

**Expert Estimation Report of
Jennifer L. Biggs, FCAS, MAAA
*In Re: W.R. Grace & Co., et al.***

**Estimation of
Asbestos Personal Injury Liabilities of
W.R. Grace as of April 2, 2001**

June 18, 2007

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I. INTRODUCTION AND SUMMARY

I, Jennifer L. Biggs, F.C.A.S., M.A.A.A., respectfully submit this independent estimate of the liability of W.R. Grace & Co. (“Grace”) for pending and future asbestos personal injury (“PI”) claims as of the date of Grace’s bankruptcy petition, April 2, 2001. This summary (i.e., the contents of Section I of this report) is for the convenience of the Court and the parties in Grace’s bankruptcy case. The estimates set forth in this report are predicated on a number of assumptions as to future conditions and events. These assumptions are documented in subsequent sections of this report, and should be understood in order to place the actuarial estimates in their appropriate context. The complete report, including the Analysis Documentation: Sections I, II, III, IV and V (to be produced separately, along with any other reliance materials) and all supporting materials should be considered in their entirety before any judgments are made about the opinions and conclusions provided in this summary.

A. Summary of Opinion

My best estimate of Grace’s asbestos personal injury liability is \$7.9 billion on an undiscounted basis. When reduced to present value as of the petition date using a 5.2% interest rate, the estimated liability is \$3.7 billion.

My estimate is based on projecting the quantity and type of future asbestos personal injury claims filed against Grace for up to 54 years after the petition date, i.e., from April 2, 2001 to the year 2054. It also includes a provision for the known pending asbestos personal injury claims filed against Grace on or before the petition date. I calculated the total liability by multiplying the known pending and projected future claims filings (both reduced for expected dismissals) by the expected average payment amounts that Grace would pay to claimants in each of the years in the projection. This is referred to as a frequency/severity model, and the basic liability calculation is as follows:

$$(\text{Total Claims} - \text{Expected Dismissals}) \times \text{Average Payment Amounts} = \text{Liability}$$

Because my results reflect certain assumptions about both the future asbestos claims against Grace and the overall asbestos litigation environment that cannot be predicted with absolute certainty, I have included a range of estimates within which my “best estimate” falls. While the best estimate reflects my opinion regarding the most reasonable estimate as to how Grace would have continued to monetize its asbestos personal injury liabilities in the tort system, the low and high ends of the range reflect different assumptions about the number of claims and the cost to Grace to resolve those claims. In my opinion, the range of Grace’s asbestos personal injury liability is \$6.4 billion to \$11.8 billion on an undiscounted basis, and \$3.0 billion to \$5.3 billion discounted. In view of the fact that the range is not symmetrical around my best estimate, there is considerably more risk that the best estimate could prove to be too low, as opposed to the risk that the best estimate might be too high. In any event, the range represents what I believe to set the high and low boundaries of reasonable estimates, and I would not characterize amounts falling outside my range as reasonable.¹

My estimates derive from a methodology consistent with actuarially-based estimations accepted by various courts, including the United States District Court for the District of Delaware, in prior asbestos bankruptcy cases. Consistent with accepted methodology and court decisions, I was instructed to assume that Grace’s bankruptcy did not occur and that claims would have been handled through the tort system. My estimates therefore focus on the debtor’s anticipated liabilities, but for the bankruptcy. By the term “anticipated liabilities,” I refer to the dollar amounts that Grace would be

¹ As with any estimate of future costs and events, my projections and estimates in this report are subject to the inherent limitation on one’s ability to predict the future. In performing my analysis, I have employed actuarial techniques and assumptions that are appropriate, and my analysis and conclusions are reasonable given the information known to me, and they are in accordance with the Code of Professional Conduct of the American Academy of Actuaries and the Actuarial Standards of Practice promulgated by the Actuarial Standards Board. I have not audited the several databases and other factual information that I relied upon, but to the extent that my analysis revealed inconsistencies and/or inaccuracies in the data, I have noted them, and in certain instances I have applied adjustments and/or made certain assumptions to account for such inconsistencies and/or inaccuracies. To the extent that I have done so, my adjustments and assumptions are reasonable, and in accordance with the professional standards applicable to actuaries.

expected to pay in order to monetize and resolve the pending and future asbestos personal injury claims against it.

Further insights on the assumption that claims should be valued as if they remained in the tort system are found in the approach of other courts in other asbestos bankruptcy estimation hearings. Judge Robreno’s opinion in the Armstrong bankruptcy proceedings states that claims should be valued in accordance with substantive state tort law, and “[a] court must therefore look at how a claim would have been valued in the state court system had the debtor never entered bankruptcy.”² Judge Rodriguez in Federal Mogul similarly found that the procedure should:

not involve the discovery of individual claims, but rather an inquiry focused on [the debtor’s] historical claims-handling practices, and expert testimony on trends and developments in the asbestos tort system. To do otherwise would eviscerate the purposes of the estimation process.³

* * *

[T]he focus must be on [the debtor’s] actual settlement history in determining what a claim would have been worth but for the bankruptcy.⁴

* * *

It would be impracticable, if not impossible, to weigh all of the factors that have influenced asbestos personal injury litigation in the United States, make adjustments, and then reach a well-reasoned conclusion that differs from what the market has told us a claim is worth. The market is just that, a market; as such, it would not be prudent to second-guess the historic resolutions that were driven by factors by both plaintiffs and defendants . . .⁵

² *In re Armstrong World Industries, Inc* , 348 B.R. 111, 123 (D. Del. 2006).

³ *In re Federal-Mogul Global Inc.*, 330 B.R. 133, 155 (D. Del. 2005)

⁴ *Id.* at 158

⁵ *Id.* at. 162

My estimates also take into account changes in the asbestos litigation environment that have occurred since Grace filed for bankruptcy. As noted in Judge Robreno's Armstrong decision, "... adjustments should be made to historical values to account for ... probable changes."⁶

B. Purpose, Scope, Qualifications, and Compensation

David T. Austern, the Court-appointed Legal Representative for Future Asbestos Personal Injury Claimants in the Grace bankruptcy case, engaged me to perform an analysis of Grace's asbestos personal injury liability as of the petition date. In connection with that assignment I provide this report and expert testimony about my analysis and conclusions. My estimates include the amounts that Grace would be expected to pay to claimants in order to resolve their personal injury claims against Grace. Thus, my analysis excludes (i) transaction costs (such as attorneys fees and expenses), (ii) recoveries that Grace might receive from its insurers and/or any costs arising from potential insurance coverage disputes, (iii) any asbestos property damage liabilities, and (iv) any non-asbestos claims.

I am a principal of Towers Perrin and lead the asbestos practice of its Tillinghast business division. Tillinghast provides consulting and software solutions to insurance and financial services companies and advises various other businesses on risk financing and self insurance. I have quantified the potential asbestos liabilities for numerous national and international insurers, reinsurers and corporate asbestos defendants. I co-authored Tillinghast's study regarding the \$200 billion asbestos "universe," published in May 2001.

Under my direction as Chairperson, the American Academy of Actuaries Mass Torts Work Group created a public policy monograph, "Overview of Asbestos Issues and Trends," released in December 2001 and an Asbestos Issue Brief released in February 2006. I am a frequent speaker on asbestos liability estimation, and I testified

⁶ *Armstrong*, 348 B.R. at 124 (ellipses in original).

before the United States Senate Committee on the Judiciary and the National Conference of Insurance Legislators regarding asbestos issues. My curriculum vitae and list of my speaking engagements and publications is set forth in Exhibit 1. A list of materials that I relied upon in performing my analysis is attached hereto as Exhibit 2.

For my time worked on this matter, including my time spent in preparation of this report and giving deposition and/or trial testimony, Tillinghast is being compensated at the rate of \$625.00 per hour.

