UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

[X] ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2015
or

[ ] TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from to

Commission file number 001-12019

QUAKER CHEMICAL CORPORATION
(Exact name of Registrant as specified in its charter)

A Pennsylvania Corporation	**No. 23-0993790**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
One Quaker Park, 901 E. Hector Street, Conshohocken, Pennsylvania	**19428-2380**
(Address of principal executive offices)	**(Zip Code)**

Registrant's telephone number, including area code: (610) 832-4000

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Name of each Exchange on which registered
Common Stock, $1.00 par value	**New York Stock Exchange**

Securities registered pursuant to Section 12(g) of the Act:

None

Indicate by check mark if the Registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes x No ☐

Indicate by check mark if the Registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No x

Indicate by check mark whether the Registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes x No ☐

Indicate by check mark whether the Registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the Registrant was required to submit and post such files). Yes x No ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§ 229.405 of this chapter) is not contained herein, and will not be contained, to the best of Registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.
x

Indicate by check mark whether the Registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer x	Accelerated filer ☐
Non-accelerated filer ☐ (Do not check if smaller reporting company)	Smaller reporting company ☐

Indicate by check mark whether the Registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ☐ No x

State the aggregate market value of voting and non-voting common equity held by non-affiliates of the Registrant. (The aggregate market value is computed by reference to the last reported sale on the New York Stock Exchange on June 30, 2015): $1,170,356,128

Indicate the number of shares outstanding of each of the Registrant's classes of common stock as of the latest practicable date: 13,207,137 shares of Common Stock, $1.00 Par Value, as of January 31, 2016.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Registrant's definitive Proxy Statement relating to the Annual Meeting of Shareholders to be held on May 4, 2016 are incorporated by reference into Part III.

PART I

As used in this Report, the terms "Quaker," the "Company," "we" and "our" refer to Quaker Chemical Corporation, its subsidiaries, and associated companies, unless the context otherwise requires.

Item 1. ***Business.***

General Description

Quaker develops, produces, and markets a broad range of formulated chemical specialty products and offers chemical management services ("CMS") for various heavy industrial and manufacturing applications in a global portfolio throughout its four regions: the North America region, the Europe, Middle East and Africa ("EMEA") region, the Asia/Pacific region and the South America region. The principal products and services in Quaker's global portfolio include: (i) rolling lubricants (used by manufacturers of steel in the hot and cold rolling of steel and by manufacturers of aluminum in the hot rolling of aluminum); (ii) corrosion preventives (used by steel and metalworking customers to protect metal during manufacture, storage, and shipment); (iii) metal finishing compounds (used to prepare metal surfaces for special treatments such as galvanizing and tin plating and to prepare metal for further processing); (iv) machining and grinding compounds (used by metalworking customers in cutting, shaping, and grinding metal parts which require special treatment to enable them to tolerate the manufacturing process, achieve closer tolerance, and improve tool life); (v) forming compounds (used to facilitate the drawing and extrusion of metal products); (vi) bio-lubricants (mainly used in machinery in the forestry and construction industries); (vii) hydraulic fluids (used by steel, metalworking, and other customers to operate hydraulic equipment); (viii) chemical milling maskants for the aerospace industry; (ix) temporary and permanent coatings for metal and concrete products; (x) construction products, such as flexible sealants and protective coatings, for various applications; (xi) specialty greases; (xii) die casting lubricants; and (xiii) programs to provide CMS. Individual product lines representing more than 10% of consolidated revenues for any of the past three years are as follows:

	2015	2014	2013
Rolling lubricants	18.6 %	20.1 %	20.7 %
Machining and grinding compounds	15.3 %	16.3 %	17.7 %
Hydraulic fluids	12.6 %	13.0 %	12.9 %
Corrosion preventives	12.0 %	12.5 %	12.5 %

A substantial portion of Quaker's sales worldwide are made directly through its own employees and its CMS programs with the balance being handled through distributors and agents. Quaker employees visit the plants of customers regularly, actually work on site, and, through training and experience, identify production needs which can be resolved or alleviated either by adapting Quaker's existing products or by applying new formulations developed in Quaker's laboratories. Quaker relies less on the use of advertising, and more heavily upon its reputation in the markets which it serves. Generally, separate manufacturing facilities of a single customer are served by different personnel.

As part of the Company's CMS, certain third-party product sales to customers are managed by the Company. Where the Company acts as principal, revenues are recognized on a gross reporting basis at the selling price negotiated with its customers. Where the Company acts as an agent, such revenue is recorded using the net reporting method as service revenues at the amount of the administrative fee earned by the Company for ordering the goods. Third-party products transferred under arrangements resulting in net reporting revenue totaled $48.6 million, $46.8 million and $41.6 million for 2015, 2014 and 2013, respectively.

The Company recognizes revenue in accordance with the terms of the underlying agreements, when title and risk of loss have been transferred, when collectability is reasonably assured, and when pricing is fixed or determinable. This generally occurs for product sales when products are shipped to customers; for consignment-type arrangements, upon usage by the customer; and for services, when they are performed. Related to other income generation, Quaker receives license fees and royalties and includes them in other income when the amounts are recognized in accordance with their agreed-upon terms, when performance obligations are satisfied, when the amount is fixed or determinable, and when collectability is reasonably assured.

During 2015, the Company expanded its business through the July 2015 acquisition of Verkol S.A. ("Verkol") for approximately $26.0 million, net of cash acquired and a post-closing adjustment settled in January 2016. Verkol is a leading specialty grease and other lubricants manufacturer based in northern Spain. Verkol is a market leader with world-class grease manufacturing capabilities and state-of-the-art research and development facilities, selling products into industrial end markets with a particular strength serving the steel industry. Also, Verkol brings a unique technology in continuous casting products that will provide the Company with cross-selling opportunities to its global steel customer base.

Competition

The chemical specialty industry comprises a number of companies of similar size as well as companies larger and smaller than Quaker. Quaker cannot readily determine its precise position in every industry it serves. Based on information available to Quaker, however, it is estimated that Quaker holds a leading global position (among a group in excess of 25 other suppliers) in the market for process fluids to produce sheet steel. It is also believed that Quaker holds significant global positions in the markets for process fluids in portions of the automotive and industrial markets. The offerings of many of our competitors differ from those of Quaker; some offer a broad portfolio of fluids, including general lubricants, while others have a more specialized product range. All competitors provide different levels of technical services to individual customers. Competition in the industry is based primarily on the ability to provide products that meet the needs of the customer, render technical services and laboratory assistance to the customer and, to a lesser extent, on price.

Major Customers and Markets

In 2015, Quaker's five largest customers (each composed of multiple subsidiaries or divisions with semi-autonomous purchasing authority) accounted for approximately 18% of our consolidated net sales, with the largest customer (Arcelor-Mittal Group) accounting for approximately 8% of our consolidated net sales. A significant portion of Quaker's revenues are realized from the sale of process fluids and services to manufacturers of steel, automobiles, aircraft, appliances, and durable goods, and, therefore, Quaker is subject to the same business cycles as those experienced by these manufacturers and their customers. Quaker's financial performance is generally correlated to the volume of global production within the industries it serves, rather than discretely related to financial performance in such industries. Furthermore, steel customers typically have limited manufacturing locations compared to metalworking customers and generally use higher volumes of products at a single location.

