrysotile asbestos by weight; it was a cementitious insulation and acoustical material for application to metal building interiors; it did not contain commercially added glass fibers, mineral wool or rock wool; it contained perlite or vermiculite, but not both; it was spray-applied or trowelled on wet; it was dark beige in color.

Zonolite Mono-Kote MK–3 (produced 1959 to 1973) was a surfacing material which contained approximately 10 to 14% 7M or 7R chrysotile asbestos by weight; it was cementitious fireproofing, it did not contain commercially added amphibole asbestos or commercially added glass fibers, mineral wool or rock wool; it contained perlite or vermiculite, but not both; it was spray-applied or trowelled on wet; it was light beige in color. Zonolite Mono-Kote MK–3 was also sold under the generic name Mono-Kote.

Zonolite High Temperature Cement (produced approximately 1938 to 1970) was a surfacing material which contained approximately 15 to 19% 7D or 6D–20 chrysotile asbestos by weight; it was a cementitious insulation and fireproofing for high temperature applications; it did not contain commercially added amphibole asbestos or commercially added glass fibers, mineral wool or rock wool; contained perlite or vermiculite, but not both; it was trowelled on wet; it was light beige in color. Zonolite High Temperature Cement was also marketed as Hi Temp Insulating Cement, Zonolite Hi-Temperature Cement and Zonolite High Temperature Insulating Cement; it was

marketed primarily for industrial applications.

Ari-Zonolite Texture (produced approximately 1961 to 1964) was a surfacing material which contained approximately 10% chrysotile asbestos by weight; it was a cementitious sprayed texture product; it was used to cover grooves in a pre-wired ceiling board; it did not contain commercially added amphibole asbestos; it was spray-applied wet; it was off-white in color.

Perltex Super-40 Perlite (exact date manufacture began is unknown; manufactured up to approximately 1973) was a surfacing material which contained approximately 6 to 8% chrysotile asbestos by weight; it was a decorative textured coating; it did not contain commercially added amphibole asbestos or commercially added glass fibers, mineral wool or rock wool; it contained perlite or vermiculite, but not both; it was spray-applied wet; it was white or beige in color; it may also have been marketed as Perltex Perlite or Super-40 Perlite.

Perltex Super-40 SAV (exact date manufacture began is unknown; up to approximately 1973) was a surfacing material which contained approximately 5 to 7% chrysotile asbestos by weight; it was a decorative textured coating; it did not contain commercially added amphibole asbestos or commercially added glass fibers, mineral wool, or rock wool; it contained perlite or vermiculite, but not both; it was spray-applied wet; it was white or beige in color. Perltex Super-40 SAV may also have been marketed as Perltex SAV or Super-40 SAV.

Perltex Super-40 Polycoarse (exact date manufacture began is unknown; manufactured up to approximately 1973) was a surfacing material which contained approximately 4 to 6% chrysotile asbestos by weight; it was a spray texture coating; it did not contain commercially added amphibole asbestos or commercially added glass fibers, mineral wool or rock wool; it was spray-applied wet; it was white or beige in color. Perltex Super-40 Polycoarse may also have been marketed as Perltex Polycoarse, Perltex Super-40 Poly or Perltex Poly.

Perltex Super-40 Fog (exact date manufacture began is unknown; manufactured up to approximately 1973) was a surfacing material which contained approximately 4 to 7% chrysotile asbestos by weight; it was used as a base coat under paint or decorative textured finish products; it did not contain commercially added amphibole asbestos or commercially added glass fibers, mineral wool or rock wool; it was spray-applied wet; it was white or beige in color. Perltex Super-40 Fog may also have been marketed as Perltex Fog.

Perltex Spray Surfacer (exact date manufacture began is unknown; manufactured up to approximately 1973) was a surfacing material which contained approximately 6 to 11% 7TF1 or 7RF9 chrysotile asbestos by weight; it was a spray texture coating applied over board, concrete, metal or plaster; it did not contain commercially added amphibole asbestos or commercially added glass fibers, mineral wool or rock wool; it contained perlite or vermiculite, but not both; it was spray-applied wet; it was white in color. Perltex Spray Surfacer may also have been marketed as PlasterTex, Perltex Super-40 Spray Surfacer, Perltex Super-40, and Gun Coat Spray Surfacer.

Hi-sorb Acoustical Plaster (exact date manufacture began is unknown; manufactured up to approximately 1973) was a surfacing material which contained approximately 8 to 10% 7M chrysotile asbestos by weight; it was an acoustical textured ceiling plaster; it was to be applied over gypsum plaster, portland cement, and lime plaster base coats, and directly to monolithic concrete surfaces; it did not contain commercially added amphibole asbestos or commercially added glass fibers, mineral wool or rock wool; it was spray-applied or trowelled on wet; it was oyster white or white in color. It was also sold as Hi-Sorb Acoustical Plaster Oyster White and XX White.

Spra-Wyt (produced 1954 to approximately 1973) was a surfacing material which contained approximately 16 to 20% 7M chrysotile asbestos by weight; it was an acoustical finish coat; it did not contain commercially added amphibole asbestos or commercially added glass fibers, mineral wool or rock wool; it contained perlite or vermiculite, but not both; it was spray-applied wet. Spra-Wyt may also have been marketed as Spra-Wyt Finish, Spra-Whyt Acoustical or Spra-Wyt Acoustical Finish.

Versakote (exact date manufacture began is unknown; manufactured up to approximately 1973) was a surfacing material which contained approximately 5 to 7% chrysotile asbestos by weight; it was a decorative exterior finish; it did not contain commercially added amphibole asbestos or commercially added glass fibers, mineral wool or rock wool; it contained perlite or vermiculite, but not both; it was spray-applied wet; it was white or beige in color. Versakote may also have been marketed as Perltex Versakote or Prep Coat #4.

Prep Coat #3 (exact date manufacture began is unknown; manufactured up to approximately 1972) was a surfacing material which contained approximately 4 to 5% chrysotile asbestos by weight; it was a decorative exterior finish; it did not contain commercially added amphibole asbestos or commercially added glass fibers, mineral wool or rock wool; it was spray-applied wet. Prep Coat #3 may also have been marketed as Perltex Prep Coat #3.

Perlcoustic (years of production unknown) was a surfacing material which contained approximately 15 to 17% 7M chrysotile asbestos by weight; it was an acoustical finish coat; it did not contain commercially added amphibole asbestos or commercially added glass fibers, mineral wool or rock wool; it contained perlite or vermiculite, but not both; it was spray-applied wet.

Concrete Leveler or Block Filler (produced late 1960's to approximately 1973) was a cement-like product used to patch or fill concrete and brick.

Horn Glazing Compound (produced 1966 to 1970) was a commercial window glazing compound or paste; it was off-white in color. Hornflex Sealants (produced 1964 to 1975) were elastomeric caulking and sealing compounds; they were a gray heavy paste and a brown viscous liquid.

Hornseal (produced 1969 to 1975) was an extrudable chalking compound; it was sold in tubes or pails; it was available in various colors, including gray, black, white aluminum, and limestone.

Vulcatex Professional Grade (produced approximately 1972 to 1977) was a polymerized, non-staining oil base caulking compound; it was gray or white in color.

Waterproofing Compounds (produced 1964 to 1977) were sold in the form of a black mastic.

Epoxy Liquid Bonding Agent (produced approximately 1969 to 1975) was a two-component bonding agent; it contained two viscous brown-colored liquids.

Epoxy Base Adhesive (produced approximately 1964 to 1966) was an epoxy based adhesive; it contained two viscous brown colored liquids.

Epoxy Resin Floor Surfacing (produced approximately 1966 to 1971) was an epoxy resin bond coat and seal coat for use on floors; it was applied in two stages; it contained a two-component bond coat and a two-component seal coat; it was available in a wide range of colors including: platinum, cashmere, iroquois, cedar, iron gray, feather green, sand, palmetto, meadowlark, lagoon, beech, graystone, rattan, medium gray, and white.

Slip Resistant Coating (produced 1966 to 1978) was a viscous liquid slip resistant coating; it was available in gray, green, red, and yellow.

Exterior Masonry Coating (produced approximately 1966 to 1972) was a heavy-bodied liquid exterior masonry coating; it was available in a wide range of colors, including: white, sandstone, tea rose, birch gray, ash gray, shadow green, cedar, baltic, dusty rose, sherwood green, and dove gray.

Acrylic Sealant (produced 1965 to approximately 1969) was a one-component acrylic sealant used for caulking, glazing and sealing joints not subject to abrasion or emersion; it was available in black, white, off-white, limestone, natural gray, and aluminum gray.

Waterproofing Sealant (produced 1969 to 1975) was a sealant accessory product for waterproofing; it was sold as a black extrudable paste.

(e) *Additional information.* No additional information is available.

III. Obtaining Additional Information

In addition to the summaries in unit II of this notice, some submitters provided EPA with such information as product catalogs, product formulas, protocols for samples, and photographs. The availability of additional information about each submission is indicated in paragraph (e) at the end of each summary in Unit II. To assist individuals in ordering any additional information, the following table has been prepared to show the total number of pages in each submission:

NUMBER OF PAGES IN EACH AIA SUBMISSION

Manufacturer	Total pages	Summary pages	Additional information pages
American Biltrite Inc., Amtico Division	264	3	261
Armstrong World Industries, Inc.	562	9	553
The BFGoodrich Company	1	1	0
The Celotex Corporation	4	4	0
Congoleum Corporation	5,594	2	5,592
Eagle-Picher Industries	5	5	0
Fibreboard Corporation	16	11	5
Flintkote Company	4	4	0
GAF Building Materials	571	35	536
General Refractories Company	3	3	0
Georgia-Pacific Corporation	4	4	0
H. K. Porter Company, Inc.	1	1	0
Kaiser Cement	3	3	0
Kaiser Gypsum Company, Inc.	5	5	0
Keene Corporation	7	7	0
Kentile Floors, Inc.	38	1	37
Mannington Mills, Inc.	1,245	2	1,243
Manville Corporation	14	14	0
National Gypsum Company	388	2	386
The Owens/Corning Fiberglas Corporation	3	3	0
Pfizer, Inc.	8	2	6
Rhone-Poulenc Ag Company	190	3	187
The Sherwin Williams Corporation	1	1	0
Tremco, Inc., Adhesives System Division	4	4	0
Union Carbide Corporation	5	5	0
Uniroyal Holding, Inc.	1	1	0
U.S. Gypsum Company	1,090	10	1,080
W. R. Grace & Company	37	37	0
Total	10,068	182	9,886

Copies of the information described above and any additional information submitted to EPA after November 17, 1989, are available for a fee of fifteen cents per page to cover reproduction costs. To obtain additional information, interested individuals should contact the following: ATLIS Federal Services, Inc., EPA/AIA Program, 6011 Executive Blvd., Rockville, MD 20852, (301) 816-0873.

Dated: February 3, 1990.

Linda J. Fisher,

Assistant Administrator for Pesticides and Toxic Substances.