I understand that this report will be submitted to Grace and the other parties in Grace's Chapter 11 bankruptcy case, styled *In re W.R. Grace & Co., et al.*, Chapter 11, Case No. 01-01139, pending in the United States Bankruptcy Court for the District of Delaware, before the Honorable Judith K. Fitzgerald. This report, together with any testimony that I may give in this case, is for use solely in connection with the estimation hearing on Grace's asbestos personal injury liability in this case. This report (and any testimony that I may give) is not intended, and should not be used, for any other purpose.

C. Grace Asbestos Products and Activities

Grace's asbestos liability arises from its activity as both a miner and manufacturer of asbestos-containing products. Grace's products continued to contain asbestos into the 1990s, long after most asbestos defendants had stopped manufacturing and selling asbestos-containing products. Workers were therefore exposed to Grace's asbestos-containing products in later periods than to asbestos-containing products of other companies. Consequently, Grace faces a longer duration of asbestos liability than many other asbestos defendants.

Grace manufactured a wide variety of asbestos-containing products that were used in many industries. Monokote fireproofing spray was sold by Grace for 30 years (1959 – 1989) and has generated many thousands of asbestos personal injury claims from workers in the construction industry. Early versions of the product (Monokote 1 to 3) contained commercially added asbestos. Later versions (Monokote 4 and 5) contained

tremolite asbestos from a commercial vermiculite mine Grace acquired in 1963, which operated near Libby, Montana from 1924 – 1990.

Grace's vermiculite mining operations at Libby included a milling process that released asbestos into the Libby environment. The vermiculite ore was later transported to expanding facilities nationwide, where it was subjected to rapid heating which released asbestos fibers into the air. The U.S. Department of Justice brought a criminal indictment against Grace and a number of its executives in 2005 based on Grace's practices at the Libby mine.

Grace also manufactured and sold numerous other asbestos-containing products including acoustical plasters, high-temperature cements, spray-on insulations, masonry-fill, roof-deck cements, caulks, mastics, adhesives, and home insulations. Grace's manufacture and sale of these products has resulted in numerous claims from workers exposed to them in a wide variety of industries. Grace has paid settlements in personal injury cases to thousands of workers in the construction trades as well as a host of other occupations, such as pipe fitters, electricians, boiler workers, shipyard workers, insulators, maintenance workers, painters, machine operators, plant workers, shipfitters, railroad workers, mill workers, mechanics, physicians, nurses, students, chemical workers, and homemakers.

D. Background of Asbestos Litigation

Widespread use of asbestos in numerous industrial processes, industrial products and retail products led to widespread disease. There are several diseases that have been linked to asbestos exposure. I maintain a list of these diseases as part of my work as Chairperson of the American Academy of Actuaries Mass Torts Subcommittee. The current list and a brief description of these diseases is shown below.

Asbestos Diseases		
Disease	Injury	Average Latency⁷
Mesothelioma	<ul style="list-style-type: none"> • A malignant tumor rising in the pleural membranes of the lungs or diaphragm and pericardial membrane of the heart. • Symptoms may be vague, including chest pain, shortness of breath, weakness, and weight loss. The disease may be indicated by a chest X-ray, but a full pathologist's microscopic exam is needed. • Fatal within 1 – 2 years. 	30-40 years
Lung Cancer	<ul style="list-style-type: none"> • A malignant tumor of the bronchi covering that grows to surrounding tissue. • Symptoms include chest pains, cough, weakness, and shortness of breath. Chest X-ray may detect the cancer, but a pathologist's microscopic exam is needed. • Often fatal. 	10-30 years
Possible Other Cancers	<ul style="list-style-type: none"> • Tumors of the throat, larynx, esophagus, stomach, colon, and lymphoid. • X-rays may detect the cancer, but a pathologist's microscopic exam is needed. • Often fatal. 	
Asbestosis	<ul style="list-style-type: none"> • A pulmonary insufficiency caused by scarring near alveoli. As the body tries to dissolve asbestos fibers trapped in lung tissue, it produces an acid that does little damage to the fibers but may cause severe scarring in the surrounding tissue. • Diagnosis through physical signs, history of exposure, pulmonary functioning test, and radiological findings. Some appreciable level of exposure over 10 years is likely required before a detectable, significant amount of functioning is lost. • Slowly progressive, potentially fatal. 	20-40 years
Pleural Changes	<ul style="list-style-type: none"> • Generally nonimpairing fibrosis or scarring of the pleura tissue over the chest wall or diaphragm. • Evidenced by effusion, thickening, plaque, or calcification. • Do not appear to be pre-cancerous, but some believe pleural changes may increase the risk of developing lung cancer in the future. 	10-30 years

⁷ Actual latency periods for individuals may be longer or shorter than the average.

Asbestos personal injury litigation began in the United States in the late 1960s, and by 1997 more than 300,000 people had filed personal injury claims against a host of companies that manufactured asbestos and/or asbestos-containing products. By 1999, 37 companies had filed for bankruptcy protection due to their asbestos liabilities.

The years 2000 – 2003 saw a significant increase in the total number of asbestos claims filing against remaining non-debtor asbestos defendants and a host of new defendants. This new wave of claims resulted in significantly increased costs for non-debtor defendants to resolve the cases, and also prompted numerous additional asbestos bankruptcies. There were 29 asbestos-related bankruptcies from 2000 – 2002.

I also maintain a list of asbestos bankruptcies for my work with the American Academy of Actuaries. The current list is shown below.

Asbestos Defendants Declaring Bankruptcy

	Company	Year of Bankruptcy		Company	Year of Bankruptcy
1	ABB Lummus Global Inc.	2006	40	J.T. Thorpe, Co. (Texas)	2002
2	A.P. Green	2002	41	J.T. Thorpe, Inc. (California)	2002
3	API Inc.	2005	42	Johns-Manville	1982
4	A-Best	2002	43	Kaiser Aluminum and Chemical	2002
5	AC&S	2002	44	Keene Corp.	1993
6	Amatex Corporation	1982	45	Kentile Floors	1992
7	American Shipbuilding	1993	46	Lone Star Steel	1989
8	Armstrong World Industries	2000	47	Lykes Brothers Steamship	1995
9	Artra Group, Inc. (Synkoloid)	2002	48	M.H. Detrick	1998
10	Asbestec Industries	1988	49	MacArthur Companies	2002
11	Asarco	2005	50	Muralo Co.	2003
12	Atlas Corporation	1998	51	National Gypsum	1990
13	Babcock & Wilcox	2000	52	Nicolet	1987
14	Bethlehem Steel	2001	53	North American Asbestos Corporation	1976
15	Brauer Supply	2005	54	North American Refractories (NARCO)	2002
16	Brunswick Fabrications	1988	55	Owens Corning Fiberglas	2000
17	Burns & Roe Enterprises	2000	56	Pacor (Philadelphia Asbestos Corporation)	1986
18	Cassiar Mines	1992	57	Pittsburgh Corning	2000
19	Celotex	1990	58	Plibrico	2002
20	C.E. Thurston	2003	59	Porter Hayden	2002
21	Chemetron Corp.	1988	60	Prudential Lines	1986
22	Combustion Engineering	2003	61	Quigley	2004
23	Congoleum	2003	62	Raytech Corporation	1989
24	Delaware Insulations	1989	63	Rock Wool Manufacturing	1996
25	E.J. Bartells	2000	64	Rutland Fire & Clay	1999
26	Eagle Picher Industries	1991	65	Shook & Fletcher	2002
27	Eastco Industrial Safety Corporation	2001	66	Skinner Engine Company	2001
28	Federal Mogul	2001	67	Special Electric	2004
29	Flintkote	2004	68	Standard Insulations Inc.	1986
30	Forty-Eight Insulations	1985	69	Stone & Webster	2000
31	Fuller-Austin Insulation	1998	70	Swan Transportation	2001
32	Gatke Corp.	1987	71	Todd Shipyards	1987
33	G-I Holdings	2001	72	U.S. Gypsum	2001
34	H&A Construction	1983	73	U.S. Mineral (Isolatek International)	2001
35	H.K. Porter Co.	1991	74	United States Lines	1986
36	Halliburton subsidiaries	2003	75	Utex Industries	2004
37	Harbison Walker	2002	76	UNR Industries	1982
38	Harnischfeger Industries	1999	77	W.R. Grace	2001
39	Hillsborough Holdings	1989	78	Wallace & Gale	1984
			79	Waterman Steamship Corp.	1983