Raw Materials

Quaker uses over 1,000 various raw materials including mineral oils and derivatives, animal fats and derivatives, vegetable oils and derivatives, ethylene derivatives, solvents, surface active agents, and a wide variety of other organic and inorganic compounds. In 2015, three raw material groups (mineral oils and derivatives, animal fats and derivatives, and vegetable oils and derivatives) each accounted for approximately 10% or more of the total cost of Quaker's raw material purchases. The price of mineral oil and its derivatives can be affected by the price of crude oil and industry refining capacity. In addition, animal fat and vegetable oil prices are impacted by biodiesel consumption which is affected by the price of crude oil. Accordingly, significant fluctuations in the price of crude oil could have a material effect upon certain products used in the Company's business. Many of the raw materials used by Quaker are "commodity" chemicals which can have volatile prices. Accordingly, Quaker's earnings could be affected by market changes in raw material prices. Reference is made to the disclosure contained in Item 7A of this Report.

Patents and Trademarks

Quaker has a limited number of patents and patent applications, including patents issued, applied for, or acquired in the United States and in various foreign countries, some of which may prove to be material to its business. Principal reliance is placed upon Quaker's proprietary formulae and the application of its skills and experience to meet customer needs. Quaker's products are identified by trademarks that are registered throughout its marketed area.

Research and Development—Laboratories

Quaker's research and development laboratories are directed primarily toward applied research and development since the nature of Quaker's business requires continual modification and improvement of formulations to provide chemical specialties to satisfy customer requirements. Quaker maintains quality control laboratory facilities in each of its manufacturing locations. In addition, Quaker maintains facilities in Conshohocken, Pennsylvania; Santa Fe Springs, California; Batavia, New York; Aurora, Illinois; Dayton, Ohio; Uithoorn, The Netherlands; Karlshamn, Sweden; Navarra, Spain; Rio de Janiero, Brazil; and Qingpu, China that, in addition to quality control, are devoted primarily to applied research and development.

Research and development costs are expensed as incurred. Research and development expenses during 2015, 2014 and 2013 were $22.1 million, $22.1 million and $21.6 million, respectively.

Most of Quaker's subsidiaries and associated companies also have laboratory facilities. Although not as complete as the laboratories mentioned above, these facilities are generally sufficient for the requirements of the customers being served. If problems are encountered which cannot be resolved by local laboratories, such problems are generally referred to the laboratory staff in Conshohocken, Santa Fe Springs, Uithoorn or Qingpu.

Regulatory Matters

In order to facilitate compliance with applicable federal, state, and local statutes and regulations relating to occupational health and safety and protection of the environment, the Company has an ongoing program of site assessment for the purpose of identifying capital expenditures or other actions that may be necessary to comply with such requirements. The program includes periodic inspections of each facility by Quaker and/or independent experts, as well as ongoing inspections and training by on-site personnel. Such inspections address operational matters, record keeping, reporting requirements and capital improvements. Capital expenditures directed solely or primarily to regulatory compliance amounted to approximately $2.3 million, $0.8 million and $0.6 million in 2015, 2014 and 2013, respectively. In 2016, the Company expects to incur approximately $2.1 million for capital expenditures directed primarily to regulatory compliance.

Number of Employees

On December 31, 2015, Quaker's consolidated companies had approximately 2,040 full-time employees of whom approximately 630 were employed by the parent company and its U.S. subsidiaries and approximately 1,410 were employed by its non-U.S. subsidiaries. Associated companies of Quaker (in which it owns less than 50% and has significant influence) employed approximately 70 people on December 31, 2015.

Company Segmentation

The Company's reportable operating segments evidence the structure of the Company's internal organization, the method by which the Company's resources are allocated and the manner by which the Company assesses its performance. The Company's reportable operating segments are organized by geography as follows: North America, EMEA, Asia/Pacific and South America. See Note 5 of Notes to Consolidated Financial Statements included in Item 8 of this Report.

Non-U.S. Activities

Since significant revenues and earnings are generated by non-U.S. operations, Quaker's financial results are affected by currency fluctuations, particularly between the U.S. dollar and the euro, the Brazilian real, the Mexican peso, the Chinese renminbi and the Indian rupee, and the impact of those currency fluctuations on the underlying economies. Incorporated by reference is (i) the foreign exchange risk information contained in Item 7A of this Report, (ii) the geographic information in Note 5 of Notes to Consolidated Financial Statements included in Item 8 of this Report and (iii) information regarding risks attendant to foreign operations included in Item 1A of this Report.

Quaker on the Internet

Financial results, news and other information about Quaker can be accessed from the Company's website at http://www.quakerchem.com. This site includes important information on the Company's locations, products and services, financial reports, news releases and career opportunities. The Company's periodic and current reports on Forms 10-K, 10-Q, 8-K, and other filings, including exhibits and supplemental schedules filed therewith, and amendments to those reports, filed with the Securities and Exchange Commission ("SEC") are available on the Company's website, free of charge, as soon as reasonably practicable after they are electronically filed with or furnished to the SEC. Information contained on, or that may be accessed through, the Company's website is not incorporated by reference in this Report and, accordingly, you should not consider that information part of this Report.

Factors that May Affect Our Future Results

(Cautionary Statements under the Private Securities Litigation Reform Act of 1995)

Certain information included in this Report and other materials filed or to be filed by Quaker with the SEC (as well as information included in oral statements or other written statements made or to be made by us) contain or may contain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. These statements can be identified by the fact that they do not relate strictly to historical or current facts. We have based these forward-looking statements on our current expectations about future events. These forward-looking statements include statements with respect to our beliefs, plans, objectives, goals, expectations, anticipations, intentions, financial condition, results of operations, future performance, and business, including:

- statements relating to our business strategy;
- our current and future results and plans; and
- statements that include the words "may," "could," "should," "would," "believe," "expect," "anticipate," "estimate," "intend," "plan" or similar expressions.

Such statements include information relating to current and future business activities, operational matters, capital spending, and financing sources. From time to time, oral or written forward-looking statements are also included in Quaker's periodic reports on Forms 10-K, 10-Q and 8-K, press releases, and other materials released to, or statements made to, the public.

Any or all of the forward-looking statements in this Report, in Quaker's Annual Report to Shareholders for 2015 and in any other public statements we make may turn out to be wrong. This can occur as a result of inaccurate assumptions or as a consequence of known or unknown risks and uncertainties. Many factors discussed in this Report will be important in determining our future performance. Consequently, actual results may differ materially from those that might be anticipated from our forward-looking statements.

We undertake no obligation to publicly update any forward-looking statements, whether as a result of new information, future events or otherwise. However, any further disclosures made on related subjects in Quaker's subsequent reports on Forms 10-K, 10-Q, 8-K and other related filings should be consulted. Our forward-looking statements are subject to risks, uncertainties and assumptions about us and our operations that are subject to change based on various important factors, some of which are beyond our control. A major risk is that the demand for the Company's products and services is largely derived from the demand for its customers' products, which subjects the Company to uncertainties related to downturns in a customer's business and unanticipated customer production shutdowns. Other major risks and uncertainties include, but are not limited to, significant increases in raw material costs, customer financial stability, worldwide economic and political conditions, foreign currency fluctuations, future terrorist attacks and other acts of violence, each of which is discussed in greater detail in Item 1A of this Report. Furthermore, the Company is subject to the same business cycles as those experienced by steel, automobile, aircraft, appliance, and durable goods manufacturers. These risks, uncertainties, and possible inaccurate assumptions relevant to our business could cause our actual results to differ materially from expected and historical results. Other factors beyond those discussed in this Report could also adversely affect us. Therefore, we caution you not to place undue reliance on our forward-looking statements. This discussion is provided as permitted by the Private Securities Litigation Reform Act of 1995.