[FR Doc. 90-3370 Filed 2-12-90; 8:45 am]

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CHECKLIST FOR WATER MANAGEMENT AT ORDERED DEMOLITIONS

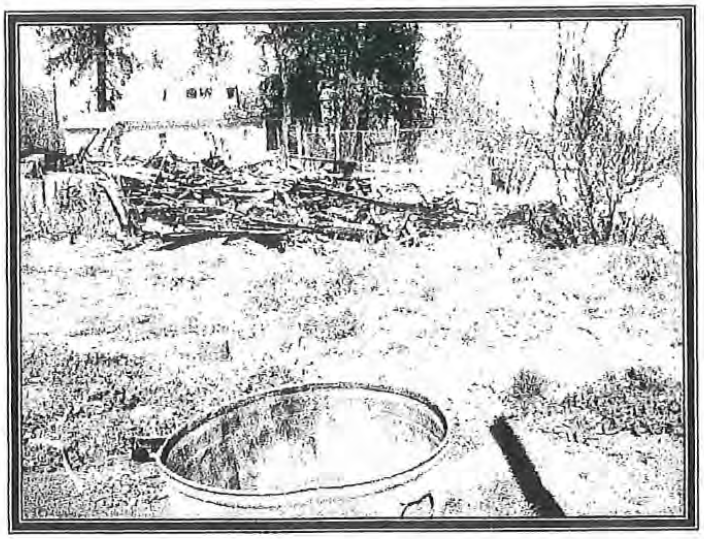
	YES/NO	DATE	If no, explain:
Has a certified asbestos inspector provided an inspection report of the building(s) to be demolished?			
Has a Work Plan been developed for demolition of building(s)?			
Does the Work Plan comply with all applicable local ordinances, and State and Federal rules?			
Does the Work Plan include planning for contingencies, such as weather events, interruption in electric service, water, or other utilities?			
Does the Work Plan incorporate EMPs for the surface and soil types present at the demolition?			
Do all personnel assignments reflect the appropriate level of expertise for the work expected to be performed, per the work plan?			
Are the training requirements for all personnel up to date?			
Have regular meetings been scheduled for effective communication?			
Have weather forecasts been checked for possible weather events?			
Have satellite imagery, geospatial maps and the site terrain been reviewed by the project manager to check the expected direction of water flow against the locations of placed berms and barriers?			
Have the surfaces and surface soils been evaluated at the work site?			
Have sufficient resources been allocated for the demolition, cleanup, and remediation work?			
Have all water management tools and equipment been ordered and are these expected to be delivered to the work site in time to prepare the site for the planned demolition work?			

A-3. Example Work Plans

1- Spokane WA work plan May 2013

CLEAN AIR AGENCY

ALTERNATIVE MEANS OF COMPLIANCE
FOR
FIRE DAMAGED STRUCTURE
524 SOUTH AUDUBON STREET
SPOKANE, WASHINGTON



Prepared For:

Larson's Demolition, Inc.
903 East Pacific Avenue
Spokane, WA 99202
Telephone (509) 535-7944

Prepared by:

Richard A. Johnson, CIH
ABIH/CIH Certificate: 5956-CP, Expiration: June 1st, 2015;
AHERA Project Designer Certificate: PDR-12-015, Expiration: November 2013

Name

2 MAY 2013
Date Revision 1

1.0 PROJECT DISCUSSIONS

Chapter 296-62-07721 Washington Administrative Code, (WAC), requires that building owner determine the presence, location, and quantity of asbestos containing materials (ACM) or presumed asbestos containing materials (PACM) prior to renovation/demolition projects.

The structure located at 524 South Audubon , Spokane, Washington was destroyed by fire. Out building have been inspected and determined to be asbestos free. Therefore the out building (Shed and Doll House) shall be demolished and properly disposed of as general demolition debris

The City of Spokane, Fire Marshall, determined the structure was a hazard to the general public and ordered the immediate demolition of the structure. Therefore the structure can not be surveyed. Mr. Mr. Richard A. Johnson, AHERA Building Inspector with J Tech Industrial Hygiene Services inspected the site on Monday, April 15th, 2013. It is Mr. Johnson's opinion that the debris can not be adequately sampled using a grid sampling method outlined in Spokane Regional Clean Air Agency Regulation 1, Article IX, Section 9-03(F)(3) Alternate Asbestos Survey. Therefore it is assumed that the structure contained asbestos-containing building materials.

The following asbestos containing building materials are suspected to be present within the building debris field:

- Gypsum Wall Board and Joint Compound;
- Ceiling and Wall Texturing on Gypsum Wallboard;
- Roofing materials; and
- Other asbestos containing building materials

The rubble pile is approximately 4,800 square feet (80 x 60 feet) in size. Photographs of the structure are located in Appendix A.

This Alternative Means of Compliance has been prepared for the demolition and proper disposal of the debris stream according to the requirements detailed in the Spokane Regional Clean Air Agency's (SRCAA) Asbestos Control Standards, Article IX, Section 9.08 (Alternate Means of Compliance).

Mr. Richard A. Johnson, AHERA Project Designer and Certified Industrial Hygienist concluded that this Alternative Means of Compliance will be as effective as the work practices in Section 9.06 of the SRCAA asbestos control standard.

2.0 SITE PERSONNEL AND RESPONSIBILITIES

2.1 KEY PERSONNEL

PROJECT MANAGER:

As Assigned by:
Larson's Demolition, Inc.
903 East Pacific Avenue
Spokane, WA 99202
Telephone (509) 535-7944

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3.1 ENGINEERING CONTROLS:

The following engineering and administrative controls will be implemented to protect the environmental and prevent the release of airborne asbestos fibers during demolition/clean-up activities:

- A Certified Asbestos Supervisor shall be present at the work site during all demolition activities and decontamination of mechanized equipment.
- The demolition site must be controlled as a regulated area by barriers, temporary fences, and asbestos warning signs.
- The regulated area shall be demarcated in any manner that minimizes the number of persons within the work area and protects persons outside the area from potential exposure to airborne asbestos fibers.
- Should air monitoring results exceed 0.05 fibers per cubic centimeter of air all work activities shall stop and a certified asbestos abatement contractor shall complete the cleanup.
- A proper asbestos survey has not been completed. Therefore, the following respiratory protection, personal protective clothing, decontamination area and hygiene facility shall be required until a proper negative exposure assessment has been prepared. Historical air monitoring from similar Alternative Means of Compliance demolition projects may be used to prepare the negative exposure assessment.
- Respiratory protection must be provided in compliance with Chapter 296-62-07715 and Chapter 296-842, Washington State Administrative Code (WAC).

  Minimum respiratory protection shall be half face negative pressure air purifying respirator equipped with P100 HEPA filters. Should friable class I, thermal system insulation or asbestos containing building materials be identified within the waste stream respirator protection shall be upgrade to full face negative pressure air purifying respirators.
- Disposal Tyvek Coveralls shall be provided in compliance with Chapter 296-62-07717, WAC and shall be worn by all site personnel within the regulated work area for the duration of the demolition activities;
- Construct a decontamination area consisting of an area of sufficient size to accommodate the cleaning of equipment and removal of protective work clothing without spreading contamination beyond the area. Protective work clothing shall be cleaned with a HEPA vacuum before it is removed;
- A hygiene facility consisting of a hand and face washing station shall be provided. The hygiene station shall be provided with adequate water, cleansing agents and towels to permit employees to wash their hands and face prior to removal of respiratory protection and upon exiting the regulated area. Sanitary baby wipes may be used in place of hand and face washing station.

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- This Alternative Means of Compliance Plan and the demolition/clean-up work plan or method of operation is required by Chapter 296-155-775(2), WAC shall be required to be on-site at all times. Dust suppression with water is such a procedure and is identified in WAC 296-155-775(18). This work plan must be retained by all identified parties for a minimum of 24 months as required by SRCAA, Article IX, Section 9.08, Sub-sections (A)(6)(a).
- Heavy equipment operator will keep all windows and doors closed during the demolition/clean-up site activities.
- All debris shall be placed directly into transport containers lined with two layers of six (6) mil reinforced polyethylene sheeting and shall be covered with an impervious air tight cover prior to transporting the debris to the landfill. Asbestos containing debris shall be transported in an air tight container.
- Small pieces of debris will likely fall from the jaws during the mechanical demolition and loading activities. Therefore the areas used to load debris shall be kept to the minimum size necessary to load the debris without creating excessive handling of the material.
- The debris loading areas shall be cleaned of all debris at the end of each work shift.
- The on-site asbestos supervisor shall observe the loading of all debris for disposal.
- Handle all debris in a wet condition. The debris must be sufficiently wet to prevent visible dust emissions. The debris must be damp but not so wet as to allow potentially contaminated water to escape from the transport vehicle. Should any water accumulate or pool it shall be filtered through a combination 30 micron and 5 micron water filtration unit (portable shower filtration pump) before it is disposed of into the sewer system.
- Water from the hygiene station shall be filtered prior to releasing the water to the sanitary sewer or used as a source of dust suppression water. Any waste water generated by the hygiene station shall be identified as non potable water.
- All rubble/debris other than cleaned structural steel, or cast in place Portland Cement Concrete, landscaping block shall be considered asbestos contaminated and must therefore be properly labeled for transportation and disposal.
- Cleaned steel, cast in Place Portland Cement Concrete and landscaping block may be salvaged for recycle.
- The debris stream shall be disposed of in a manner that is consistent with local, state and federal regulations and is protective of both human health and the environment.
- Identifiable and easily separable friable or suspected friable asbestos containing building materials shall be separated and sealed or wrapped with 6-mil reinforced polyethylene sheeting and hand loaded in to the transport vehicle for proper disposal.
- A minimum of six (6) inches of soil under contaminated debris or at any materials load-out areas associated with the site shall be removed to dispose of all asbestos mineral fibers washed in the soil by dust suppression water streams.

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2- South Carolina DHEC Building Demolition Work Plan. December 2015

AHERA/NESHAP ASBESTOS PROJECT DESIGN

109 OAKLAND AVENUE

CLIENT:

Santee-Lynches Regional Council of Governments
City of Manning

Fleming Neighborhood Demolition CDBG Project #4-W-14-004
2525 Corporate Way

Suite 200

Sumter, SC 29154

LOCATION:

109 Oakland Avenue Manning,
SC 29102

DATE OF DESIGN:

December 4, 2015



Anthony B. Monk

SC DHEC AHERA Asbestos Building Inspector BI-01210 Exp: 11/2/16

SC DHEC AHERA Asbestos Air Sampler AS-00330 Exp: 11/3/16

SC DHEC AHERA Asbestos Supervisor SA-01863 Exp: 11/3/16

SC DHEC AHERA Asbestos Management Planner MP-00199 Exp: 11/2/16 SC DHEC AHERA Asbestos Project Designer PD-00160 Exp: 11/4/15

SUMMIT ELT, Inc.