Grace was not among the group of asbestos defendants that was frequently sued in the early phases of asbestos litigation, with only a handful of cases being filed against Grace in the late 1970s. Rather, personal injury plaintiffs began to sue Grace in greater numbers beginning in the mid-1980s, albeit, still in relatively modest numbers,

but the claim volume grew steadily through the mid-1990s. According to Grace's CMS claims database, by 1984 less than 1,000 claimants had sued Grace. That number increased to approximately 32,000 by the end of 1990, and by the end of 1994, 110,000 claimants had sued Grace. Annual claimant filings increased to 34,000 in 1995 and 41,000 in 1996, slowing somewhat from 1997 – 1999, but then the flow of asbestos claims increased dramatically from 2000 to the petition date. Thus, whereas the asbestos filings against Grace averaged around 25,000 per year from 1997 – 1999, filings increased by approximately 90% to 48,000 in 2000. There were 34,000 claims filed against Grace in 2001 from January 1 to April 2, 2001.⁸ At the same time, the amounts that Grace paid to resolve asbestos claims also increased significantly.⁹

While other non-debtor asbestos defendants also experienced steep increases in claims in 2000 – 2001, Grace had several aspects that differentiated it from them. These differentiating characteristics caused Grace to become arguably one of the most well known and frequently sued asbestos defendants.

Among these aspects are Grace's operations at its Libby, Montana mine that has been the subject of negative national publicity, as well as civil and criminal legal actions against Grace. In 2001, the U.S. Environmental Protection Agency sued Grace to recover its costs of the environmental cleanup, related health screenings, and investigation and continued environmental monitoring at Libby. The EPA suit resulted in a \$54.5 million judgment against Grace. In 2005, the U.S. Department of Justice brought a criminal indictment against Grace and certain of its executives relating to the Libby operations. The criminal case is pending. Grace's handling of the Libby site has been widely criticized in the national media. In addition to numerous negative newspaper and television reports, a 2004 book and a documentary film criticized Grace for harmful health effects to Libby workers and town residents from Grace's vermiculite mining

⁸ The number of claimant filings by year is set forth in my reliance materials at Analysis Documentation: Section III, Exhibit 11, Sheet 1.

⁹ Grace's payments by Settlement Year are set forth in my reliance materials at Analysis Documentation: Section III, Exhibit 2, Sheet 1a.

operations. In addition to the government's civil and criminal actions, many former Libby mine workers and residents of Libby, Montana have sued Grace for asbestos-related diseases.

Another aspect is that Grace's asbestos-containing products were extremely widespread. Grace's asbestos products were used in the construction of buildings across the United States, including office buildings, industrial structures, schools and hotels. Grace's long-time, in-house counsel responsible for handling Grace's asbestos personal injury actions has explained that Grace products were used in "any kind of construction or industrial site. It ran the whole gamut." By the 1970s, Grace was manufacturing and selling the nation's leading fire-proofing material, Monokote, used in approximately 60 to 80 percent of the nearly 150,000 steel-frame buildings constructed nationwide during the 1970s and 1980s. For example, Grace Monokote was in forty floors of the World Trade Center Towers. The wide-ranging use of Grace asbestos-containing products has left a large pool of claimants potentially exposed to Grace products.

Finally, workers' exposure to Grace's asbestos-containing products occurred later than exposure to most other asbestos defendants' products. For example, many asbestos defendants' liabilities arise from workers' exposure to their products during World War II and the post-war construction boom, trailing off by the 1970s. In contrast, workers' exposure to Grace's asbestos-containing products continued longer than for other defendants' products because Grace's products contained asbestos into the late 1980s and early 1990s, long after other defendants had discontinued or were phasing out products with asbestos. The significance of this fact for purposes of my analysis is that Grace generally has later dates of first exposure ("DOFE") than most other asbestos defendants. As a result, Grace will have a higher proportion of its claimants filing suit further into the future than other defendants.

Documents and testimony of Grace's current and former executives show that Grace generally settled cases to avoid the risk of large adverse jury verdicts, avoid transaction costs (such as attorney fees) and/or to resolve groups of cases in block settlements for the lowest costs it could negotiate. Grace executives have described that,

overall, Grace considered that its claims handling and settlement practices achieved good results. Until the bankruptcy petition in April 2001, Grace continued its historical strategy of resolving the vast majority of claims through settlement. Ultimately, however, Grace chose to deal with its asbestos personal injury liability by filing for bankruptcy.

Beyond Grace's own experience as an asbestos defendant, the asbestos litigation environment has undergone significant changes over the last several years. While the incidence of mesothelioma has been fairly stable, the number of mesothelioma claims has increased significantly from the late 1990s, as have the jury verdicts and settlement amounts paid by defendants to resolve mesothelioma cases. I believe the increase in the number of mesothelioma claims mainly reflects a higher claiming rate resulting from greater awareness of asbestos as the cause of the disease and more public attention to the increased compensable value of mesothelioma claims for victims of this fatal disease, and for their families. On the other hand, since 2003 there has been a significant decrease in nonmalignant claim filings. The decrease appears to be due to a reduction in mass screening activity and changes in the tort system in several states. The number of new defendant bankruptcies has also declined.

Some jurisdictions, notably Mississippi and Texas, have revised laws relating to case consolidation and forum, tightening restrictions regarding the connection between a plaintiff and the venue of the case. Florida, Georgia, Kansas, Ohio, South Carolina, and Texas have passed legislation that requires asbestos claimants to satisfy medical criteria in order to bring a claim. Other state changes relate to innocent sellers, successor liability, and caps on non-economic and punitive damages.

Nonmalignant claim filings have decreased as more scrutiny has been focused on potentially fraudulent claims. Plaintiff attorneys in asbestos cases have historically combined large numbers of claimants in single lawsuits. Many of these claimants have been diagnosed through mass screening programs. Recent events, such as Judge Janice Jack's findings in the Silica Multi-District Litigation proceeding, have cast considerable doubt on these diagnoses. This heightened scrutiny in conjunction with

stricter medical criteria adopted by some states in the form of inactive dockets or legislation might lead to fewer mass settlements of pending claim inventories and will likely affect whether and how mass screening activities are conducted in the future.

Overall, the number of claims filed annually against Grace increased substantially until its bankruptcy petition in April 2001. My estimates assume that the number of claims would have continued at high levels through 2003, after which the non-malignant claims would have declined for Grace, as they did for other non-debtor defendants. While the number of nonmalignant claims filed in 2004 and subsequent is dramatically lower than in the immediately preceding years, the remaining claims meeting medical criteria are less likely to be dismissed and more likely to have higher average values.

E. Data and Information Considered

I relied principally on the following underlying factual data and information for my analysis: (1) Grace's internal Case Management System database ("CMS"), which Grace developed and used from the late 1980s through the petition date to track its asbestos PI cases. Grace also used CMS as a primary factual basis for its pre-petition estimates of its future asbestos liabilities, and as a basis for its claims against its insurance carriers in settlement of Grace claims for coverage for its asbestos liabilities; (2) Manville Personal Injury Trust claim information as of December 31, 2006; (3) Rust Consulting Co.'s tabulation of the Personal Injury Questionnaire ("PIQ") and Proof of Claim ("POC") responses as of April 30, 2007; (4) analysis by Victor L. Roggli, M.D., Professor of Pathology at Duke University Medical Center, of certain of the underlying PIQ responses; (5) information from various studies regarding asbestos epidemiology and claims forecast modeling conducted by Eric J. Stallard, A.S.A., M.A.A.A., F.C.A., Research Professor in the Department of Sociology and the Center for Population Health and Aging at Duke University; and (6) interest rate assumptions provided by Joseph Radecki, Managing Director and the Group Head of the Restructuring Group at Piper Jaffray & Co.