Item 1A. ***Risk Factors.***

Changes to the industries and markets that Quaker serves could have a material adverse effect on the Company's liquidity, financial position and results of operations.

The business environment in which the Company operates remains uncertain. The Company is subject to the same business cycles as those experienced by steel, automobile, aircraft, appliance, and durable goods manufacturers. A major risk is that the Company's demand is largely derived from the global demand for its customers' products, which subjects the Company to uncertainties related to downturns in our customers' business and unanticipated customer production shutdowns or curtailments. The Company has limited ability to adjust its cost level contemporaneously with changes in sales and gross margins. Thus, a significant downturn in sales or gross margins due to reductions in global production within the industries the Company serves, weak end-user markets, loss of a significant customer, and/or rising raw material costs could have a material adverse effect on the Company's liquidity, financial position, and results of operations.

The specialty chemical industry comprises a number of companies of similar size as well as companies larger and smaller than Quaker. It is estimated that Quaker holds a leading and significant global position in the markets for process fluids to produce sheet steel, and significant global positions in portions of the automotive and industrial markets. The industry is highly competitive, and a number of companies with significant financial resources and/or customer relationships compete with us to provide similar products and services. Our competitors may be positioned to offer more favorable pricing and service terms, potentially resulting in reduced profitability and/or a loss of market share for us. In addition, several competitors could potentially consolidate their businesses to gain scale to better position their product offerings, which could have a negative impact on our profitability and market share. Historically, competition in the industry has been based primarily on the ability to provide products that meet the needs of the customer and render technical services and laboratory assistance to the customer and, to a lesser extent, on price. Factors critical to the Company's business include successfully differentiating the Company's offering from its competition, operating efficiently and profitably as a globally integrated whole, and increasing market share and customer penetration through internally developed business programs and strategic acquisitions.

Our business depends on attracting and retaining qualified management and other key personnel.

The unanticipated departure of any key member of our management team or other key personnel could have an adverse effect on our business. Given the relative size of the Company and the breadth of its global operations, there are a limited number of qualified personnel to assume the responsibilities of management level or other key employees. In addition, because of the specialized and technical nature of our business, our future performance is dependent on our ability to attract and retain qualified management, commercial, technical, or other key personnel. Competition for such personnel is intense, and we may be unable to continue to attract or retain such personnel. In an effort to mitigate such risks, the Company utilizes retention bonuses, offers competitive pay and maintains continued succession planning, but there can be no assurance that these mitigating factors will be adequate to attract or retain qualified management or other key personnel.

Inability to obtain sufficient price increases or contract concessions to offset increases in the costs of raw materials could result in a loss of sales, gross margin, and/or market share and could have a material adverse effect on the Company's liquidity, financial position and results of operations. Conversely, an inability to implement timely price decreases to compensate for changes in raw material costs could result in a loss of sales, gross margin, and/or market share and could have a material adverse effect on the Company's liquidity, financial position and results of operations.

Quaker uses over 1,000 various raw materials, including mineral oils and derivatives, animal fats and derivatives, vegetable oils and derivatives, ethylene derivatives, solvents, surface active agents, and a wide variety of other organic and inorganic compounds. In 2015, three raw material groups (mineral oils and derivatives, animal fats and derivatives, and vegetable oils and derivatives) each accounted for approximately 10% or more of the total cost of Quaker's raw material purchases. The price of mineral oils and derivatives can be affected by crude oil pricing and industry refining capacity. Animal fat and vegetable oil prices also can be impacted by biodiesel consumption which is affected by the price of crude oil. In addition, many of the raw materials used by Quaker are "commodity" chemicals, which can experience significant price volatility. Accordingly, Quaker's earnings can be impacted by market changes in raw material prices.

Although the Company has been successful in the past in recovering a substantial amount of the raw material cost increases while retaining its customers, there can be no assurance that the Company can continue to recover higher raw material costs or retain customers in the future. Conversely, the Company has been successful in maintaining acceptable levels of margin in periods of raw material price decline, but there can be no assurance that the Company can continue to maintain its margins through appropriate price and contract concessions, while retaining all customers in the future. As a result of the Company's past pricing actions, in periods of rising and declining costs, customers may become more likely to consider competitors' products, some of which may be available at a lower cost. A significant loss of customers could result in a material adverse effect on the Company's liquidity, financial position, and results of operations.

Lack of availability of raw materials and issues associated with sourcing from some single suppliers and some suppliers in volatile economic environments could have a material adverse effect on the Company's liquidity, financial position and results of operations.

The chemical specialty industry can experience some tightness of supply for certain raw materials. In addition, in some cases, we source from a single supplier and/or suppliers in economies that have experienced instability. Any significant disruption in supply could affect our ability to obtain raw materials, which could have a material adverse effect on our liquidity, financial position and results of operations. In addition, certain of the Company's raw materials are subject to various regulatory laws, and a change in the ability to legally use such raw materials may impact Quaker's liquidity, financial position and results of operations.

Loss of a significant manufacturing facility may materially and adversely affect the Company's liquidity, financial position and results of operations.

Quaker has multiple manufacturing facilities throughout the world. In certain countries, such as Brazil and China, there is only one such facility. If one of the Company's facilities is damaged to such extent that production is halted for an extended period, the Company may not be able to timely supply its customers. This could result in a loss of sales over an extended period, or permanently. The Company does take steps to mitigate against this risk, including contingency planning and procuring property and casualty insurance (including business interruption insurance). Nevertheless, the loss of sales in any one region over any extended period of time could have a significant material adverse effect on Quaker's liquidity, financial position and results of operations.

Bankruptcy of a significant customer or a closure of a customer's major site could have a material adverse effect on our liquidity, financial position and results of operations.

A significant portion of Quaker's revenues is derived from sales to customers in the steel and automotive industries; including some of our larger customers, where a number of bankruptcies have occurred in the past and where companies have experienced financial difficulties. As part of the bankruptcy process, the Company's pre-petition receivables may not be realized and customer manufacturing sites may be closed or contracts voided. The bankruptcy of a major customer could have a material adverse effect on the Company's liquidity, financial position and results of operations. Also, steel customers typically have limited manufacturing locations compared to metalworking customers and generally use higher volumes of products at a single location. The loss or closure of one or more steel mills or other major sites of a significant customer could have a material adverse effect on Quaker's business.

During 2015, our five largest customers (each composed of multiple subsidiaries or divisions with semi-autonomous purchasing authority) together accounted for approximately 18% of our consolidated net sales, with the largest customer (Arcelor-Mittal Group) accounting for approximately 8% of our consolidated net sales.

Impairment evaluations of goodwill, intangible assets, investments or other long-lived assets could result in a reduction in our recorded asset values, which could have a material adverse effect on the Company's liquidity, financial position and results of operation.

The Company performs reviews of goodwill and indefinite-lived intangible assets on an annual basis, or more frequently if triggering events indicate a possible impairment. The Company tests goodwill at the reporting unit level by comparing the carrying value of the net assets of the reporting unit, including goodwill, to the unit's fair value. Similarly, the Company tests indefinite-lived intangible assets by comparing the fair value of the assets to their carrying values. If the carrying values of goodwill or indefinite-lived intangible assets exceed their fair value, the goodwill or indefinite-lived intangible assets may be considered impaired. In addition, the Company will perform a review of a definite-lived intangible asset or other long-lived asset when changes in circumstances or events indicate a possible impairment. An estimate of undiscounted cash flows produced by the asset or appropriate group of assets is compared with its carrying value to determine if an impairment charge is warranted. If any impairment or related charge is warranted, then Quaker's liquidity, financial position and results of operations could be materially affected.