7349 Peppermill Parkway - Suite A

North Charleston, SC 29418

843-606-6268

SUMMIT Job No. 3805.10

AHERA/NESHAP ASBESTOS PROJECT DESIGN

109 Oakland Avenue Manning,
SC 29102

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LIST OF APPENDICES

A Asbestos Inspection

1.0 DOCUMENT INTENT

This document represents the Asbestos Abatement Specifications for the abatement of Asbestos Containing Materials (ACMs) for the structure at 109 Oakland Avenue in Manning, South Carolina. The CONTRACTOR shall be responsible for adhering to the Specifications contained in the Asbestos Abatement Specifications.

The Summary of Work is intended to limit the scope and locations of items of the Work included therein. It is not intended to limit the Scope of Work should plans, schedules or notes indicate an increased scope. Inadvertent omission of an item from its proper section of the Specifications and its inclusion in another section shall not relieve the CONTRACTOR of responsibilities for the item specified.

Project: 109 Oakland Avenue

Manning, South Carolina

Owner: Santee-Lynches Regional Council of Governments/City of Manning

2525 Corporate Way

Suite 200

Sumter, SC 29154

Consultant: SUMMIT ELT, Inc. (**SUMMIT**)

Anthony B. Monk

7349 Peppermill Parkway - Suite A

North Charleston, SC 29418

843-606-6268

SC DHEC AHERA Asbestos Building Inspector BI-01210 Exp: 11/2/16

SC DHEC AHERA Asbestos Air Sampler AS-00330 Exp: 11/3/16

SC DHEC AHERA Asbestos Supervisor SA-01863 Exp: 11/3/16

SC DHEC AHERA Asbestos Management Planner MP-00199 Exp: 11/2/16 SC DHEC AHERA Asbestos Project Designer PD-00160 Exp: 11/4/16

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2.0 SCOPE OF WORK

Project Location

All of the work described within this report was conducted at the following location:

Location: 109 Oakland Avenue

Manning, South Carolina

Owner: Santee-Lynches Regional Council of Governments/City of Manning

Project Type: Class I Work (Friable, Interior):

1. **The wallboard system material found throughout the structure contains up to 2% Chrysotile asbestos and there is approximately 1,700 square feet of the material.**
2. **All other building materials/household contents associated with the interior of the structure are assumed to be Asbestos Contaminated Materials. All of these materials must be abated and treated as Asbestos Contaminated Materials.**

The bricks and mortar associated with the structure have been tested and are not classified as Asbestos Containing Materials. These items can be cleaned and salvaged for recycling or disposed of as non-ACM. The Roofing Material has been tested and is not classified as Asbestos Containing Materials. SCDHEC has stipulated the entire (porous) contents of the building must be assumed to be contaminated with asbestos and disposed of as such. Nonporous, non-suspect materials (i.e. metals, plastic, rubber, etc.) can be cleaned and salvaged for recycling or disposed of as non-ACM.

If non-porous materials are to be salvaged for recycling or disposed of as non-ACM, they must be thoroughly cleaned using potable water to the visual approval of the CONSULTANT. The contaminated water used for cleaning must be contained, filtered through a 5-micron or less filter and properly disposed of into a sanitary sewer.

The project involves the removal and disposal of the above noted items.

Roll off containers utilizing 2 layers of re-enforced polyethylene sheeting shall be used to store all asbestos containing/Asbestos-Contaminated materials. Polyethylene sheeting shall be installed in a manner in which the poly can be folded over from both sides and sealed along the top when the dumpster is full or at the end of each work day. Tops of containers must be completely covered and sealed using polyethylene sheeting at the end of each work day and before transport to the landfill. The CONTRACTOR shall be responsible for determining the appropriate number of roll-off containers. Asbestos containing materials/asbestos-contaminated materials shall be removed from the site and placed in the roll-off containers. A PCM clearance shall be performed after removal of all asbestos containing materials/asbestos-contaminated materials from the site.

The CONTRACTOR will be responsible for complete removal of the asbestos containing materials/asbestos contaminated materials listed above in accordance with the project design.

Minimum respiratory protection will be half-face air-purifying respirators equipped with HEPA cartridges.

The CONTRACTOR will complete and submit the required SC DHEC notification forms and pay all fees.

The CONTRACTOR shall provide the following utility services for proper completion of the project: potable water and 110 volt electricity. The CONTRACTOR shall coordinate the location and availability of utilities through The OWNER. The CONTRACTOR shall ensure that all electrical cords are connected to GFCI devices. Hoses and cords not suspended shall be taped to the floor utilizing caution tape in high traffic areas.

3.0 SUMMARY OF WORK

A. Furnish all labor, materials, services, employee training and testing, permits, insurance (pertaining to asbestos abatement activity), tools and equipment necessary for safe completion of all work in accordance with all federal, state, local laws and regulations. The CONTRACTOR shall have complete understanding of all contract documents as supplied by CONSULTANT (SUMMIT). Work shall include abatement activities defined below and as represented by the accompanying drawings. The CONTRACTOR is responsible for securing the job site and is solely responsible for their materials and equipment.

B. Abatement Work

1. **Location:** 109 Oakland Avenue Manning, South Carolina

Project Type: Class I Work (Friable, Interior):

1. **The wallboard system material found throughout the structure contains up to 2% Chrysotile asbestos and there is approximately 1,700 square feet of the material.**
2. **All other building materials/household contents associated with the interior of the structure are assumed to be Asbestos Contaminated Materials. All of these materials must be abated and treated as Asbestos Contaminated Materials.**

The project involves the removal and disposal of the above noted items.

Note: The CONTRACTOR is responsible for field verification of the total and location quantity prior to the submission of bids.

Qualifications

The CONTRACTOR shall be licensed by the South Carolina Department of Health and Environmental Control (SC DHEC) to abate asbestos containing materials in the state of South Carolina. CONTRACTOR's employees shall be licensed by SC DHEC in their respective job/worker category.

4.0 DEFINITIONS

1. "Abatement" - Procedures to control fiber release from regulated asbestos-containing materials. This includes removal, enclosure, encapsulation, repair, and any associated preparation, clean up and disposal activities having the potential to disturb regulated asbestos-containing material.
2. "Adequately wet" - To sufficiently mix or penetrate with liquid to prevent the potential release of particulates. The absence of visible emissions is not sufficient evidence of being adequately wet. 3. "Aggressive clearance sampling" - A method of sampling which uses electric fan(s), electric leaf blower(s), and other devices to simulate vigorous activity in the abated area while air samples are being collected.
4. "AHERA" - Regulations developed pursuant to the Asbestos Hazard Emergency Response Act, 40 CFR Part 763, Asbestos Containing Materials in Schools (December 20, 1987).

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5. "AIHA" - American Industrial Hygiene Association.
6. "Airlock" - A chamber which permits entrance and exit with minimum air movement between a contaminated area and an uncontaminated area, consisting of two doorways protected by two overlapping polyethylene sheets and separated by a sufficient distance such that one passes through one doorway into the chamber, allowing the doorway sheeting to overlap and close off the opening before proceeding through the second doorway. The airlock maintains a pressure differential between the contaminated and uncontaminated areas, thereby minimizing flow-through contamination further.
7. "Air sampler - A person licensed by SC DHEC to implement air-monitoring plans and analysis schemes during abatement.
8. "Air sampling" - A method such as NIOSH 7400 for PCM, the OSHA Reference Method, 40 CFR 763 Appendix A for TEM, or an equivalent method accepted by SC DHEC used to determine the fiber content of a known volume of air during a specified period of time.
9. "Amended water" - Water to which a surfactant (for example, a non-sudsing detergent) has been added.
10. "Area air sampling" - Any form of air sampling whereby the sampling device is placed at a stationary location either inside or outside the regulated work area.
11. "Asbestos" - The asbestiform varieties of serpentinite (chrysotile), riebeckite (crocidolite), cummingtonite-grunerite (amosite), anthophyllite, and actinolite-tremolite.
12. "Asbestos abatement entity" - Any individual, partnership, firm, association, corporation, sole proprietorship or other business concern, as well as an employee or member of any governmental, religious, or social organization that is involved in asbestos abatement.
13. "Asbestos Containing Material (ACM)" - Material containing asbestos of any type, either alone or mixed with other materials, in an amount greater than one percent (1%) as determined by using the method specified in 40 CFR Part 763, Appendix A, Subpart F, Section 1, as amended, or an accepted equivalent. (NOTE: "Appendix A to Subpart F" has been redesignated as, and shall hereinafter be referred to as, "Appendix E to Subpart E" - 60 FR 31917, June 19, 1995.)
14. "Asbestos containing waste materials" - As applied to demolition and renovation operations, this term includes regulated asbestos-containing waste materials and materials contaminated with asbestos, including disposable equipment and clothing.
15. "Asbestos project" - Any activity associated with abatement including inspection, design, air monitoring, in-place management, encapsulation, enclosure, renovation, repair, removal, any disturbance of regulated asbestos containing materials (RACM), and demolition of a facility.
16. "Asbestos project design" - A written or graphic plan prepared by an accredited project designer specifying how an asbestos abatement project will be performed that includes, but is not limited to, scope of work and technical specifications.
17. "Asbestos training course" - A SC DHEC-approved initial or refresher course in any discipline listed herein (for example, workers, supervisors, management planners, etc.) that meets the requirements of this regulation and is acceptable for licensing purposes.
18. "Asbestos training course instructor" - A SC DHEC-approved individual who will teach work practice topics, non-work practice topics, and/or hands-on topics in any SC DHEC-approved initial and/or refresher training course and who meets the qualifications of this regulation.
19. "Asbestos training course provider" - The person, sole proprietorship, public corporation, or incorporated entity that meets the qualifications of this regulation to provide instruction in any of the work practice topics or disciplines, non-work practice topics, and/or hands-on topics in any SC DHEC approved initial and/or refresher training course.