F. Analysis and Methodology

My analysis of Grace’s estimated liability for asbestos claims involved six steps, which are summarized as follows.

1. Compile Basic Claim Information

First, I compiled pertinent information for each of the personal injury claims that are known to have been filed against Grace. Specifically, I identified (or, when unknown, allocated) the following characteristics for each claim: disease type, claim status, filing year, settlement year (if any), settlement amount (if any), date of first exposure to an asbestos-containing product (“DOFE”), and jurisdiction where the claim was filed. I initially summarized the claim disease types from CMS into seven disease categories: mesothelioma, lung cancer, other cancer, unknown cancer, nonmalignant, asbestos-related, and unknown.¹⁰ Having compiled the above basic claim information about each claim, I then segregated the total known claims filed against Grace into two categories: (i) closed, dismissed and inactive claims, and (ii) open and liquidated “but unpaid” claims.

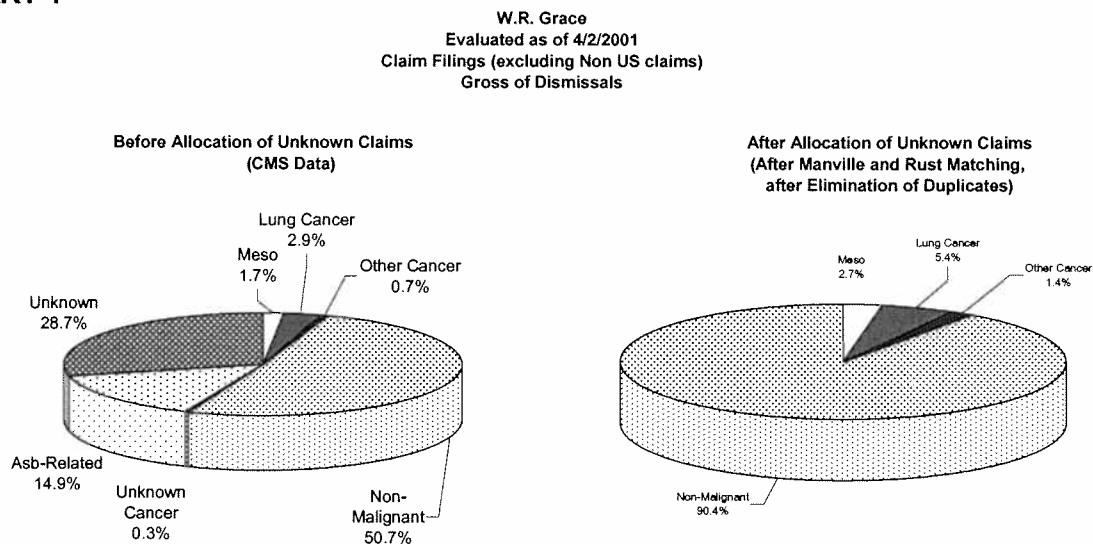
For a number of claims, the disease information in CMS was unknown. I therefore conducted supplemental investigations to identify the likely disease associated with closed claims for which the disease type in CMS was listed as “asbestos-related” or “unknown,” as well as each of the open or liquidated claims. This involved matching CMS claimant data with probable matches to their respective claim information in the Manville Personal Injury Trust database and/or the Rust response database. This yielded supplemental disease information for many claims.¹¹

¹⁰ Grace’s CMS claims database contains ten possible illness descriptions. For purposes of my estimation, I assigned to each of the ten CMS illness descriptions one of the corresponding seven disease types listed above. For example, CMS contained separate illness descriptions for pleural disease, pleural changes and pleural thickening, and I assigned all three of these for estimation purposes to the disease type “nonmalignant.”

¹¹ Manville Trust data is a reliable source for supplementing claimant information because the Trust has been in place for many years and most asbestos plaintiffs have filed a claim against the Trust.

Based on disease information from all three sources, I selected a single illness for each claimant. For some CMS claimants, however, the disease types listed in CMS, Manville, and Rust differed. Where inconsistencies involved mesothelioma, Dr. Roggli scrutinized the underlying PIQ responses and attachments. This review contributed to my analysis of which of the sources is more accurate. I concluded that the disease information in Manville is the most accurate, and more reliable than the Rust information. Even after supplementing disease information from the other sources, there were remaining claims with unknown disease types. For these I allocated disease diagnoses based on the distribution of the “matched” claims. The following charts show the distribution of claims filed before and after the allocation of unknown claims.

CHART 1

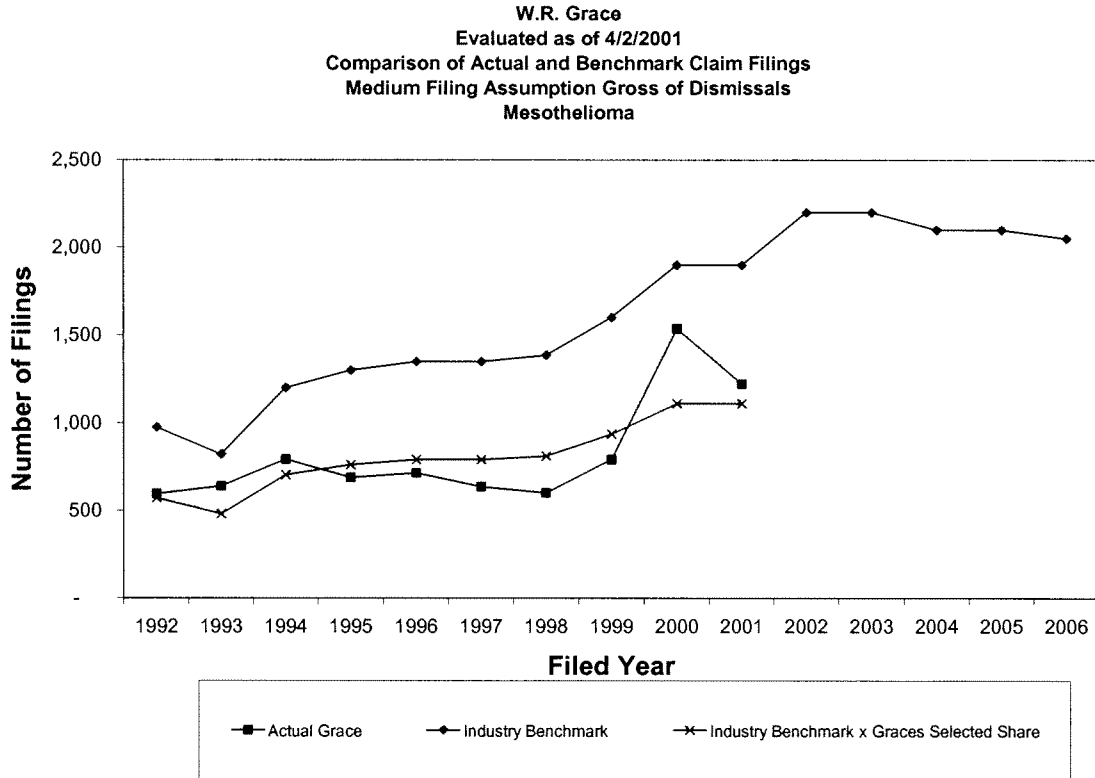


2. Project Future Claim Filings

Second, I projected future claim filings against Grace. I did this by first reviewing ratios of Grace’s historical claims, as compared to Tillinghast’s estimate of the total historical number of asbestos claims by disease type, also referred to as the “industry” or “benchmark” pattern.

