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8
9 SUPERIOR COURT OF CALIFORNIA

10 COUNTY OF SAN FRANCISCO – UNLIMITED JURISDICTION

11
12 THOMAS RUBINO, Individually and as
13 Successor-in-Interest to CARMINE
14 RUBINO, JR., Decedent; DANIEL
15 RUBINO; and DOES ONE through TEN,
inclusive,

16 Plaintiffs,

17 vs.

18 AC AND S, INC., et al.,

19 Defendants.
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Case No.: CGC-08-274556

**EXHIBITS A-Z TO:
DECLARATION OF JOHN TEMPLIN IN
SUPPORT OF PLAINTIFF' OPPOSITION
TO DEFENDANT BASE
CORPORATION'S MOTION FOR
SUMMARY JUDGMENT AND/OR
ADJUDICATION**

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EXHIBIT "A"

VITAE

Philip John Templin, CIH

Senior Consultant

MAS LLC

3020 Old Ranch Parkway, Suite 300

Seal Beach, CA 90740-2750

Work Phone: (562) 799-5530

EDUCATION

1976 Received a Bachelor of Science Degree in Biochemistry from the University of Pittsburgh, Pittsburgh, Pennsylvania

1980 Received a Master of Science Degree in Industrial Hygiene from the University of Pittsburgh, Pittsburgh, Pennsylvania

PROFESSIONAL WORK SUMMARY

2002 - Present	MAS LLC, Los Angeles, California Certified Industrial Hygienist, Senior Consultant
1991 - 2002	Law/Crandall, Los Angeles, California Certified Industrial Hygienist, Principal Scientist, Corporate Consultant
1987 - 1991	Law Engineering
1986 - 1987	CTL Environmental Services, Inc.
1982 - 1986	Cal/OSHA Consultation Service
1980 - 1982	University of Houston

PROFESSIONAL WORK HISTORY

Mr. Templin joined MAS in 2002 as a Senior Consultant to start their branch office in Los Angeles, California. From 1987 until 2002, Mr. Templin was a Certified Industrial Hygienist, Principal Scientist and Corporate Consultant at Law/Crandall. His experience includes numerous projects of significant magnitude and technical complexity. Prior to joining Law Engineering, Mr. Templin was Director of Asbestos-Related Services and Chief Industrial Hygienist for CTL Environmental Services, Inc. His responsibilities included preparation of proposals, contract specifications, and survey reports, project and personnel management, and program development, e.g., operations and maintenance, respiratory protection, and employee training, both for client and in-house use.

From 1982 to 1986, Mr. Templin served as an associate industrial hygienist for the Cal/OSHA Consultation Service. His duties consisted of performing work place evaluations to identify potential occupational health hazards, preparing written reports to recommend appropriate control alternatives, conducting employee training programs for both client and Cal/OSHA personnel, and assisting employers in understanding and complying with Cal/OSHA requirements via seminars, office meetings and telephone consultations.

Prior to joining Cal/OSHA, Mr. Templin was engaged as an industrial hygienist and, eventually, project manager for an OSHA "New Directions" grant administered by the University of Houston. His duties included developing and presenting employee training programs in occupational health topics throughout OSHA Region VI, preparing grant proposals, and managing the budget and personnel for the project.

SUBSPECIALTY TITLE**Industrial Hygiene****SUBSPECIALTY SUMMARY**

Mr. Templin's experience encompasses all aspects of industrial hygiene practice, which is broadly defined as the anticipation, recognition, evaluation, and control of occupational health hazards. Mr. Templin has practiced this discipline in such disparate venues as manufacturing, commercial, retail, office, medical, and institutional, and has experience in academia, government, and private industry.

SUB-SPECIALTY EXPERIENCE**Indoor Air Quality**

Mr. Templin has performed well over 100 indoor air quality assessments in a wide variety of settings, including medical facilities, retail department stores, office buildings, and hotels. These studies have been both proactive and complaint-driven in nature and have addressed such issues as mechanical system design, performance and maintenance; comfort-related parameters (e.g., carbon dioxide, temperature, relative humidity); air contaminants (e.g., dust, airborne fibers, formaldehyde, volatile organic compounds); bioaerosols; and legionella in water systems. Mr. Templin also served on the committee that developed and issued Law Companies' Work and Test Procedures for Indoor Air Quality.

Industrial Hygiene

Mr. Templin has performed over 500 field surveys covering a wide spectrum of industrial hygiene and regulatory issues including recommending control alternatives, developing training for material safety data sheets, noise and hearing conservation and respiratory protection programs, and advising employers on interpretation of, and compliance with, regulatory agency requirements. His specific areas of expertise include ethylene dibromide, noise, lead, ethylene oxide, and indoor air quality.

Publications and Presentations: Presented Paper #444, "Utilization of Portable Gas Chromatograph...", American Industrial Hygiene Conference, Philadelphia, PA, 1983.

Session Arranger and Co-author, Round Table 203, "Mock Trial", American Industrial Hygiene Conference and Exposition, New Orleans, LA, 2001

Co-presenter Professional Development Course #203, "Establishing Occupational Disease Causation", American Industrial Hygiene Conference and Exposition, Atlanta, GA, 2004.

Co-author, "Asbestos Exposures from Gasket Removal", AIHA Journal (64), September/October 2003, p. 595.

Panelist for two sessions ("Preparing an Industrial Hygienist for Trial: Anticipating Weaknesses and Capitalizing on Strengths"; and "Daubert/Frye Hearing: Low Dose Chrysotile Extrapolation/Causation"), HB Litigation Conferences "Trying an Asbestos Case - How to Get the 'W'", Philadelphia, PA, January 25, 2011

Panelist, "Secondary No Longer: The Growth of Bystander and Take Home Exposure Claims", Perrin Conferences, "Asbestos Litigation Conference: A National Overview & Outlook", September 19-21, 2011, San Francisco, CA

Lead

Mr. Templin has performed evaluations for lead exposure and made recommendations for control measures and regulatory compliance in such disparate venues as industrial plants (battery manufacturing, auto repair, and foundries), recreational facilities (indoor shooting ranges), and commercial/institutional/residential structures. His experience includes testing, health hazard assessment, abatement project design, technical specification preparation, and project management for lead-based paint removal from five bank branch facilities. Mr. Templin has completed numerous lead-related training courses and has been appointed to serve on LAW Companies' steering committee on providing lead-based paint consulting services. Mr. Templin also participated in the planning, scripting, coordination, and presentation of a conference on lead-related issues sponsored by the California State University which was televised via satellite downlink to 50 sites representing over 21 states across the nation.

Asbestos

Mr. Templin has performed building surveys, hazard assessments, project monitoring and reporting, and employee training with regard to asbestos, and has prepared recommendations for control alternatives, removal specifications, and operations and maintenance programs for numerous clients, including Hines Interests Limited Partnership, State of California, Universal Studios, Inc., Dodger Stadium, Shell Oil Company, Santa Fe Realty, City of Burbank, and Bakersfield City Schools. He has also devised procedures for performing spot removal of asbestos-containing fireproofing to be utilized in conjunction with the installation of fire sprinkler systems in high rise buildings, as mandated by Los Angeles City Ordinance. To date, these procedures have been successfully employed in three such buildings, all of them with high occupancy rates, in the Los Angeles area.

Environmental Site Assessments

Mr. Templin has performed, participated in or managed over 50 Environmental Site Assessments (Phase I), several of which involved coordinating survey activities conducted concurrently over a wide geographical area and under severe time constraints. His clients include Home Savings of America, Great Western Bank, Chase Investors Management Corporation and Bankers Trust Company.

Special Projects

Pursuant to cost recovery litigation, Mr. Templin has participated in or managed several projects in which LAW, working in concert with building owners and their legal counsel, has collected samples of asbestos-containing materials for constituent analysis with an eye toward identifying the manufacturer(s). He has also prepared to offer expert witness testimony in these and other related cases (e.g., allegations of sick building syndrome, microbial infestation, personal injury, etc.).

REGISTRATION

Certified Industrial Hygienist, Comprehensive Practice, No. 3064, 1985
Certified Asbestos Consultant (CA), No. 92-0714, 1992
Lead-Related Certified (CA), 1995 (Interim), 1999 (full)

- Inspector/Assessor No. I753
- Project Designer No. D753
- Project Monitor No. M753

PROFESSIONAL MEMBERSHIPS & ASSOCIATIONS

American Academy of Industrial Hygiene
American Industrial Hygiene Association

- Past Chair (June 2000 – January 2002), Law Committee (National)

Seminars

Presented over 300 seminars to employers and employee groups, trade, professional, and labor organizations, and regulatory agency personnel covering a wide variety of issues, including asbestos, indoor environmental quality, mold, noise, ethylene oxide, and hazard communication regulations.

Special Training

University of Southern California, Institute of Safety and Systems Management: Safety and Health Training for Hazardous Waste Site Workers.

University of Alabama: Advanced Noise Control.

University of Southern California, Institute of Safety and Systems Management: NIOSH 582 - Sampling and Evaluating Airborne Asbestos Dust.

American Technologies, Inc.: Asbestos Dust Contamination

Steel Structures Painting Council: Industrial Lead Paint Removal and Abatement

Scitex Corporation: Radiation Training Course and Advanced Operator Certification (XRF Spectrum Analyzer)

American Industrial Hygiene
Conference and Exposition:

- 1991: Bioaerosols in the Workplace
- 1992: Resolution of Indoor Air Quality Complaints
- 1993: Risk Assessment, Inspection, and Abatement of Lead-Based Paint Hazards
- 1994: Resolving the Ambiguities: An Industrial Hygiene IAQ Symposium
- 1995: TSCA – What does it Mean to You?
- 1996: Integrating Loss Prevention and Industrial Hygiene Practices as a Consultant
- 1997: Indoor Air Quality Symposium: Current Practices Around the World
- 1999: Fundamentals of Industrial Hygiene Law and the Business of Providing Expert Testimony
- 2000: The Role of Volatile Organic Compounds (VOCs) in Indoor Environmental

Quality

Reducing Community or Employee Outrage: Risk Communication in Controversy

- 2001: Lead Hazard Evaluation and control in Buildings
- 2002: Prevention, Determination and Remediation of Biological Contamination in Indoor Environments
- 2003: Reconstructing Exposure and Dose: Utility for the Practicing Industrial Hygienist
Microorganisms in Indoor Air: Health Complaints, Sampling Strategies, and Interpretation
- 2004: Community Exposures: Sampling and Control
- 2006: Applied Epidemiology for Industrial Hygienists

Investigative Photography for Safety and Health Professionals

- 2007: Prevention, Determination, and Remediation of Biological Contamination in Indoor Environments: The 2005 Field Guide
- 2010: The Derivation of Occupational Exposure Levels
Ethical Fitness: Choosing Between Right vs. Right
- 2011: Managing Nanomaterial Hazards for EHS Professionals

IAQ 1992: Environments for People

6th International Scientific Conference on Bioaerosols, Fungi, Bacteria, Mycotoxins in Indoor and Outdoor Environments and Human Health, Saratoga Springs, NY, September 6-9, 2011

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EXHIBIT "B"

ATTACHMENT A

Product Name	Type of Product	Formula	Years Marketed
Bondo	Heavyweight Automotive Body Filler	55-60% Talc 38-42% Polyester Resin 2-3% Other Ingredients	1955-77
White Streak	Heavyweight Automotive Body Filler	55-60% Talc 38-42% Polyester Resin 2-3% Other Ingredients	1958-86
Miracle Tone	Heavyweight Automotive Body Filler	55-60% Talc 38-42% Polyester Resin 2-3% Other Ingredients	1958-86
Slik	Heavyweight Automotive Body Filler	55-60% Talc 38-42% Polyester Resin 2-3% Other Ingredients	1958-86
DC-3	Heavyweight Automotive Body Filler	55-60% Talc 38-42% Polyester Resin 2-3% Other Ingredients	1958-86
Martin Senour (CUZ)	Heavyweight Automotive Body Filler	55-60% Talc 38-42% Polyester Resin 2-3% Other Ingredients	1968-86
Martin Senour (Blue Moon)	Heavyweight Automotive Body Filler	55-60% Talc 38-42% Polyester Resin 2-3% Other Ingredients	1968-86
Martin Senour (Pay Day)	Heavyweight Automotive Body Filler	55-60% Talc 38-42% Polyester Resin 2-3% Other Ingredients	1968-86
Martin Senour Microlite	Lightweight Automotive Body Filler	38-42% Talc 48-52% Polyester Resin 7-10% Other Ingredients	1978-86
Bondo	Lightweight Automotive Body Filler	38-42% Talc 48-52% Polyester Resin 7-10% Other Ingredients	1978-86
Dynalite	Lightweight Automotive Body Filler	38-42% Talc 48-52% Polyester Resin 7-10% Other Ingredients	1976-86
Ultralite	Lightweight Automotive Body Filler	38-42% Talc 48-52% Polyester Resin 7-10% Other Ingredients	1976-86
DC-3	Lightweight Automotive Body Filler	38-42% Talc 48-52% Polyester Resin 7-10% Other Ingredients	1976-86
Sherwin Williams	Lightweight Automotive Body Filler	38-42% Talc 48-52% Polyester Resin 7-10% Other Ingredients	1982-86

EXHIBIT

P-2

Parsons 10/11/02

Putty Coat	Automotive Finishing Putty	53-57% Talc 39-43% Polyester Resin 4-6 Other Ingredients	1982-86
Dyna Glass	Reinforced Product	32-38% Talc 50-60% Polyester Resin 8-12% Other Ingredients	1975-86
Bondo Glass	Reinforced Product	32-38% Talc 50-60% Polyester Resin 8-12% Other Ingredients	1975-86
Dyna Hair	Reinforced Product	32-38% Talc 50-60% Polyester Resin 8-12% Other Ingredients	1982-86
Sherwin Williams (SW Hair)	Reinforced Product	32-38% Talc 50-60% Polyester Resin 8-12% Other Ingredients	1982-86
Sherwin Williams (SW Glass)	Reinforced Product	32-38% Talc 50-60% Polyester Resin 8-12% Other Ingredients	1982-86

Other Ingredients: Titanium Dioxide, Calcium Carbonate

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EXHIBIT "C"

Royal-Globe Insurance COMPANIES

ROYAL GLOBE INSURANCE COMPANY
NEW YORK, N.Y. 10004
LLOYD'S LONDON
LONDON, ENGLAND

ROYAL GLOBE INSURANCE COMPANY
NEW YORK, N.Y. 10004
LLOYD'S LONDON
LONDON, ENGLAND

ROYAL GLOBE INSURANCE COMPANY
NEW YORK, N.Y. 10004
LLOYD'S LONDON
LONDON, ENGLAND



20 WESTINGHOUSE ROAD
BEEFORD, N. H. 03102

August 18, 1972

Mr. Victor A. Bacchals, General Manager
Mastern Magnesia Talc Company
Depot Street
Johnson, Vermont 05656

Dear Sir:

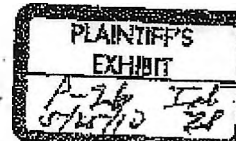
The attached chart contains the results of the dust survey taken on July 25, 1972. The results were compiled by Mr. Eugene Pittelli, Assistant Chief Engineer, Industrial Hygiene, of the Royal-Globe Insurance Company.

The samples were taken using a NSA permissible air sampling pump with a Millipore cellulose acetate filter monitor. Samples were analyzed according to PHS guidelines in assessing dust hazards using filter sampling devices.

An analysis was also made on each of the dust samples submitted for the total number of fibres present. The following are the results of this analysis:

Sample #206	-	0	fibres per c.c.
Sample #109	-	3.5	fibres per c.c.
Sample #113	-	0.9	fibres per c.c.
Sample #110	-	1.1	fibres per c.c.

The above indicates that there were a minimal number of fibres present. If we assume the worse condition that the talc was fibrous, we would still be within the current TLV of 5 fibres per c.c. Sample #109 contained 3.5 fibres per c.c. This would be above the proposed new O.S.H.A. limit of 2 fibres per c.c.



PADUANO

BASF02453

- Page 2 -

The results seem to indicate that the tale in general contains a minimum number of fibrous type dust.

Very truly yours,

ROYAL GLOBE INSURANCE COMPANIES

John G. Amadio

John G. Amadio
Loss Prevention Representative

JGA/sdc

cc: Mr. John O'Rourke
Casualty Loss Control Dept.
Alexander & Alexander, Inc.
225 Broadway
New York, New York

(2) N.Y. Met L.P.&C.

Boston L.P.&C.

Bedford L.P.&C.

enclosures

PADUANO

BASF02454

EASTERN MICHIGAN TAC CO.
DUST SURVEY

Sample Number	Location	Floor	Exposure	MPG Concentration	TLV
109	44 Grade, pkg. machine	1st	2 employees 1/2 day/yr.	3.7	20
206	46 Hopper Screen	3rd	3 employees - 30 min. 2 hrs.	0.15	20
110	Catwalk over Flotation Plant	3rd	1 employee - irregular exp.	1.5	20
113	43 Grade, pkg. machine	1st	2 employees - 1 hr.	2.5	20
800	5 Type pkg. machine	-	1 employee - hrs.	Approx. 40	20

PADUANO

BAEF02456

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EXHIBIT "D"



Johns-Manville

Environmental Control Systems Division

Box 100
Manville, W. J. 80405
(303) 784-8000

725-5010

September 5, 1972

Engelhard Minerals & Chemicals Corporation
Minerals & Chemicals Division
Nenlo Park
Edison, New Jersey 08817

Attention: Mr. T. D. Oulton
Research Department

Dear Mr. Oulton:

Six samples of talc were submitted for possible tremolite content as determined by phase contrast microscopic examination. Analysis was performed by the membrane filter method.

The bulk samples of talc were dispersed in a chamber and collected on membrane filters. Examination of the samples was performed at 430X. Using a random selection of 80 fields, three points were determined:

1. Does the sample contain tremolite
2. The approximate percentage of tremolite
3. The average length of the tremolite fibers

The table below shows the count data.

<u>Sample No.</u>	<u>No. of Particles</u>	<u>No. of Fibers</u>
2346-16-1	396	5
2346-16-2	279	3
2346-16-3	406	0
2346-16-4	361	0
2346-16-5	265	0
2346-16-6	250	0

RUBINO

BASF-EMCC 00093

RUBINO

EAST-EMCC 00894

Page Two
September 5, 1972

T. D. Cullen

This data indicates the presence of tremolite in the first two samples only. The tremolite content of these two samples was approximately 1 per cent. The fibers were between 5 and 10 microns in length, with the average length between 5 and 10 microns.

Photomicrographs of the samples showing tremolite are included. The actual magnification shown is 450X.

Very truly yours,

Edward J. Butera

Edward J. Butera
Industrial Hygienist

njc

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EXHIBIT "E"

SUPERIOR COURT OF NEW JERSEY
LAW DIVISION: MIDDLESEX COUNTY
DOCKET NO. MID-L-5384-11 AS

JOHN SAMPSON,

Plaintiff,

vs.

3M COMPANY, et al,

VIDEOTAPE
DEPOSITION UNDER
ORAL EXAMINATION
OF
GLEN A. HEMSTOCK, M.D.

Defendants.

T R A N S C R I P T of the proceedings as
taken stenographically by and before ANN P. CONLON, a
Notary Public and Certified Court Reporter of the
State of New Jersey, at the Holiday Inn Express,
Route 37, Toms River, New Jersey, on Wednesday, May
9, 2012, commencing at 10:13 a.m.

BRODY DEPOSITION SERVICES
235 East Broad Street
Westfield, NJ 07090
908.789.2000 phone
908.789.2007 fax

1 A. That was one of the problems with
2 talc. It's a very -- there's no major -- you can't
3 say it goes to the paper industry or it goes to the
4 petroleum industry or some big industry. Some of it
5 went into paints, some went into plastic fillers.
6 Let's see, some of it went to the paper industry for
7 pitch control. There were a whole bunch of different
8 small operations, opportunities, so it was a very
9 diverse product. It was used in a lot of different
10 places and I'd be hard put to tell you the relative
11 tonnages that went into the various areas.

12 Q. So is the most refined Emtal product
13 the 500 series product?

14 A. That's to the best of my recollection,
15 yes.

16 Q. Do you know what the intended uses
17 were for that product?

18 A. As I said, it was primarily a matter
19 of whiteness, and obviously in paints, if you're
20 making white paints, you like to have it as white as
21 you can. So I would say paint was probably one of
22 the major applications there. There probably were
23 others as well, but I was not familiar with them.

24 Q. So if we look at the 42 grade Emtal
25 talc as the most coarse grade --

Page 31

1 A. Yes.

2 Q. -- and 500 as the most refined, is
3 that fair?

4 A. Yes.

5 Q. And as the numbers go up in labelling,
6 let's say there was a 71, I know there wasn't a 71,
7 that would be more refined than a 42, for example?

8 A. I don't know where these numbers came
9 from. They were there before I came on the scene.
10 So I'm not sure what the numbering system really
11 applied to. As far as I know, it didn't have any
12 significance, 42 was just a number.