Fluctuations in our effective tax rate could have a material effect on the Company's liquidity, financial position and results of operation.

The Company is subject to income taxes in both the U.S. and various foreign jurisdictions, and our domestic and international tax liabilities are subject to the allocation of income among these different jurisdictions. Our effective tax rate is derived from a combination of local tax rates, applicable to the Company, in the various countries, states and other jurisdictions in which we operate. Our effective tax rate and respective tax liabilities could, therefore, be materially affected by changes in the mix of earnings in countries with differing statutory tax rates, changes in tax rates, expiration or lapses of tax credits or incentives, changes in uncertain tax positions, changes in the valuation of deferred tax assets and liabilities, or changes in tax laws, including matters such as transfer pricing. In addition, we are regularly under audit by tax authorities, and the final decisions of such audits could materially affect our current tax estimates and tax positions. Any of these factors, or similar tax-related risks, could cause the Company to experience an effective tax rate and tax-related payments that significantly differ from previous periods or current expectations, which could have a significant material effect on Quaker's liquidity, financial position and results of operations.

Failure to comply with any material provision of our primary credit facility or other debt agreements could have a material adverse effect on our liquidity, financial position and results of operations.

The Company's primary credit line is a $300 million unsecured multicurrency credit agreement with a group of lenders, which matures in June 2018. The amount available under this facility can be increased to $400 million at the Company's option if lenders agree to increase their commitments and the Company satisfies certain conditions. This facility provides the availability of revolving credit borrowings, and, in general, bears interest at either a base rate or LIBOR plus a margin based on the Company's consolidated leverage ratio.

The facility contains covenants that impose certain restrictions, including limitations on investments, acquisitions and liens, as well as default provisions customary for facilities of its type. While these covenants and restrictions are not currently considered to be overly restrictive, they could become more difficult to comply with as our business or financial conditions change. In addition, deterioration in the Company’s results of operations or financial position could significantly increase borrowing costs.

Quaker is exposed to market rate risk for changes in interest rates, due to the variable interest rate applied to the Company’s borrowings under its credit facilities. Accordingly, if interest rates rise significantly, the cost of debt to Quaker will increase, perhaps significantly, depending on the extent and timing of Quaker’s borrowings under the credit facilities. At December 31, 2015, the Company had $62.9 million in outstanding borrowings under its credit facilities. Incorporated by reference is the interest rate risk information contained in Item 7A of this Report.

Environmental laws and regulations and/or pending and future legal proceedings may materially and adversely affect the Company’s liquidity, financial position, and results of operations, as well as its reputation in the markets it serves.

The Company is a party to proceedings, cases, and requests for information from, and negotiations with, various claimants and federal and state agencies relating to various matters, including environmental matters. An adverse result in one or more pending or on-going matters or any potential future matter of a similar nature could materially and adversely affect the Company’s liquidity, financial position, and results of operations, as well as its reputation in the markets it serves. Incorporated herein by reference is the information concerning pending asbestos-related litigation against an inactive subsidiary, amounts accrued associated with certain environmental, non-capital remediation costs and other potential commitments or contingencies highlighted in Note 23 of Notes to Consolidated Financial Statements, which appears in Item 8 of this Report.

Failure to comply with the complex global regulatory environment in which the Company operates could have an adverse impact on the Company’s reputation and/or a material adverse effect on the Company’s liquidity, financial position and results of operations.

Changes in the regulatory environment in which the Company operates, particularly, but not limited to, the United States, Brazil, China, India and the European Union, could lead to heightened regulatory scrutiny, could adversely impact our ability to continue selling certain products in our domestic or foreign markets and/or could increase the cost of doing business. For instance, the European Union’s Registration, Authorization and Restriction of Chemicals (“REACH”), and analogous non-E.U. laws and regulations or other similar laws and regulations, could result in fines, ongoing monitoring and other future business activity, which could have a material adverse effect on the Company’s liquidity, financial position and results of operations. In addition, non-compliance with applicable laws and regulations, particularly the U.S. Foreign Corrupt Practices Act (“FCPA”), the U.K. Bribery Act and other similar laws and regulations, could result in a negative impact to the Company’s reputation, potential fines or ongoing monitoring, which could also have a material adverse effect on the Company’s liquidity, financial position, and results of operations.

Potential product, service or other related liability claims could have a material adverse effect on the Company’s liquidity, financial position and results of operations.

The development, manufacture and sale of specialty chemical products and other related services involve inherent exposure to potential product liability claims, service level claims, product recalls and related adverse publicity. Any of these potential product or service risks could also result in substantial and unexpected expenditures and affect customer confidence in our products and services, which could have a material adverse effect on the Company’s liquidity, financial position and results of operations. Although the Company maintains product and other general liability insurance, there can be no assurance that the types or levels of coverage maintained are adequate to cover these potential risks. In addition, the Company may not be able to continue to maintain its existing insurance coverage or obtain comparable or additional insurance coverage at a reasonable cost, if at all, in the event a significant product or service claim arises.

We may be unable to adequately protect our proprietary rights and trade brands, which may limit the Company’s ability to compete in its markets.

Quaker has a limited number of patents and patent applications, including patents issued, applied for, or acquired in the United States and in various foreign countries, some of which may prove to be material to its business. Principal reliance is placed upon Quaker’s proprietary formulae and the application of its skills and experience to meet customer needs. Also, Quaker’s products are identified by trademarks that are registered throughout its marketed area. Despite our efforts to protect such proprietary information through patent and trademark filings, through the use of appropriate trade secret protections and through the inability of certain products to be effectively replicated by others, it is possible that competitors or other unauthorized third parties may obtain, copy, use or disclose our technologies, products, and processes. In addition, the laws and/or judicial systems of foreign countries in which we design, manufacture, market and sell our products may afford little or no effective protection of our proprietary technology or trade brands. These potential risks to our proprietary information and trade brands could subject the Company to increased competition and negatively impact our liquidity, financial position and results of operations.

We might not be able to timely develop, manufacture and gain market acceptance of new and enhanced products required to maintain or expand our business.

We believe that our continued success depends on our ability to continuously develop and manufacture new products and product enhancements on a timely and cost-effective basis, in response to customers' demands for higher performance process chemicals, coatings, greases and other chemical products. Our competitors may develop new products or enhancements to their products that offer performance, features and lower prices that may render our products less competitive or obsolete, and, as a consequence, we may lose business and/or significant market share. The development and commercialization of new products require significant expenditures over an extended period of time, and some products that we seek to develop may never become profitable. In addition, we may not be able to develop and introduce products incorporating new technologies in a timely manner that will satisfy our customers' future needs or achieve market acceptance.

An inability to appropriately capitalize on growth, including prior acquisitions, organic growth, or future acquisitions, may adversely affect the Company's liquidity, financial position and results of operations.

Quaker has completed several acquisitions recently and in the past several years and, also, may continue to seek acquisitions to grow its business in the future. The success of the Company's growth depends on its ability to successfully integrate these acquisitions, including, but not limited to its ability to do the following:

- successfully execute the integration or consolidation of the acquired or additional business into existing processes and operations;
- develop or modify financial reporting, information systems and other related financial tools to ensure overall financial integrity and adequacy of internal control procedures;
- identify and take advantage of potential cost reduction opportunities, while maintaining legacy business and other related attributes; and
- further penetrate existing, and expand into new, markets with the product capabilities acquired in acquisitions.

In addition, the Company continues to grow organically through increased end-market growth, incremental market share gains, and extending past acquisitions of adjacent technologies through its existing channels. Such growth is dependent on prevailing market conditions and the Company's ability to execute over time.