The chart below shows Grace’s historical mesothelioma claims by filed year compared to my estimate of the total number of mesothelioma claims each year.

CHART 2



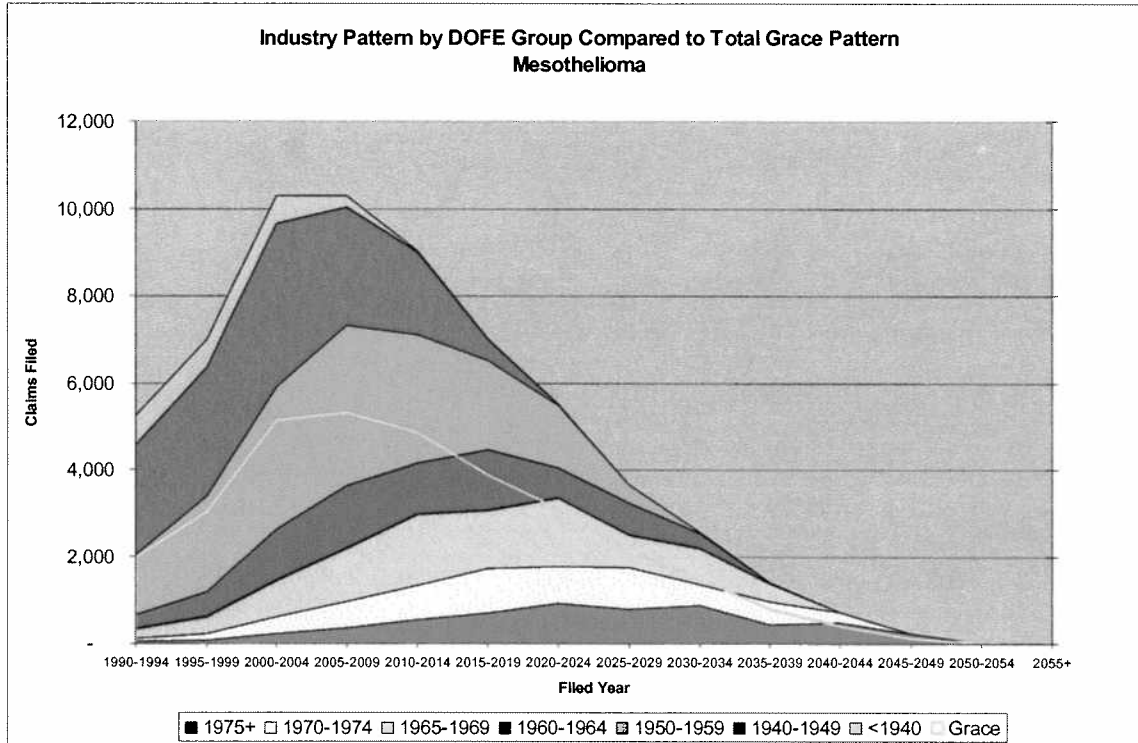
Note:
 2001 is actual through 4/2/2001 and projected through 12/31/2001.

Grace’s share averaged 58.4% of total mesothelioma claims filed from 1997 – 2001. I also show the total historical pattern adjusted to the level of Grace’s share, by multiplying the industry pattern by 58.4%. While in some filing years the industry pattern reflecting Grace’s share is higher than Grace’s actual filings, for other years it is lower, and overall, Grace’s experience tracks with the shape of the industry pattern, demonstrating that Grace was subject to similar trends in filing experience as other defendants.

I reviewed and incorporated into my analysis studies of future claims experience performed for the Manville Trust by Eric Stallard and Kenneth Manton in

connection with fairness hearings on the Trust. The chart below shows the composition of the industry mesothelioma claim filing pattern by DOFE.

CHART 3

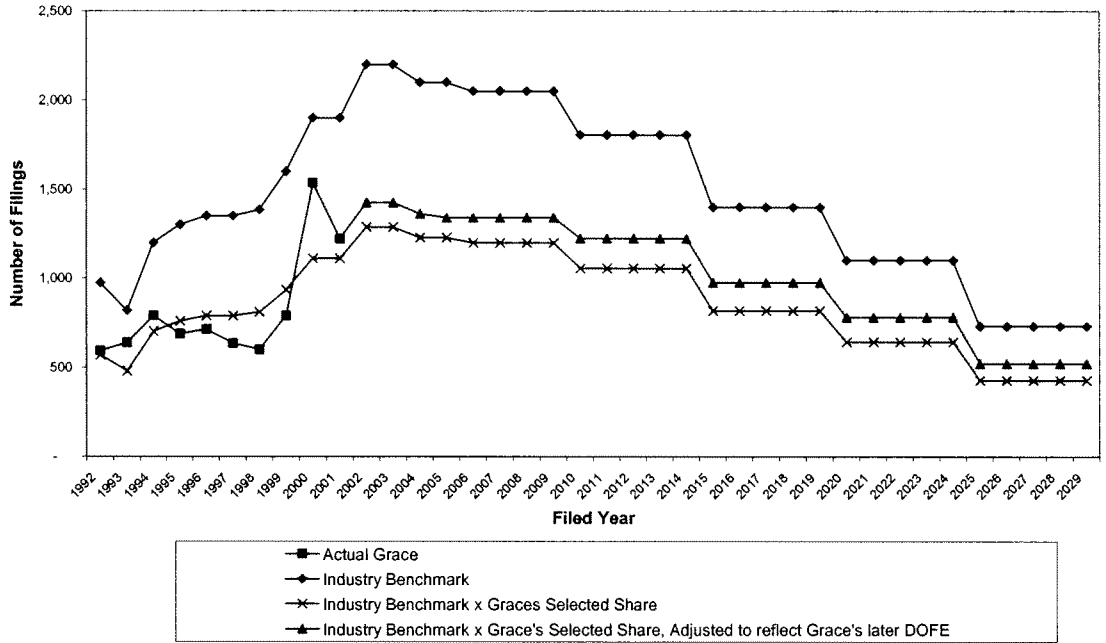


Grace’s distribution of mesothelioma claims filed from 1995 – 2001 has significantly later dates of first exposure than represented in overall industry data as depicted by Manville.

I then selected and applied ratios representing Grace’s share of historical industry filings by disease type to my estimates of total future asbestos claims filings, adjusted to reflect Grace’s later DOFE (as compared to other companies whose asbestos use ended much earlier). The following chart shows Grace’s mesothelioma share of 58.4% multiplied by the industry mesothelioma filing pattern, with and without adjustment for Grace’s later DOFE distribution.

CHART 4

**W.R. Grace
Evaluated as of 4/2/2001
Comparison of Actual and Benchmark Claim Filings
Medium Filing Assumption Gross of Dismissals
Mesothelioma**



Note:
2001 is actual through 4/2/2001 and projected through 12/31/2001.

In the adjusted pattern, the run-off (or annual decline in the level of claims) is slower, to reflect that the population exposed to Grace’s products, on average was exposed later, and therefore will remain alive to file claims further in the future.

3. Estimate Claim Dismissals

Third, I estimated the number of claims that would be dismissed without payment. My dismissal estimates are based on a review (separately by disease type and jurisdiction) of Grace’s historical claims that it closed without payment (or dismissed), relative to its total closed claims. For malignant claims, I assume identical dismissal rates for pending and future claims. For nonmalignant claims, however, I expect that state legislative and judicial changes to the tort system will result in a significant increase in dismissal rates.