13 Q. So would you expect when, for example,
14 you were doing tests on an Emtal 500 product that the
15 fiber mineral that you would be examining would be
16 significantly smaller than say the 42 product?

17 MR. WILLIAMS: Objection to form.

18 A. Yes. Well, the talc itself is a plate
19 product. It's a plate instead of a fiber.

20 Q. I didn't say the word "fiber."

21 A. No, I know.

22 Q. We'll get to that later, okay?

23 A. Sure.

24 Q. That's why I'm saying don't try to
25 anticipate what I'm going to ask.

1 A. Would you please repeat the question?

2 Q. Sure. When you looked at, for
3 example, the talc, the Emtal 500 product under a
4 microscope as opposed to the 42, would you expect to
5 see smaller particles under the microscope because it
6 was more refined?

7 A. Yes, you would.

8 Q. We'll put to issue later on whether it
9 had fibers or not.

10 A. Okay.

11 Q. It had fibers at some point you found
12 out, right?

13 MR. WILLIAMS: Objection to form.

14 A. Yes.

15 Q. Now, am I correct that there came a
16 point in time when the Emtal talc mine ceased
17 operation, correct?

18 A. Yes.

19 Q. That was around '83, '84?

20 A. As I recall, yes.

21 Q. And at that point in time, a decision
22 was made by someone to gather up all of the
23 materials, research materials that were under your
24 control and transfer them to some central location
25 for the Emtal talc, correct?

1 A. Yes, and that applied only to the
2 discontinued operations.

3 Q. All right. But right now I want to
4 just focus on the Emtal operation. And I think you
5 were asked some questions about this at your
6 deposition with Mr. Williams, but I want to ask you
7 some questions about it, okay?

8 I'm going to show you what's been
9 marked P-303 for identification. Do you see that?

10 A. Yes, I do.

11 Q. You were asked about this a few weeks
12 ago in your deposition, correct?

13 A. That's correct.

14 Q. And I know before Mr. Williams asked
15 you questions about motivations for sending -- I'm
16 not going to ask you those questions at this point.
17 I just want some factual information, okay?

18 A. Okay.

19 Q. This is dated March 7th, 1984,
20 correct?

21 A. Yes, that's correct.

22 Q. And it was sent by you.

23 A. It was sent by me to members within
24 the department, yes.

25 Q. To everyone who worked for you.

1 A. To everyone who had any association
2 with these operations, yes.
3 Q. So anybody in research and
4 development.
5 A. Yes, non-hmm.
6 Q. Now, you say in the first paragraph --
7 well, let me ask you some questions. Did you author
8 this memo?
9 A. I did not author it. It was sent over
10 my signature, obviously. As best I remember, it was
11 prepared by the legal department of Engelhard.
12 Q. Now, do you know who David Swanson
13 was?
14 A. Yes.
15 Q. Was he a good guy?
16 A. Yes, very good guy.
17 Q. You knew I represented his daughter at
18 one point in time?
19 A. No, I didn't know that.
20 Q. And Mr. Swanson said in a deposition
21 that he believed this memo originated with a Mr.
22 Dornbusch. Is that your understanding?
23 MR. WILLIAMS: Objection to form.
24 A. That's probable. I can't say for
25 sure, but I believe that's true.

Page 35

1 Q. And Mr. Dornbusch was who?
2 A. He was head of the legal department at
3 that time.
4 Q. And he worked at the Menlo Park
5 facility?
6 A. He did.
7 Q. Do you know who physically drafted
8 this memo?
9 A. No, I can't tell you who physically
10 drafted it. I don't know.
11 Q. But the legal department basically
12 told you to send this memo out?
13 A. Yes.
14 Q. Now, it says in the first paragraph
15 that it is the policy of Engelhard Corporation. Do
16 you see that?
17 A. Yes.
18 Q. And then it says, "The regular
19 disregarding of outdated business records keeps our
20 storage costs down and enables Engelhard personnel to
21 make more efficient use of those company documents
22 and files that are needed for current operations."
23 Do you see that?
24 A. Yes, I do.
25 Q. What does that mean?

1 A. I think it just means that we have
2 fewer files to go through, having gotten rid of what
3 was done on these operations, because we in research
4 and development had no further need for them.
5 Q. And then it says -- well, it says it's
6 the policy of Engelhard Corporation, correct?
7 A. Yes.
8 Q. You were at Engelhard Corporation
9 beginning in 1956 with some period of time off in the
10 early '60s, correct?
11 A. That's correct.
12 Q. Up until 1984, had you ever seen a
13 memo like this sent out by Engelhard asking to purge
14 documents related to research done by Engelhard?
15 MR. WILLIAMS: Objection to form.
16 A. Not that I recall.
17 Q. Not that you recall?
18 A. Not that I recall.
19 Q. Was this a written policy that you're
20 aware of that said that once an operation was
21 discontinued, that the documents related to that
22 operation should be purged from the research
23 department and placed somewhere else?
24 MR. WILLIAMS: Objection to form.
25 A. I doubt it, but I think it made a lot

Page 37

1 of sense to do that.
2 Q. After you sent this memo in 1984, did
3 you ever send a memo like this again?
4 A. No, not that I recall.
5 Q. So before you sent this memo on March
6 7th, 1984, were you aware of such a policy?
7 MR. WILLIAMS: Objection to form.
8 A. I can't say specifically that I was.
9 As I said, I wasn't surprised, because I think it did
10 make a lot of sense.
11 Q. But since it was a policy, doesn't
12 that mean to you, sir, that somehow that was an
13 established procedure at the corporation?
14 A. Well, it may have been, but it wasn't
15 a written procedure, to the best of my knowledge.
16 Q. And that's my question. Before they
17 asked you to send this memo out in 1984, were you
18 aware in any way of a policy like this?
19 A. I guess I would say probably not, not
20 that I recall.
21 Q. And when they asked you to send this
22 or when they directed you to -- you weren't asked to
23 send this out, right? You were told to send it out,
24 A. Well, I could have objected, I
25 suppose. But I took it as a routine matter --

1 Q. Okay.
 2 A. -- and I agreed with it basically.
 3 Q. Okay. I'm going to get to that part.
 4 A. Okay.
 5 Q. Do you know where this alleged policy
 6 came from?
 7 A. I would imagine it came from the legal
 8 department.
 9 Q. Now, you thought it made sense,
 10 correct, because it was your understanding that the
 11 information was not going to be purged for all time,
 12 it was going to be sent to some central location for
 13 access later on, correct?
 14 A. That's right. It avoided the
 15 cluttering of files. If you sent copies to marketing
 16 and to manufacturing and kept them all in research,
 17 you had three files that you didn't really need, that
 18 you weren't going to use again.
 19 Q. Right. But when you sent this out,
 20 this memo, you as a scientist, you did it with the
 21 understanding that the information you were asking
 22 your people to collect was not going to be thrown out
 23 but put in one central location?
 24 A. That's correct.
 25 Q. Okay, because you would not have

1 people would keep a notebook for a given operation,
 2 so the whole notebook might be purged. And others,
 3 if you have a couple of pages that pertain to that
 4 particular operation, you might purge it out of the
 5 notebook, yes.
 6 Q. Now, it also says that one of the
 7 things that was supposed to be purged from the
 8 research and development department were technical
 9 service requests and responses. Do you see that?
 10 MR. WILLIAMS: Objection to form.
 11 A. Yes.
 12 Q. Is that your understanding?
 13 MR. WILLIAMS: Same objection.
 14 A. Yes.
 15 Q. And when it says technical service
 16 requests and responses, would that, for example,
 17 include any underlying data that was attached to
 18 those responses?
 19 A. If it pertained to that operation, I
 20 would assume that's true.
 21 Q. So for example, if you had a test that
 22 was run pursuant to a technical service request and
 23 the test results included photomicrographs, do you
 24 know what a photomicrograph is?
 25 A. Yes.

1 condoned, as a scientist, to throw out this
 2 information, would you?
 3 MR. WILLIAMS: Objection to form.
 4 A. No, there would be no reason to do
 5 that.
 6 Q. Okay. Now, the information that you
 7 told your people to gather up included personal
 8 files, correct?
 9 A. Yes.
 10 Q. You told them to actually go into all
 11 their notebooks and pull out all the stuff on Emtal,
 12 correct?
 13 A. I don't recall specifically having
 14 requested that, but we wanted to purge whatever was
 15 available, yes.
 16 Q. I'm not trying to trick you. It says,
 17 "As a first step in complying with this policy within
 18 the research department, please review your personal
 19 files and sort out all notebooks," correct?
 20 A. Yes.
 21 Q. Does that mean go to the notebooks and
 22 purge whatever relates to Emтал in the notebooks for
 23 central handling?
 24 A. Yes, I think that's true. I think
 25 that some people, it depended on the scientist. Some

1 Q. . What is that?
 2 A. Well, it's a picture, basically, a
 3 micrograph picture, either a microscope picture or I
 4 suppose an electron microscope picture.
 5 Q. Is that important in terms of
 6 assessing and making independent judgments about
 7 testing that was done to be able to see those?
 8 A. It may be. In some cases it may not
 9 be.
 10 Q. It says also memoranda and reports
 11 that pertain to Emтал, correct?
 12 A. Pertain to discontinued operations,
 13 yes.
 14 Q. Including Emтал?
 15 A. Including Emтал.
 16 Q. And when the pages were physically
 17 taken out of these books -- by the way, these lab
 18 books, were they wire lab books or were they --
 19 A. No.
 20 Q. They were like loose-leafs that you
 21 could open and close?
 22 A. No, they were hard-bound. They were
 23 hard-bound notebooks.
 24 Q. What does that mean?
 25 A. Well, you couldn't pull the pages out.

1 They were stitched into the binding of the book, and
2 when the books were -- in principal. It never always
3 worked that way in practice. The investigator, the
4 scientist was supposed to compute at the end of the
5 day what he had accomplished during that day, record
6 it in the notebook and have it signed by his
7 supervisor. That was the standard policy.

8 It didn't always happen that way,
9 because it was difficult to, you know, sometimes the
10 supervisor wasn't available or various things. But
11 that was normal. So there was not a loose-leaf
12 notebook. It would take some effort to get the pages
13 out.

14 Q. So how would they physically get the
15 Enthal pages out of these notebooks? They had to
16 razor them out? What would they do?

17 A. You could probably pull them.

18 Q. Pull them out?

19 A. Yes.

20 Q. What was physically done with those
21 pages pursuant to this purge memo?

22 MR. WILLIAMS: Objection to form.

23 A. I can't answer specifically what was
24 done. I would assume that the given notebook, the
25 composition from a given notebook would be put into

1 Halket, is said, correct?

2 A. Yes.

3 Q. Who was Chuck Halket? Who did he work
4 for?

5 A. Well, he was not in research. I don't
6 think he was in the legal department either. I think
7 he was part of administrative services, but I'm a
8 little fuzzy on that. I really don't recall.

9 Q. Okay. And you were supposed to --
10 let's get the procedure down. You were supposed to,
11 pursuant to your memo, purge all the Enthal-related
12 information from your files, if you got this memo,
13 correct?

14 MR. WILLIAMS: Objection to form.

15 A. Yes.

16 Q. And then you were supposed to get a
17 box from Chuck?

18 A. That's what the memo indicates, yes.

19 Q. And then you were supposed to put it
20 in a box.

21 A. Put it in a box.

22 Q. And then it says, "Keep those boxes in
23 your office area available for pickup."

24 A. Mm-hmm.

25 MR. LA SALA: Is that a yes, Doctor?

1 some kind of a file or perhaps with a staple or
2 something of the sort to hold it together. So I
3 can't address that directly. I don't know.

4 Q. I believe Mr. Swanson said that he was
5 involved in this process and that he was told to
6 basically put his Enthal-related information outside
7 his door. Is that your recollection?

8 MR. WILLIAMS: Objection to form.

9 A. It's not my recollection.

10 Q. What do you recall?

11 A. I wouldn't know. I don't know how it
12 was collected, to be honest with you, I really don't
13 know. It's not unreasonable, and it may have been
14 Swanson at that point was a manager in the
15 organization, and so he may have had more stuff than
16 some of the scientists did, some of the individual
17 personnel.

18 Q. Well, who physically gathered up the
19 Enthal information that was ordered purged from the
20 research and development files pursuant to your memo?

21 MR. LA SALA: Objection to form. Go
22 ahead, Doctor.

23 A. I think, as indicated in here, this
24 Chuck Halket's job was to do that.

25 Q. So you could get the boxes from Chuck

1 A. Yes.

2 Q. Now, it says a little further down,
3 "All the notes books will be returned to you on or
4 before March 19th." Do you see that?

5 A. Yes.

6 Q. So was somebody else directed or was
7 it somebody else's job to take these lab notebooks
8 with the Enthal information and remove the Enthal
9 information from the lab books and give them back to
10 the scientists?

11 MR. WILLIAMS: Objection to form.

12 A. I couldn't answer that question. I
13 don't know. It may have varied from one individual
14 to the other. I would have thought the individual
15 would remove the pages from the notebook and collect
16 them, but that's not clear in my mind.

17 Q. It says here, "In the event that the
18 notebook you are currently using contains information
19 from discontinued operations," meaning Enthal,
20 correct?

21 MR. WILLIAMS: Objection to form.

22 A. No, and all the rest.

23 Q. So for example, if you had an old
24 notebook that had Enthal information, you weren't
25 using it anymore, you could just put that in the box,

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1 MR. WILLIAMS: Objection to form.
 2 A. I don't think there was anybody,
 3 because I don't think anybody at that time realized
 4 it was unsafe or potentially unsafe.
 5 Q. I'm trying not to go there yet.
 6 A. Okay.
 7 Q. Going back to P-363, your initials on
 8 the bottom say GAE; and then it says JF. What does
 9 JF stand for, do you know? Do you see right here?
 10 A. Yes, I see. I think that would be the
 11 secretary. That's part of -- and I don't know who --
 12 I'm trying to think, I'm not aware of whose initials
 13 that is. It was not either Mrs. Knox or Mrs. Werner,
 14 which were the two that reported to me.
 15 Q. After these documents were retrieved
 16 pursuant to the March 7th, 1984 memo, where did they
 17 physically go?
 18 A. I can't answer the question, except
 19 that they went to the central storage, central
 20 repository in the legal department, as best I know.
 21 Q. Who became the custodian for those
 22 documents?
 23 A. I would assume it would be Mr.
 24 Dornbusch.
 25 Q. Some of these documents were the

1 MR. WILLIAMS: Objection to form.
 2 A. They weren't BASF lawyers at that
 3 time, but the lawyers did, yes.
 4 Q. Engelhard lawyers.
 5 A. Yes, okay.
 6 Q. Mr. Dornbusch was there for part of
 7 the time?
 8 A. Yes, I assume he was.
 9 Q. Mr. Halket, do you remember him?
 10 A. Oh, I remember him. I'm not sure he
 11 was there at the deposition.
 12 Q. If they were sitting in the
 13 deposition, they know, do they not, that the
 14 documents that you're being questioned about that
 15 were part of your research and development files were
 16 being used in these depositions, correct?
 17 MR. WILLIAMS: Objection to form.
 18 A. I would assume they would, yes.
 19 Q. And they would have clearly been aware
 20 that when these documents were being purged from your
 21 files, they related at least in part to the lawsuit
 22 that you were testifying in, correct?
 23 MR. WILLIAMS: Same objection to form.
 24 calls for speculation.
 25 A. Yes.

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1 subject of the Westfall litigation, correct?
 2 A. Yes.
 3 Q. And you were asked questions about
 4 some of these documents way back when, when your
 5 deposition was taken, correct?
 6 A. Yes.
 7 Q. I probably had dark curly hair back
 8 then.
 9 MR. LA SALA: Objection.
 10 A. I probably had more hair than I have
 11 today.
 12 Q. When these documents were ordered to
 13 be removed from the research and development
 14 department, the legal department was aware that some
 15 of these documents at least were being used in a
 16 lawsuit, correct?
 17 MR. WILLIAMS: Objection to form,
 18 calls for speculation.
 19 A. Yeah, I couldn't answer that question
 20 for sure.
 21 Q. Well, you were asked about them in
 22 your deposition, correct?
 23 A. Yes.
 24 Q. And the BASF inhouse lawyers sat in
 25 your deposition next to you, didn't they?

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1 Q. Now, just so I'm clear about what was
 2 covered in the March 7th, 1984 memo, and then we'll
 3 take a break, laboratory notebooks containing
 4 asbestos analysis of the Emtal product or samples
 5 were included in the materials covered by this memo,
 6 correct?
 7 MR. WILLIAMS: Objection to form.
 8 A. Yes, I suppose it would be.
 9 Q. Reports relating to the asbestos
 10 analysis of Emtal were included in the materials
 11 covered by this memo, correct?
 12 MR. WILLIAMS: Same objection.
 13 A. I would assume so, yes.
 14 Q. When I say the memo, I'm talking about
 15 the March 7th, 1984 memo.
 16 A. Yes.
 17 Q. Memorandums relating to the analysis
 18 of Emtal talc or ore samples were included in the
 19 materials subject to this memo, correct?
 20 MR. WILLIAMS: Same objection.
 21 A. I would assume so.
 22 Q. Notes relating to the asbestos
 23 analysis of the Emtal product or samples were
 24 included in the materials that were subject of this
 25 memo, correct?

1 MR. WILLIAMS: Same objection.
 2 A. I would assume so.
 3 Q. Laboratory notebooks containing
 4 entries relating to asbestos and Ental were included
 5 in the materials gathered pursuant to this memo,
 6 correct?
 7 A. I would assume so.
 8 MR. WILLIAMS: Same objection.
 9 Q. Reports containing discussions of
 10 asbestos and Ental were included in the materials
 11 that were the subject of this memo, correct?
 12 MR. WILLIAMS: Same objection.
 13 A. Yes.
 14 Q. Memorandums containing discussions of
 15 asbestos associated with Ental were included in the
 16 materials pursuant to this memo, correct?
 17 MR. WILLIAMS: Same objection.
 18 A. Yes.
 19 Q. Notes relating to discussions of
 20 asbestos associated with Ental products or talc or
 21 ore were included in the memo, correct?
 22 MR. WILLIAMS: Same objection.
 23 A. Yes.
 24 Q. Documents containing suggestions,
 25 recommendations, warnings, forecasts or directions

1 that were in your department related to Ental
 2 products or ore were the subject of this memo,
 3 correct?
 4 A. I would assume they would be, yes.
 5 MR. WILLIAMS: Same objection.
 6 Q. Now, you were deposed on two separate
 7 occasions in the Westfall case, correct?
 8 A. That's correct.
 9 Q. Do you know what happened to that
 10 case?
 11 A. No, I really don't.
 12 Q. Since you were deposed in the Westfall
 13 case, since the second day of your deposition up
 14 until 2012, were you ever consulted by the lawyers
 15 for Engelhard or BASF in relation to asbestos and
 16 Ental talc?
 17 MR. WILLIAMS: I'm going to object and
 18 I'll instruct the witness not to answer. It would
 19 require him to reveal communications with counsel for
 20 BASF or Engelhard.
 21 MR. PLACITELLA: That's not what I'm
 22 asking, substance.
 23 Q. Did any lawyer from BASF or Engelhard
 24 ever visit with you again between the last time you
 25 were deposed in the Westfall case and until very

1 recently in 2012 concerning Ental?
 2 MR. WILLIAMS: And he's looking for a
 3 yes or no answer.
 4 MR. LA SALA: Yes or no on that,
 5 Doctor.
 6 A. Yes.
 7 Q. When was that?
 8 A. I couldn't tell you exactly, but it
 9 was maybe 2008, 2009.
 10 Q. And who was it that came to see you in
 11 2008 and 2009?
 12 A. Well, Mr. Williams was one and I guess
 13 Mr. Timpone.
 14 Q. So from 1983 when you were deposed and
 15 Mr. Williams came to see you sometime in 2008 or
 16 2009, did any lawyer from either Engelhard or BASF
 17 visit you concerning the issue of asbestos and Ental
 18 talc?
 19 A. No, they did not.
 20 Q. Did they know where to find you?
 21 MR. WILLIAMS: Objection to form,
 22 calls for speculation.
 23 A. Yes. I don't know that they knew how
 24 to find me. We moved around a few times since I
 25 retired.

1 Q. How did they find you now?
 2 A. I don't know.
 3 Q. Somebody found you.
 4 A. Yes, they did.
 5 Q. Mr. Williams is pretty good, huh?
 6 A. Mr. Williams is pretty good.
 7 Q. So all those lawyers before them, they
 8 weren't so good?
 9 A. I didn't have any connection with
 10 them.
 11 MR. PLACITELLA: Why don't we take a
 12 break.
 13 THE VIDEOGRAPHER: The time is
 14 approximately 11:29. We're now going off the video
 15 record.
 16 (A brief recess is taken.)
 17 THE VIDEOGRAPHER: The time is
 18 approximately 11:42. No testimony was given while
 19 off. We're now back on the record. You may proceed.
 20 BY MR. PLACITELLA:
 21 Q. I neglected to ask you one question
 22 follow-up to the last thing I spoke to you about.
 23 In addition to being physically
 24 visited, were you contacted in any way by the lawyers
 25 for either Engelhard or BASF related to asbestos and

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1 Engelhard took issue with or questioned the
2 methodology that was used by Manville in doing these
3 tests?