20. "ASHARA" - Regulations developed pursuant to 40 CFR Part 763, Subpart E, Appendix C Model Accreditation Plan, Asbestos School Hazard Abatement Reauthorization Act (November 28, 1992).
21. "Authorized visitor" - The facility owner/operator, or any representative of a regulatory or other agency having jurisdiction over the project. This is limited to government project inspectors, police, paramedics, fire-safety personnel, nuclear plant operators, and insurance loss prevention safety auditors, or other personnel as approved on a case-by-case basis by SC DHEC.
22. "Background monitoring" - Area sampling performed prior to abatement to obtain an index of existing airborne fiber levels under typical activity.
23. "Building inspection" - An activity undertaken at a facility by a SC DHEC-licensed asbestos building inspector to determine the presence and location of regulated and non-regulated ACM, and to assess the condition of materials identified as ACM. This includes visual or physical examination and bulk sample collection.
24. "Building inspector" - A person licensed by SC DHEC to examine a facility for the presence of ACM, to identify and assess the condition of the material, and to collect bulk samples.
25. "Category I nonfriable asbestos containing material (ACM)" - Nonfriable asbestos or nonfriable asbestos-containing packing, gaskets, and resilient floor covering; and asphalt roofing products containing greater than one percent (1%) asbestos as determined using the method specified in 40 CFR Part 763, Appendix E, Subpart E, or an accepted equivalent.
26. "Category II nonfriable ACM" - Any material that cannot, when dry, be crumbled, pulverized, or reduced to powder by the forces expected to act upon it in the course of demolition or renovation operations, excluding Category I nonfriable ACM and containing greater than one percent (1%) asbestos as determined using the methods specified in 40 CFR Part 763, Appendix E, Subpart E, or an accepted equivalent.
27. "Clean room" - An uncontaminated area or room that is part of the decontamination enclosure system and that has provisions for storage of street clothing and protective equipment.
28. "Clearance monitoring" - Area air sampling performed using SC DHEC accepted aggressive clearance sampling techniques to determine the airborne concentrations of residual fibers upon conclusion of asbestos abatement.
29. "Commercial labor provider" - Any individual, partnership, corporation, or other business concern that is not engaged in an asbestos project but does provide temporary workers or supervisors to the owner/operator of the project.
30. "Contractor" - Any individual, partnership, corporation or other business concern that performs asbestos abatement but is not a permanent employee of the facility owner.
31. "Control measure" - Use of amended water, negative pressure differential equipment, encapsulant, high efficiency particulate air filtration device, glove bag or other state-of-the-art equipment designed to prevent fiber release into the air.
32. "Critical barrier" - At minimum, two independent layers of 6-mil plastic sheeting applied to any opening into a work area in a manner that creates a leak-tight seal within the work area to isolate vents, windows, doors, switches, outlets, and any other cavity or opening to the contaminated work area.
33. "Cut" - To penetrate with a sharp-edged instrument. This includes sawing, but may not include shearing, slicing, or punching.
34. "Decontamination enclosure system" - An enclosed area adjacent and connected to the regulated work area consisting of an equipment room, shower area, and clean room, each separated by airlocks, that is used for the decontamination of employees, materials, and equipment that are contaminated with asbestos.

35. "Demolition" - Wrecking or taking out any load-supporting structural member of a facility together with any related handling operations, the burning of any facility, or moving of a structure.
36. "SC DHEC" - The South Carolina Department of Health and Environmental Control.
37. "Electrical generating facility" - Any establishment primarily engaged in the generation, transmission and/or distribution of electrical energy for sale.
38. "Emergency operation" - A renovation or demolition operation that was not planned but results from a sudden, unexpected event that, if not immediately attended to, will present an imminent safety or public health hazard, will cause equipment damage, or will impose an unreasonable financial burden. This term specifically excludes routine equipment maintenance.
39. "Encapsulation" - A form of abatement involving the treatment of regulated asbestos-containing material (RACM) with a liquid that covers the surface with a protective coating (bridging) or embeds fibers in an adhesive matrix (penetrating) to prevent the release of asbestos fibers.
40. "Enclosure" - A form of abatement involving placement of a leak-tight, impermeable, permanent barrier to prevent access to regulated asbestos-containing material and to prevent the release of asbestos fibers.
41. "EPA" - United States Environmental Protection Agency.
42. "Equipment room" - A contaminated area or room that is part of the decontamination enclosure system and that has provisions for the storage of contaminated clothing and equipment.
43. "Examination date" - The date printed on SC DHEC Asbestos Abatement License that indicates the date of successful completion of an examination administered upon completion of an asbestos training course.
44. "F/cc" - Fibers per cubic centimeter.
45. "Facility" - Any institutional, commercial, public, industrial, or residential structure, installation, or building (including any structure, installation, or building containing condominiums or individual dwelling units operated as a residential cooperative, but excluding residential buildings having four or fewer dwelling units); any bridge; any ship; and any active or inactive waste disposal site. For purposes of this definition, any building, structure, or installation that contains a loft used as a dwelling is not considered a residential structure, installation, or building. Any structure, installation or building that was previously subject to this requirement is included in this definition, regardless of its current use or function.
46. "Facility component" - Any part of a facility including equipment.
47. "Friable" - Refers to ACM, which may, when dry, be crumbled, pulverized, or reduced to powder by the forces expected to act upon it in the course of demolition or renovation operations.

This also refers to previously non-friable ACM after such material becomes damaged to the extent that when dry, can be or has been crumbled, pulverized, or reduced to powder.

48. "Friable asbestos containing material" - Any material that, when dry, can be or has been crumbled, pulverized, or reduced to powder and contains greater than one percent (1%) asbestos as determined using the method specified in 40 CFR Part 763, Appendix E, Subpart E, as amended, or an accepted equivalent.
49. "Goose neck" - Process for sealing the outer bag by twisting the opening of the bag, folding twisted portion of bag over, and creating a loop. Adequately secure the opening of the bag to the base of the twist, using duct tape.
50. "Glovebag" - A sealed compartment with attached inner gloves used for the handling of asbestos containing materials. Information on glovebag installation, equipment and supplies, and work practices is contained in the Occupational Safety and Health Administration's (OSHA's) final rules on

occupational exposure to asbestos, 29 CFR 1926.1101 (August 10, 1994), as amended, and any subsequent amendments or editions.

51. "Grind" - To reduce to powder or small fragments. Grinding includes mechanical chipping or drilling.
52. "HEPA filter" - A high efficiency particulate air filter that will capture particles with an aerodynamic diameter of 0.3 micrometers with a minimum efficiency of 99.97 percent.
53. "Homogeneous area" - Area of surfacing material, thermal system insulation material, or a miscellaneous material that is uniform in color or texture.
54. "HVAC" - Heating, ventilation, and air conditioning.
55. "Industrial manufacturing facility" - Any establishment whose Standard Industrial Classification code falls within Major Groups 20 through 39, excluding any office space that is part of such an establishment.
56. "In poor condition" - Refers to any ACM where the binding of the material is losing its integrity as indicated by peeling, cracking, or crumbling of the material.
57. "Installation" - Any building or structure or any group of buildings or structures at a single demolition or renovation site that are under the control of a single owner or operator (or of owners or operators under common control).
58. "Issue date" - The date a license is issued by SC DHEC.
59. "Leak-tight" - Dust, solids, or liquids cannot escape or spill out.
60. "License" - A document issued by SC DHEC that allows an asbestos abatement contractor, building inspector, project designer, management planner, air sampler, supervisor, worker, or other to engage in asbestos projects.
61. "Long-term, in-house contractor" - A contractor having a long-term, often multi-year, contractual arrangement with an industrial manufacturing or electrical generating facility to provide construction and maintenance services, including asbestos abatement. The employees of a designated long-term, in-house contractor shall be covered under the group license of the assigned facility.
62. "Management planner" - A person licensed in accordance with the requirements of this regulation who interprets inspection reports, conducts hazard assessments of asbestos-containing materials, determines appropriate response actions, develops a schedule for implementing response actions, and prepares written management plans.
63. "Manometer" - Instrument for the measurement of gas pressure whose units are represented in inches of water column.
64. "Minor project" - A project where 25 or fewer square or linear feet of regulated asbestoscontaining material (RACM) are removed, or where 10 or fewer cubic feet of RACM off a facility component are cleaned up.
65. "Movable object" - A structure within the work area that can be moved (e.g., chair, desk, etc.). 66. "Negative pressure differential equipment" - A portable exhaust system equipped with a HEPA filter.
67. "NESHAP" - National Emission Standards for Hazardous Air Pollutants, 40 CFR 61, Subpart M, February 3, 1994, as amended, and any subsequent amendments or editions.
68. "NESHAP project" - An asbestos project which involves at least 160 square feet or 260 linear feet of regulated asbestos containing material (RACM), or 35 or more cubic feet of RACM off a facility component such that the area or length could not be measured prior to abatement. If several contemporaneous projects in the same area within the same building being performed by the same contractor are smaller than 160 square or 260 linear feet individually but add up to that amount, then the combination of the smaller projects shall be considered one NESHAP project.
69. "NIOSH" - National Institute for Occupational Safety and Health.

70. "Non-industrial facility"- Any public, private, institutional or governmental entity that does not meet the definition of an electrical generating or industrial manufacturing facility as defined in this regulation.
71. "Operation and maintenance (O&M) activity" - The disturbance of regulated asbestoscontaining material only when required in the performance of an emergency or routine maintenance activity that is not intended solely as asbestos abatement. In no event shall the amount of ACM disturbed exceed that which can be contained in one glovebag or 6-mil polyethylene bag that shall not exceed 60 inches in length and width.
72. "O&M worker" - An individual licensed under a facility group license to perform an operation and maintenance activity at that facility.
73. "OSHA" - Occupational Safety and Health Administration.
74. "Owner/operator" - Any person or contractor who owns, leases, operates, controls, or supervises a facility being demolished or renovated, or any person who operates, controls, or supervises the demolition or renovation operation, or both.
75. "Owner's representative" - A licensed supervisor, management planner, project designer, or air sampler designated by the facility owner to manage the asbestos project, and who serves to ensure that abatement work is completed according to specification and in compliance with all relevant statutes and regulations.
76. "Personal air sampling" - A method used to obtain an index of an employee's exposure to airborne fibers. Samples are collected outside the respirator in the worker's breathing zone.
77. "Planned renovation operations" - A renovation operation, or a number of such operations, in which some RACM will be disturbed, removed, or stripped within a given period of time and that can be predicted. Individual non-scheduled operations are included if a number of such operations can be predicted to occur during a given period of time based on operating experience.
78. "Project designer" - A person licensed in accordance with the requirements of this regulation who is directly responsible for planning all phases of an asbestos abatement project design from project site preparation through complete disassembly of all abatement area barriers.
79. "Reciprocity" - A written agreement between another state and South Carolina to use the same or equivalent auditing criteria when evaluating training course materials, course presentations, and instructor qualifications.
80. "Regulated area" - An area established by the owner/operator of an asbestos project to demarcate areas where asbestos abatement activities are conducted; any adjoining area where debris and waste from such asbestos work is stored; and any work area within which airborne concentrations of asbestos exceed, or there is a reasonable possibility they may exceed, the permissible exposure limit.
81. "Regulated asbestos-containing material (RACM)" - (a) Friable asbestos-containing material; (b) Category I nonfriable ACM that has become friable; (c) Category I nonfriable ACM that will be or has been subjected to sanding, grinding, cutting, drilling, or abrading; or (d) Category II nonfriable ACM that is likely to become or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations subject to this regulation.
82. "Removal" - Taking out RACM or facility components that contain or are covered with RACM from any facility.
83. "Renovation" - Altering a facility or one or more facility components in any way, including the stripping or removal of RACM from a facility component. Operations in which load-supporting structural members are wrecked or taken out are demolitions.