4. Calculate Average Payment Amounts

Fourth, I calculated the expected average amounts payable to claimants, trended to future years of payment, also referred to as “Settlement Years.” For historical periods, I rely on the upward trend in Grace’s own data, compared to increases other asbestos defendants were experiencing during the relevant time period. For future periods, I consider various factors affecting claim costs, including the effect of changes to the various state tort systems, claimant aging, and inflation. I refer to the combined effect of these factors on average claim payment amounts in each future year as the “trend.”

5. Calculate Future Claim Liability

Fifth, based on the above information, I calculated Grace’s future and pending asbestos personal injury claim liability. The product of the expected number of future claim filings (less dismissals) and the average payments (adjusted for trend) is the undiscounted estimated liability for a given filing year. The total of this product across all disease types, state groups, and filing years is Grace’s undiscounted estimated future liability. Similarly, the provision of pending claims is calculated as the product of the pending claim counts multiplied by the selected dismissal rates multiplied by the average payments, by disease type and state group.

6. Project Cash Flow

Finally, I projected the future cash flow using a payment pattern reflecting Grace’s historical lag time between claim filing and payment dates.

I calculated the average duration of the overall cash flow in order to determine an appropriate interest rate for discounting the liabilities to present value. The average duration for my best estimate is 18.5 years. Using the average duration of 18.5 years for a straight line interpolation between risk free rates of 5.0% for a 10-year treasury and 5.5% based on a 30-year treasury, results in an interest rate of 5.2%.

EXHIBIT 1

EXHIBIT 1

CURRICULUM VITAE

Jennifer L. Biggs, F.C.A.S., M.A.A.A.

Employer: Towers Perrin (January 1985 - Present)
101 S. Hanley Road
St. Louis, MO 63105

Responsibilities:

- Principal and Consulting Actuary
 - Primary focus is quantification of asbestos liabilities of corporate defendants, insurers and reinsurers, as well as estimation of debtors' asbestos liabilities in bankruptcy estimation proceedings
 - Other client-related responsibilities, including:
 - Loss Reserve Reviews - Evaluating insurers' loss and expense reserves and providing Statements of Actuarial Opinion for state regulators
 - Self-Insurance Analyses, primarily for hospitals and physicians - Providing annual funding indications, evaluating alternative self-insured retention limits, and designing allocation methods
 - Ratemaking - Analyzing physician insurer rate levels and preparing filing materials for entry into new states
- Lead the asbestos practice of the Tillinghast business of Towers Perrin
 - Coordinate asbestos-related research and development activities, including:
 - Maintenance of Tillinghast's defendant and insurer projection models and underlying benchmark assumptions
 - Monitoring of trends in the litigation environment
 - Oversee asbestos public relations opportunities (e.g., articles, presentations)

Education: Washington University, St. Louis, MO
B.A., With Honors, Mathematics, Business Minor, 1984

Professional Designations: Member, American Academy of Actuaries, 1991
Fellow, Casualty Actuarial Society, 1994

Professional Activities: Chairperson, American Academy of Actuaries' Mass Tort Subcommittee, 2001 - Present

Prior Testimony:

- Expert Witness on behalf of the Liquidator of Delta America Re Insurance Company during 1988 - 1999; *In Re: Nichols v. American Risk Management, et al.*, 91 Civ. 2999 (S.D.N.Y.)
- Testimony Before the Committee of the Judiciary of the United States Senate regarding the FAIR Act, June 4, 2003
- Testimony Before the National Council of Insurance Legislators, July 10, 2003

Articles and American Academy of Actuaries Publications:

- *Sizing Up Asbestos Exposure*, by Michael E. Angelina and Jennifer L. Biggs, *Emphasis*, 2001/3
- *Asbestos Reserves Pose Re Challenges*, by Mike Angelina and Jenni Biggs, *National Underwriter Property & Casualty Edition*, September 9, 2002
- *Asbestos Costs Rise For Defendants, Insurers*, by Jenni Biggs and Mike Angelina, *National Underwriter Property & Casualty Edition*, March 24, 2003
- *Analyzing Reserves: Devil is in the Details - As Scrutiny, Case Filings Rise, Insurers Must Consider a Host of Factors*, by Michael E. Angelina and Jennifer L. Biggs, *National Underwriter Property & Casualty Edition*, June 28, 2004
- American Academy of Actuaries' Mass Torts Subcommittee Chairperson, 2001 - Present
 - *Dissecting A&E Survival Ratios*, by the American Academy of Actuaries Environmental and Mass Tort Liability Work Group, *Best's Review*, September 2001
 - 2001 Monograph: *Asbestos Issues and Trends* available at www.actuary.org
 - *Asbestos Update*, February 2006 available at www.actuary.org

Presentations:

1. CAS Seminar on Reinsurance, June 15-16, 2000
Concurrent Session: Current Events
Changes in Asbestos Liability
2. Casualty Loss Reserve Seminar, September 18, 2000
Introduction to Reinsurance Reserving
3. CAS Annual Meeting, November 13, 2000
New Classes of Claims / Megatort Update
4. 2001 RAA Education Conference, May 30, 2001
Asbestos Claims: Is This the Beginning or the End?
5. CAS Seminar on Reinsurance, July 12, 2001
Concurrent Session - Latent Exposures
Asbestos - From Bad to Worse
6. Swiss Re/APH Update, October 8, 2001
Asbestos Issues and Trends
7. 2001 CAS Annual Meeting, November 13-14, 2001
Concurrent Session: Asbestos Claims Liabilities
Quantification of Asbestos Liabilities
8. Morgan Stanley, January 18, 2002
Asbestos: Old Problem, New Perspective
(Videotaped)
9. Merrill Lynch, January 28, 2002
Major Chemicals Conference Call and February 12, 2002 transcript
10. Excess/Surplus Lines Claims Association Conference, February 12, 2002
Asbestos - An Actuarial/Financial Point of View and Claims Look Into the Future
11. Salomon Smith Barney Investor Conference, March 1, 2002
Asbestos Issues and Trends
12. J.P. Morgan/London, March 5, 2002
Asbestos Teleconference
13. CAS Seminar on Ratemaking, March 7-8, 2002
Concurrent Session: Emerging Risks - What Now?
Asbestos Update

14. 27th International Congress of Actuaries, March 19, 2002
General Insurance Parallel Session: Latent Exposures
15. A Seminar by Claims Resolution Management Corporation
and Tillinghast/Towers Perrin, March 26, 2002
The \$200 Billion Question: Understanding the Financial Impact of Asbestos
Litigation Forecasting Claims
16. CAS Special Interest Seminar on The Changing Insurance Market, April 15, 2002
Concurrent Session: Asbestos
17. CAS Seminar on Reinsurance, June 4, 2002
Asbestos - The Perfect Storm
18. Asbestos Litigation Today Symposium, South Texas College of Law, March 7, 2003
The Scope and Impact of Asbestos Litigation
19. Casualty Actuaries of New England, Spring Meeting, March 19, 2003
Concurrent Session: Current Issues
Asbestos Issues and Trends
20. CAS Seminar on Ratemaking, March 27, 2003
Concurrent Session: Emerging Risks - What Now?
Asbestos Issues and Trends
21. Manufacturers Alliance/MAPI, Law Councils I and II, April 3, 2003
A Review of Current Insurance Issues and Concerns Associated with Asbestos
Liability
22. Central States Actuarial Forum, September 15, 2003
Asbestos Issues and Trends
23. GE ERC State-of-the-Art Forum, October 1-3, 2003
Asbestos Issues and Trends
24. 7th Annual Cambridge Reinsurance Symposium, November 13, 2003
Asbestos Developments
25. CAS 2004 Seminar on Ratemaking, March 11, 2004
Asbestos Liabilities - The Continuing Saga
26. Swiss Re - APH Claims Workshop, March 23, 2004
Asbestos Liabilities - The Continuing Saga