4 A. No. The only question I would have is
5 whether or not these were really within the ore body
6 or whether they were taken outside. Those numbers or
7 descriptions don't mean a thing to me.

8 Q. Well, it says some was taken from the
9 west side, correct?

10 A. Yes.

11 Q. Another was taken from the foot wall,
12 correct?

13 A. Yes, that's what it says.

14 Q. Another says the east hanging wall,
15 right?

16 A. Yes.

17 Q. So we know that you said that the ore
18 body was kind of elongated, not deep, right?

19 A. Yes.

20 Q. So we know they took some from the
21 east and we know they took some from the west,
22 correct?

23 MR. WILLIAMS: Objection to form.

24 A. Yes, that's what it says. However,
25 they're waste rock samples.

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1 Q. Right.

2 A. Which leads to the question whether
3 they were part of the product. Probably not.

4 Q. But they took samples from the east
5 side of the mine and the west side of the mine and
6 when they sampled them, they found asbestos in all
7 the samples, correct?

8 MR. WILLIAMS: Objection to form.

9 Q. Correct, that's what it says.

10 MR. WILLIAMS: Same objection.

11 A. Well, chlorite I wouldn't consider to
12 be asbestos.

13 Q. That's your X-ray analysis which you
14 said wouldn't pick it up, right?

15 A. That's right.

16 Q. Manville didn't use X-ray, they used
17 the OSHA method, right?

18 A. Yes, they counted fibers.

19 Q. And they counted fibers. And it says
20 asbestos fibers.

21 A. Yes.

22 Q. And then they found asbestos fibers in
23 the rock samples from the west side of the mine and
24 the east side of the mine, correct?

25 MR. WILLIAMS: Objection to form.

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1 A. Yes, that's what it says.

2 Q. You have in front of you P-92.

3 A. Yes, I do.

4 Q. My notes don't indicate whether anyone
5 has ever showed you this before. I try to keep track
6 of that.

7 This is a May 25th, 1973 letter from
8 Johns-Manville again to Mr. Oulton, correct?

9 A. That's correct.

10 Q. He worked in your department, correct?

11 A. Yes, he did.

12 Q. He was Mr. Engle's predecessor?

13 A. Yes.

14 Q. And presumably these were outsourced
15 samples to Johns-Manville to do testing?

16 A. Yes, I would assume so, yes.

17 Q. And again, they have samples J-1
18 through J-4. Do you see that?

19 A. Yes.

20 Q. And then there's also a K-1.

21 A. Are those possibly the same samples?

22 Q. I think they are, that's why I'm
23 asking you. They look like the same samples from the
24 other one?

25 A. Yes.

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1 Q. Do you see it has the same numbers as
2 it did in the prior, in terms of asbestos fibers?

3 A. Right, yes.

4 Q. And do you see where it says percent
5 asbestos?

6 A. Yes.

7 Q. So of the samples that were taken,
8 according to the report given to you by
9 Johns-Manville, the samples ranged from zero on one
10 sample, right?

11 A. Minus-minus.

12 Q. And then there were four other
13 samples, and the percentage of asbestos ranged from
14 .6 to 1.6 percent.

15 A. That's right.

16 Q. So if they looked on the east side of
17 the mine and the west side of the mine, they found
18 asbestos in the rock from .6 percent to 1.6 percent,
19 correct?

20 MR. WILLIAMS: Objection to form.

21 A. Yes. It's a matter of how you define
22 mine. As I suggested earlier, it may be outside the
23 ore body that they were mining from.

24 Q. But that's speculation on your part.

25 A. Yes, it is, agreed.

1 Q. It's unlikely that you would pay an
2 outside consultant money like Manville to do tests of
3 samples that don't pertain to what's actually going
4 on in the mine. Would you agree?

5 MR. LA SALA: Objection to form.

6 MR. WILLIAMS: Objection to form,
7 calls for speculation.

8 A. Yes.

9 Q. Now, it indicates once again that
10 there were photomicrographs taken of the samples.
11 Would the photomicrographs have been covered by the
12 1984 purge memo?

13 A. Yes, I would certainly assume so.

14 MR. WILLIAMS: Objection to form.

15 Q. Now, the next group, unless Mr.
16 Williams is going to tell me differently, the next
17 group of documents that I could find relating to any
18 testing of Emtal talc for asbestos occurred in 1976.
19 Are you aware of any further testing between 1973 and
20 1976 as you sit here today?

21 A. No. I'd be surprised if there
22 weren't, but I'm not aware of it.

23 Q. Okay. So if any testing was done
24 between '73 and '76, the results of those tests would
25 have been subject to the 1984 purge memo.

1 A. Probably would have, yes.

2 MR. WILLIAMS: Objection to form.

3 Q. Do you believe that there were
4 probably tests done between '73 and '76?

5 A. I have no reason to believe either
6 way.

7 Q. Okay. Now, I saw that in your
8 testimony in the Lopez case, Mr. Williams asked you
9 questions about studies conducted by Harvard and
10 NIOSH in around 1976. Do you recall him asking those
11 questions?

12 A. Yes, I do.

13 Q. Did you have anything to do with those
14 studies?

15 A. No, I did not.

16 Q. Do you have any familiarity with those
17 studies?

18 A. Not really, no.

19 Q. Were they done at the direction of
20 yourself or your department?

21 A. I would not expect so.

22 Q. All right. Would you be able to speak
23 authoritatively in any respect concerning what those
24 studies showed?

25 MR. WILLIAMS: Objection to form.

1 A. Probably not.

2 Q. Am I correct that until Mr. Williams
3 actually showed you certain documents related to
4 those studies, you had never even heard of those
5 studies?

6 A. Well, I heard of NIOSH and OSHA --

7 Q. But the studies --

8 A. The studies themselves, no.

9 Q. So I'm not going to ask you all the
10 questions about those studies. Is that good news?

11 A. Yes, that's good news.

12 Q. Now, to the extent that those studies
13 showed that there was actinolite in the Emtal talc,
14 did you consider that an asbestos form of material?

15 A. I would consider it asbestos-form,
16 mineral, yes.

17 Q. And it would have been considered as
18 an asbestos form of mineral by Engelhard during the
19 time that Emtal was being mined, correct?

20 A. I would think so, yes.

21 Q. Okay, I just skipped five pages. I
22 have in front of you P-129, which is a technical
23 service request, February 10, 1977. Do you see that?

24 A. Yes.

25 Q. And it was from Shafer to Marchetti.

1 Who is Marchetti?

2 A. Marchetti was the manager of -- I
3 guess he was manager of product development at that
4 point. So he was in the research department, yes.

5 Q. Now, Mr. LaSala was probably saying to
6 himself, Chris, you can't pronounce Marchetti?

7 A. It is Marchetti.

8 Q. Placitella can't pronounce it.

9 Now, you got a copy of this, correct?

10 A. Yes, I did.

11 Q. Can we go to the second page?

12 A. Min-hum.

13 Q. This is the result of the analysis
14 pursuant to the TSK, correct?

15 A. Yes.

16 Q. And the summary in the beginning says,
17 "Two rafters or bulk samples of talc and two
18 respirable dust samples collected at the Emtal plant
19 by MESA were examined by EMC" -- who is EMC, do you
20 know?

21 A. That was Engelhard Minerals &
22 Chemicals. After the merger it became EMC.

23 Q. -- "and by Walter McCrone Associates
24 for fiber count and for the presence of asbestos,"
25 right?

Page 202 1 MR. PLACITELLA: Why don't we take two 2 minutes. 3 THE VIDEOGRAPHER: The time is 4 approximately 4:13. We're going off the video 5 record. 6 (A brief recess is taken.) 7 8 THE VIDEOGRAPHER: The time is 4:15 9 p.m., we're now back on the video record. No 10 testimony was given while we were off. You may 11 proceed. 12 BY MR. PLACITELLA: 13 Q. It's 4:15 and we've agreed to suspend 14 the deposition for today, and we will work out 15 another day with Mr. LaSala and Mr. Williams and of 16 course your schedule, okay? 17 A. Okay. 18 Q. We'll figure out another day to have 19 you be done with me, okay? 20 A. The whole day? 21 Q. Probably. Well, Mr. Williams may have 22 a few questions. 23 A. Okay. 24 THE VIDEOGRAPHER: The time is 25 approximately 4:16 p.m. This concludes today's	204 2 CERTIFICATE OF OFFICER 3 4 I, ANN P. CONLON, a Notary Public and 5 Certified Court Reporter of the State of New Jersey, 6 do hereby certify that prior to the commencement of 7 the examination, the witness was duly sworn by me. 8 9 I DO FURTHER CERTIFY that the 10 foregoing is a true and accurate transcript of the 11 testimony as taken stenographically by and before me 12 at the time, place, and on the date hereinbefore set 13 forth. 14 I DO FURTHER CERTIFY that I am neither 15 a relative nor employee, nor attorney or counsel to 16 any of the parties involved, that I am neither 17 related to nor employed by such attorney or counsel, 18 and that I am not financially interested in the 19 outcome of the action. 20 21 22 23 NOTARY PUBLIC OF THE STATE OF NEW JERSEY 24 My Commission Expires: 2/3/16 25 License No. 30XT000999
Page 203 1 portion of the dep. We're now going off the video 2 record. 3 4 (The deposition is adjourned at 4:16 p.m.) 5 6 * * * * * 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25	

SUPERIOR COURT OF NEW JERSEY.
LAW DIVISION: MIDDLESEX COUNTY
DOCKET NO. MID-L-5384-11 AS

JOHN SAMPSON,

Plaintiff,

vs.

3M COMPANY, et al,

Defendants.

DEPOSITION OF:

GLEN A. HEMSTOCK

VOLUME II

T R A N S C R I P T of the proceedings as
taken stenographically by and before ANN P. CONLON, a
Notary Public and Certified Court Reporter of the
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Route 37, Toms River, New Jersey, on Tuesday, May 29,
2012, commencing at 10:10 a.m.

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4 3 in order, you should see the Royal Globe, and I'll
5 put that up. Do you see I have it up there?

6 A. Yes.

7 Q. Do you see where they talk about Royal
8 Globe, and we went through this before on the first
9 day of your deposition, and it gives fiber readings
10 for the Emtal talc?

11 A. Yes.

12 Q. And then the next one I put in there
13 is Johns Manville, which would be Exhibit 6 in front
14 of you, which I'll put up. So you have in front of
15 you Exhibit 6. Do you remember I asked you questions
16 about this?

17 A. Yes, I do.

18 Q. I'll blow up the section of Exhibit 6
19 that I'm referring to. See where it says, "Six
20 samples of talc were submitted for possible tremolite
21 content as determined by phase contrast microscopic
22 examination" and then the table shows the number of
23 fibers?

24 A. Yes.

25 Q. So is my first question, "By the end

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1 of 1972, the following tabs found asbestos in Emtal:
2 Royal Globe and Johns Manville," true or false?

3 MR. LA SALA: Objection.

4 MR. WILLIAMS: Objection to the form
5 of the question.

6 A. I would say true.

7 Q. So can you mark "true" on that? Just
8 check off "true."

9 MR. WILLIAMS: We object to this,
10 having the witness mark up the exhibit. Do we have
11 another copy of the exhibit that isn't marked? And
12 we'll label the marked version as Exhibit 412A or
13 something like that?

14 MR. PLACITELLA: Sure.

15 MR. LA SALA: I also object to this
16 procedure.

17 Q. Go to the next page. The next page
18 says, "In 1977, the following laboratories found
19 asbestos in Emtal." Do you see that?

20 A. Yes.

21 Q. It says, "EMC, McCrone, and Exxon."
22 Do you see that?

23 A. Yes.

24 Q. Is that true or false?

25 MR. WILLIAMS: Object to the question,

282

1 object to the procedure.

2 MR. LA SALA: Same objection.

3 A. Yes, I think on the basis of what
4 we've reviewed, I would say yes, it's true.

5 Q. Can you put a cross on "true," please?

6 MR. LA SALA: Same objection.

7 Q. The next page, "In 1979, the following
8 labs found asbestos in Emtal: Georgia Tech, NIOSH,
9 McCrone, Engelhard," and CTEES I think is also

13 Q. So having seen this, is the statement
14 "In 1979 the following labs found asbestos in Emtal:
15 Georgia Tech, NIOSH, McCrone and Engelhard" true or
16 false?

17 MR. WILLIAMS: Objection to form.
18 Object to this procedure.

19 MR. LA SALA: Same objection.

20 A. These are air samples.

21 Q. How about if you cross out NIOSH?
22 Just put a line through it.

23 A. I can accept the others a little more
24 readily.

25 Q. And cross out CTEES at the bottom,

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1 because that's the same thing as Georgia Tech.

2 A. Okay.

3 Q. So in 1979 the following labs found
4 asbestos in Emtal: Georgia Tech, McCrone and
5 Engelhard. True or false?

6 MR. WILLIAMS: Same objection.

7 A. Yes, that would be true.

8 Q. If you look at Exhibit 219, just so
9 the record is clear, CTEES, that's Georgia Tech,
10 right?

11 A. Yes, Engineering Experiment Station.

12 Q. Okay, next. I went to your testimony
13 over the weekend, and is it true or false, "four
14 independent scientists concluded there was asbestos
15 in Emtal"? And when I say that, I quote your

16 testimony, which says from last time, "So as of the
17 time this was written by Mr. Triglia to you, we now
18 have four independent judgements looking at
19 photographs taken under a microscope all coming to
20 the conclusion that they found chrysotile fiber in
21 fatal talc, true?" And you answered, "Yes, that's
22 what the data says."

23 MR. LA SALA: Objection.

24 MR. WILLIAMS: Objection to form.

25 Q. Do you remember that testimony?

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1 A. Yes, I do.

2 Q. So is it true or false, four
3 independent scientists concluded asbestos was in
4 fatal?

5 MR. LA SALA: Same objection.

6 MR. WILLIAMS: Same objection.

7 A. Yes, the only objection I have to it
8 is the fact that they were grab samples, and we
9 really don't know -- the fact that they found some I
10 guess would support the statement, but whether you
11 find it day in and day out, we really don't know.

12 Q. I'm going to get to that, but as a
13 statement is it true or false?

14 A. It would be true.

15 MR. WILLIAMS: Same objections.

16 Q. The next one --

17 MR. WILLIAMS: Is there a page

18 reference for that deposition testimony of Mr.
Page 72

19 Hemstock?

20 MR. PLACITELLA: I'll get it for you.

21 The next one, the page reference is page 192.

22 Q. Next, do you recall giving this
23 testimony? "So as of May, 1979, there is no doubt,
24 is there, at this point that there is asbestos being
25 found in the talc from the Emtal mine?"

286

1 Your answer, "Yes, and I would agree
2 with that statement." True or false?

3 MR. WILLIAMS: Same objection.

4 MR. LA SALA: I'm looking at page 192,
5 and that question and answer do not appear.

6 MR. PLACITELLA: Then it's my error in
7 terms of the page number.

8 Q. Do you recall giving that testimony?

9 A. Yes, I do, but I don't know whether it
10 was on 192 or not.

11 Q. Cross out 192 at the bottom. I'll fix
12 it later.

13 A. Okay.

14 Q. Do you recall giving that testimony?

15 MR. WILLIAMS: And again, we object to
16 the form of the question and this entire procedure,
17 and to the exhibit, which, as the doctor just noted,
18 is inaccurate.

19 Q. Take Exhibit 207 out.

20 A. Yes, I believe that to be true.

21 Q. So on the summary it says, "So they
Page 73

22 looked at samples for 15 weeks straight and they
23 found fibers in every sample." You answered,
24 "Mm-Hmm, yes."
25 "And a few of the Ental samples showed

287

1 relatively high fiber counts. That was Mr. Triglia's
2 judgement, correct?" Your answer, "Yes."
3 "Do you have any reason to doubt his
4 judgement?" Your answer, "No, I don't." True or
5 false?

6 A. True.

7 MR. WILLIAMS: Objection to form.

8 MR. LA SALA: Object to form.

9 MR. WILLIAMS: Was there a page
10 reference for that deposition testimony?

11 MR. PLACITELLA: Kacy will give it to
12 you at the break.

13 Q. Now, I want to just focus specifically
14 on your responsibilities for a moment. Your
15 responsibilities focus strictly on R and D, correct?

16 A. That's correct.

17 Q. You were not privy to what the project
18 manager or the product manager was doing when it came
19 to interacting with customers about something?

20 A. No, I was not.

21 Q. For example, I think you told us that
22 you were unaware that customers had told Engelhard
23 that they would not tolerate any asbestos in their
24 products, correct?

14 Q. Now, I'm going to blow up -- do you
15 know what a material safety data sheet is, by the
16 way?

17 A. Well, it's a document provided I
18 believe by the product manager, and I'm sure there
19 was input probably from some people in R & D and some
20 people in manufacturing. But it originated, I
21 believe, with the product manager.

22 Q. And would you agree that the purpose
23 of a material safety data sheet is to tell the truth
24 about the product?

25 MR. WILLIAMS: Objection to form.

295

1 MR. LA SALA: Objection to form.

2 A. Yes, you would normally think so, yes.

3 Q. Now, I want to show you where it says
4 "Technical Data" on page three, I've highlighted it.
5 It states, "The commercial product grades Emtal platy
6 talcs shipped from the Johnson, Vermont plant have
7 been examined by the most appropriate and sensitive
8 mineralogical diagnostic methods available, and it
9 can be stated with confidence that no trace of any of
10 the asbestos minerals, namely chrysotile, amosite,
11 anthrophillite, tremolite, actinolite, or crocidolite,
12 can be detected by standard X-ray powder diffraction
13 methods or by scanning electron microscope methods at
14 the highest magnification."

15 Is that a true statement, Doctor, that
16 all the testing that you did at Engelhard in the labs

Glen Hemstock, Vol. 7, 05.29.12

17 and that you had others do for you found no trace of
18 any asbestos minerals?

19 MR. LA SALA: Objection.

20 MR. WILLIAMS: Objection to form and
21 foundation.

22 A. No, that's an overstatement.

23 Q. Is it true or false?

24 A. I would say this statement as it
25 exists is false.

296

1 Q. Can you put "false"?

2 A. Yes.

3 MR. WILLIAMS: Objection.

4 MR. LA SALA: Objection.

5 Q. Can you turn to the next page in my
6 questions? It's Exhibit 404.

7 A. Yes.

8 Q. I'm going to represent to you that
9 this document came from the files of the duPont
10 Corporation, and if you look at the second paragraph,
11 I've highlighted it and I'm blowing it up.

12 A. Yes.

13 Q. Is that essentially the same statement
14 we had from the prior document?

15 MR. LA SALA: Objection to form.

16 MR. WILLIAMS: Objection to form.

17 A. Yes, essentially the same.

18 Q. It says that with confidence there's
19 no trace of asbestos in Cmtal talc?

4 A. I can't answer that question. I don't
5 know.

6 Q. Could you put a question mark there?

7 A. Okay.

8 Q. I only want to know what you know.

9 Can you go to the next question? Go to Exhibit 192.

10 Exhibit 192 is a January 15th, 1979 draft memo to
11 NIOSH. Is that correct?

12 A. Yes, it appears so.

13 Q. Can you look at the second paragraph?
14 Stated is, "Is there any justification for singling
15 out asbestos-free talc for the hazardous labelling
16 proposals cited in the draft document?" Do you see
17 that?

18 A. Yes.

19 Q. Was Ental an asbestos-free talc?

20 MR. LA SALA: Objection to form.

21 MR. WILLIAMS: Objection to form.

22 A. This was 1979.

23 MR. LA SALA: Doctor, if you have to
24 read the entire document for context, please do so.

25 A. There's no indication of who wrote

302

1 this letter, and neither is there an indication that
2 it was ever sent. It's a draft.

3 Q. I'm just asking you whether that's an
4 accurate statement or not.

5 A. On the face of it, it is not.

6 Q. I won't ask you to check one way or

7 the other, because we don't know, we have no proof
8 whether it was sent or not.

9 A. That's correct.

10 Q. So we'll leave that one alone, I won't
11 ask you to mark it. Is that fair?

12 A. Yes, that's fair.

13 Q. Would you look at Exhibit 232, please?
14 Exhibit 232 is a customer report dated October 8th,
15 1980. Do you see that?