84. "Repair" - Returning damaged asbestos-containing material to an undamaged condition or to an intact state so as to prevent fiber release.
85. "Resilient floor covering" - Asbestos-containing floor tile, including asphalt and vinyl floor tile, and sheet vinyl floor covering containing greater than one percent (1%) asbestos as determined using polarized light microscopy according to the method specified in 40 CFR Part 763, Appendix E, Subpart E, Polarized Light Microscopy, or an accepted equivalent.
86. "Shower room" - A room located between the clean room and the equipment room in the decontamination enclosure system containing a shower with hot and cold or warm running water controllable at the tap.
87. "Small project" - A project where more than 25 but fewer than 160 square feet or more than 25 but fewer than 260 linear feet of RACM are to be abated, or where more than 10 but fewer than 35 cubic feet of RACM off a facility component are to be cleaned up.
88. "Start date" - The date printed on SC DHEC-issued asbestos abatement project license, which indicates when asbestos renovation or demolition operations, including any abatement activity having the potential to disturb RACM, will begin.
89. "Strip" - To remove RACM from any part of a facility or facility component.
90. "Structural member" - Any load-supporting member of a facility, such as beams and loadsupporting walls; or any non-load-supporting member, such as ceilings and non-load-supporting walls.
91. "Structures per square millimeter" - Reporting measure for Transmission Electron Microscopy (TEM) Analysis. TEM clearance requires fewer than 70 structures per square millimeter (70s/mm^2). 92. "Supervisor" - A person licensed by SC DHEC and designated as the contractor's representative to provide direct on-site supervision and guidance to workers engaged in abatement of RACM.

93. "Surfactant" - A chemical wetting agent added to water to improve penetration, such as a nonsudsing detergent.
94. "Temporary storage license" - A license issued by SC DHEC that authorizes storage of asbestos waste from small and minor projects at a secure location deemed acceptable by SC DHEC.
95. "Variance" - Written SC DHEC approval for the use of alternative work practices at an asbestos project.
96. "Visible emissions" - Any emissions that are visually detectable without the aid of instruments that originate from RACM or asbestos-containing waste material or a regulated work area.
97. "Waste generator" - Any owner/operator of an asbestos project covered by this regulation whose act or process produces asbestos-containing waste material.
98. "Waste shipment record" - The shipping document, required to be originated, prepared, and signed by the waste generator, used to track and substantiate the disposition of asbestos-containing waste material.
99. "Wet cleaning" - The process of removing asbestos contamination from facility surfaces and objects by using cloths, mops, or other cleaning tools that have been dampened with amended water.
100. "Work area" - Designated rooms, spaces, or areas in which asbestos abatement activities are to be undertaken, or that may be contaminated as a result of such abatement activities.
101. "Worker" - A person licensed by SC DHEC to perform asbestos abatement under the direct guidance of an accredited and licensed supervisor.
102. "Working day" - Monday through Friday, including holidays that fall on any of the days Monday through Friday.

5.0 PROJECT COORDINATION

5.1 Action Plan

A. Coordinate with CONSULTANT to determine availability of facilities.

B. Schedule abatement operations in the sequence required to obtain the best results where execution of one part of the Work depends on execution of other components, before or after its own execution.

C. Where necessary, prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as SC DHEC notifications, surveys, notices, reports, CONTRACTOR lists, work schedules, and attendance at meetings.

D. Prepare a plan of the procedures proposed for use in complying with the requirements of this specification. Include in the plan the location and layout of decontamination areas, the sequencing of asbestos work, and methods used to assure the safety of workers and visitors to the site. A disposal plan should include the location of the approved disposal site, a detailed description of the methods to be employed to control pollution, methods of removal to prohibit visible emissions, and packaging of removed asbestos debris.

5.2 Project Directory

A. Develop and post a directory of all entities involved in the project. Include the CONTRACTOR'S principal staff assignments, including the Superintendent and other personnel in attendance at the site. Identify individuals, their duties and responsibilities. List business name, contact person, normal business and emergency telephone, pager and fax numbers, and addresses of:

1. CONTRACTOR'S general superintendent, supervisory personnel, and CONTRACTOR'S home office
2. Emergency services including but not limited to fire, ambulance, doctor, hospital, police, power company, telephone company, water company.
3. Local, state, and federal agencies with jurisdiction over the project.

5.2 Miscellaneous

A. Workers are to dress appropriately when out of the construction area and in view of the public (e.g. street clothing unless involved in asbestos abatement activities). Workers are to decon and change into street clothes prior to exiting the sight barriers. Respirators shall remain in bags when not in use.

B. No flames or flammable materials are to be used or brought into buildings. Solvents for the removal of resilient floor covering cutback adhesives must have a flashpoint greater than 140 degrees Fahrenheit.

C. All electrical equipment shall utilize ground fault circuit interrupters (GFCI).

D. Emergency telephone numbers for the local fire department, police department, and emergency medical services shall be posted.

E. The CONTRACTOR shall ensure an adequate number of fire extinguishers are on-site. A minimum of one fire extinguisher with a National Fire Protection Association rating of 10BC (dry chemical) shall be placed in each per 3000 square feet of containment space or fraction thereof, of containment area. Each fire extinguisher shall be maintained in a fully charged and operable condition.

F. SC DHEC licenses and accreditations, current fit test certification, current training/refresher certificates and medical surveillance documentation for each worker involved in the abatement work must be on-site and made available for review to the CONSULTANT and SC DHEC upon request.

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6.0 SUBMITTALS

A. During the project submit the following documents:

1. **The SC DHEC asbestos permit and all other applicable permit approvals.**
2. Copy of daily sign in/out log for each regulated asbestos abatement area. This log should include the date, the name, the social security number, and times of entrance and exit of each person performing work inside the Regulated Area.
3. Notify CONSULTANT verbally if any accident or other medical emergency occurs requiring treatment and/or removal of a worker from the work site. A written incident report will need to be submitted to the CONSULTANT as soon as possible. This written report will need to include the name of the worker(s) involved in the incident, the job location, and time of the incident.
4. Results of any sample analysis (air - personal or area; and bulk). OSHA (29 CFR 1926.1101 (f)) type samples shall be posted as soon as possible following receipt of monitoring results (preferably within 24 hours of air Monitoring).
5. Notice of any unsatisfactory conditions.
6. Notice of any regulated barrier violations or failures.

B. Submit the following to the CONSULTANT upon the completion of the project:

1. All asbestos waste manifests within five (5) days of receipt from the landfill if not previously submitted.
2. Copy of all notes, logs and reports maintained or prepared by the CONTRACTOR'S security personnel within five (5) days of project completion if not previously submitted.

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7.0 AIR MONITORING AND TEST LABORATORY SERVICES

A. QUALITY ASSURANCE

1. All environmental baseline and daily air monitoring will be performed in accordance with the procedures outlined in the latest edition of the National Institute for Occupational Safety and Health (NIOSH) 7400 Method and guidelines issued by Environmental Protection Agency regarding detection limits.

B. The OWNER has contracted SUMMIT to perform all required perimeter and area air monitoring during the abatement process.

C. Samples shall be collected during abatement according to the following schedule:

Background samples in the abatement area shall be collected prior to the CONTRACTOR starting. Daily air samples shall be collected during each 8-hour work shift. The daily air samples shall be collected a minimum 2.5-hours of every 4-hours worked, and not to exceed 4-hour intervals. Clearance samples shall only be collected after the area has passed final visual inspection by the Air Monitor.

D. The CONTRACTOR shall be responsible for personnel monitoring of his employees as regulated by OSHA 1926.1101 and must be conducted by SC DHEC licensed personnel.

E. PHASE CONTRAST MICROSCOPY (PCM)

In each homogeneous Work Area or as required by the CONSULTANT, **a minimum of five (5) PCM samples will be taken and analyzed as a baseline** prior to the CONTRACTOR's mobilization to the site.

The number and volume of air samples taken and analytical methods used by SUMMIT for sampling will generally be as follows:

Location Sampled	Scheduled Number of Samples	Minimum Volume (Liters)	Filter Media
Inside Work Area (Initial Baseline)	5	1,200	Mixed Cellulose Ester
Outside Work Area (Daily)	4	1,200	Mixed Cellulose Ester
Inside Work Area (Clearance)	5	1,200	Mixed Cellulose Ester

Clearance background and blank samples will not be collected and will be assumed to be zero (0). Only one (1) blank per sampling event shall be collected.

Clearance samples shall be by PCM analysis and will be available within 4 hours of completion of clearance sampling.

Analysis: Asbestos fibers on each 0.8-micron filter will be measured using analysis per NIOSH 7400 counting rules A.

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Release Criteria: Decontamination of the project is complete as determined by the analytical protocol if each of the Work Area samples is below 0.010 fibers per cubic centimeter (f/cc). If the analysis of the Work Area samples fails to meet the release criteria, then the CONTRACTOR must cease demolition activities and reassess their abatement to bring the fiber count to below 0.010 f/cc or 70 structures/mm^2.

The CONTRACTOR is cautioned, however, that should interpretations be made, opinions be formed and conclusions be drawn as a result of examining the test results, these interpretations, opinions and conclusions will be those made, formed and drawn solely by the CONTRACTOR. The CONTRACTOR is responsible for performing air tests required for its evaluation of the safety of its employees.

8.0 REGULATED AREAS

Securing Work Area

A. Secure work area from access by non-authorized personnel. Accomplish this, where possible, by constructing temporary barriers with signs and warning tape.

Demarcation of Regulated Area

Demarcate the Regulated Area with signs and barrier tape. Configure the Regulated Area to minimize the number of persons within the area and to protect persons outside the area from exposure to airborne concentrations of asbestos. Establish sight barriers utilizing black plastic sheeting inside the Regulated Area and post the Asbestos Signs so that they are out of public view.

A. SIGNS

1. Signs must be posted (in English) at all entrances to the Regulated Area, at least 20" x 14", with the legend:

DANGER
ASBESTOS
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY
RESPIRATORS AND PROTECTIVE CLOTHING
ARE REQUIRED IN THIS AREA

B. Post warning signs at each side of the building.

C. Barrier tape must be used to establish the Regulated Area. Delineate the area with 3inch wide polyethylene ribbon printed with the warning "CAUTION ASBESTOS REMOVAL". Install at a height of between three and four feet above the floor or ground level. The controlled access points shall be clearly marked with the signs required as noted above.

D. General procedures

1. Management of the Regulated Area is to be under the supervision of an OSHA Competent Person as described in Project Coordination.

2. Do not allow eating, drinking, smoking, chewing tobacco or gum, or applying cosmetics in the Regulated Area.

3. Before start of work, comply with requirements for worker protection in Respiratory Protection Section.

9.0 RESPIRATORY PROTECTION

General Requirements

Instruct and train each worker involved in asbestos abatement/demolition in proper respirator use and require that each worker always wear a respirator, properly fitted on the face in the Regulated Area from the start of any operation which may cause airborne asbestos fibers until the Regulated Area is completely decontaminated. Use respiratory protection appropriate for the fiber level encountered in the work place or as required for other toxic or oxygen-deficient situations encountered. Respiratory

protection will not be required during preparation of the Negative Pressure Enclosures and Regulated Areas. Minimum respiratory protection will be half-face airpurifying respirators equipped with HEPA cartridges.

Standards

Except to the extent that more stringent requirements are written directly into the Contract Documents, the following regulations and standards have the same force and effect (and are made a part of the Contract Documents by reference) as if copied directly into the Contract Documents, or as if published copies were bound herewith. Where there is a conflict in the regulations and standards, the more stringent requirement must be met.