Therefore, the Company may fail to derive significant benefits or may not create the appropriate infrastructure to support such additional growth from organic or acquired businesses, which could have a material adverse effect on Quaker's liquidity, financial position, and results of operations.

The scope of our international operations subjects the Company to risks including, but not limited to, risks from currency fluctuations, changes in trade regulations, political and economic instability, and complex local tax environments.

Since significant revenues and earnings are generated by non-U.S. operations, Quaker's financial results are affected by currency fluctuations, particularly between the U.S. dollar and the euro, the Brazilian real, the Mexican peso, the Chinese renminbi, and the Indian rupee, and the impact of those currency fluctuations on the underlying economies. During the past three years, sales by non-U.S. subsidiaries accounted for approximately 60% of our consolidated net sales. Generally, all of the Company's operations use their local currency as their functional currency. The Company generally does not use financial instruments that expose it to significant risk involving foreign currency transactions; however, the relative size of its non-U.S. activities has a significant impact on reported operating results and the Company's net assets. Therefore, as exchange rates vary, Quaker's results can be materially affected. Incorporated by reference is the foreign exchange risk information contained in Item 7A of this Report and the geographic information in Note 5 of Notes to Consolidated Financial Statements included in Item 8 of this Report.

The Company often sources inventory among its worldwide operations. This practice can give rise to foreign exchange risk resulting from the varying cost of inventory to the receiving location, as well as from the revaluation of intercompany balances. The Company mitigates this risk through local sourcing efforts.

Additional risks associated with the Company's international operations include, but are not limited to: instability in economic conditions from country to country; changes in a country's political condition; trade protection measures; longer payment cycles; licensing and other legal requirements; restrictions on the repatriation of our assets, including cash; the difficulties of staffing and managing dispersed international operations; less protective foreign intellectual property laws; legal systems that may be less developed and predictable than those in the United States; and complex and dynamic local tax regulations.

The breadth of Quaker's international operations subjects the Company to various local non-income taxes, including value-added-taxes ("VAT"). With VAT and other similar taxes, the Company essentially operates as an agent for various jurisdictions by collecting VAT-related taxes from customers and remitting those amounts to the taxing authorities on the goods it sells. The laws and regulations regarding VAT-related taxes can be complex and vary widely among countries, as well as among individual jurisdictions within a given country, and for the same products, making full compliance difficult. As VAT and other similar taxes are often charged as a percentage of the selling price of the goods sold, the amounts involved can be material. Should there be non-compliance by the Company, it may need to remit funds to the tax authorities prior to collecting the appropriate amounts from the customers or jurisdictions, which may have been incorrectly paid. In addition, the Company may choose for commercial reasons not to seek repayment from certain customers. This could have a material adverse effect on the Company's liquidity, financial position and results of operations. See Note 23 of Notes to Consolidated Financial Statements, included in Item 8 of this Report, which is incorporated herein by this reference, for further discussion.

Disruption of critical information systems or material breaches in the security of our systems may adversely affect our business and our customer relationships.

Quaker relies on information technology systems to process, transmit, and store electronic information in our day-to-day operations. The Company also relies on its technology infrastructure, among other functions, to interact with customers and suppliers, fulfill orders and bill, collect and make payments, ship products, provide support to customers, fulfill contractual obligations and otherwise conduct business. Our information technology systems are subject to potential disruptions, including significant power outages, cyberattacks, computer viruses, other malicious codes, and/or unauthorized access attempts, any of which, if successful, could result in data leaks or otherwise compromise our confidential or proprietary information and disrupt our operations. Cybersecurity incidents, such as these, are becoming more sophisticated and frequent, and there can be no assurance that our protective measures will prevent security breaches that could have a significant impact on our business, reputation and financial results. Failure to monitor, maintain or protect our information technology systems and data integrity effectively or, to anticipate, plan for and recover from significant disruptions to these systems could have a material adverse effect on our business, results of operations or financial condition.

Terrorist attacks, other acts of violence or war, natural disasters or other uncommon global events may affect the markets in which we operate and our profitability.

Terrorist attacks, other acts of violence or war, natural disasters or other uncommon global events may negatively affect our operations. There can be no assurance that there will not be further terrorist attacks against the U.S. or other locations where we do business. Also, other uncommon global events, such as earthquakes, fires and tsunami, cannot be predicted. Terrorist attacks, other acts of violence or armed conflicts, and natural disasters may directly impact our physical facilities and/or those of our suppliers or customers. Additional terrorist attacks or natural disasters may disrupt the global insurance and reinsurance industries with the result that we may not be able to obtain insurance at historical terms and levels, if at all, for all of our facilities. Furthermore, any of these events may make travel and the transportation of our supplies and products more difficult and more expensive and ultimately affect the sales of our products. The consequences of terrorist attacks, other acts of violence or armed conflicts, natural disasters or other uncommon global events can be unpredictable, and we may not be able to foresee events, such as these, that could have a material adverse effect on our business.

Item 1B. ***Unresolved Staff Comments.***

None.

Item 2. *Properties.*

Quaker's corporate headquarters and a laboratory facility are located in its North American segment's Conshohocken, Pennsylvania location. The Company's other principal facilities in its North American segment are located in Aurora, Illinois; Detroit, Michigan; Middletown, Ohio; Santa Fe Springs, California; Batavia, New York; Dayton, Ohio; and Monterrey, N.L., Mexico. The Company's EMEA segment has principal facilities in Uithoorn, The Netherlands; Barcelona, Spain; Navarra, Spain; Karlshamn, Sweden; and Tradate, Italy. The Company's Asia/Pacific segment operates out of its principal facilities located in Qingpu, China; Kolkata, India; and Sydney, Australia, while its South American segment operates out of its principal facility in Rio de Janeiro, Brazil. With the exception of the Conshohocken, Santa Fe Springs, Aurora, Karlshamn, and Sydney sites, which are leased, the remaining principal facilities are owned by Quaker and, as of December 31, 2015, were mortgage free. Quaker also leases sales, laboratory, manufacturing, and warehouse facilities in other locations.

Quaker's principal facilities (excluding Conshohocken) consist of various manufacturing, administrative, warehouse, and laboratory buildings. Substantially all of the buildings (including Conshohocken) are of fire-resistant construction and are equipped with sprinkler systems. All facilities are primarily of masonry and/or steel construction and are adequate and suitable for Quaker's present operations. The Company has a program to identify needed capital improvements that are implemented as management considers necessary or desirable. Most locations have various numbers of raw material storage tanks, ranging from 2 to 58, at each location with a capacity ranging from 1,000 to 82,000 gallons, and processing or manufacturing vessels ranging in capacity from 7 to 16,000 gallons.

Each of Quaker's non-U.S. associated companies (in which it owns less than 50% interest and has significant influence) owns or leases a plant and/or sales facilities in various locations, with the exception of Primex, Ltd.

Item 3. *Legal Proceedings.*

The Company is a party to proceedings, cases, and requests for information from, and negotiations with, various claimants and Federal and state agencies relating to various matters, including environmental matters. For information concerning pending asbestos-related litigation against an inactive subsidiary, amounts accrued associated with certain environmental non-capital remediation costs and the Company's value-added tax dispute settlements, reference is made to Note 23 of Notes to Consolidated Financial Statements, included in Item 8 of this Report, which is incorporated herein by this reference. The Company is a party to other litigation which management currently believes will not have a material adverse effect on the Company's results of operations, cash flow or financial condition.