16 A. Yes.

17 Q. Do you recognize any of the names of
18 the people at Minerals & Chemicals on this report?

19 A. Yes, I recognize Mr. Richardson and
20 Mr. Zimmermann, and I don't know KRM.

21 Q. Now, it talks about the requirements
22 of what they're going to buy. Is that fair?

23 A. Yes.

24 MR. LA SALA: Objection.

25 A. It appears so.

303

1 Q. It says, "Requirements in 1980, 500
2 tons; in 1981, 10,000 tons; and in 1982, 30,000
3 tons," correct?

4 A. Yes, those are projections.

5 Q. And then there's a section here that
6 says, "Attention JM Zimmermann." He's the product
7 manager, correct?

8 A. That's correct.

9 Q. It says, "Congoleum Management is

25 speeches, move to strike your testimony. Just ask

382

1 the witness questions, please.

2 MR. WILLIAMS: We can go off the
3 record.

4 MR. PLACITELLA: I'm not going off the
5 record.

6 MR. WILLIAMS: Joe, are we done for
7 the day?

8 MR. LA SALA: Yes.

9 MR. WILLIAMS: Are we going off the
10 record now, Mr. Placitella?

11 MR. PLACITELLA: If we're done, yes.

12 THE VIDEOGRAPHER: The time is
13 approximately 3:52. This concludes today's portion
14 of the video deposition. We're now going off the
15 video record.

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18 (The deposition is adjourned at 3:55 p.m.)

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1 CERTIFICATE OF OFFICER

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3 I, ANN P. CONLON, a Notary Public and
4 Certified Court Reporter of the State of New Jersey,
5 do hereby certify that prior to the commencement of
6 the examination, the witness was duly sworn by me.

7

8 DO FURTHER CERTIFY that the foregoing
9 is a true and accurate transcript of the testimony as
10 taken stenographically by and before me at the time,
11 place, and on the date hereinbefore set forth.

12 I DO FURTHER CERTIFY that I am neither
13 a relative nor employee, nor attorney or counsel to
14 any of the parties involved, that I am neither
15 related to nor employed by such attorney or counsel,
16 and that I am not financially interested in the
17 outcome of the action.

18

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22 NOTARY PUBLIC OF THE STATE OF NEW JERSEY

23 My Commission Expires: 2/3/16

24 License No. 30XI000999

25

INTER-DEPARTMENTAL MEMORANDUM		Property of R&D Division		MINERALS & CHEMICALS DIVISION	
TO	All R&D Personnel	FROM	G. A. HUNTER	DATE	March 7, 1984
SUBJECT	DOCUMENT RETRIEVAL -- DISCONTINUED OPERATIONS				

It is the policy of Engelhard Corporation to avoid the undue accumulation of documents that are no longer likely to be needed in our business operations. The regular discarding of outdated business records keeps our storage costs down and enables Engelhard personnel to make more efficient use of those Company documents and files that are needed for current operations. As a first step in complying with this policy within the Research Department, please review your personal files and sort out all notebooks, duplicate copies of notebooks, technical service requests and responses, memoranda and reports that pertain to the following discontinued operations:

Engelhard Minerals Ltd.
 SOR (Societe Chimie de la Bauxite)
 Speedi Dri Corporation
 Astol
 Chemische's Petrochemical Operation
 Chynaroga Lime Co.

All information contained in your files pertaining to these operations should be withdrawn and placed in file boxes for discard. Appropriate file boxes can be obtained from Chuck Hachal at extension 5071. Please keep these boxes in your office area, available for pick up on March 15, 1984. In the event that the notebook you are currently using contains information from these discontinued operations, please place it on the top of the box. All these notebooks will be returned to you on or before March 15th. Please understand that it is our intent to retain copies of those documents to be preserved from discontinued operations only in our central files and can be accessed there should the need arise.

Your cooperation in this matter is much appreciated.

GAH:jf



Washington, D. C. 20540

WITNESSES

L. A. Hunter

PATD:W

PAGE 00157

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EXHIBIT "F"

MINERALS & CHEMICALS DIVISION
MINERAL PRODUCTS & CHEMICALS CORPORATION
BENLO PARK, BRIDGE, NEW JERSEY 08807

TECHNICAL SERVICE REQUEST

TSR No. 7-2

To: G. A. Hemstock
By: E. J. Triglia From: J. H. Shaper
Market: District:
Copies to: AJR Data Information Required:
Customer/Other:
Subject: FINAL WASTE ROCK-ASBESTOS-ROCK PARTICLES & FREE SILICA

Description of Problem and Work Requested:

So as to be certain we are or are not exposing our miners to asbestos-form particles or free silica in quantities that are deemed to be injurious to their health we request an analysis of four mine rock waste samples be made for asbestos-form material and free silica. The sample submitted are as follows.

73-J-1	West Side "A"	chlorite schist
73-J-2	West	footwall
73-J-3	East	hangingwall
73-J-4	East Side "A"	chlorite schist

Date: Feb 27, 1973 Signed: J. H. Shaper Approved:

Date Received: 5-12-73 Charge: 73-8-973
DAI TO ERM INC
Copies to: CDR GAGE ERM TBO TAC Assigned to: E. J. Triglia

Keywords:

Test Results & Comments:

(See Attached)

Date Completed: 5/12/73 Hours: 21 Datebook Ref: 3057-14; 3014-47
File Code: 2305 Signed: E. J. Triglia
RM-9372

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TEST RESULTS AND COMMENTS:

The four mine rock samples described in the TSR were submitted just as they came from the mine, that is as chunks or large pieces of rock. A portion of each rock sample was reduced in size using the jaw crusher and finally ground in a micropulverizer to obtain as representative a sample as possible.

The prepared samples were examined by X-ray diffraction analysis to determine their mineralogical makeup. The free silica (quartz) content of each sample was then determined by chemical assay. A portion of each pulverized sample was also sent to the Industrial Hygiene Laboratory of Johns-Manville Products Corporation to determine the presence of "asbestiform" particles by phase contrast microscope techniques as defined by OSHA. The results of the tests are outlined in Table I attached. A copy of the Johns-Manville report by E.J. Kulava is also attached. (1)

The X-Ray analysis showed the presence of chlorite as the major mineral in all four samples with indications of possibly a small amount of talc also present. Sample No. J-3 from the East Hanging Wall also had a minor quantity of quartz. There was no evidence of any of the asbestos type minerals listed in the ACGIH booklet, "Threshold Limit Values for 1972". The asbestos minerals that we looked for and could not find were Chrysotile, Tremolite, Anthophyllite, Actinolite and Crocidolite.

The chemical analysis showed that there were merely traces of quartz present in all but the J-3 sample which had 3.25% - this confirms the X-Ray results. With 3% quartz present the TLV for total dust permissible in the air around this sample site would be reduced from 20 to 25 million particles per cubic foot. For the other three samples, of course the TLV's for mineral dust in airborne samples are the same as those given for Talc.

TABLE I

RESULTS OF TESTS ON EWAL MINE WASTE ROCK SAMPLES

Sample No.	73-J-1	73-J-2	73-J-3	73-J-4
Sampling Site	West Side "A" West		East	East Side "A"
Identification	Chlorite-	Footwall	Hangings-	Chlorite-
	Schist		Wall	Schist
X-Ray Analysis	Chlorite	Chlorite	Chlorite+ some quartz	Chlorite
% Free Silica	0.26	0.10	3.25	0.18
No. Asbestos Fibers counted*	3	4	3	8

* Based on a total particle count of 500. (see Johns-Manville report attached)

(non-asbestiform), i.e., 20 m.p.p.e.f.

The report from E. J. Bulava of Johns-Manville indicates the presence of a few fibers observed in each of the four samples tested. This was estimated to be less than 1 number % on a number count basis for samples J-1, 2 and 3 and slightly more than 1% for sample J-4. For bulk samples this is generally considered acceptable by NIOSH standards even if all the particles which seem to fit the "asbestiform" classification as defined by OSHA, are indeed asbestos minerals. However, it is doubtful that microscopic observation at 450 magnification is sufficient to differentiate between an asbestos type particle and one that may have the appearance of a fiber with a 3/1 length to diameter ratio but which may actually be due to nothing more than particle orientation or other influences. Generally speaking, fiber counting by phase contrast microscope techniques can very likely be challenged and probably discredited by the use of more sophisticated test methods such as by scanning electron microscope examination coupled with energy dispersive X-ray analysis of individual particles present in the field of the microscope.

It was considered an unwarranted expense to do this type of test at this time because these are not ideal samples. It would be more practical and meaningful to do analyses of this kind on air-borne samples taken at mine locations under actual operating conditions. Perhaps this can be done at a later date by Bob Kolesar using the NIOSH field sampling kits which were acquired by Dick Quinn and have recently been calibrated by Mr. Kolesar here at the Manito Park laboratory.

NOTE:

- (1). Sample 75-K-1 included in Bulava's report is a sample of kaolinite clay which was submitted along with the other 4 samples.

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EXHIBIT "G"

INTER-DEPARTMENT MEMORANDUM		TDD		MINERALS & CHEMICALS DIVISION	
TO	Dr. G. G. Albert	FROM	T. D. Quinn	DATE	March 6, 1975
SUBJECT	Inspection of Certain Clay Samples by Johns-Manville Industrial Hygiene Laboratory to detect and determine presence of "asbestiform" particles by Phase Contrast Microscope Techniques and as defined by OSHA.				

A particular concern regarding possible presence in Attapulginic clays of particles that might possibly be identified as an asbestos mineral or classified as "asbestiform" when sampled and examined by phase contrast microscopy according to standard OSHA test procedures was subjected to preliminary test by submission of a set of samples to the Johns-Manville Industrial Hygiene Laboratory, a group whose competence in this field seems to be generally recognized by OSHA and others.

The samples submitted were as follows:

- E-19-73-A: 2 blend of 50% Attagel 50 and 50% Spray Batin.
- E-19-73-B: 100% Attagel 50. (Fluid Energy Milled, Alpine Classified).
- E-19-73-C: A blend of 50% Attagel 90 and 50% KHAL 50.
- E-19-73-D: 100% KHAL 500.
- E-19-73-E: 100% Attagel 40 (Fluid Energy Milled only).
- E-19-73-F: 100% Attamax 100M.

The Johns-Manville report by E. J. Bulava is attached herewith, wherein it is noted that at least some fibrous material (generally estimated to be less than 1 number % on a number count basis) was observed in all six samples as submitted.

Polaroid photographs selected as representative are available for examination with the particles classified as asbestos or as "asbestiform" under the OSHA definition circled in each photograph; some supplementary comments of my own are added to each set.

In general, however, it would appear that any air-borne particulate material as sampled and tested can indeed present particles classifiable as "asbestos" under the OSHA definition, even though in truth the appearance may be due to

cc: 20

AJR ERL AX-DAV ERT TDD (5)

signed

T. D. Quinn

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nothing more than particle orientation or other influences. This should support an aggressive effort on our part to discredit the OSHA phase contrast microscope technique with all the evidence that we might be able to bring to bear.

#0400; 0600

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EXHIBIT "H"

**Johns-Manville
Products Corporation**

Manville, New Jersey 08815
(201) 725-2000

May 25, 1973

Mr. T. D. Oulton,
Research Department
Engelhard Minerals & Chemicals Corp.
Minerals & Chemicals Division
Manic Park
Edison, New Jersey 08817

Dear Mr. Oulton:

Inspection of your samples numbered 73-J-1 through 4 and 73-K-1 has been completed. The analysis consisted of aeration of a portion of each sample and collection on membrane filters, mounting the filters on slides, and phase contrast microscope inspection. As requested, a sufficient number of fields were counted to obtain a minimum of 500 total particles for each slide. The number of particles considered to be asbestos fibers was also recorded.

The results are given in the following table.

<u>Sample Number</u>	<u>Total Particles Counted</u>	<u>Asbestos Fibers Counted</u>	<u>% Asbestos</u>
73-J-1	503	3	0.6
73-J-2	502	6	1.2
73-J-3	503	3	0.6
73-J-4	506	8	1.6
73-K-1	504	0	0.0

Samples 73-J-1 through 4 appeared very similar, having primarily large particulate. Sample 73-K-1 was composed of very fine particulate, about one micron in size, which tended to agglomerate. No fibers were noted.

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Page Two
May 25, 1973

T. D. Dulton

during the counting of the first 304 particles. Scanning the filter, a few fibers were noted which were three to four microns in length.

One Polaroid photograph is enclosed for each of the four "J" samples, and four photographs for the "K" sample.

Very truly yours,

Edward J. Bulava
Edward J. Bulava
Industrial Hygienist

/rjc

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EXHIBIT "I"

The samples were first analyzed by scanning 10 grid openings (0.0071 mm^2) on each filter to determine the presence or absence of fibers and to insure that the sample preparation was adequate for analysis. Each fiber (3 to 1 aspect ratio) in each of 5 grid openings was then analyzed using both selected area electron diffraction and energy dispersive x-ray elemental analysis for fiber identification. Fiber lengths were determined by comparison with calibration marks on the viewing screen.

BASF_LOPEZ000013041

August 26, 1976

William A. Burgess
Associate Professor
Harvard University
School of Public Health
Kresge Center for Environmental Health
6650 Huntington Avenue
Boston, Massachusetts 02115

Dear Bill:

As we discussed on August 24, we have completed free slices and asbestos fibers analysis of the 28 samples sent to us by Maryanne on May 20.

Free slices determinations were made using the x-ray diffraction technique recommended by NIOSH in its document "Criteria for a Recommended Standard: Occupational Exposure to Crystalline Silica." On this batch of samples, our lab reported a minimum detectable limit of 20 ug per sample. No free silica (i.e. <20ug) was detected in any of the eighteen samples submitted.

The ten air samples for fiber determinations were analyzed for asbestos fibers using analytical transmission electron microscopy. Samples were prepared using a modification of the technique published by Ottix and Isom (paper enclosed). Instead of using a wettable film, we have modified this technique to use only a heavy carbon coating which allows analysis by electron diffraction and microprobe techniques. Particle loss by this technique has been shown to be quite low (i.e. <5%). All samples were prepared in a laboratory clean hood.

Each of the samples were found to contain elongated particles meeting the definition of a fiber (3 to 1 aspect ratio). However, most elongated particles were identified as talc based on their selected area electron diffraction patterns. Several of these particles were identified as antigorite. Single chrysotile fibers were observed in samples A-77 and A-80. No asbestos fibers were seen in any of the other samples.

Also enclosed are x-ray diffraction and light microscopy studies of the talc bulk samples which were submitted to W.C. McGraw. I believe these data are in basic agreement with the results obtained by both Karen Gold and Johnson and Johnson.

I am very encouraged by the low free silica values which we are obtaining and the lack of asbestos fibers in either the bulk or airborne materials. These studies should provide some further answers as far as health effects of "pure" talc exposures. The presence of nickel at levels of 2000 to 3000 ppm may be a further point for us to consider. We need to discuss this during our meeting of September 7.

Sincerely,

John M. Dement
Industrial Hygiene Section
Industry-wide Studies Branch

enclosures (7)

John Dement/pj/Rm. 540/ POB/Cinst., Ohio 45202/ 8-26-76

HARVARD UNIVERSITY
SCHOOL OF PUBLIC HEALTH

KRESGE CENTER FOR ENVIRONMENTAL HEALTH
DEPARTMENT OF ENVIRONMENTAL HEALTH SCIENCES



May 20, 1976

Mr. John Dement
NIOSH
Robert A. Taft Laboratories
4676 Columbia Parkway
Cincinnati, Ohio 45226

Dear John:

Under separate cover I am sending you eighteen respirable mass filters from the Vermont Talc Winter Study. These randomly selected filters represent fifteen full-shift exposures at the three companies. Data concerning the sample locations and the filter weights is enclosed in Appendix I.

I am also forwarding half-filter samples of the ten heaviest fiber samples for asbestos analysis by transmission electron microscopy. These Millipore filters have been counted at HSPH by phase contrast microscopy using the latest USPHS/NIOSH asbestos counting procedure (Leidel et. al., April, 1976). The fiber counts and sample locations appear in Appendix II.

However, our sampling protocol involved taking parallel Millipore and Nuclepore fiber samples and the evaluation of the corresponding Nuclepore filters by scanning electron microscopy has enabled us to distinguish rolled talc particles and talc shards from actual fibers. Thus, the fiber counts from the few Nuclepore filters which we have examined have been reduced to almost zero. As soon as all the Nuclepore filters have been counted, I will send you this information.

I apologize for being unable to visit your lab in Cincinnati and to attend the AIHA meeting in Atlanta. As June rapidly approaches my traveling has been restricted to a 50 mile radius of the Boston Hospital for Women. However, I do intend to get to Cincinnati in the latter part of the summer. I also would appreciate it if you could forward me a copy of your two papers that were presented in Atlanta.

Thank you very much.

Sincerely yours,

Maryanne G. Boundy
Staff Industrial Hygienist

BASF_LOPEZD00013038

Appendix I Respirable Mass Data

I. Vermont Talc Company

Windham Mine

<u>Date</u>	<u>Name</u>	<u>Job</u>	<u>Filter #</u>	<u>Filter wt.</u>
1. 1/6		Maintenance	309	0.244 mg
2. 1/7		Boat operator	312	0.583

Chester Mill

3. 1/5		Bagger	356	0.713
4. 1/7		Crusher, palletizer	337	1.690
5. 1/8		Palletizer	344	1.150

II. Windsor Minerals

West Windsor Mill

6. 1/12		Maintenance	360	0.565
7. 1/13		Wet mill operator	404	2.687

Gassetts Mill

8. 1/14		Bagger, palletizer	425	0.957
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Argonaut Mine

9. 1/13		Loading operator	393	0.349
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Hammondsville Mine

10. 1/13		Scraper	379	0.951
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III. Eastern Magnesia Talc Company

Mill

11. 2/24		Palletizer "42, 41"	490	1.289
		" "41"	584	0.751
12.		General Utility	504	1.573
13. 2/25		Forklift operator	553	0.411
		" "	561	0.386

Mine

14. 2/25		Driller	505	0.210
		" "	526	0.192
15.		Driller	617	0.702

Appendix II Fiber Counts on Millipore Filters

I. Vermont Talc Company

Date	Location	Filter #	Fibers/cc
1. 1/7	Mill - Bagging area	A-43	63.5
2.	" " "	A-45	8.9
3.	" " "	A-44	7.5
4. 1/8	" - Palletizing area	A-46	7.9
5.	" - Crusher	A-50	7.3

II. Windsor Minerals - Argonaut Mine

6. 1/14	Automatic Miner	A-65	7.5
---------	-----------------	------	-----

III. Eastern Magnesia Talc

7. 2/24	Mine - Scraper	A-73	16.1
8. 2/24	Mill - 5-tube bagger area	A-70	6.0
9. 2/25	" " "	A-80	6.4
10.	" - Palletizing area	A-77	4.6

No fibers of asbestos detected by NIOSH
 TEM studies some background chrysotile

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EXHIBIT "J"

2 May 1977

Mr. Trigiani
Engelhard Minerals & Chemicals Corporation
Mento Park
Edison, New Jersey 08818

Dear Mr. Trigiani:

We have completed our microscopic examination of the 10 talc samples which you submitted. Under your purchase order 33728 the samples were to be examined for the presence of asbestos and fibers.

The detection and identification of asbestos was determined by dispartion staining.

Samples E-32-77A-E-32-77C and E-32-77E-E-32-77G are free of asbestos. These nine samples are non-fibrous.

Sample E-32-77H differs from the other nine samples in that it is very fibrous. This sample contains approximately 20% fibrous antigorite. The sample also shows the presence of approximately 1% chrysotile asbestos.

Thank you for consulting McCrone Associates and if you have any questions concerning these results, please contact us.

Mark Dalglish
Research Microscopist

MP:fo
ref: 6883

8750

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EXHIBIT "K"



walter c. mcrone associates, inc.

CONSULTING: ULTRAMICROANALYSIS • MICROSCOPY • SMALL PARTICLE PROBLEMS • SOLID-STATE CHEMISTRY

18 May 1977

Mr. E. J. Triglia
Engelhard Minerals & Chemicals
Menlo Park
Edison, New Jersey 08818

Dear Mr. Triglia:

We have completed our examination of the six talc samples which you submitted under purchase order 39777.

In your letter you requested that fiber counts be made by OSHA Phase Contrast Methods along with identification and quantitation of asbestos present. The phase contrast method is used for samples collected on filters and cannot be used on bulk samples. Therefore, results are given for total amount of fibrous material, the results of which are given in the table below.

<u>Sample no.</u>	<u>% (wt.) Asbestos</u>	<u>Type of asbestos</u>	<u>Total % wt. fibrous material</u>
E-44-77-A	2	tremolite	3
E-44-77-B	5	tremolite	5
E-44-77-C	3	tremolite	4
E-44-77-D	3	tremolite	4
E-44-77-E	4	tremolite	4
E-44-77-F	2	tremolite	4

Thank you for consulting McCrone Associates and if you should have any questions concerning these results, please contact us.

Sincerely,

Mark Palenik
Research Microscopist

MP:fe
ref: 6083

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EXHIBIT "L"



walter c. macrone associates, inc.