SC DHEC regulations

OSHA - U.S. Department of Labor Occupational Safety and Health Administration, Safety and Health Standards 29 CFR 1910, Section 1001 and Section 134 and 29 CFR 1926.1101.

ANSI - American National Standard Practices for Respiratory Protection, ANSI Z88.2-1990. NIOSH - National Institute for Occupational Safety and Health

Submittals

A. Submit the following to the CONSULTANT:

1. Respiratory Protection Program: Submit CONTRACTOR'S written respiratory protection program manual as required by OSHA 29 CFR 1926.1101.
2. Respiratory Protection Schedule: Submit level of respiratory protection intended for each operation required by the project.

Non-permitted respirators - Do not use single use, disposable or quarter face respirators.

10.0 MATERIALS AND EQUIPMENT

Utilities

A. The CONTRACTOR shall supply electricity (110V) and potable water.
B. The CONTRACTOR shall supply GFCI for all electrical circuits.

Tools and Equipment A.

Respirators

1. Respiratory protection will not be required during preparation of NPE's or Regulated Areas.
2. Minimum respiratory protection will be half-face air-purifying respirators equipped with HEPA cartridges.
3. All respirators must be NIOSH approved.

B. Protective clothing shall meet or exceed minimum protective clothing requirements of Title 29 CFR 1926.1101 and include full body disposable coveralls, disposable hood (separate or

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integral to coverall) and foot coverings (reusable footwear, 18-inch high boot type disposable foot coverings or foot coverings integral to coverall).

C. Decontamination system for non-friable removals shall be 6-mil poly on the floor outside the enclosure (regulated area).

Decontamination system for friable removals shall consist of a "clean room", a "shower room", and an "equipment room". Each room shall be separated from each other and the work area by a “Z” flap airlock (or non-friable materials that are rendered friable).

D. Filtration systems for drain lines from showers or other water sources carrying asbestos contaminated water shall have disposable type primary and secondary filters and, if necessary, sump pump. Primary filter shall pass particles 20 microns and smaller; secondary filters, 5 microns and smaller.

E. Miscellaneous Equipment

1. Low pressure sprayer for amended water applications.
2. First Aid Kit must be on-site and available at the clean room.

Materials

A. For wetting prior to disturbance of Asbestos-Containing Materials, use either amended water or a removal encapsulant.

1. Amended water must result in the retardation of fiber release equal to or greater than that provided by the use of one ounce of a surfactant consisting of 50% polyoxethylene ester and 50% polyoxyethylene ether mixed with five gallons of water.
2. Encapsulant shall be penetrating or bridging type designed to provide the same retardation of fiber release as the amended water in the above.

B. Polyethylene sheeting shall be ‘true’ 6-mil OR with a dart impact of 270 grams, tear resistance of 512 grams, and transverse direction of 2067 grams (check manufacturer’s specifications). Wall polyethylene sheeting must be ‘true’ 4 mil OR the equivalent dart impact. Width of sheeting must be the largest size possible to minimize seams, clear, frosted or black, as indicated. Disposal bags must meet the ‘true’ 6-mil requirement for disposal of ACM. Manufacturer’s specifications must be on-site for any other thickness that ‘true’ 6-mil poly.

C. Duct tape in 2” or 3” widths and spray cement formulated to stick aggressively to polyethylene sheeting.

11.0 WORK AREA CLEAN UP AND VERIFICATION

A. Provide general clean-up of work area concurrent with the removal of all asbestos-containing materials. Do not permit accumulation of debris.

11.1 REMOVAL OF ASBESTOS-CONTAINING MATERIAL

Removal

Remove and properly dispose of all asbestos containing materials as specified in the Contact Documents in accordance with the methods and procedures outlined in the OSHA 29 CFR 1926.1101,

40 CFR Part 763, and 40 CFR 61, Subpart M, February 3, 1994, as amended, and any subsequent amendments or editions.

Maintain exposure levels below 0.1 fibers per cubic centimeter (f/cc) regardless of respiratory protection provided. The CONSULTANT'S PROJECT MANAGER reserves the right to order a cease in abatement activity should fiber counts exceed the PEL or visible emissions are observed until control measures are implemented to reduce fiber levels below the PEL and/or eliminate visible emissions.

A. Removal of Friable ACM/Asbestos Contaminated Materials (Class I Work, Interior):

The CONTRACTOR shall remove the ACM/Asbestos-Contaminated Material in as nonfriable a manner as possible. All ACM once removed in shall be: thoroughly wet during stripping or removal and shall remain wet until disposed of, carefully lowered to the ground or floor, not dropped or thrown, and at no time shall the ACM to accumulate or become dry.

If non-porous materials are to be salvaged for recycling or disposed of as non-ACM, they must be thoroughly cleaned using potable water to the visual approval of the CONSULTANT. The contaminated water used for cleaning must be contained, filtered through a 5-micron or less filter and properly disposed of into a sanitary sewer.

All porous materials not salvaged shall be treated as Asbestos Contaminated Waste and handled and disposed of as Asbestos Containing Materials (ACMs).

Wet methods shall be utilized heavily during removal to control emissions.

12.0 DISPOSAL OF ASBESTOS-CONTAINING WASTE MATERIAL

A. Dispose of ACM and used plastic sheeting, tape, cleaning materials and disposable protective clothing as asbestos waste materials.

B. Waste must be loaded, stored and transported in a 6 mil (2 layers), poly-lined, rigid top truck or open top dumpster which can be locked or guarded from unauthorized access. The poly shall be installed in a manner in which the poly can be folded over, closed and sealed at the top from both sides. Dumpster will remain closed and locked when not in use.

C. Prepare for each load a SC DHEC Asbestos Waste Manifest and obtain signature on the waste manifest from the CONSULTANT'S PROJECT MANAGER prior to transporting waste.

D. Dispose of asbestos waste in landfills approved by the EPA and/or the state as authorized disposal facilities for asbestos and operating in compliance with Title 40 CFR 61.156 at the time of disposal.

E. Transport waste, accompanied by a manifest, to an approved waste site for disposal as asbestos waste and provide the CONSULTANT'S PROJECT MANAGER a copy of manifest signed by the waste disposal facility representative.

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Appendix A
Asbestos Inspections

AHERA/NESHAP ASBESTOS INSPECTION REPORT
109 OAKLAND AVENUE
MANNING, SC

CLIENT:

Santee-Lynches Regional Council of Governments

City of Manning

Fleming Neighborhood Demolition CDBG Project #4-W-14-004

2525 Corporate Way

Suite 200

Sumter, SC 29154

LOCATION:

109 Oakland Avenue

Manning, SC 29102

DATE OF INSPECTION:

September 29, 2015

DATE OF REPORT:

October 26, 2015

PREPARED BY:

Anthony B. Monk

Environmental Project Manager

SUMMIT ELT, Inc. ***(SUMMIT)***

7349 Peppermill Parkway - Suite A
North Charleston, South Carolina 29418
843-606-6268

SUMMIT Job No. 3784.09

AHERA/NESHAP ASBESTOS INSPECTION REPORT

109 Oakland Avenue, Manning, SC 29102

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1.0 REPORT CERTIFICATION

SUMMIT is pleased to provide environmental consulting services for Santee-Lynches Regional Council of Governments and the City of Manning. Please contact this office at 843-606-6268 with any questions or comments regarding the findings submitted in this report.

This document, entitled *AHERA/NESHAP Asbestos Inspection Report,* was prepared for SanteeLynches Regional Council of Governments and the City of Manning, and the South Carolina Department of Health and Environmental Control (SCDHEC) with sound practices and procedures and in accordance with Asbestos Hazard Emergency Response Act (AHERA), Title II of the Toxic Substance Control Act (TSCA), SCDHEC Regulation 61-86.1, 40 CFR 61, and 40 CFR 763 for Asbestos Containing Materials (ACM) guidance. The results obtained by the work documented in this report fulfill the requirements of federal, state, and local regulations regarding Asbestos Containing Materials.



10/26/15

Anthony B. Monk Date

SC DHEC AHERA Asbestos Building Inspector No. BI-01210

Expiration Date: November 4, 2015

SC DHEC AHERA Asbestos Air Sampler No. AS-00330

Expiration Date: November 5, 2015

SC DHEC AHERA Asbestos Supervisor No. SA-01863

Expiration Date: November 5, 2015

SC DHEC AHERA Asbestos Management Planner No. MP-0199

Expiration Date: November 4, 2015

SC DHEC AHERA Asbestos Project Designer No. PD-00160

Expiration Date: November 4, 2015

2.0 EXECUTIVE SUMMARY

Guidelines for Enhanced Management of Asbestos in Water at Ordered Demolitions, Appendices (2016) Published by AsbestosClaims.Law
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On September 29, 2015, SUMMIT ELT (**SUMMIT**) performed an AHERA/NESHAP Asbestos

Inspection for the structure(s) at 109 Oakland Avenue in Manning, South Carolina.

The purpose of this inspection was to investigate available records for the specification of asbestos containing material (ACM), inspect for suspect materials, sample and analyze suspect materials to test for asbestos, and assess the condition and location of the ACM and other characteristics of the structure.

No records were available for review to determine the date the structure was built or the type of materials used during the construction. The structure is a residential building.

A homogeneous material is a material that appears to be uniform when properties such as age, color, and texture are compared. There were four (4) homogeneous suspect materials observed on the structures. The homogeneous areas are described in detail in section 3.0 of this report.

One (1) residential structure exists at the site. All interior building materials appeared to be in significantly damaged condition.

WB-1 THROUGH WB-5

The sheetrock/joint compound system is located throughout the structure. The material is currently in significantly damaged condition and is friable with a low potential for damage. The material was sampled and the results indicated that the material is classified as Asbestos Containing Material (ACM). The joint compound contains 2% Chrysotile and there is approximately 1700 SF of the material. The material is classified as surfacing. The sample analysis of the material is enclosed in Appendix A. A detailed map showing the locations of the sampling locations can be found in SUMMIT Documentation.

Due to the significantly damaged condition of the wallboard system, all interior flooring and other household contents of the interior of the structure shall be treated as AsbestosContaminated Materials.

The interior subflooring of the structure appeared to be severely damaged and open to the exterior/crawlspace in certain areas. The structure has also some burn damage. It appears that the residential building is structurally unsound for proper asbestos abatement protocols.

3.0 SUSPECT MATERIALS

3.1 Wallboard

WB-1 THROUGH WB-5

The sheetrock/joint compound system is located throughout the structure. The material is currently in significantly damaged condition and is friable with a low potential for damage. The material was sampled and the results indicated that the material is classified as Asbestos Containing Material (ACM). The joint compound contains 2% Chrysotile and there is approximately 1800 SF of the material. The material is classified as surfacing. The sample analysis of the material is enclosed in Appendix A. A detailed map showing the locations of the sampling locations can be found in SUMMIT Documentation.

3.2 Flooring

BA FL-1, BA FL-2 AND BA FL-3

The bathroom flooring is located in the bathroom of the structure. The material is currently in damaged condition and is non-friable with a low potential for damage. The material was sampled and the results indicated that the material is not classified as Asbestos Containing Material (ACM). The material is classified as miscellaneous. The sample analysis of the material is enclosed in Appendix A. A detailed map showing the locations of the sampling locations can be found in SUMMIT Documentation.