Item 4. *Mine Safety Disclosures.*

Not Applicable

Item 4(a). ***Executive Officers of the Registrant.***

Set forth below is information regarding the executive officers of the Company, each of whom (with the exception of Ms. Hall and Mr. Hostetter) have been employed by the Company for more than five years, including the respective positions and offices with the Company held by each over the respective periods indicated. Each of the executive officers, with the exception of Mr. Hostetter, is elected annually to a one-year term. Mr. Hostetter is considered an executive officer in his capacity as principal accounting officer for purposes of this Item.

Name, Age, and Present Position with the Company	Business Experience During the Past Five Years and Period Served as an Officer
Michael F. Barry, 57 Chairman of the Board, Chief Executive Officer and President and Director	Mr. Barry, who has been employed by the Company since 1998, has served as Chairman of the Board since May 2009, in addition to his position as Chief Executive Officer and President held since October 2008. He served as interim Chief Financial Officer from October 22, 2015 until November 29, 2015. He served as Senior Vice President and Managing Director – North America from January 2006 to October 2008. He served as Senior Vice President and Global Industry Leader – Metalworking and Coatings from July through December 2005. He served as Vice President and Global Industry Leader – Industrial Metalworking and Coatings from January 2004 through June 2005 and Vice President and Chief Financial Officer from 1998 to August 2004.
Mary Dean Hall, 58 Vice President, Chief Financial Officer and Treasurer	Ms. Hall has served as Vice President, Chief Financial Officer and Treasurer since she joined the Company on November 30, 2015. Prior to joining the Company, Ms. Hall served as the Vice President and Treasurer of Eastman Chemical Company from April 2009 until October 2015. Prior to that role, she held various senior-level financial positions of increasing responsibility with Eastman from 1995 until April 2009, including Treasurer, Vice President and Controller, and Vice President, Finance.
D. Jeffry Benoliel, 57 Vice President and Global Leader – Metalworking, Can and Mining	Mr. Benoliel, who has been employed by the Company since 1995, has served as Global Leader – Mining since May 2014, in addition to his position as Vice President and Global Leader – Metalworking and Can since July 2013 and his role as Corporate Secretary, a position held from 1998 through March 2015. He served as Vice President – Global Metalworking and Fluid Power from June 2011 through June 2013 and served as General Counsel from 2001 to March 2012. He served as Vice President – Global Strategy from October 2008 to June 2011.
Joseph A. Berquist, 44 Vice President and Managing Director – North America	Mr. Berquist, who has been employed by the Company since 1997, has served as Vice President and Managing Director – North America since April 2010. He served as Senior Director, North America Commercial from October 2008 through March 2010.
Ronald S. Ettinger, 63 Vice President – Human Resources	Mr. Ettinger, who has been employed by the Company since 2002, has served as Vice President-Human Resources since December 2011. He served as Director-Global Human Resources from August 2005 through November 2011.
Shane W. Hostetter, 34 Global Controller	Mr. Hostetter, who has been employed by the Company since July 2011, has served as Global Controller since September 2014. He served as Corporate Controller from May 2013 to August 2014. He served as Assistant Global Controller from July 2011 to May 2013. Prior to joining the Company, Mr. Hostetter led the financial reporting department for Pulse Electronics Corporation (formerly Technitrol, Inc.) from May 2008 to June 2011.

Name, Age, and Present Position with the Company	Business Experience During the Past Five Years and Period Served as an Officer
Dieter Laininger, 52 Vice President and Managing Director – South America and Global Leader – Primary Metals	Mr. Laininger, who has been employed by the Company since 1991, has served as Vice President and Managing Director – South America, since January 2013, in addition to his position as Vice President and Global Leader – Primary Metals, to which he was appointed in June 2011. He served as Industry Business Director for Steel and Metalworking – EMEA from March 2001 through July 2011.
Joseph F. Matrange, 73 Vice President and Global Leader – Coatings	Mr. Matrange, who has been employed by the Company since 2000, has served as Vice President and Global Leader – Coatings since October 2008. He has also served as President of AC Products, Inc., a California subsidiary, since October 2000, and Epmar Corporation, a California subsidiary, since April 2002.
Jan F. Nieman, 54 Vice President and Global Leader – Grease and Fluid Power, Global Strategy and Marketing	Mr. Nieman, who has been employed by the Company since 1992, has served as Vice President – Global Strategy and Marketing since May 2014, in addition to his position as Global Leader – Grease and Fluid Power since August 2013. He also served as Global Leader – Mining from August 2013 through April 2014. He served as Vice President and Managing Director – Asia/Pacific from February 2005 through July 2013.
Wilbert Platzer, 54 Vice President and Managing Director – EMEA	Mr. Platzer, who has been employed by the Company since 1995, has served as Vice President and Managing Director – EMEA since January 2006.
Adrian Steeples, 55 Vice President and Managing Director – Asia/Pacific	Mr. Steeples, who has been employed by the Company since 2010, has served as Vice President and Managing Director – Asia/Pacific since July 2013. He served as Industry Business Director – Metalworking from March 2011 through June 2013, and Manager, European and Global Special Projects, from May 2010 through February 2011. Prior to joining the Company, he worked for the BP Group serving as BP/Castrol European and Asian Pacific Sales Director in Industrial Lubricants and Services from January 2009 through December 2009.

PART II

Item 5. ***Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities.***

The Company's common stock is listed on the New York Stock Exchange ("NYSE") under the trading symbol KWR. The following table sets forth, for the calendar quarters during the two most recent fiscal years, the range of high and low sales prices for the common stock as reported on the NYSE composite tape (amounts rounded to the nearest penny), and the quarterly dividends declared and paid:

	Price Range				Dividends Declared		Dividends Paid	
	2015		2014					
	High	Low	High	Low	2015	2014	2015	2014
First quarter	$ 92.72	$ 78.03	$ 80.91	$ 65.19	$ 0.30	$ 0.25	$ 0.30	$ 0.25
Second quarter	90.69	80.69	81.70	71.16	0.32	0.30	0.30	0.25
Third quarter	95.74	75.04	79.59	69.17	0.32	0.30	0.32	0.30
Fourth quarter	85.99	75.42	93.56	67.29	0.32	0.30	0.32	0.30

There are no restrictions that currently limit the Company's ability to pay dividends or that the Company believes are likely to materially limit the payment of future dividends. If a default under the Company's primary credit facility were to occur and continue, the payment of dividends would be prohibited. Reference is made to the "Liquidity and Capital Resources" disclosure contained in Item 7 of this Report.

As of January 15, 2016, there were 919 shareholders of record of the Company's common stock, its only outstanding class of equity securities.

Every holder of Quaker common stock is entitled to one vote or ten votes for each share held of record on any record date depending on how long each share has been held. As of January 15, 2016, 13,263,626 shares of Quaker common stock were issued and outstanding. Based on the information available to the Company on January 15, 2016, we estimate as of that date the holders of record of 758,390 shares of Quaker common stock would have been entitled to cast ten votes for each share, or approximately 38% of the total votes that would have been entitled to be cast as of that record date, and the holders of record of 12,505,236 shares of Quaker common stock would have been entitled to cast one vote for each share, or approximately 62% of the total votes that would have been entitled to be cast as of that date. The number of shares that are indicated as entitled to one vote includes those shares presumed to be entitled to only one vote. Because the holders of these shares may rebut this presumption, the total number of votes entitled to be cast as of January 15, 2016 could be more than 20,089,136.

Reference is made to the information in Item 12 of this Report under the caption "Equity Compensation Plans," which is incorporated herein by this reference.