CONSULTING: ULTRAMICROANALYSIS • MICROSCOPY • SMALL PARTICLE PROBLEMS • SOLID-STATE CHEMISTRY

*Completed
Version 2/10/77*

27 June 1977

Mr. Frank J. Dzierzanowski
Englehard Minerals and Chemicals Corporation
Menlo Park
Edison, New Jersey 08818

Dear Mr. Dzierzanowski:

We have completed our examination by light microscopy of the two talc samples which you submitted under purchase order number 33715.

A comparison of the minerals present and their approximate quantities is given in the table below. The most significant difference between the two samples is the amount of chlorite present. Sample R 72-77B has approximately five times the amount of chlorite present in R 191-77A. Because chlorite and talc appear similar under the microscope, photomicrographs would not show any significant differences between the samples. Magnesite and calcite also appear similar under the microscope.

Another significant difference between the two samples is the presence of fibrous actinolite in sample R 191-77A. Approximately 90% of the actinolite present is fibrous and can be classified as asbestos. However, no fibrous actinolite was detected in sample R 72-77B.

Apart from mineralogical differences between the two samples the following textural difference is noted.

Sample R 72-77B shows a largely schistose structure with segregation of the principal minerals into lenticles or lenses up to several millimeters thick and a few centimeters long, characteristic of a high degree of dynamic metamorphism.

Sample R 191-77A on the other hand shows a granular texture with equant carbonate grains surrounded by a talc matrix showing no evidence of schistosity. Veins, probably also of carbonate permeate the matrix. The granularity of the rock suggests a combination of thermal and dynamic metamorphism.

Mr. Dzierzanowski
Page Two

% (wt.) of Minerals Present in Talc Samples

Mineral	R 191-77A	R 72-77B
Talc	50	43
Magnesite	40	-
Calcite	-	6
Chlorite	10	50
Quartz	-	1
Actinolite	<1	0.5
Iron Oxide	trace	-

Thank you for consulting McCrone Associates and if you have any questions concerning this report, please contact us.

Sincerely

Mark Palenik
Research Microscopist

MP:jg
Ref. MA 6083 - P.O. 33736

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EXHIBIT "M"

Walter A. McCrone Associates, Inc.

AUG 10 1977

SCANNING: ULTRAMICROANALYSIS • MICROSCOPY • SMALL PARTICLE PROBLEMS • SOLID-STATE CHEMISTRY

6 July 1977

Mr. Duane Heydon
Hallmark Cards Incorporated
Kansas City, Missouri 64111

Dear Mr. Heydon:

Enclosed is our laboratory report on your sample of balloons
JMI-2000269, which contains a very small amount of asbestos
fibers.

Since you were in Chicago we have learned that OSHA's definition
of a fiber has been changed, as of the enclosed memo dated 1-19-77,
from 5:1 aspect ratio and 3 μ m maximum width back to their 1975
numbers which are given in the enclosed page from the Federal Register.

If you have any questions, please let me know.

Sincerely yours,

Lucy B. McCrone

Lucy B. McCrone
Senior Research Scientist

LEWIS
and
RAY, 2007 P.O. CHICAGO

PADUANO

BASF02497

ANALYSIS FOR ASBESTOS

Sample description or number MJ - 2005269, balloons,assortedDate 1 July, 1978Client HALLANGER Coors IncNA reference 3907Method: Polarized light microscopy.

Identification of asbestos is based on refractive index as described in the Rules Proposed by the U.S. Food and Drug Administration for Asbestos Particles in Talc, pages 27079-90, Federal Register Vol. 38, No. 188, 28 September 1973, with the aid of dispersion staining as described by R.O. McGrone, in Environmental Health Perspectives 9, 257-61, 1974.

Sample Preparation: 25 of the 50 balloons were washed with distilled tap water to remove the dusting powder from within the balloons. The powder was collected on a membrane filter.

Total weight of sample mounted for analysis: 0.6 mgNumber of chrysotile fibers found: 0Number of chrysotile fibers per mg: 0Number of amphibole fibers found: 3 (in 0.3 mg)Number of amphibole fibers per mg: 10

Comments:

The dusting powder is talc which contains about 0.5% of tremolite. The tremolite is in the form of small prisms, a few of which must be called fibers according to the CSM and FDA definitions (length:width $\geq 3:1$, width $\leq 5 \mu m$, length $\geq 5 \mu m$). These fibers amount to about 10% of the total tremolite, i.e., 0.05% of the sample.

Signed L. B. McGrone

Walter C. McGrone Associates Inc.

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EXHIBIT "N"

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
MINERALS & CHEMICALS DIVISION

PROPERTY OF M&C DIVISION		DATE	
TO	FROM	August 18, 1977	

TO	F. D. Oulton	R. Berger	4/2/77
FROM	MINERALOGICAL EVALUATION OF WATERBURY AND JOHNSON TALC		

Synopsis:

One and pulverized samples of Waterbury and Johnson (Fatal) mines talc were compared. X-ray diffraction data show Fatal contains more talc and muscovite and less chlorite and dolomite than the Waterbury product. X-ray fluorescence shows Fatal contains more arsenic and silica and less titanium and aluminum than the Waterbury product. The microscopic examination showed that the following minerals are common in both samples: talc, chlorite, magnetite, dolomite, feldspar, sphene, rutile, alivine, chromite, actinolite-tranmite, pyrite, serpentine, pyroxene, garnet, magnetite, and phyllosilicate. In addition, the Fatal talc contains: graphite, arsenopyrite, hematite, and the Waterbury talc contains: quartz, zircon, titanite, muscovite, and leucophaea.

It should be pointed out that actinolite-tranmite was detected in only one of the five chosen Fatal ore pieces, and in a lesser quantity than in the Waterbury ore samples. The arsenic in the Fatal talc is probably bound as arsenopyrite-decompositional in the pyrite.

Introduction:

X-ray samples from the Watbury and Johnson mines were received to determine differences and/or similarities in mineralogy. These samples are identified as follows:

K72-77A	Pulverized Watbury talc
K72-77B	Typical Watbury ore
" K72-77A	Pulverized (Grade 42) Bental talc
K72-77B	Typical Johnson ore

These samples are supposed to represent typical products and ores obtained from these locations.

Discussion and Results:

The pulverized samples of Watbury and Bental were examined by X-ray diffraction and X-ray fluorescence. A comparison of the X-ray diffraction data, based on the relative intensities of the major reflections, are as follows:

Ref
6672

Copy to	6672	CSH, FID	6672	6672
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RUBING

BASF-EMCC 00113

August 18, 1977

	<u>Batal</u>	<u>Waterbury</u>
Talc	1	0.7
Chlorite	1	3.9
Dolomite	1	1.7
Magnetite	1	0.4

These data indicate that magnetite and talc dominate in the Batal 42 and chlorite and dolomite dominate in the Waterbury talc.

X-ray fluorescence data for the pulverized samples, again based on relative intensities of peaks due to the elements, are as follows:

	<u>Batal</u>	<u>Waterbury</u>
Strontium	1	1
Arsenic	3	1
Nickel	1	3
Iron	1	1
Titanium	1	8
Calcium	1	1
Silicon	1.2	1
Aluminum	1	2

These data show that Batal contains more arsenic and silicon and less titanium and aluminum than the Waterbury talc.

The Batal ore sample consisted of fragments of about one inch in size. These fragments were so different in appearance that to obtain a representative sample, five pieces were selected for thin-section preparation. The Waterbury ore consisted of hand specimens that showed two different rock types: a light green, soft talc schist and a gray talc-carbonate rock.

All samples were embedded in epoxide and prepared as uncoated-thin sections. The thin sections were microscopically examined with polarized transmitted and reflected light. In addition, free grains of the samples were examined using index of refraction liquids.

Microscopic examination of the samples show the following minerals to be present:

RUBINO

BASF-EMCC 06116

Hand lot 7, D. Wilson
From K. Burger

-4-

August 15, 1977

In sample ELI, a tectonic deformed gray talc-carbonate rock, muscovite forms in the grooves of leucocratic talc veins and pores in subhedral crystals, often heavily intergrown with talc. The gray color appears from fine dispersed hematite on shearing surfaces. Hematite is also observed along shearing surfaces.

In ELIa (light green) magnetite, the major component occurs in a predominance of well-sorted talc as vein-fillings and isolated islands in subhedral to subhedral crystals.

In sample ELIb (gray piece), in the fine subhedral talc, magnetite occurs as islands in subhedral to subhedral crystals. Some magnetite is partly replaced by talc. Some decompositions in the magnetite are probably siderite. In this sample, pyrite is coarser than in all other samples.

Sample ELI, a talc-bearing, the schistosity is very distinct and talc and chlorite are foliated along the schistosity. Dolomite occurs as porphyroblasts filled partially to the foliation. Muscovite appears as clastic and single crystals, partly altered to hematite.

In ELI, the talc-carbonate rock, magnetite occurs as vein-filling and islands in subhedral to subhedral crystals, partly replaced by talc. Most of the magnetite, partly altered to hematite, is disseminated in the magnetite.

In both Heterozygous samples, actinolite-hornblende is present, but the talc-carbonate rock contains a lesser amount.

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EXHIBIT "O"

MINERAL & CHEMICALS DIVISION
ENGLAND MINERALS & CHEMICALS CORPORATION
HOBBS PARK, HOUSTON, NEW JERSEY 08041

TECHNICAL SERVICE REQUEST

TSR No. 1 J-79-1

To: G. Huff From: R. E. Lomas/ETAL
Market: _____ District: _____
Copies to: DAJ, JME, ALY, JHS Data Information Required: ASAP-Please run!
Customer/Other: _____
Subject: Sample REL 79-1

Description of Problem and Work Requested

We are supplying talc Sample REL 79-1 under separate cover to you for testing of the following properties:

Residue on 100 mesh screens, dry
Residue on 200 mesh screens, dry
Residue on 325 mesh screens, wet
Photovolt brightness, % GER'S
Oil Absorption, Gardner-Colman

TOA Bulking, loose and packed
Fiber content - Request + Sample to RALPH 2-5-79
Free Moisture, %
Particle size distribution curve

*Received
2-7-79*
Free Silica - Request + Sample to RALPH 2-5-79 (no present)
Body Deter Formals Comparison (Various applications)
Requested by Zimmerman
R-127-79 (1st Sample to R. WASHBURN ON 2-5-79 (no ph's present) + copy of TSR)

Date: 2/29/79 Signed: R. E. Lomas Approved: J. R. Suter

Date Received: 2-1-79 Charge: 300238

Copies to: GAH EIT Assigned to: P. J. Dzierzanowski

Keywords: _____

Test Results & Comments

Date Completed: _____ Hours: _____ Notebook Ref.: _____

File Code: 2800 Signed: _____

RM-9272

VOLK

BASF 00083

2/13/79

Telephone discussion with Peter Gale -
Peter examined a sample of Talc labeled
REL-79-1 - (CR 127-79) by TEM
and SAED at Ganges Tech. This
morning he informed me that they
found some Chrysotile particles in
this material - has estimated at
less than 0.1%. These particles
are 2 μ in length -

SAED evaluation of these particles
confirmed that they are Chrysotile.

Notified Don Jacobs and Zimmerman.
They will send additional samples to
Peter for evaluation.

Held TSP until additional samples are
received.

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EXHIBIT "P"



INTER-DEPARTMENT MEMORANDUM

CONFIDENTIAL

Property of NRC Division

MINERALS & CHEMICALS DIVISION

TO	E.J. Triglia	FROM	P.M. Gale	DATE	April 11, 1979
SUBJECT	Talc Investigation - Review and Update			CONFIDENTIAL	APR 11 1979

RETURNED

APR 11 1979

G. A. H.

The following is a review and update on the talc investigation which was initiated in February 1979. The investigation itself concerned the identification of contaminants in a number of talc production samples using transmission electron microscopy.

Transmission electron microscopy investigations were undertaken at the Georgia Institute of Technology from February 12th to February 16th. One of the samples (79-J-1) investigated during this time was a talc production sample from the Baker mine in southern Quebec. A request had been made (TERRJ-79-1) to examine this sample and determine the mineralogy and possible contaminants present. A transmission electron microscope examination of this talc production sample showed the presence of chrysotile fibers. The implications prevalent in this information prompted Mr. Howard Shafer to send four more talc production samples to the Georgia Institute of Technology for transmission electron microscopy investigations. Two of the samples (79-J-2, 79-J-4) were recent Bata 42 production samples and the other two samples (79-J-3, 79-J-5) were talc production samples from the Quebec operation.

Results from this investigation were presented on February 20th at a meeting attended by FJD, EJT, DAJ, MJZ, and GGG. These same results were presented on February 22nd at a meeting attended by EJB, EJT, GAN, ALY, and JVK. At that time it was decided that the investigation was to continue by examining eight talc production samples for the presence of contaminants with the use of the transmission electron microscope. The following samples were investigated from February 27th to March 2nd:

79-J-2 (Bata 42)
79-J-3 (Baker, Quebec)
79-J-4 (Bata 42)
79-J-5 (Baker, Quebec)
Windear 36
Vernal 95
Vernal 1XX
R-191-778 (Bata 42)

The quantitative data generated from the transmission electron microscope on the eight samples listed above are presented in Table I.

hs

continued....

0072

COPY TO	GAN JVK ALY JMS EJD	SIGNED	Pete A. Gale
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PADUANO

BASFO2634

Some of the data in Table I was presented on March 8th at a meeting attended by FJD, EFT, GAX, ALY, MJT, JMB, and RMM. Based on the data reported, the following decisions were made in reference to the future course of action to be taken in the talc investigation:

1. Calculate the percent by weight of fiber in each sample.
2. Check the transmission electron microscopy data obtained at the Georgia Institute of Technology with transmission electron microscopy work on the same samples at the McCrone research institute.
3. Examine the Johnson mine and mill for the possible source of contaminants.
4. Conduct air sampling tests at the Johnson operation.
5. Attempt to develop a qualitative method for testing the amount of contaminants in production sample from Johnson.

Recently I have been adapting the NIOSH fiber counting method (phase contrast microscope) for airborne asbestos concentrations to bulk samples. The data generated will show the number of fibers >5µ with a 3 to 1 aspect ratio per sample. Furthermore, I will be checking each suspected "fiber" in polarized light in an attempt to identify the fiber itself. Fiber counting with the phase contrast microscope has been completed on bulk samples 79-J-2, 79-J-4 and Vertical XXX. The results and estimated values for airborne dust meeting TLV talc requirements are as follows:

Sample Number	Fibers/mg >5 microns	Fibers/m ³		Fibers/cc	
		Present Talc	Proposed Talc	Present Talc	Proposed Talc
		6.7mg/m ³	1.5mg/m ³	TLV	TLV
79-J-2	559	3750	840	.004	.0008
79-J-4	754	5050	1130	.005	.001
Vertical XXX	1320	8800	2000	.009	.002

Presently seven talc production samples are being investigated quantitatively with the transmission electron microscope. Four samples (31379-500, 31379-41, 10578-500, 101078-41) are at the Georgia Institute of Technology and three samples (E-68-79, E-69-79, E-70-79) are at the McCrone research institute. Thirty-eight crushed rock samples have been sent to the Georgia Institute of Technology for qualitative transmission electron microscopy investigations. Fifty-two respirable samples collected at the Johnson mine and mill were sent to George D. Clayton Environmental Consultants for fiber count by phase contrast microscopy. Eight other respirable samples collected from the mine and mill were sent to Walter McCrone Associates for identification of fibers by transmission electron microscopy.

TABLE I

DATA ON TALC PRODUCTION SAMPLES FROM TRANSMISSION ELECTRON MICROSCOPY EXAMINATIONS DONE AT THE GEORGIA INSTITUTE OF TECHNOLOGY - FEBRUARY 27TH TO MARCH 2ND

* per 8 grid openings see blank contains 4 fibers per 15 grid openings	Batal 42 79-11-2	Baker 79-3-3	Batal 42 79-3-4	Baker 79-3-5	Windsor 79-3-6	Vertical 95	Vertical 95	Batal 42 79-11-77B
Milligrams of sample dispensed in 7 ml. H ₂ O + TRPP	8.8	12.2	9.8	10.0	10.4	9.3	9.3	8.4
Microfibers of dis- persed sample ex- tracted and placed on grid	4	4	4	4	4	4	4	4
Weight of sample on grid in milligrams	5.04 X 10 ⁻³	6.96 X 10 ⁻³	3.60 X 10 ⁻³	5.71 X 10 ⁻³	5.94 X 10 ⁻³	5.65 X 10 ⁻³	5.32 X 10 ⁻³	4.80 X 10 ⁻³
Fibers counted per 15 grid openings minus the blanks	24	25	230*	38	13	0	2	18
Number of Fibers (calculated per grid)	2087	2174	38013	3123	1057	---	148	1387
Number of Fibers (calculated) per milligram of sample	4.14 X 10 ⁵	3.12 X 10 ⁵	6.79 X 10 ⁶	5.47 X 10 ⁵	1.78 X 10 ⁵	---	2.72 X 10 ⁴	2.89 X 10 ⁵
Weight percent of fibers per sample	4.25 X 10 ⁻⁶	2.36 X 10 ⁻⁶	1.53 X 10 ⁻⁴	4.36 X 10 ⁻⁴	6.50 X 10 ⁻⁷	---	1.22 X 10 ⁻⁷	5.10 X 10 ⁻⁶
Fibers greater than 5 microns in length per 25 grid openings	2	1	80	2	0	0	0	2
Fibers greater than 5 microns in length per grid	174	86	6942	174	---	---	---	174
Fibers greater than 5 microns in length per milligram of sample	3.45 X 10 ⁴	1.24 X 10 ⁴	1.24 X 10 ⁶	3.05 X 10 ⁴	---	---	---	3.63 X 10 ⁴

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EXHIBIT "Q"



walter c. mcrone associates, inc.

CONSULTING: ULTRAMICROANALYSIS • MICROSCOPY • SMALL PARTICLE PROBLEMS • SOLID-STATE CHEMISTRY

30 April 1979

Mr. Peter N. Gale
Engelhard Minerals & Chemicals Corporation
Menlo Park
Edison, New Jersey 08817

Dear Mr. Gale:

Using selected area diffraction and transmission electron microscopy we have analyzed a series of three bulk mineral samples. These three samples were designated as E-68-79, E-69-79 and E-70-79. Two of these samples were found to be extremely clean and free from asbestiform minerals by our analysis. The third, however, Sample E-70-79, contained extremely high levels of chrysotile asbestos, probably in the range of 0.10% to 1% of the sample.

The method of analysis was to take approximately 20 mg and disperse it in 10 cc of isopropyl alcohol and then ultrasonerate the mixture. The larger and heavier particles in general settle at the bottom and the extremely fine particles, such as the asbestos are concentrated in the suspension of the liquid.

The results of our analysis indicated that in counting 10 grid squares we found 96 fibers or approximately 9.6 fibers per grid square opening.

Thank you for consulting McCrone Associates. If there are any further questions, please feel free to contact me.

Very truly yours,

Gene R. Grieger
Senior Research Physicist

GRG:jdc
Ref. MA 7829 - P. O. 35185

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EXHIBIT "R"

With the realization that we have found fibers in one of our Eastl samples, several more samples of Paper 44 were submitted to Georgia Tech for assay, one from recent and the other from earlier 1977 production. Each sample showed traces of fibers that were mostly smaller than 5 microns in length. These same samples were subsequently sent to two other independent laboratories for confirmation. Their results have in general agreement with those reported by Georgia Institute of Technology.

Comparative grades of tele from Verbal, Windsor and Jolley were also tested and most showed evidence of some chrysotile with the exception of Verbal, which had none in the 95 grade and only a few fibers in the 100 grade.

Although it is difficult to quantify concentrations of fibers measured in bulk samples it is possible to calculate very roughly the fiber mass by measuring the length and breadth of every fiber counted. By assuming that the breadth measurement is a diameter, the volume of the fiber can be calculated. The volume multiplied by the density will give us the mass concentration of the fibrous particles. Knowing the weight of sample that was transferred to the grid allows us to calculate an approximate weight percent of fibers present.

in
2800

continued...

copy to	YR	REMARKS
		<i>Emilio L. R. R.</i>

Elm 1283

RUBINO

BASF-EMCC 00184

RESEARCH DEPARTMENT MEMORANDUM

PROPERTY OF RMC DIVISION

MINERALS & CHEMICALS DIVISION

TO	C.A. Remondet	FROM	E.J. Treppe	DATE	May 22, 1979
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SUBJECT

Pale Investigation

RECEIVED
MAY 23 1979
U.S. DEPARTMENT OF COMMERCE
MINERALS & CHEMICALS DIVISION

G.A.H. 1

In response to a TSK from Marketing, a sample of butyl 42 representing a composite of specimens made from 8/78 to 11/78 was examined for the presence of fibers. This was done as part of a program to obtain composition data between Baker and Zisch 42 butyl. The samples were sent to Georgia Technical Institute where morphological identification was made by means of a transmission electron microscope using a magnification power of about 25,000X. Which can thus distinguish particles as small as .01 micron in diameter. Evidence of asbestiform fibers was found. These fibers have a very distinctive and unique shape which makes them easy to identify. I have micrographs that were taken at the Institute which show the fibrous nature and hollow tube or shell like structural characterization of this material. No positively confirm the presence, however, selected area electron diffraction analysis to focus on any single substructure particle in the field of the electron microscope. An electron diffraction pattern is obtained corresponding to the regular arrangement of atoms and ions in space which is characteristic of the crystalline material under observation. I have here a photograph of a pattern showing the streaks and "d" spacing and arrangement of the data which can be made "fingerprints" that being relatively to chrysotile and next to it is the pattern for talc for comparison.