27. Illinois Department of Insurance and Society of Financial Examiners / Illinois Chapter, April 22, 2004
Asbestos and Environmental Update
28. Reinsurance Claims and Collections, American Conference Institute, June 22, 2004
Update on Asbestos Claims and Their Impact on Reinsurers
(with Margaret Reetz, Cozen O'Connor)
29. Property Casualty ExecuSummit, June 22, 2004
Asbestos Issues and Trends: The Ongoing Saga
30. Tillinghast/Towers Perrin and Claims Resolution Management Corporation Seminar, June 29, 2004
Quantification and Forecasts
31. Casualty Loss Reserve Seminar, September 13, 2004
Asbestos - Legislative Update
32. St. Louis Actuaries Club Luncheon, December 14, 2004
Asbestos Issues and Trends
33. CAS Ratemaking Seminar, March 11, 2005
Emerging and Latent Risks for Commercial Liability
34. Merrill Lynch Asbestos Conference Call, March 15, 2005
35. The International Reinsurance Summit, May 19, 2005
Session Four: Current Critical Issues Following Asbestos and Terrorism
Asbestos
36. Tillinghast/Towers Perrin and Claims Resolution Management Corporation Seminar, September 29, 2005
Asbestos: The Times They Are A-Changin'?
Federal Reform Efforts: The FAIR Act (S. 852) and Beyond
37. Conference of Consulting Actuaries, 2005 Annual Meeting, November 2, 2005
Session 47: Asbestos Update
38. CAS Annual Meeting 2005, November 15, 2005
Session C29: What's the Future of Asbestos Legislation?
39. Mealey's Silica & Asbestos Claims Conference: What Effect Will Investigations into Fraudulent Suits Have on the Litigation?, November 9, 2006
Quantifying the Risk: The Impact of Investigations Into Fraudulent Silica/Asbestos Suits Will Have on the Rate of Filing and Value of Current & Future Claims

40. Mealey's Asbestos Conference, February 8, 2007
Crunching the Numbers in 2007 & Beyond: Successfully Riding the Next Wave of Asbestos Claims
41. Mealey's Asbestos Bankruptcy Conference, June 7, 2007
The Experts Speak: The Estimation of Current & Future Asbestos Liabilities

EXHIBIT 2

EXHIBIT 2

Materials Relied Upon By Jennifer L. Biggs

1. Analysis Documentation Sections I, II, and III
2. Analysis by Victor L. Roggli, M.D. of certain W.R. Grace Asbestos Personal Injury Questionnaire responses
3. W.R. Grace & Co. Case Management System excerpts provided by Grace counsel, dated June 14, 2002
4. W.R. Grace & Co. Asbestos Bodily Injury Data Dictionary provided by Grace counsel, dated June 14, 2002
5. Manville Personal Injury Trust claims database purchased by Tillinghast, dated as of December 31, 2006
6. Rust Database of W.R. Grace Asbestos Personal Injury Questionnaires and Proofs of Claim provided by Grace counsel, dated as of April 30, 2007
7. Personal Injury Questionnaires and Proofs of Claim responses provided by Grace counsel, dated as of April 30, 2007
8. W.R. Grace FAR/GAR Images Files provided by Grace counsel
9. BMC Mail File with Historical Grace Party ID Information provided by Grace counsel, dated October 13, 2006
10. Documents produced by W.R. Grace in response to the Official Committee of Asbestos Personal Injury Claimants' document requests and interrogatories
11. Eric Stallard, Kenneth G. Manton, and Joel E. Cohen, *Forecasting Product Liability Claims, Epidemiology and Modeling in the Manville Asbestos Case* (2005)
12. Eric Stallard, *Product Liability Forecasting for Asbestos-Related Personal Injury Claims, A Multidisciplinary Approach*, reprinted from Population Health and Aging, Strengthening the Dialogue Between Epidemiology and Demography, Vol. 954 of the Annals of the New York Academy of Sciences, December 2005
13. Eric Stallard and Kenneth G. Manton, *Projections of Asbestos-Related Personal Injury Claims Against the Manville Personal Injury Settlement Trust, Males 1990-2049, By Occupation, Date of First Exposure and Type of Claim*, Duke University Center for Demographic Studies, Draft, March 8, 1994

14. Eric Stallard and Kenneth G. Manton, *Estimates and Projections of Asbestos-Related Diseases and Exposures Among Manville Personal Injury Settlement Trust Claimants, 1990-2049*, Duke University Center for Demographic Studies, Draft, August 31, 1993
15. Eric Stallard and Kenneth G. Manton, *Projections of Asbestos-Related Personal Injury Claims Against the Manville Personal Injury Settlement Trust, Males 1990-2049, By Occupation, Date of First Exposure and Type of Claim*, Duke University Center for Demographic Studies, Draft, February 21, 1994
16. Tables provided by Eric Stallard containing additional claim run-off curves, detailed by date of first exposure and occupation are included within Tillinghast's Filing Pattern Documentation.
17. Annual claims filed by year by jurisdiction by defendant from *En Banc*, a database purchased by Tillinghast
18. Various SEC 10-K filings submitted by American Standard, Ashland Oil, Crane Company, Coltec, Georgia Pacific, Goodyear, Kaiser Cement, Oglebay Norton, St. Gobain (Certainteed), Union Carbide, and Viacom (Westinghouse)
19. Mark Peterson, *Report on Opinions and Support for Opinions of Mark A. Peterson Re: Asbestos Liabilities of W.R. Grace on March 30, 1998*, submitted in Official Committee of Asbestos Property Damage Claimants, et al. v. Sealed Air Corporation and Cryovac Inc., Case No. 02-2211 (Bankr. D. Del.)
20. In re Armstrong World Industries, Inc., et al., 348 B.R. 111 (D. Del. 2006)
21. In re Federal-Mogul Global, Inc., et al., 330 B.R. 133 (D. Del. 2005)
22. Owens Corning, et al. v. Credit Suisse First Boston, et al., 2005 U.S. Dist. Lexis 10752, No. 04-905 (D. Del. April 13, 2005)
23. Owens Corning, et al. v. Credit Suisse First Boston, et al., 322 B.R. 719 (D. Del. 2005)
24. Deposition Transcripts and Exhibits of Jay W. Hughes, Jr. taken in Official Committee of Asbestos Property Damage Claimants, et al. v. Sealed Air Corporation and Cryovac Inc., Adv. Pro. Nos. 02-2210 and 02-2211 (Bankr. D. Del.), July 19, 2002 and August 21, 2002
25. Deposition Transcripts and Exhibits of Robert Beber taken in Official Committee of Asbestos Property Damage Claimants, et al. v. Sealed Air Corporation and Cryovac Inc., Adv. Pro. Nos. 02-2210 and 02-2211 (Bankr. D. Del.), July 31, 2002 and August 30, 2002