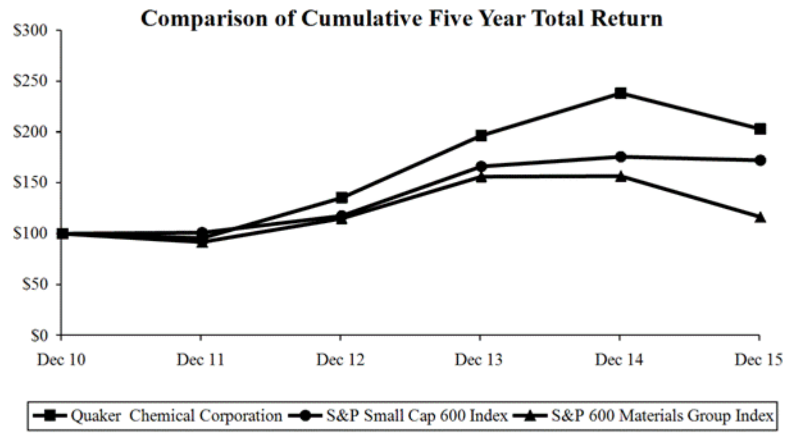
The following table sets forth information concerning shares of the Company's common stock acquired by the Company during the fourth quarter of the fiscal year covered by this Report:

Issuer Purchases of Equity Securities

Period	(a) Total Number of Shares Purchased (1)	(b) Average Price Paid Per Share	(c) Total Number of Shares Purchased as part of Publicly Announced Plans or Programs	(d) Approximate Dollar Value of Shares that May Yet be Purchased Under the Plans or Programs (1)
October 1 - October 31	13,838	$ 80.17	13,838	$ 93,901,217
November 1 - November 30	12,580	$ 81.08	12,580	$ 92,881,217
December 1 - December 31	1,858	$ 84.66	1,858	$ 92,723,918
Total	28,276	$ 80.87	28,276	$ 92,723,918

(1) On May 6, 2015, the Company's Board of Directors approved, and the Company announced, a new share repurchase program, pursuant to which the Company is authorized to repurchase up to $100,000,000 of Quaker Chemical Corporation common stock (the "2015 Share Repurchase Program"). The 2015 Share Repurchase Program has no expiration date. All of the shares acquired by the Company during the applicable respective periods were acquired pursuant to the 2015 Share Repurchase Program.

The following graph compares the cumulative total return (assuming reinvestment of dividends) from December 31, 2010 to December 31, 2015 for (i) Quaker's common stock, (ii) the S&P SmallCap 600 Index (the "SmallCap Index"), and (iii) the S&P 600 Materials Group Index (the "Materials Group Index"). The graph assumes the investment of $100 on December 31, 2010 in each of Quaker's common stock, the stocks comprising the SmallCap Index and the stocks comprising the Materials Group Index.



	12/31/2010	12/31/2011	12/31/2012	12/31/2013	12/31/2014	12/31/2015
Quaker	$ 100.00	$ 95.60	$ 135.22	$ 196.47	$ 238.15	$ 202.90
SmallCap Index	100.00	101.02	117.51	166.05	175.61	172.15
Materials Group Index	100.00	91.73	114.94	156.10	156.56	116.41

Item 6. ***Selected Financial Data.***

The following table sets forth selected financial data for the Company and its consolidated subsidiaries:

	Year Ended December 31,				
(in thousands, except dividends and per share data):	**2015 (1)**	**2014 (2)**	**2013 (3)**	**2012 (4)**	**2011 (5)**
Summary of Operations:					
Net sales	$ 737,555	$ 765,860	$ 729,395	$ 708,226	$ 683,231
Income before taxes and equity in net income of associated companies	70,230	78,293	72,826	62,948	59,377
Net income attributable to Quaker Chemical Corporation	51,180	56,492	56,339	47,405	45,892
Per share:					
Net income attributable to Quaker Chemical Corporation Common Shareholders - basic	$ 3.84	$ 4.27	$ 4.28	$ 3.64	$ 3.71
Net income attributable to Quaker Chemical Corporation Common Shareholders - diluted	$ 3.84	$ 4.26	$ 4.27	$ 3.63	$ 3.66
Dividends declared	1.260	1.150	0.995	0.975	0.955
Dividends paid	1.24	1.10	0.99	0.97	0.95
Financial Position					
Working capital	$ 241,298	$ 226,617	$ 197,991	$ 170,018	$ 152,900
Total assets	685,513	665,526	584,146	536,634	511,152
Long-term debt	81,439	75,328	17,321	30,000	46,701
Total equity	381,243	365,135	344,696	289,676	261,357

Notes to the above table *(in thousands)*:

(1) The results of operations for 2015 include equity income from a captive insurance company of $2,078 after tax; offset by an after-tax charge of $2,806 related to a currency conversion charge at the Company’s 50% owned equity affiliate in Venezuela; $2,813 of one-time transaction expenses related to the Company’s July 2015 acquisition of Verkol S.A.; $173 of charges related to cost streamlining initiatives in the Company’s South American segment; $328 of charges related to certain U.S. customer bankruptcies; and $6,790 of charges related to a global restructuring program.

(2) The results of operations for 2014 include equity income from a captive insurance company of $2,412 after tax; offset by an after-tax charge of $321 related to a currency conversion charge at the Company’s 50% owned equity affiliate in Venezuela; $1,166 of charges related to cost streamlining initiatives in the Company’s EMEA and South American segments; a $902 charge related to a U.K. pension plan amendment; and $825 of charges related to certain customer bankruptcies.

(3) The results of operations for 2013 include equity income from a captive insurance company of $5,451 after tax; an increase to other income of $2,540 related to a mineral oil excise tax refund; and an increase to other income of $497 related to a change in an acquisition-related earnout liability; partially offset by an after-tax charge of $357 related to a currency conversion charge at the Company’s 50% owned equity affiliate in Venezuela; $1,419 of charges related to cost streamlining initiatives in the Company’s EMEA and South American segments; and a $796 net charge related to a non-income tax contingency.

(4) The results of operations for 2012 include equity income from a captive insurance company of $1,812 after tax; and an increase to other income of $1,737 related to a change in an acquisition-related earnout liability; partially offset by a charge of $1,254 related to the bankruptcy of certain customers in the U.S.; and a charge of $609 related to CFO transition costs.

(5) The results of operations for 2011 include equity income from a captive insurance company of $2,323 after tax; an increase to other income of $2,718 related to the revaluation of the Company’s previously held ownership interest in Tecniquimia Mexicana S.A de C.V. to its fair value; and an increase to other income of $595 related to a change in an acquisition-related earnout liability.

Item 7. ***Management's Discussion and Analysis of Financial Condition and Results of Operations.***

Executive Summary

Quaker Chemical Corporation is a leading global provider of process fluids, chemical specialties, and technical expertise to a wide range of industries, including steel, aluminum, automotive, mining, aerospace, tube and pipe, cans, and others. For nearly 100 years, Quaker has helped customers around the world achieve production efficiency, improve product quality, and lower costs through a combination of innovative technology, process knowledge, and customized services. Headquartered in Conshohocken, Pennsylvania USA, Quaker serves businesses worldwide with a network of dedicated and experienced professionals whose mission is to make a difference.