It can be seen that most of the samples have less than .01% fibers with the exception of 75J-4 an Ental 42 product processed 2/13/79. This particular sample had about 0.3% fibers.

To determine the week to week variation of the fibers in Ental production and to see if there were any differences between floated and unfloated grades, one weekly composite sample of Ental 42 together with a floated grade of Ental 500 were sampled over a 12 week period and each product was evaluated for total fiber content. The results showed that although there was a variability in the number of fibers counted from week to week, there were nevertheless fibers present in every sample of Ental 42 tested. A few of the Ental 42 samples showed relatively high fiber counts. There were practically no fibers present in the Ental 500 samples and the few that were detected in a small percentage of the samples were all smaller than 5 microns in length.

To see if there had been any change in the character of the mine over the past year, two samples of Ental 41 and Ental 500 grades from 1978 and 1979 production respectively, were tested at Georgia Tech for fiber count using the TEM-SAGE combination. Both Ental 41 samples had virtually the same number of total fibers but the 1979 sample unlike the earlier 1978 one, also had some fibers longer than 5 microns. There were several small fibers present in the 1979 Ental 500 sample but no fibers were detected in the 1978 sample. The fact that most of the fibers are so small partially explains why they were not discovered until now. We now have at our disposal extremely sensitive techniques that can distinguish and identify the smallest particle.

In accordance with the proposed Industrial Talc standard, whenever asbestos is detected in bulk samples, environmental monitoring becomes mandatory. Membrane filter samples were collected from workers at both the mine and mill and the samples were assayed for fiber count by phase contrast microscopy at 450 X magnification. All fibers with a 3/1 aspect ratio that were over 5 microns in length were counted. The time weighted average for the miller group was 0.45 fibers/cc which was somewhat higher than the miners who averaged only 0.24 fibers/cc. These values are comfortably under the 2 fiber/cc limit given in the present standard for asbestiform talc but they would not meet the 0.1 fiber/cc limit for asbestos fibers as directed in the proposed talc standard. However, analysis of several of the respirable samples by TEM-SAGE at Walter C. McCrone Associates showed that none of the fibers that were found belonged to any of the asbestos class of minerals. It is apparent that as far as the workplace is concerned, we are in compliance with both the present and proposed talc standard on asbestos. Also in the revised occupational standard for talc a limit of 50 micrograms of free silica per cubic meter of air is proposed for talc products. Twelve respirable talc dust samples were collected at the Ental plant along with the 52 membrane filter samples for asbestos count. Analysis of the respirable samples for free silica by x-ray diffraction according to the XRD analytical method showed that none of the samples exceeded the limit of 50 micrograms of quartz per cubic meter of air.

continued....

2. Some analytical work still needs to be done to determine the fiber level in every tail grade and perhaps establish some typical values and also define the detection level. The latter will require replicate analyses of the most important grades at least.

3. It would be wise to select another outside laboratory with the facilities to do both optical (phase contrast) and electron microscopy work.

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EXHIBIT "S"

INTER-DEPARTMENT MEMORANDUM		CONFIDENTIAL Property of M&C Division		MINERALS & CHEMICALS DIVISION	
TO	G.A. Houston	FROM	E.J. Triglia	DATE	July 17, 1973
SUBJECT	Talc Investigation			CONFIDENTIAL	
RECEIVED JUL 17 1973 G. A. H.				NOT FOR REPRODUCTION	

A comparative study of the asbestos fiber content of competitive talc versus selectivetal grades was undertaken at the request of the Marketing Department. For company reasons the identity of the competitive talc products was disguised by use of the following code:

<u>Code</u>	<u>Sample</u>
MC-1	Verbal 93
MCX-1	Verbal 22X
MCX-5	Verbal 22X-C
MS-1	Windsor 36
MS-1	Pfizer, QP36-33
MSI-2	Cyprus C-300, California
MSI-3	Cyprus, Beaverwhite, Montana

The Verbal grades chosen for comparison were those that had been assayed earlier by Engelhard Industries. The sample code used for these products and the asbestos fibers found by E.J. is as follows:

PCM-4	Verbal 42, abundant fibers
PCM-12	Verbal 42, many fibers
PCM-7	Verbal 500, many fibers

Replicate samples of the six competitive products and the three Verbal products were numbered in a randomized fashion and sent to Georgia Institute of Technology for analysis of asbestos fiber content by TEM-EDS instrumentation. The nineteen samples consisted of the following: three replicate samples of MC-1, MCX-1 and MS-1, duplicate samples of PCM-4, PCM-7 and PCM-12 and single samples of MCX-5, MS-1, MSI-2 and MSI-3. The randomized arrangement of the samples used is shown in Table I, attached.

The samples were analyzed at Georgia Tech in numerical order without any prior knowledge of what the samples were, which samples were replicated and how many. The analytical results reported in Table II, attached show that only two of the competitive products analyzed had asbestos fibers present. The two talcs that gave positive readings were MS-1 and MSI-2, but even with these only traces of fibers (0-5) were found and none were greater than 5 microns. Conversely the three Verbal products analyzed all had some asbestos fibers present ranging in concentration from trace, (0-5 fibers/15 grid openings) to many (15-20 fibers). Most of the fibers were small, but several of the Verbal samples had a few fibers longer than 5 microns.

he

continued...

copy
to

LPT (3)

initial

Emil Triglia

RUBINO

BASF-EMCC 00187

The tally sheet on this latest set of talc samples compares fairly well, in a qualitative way with the asbestos fiber count reported earlier on these same samples. The results obtained in previous evaluations are shown in Table III, attached.

Looking at the overall picture it is obvious that TEM-SAB is an excellent tool for detecting the presence or determining the absence of even the smallest asbestos fiber. The repetitive samples of the comparative grades examined show (Table IV) that in most cases they are completely devoid of asbestos particles. Three of the samples assayed earlier were found to contain possible traces in two samples and minor quantities (5-15 fibers/15 grid openings) in a third. However, the microscopist was not as confident of the earlier results as he was with the latest evaluations because of inexplicably high background counts obtained in the former cases.

Finally, it is apparent that a fairly good estimate of the relative number of fibers present can be made which, with a few exceptions, seems to be reasonably reproducible within a given range.

This is shown in Table V where the comparative results for the Ectal samples are summarized. There is good agreement between the Engelhard Industries Instrumentation Labs and Georgia Tech for samples PCM-12 and PCM-7 but for PCM-4 the asbestos fiber count varies from trace to abundant which is a ten fold difference. However, in every case some fibers were found.

Finally, as desirous as some of us are to be able to quantify the results, I think another vehicle other than electron microscopy is necessary to obtain precise and accurate data. It is a well publicized fact that quantitative determinations by electron microscopy of bulk samples is extremely difficult because of the different sizes involved, the difficulty in separating and isolating individual fibers and the great dilution error introduced because of the minute sample aliquot that must be examined in the field of the electron microscope. Quantification of results may be done by other admittedly less sensitive but certainly more reproducible methods than TEM/SEM methods.

TABLE 7

Numbering System Used to Randomize Talc Samples

<u>Sample Number</u>	<u>Sample Code</u>
4026-1	MC-1 (1)
-2	MS-1 (1)
-3	MX-1 (1)
-4	PC-1 (1)
-5	PC-7 (1)
-6	PC-4 (1)
-7	MC-1
-8	MS-1 (2)
-9	PC-7 (2)
-10	MS-3
-11	MX-2
-12	MS-1 (2)
-13	MX-1 (2)
-14	PC-1 (2)
-15	MS-3
-16	PC-12 (2)
-17	MX-1 (3)
-18	MC-1 (3)
-19	MS-1 (3)

TABLE II
ANALYSIS OF 30 BULK SAMPLES FOR ASBESTOS FIBERS
BY TEM-EDS

Sample Code	Sample I.D.	Sample No.	Asbestos Total	Fiber/15 Grid Opening >5 microns
MCI-1 (1)	Verbal 95	4026-1	0	0
MCI-1 (2)	Verbal 95	4026-8	0	0
MCI-1 (3)	Verbal 95	4026-18	0	0
MCI-1 (1)	Verbal XXX	4026-3	0	0
MCI-1 (2)	Verbal XXX	4026-13	0	0
MCI-1 (3)	Verbal XXX	4026-17	0	0
MCI-5	Verbal XXX-G	4026-15	0	0
MM6-1 (1)	Windoor 36	4026-2	0	0
MM6-1 (2)	Windoor 36	4026-12	0	0
MM6-1 (3)	Windoor 36	4026-19	0	0
EBL	Pfister GP 38-33	4026-7	Trace, 0-1	0
MCI-2	Cypress 300	4026-11	0	0
MCI-3	Cypress, Montana	4026-10	Trace, 0-5	0
PCM-4 (1)	Ental 42	4026-6	Trace, 0-5	None
PCM-4 (2)	Ental 42	4026-14	Minor, 5-15	None
PCM-12 (1)	Ental 42	4026-4	Heavy, 15-50	Few
PCM-12 (2)	Ental 42	4026-12	Heavy, 15-50	Few
PCM-7 (1)	Ental 500	4026-5	Heavy, 15-50	Few
PCM-7 (3)	Ental 500	4026-9	Heavy, 15-50	0

TABLE III

RESULTS OBTAINED IN PREVIOUS ANALYSIS OF
ASBESTOS FIBER CONTENT IN TALC SAMPLES

Sample Code	Sample I.D.	Date Analyzed	Laboratory Used	Asbestos Fiber/15 Grid Squ.	Total	>3u
PCM-4	Batal 42	4/20/79	E.I. Inst.	abundant	>50	abundant >50
PCM-12	Batal 42	4/20/79	E.I. Inst.	many, 15-30		few
PCM-7	Batal 360	4/20/79	E.I. Inst.	many		0
MO-1	Verbal 95	6/6/79	Ga. Tech.	0		0
MO-2	↓	↓	↓	0		0
MO-3	↓	↓	↓	0		0
MEK-1	Verbal XXX	6/8/79	Ga. Tech.	0		0
MEK-2	↓	↓	↓	poss. trace		0
MEK-3	↓	↓	↓	0		0
MEK-4	↓	↓	↓	0		0
P. Gals	Verbal XXX	5/2/79	Ga. Tech.	poss. trace		0
W46-1	Windsor 36	5/8/79	Ga. Tech.	0		0
W46-2	Windsor 36	5/8/79	Ga. Tech.	0		0
P. Gals	Windsor 36	5/2/79	Ga. Tech.	minor, 5-15		0
MD461-1	WCB, 4641	5/8/79	Ga. Tech.	0		0
MD465-2	WCB, 4665	5/8/79	Ga. Tech.	0		0

TABLE IV

COMPARISON OF REPETITIVE SAMPLES OF COMPETITIVE PRODUCTS

Sample Code	Sample I.D.	Date Analyzed	Laboratory Used	Asbestos Fiber/15 Grid Open. Total	>5µ
MCI-1 (1)	Verbal 93	7/12/79	Ga. Tech.	0	0
-1 (2)	↓	7/12/79	↓	0	0
-1 (3)	↓	7/12/79	↓	0	0
MC-1	↓	6/8/79	↓	0	0
-2	↓	6/8/79	↓	0	0
-3	↓	6/8/79	↓	0	0
P. Gale	↓	3/2/79	↓	0	0
MCK-1 (1)	Verbal XXX	7/12/79	Ga. Tech.	0	0
-1 (2)	↓	7/12/79	↓	0	0
-1 (3)	↓	7/12/79	↓	0	0
MCK-1	↓	6/8/79	↓	0	0
-2	↓	6/8/79	↓	pos. trace	0
-3	↓	6/8/79	↓	0	0
-4	↓	6/8/79	↓	0	0
P. Gale	↓	3/2/79	↓	pos. trace	0
MCK-5	Verbal XXX-G	7/12/79	↓	0	0
MWS-1 (1)	Windsor 36	7/12/79	Ga. Tech.	0	0
-1 (2)	↓	7/12/79	↓	0	0
-1 (3)	↓	7/12/79	↓	0	0
MWS-1	↓	6/8/79	↓	0	0
-2	↓	6/8/79	↓	0	0
P. Gale	↓	3/2/79	↓	minor, 5-15	0

TABLE 4

COMPARISON OF REPETITIVE SAMPLES OF KENTAL PRODUCTS

Sample Code	Sample I.D.	Date Analyzed	Laboratory Used	Asbestos Fiber/15 Grid Open. Total	>5µ
PCM-4 (1)	Kental 42	7/12/79	Ga. Tech.	trace, 0-5	none
-4 (2)	Kental 42	7/12/79	Ga. Tech.	minor, 5-15	none
-4	Kental 42	4/20/79	E.I. Inst.	abundant >50	abundant >50
PCM-12 (1)	Kental 42	7/12/79	Ga. Tech.	many, 15-50	few
-12 (2)	Kental 42	7/12/79	Ga. Tech.	many, 15-50	few
-12	Kental 42	4/20/79	E.I. Inst.	many, 15-50	few
PCM-7 (1)	Kental 500	7/12/79	Ga. Tech.	many	few
-7 (2)	Kental 500	7/12/79	Ga. Tech.	many	0
-7	Kental 500	4/20/79	E.I. Inst.	many	0

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EXHIBIT "T"



walter c. m'c crone associates, inc.

CONSULTING: ULTRAMICROANALYSIS • MICROSCOPY • SMALL PARTICLE PROBLEMS • SOLID-STATE CHEMISTRY

2 January 1981

Mr. Frank J. Washabaugh
Industrial Products
Engelhard Minerals & Chemicals Corporation
Menlo Park
Edison, New Jersey 08817

Dear Mr. Washabaugh:

We have completed our examination for asbestos in the three (3) talc samples submitted under your purchase order 42534.

The samples, identified as E-275-80, E-276-80 and E-277-80, were examined using polarized light microscopy with dispersion staining. The asbestos mineral tremolite-actinolite was detected in all three of the samples. Samples E-276-80 and E-277-80 each contain 0.5-1% by weight tremolite-actinolite. Sample E-275-80 contains slightly more (1-2%) of the mineral. Aspect ratios of the tremolite-actinolite in all of the samples are greater than 3:1. The samples therefore can be considered to contain asbestiform minerals under current government regulations.

Thank you for consulting McCrone Associates. If there are any questions, please feel free to call me.

Sincerely,

Mark E. Palenik
Senior Research Microscopist

MEP:fc
Ref: 9480

Engelhart M. is.

E-276-80

0.5-1% tremolite

Aspect ratio greater
than 3:1

E-275-80

1-2% tremolite

Aspect ratio greater
than 3:1

E-277-80

0.5-1% tremolite

Aspect ratio
greater than 3:1

IE 2397

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EXHIBIT "U"

1 MICHAEL L. ARMITAGE, CA Bar No. 152740
2 MICHAEL B. GURIEN, CA Bar No. 180538
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4 222 North Sepulveda Boulevard, Suite 1900
5 El Segundo, California 90245
6 Telephone: (310) 414-8146
7 Facsimile: (310) 414-8156

8 Attorneys for Plaintiff
9 KATHERINE A. LOPEZ

10
11 SUPERIOR COURT OF THE STATE OF CALIFORNIA
12 FOR THE COUNTY OF LOS ANGELES

13 LAOSD ASBESTOS CASES

14 KATHERINE A. LOPEZ,
15 Plaintiff,

16 vs.

17 AKZO NOREL PAINTS LC, *et al.*,
18 Defendant.

JCCP No. 4674

Honorable Emilie H. Elias,
Department 324

Los Angeles Superior Court,
Case No. BC 468419

DECLARATION OF CARL ANDREW
BRODWIN, MD, MPH, FACOEM IN
SUPPORT OF PLAINTIFF'S OPPOSITION
TO THE MOTION FOR SUMMARY
JUDGMENT OF DEFENDANTS BASF
CATALYSTS, LLC, PITA REALTY
LIMITED, AND EASTERN MAGNESIA
TALC COMPANY

Separately-Filed Related Documents:

1. Opposition to Motion; Memorandum of Points and Authorities;
2. Separate Statement of Disputed and Undisputed Material Facts; and
3. Declaration of Michael B. Gurien

Date: April 13, 2012
Time: 9:00 a.m.
Department: 324

Action Filed: August 26, 2011
Trial Date: April 24, 2012

CONFORMED COPY
ORIGINAL FILED
negative filed in original
computerized, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000

APR 03 2012

John A. Dario, Executive Officer/Clerk
By: Tanaya Lewis, Deputy

1 I, Carl A. Brodtkin, MD, MPH, FACOEM declare that:

2 1. This declaration is submitted in support of Plaintiff Katherine Lopez's opposition to the
3 motion for summary judgment or, in the alternative, summary adjudication of Defendant NMBFLL, Inc..

4 2. I am a physician licensed to practice medicine in the State of Washington. I attended
5 Swarthmore College, in Swarthmore, Pennsylvania, from 1975 to 1979, and graduated with a Bachelor
6 of Arts degree in biology. I received my medical degree with honors from the University of Colorado
7 Medical School in 1983. From 1983 to 1986, I completed an internship and residency in Internal
8 Medicine at Oregon Health Sciences University in Portland, Oregon. I practiced Internal Medicine
9 between 1986 and 1989 in Portland and in Denver, Colorado. I was certified by the American Board of
10 Internal Medicine in 1987.

11 3. For the past 20 years, I have specialized in the practice of Occupational and
12 Environmental Medicine, including research and teaching on the health effects of toxic substances,
13 including asbestos. From 1989 to 1991, I completed a fellowship in Occupational and Environmental
14 Medicine at the University of Washington, as well as a Masters in Public Health (MPH) in
15 Environmental Health, gaining expertise in the areas of occupational and environmental medicine,
16 epidemiology, toxicology, industrial hygiene and health services. From 1991 to 1993, I completed a
17 clinical fellowship in Environmental Medicine with the Agency for Toxic Substances and Disease
18 Registry (ATSDR), which is an agency of the United States Department of Health and Human Services.
19 I have held several teaching positions in the Occupational and Environmental Medicine Program at the
20 University of Washington (Departments of Medicine and Occupational and Environmental Health
21 Sciences). From 1989 to 1992, I was an acting instructor in the University's Occupational and
22 Environmental Medicine Program. I was an acting assistant professor in the program from 1992 to
23 1993, an assistant professor from 1993 to 1999, and an associate professor from 1999 to 2003. Since
24 2003, I have been a clinical associate professor in the Department. From 1996 to 2000, I was associate
25 director of the University of Washington's Occupational and Environmental Medicine
26 Residency/Fellowship Program, and I was the program's director from 2000 to 2003. Since 2003, I
27 have been engaged in the private practice of Occupational and Environmental Medicine. I was certified
28 by the American Board of Preventive Medicine in Occupational Medicine in 1994, and am a Fellow of

1 the American College of Occupational and Environmental Medicine (ACOEM). A true and correct
2 copy of my current *curriculum vitae* is attached hereto as Exhibit A.

3 4. Occupational and Environmental Medicine is a specialty that focuses on the health of
4 workers, including factors in the workplace and environment that adversely impact human health; the
5 physical, chemical, biological, and social environments of the workplace; and the health outcomes of
6 environmental exposures in the workplace. As a practitioner in this field, I diagnose exposure-related
7 illnesses, treat, and clinically manage patients with occupational and environmental injuries, illnesses,
8 impairment and disabilities. I also identify the workplace factors and exposures that contribute to these
9 conditions in order to prevent and manage them in the future.

10 5. A major research and clinical interest over the past 20 years has been asbestos-related
11 diseases, including clinical evaluation of workplace asbestos exposures. I have worked with issues
12 involving exposure to asbestos in industrial settings, and have evaluated thousands of patients with
13 asbestos-related diseases in clinical and research settings, as well as occupational screening programs,
14 including former workers at nuclear facilities. As part of my clinical practice and research, I regularly
15 obtain histories related to work with and around asbestos-containing materials in numerous industrial
16 settings. In diagnosing any patient with an asbestos-related disease, it is necessary for me and others in
17 my field to evaluate potential sources of asbestos exposure.

18 6. An integral part of the practice of Occupational and Environmental Medicine is assessing
19 epidemiological studies. Epidemiology has been a major aspect of my research career since the early
20 1990s, and review of epidemiological studies is part of my clinical, teaching and research practice. In
21 addition, I have performed my own epidemiologic studies for numerous articles involving asbestos-
22 related diseases, as well as participated as a peer-reviewer of such studies in the scientific medical
23 literature.