26. Deposition Transcript and Exhibits of David B. Siegel taken in Official Committee of Asbestos Property Damage Claimants, et al. v. Sealed Air Corporation and Cryovac Inc., Adv. Pro. Nos. 02-2210 and 02-2211 (Bankr. D. Del.), September 19, 2002
27. Deposition Transcript and Exhibits of Dr. Thomas Florence taken in Official Committee of Asbestos Property Damage Claimants, et al. v. Sealed Air Corporation and Cryovac Inc., Adv. Pro. Nos. 02-2210 and 02-2211 (Bankr. D. Del.), July 3, 2002
28. Deposition Transcript and Exhibits of Daniel Rourke taken in Official Committee of Asbestos Property Damage Claimants, et al. v. Sealed Air Corporation and Cryovac Inc., Adv. Pro. Nos. 02-2210 and 02-2211 (Bankr. D. Del.), June 20, 2002 and July 11, 2002
29. Deposition Transcripts and Exhibits of Jay W. Hughes, Jr. taken in In re W.R. Grace & Co., et al., Case No. 01-1139 (Bankr. D. Del.), February 22, 2007
30. Deposition Transcripts and Exhibits of Robert Beber taken in In re W.R. Grace & Co., et al., Case No. 01-1139 (Bankr. D. Del.), February 21, 2007
31. Deposition Transcripts and Exhibits of Fred Zaremby taken in In re W.R. Grace & Co., et al., Case No. 01-1139 (Bankr. D. Del.), April 25, 2007
32. Transcript of Jay W. Hughes, Jr., testimony taken in W.R. Grace, et al. v. American Re-Insurance Company, Arbitration Proceedings before Hon. Milton Mollen and Kathleen A. Robert, December 17, 2002
33. Non-estimation expert reports submitted on behalf of W.R. Grace in In re W.R. Grace & Co., et al., Case No. 01-1139 (Bankr. D. Del.), October 3, 2006, by the following:
 - Elizabeth Anderson, Ph.D.
 - Gordon Bragg, Ph.D.
 - Paul E. Epstein, M.D.
 - David H. Garabrant, M.D., M.P.H.
 - Steven E. Haber, M.D., F.C.C.P.
 - Daniel Henry, M.D.
 - Grover M. Hutchins, M.D.
 - Richard J. Lee, Ph.D., Peter S.J. Lees, Ph.D., CIH
 - Dr. M. Laurentius Marais and Dr. William E. Wecker
 - Suresh Moolgavkar, M.D., Ph.D.
 - Bertram Price, Ph.D.
 - Joseph V. Rodricks, Ph.D.
 - David Weill, M.D.

34. Non-estimation expert reports submitted on behalf of the Official Committee of Asbestos Personal Injury Claimants in In re W.R. Grace & Co., et al., Case No. 01-1139 (Bankr. D. Del.), October 3, 2006, by the following:
 - Arnold R. Brody
 - Barry I. Castleman
 - Samuel P. Hammar, M.D.
 - Richard A. Lemen, Ph.D., M.S.P.H.
 - William E. Longo
 - Stephen M. Snyder
 - Laura S. Welch, M.D., F.A.C.P., FACOEM

35. Non-estimation expert reports submitted on behalf of the Libby Claimants in In re W.R. Grace & Co., et al., Case No. 01-1139 (Bankr. D. Del.), October 3, 2006, by the following:
 - Arthur Frank
 - Alan C. Whitehouse

36. W.R. Grace & Co.'s Informational Brief, filed in In re W.R. Grace & Co., et al., Case No. 01-1139 (Bankr. D. Del.), dated April 2, 2001

37. Fourth Amended and Restated Verified Statement in Connection with the Representative of Creditors as Required by Fed. R. Bankr. P. 2019, filed by Cohn Whitesell & Goldberg LLP and Landis Rath & Cobb LLP, filed in In re W.R. Grace & Co., et al., Case No. 01-1139 (Bankr. D. Del.), December 7, 2006

38. Declaration of Service Regarding: (1) Letter from Kirkland & Ellis LLP to Counsel/Claimants, (2) Amended Case Management Order for the Estimation of Asbestos Personal Injury Liabilities, (3) W.R. Grace Asbestos Personal Injury Questionnaire, filed in In re W.R. Grace & Co., et al., Case No. 01-1139 (Bankr. D. Del.), March 7, 2006

39. Declaration of Service Regarding: (1) Letter from Rust Consulting, Inc. to Counsel/Claimants, (2) W.R. Grace Asbestos Personal Injury Questionnaire (Customized), filed in In re W.R. Grace & Co., et al., Case No. 01-1139 (Bankr. D. Del.), March 7, 2006

40. Order As To All Pre-Petition Asbestos PI Litigation Claims, Including Settled Claims, (I) Establishing Bar Dates; (II) Approving Proof of Claim Form; and (III) Approving Notice of Pre-Petition Asbestos Personal-Injury Claims Bar Date, filed in In re W.R. Grace & Co., et al., Case No. 01-1139 (Bankr. D. Del.), August 24, 2006

41. Stipulated Order Clarifying The Order As To All Pre-Petition Asbestos PI Litigation Claims, Including Settled Claims, (I) Establishing Bar Dates; (II) Approving Proof of Claim Form; and (III) Approving Notice of Pre-Petition Asbestos Personal-Injury Claims Bar Date, filed in In re W.R. Grace & Co., et al., Case No. 01-1139 (Bankr. D. Del.), September 26, 2006
42. Barry I. Castleman, *Asbestos Medical and Legal Aspects* (Aspen Publishers 5th Ed. 2005)
43. Andrew Schneider & David McCumber, *An Air That Kills: How Asbestos Poisoning of Libby, Montana Uncovered a National Scandal* (2004)
44. Mark A. Behrens & Phil Goldberg, *The Asbestos Litigation Crisis: The Tide Appears To Be Turning*, 12 Conn. Ins. L. J. 477 (2005-2006) (forthcoming)
45. American Academy of Actuaries, *Overview of Asbestos Issues and Trends*, Public Policy Monograph, December 2001, available at www.actuary.org
46. National Center for Health Statistics, National Occupational Respiratory Mortality System (NORMS), available at <http://webappa.cdc.gov/ords/norms.html>
47. The National Cancer Institute Surveillance, Epidemiology, and End Results (SEER) Public-Use Data
48. Nicholson, *et al.*, *Occupational Exposure to Asbestos: Population at Risk & Projected Mortality – 1980-2030*, 3 Am. J. Indus. Med. 259-311 (1982)
49. Grace Bankruptcy Claims Information Site, available at <http://www.graceclaims.com/index.shtml>
50. Grace Bankruptcy Claims Information Site, Grace Product List, available at <http://www.graceclaims.com/products.shtml>
51. Jeffrey A. Lybarger, M.D. and B. Kathy Skipper, M.A., *The Community Environmental Health Project in Libby, Montana*, Hazardous Substances & Public Health, Vol. 12, No. 1, Spring 2002, available at <http://www.atsdr.cdc.gov/HEC/HSPH/vol12no1.pdf>
52. Mark A. Behrens and Phil Goldberg, *Asbestos Litigation: Momentum Builds for State-Based Medical Criteria Solutions to Address Filings By the Non-Sick*, Mealey's Litigation Report: Asbestos, Vol. 20, Issue 6, April 15, 2005
53. Stephen J. Carroll, Deborah R. Hensler, *et al.*, *Asbestos Litigation*, RAND Institute for Civil Justice, May 10, 2005, available at www.rand.org/publications

54. Michael Moss & Adrienne Appel, *Protecting the Product: A Special Report; Company's Silence Countered Safety Fears About Asbestos*, N.Y. Times, July 9, 2001, at A1
55. *W.R. Grace Was Silent About Asbestos in Monokote*, July 20, 2001, available at http://www.asbestosnetwork.com/news/nw_072001-monokote.htm
56. *Asbestos Danger: Do You Have Zonolite In Your Attic?*, February 20, 2003 and May 21, 2003, available at <http://www.nbc5.com/money/1993941/detail.html>
57. *The History of W.R. Grace & Co.*, November 18, 1999, available at <http://seattlepi.nwsource.com/uncivilaction/grac19.shtml>
58. *Libby Asbestos Site, Libby Montana*, U.S. Environmental Protection Agency, Region 8, ATSDR, PHS, US Dot-Volpe, November 14, 2002, available at <http://www.oscreadiness.org/2004/materials/asbestososctrng.pdf>
59. *Former Workers at Two Arizona Vermiculite Processing Plants Were Exposed to Asbestos Sites in Phoenix and Glendale Evaluated*, Agency for Toxic Substances and Disease Registry, September 28, 2006, available at http://www.atsdr.cdc.gov/news/phoenix_glendale_092806.html
60. *Medical Testing and Results*, Agency for Toxic Substances and Disease Registry, available at http://www.atsdr.cdc.gov/asbestos/sites/libby_montana/medical_testing.html