3.3 Foundation

FOUND-1, FOUND-2 AND FOUND-3

The cinderblock is located on the exterior foundation of the structure. The material is currently in good condition and is non-friable with a low potential for damage. The material was sampled and the results indicated that the material is not classified as Asbestos Containing Material (ACM). The material is classified as miscellaneous. The sample analysis of the material is enclosed in Appendix A. A detailed map showing the locations of the sampling locations can be found in SUMMIT Documentation.

3.4 Roofing

ROOF-1, ROOF-2 AND ROOF-3

The roofing shingles are located on the roof of the structure. The material is currently in good condition and is non-friable with a low potential for damage. The material was sampled and the results indicated that the material is not classified as Asbestos Containing Material (ACM). The material is classified as miscellaneous. The sample analysis of the material is enclosed in Appendix A. A detailed map showing the locations of the sampling locations can be found in SUMMIT Documentation.

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4.0 SUSPECT MATERIAL QUANTITIES

Summary of Suspect Material Quantities:

SUSPECT MATERIAL	ACM?[1] (Y/N)	ASBESTOS CONTAMINATED?	APPROXIMATE QUANTITY[2]
SHEETROCK/JOINT COMPOUND SYSTEM	**Y**	**N/A**	**1800 SF**
BATHROOM VINYL FLOORING/MASTIC	**N**	**Y**	**100 SF**
CINDERBLOCK	N	N	300 SF
ROOFING SHINGLES	N	N	1000 SF

Quantities: SF = Square Feet LF = Linear Feet CF = Cubic Feet N/A = Not Applicable

Note 1: ACM = Material containing asbestos of any type, in an amount greater than 1%

Note 2: All quantities are estimated and should not be used for bidding purposes

5.0 CONCLUSIONS AND RECOMMENDATIONS

On September 29, 2015, **SUMMIT** performed an AHERA/NESHAP Asbestos Inspection for the structure(s) at 109 Oakland Avenue in Manning, South Carolina.

One (1) residential structure exists at the site. All interior building materials appeared to be in significantly damaged condition.

WB-1 THROUGH WB-5

The sheetrock/joint compound system is located throughout the structure. The material is currently in significantly damaged condition and is friable with a low potential for damage. The material was sampled and the results indicated that the material is classified as Asbestos Containing Material (ACM). The joint compound contains 2% Chrysotile and there is approximately 1700 SF of the

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material. The material is classified as surfacing. The sample analysis of the material is enclosed in Appendix A. A detailed map showing the locations of the sampling locations can be found in SUMMIT Documentation.

Due to the significantly damaged condition of the wallboard system, all interior flooring and other household contents of the interior of the structure shall be treated as AsbestosContaminated Materials.

The interior subflooring of the structure appeared to be severely damaged and open to the exterior/crawlspace in certain areas. The structure has also some burn damage. It appears that the residential building is structurally unsound for proper asbestos abatement protocols.

If the structure is to be renovated or demolished, a copy of this report and a notification of demolition or renovation forms must be submitted to The South Carolina Department of Health and Environmental Control (SCDHEC) at least ten working days prior to these activities taking place.

Bidders are responsible for their own calculations and estimates of quantities. Actual quantities may be more or less than indicated. Though every effort was made to examine wall cavities and other areas for pipe insulation, spray-applied or trowel applied surfacing material or other miscellaneous materials and other Presumed Asbestos Containing Material (PACM), this survey and report only deals with accessible areas of the building. There may be additional inaccessible areas above ceiling, behind walls and below floors that become evident during demolition or renovation activities. If suspect materials are found, additional asbestos testing may be required.

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ACL Doc 21594 · Page 69 of 88 **asbestosclaims.law/library/21594/69**

FIGURES

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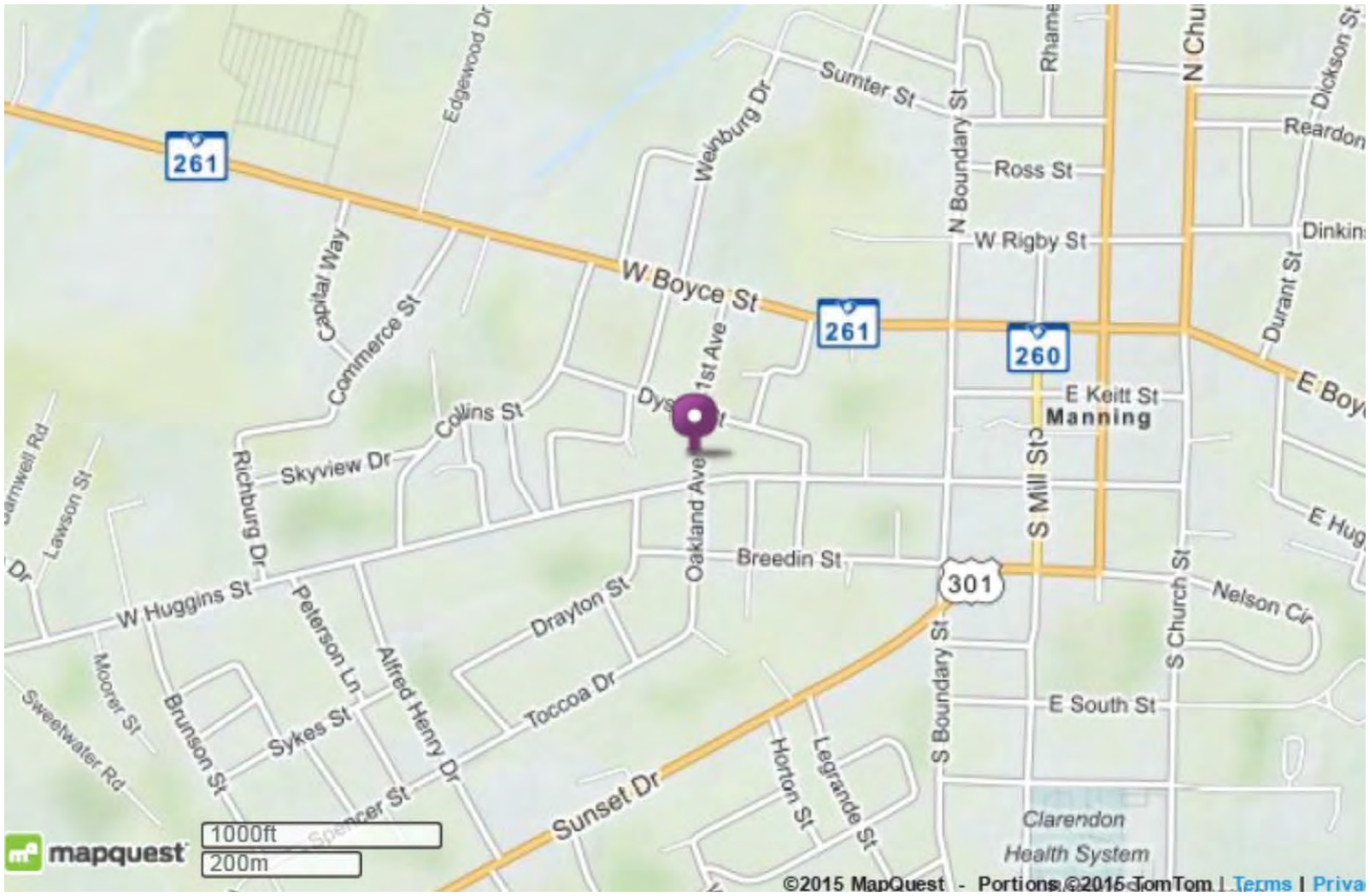


Figure 1 Site Location Map	109 Oakland Ave Manning, South Carolina	**SUMMIT ELT, Inc.** Project: 3784.09

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APPENDIX A

ANALYTICAL RESULTS

EMSL Analytical, Inc.
376 Crompton Street, Charlotte, NC 28273
Phone/Fax: (704) 525-2205 / (704) 525-2382
http://www.EMSL.com charlottelab@emsl.com

EMSL Order: 411507456
CustomerID: SECS21B
CustomerPO:
ProjectID:

Attn: **Tony Monk**
Summit ELT
7349 Peppermill Pkwy
Suite A
North Charleston, SC 29418

Phone: (704) 965-9235
Fax:
Received: 10/07/15 10:20 AM

Analysis Date:Collected:10/13/2015

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Project: **109 Oakland St.**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos %	Fibrous	Non-Asbestos %	Non-Fibrous	Asbestos % Type
WB-1-Wallboard *411507456-0001*	- Wallboard	Brown/Gray Fibrous Heterogeneous	10%	Cellulose	90%	Non-fibrous (other)	**None Detected**
WB-1-Joint Compound *411507456-0001A*	- Wallboard	Tan Fibrous Homogeneous			20% Ca Carbonate 78% Non-fibrous (other)		**2% Chrysotile**
WB-1-Tape *411507456-0001B*	- Wallboard	Beige Fibrous Homogeneous	100%	Cellulose	0%	Non-fibrous (other)	**None Detected**
WB-2-Wallboard *411507456-0002*	- Wallboard	Brown/Gray Fibrous Heterogeneous	10%	Cellulose	90%	Non-fibrous (other)	**None Detected**
WB-2-Joint Compound *411507456-0002A*	- Wallboard						**Stop Positive (Not Analyzed)**
WB-2-Tape *411507456-0002B*	- Wallboard	Beige Fibrous Homogeneous	100%	Cellulose	0%	Non-fibrous (other)	**None Detected**
WB-3-Wallboard *411507456-0003*	- Wallboard	Brown/Gray Fibrous Heterogeneous	10%	Cellulose	90%	Non-fibrous (other)	**None Detected**

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WB-3-Joint Compound *411507456-0003A*	- Wallboard	**Stop Positive (Not Analyzed)**

Analyst(s)

Eric Loomis (8) Lee Plumley, Laboratory Manager *Maria Cao (12)* or other approved signatory

North Charleston, SC 29418

Project: **109 Oakland St.**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos			Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**% Non-Fibrous**	**% Type**
WB-3-Tape *411507456-0003B*	- Wallboard	Beige Fibrous Homogeneous	100%	Cellulose	0% Non-fibrous (other)	**None Detected**
WB-4-Wallboard *411507456-0004*	- Wallboard	Gray Non-Fibrous Homogeneous	10%	Cellulose	90% Non-fibrous (other)	**None Detected**
WB-4-Joint Compound *411507456-0004A*	- Wallboard					**Stop Positive (Not Analyzed)**
WB-4-Tape *411507456-0004B*	- Wallboard	Tan Fibrous Homogeneous	100%	Cellulose	0% Non-fibrous (other)	**None Detected**
WB-5-Wallboard *411507456-0005*	- Wallboard	Gray Fibrous Heterogeneous	10%	Cellulose	90% Non-fibrous (other)	**None Detected**

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Analysis Date:Collected:10/13/2015