24 7. I have worked with a number of other researchers and clinicians who evaluate asbestos-
25 related diseases, including participation in the group that developed specific criteria for the American
26 Thoracic Society ("ATS") to assist clinicians in diagnosing and managing non-malignant asbestos-
27 related disease (e.g., asbestosis and asbestos-related pleural disease). These criteria were published in
28 2004 and represent the official document of the ATS for the diagnosis of asbestosis and asbestos-related

1 pleural disease.

2 8. I am one of the editors for the *Textbook of Clinical Occupational and Environmental*
3 *Medicine, 2nd Edition*, which is a major textbook in the field of Occupational and Environmental
4 Medicine. I co-authored the chapter in that textbook on asbestosis and nonmalignant asbestos-related
5 disease. I have published dozens of articles on the subject of asbestos-related diseases.

6 9. I have been retained by the law firm of Waters, Kraus & Paul for the purpose of
7 formulating and providing opinions in this matter concerning Katherine A. Lopez's medical diagnosis,
8 including, but not limited to, whether she has mesothelioma and, if so, whether it was caused by her
9 exposure to asbestos, how those exposures more likely than not occurred, scientific and medical
10 evidence of causation, whether the medical care Ms. Lopez has received was reasonable and necessary,
11 as well as state of the art medical knowledge regarding asbestos-related health effects.

12 10. I have acted as an expert consultant at the request of various plaintiffs, a defendant, as
13 well as state workers' compensation programs in cases involving exposure to asbestos. To my
14 knowledge, I have not been excluded from any court from testifying as a physician in occupational and
15 environmental medicine.

16 11. I have reviewed Ms. Lopez's medical records, including pathologic reports, regarding her
17 diagnosis of malignant mesothelioma in June 2011 and her care and treatment for the disease, as well as
18 directly examining her chest CT and radiographic imaging studies (between 5/18/11 - 10/20/11). I
19 interviewed her telephonically on March 23, 2012, for purposes of obtaining her medical history directly
20 and updating her current clinical status.

21 12. I have reviewed the transcript of Ms. Lopez's deposition in this case (seven volumes
22 [12/8/11 - 12/22/11]) and the transcripts of the depositions of her brothers, Aaron Parson (five volumes
23 [2/19/12 - 3/5/12]) and Bruce Parson (three volumes [2/7/12 - 2/9/12].) Based on my review of these
24 transcripts, I am informed and aware of:

25 (a) Ms. Lopez and her brother Aaron Parson testified that she was exposed to joint
26 compounds and exterior stucco used in her presence by her father during "a lot" of residential
27 remodeling projects (1967-1978) and that she was exposed to automotive friction products while
28

1 observing her brothers Aaron and Bruce remove and replace brakes on various vehicles in the driveway
2 of their home, including arcing of brakes performed the garage (1974- >1980).

3 (b) Ms. Lopez' and her brother Aaron Parson's respective testimony indicates that
4 between approximately 1973- >1980, Ms Lopez was in close proximity (e.g., "right next to" to $\leq 6'$) to
5 her brother Aaron on multiple occasions when he performed auto body repair work in the family's
6 driveway on numerous vehicles. Dents were removed with a suction cup or a mallet, followed by
7 application of auto body filler to the defect. The auto body filler used by her brothers was "Bondo"
8 brand (e.g., "Bondo" heavy filler [Bruce Parson testimony]). Once dried, the Bondo was sanded/grinded
9 for approximately 15 to 30 minutes with sandpaper or a metal file (e.g., "cheesegrater"). This process
10 generated a fine pink dust that accumulated on Ms. Lopez' clothing and which she breathed ("a lot",
11 "many times"). Multiple coats of Bondo were applied and sanded until the job was complete.

12 (c) Mr. Parson testified that he sanded Bondo auto body filler in Ms. Lopez' presence
13 ($\leq 6'$ proximity), using a long board with sand paper and block, and allowed her to do some of the
14 sanding herself (including use of a power sander on occasion). Ms. Lopez also assisted Aaron in
15 sweeping up the sanded Bondo, generating dust. While Aaron Parson generally recalled Ms. Lopez
16 being present while he worked with Bondo on many vehicles (describing her as there "all the time"), he
17 had a specific recollection of her presence while he worked on an Austin Marina GT in 1977 and a 1969
18 Ford Mustang in approximately 1977-1978. With respect to the Austin Marina GT, Mr. Parson testified
19 that he recalled Ms. Lopez being within six feet of him while he hand-sanded Bondo on this vehicle
20 (e.g., right fender). He also testified that he allowed Ms. Lopez to directly sand Bondo on the Austin
21 Marina GT herself. With respect to the Ford Mustang, Mr. Parson testified that he sanded Bondo on this
22 vehicle (power sander and hand block sanding) in Ms. Lopez's presence while she was standing within
23 six feet of him. In addition, he allowed Ms. Lopez to sand Bondo on this vehicle using a power sander
24 (e.g., rear right quarter panel).

25 (d) Bruce Parson's testimony confirms that he and his brother Aaron used "Bondo"
26 auto filler (e.g., 1965-1968), and that sanding Bondo (with rasp file and/or sanding block for 30 minutes
27 per location [3-4 hours sanding/vehicle) generated dust accumulating over their clothing.

28

1 (c) Ms. Lopez testified that she participated in laundering the family's clothing from
2 approximately age 8 until she left the family home (approximately 1970-1979). She laundered clothing
3 on a weekly basis (2-3 days/week). It was her practice to shake out the clothing before loading the
4 washing machine. Shaking out the clothing created some visible dust that she breathed.

5 (f) Aaron Parson confirmed that Ms. Lopez laundered his clothes, observing her do this
6 approximately 20 times (observing her shake his clothes and clean out pockets on 1-2 occasions).

7 I have reviewed documents that I am informed were produced in this case by Defendant BASF,
8 which bear numbered identification stamps beginning with the term "BASF_LOPEZ", attached hereto
9 as Exhibit B.

10 13. Based on my review of the documents attached hereto as Exhibit B, I am informed and
11 have assumed the truth of the following:

12 (a) On September 30, 1967, Engelhard Minerals & Chemicals Corporation acquired
13 the Johnson, Vermont talc operation of Eastern Magnesia and thereafter continued to operate the talc
14 plant under Eastern Magnesia. Talc products from the operation were known as "EMTAL". (Ex. B,
15 BASF_LOPEZ 000001675.)

16 (b) Engelhard/Eastern Magnesia sold Bental talc, including Bental 42, to Bondo
17 Corporation (Dynatron/Bondo), for use in auto body patching products. Engelhard/Eastern Magnesia
18 sold 6,800 tons (13,600,000 pounds) of Bental 42 to Dynatron/Bondo in 1972, 8,300 tons (16,600,000
19 pounds) of Bental 42 in 1973. (Ex. B, BASF_LOPEZ 000005613, 000014411.)

20 (c) Bondo auto body patching products were "consumer oriented" and sold to
21 "discount stores and related auto shops." (Ex. B, BASF_LOPEZ 000014411.)

22 (d) "Bental® 42 talc [wa]s widely used in marine and auto body filler products" in the
23 late 1970s (11/6/78 Engelhard; JM Zimmermann, Product Manager). Bental 42 talc was used at a 60%
24 filling level in auto body filler, to provided resin extension. (Ex. B, BASF_LOPEZ 000002854.)

25 (e) Engelhard/Eastern Magnesia's "largest market" for talc was body patch, which
26 utilized "19,000 tons/yr. of Profal® talcs, mostly Bental® 42," by 1978 (11/22/78 Engelhard memo). (Ex.
27 B, BASF_LOPEZ 000000167.)

28 (f) Engelhard/Eastern Magnesia (Engelhard 11/22/78 memo) indicates that the use of

1 body patch products containing Emtal 42 talc—with a talc content of 20 to 40 percent by volume—
2 resulted in exposure, as products were "sanded by users, with little or no dust control." (Ex. B,
3 BASF_LOPEZ 000000167.)

4 14. Attached hereto as Exhibit C are documents I have reviewed, which I am informed were
5 produced to Ms. Lopez's counsel, Waters, Kraus & Paul, by Defendant BASF in *Randy N. Evens, et al.*
6 *v. Amcord, Inc., et al.*, Los Angeles Superior Court, Case No. BC 473347. These documents bear
7 numbered identification stamps beginning with the term "BASF_EVENS" and are attached as Exhibit C.
8 Collectively, these documents indicate that Engelhard/Eastern Magnesia was Dynatron/Bondo's
9 predominant and/or sole supplier of talc prior to 1983 (e.g., Engelhard 12/7/82 memo of Mike
10 Zimmermann and others: "sole talc supplier to Dynatron"). (Ex. C, BASF_EVENS 000016608
11 [8/19/80], 000017303 [11/7/82].)

12 15. My review of the documents produced by Defendant BASF in this case shows that
13 periodic testing of Engelhard/Eastern Magnesia Emtal talc between 1972 and 1981 consistently
14 demonstrated asbestos fiber content. Specifically:

15 (a) On or about September 5, 1972, Johns-Manville conducted an analysis of
16 Engelhard/Eastern Magnesia talc and found that two out of six (33%) samples were contaminated with
17 tremolite asbestos at approximately one percent. The fibers were from 5 to 20 microns in length, with
18 an average length of 5 to 10 microns. (Ex. B, BASF_LOPEZ 000000018-19.)

19 (b) On March 6, 1973, an Engelhard inter-department memorandum noted that the
20 September 1972 Johns-Manville study had observed some fibrous material (less than one percent) in all
21 six samples submitted, classified as asbestos or as "asbestiform" by OSHA definition, and recommended
22 an "aggressive effort on our part to discredit the OSHA phase contrast microscope technique with all the
23 evidence that we might be able to bring to bear." (Ex. B, BASF_LOPEZ 000000028-29.)

24 (c) On or about May 25, 1973, Johns-Manville conducted further testing of
25 Engelhard/Eastern Magnesia talc and found that 4 out of 5 samples (80%) contained 0.6 to 3.6 percent
26 asbestos content. (Ex. B, BASF_LOPEZ 000000026.)

27 (d) On or about August 1976, John Dement of NIOSH examined Vermont talc
28 samples and found chrysotile asbestos in two of our four (50% [A-80, A-77]) Engelhard/Eastern

1 Magnesia talc samples. (Ex. B, BASF_LOPEZ 000013038-42.)

2 (e) On or about May 2, 1977, one out of ten samples (ten percent) of
3 Engelhard/Eastern Magnesia talc was "very fibrous" and contained approximately one percent
4 chrysotile asbestos. (Ex. B, BASF_LOPEZ 000014174.)

5 (f) On June 27, 1977, Walter C. McCrone Associates, Inc. reported that one of two
6 (50%) Engelhard/Eastern Magnesia talc samples demonstrated actinolite asbestos. (Ex. B,
7 LOPEZ_BASF 000014175.)

8 (g) On August 18, 1977, an Engelhard inter-department memorandum noted that
9 actinolite/tremolite had been detected in one of five (20%) Fental ore piece samples. (Ex. B,
10 BASF_LOPEZ 000000047.)

11 (h) On October 27, 1978 memorandum report results of an X-ray diffraction study in
12 which chrysotile asbestos was found in all four Fental talc samples, one of which also contained amosite
13 asbestos. (Ex. B, BASF_LOPEZ 000000065-67.)

14 (i) On April 30, 1979, Walter C. McCrone Associates, Inc. reported to Engelhard
15 that one out of the three (33%) bulk samples of Engelhard/Eastern Magnesia talc that were examined
16 "contained extremely high levels of chrysotile asbestos, probably in the range of 0.10% to 1% of the
17 sample." (Ex. B, BASF_LOPEZ 000010430-10433.)

18 (j) On May 22, 1979, an Engelhard inter-department memorandum noted that
19 Georgia Technical Institute, in its testing of Fental 42 samples, found "fingerprints that belong
20 exclusively to chrysotile," mostly smaller than 5 microns. Two other independent laboratories were in
21 general agreement with these findings. (Ex. B, BASF_LOPEZ 000000091.)

22 (k) On July 17, 1979, a confidential Engelhard inter-department memorandum
23 reported on testing of three samples of Fental, including Fental 42, which revealed that all of the samples
24 contained asbestos fibers ranging in content from "trace" to "minor" to "many" to "abundant," with a
25 some fibers longer than 5 microns. (Ex. B, BASF_LOPEZ 000000094-100.)

26 (l) On January 2, 1981, Walter C. McCrone Associates, Inc. reported to Engelhard
27 that the asbestos mineral tremolite-actinolite was detected in all three samples examined with
28 asbestiform content by weight, ranging from 0.5 to 1% in two of the samples and 1-2% in the third

1 sample. (Ex. B, BASF_LOPEZ 000010448.)

2 16. While I am not aware of airborne asbestos sampling during sanding of "Bondo" auto
3 filler products, I am informed by such testing on similar asbestos-contaminated talc containing auto body
4 products. Specifically, Dupont "65-Line Preparakote" automotive refinishing primer contained a trace
5 amount of asbestos fiber present as a naturally occurring contaminant of the talc contained in the product
6 (Dupont's Supplemental Responses to Plaintiffs' First Interrogatories to Defendants; Calvin Beyerlin et
7 al v. 3M Bondo Corp et al [Case No. 11-2-10780-4]; page 7). Dupont testing of sanding operations on
8 "65-Line Preparakote," documented significant airborne asbestos concentrations of 1.6 to 3.2 fibers per
9 cubic centimeter ("cc") of air (operator sanding fenders and panels) (Dupont April 4, 1973 report
10 (Thomas J. Nelson; Manufacturing Support Group). It is noted that 1976 OSHA levels would be
11 exceeded for work exceeding 5 hours.

12 17. Ambient levels of asbestos in the general environment are in the range of 0.000002 fibers
13 per cc of air in an urban areas like Los Angeles to 0.0000002 fibers per cc air in rural areas (Agency for
14 Toxic Substances and Disease Registry surveys (2001)).

15 18. Malignant mesothelioma is a progressive and fatal disease. Asbestos exposure is the pre-
16 eminent etiology of malignant mesothelioma. All asbestos fiber types are potent for causing
17 mesothelioma, including chrysotile.

18 19. My opinion regarding asbestos exposure and mesothelioma risk is that mesothelioma is
19 a dose-response disease, and that biologically significant exposures must be identified through a careful
20 and thorough assessment of the occupational, para-occupational and environmental history. Use of the
21 occupational, para-occupational and environmental history to identify such exposure is a methodology
22 integral to the field of occupational and environmental medicine, and typically relied upon by physicians
23 in my field. An identified exposure from the occupational, para-occupational and environmental history
24 requires 1) a known source of asbestos exposure, 2) a well-characterized activity disrupting the source to
25 generate airborne fibers, that is 3) sufficient to overcome the body's respiratory defenses, and 4) adds to
26 the body's burden of asbestos (initially in the lung, with translocation to other tissues, such as the
27 pleura). Such exposures are orders of magnitude above ambient levels (which are typically very low, in
28 the range of 0.000002 f/cc in urban environments [Agency for Toxic Substances and Disease Registry;

1 see above], and not associated with significant risk for mesothelioma).

2 20. While the scientific medical literature does not support the concept of a specific "bright-
3 line" threshold dose at which asbestos-induced mesothelioma can occur, it has demonstrated clear dose-
4 response levels at which well characterized, statistically significantly increased risk does occur. In two
5 of the largest, most comprehensive epidemiologic studies of mesothelioma, specifically designed to
6 investigate the effects of lower-level asbestos exposure, no threshold was identified. In the investigation
7 of 405 incident mesothelioma cases in France, Iwatsubo and colleagues concluded that mesothelioma
8 cases occurred below a cumulative asbestos exposure range of 0.5-5 f/cc-year (with a 4-fold, statistically
9 significant increased risk between 0.5-0.99 f/cc-yr [Iwatsubo et al.; *Am J Epidemiology* 1998;148:133]).
10 In a follow-up investigation of this national registry, Rolland and colleagues identified a statistically
11 significant, almost three-fold increased risk for malignant mesothelioma with a cumulative occupational
12 asbestos exposure in the range of >0-0.07 f/cc-yr (OR 2.8 [95%CI 1.7-4.7]; Rolland et al. *Risk of pleural*
13 *mesothelioma: a French population-based case-control study [1998-2002]*). *Lung Cancer*
14 2006;54Supplement1:S9-S10). Similarly, in an investigation of 415 incident mesothelioma cases in
15 Germany, Rodelsperger and colleagues observed an 8-fold, highly statistically significant increased risk
16 for mesothelioma at a cumulative exposure range of >0-0.15 f/cc-yr (OR 7.9; 95%CI 2.1-30.0), again
17 confirming a strong dose-response without threshold (Rodelsperger et al.; *American Journal of*
18 *Industrial Medicine* 2001;39:262).

19 21. Based on my review of the clinical medical records and data, including pathologic
20 reports, it is my opinion, to a reasonable degree of medical certainty, that Ms. Lopez developed
21 pathologically-documented malignant mesothelioma in June 2011.

22 22. Based on my experience, education, training, and research, as well as the information
23 known and made known to me by my review of the materials in this case, as set forth above in
24 paragraphs 11 through 22, it is my opinion, to a reasonable degree of medical certainty, that Ms. Lopez
25 had identified exposure as a bystander, indirectly (through domestic laundering) and occasionally
26 directly, to asbestos from Bondo automobile body filler in the 1970s (approximately 1973 to > 1980),
27 when she was present while the product was sanded, generating dust in her immediate vicinity that she
28 breathed. My opinion is based on the testimony of Ms. Lopez and her brothers regarding her exposure

1 to the Bondo product; that talc was an ingredient of the Bondo product to which she was exposed; that
2 the talc in the product was supplied substantially by Engelhard/Eastern Magnesia from its talc mine in
3 Johnson, Vermont; that testing of Engelhard/Eastern Magnesia (Emtal) talc between 1972 and 1981,
4 which includes the period of Ms. Lopez' exposure, consistently demonstrated asbestos fiber content in
5 significant portions of the samples tested, varying with the particular test, with asbestos fiber content
6 ranging from trace to abundant; and that testing of sanding operations on a similar automotive body
7 product (automotive primer containing talc with trace amounts of asbestos) demonstrated significant
8 airborne asbestos concentrations ranging from 1.6 to 3.2 fibers per cc of air, which is hundreds-of-
9 thousands to millions of times greater than ambient levels of asbestos (see paragraphs 17 and 19 above).

10 23. Ms. Lopez developed and was diagnosed with pathologically-documented mesothelioma
11 in June 2011, within the appropriate latency period of decades following her exposure to the Bondo
12 product during the 1970's, among other products, and there is no evidence that her development of
13 mesothelioma was caused by any other alternative cause of mesothelioma (e.g., no history of chronic
14 pleural injury related to recurrent pneumothorax, chronic empyema or therapeutic radiation).

15 24. It is therefore my opinion, to a reasonable degree of medical certainty, that Ms. Lopez'
16 exposure to asbestos from Bondo automobile body filler, containing asbestos-containing talc supplied by
17 Engelhard/Eastern Magnesia, was a substantial factor, among other identified exposures from her para-
18 occupational and environmental history, in contributing to her cumulative dose of asbestos and, as such,
19 was a substantial factor contributing to her risk of developing mesothelioma.

20 I declare under penalty of perjury under the laws of the State of California the foregoing is true
21 and correct.

22 Executed on April nd 2, 2012 at Seattle, WA

23
24 Carl Andrew Brodtkin, M.D.
25 Carl A. Brodtkin, MD, MPH, FACOBM
26 Declarant
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EXHIBIT "V"

1 IN THE DISTRICT COURT FOR THE COUNTY OF DUVAL
2 STATE OF TEXAS

3 JIMMIE A. MILLS,

4 Plaintiff,

5 vs.

6 AMERICAN OPTICAL CORPORATION, et. al.

7 Defendants.

CAUSE NO.:
DC 02-259

8 IN THE DISTRICT COURT FOR THE COUNTY OF HARRIS
9 STATE OF TEXAS

10 MELBA F. STEPHENSON, et. al.,

11 Plaintiffs,

12 vs.

13 AMF INCORPORATED, et. al.,

14 Defendants.

CAUSE NO.:
00-65210

15 Video deposition of CHARLES DUGGAR, taken
16 on behalf of the Plaintiffs, pursuant to the
17 stipulations agreed to herein, before
18 Leslie A. Moon, Certified Court Reporter and
19 Notary Public, at 8700 Hospital Drive,
20 Douglasville, Georgia, on the 11th day of May,
21 2004, commencing at the hour of 9:00 a.m.

22 REGENCY-BRENTANO, INC.

23 Certified Court Reporters

24 Suite 140 - 13 Corporate Square

25 Atlanta, Georgia 30329

(404) 321-2333

1 or Bondo, I think, as you -- they call it now. Back
2 when I worked there it was Dynatron/Bondo.

3 Q Okay.

4 A Because I went to work for Dynatron, not
5 Bondo. We bought -- Dynatron bought Bondo out in the
6 late '60s, early '70s.

7 Q Right.

8 A And then we started under the
9 Dynatron/Bondo logo and name.

10 Q Well, do you -- Do you know what the
11 lawsuits are about at all?

12 A Yeah; a little bit. All I know is somebody
13 claims that there was asbestos in the product.

14 Q All right. And were you asked about
15 whether or not there was asbestos in the product?

16 A Yeah.

17 Q And no one before had ever asked you about
18 that?

19 A No.

20 Q Are you sure about that, sir?

21 A I'm very positive.

22 Q All right. Well, let's -- Let me go back
23 then and get a little bit of history about you. How
24 old a man are you?

25 A 68.

1 Q And Mr. Duggar, am I pronouncing that
2 right?
3 A Duggar is correct.
4 Q Mr. Duggar, you started for Dynatron in
5 what year?
6 A June of 1966.
7 Q And what did you do before that?
8 A I -- Let's see, what was the last thing, I
9 more or less loafed around. I'd been in Texas for
10 about two years out there and all. I'd come out of
11 the service, in '59 and owned a service station in
12 Cedartown for a short while.
13 Q What did you do in Texas?
14 A I worked in the shipyard.
15 Q Down -- Which shipyard?
16 A US Steel for one.
17 Q In Houston?
18 A No; Orange.
19 Q Orange?
20 A Yeah.
21 Q Oh, okay. All right. What did you do
22 there?
23 A Well, I sandblasted, painted. We were
24 doing a bunch of -- while I was working for -- I'm
25 trying to think of somebody else before we went to US

1 Steel, another shipyard we would -- started out what
2 we was doing --

3 Q In Orange?

4 A Yeah. And we were doing a bunch of old
5 government ships there, and we were redoing them.

6 Q Okay. Did you learn anything about silica
7 while you were at that shipyard?

8 A No, not really.

9 Q Okay. But you were blasting with silica
10 sand there?

11 A Yes. I know what -- I know what you mean.

12 Q Okay. Did you later learn about silica?

13 A No. I never -- never thought about it one
14 way or the other.

15 Q All right. Now, when you went to work for
16 Dynatron in about 1966 -- is that right?

17 A June of '66.

18 Q June of '66?

19 A Yeah.

20 Q What were you doing?

21 A Started out just packaging on their line as
22 labor.

23 Q What were you packaging?

24 A Cans of Bondo or -- this and Bondo -- let
25 me put it correct -- plastic filler.

1 Q All right. Let me ask you about the -- the
2 bags. What did they say on the bags?

3 A I don't know.

4 Q Do you remember what color the bags were?

5 A Brownish color.

6 Q Like a paper bag you get in the grocery
7 store?

8 A Your paper bag, about the same color.

9 Q Did they have a logo on it, though?

10 A Yes. But I couldn't tell you what they
11 were now.

12 Q Okay. Now, you say they came from
13 Engelhart?

14 A Yeah.

15 Q How do you know that?

16 A That's the only place we ever bought any
17 talc. And that's who we -- they always ordered it
18 from.

19 Q Where did you get the titanium oxide from?

20 A I don't know. I can't remember that. It
21 was Castor Oil Company or something.

22 Q I'm sorry?

23 A Castor Oil Company or something.

24 Q You think it was --

25 A Yeah. I think it's --

1 can get. You remember, we're talking about thirty
2 something years ago.

3 Q Fair enough. I can't remember all that
4 detail either.

5 A Okay. But it was -- I'd say go from '67
6 until like '75, somewhere in there.

7 Q All right.

8 A Or a little bit before that.

9 Q All right. And do you know where Engelhart
10 got their talc?

11 A The only thing as I know -- Because later
12 years all we ordered was from Vermont. Because it --
13 A little later on I was doing the ordering of most
14 all your raw materials.

15 Q Later on you actually ordered the talc?

16 A I sure did. I ordered so many cars a month
17 to be -- to be released on certain days so that they
18 staggered in to us on the right time.

19 Q Did you always order from Engelhart or did
20 you order from other people?

21 A I ordered from Engelhart.

22 Q All right. But do you know where
23 Engelhart's mines were?

24 A All I know is Vermont. I do not know the
25 name. I can't remember the name of the town or

1 Q -- those raw materials were?
2 A It's 21 years ago since I left there.
3 Q All right. That's fair enough. When did
4 you leave there?
5 A September '83.
6 Q And what was your reason for leaving?
7 A You want the real reason or a false
8 reason?
9 Q We're -- We're here to find out what the
10 truth is so you need to tell me the real reason.
11 A I figured I'd probably get drunk again if I
12 stayed there.
13 Q All right.
14 A I'm a recovering alcoholic of twenty --
15 going on 22 years, so --
16 Q What was it about the job that caused your
17 problem; a stressful job?
18 A Yeah. Very stressful.
19 Q Did you -- Who was your immediate boss when
20 you left?
21 A As I told you a while ago, I looked towards
22 one man, that was the owner. He's the one that had
23 hired me originally.
24 Q All right.
25 A And if I needed something or anything,

1 MR. COOK: Okay. That's all the
2 questions I have.

3 THE WITNESS: All right.

4 MR. COOK: I apologize for
5 getting in your personal business; my job
6 to do that, though.

7 THE WITNESS: It doesn't matter
8 to me. It's over.

9 MR. REYNARD: All right. I'm
10 through, too.

11 (Deposition concluded at 10:00 a.m.)

12 (The signature of the witness to the deposition was
13 waived.)

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EXHIBIT "W"

Mills v. American Optical

444-843

BOW/ROTT Phillip Price

(COOK)

7/1/2004

Page 1

CAUSE NO. DC 02-259

COPY

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3

JIMMIE A. MILLS

IN THE DISTRICT COURT OF

4

PLAINTIFF

DUVAL COUNTY, TEXAS

5

VS.

6

AMERICAN OPTICAL CORPORATION,

7

ET AL

229TH JUDICIAL DISTRICT

8

DEPENDANTS

9

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CAUSE NO. 02-29773

11

MELBA F. STEHENSON, ET AL

IN THE DISTRICT COURT OF

12

HARRIS COUNTY, TEXAS

13

VS.

14

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AMT INCORPORATED, ET AL

215TH DISTRICT

16

17

DEPOSITION OF: Phillip Price

DATE: July 1, 2004

18

HELD AT: Days Inn Hotel

19

375 East Main Street

Branford, Connecticut 06405

20

21

22

23

24

25

Reporter: Katrina Loda, LSR #00129

Brandon Smith Reporting

c29a3b9c-c205-41a6-b568-8078551daa70

1 Phillip Price,
2 having been first duly sworn, was examined
3 and testified as follows:

4
5 DIRECT EXAMINATION BY: MR. COOK

6
7 Q Please stated your full name for the record,
8 sir?

9 A Phillip Anthony Price.

10 Q How old a man are you?

11 A 76.

12 Q Mr. Price, are you currently employed?

13 A No.

14 Q Are you retired?

15 A Yes.

16 Q What are you retired from?

17 A Well, when Dynatron Bando Corporation moved
18 away from Connecticut that's my time I retired.

19 Q Can you tell me what you were doing in the way
20 of an occupation in 1960?

21 A In 1960 -- I was hired somewhere in the 60's
22 I'm not sure of the exact date -- but I was employed
23 by Bando Corporation in North Branford.

24 Q In Connecticut?

25 A Right.

7/1/2004

Mills v. American Optical

Phillip Price

Page 8

1 Q Now, before that what did you do?

2 A I worked on and off in construction and before
3 that I worked for the YMCA in New Haven.

4 Q All right, sir. When you went to work for
5 Bando Corporation do you think it was the early 60's
6 or late 60's?

7 A Early 60's.

8 Q All right. Is there any way you can give me a
9 better date on that?

10 A God no, I don't know. There isn't really.

11 Q Okay. In the affidavit you gave back in 1999
12 and I'm reading from it you said I was employed
13 by Bando Corporation in North Branford, Connecticut
14 in approximately 1960?

15 A Right and '68 -- yeah, right, 1960.

16 Q It says approximately 1960?

17 A Right.

18 Q Did you do something then to figure out when
19 you were employed?

20 A My sons's birth was in the 60's. 1960.

21 Q So can we stick with this? I was employed by
22 Bando Corporation in approximately 1960?

23 A Right.

24 Q Okay. Now, can you tell me what you did when
25 you first went to work for Bando Corporation?

Brandon Smith Reporting

e2ba3b9e-n285-41a6-b58d-8876651dca70

1 A I was employed through -- on a production line,
2 packaging.

3 Q All right. And what specifically did you do?

4 A Putting cans in boxes and getting them ready
5 for shipping.

6 Q Okay.

7 A At that time.

8 Q And then in approximately 1958 you became a
9 mixer, right?

10 A Right.

11 Q And what was your job -- what did you mix?

12 A Autobody compound.

13 Q And what materials did you use?

14 A Resins and talc.

15 Q Where did you get the talc?

16 A From Vermont. It was two suppliers but at that
17 time there was only one supplier which was Eastern
18 Magnesium Talc.

19 Q I'm sorry, what was it?

20 A Eastern Magnesium Talc Company.

21 Q Okay. Do you know where their mines were?

22 A Up in Johnson, Vermont.

23 Q Okay. Then you said there was a second
24 supplier at some point in time?

25 A Right. I don't know the exact date but they

7/1/2004

Phillip Price

Page 22

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the questions I have, Mr. Price. Thank
you very much for your time.

MR. REYNARD: I'm not going to have
any, Russ. Thanks everyone.

(Deposition concluded at 10:30 a.m.)

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EXHIBIT "X"

Our major increase is in the area of Rental-42 which is 586 tons versus zero of last year. There's most recent vital conditions that the 602 business is off here and we feel very confident that we will continue to receive our fair share. Share will be at least once per month.

Re. American Chemical

236

156

This increase due to order cycle.

777-Royal Elec.

This company is shown on the sheet under Int. Tel & Tel and Royal Electric. They are one and the same company and I have combined their purchases for this report. Because of our joint efforts in service and quality to this account, we remain their prime supplier on ASP 602, 102 and Saltstone #2. On Saltstone Special we are making an effort to get even a larger percentage of the business.

Forward to Page Two



RUBINO

BASF-ENMCC 00264

New England Reins & Polymers Corp.

216 New England Bldg., Woburn, Mass. 01801

(617) 936-1034

TO: Mr. Charles Gatter / Engelhard Min. & Chem. DATE: 6/22/78

FROM: Mr. James P. Czalesky

SUBJECT: Comments on May 1978 IBM Report

Dear Charles:

I am going to try to institute a new report to you regarding our comments after reviewing the IBM report we received from you. What I hope to be able to do is give you some comments on specific accounts which I have after reviewing the report.

Tons This Year Tons Prior Year to Date

Bondo Corp.

495

636

We continue to sell Bondo 1000 of their requirements and this decrease in purchases is due strictly to order cycle.

General Motors
Pittsfield, Mass.

680

102

New England Resins & Pigments Corp.

Page Two

	<u>Tons This Year</u>	<u>Tons Prior Year to Date</u>
<u>Scott Graphics</u>	252	150

This account has been extremely busy through the first five months and is well ahead of production. My last call here indicated they intend to continue to purchase at this level.

<u>Teknor-Apex</u>	52	112
--------------------	----	-----

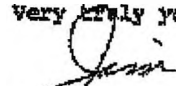
Due to a special arrangement Fremport made here, we were handicapped in obtaining much business here this year. I do feel that with recent orders placed with us and their projections for the balance of the year, they will equal 1977 purchases.

<u>New England Resins & Pigments 1977</u>	1283
---	------

We will at this point remain closer to our purchases of last year and would expect that within the next month or two we will be on at least an equal basis. The labor problems of last year caused us to do some very heavy purchasing in the first quarter. On the other hand, the weather in the first quarter of this year held our purchases down.

I hope this report has some value to you. I would appreciate any comments you might have.

Very truly yours,


James F. Craffey

dc:

cc: Mr. J. Aveni

RUBINO

EASF-EMCC 06265

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EXHIBIT "Y"

MINERALS & CHEMICALS DIVISION

Engelhard Minerals & Chemicals Corporation

CUSTOMER'S REPORT

- ☒ Visit
☐ Phone
☐ Appointment
☐ Personal
☐ Radio
☐ Catalogue

Firm Name Dynastion/Zendo Corporation
 Address Billie Rose
Atlanta, Georgia

Date of Visit 10/11/78 Date of Report 10/13/78

Salesman J. H. Edmonstone and John Harris
Charles E. Clarke

Business Antechody Filler

Personnel J. Quin Nechesser, Pres.

Requirements 9 - 10,000 TYP of Yalc
at three locations

Objective
 Sample
 Mail List

Hollowspherical fillers - 175 TYP
 split between Q-Def and 3N Glass
 bottles

Remarks

1. Antechody Filler Manufacturers Association Yalc Exposure Report.

Chuck, John and I reviewed the paper with Quin. He was quite pleased with the comparisons and comments for immediate distribution to his group. After reading it, Quin said he felt a little safer about using the Bental helix.

He then attempted to convince Quin that he must have us check to present the paper at the next meeting. Quin repeatedly said no to this idea. It was clear that he wants a paper to read out to prove the viability of the organization, but that is the only role the organization will play. If the manufacturers have questions, they will be told to contact their supplier.

Quin agreed to pass this paper on only to the members of the APMA, of which there are twelve. The meeting that is coming up next week is not a full membership meeting, but a meeting of the seven members of the Board of Directors only. In preparation for this meeting, Quin has obtained written statements on the safe use of fillers from XQ, SN and EMC.

On the question of bodypack dust exposure, Quin is preparing that the APMA sponsor a study of the effects of inhalation of the dust created from the bodypack to have this information available for their customers. He asked us if we would be willing to contribute to this effort, and we allowed that we would and would be especially in a position to contribute study design help through Check Clark. We discussed acute inhalation testing, dust analysis, and chronic inhalation tests.

An APMA membership list was obtained. The Association headquarters is in Chicago at the Auto Service Industry Headquarters (ASIA). There are no full time staffers at this point. Membership is only \$150 a year. No supplier members have yet been admitted. Quin is the President. Al Breuschen of Marion is the Vice President and Don Peck of Claxson is Treasurer.

cc JAM ALV HNK PIR CDB JAM ~~Q~~ JPA WBN GEN CAC CIR PSS EAV PEB
P C

RECEIVED 6/75

RUBINO

BASF-EMCC 00258

2. Phantom Freight Credit - Quin was impressed, relieved, and surprised by our decisive action to remove the burden of phantom freight from him. After he brought up the topic and discussed what a bother it was to him at some length, he was quite surprised to find that we had done a full analysis, decided to relieve him of this burden, and made this retroactive to July of 78. He repeatedly mentioned that this was a superb service that really makes it worth doing business with Engelhard.

Contract Revision - Discussing the terms under which we do business, we mentioned that there was a contract that had been existing for some time and we thought that we might revise it. Quin said he would be amenable to looking into that with us. John Morris will work through Pro Bear and Bill King to review the contract, including a right to meet competition clauses, and get it to Quin for his signature.

3. Bulk Truck Plans Out of Northford, CT. - Quin is gradually moving toward a bulk truck proposal out of Northford, CT. He apparently has not taken much action along this line, and could use some help in coming up with truck features that would allow him to carry 40,000 lbs. of rail and some plywood or bagged bale at the same time. This plan is still in the preliminary stage.

I suspect that BQ and possibly Vercel are aware of Quin's ideas, and maybe working with him to design such a vehicle. Quin wants to use a standard semi-trailer, modified to carry bulk rail and leave some space for bagged product as well.

Since the Connecticut business is a major target of Vercel, I will put together a project to develop a design for a truck of this type for Quin.

4. Conspiration

a. Howe Slansky, Vice President of Quiva Inc has called on Quin and impressed him with his thoroughness and followup. The Quiva line is that Vertical sales have not been as good as Datal in the past but now after the significant capital expenditures, they are at least as good. Not only that, but they hint that you can actually load more Vertical sale than you can Datal. (We do not know whether this is true, but it is under investigation.) From this departure, Quiva is hoping to get examples tested and then push the idea of second source of supply. At Dynaford, Slansky is not asking for all the business, but just one plant -- Borthford, CA, the Boards operation. Quin admitted that he has run some production with Vertical at Norrbford and has shipped some bodypatch from the location with Vertical to it. We do not know if any other special terms were offered.

' By copy of this report I am asking Charles Carter and Joe Avard to stay in closer touch with the Boards operation, to find out what their plans are and to help them with their bulk truck development. I am sure this will be quite a little battle in the near future.

b. Miller bubble. - Quin now runs 38 Glenn bubbles at Atlanta, Q-22 at Boards, and both in California. He is careful to have a dual source. (Something he mentioned he did not have in this.) In 1978 the lightweight compounds have exploded to 30% of Quin's little bodypatch business. Despite this rapid growth, my data volume has stayed level for the last three years. Quin mentioned that he hopes to get built in these materials in Atlanta and California.

RUEINO

BIAS-EMCC 00269

From an industry standpoint, after product problems with lightweight compounds in 1976 and 77, a number of the manufacturers are laying back and being very careful in producing the lightweight compounds. Quin did not introduce his product until 1978, and apparently feels he has a better product. The Dynatron product uses Genoril as a suspending and rheotropic agent in these body filler compounds to avoid some of the floating out problem inherent with these lightweight materials.

Quin said that his production cost is equal for the tale filled or lightweight compounds. However, his advantage is that he can reach a much larger market geographically now, especially since he does sell on a delivered price basis. Most first time lightweight compound buyers do stay with the material because it is easy to file and sand, easier to mix for use and just lighter weight and easier to spread and handle. Both SR and EQ have actually gone to the bodypatch accounts and tried a "pull-through" strategy through the various manufacturers. This has created some apprehensions among the manufacturers, but they are buying.

Action Items

1. AFPA -- JET to followup with Mr. Hochmeyer after the meeting the week of the 16th of October to determine what questions were asked and whether any further follow-up is requested.
2. Competitiveness -- Initiate a JCR study to develop a definition of the tale product needed to allow higher loadings in bodypatch at the same viscosity.
3. Lightweight Bodypatch Compounds -- Initiate a JCR study to explore the possibility of using an Attapulgite as a suspending and rheotropic agent to replace Celvol in these films.

4. Design a bulk truck for Bonds. Using contacts at bulk handling accounts and are knowledge of the material, at least lay out the basic design to be compatible with the requirements for blowing talk to flow.

5. Issue the credit for the third quarter of 1976 phantom freight.

RUBINO

BASF-EMCC 00270

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EXHIBIT "Z"

MINERALS & CHEMICALS DIVISION

Engelhard Minerals & Chemicals Corporation

Marble Park, Edison, N. J. 08817

CUSTOMER'S REPORT

☒ Yield ☐ Absorption
☐ Purity ☐ Particle
☒ Solubility ☐ Color

Firm Name
 Address

Dynatron/Quinn Corp.
 P. O. Box 20121
 Atlanta, GA 30325

Date of Visit
 5/1/79

Name of Report

Subsidiary
 J. J. Morris - C. B. Bear
 R. H. Zimmerman

Personnel
 Quinn Macomber, President

Function
 Body Patch

Requirements

Talc 5 to 10,000 tons per year
 all three locations, 8,000 tons
 Ental 42, 1,000 tons Ental 4190,
 200 tons talc "Mabala" (fillers),
 100,000 pounds of fumed silica.

Shipment
 Samples
 Used for

Comments

Meeting arranged to discuss rising demand for Ental 4190, 500; and our plans to accommodate these needs. Secondly, to appraise Quinn's attitude regarding Vertal's lower price offering on their competitive efforts.

A) Ental 4190: 500

With acceptance of lightweight body patch growing quickly. Ental 4190 may comprise 33 1/3% of the talc used in the formulation. The standard formula had incorporated 60% talc (Ental 42)/40% resin. Indication is that the lightweight product will reduce talc usage by 30%. Mike Zimmerman outlined our plans to meet his new requirements, which involve shipments of both Ental 4190 and Ental 500 for the present, and as more Ental 4190 becomes available. Ental 500 would be, accordingly, reduced. This met with Quinn's satisfaction.

B) Vertal Price Offering

Vertal is offering to supply Dynatron's total talc requirement at \$3.00 a ton (bulk) below Ental 42 price. Concomitantly, they claim to have a substitute for Ental 4190, at a \$6.00 discount (bags). Product acceptance has Quinn's approval, after a trial at Connecticut plant. Quinn has not indicated, however, a switch to another product, but Vertal's new management has pressured him extensively. He is willing to continue with us on 100% share of business if we will meet this competitive offer. He will continue the talc requirements on oil products, and plants, and submit this information shortly.

Mineral Thickener

Quinn received sample of (X-2196) thickener. Presently using Celmar(?) in formulation. Will evaluate and let us know.

Note: Atlanta warehouse space to grow by 40,000 sq. ft. Connecticut plant may be switched to a New Jersey location. Strong indication they may open a Canadian operation later this year.

LMK:gc

WAX, FLX, JET, CEC

5-1076 676

RUBINO

RASF-EMCC 00279