Sample	Description	Appearance	%	Fibrous	%	Non-Fibrous	%	Type
WB-5-Joint Compound *411507456-0005A*	- Wallboard							**Stop Positive (Not Analyzed)**
WB-5-Tape *411507456-0005B*	- Wallboard	Tan Fibrous Homogeneous	100%	Cellulose	0%	Non-fibrous (other)		**None Detected**
BA FL-1-Flooring *411507456-0006*	Bath - Flooring	Beige Fibrous Homogeneous	10% 1%	Cellulose Glass	89%	Non-fibrous (other)		**None Detected**

Analyst(s)

Eric Loomis (8) Lee Plumley, Laboratory Manager *Maria Cao (12)* or other approved signatory

North Charleston, SC 29418

Project: **109 Oakland St.**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos %	Fibrous	Non-Asbestos %	Non-Fibrous	Asbestos %	Type
BA FL-1-Mastic *411507456-0006A*	Bath - Flooring	Beige Non-Fibrous Homogeneous			5% 95%	Ca Carbonate Non-fibrous (other)		**None Detected**
BA FL-2-Flooring *411507456-0007*	Bath - Flooring	Gray/Tan Fibrous Heterogeneous	10% 1%	Cellulose Glass	89%	Non-fibrous (other)		**None Detected**
BA FL-2-Mastic *411507456-0007A*	Bath - Flooring	Tan Fibrous Heterogeneous			5% 95%	Ca Carbonate Non-fibrous (other)		**None Detected**

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FOUND-1 *411507456-0008*	- Foundation	Gray Non-Fibrous Homogeneous	<1%	Cellulose	35% Quartz 10% Ca Carbonate 55% Non-fibrous (other)	**None Detected**
FOUND-2 *411507456-0009*	- Foundation	Gray Non-Fibrous Homogeneous			40% Quartz 10% Ca Carbonate 50% Non-fibrous (other)	**None Detected**
FOUND-3 *411507456-0010*	- Foundation	Gray Non-Fibrous Homogeneous			20% Quartz 5% Ca Carbonate 75% Non-fibrous (other)	**None Detected**
ROOF-1 *411507456-0011*	- Roofing	Black Fibrous Heterogeneous	8%	Glass	10% Quartz 15% Ca Carbonate 67% Non-fibrous (other)	**None Detected**

Analyst(s)

Eric Loomis (8) Lee Plumley, Laboratory Manager *Maria Cao (12)* or other approved signatory

North Charleston, SC 29418

Project: **109 Oakland St.**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos	
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**%**	**Type**
ROOF-2 *411507456-0012*	- Roofing	Brown/Black Fibrous Heterogeneous	8%	Glass	8% 5% 79%	Quartz Ca Carbonate Non-fibrous (other)		**None Detected**

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Phone: (704) 965-9235
Fax:
Received: 10/13/15 4:30 PM
Analysis Date: 10/19/2015
Collected:

Project: **109 Oakland St.**

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by TEM via EPA/600/R-93/116 Section 2.5.5.1

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
BA FL-3-Flooring *411507456-0013*	Bath - Flooring	Beige Fibrous Homogeneous	100	<0.1 Fibrous (other)	No Asbestos Detected
BA FL-3-Mastic *411507456-0014*	Bath - Flooring	White Non-Fibrous Homogeneous	99.5	0.55 Fibrous (other)	No Asbestos Detected
ROOF-3 *411507456-0015*	- Roofing	Black Fibrous Homogeneous	100	None	No Asbestos Detected

Analyst(s)

Charles Harris (3)

Lee Plumley, Laboratory Manager
or other approved signatory

This laboratory is not responsible for % asbestos in total sample when the residue only is submitted for analysis. The above report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

Samples analyzed by EMSL Analytical, Inc. Charlotte, NC

Test Report EPANOB-7.24.0 Printed: 10/20/2015 1:02:59 PM

THIS IS THE LAST PAGE OF THE REPORT.

Initial report from 10/20/2015 13:02:59

EMSL Analytical, Inc.
376 Crompton Street

Charlotte, NC 28273
PHONE: (704) 525-2205
FAX: (704) 525 2382

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Bulk Building Material Chain of Custody

EMSL Order Number (*Lab Use Only*): 41150756

Company : Summit ELT	**EMSL-Bill to:** ☐ Same ☑ Different If Bill to is Different note instructions in Comments** *Third Party Billing requires written authorization from third party*
Street: 7349 Peppermill Pkwy Suite A	
City: North Charleston **State/Province:** SC	**Zip/Postal Code:** 29418 **Country:** United States
Report To (Name): Anthony Monk	**Telephone #:** 7049659235
Email Address: amonk@summit-companies.com	**Fax #:** **Purchase Order:**
Project Name/Number: 109 Oakland St	**Please Provide Results:** ☐ Fax ☑ Email ☐ Mail
U.S. State Samples Taken: SC	**CT Samples:** ☐ Commercial/Taxable ☐ Residential/Tax Exempt

Turnaround Time (TAT) Options* – Please Check

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 48 Hour ☐ 72 Hour ☐ 96 Hour ☑ 1 Week ☐ _ Week

*For TEM Air 3 hr through 6 hr, please call ahead to schedule.*There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.

PLM - Bulk (reporting limit)	TEM – Bulk
☑ PLM EPA 600/R-93/116 (<1%)	☑ TEM EPA NOB – EPA 600/R-93/116 Section 2.5.5.1
☐ PLM EPA NOB (<1%)	☐ NY ELAP Method 198.4 (TEM)
Point Count ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ Chatfield Protocol (semi-quantitative)
Point Count w/Gravimetric ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ TEM % by Mass – EPA 600/R-93/116 Section 2.5.5.2
☐ NIOSH 9002 (<1%)	☐ TEM Qualitative via Filtration Prep Technique
☐ NY ELAP Method 198.1 (friable in NY)	☐ TEM Qualitative via Drop Mount Prep Technique
☐ NY ELAP Method 198.6 NOB (non-friable-NY)	**Other**
☐ OSHA ID-191 Modified	☐
☐ Standard Addition Method	

☑ Check For Positive Stop – Clearly Identify Homogenous Group **Date Sampled:**

Samplers Name: Anthony Monk **Samplers Signature:**

Sample #	HA #	Sample Location	Material Description
WB-1	1		WALLBOARD
2			↓
3			
4			
5	↓		
BA FL-1	2		BATH FLOORING
2			↓
3	↓		
FOUND-1	3		FOUNDATION
" 2	3		"

Client Sample # (s): - **Total # of Samples:** 14

Relinquished (Client): **Date:** 10-5-15 **Time:** 1100

Received (Lab): [illegible] **Date:** 10/7/15 **Time:** 10:20 AM EMSL FM

Comments/Special Instructions:
BillTo: Summit ELT, 3575 Centre Circle, Fort Mill, SC, 29715, United States
Attention: Anthony Monk Phone: 7049659235 Email: amonk@summit-companies.com Purchase Order:

7950 7576 0252

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

EMSL Analytical, Inc.
376 Crompton Street

Charlotte, NC 28273
PHONE: (704) 525-2205
FAX: (704) 525 2382

Asbestos Bulk Building Material Chain of Custody

EMSL Order Number (*Lab Use Only*): 411507456

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	HA #	Sample Location	Material Description
FOUND-3	3		FOUNDATION
ROOF-1	4		ROOFING
2	4		↓
3	4		

***Comments/Special Instructions:**
BillTo: Summit ELT, 3575 Centre Circle, Fort Mill, SC, 29715, United States
Attention: Anthony Monk Phone: 7049659235 Email: amonk@summit-companies.com Purchase Order:

Page 2 of 2 pages

APPENDIX B

ASBESTOS LICENSES

C:\amonk\Documents\SUMMIT\PROJECTS\City of Manning\109 Oakland Dr\Appendix B.rtf

ATTACH A COPY OF THE DEMOLITION CONTRACTORS

ASBESTOS CERTIFICATION LICENSE TO THIS WORK PLAN

IN THE SPACE BELOW:

APPENDIX C

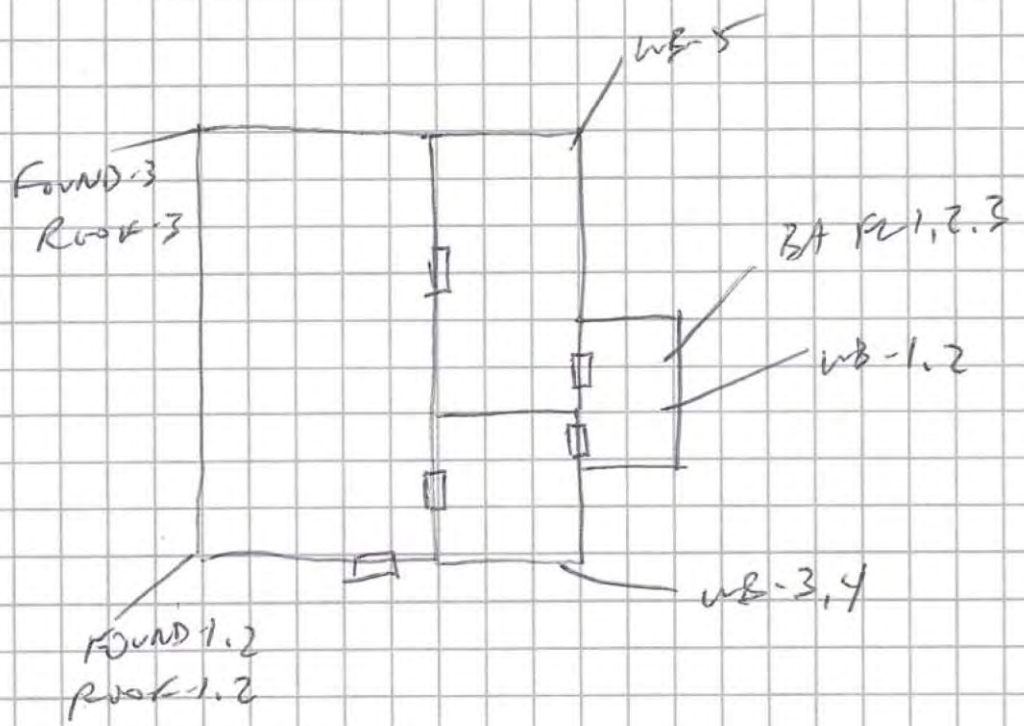
SUMMIT DOCUMENTATION

C:\amonk\Documents\SUMMIT\PROJECTS\City of Manning\109 Oakland Dr\Appendix C.rtf

SUMMIT
ENGINEERING • LABORATORY • TESTING

PREPARED BY:	DATE:	CHECKED BY:	DATE:	PROJECT NO:
AM	9-29-15			
PROJECT NAME: 109 Oakland St				SHEET NO ___ OF ___

Small amount of burn damage
Acc Ceiling Cover
Panelboard on walls, Stirk on ceilings and behind panelboard



Oakland

United States
Environmental Protection
Agency

Office of Air Quality Planning and Standards
Sector Policies and Programs Division
Research Triangle Park, NC

Publication No. EPA-453/B-16-002b
July 2016

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