The Company delivered solid operating results in 2015, despite significant foreign exchange headwinds and challenging market conditions, most notably, lower global steel production. Net sales were $737.6 million for 2015 compared to $765.9 million for 2014. The 4% decrease in net sales was primarily driven by the negative impact of foreign currency translation of $53.6 million, or 7%, and declines in selling price and product mix of 1%, which offset the Company's product volume and acquisition-related growth of 4% in 2015. Gross profit improved year-over-year primarily as a result of higher gross margin of 37.6% for 2015 compared to 35.7% for 2014, due to timing of certain raw material cost decreases in 2015 compared to 2014. Selling, general and administrative expenses ("SG&A") increased $3.1 million from 2014, due to several factors, including higher labor-related costs and incremental costs associated with the Company's recent acquisitions, including certain one-time transaction expenses of $2.8 million incurred with the Company's third quarter of 2015 Verkol S.A. ("Verkol") acquisition, partially offset by the impact of foreign currency translation. Also, the Company incurred expenses of $6.8 million in 2015 related to a global restructuring program, which included costs to reduce total headcount by approximately 65 employees globally and to close certain non-manufacturing locations. The Company expects to substantially complete this program in 2016 and currently projects pre-tax cost savings as a result of this program to be approximately $3 million in 2016 and approximately $6 million annually in subsequent years. The net result of the Company's operating performance in 2015, supplemented by a lower tax rate compared to 2014, was earnings per diluted share of $3.84 for 2015 compared to $4.26 for 2014. With the fourth quarter of 2015 restructuring expenses and other uncommon items excluded, the Company's non-GAAP earnings per diluted share increased 4% to $4.43 for 2015 compared to $4.26 for 2014. The Company was able to achieve these reported and non-GAAP results despite a negative impact of $0.31 per diluted share, or 7%, from changes in foreign exchange rates and, also, lower global steel production. As a result of this non-GAAP earnings growth, the Company's adjusted EBITDA increased 2% to $101.6 million for 2015 compared to $99.8 million in 2014. See the Non-GAAP Measures section of this Item, below, as well as other items discussed in the Company's Consolidated Operations Review, in the Operations section of this Item, below.

From a regional perspective, the Company's 2015 operating performance was driven primarily by its North America and Asia/Pacific regions, which experienced increased volumes and higher gross margins. Notably, North America included contributions from a full year of the 2014 acquisition of ECLI Products, LLC ("ECLI"). However, both regions were negatively impacted by foreign currency translation, due to the weakening against the U.S. dollar of the Mexican peso and the Chinese renminbi, Indian rupee and Australian dollar, respectively. Related to Europe, Middle East and Africa ("EMEA"), the region's results decreased from 2014 mainly due to the weakening of the euro against the U.S. dollar, as well as declines in selling price and product mix, which offset higher product volumes, including contributions from the Company's 2015 and 2014 acquisitions of Verkol and Binol AB ("Binol"), respectively. Finally, South America's performance continued to be negatively impacted by the economic downturn and related effects on end-user production in Brazil. In addition, foreign exchange continued to negatively impact South America's results, due to the weakening of the Brazilian real and the Argentinian peso against the U.S. dollar. These decreases to the region's performance were partially offset by the positive effects of selling price and product mix and lower labor-related costs as a result of the cost streamlining initiatives taken in this segment during 2013 and 2014. See the Reportable Operating Segment Review, in the Operations section of this Item, below.

The Company's solid operating performance, coupled with lower cash invested in the Company's working capital, increased its net operating cash flow by $18.7 million, or 34%, to $73.4 million for 2015 compared to $54.7 million for 2014. The most notable driver of the Company's working capital improvement was the decrease of cash outflow from accounts receivable, primarily due to the levels of sales at each year-end and, also, better timing of cash receipts. These working capital changes are further discussed in the Company's Liquidity and Capital Resources section of this Item, below.

Overall, the Company is pleased with its 2015 operating performance. Specifically, the Company was able to grow its non-GAAP earnings by 4% and deliver strong cash flow despite significant foreign exchange headwinds, weak economic conditions in several regions, especially in South America, and lower global production in the Company's largest market, steel. In addition, the Company's sales continued to be impacted by downward price adjustments due to lower raw material costs. The Company's performance, despite these headwinds, was highlighted by further market share gains, leveraging of past acquisitions, improved gross margin, and controlled SG&A levels which fell to the bottom line and produced the Company's sixth consecutive year of non-GAAP earnings and adjusted EBITDA growth. Looking forward to 2016, while the Company anticipates a continued strong U.S. dollar, further pricing pressure to adjust to a lower raw material cost environment, and continued uncertain economic conditions in South America and China, the Company believes its track record of market share gains and leveraging of past acquisitions will continue to offset these market challenges. Also, the Company's restructuring program will allow it to further gain SG&A leverage and yield meaningful cost savings into 2016. Finally, the Company's strong cash flow generation and balance sheet continue to be strengths that will allow for future key strategic initiatives and acquisitions. The Company's 2016 plans indicate growth in its top and bottom lines despite currency headwinds. Overall, the Company remains confident in its future and expects 2016 to be another good year for Quaker, as the Company expects to increase non-GAAP earnings and adjusted EBITDA for a seventh consecutive year.

Critical Accounting Policies and Estimates

Quaker's discussion and analysis of its financial condition and results of operations are based upon Quaker's consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States. The preparation of these financial statements requires Quaker to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses, and related disclosure of contingent assets and liabilities. On an ongoing basis, Quaker evaluates its estimates, including those related to customer sales incentives, product returns, bad debts, inventories, property, plant and equipment, investments, goodwill, intangible assets, income taxes, financing operations, business combinations, restructuring, incentive compensation plans (including equity-based compensation), pensions and other postretirement benefits, and contingencies and litigation. Quaker bases its estimates on historical experience and on various other assumptions that are believed to be reasonable under such circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. However, actual results may differ from these estimates under different assumptions or conditions.

Quaker believes the following critical accounting policies describe the more significant judgments and estimates used in the preparation of its consolidated financial statements:

1. Accounts receivable and inventory exposures — Quaker establishes allowances for doubtful accounts for estimated losses resulting from the inability of its customers to make required payments. If the financial condition of Quaker's customers were to deteriorate, resulting in an impairment of their ability to make payments, additional allowances may be required. As part of its terms of trade, Quaker may custom manufacture products for certain large customers and/or may ship products on a consignment basis. Further, a significant portion of Quaker's revenues is derived from sales to customers in industries where a number of bankruptcies have occurred in past years and where companies have experienced financial difficulties. When a bankruptcy occurs, Quaker must judge the amount of proceeds, if any, that may ultimately be received through the bankruptcy or liquidation process. These matters may increase the Company's exposure, should a bankruptcy occur, and may require a write down or a disposal of certain inventory due to its estimated obsolescence or limited marketability. Reserves for customers filing for bankruptcy protection are generally established at 75-100% of the amount outstanding at the bankruptcy filing date. However, initially establishing a reserve and the amount thereto is dependent on the Company's evaluation of likely proceeds to be received from the bankruptcy process, which could result in the Company recognizing minimal or no reserve at the date of bankruptcy. Large and/or financially distressed customers are generally reserved for on a specific review basis, while a general reserve is maintained for other customers based on historical experience. The Company's consolidated allowance for doubtful accounts was $7.8 million and $6.5 million at December 31, 2015 and 2014, respectively. The Company recorded an increase in its provision for doubtful accounts of $1.5 million in 2015, compared to a reduction of $0.3 million in 2014 and an increase to its provision for doubtful accounts of $1.1 million in 2013. Changing the recorded provisions by 10% would have increased or decreased the Company's pre-tax earnings by approximately $0.2 million, less than $0.1 million, and $0.1 million in 2015, 2014 and 2013, respectively. See Note 10 of Notes to Consolidated Financial Statements, which appears in Item 8 of this Report.

2. Environmental and litigation reserves — Accruals for environmental and litigation matters are recorded when it is probable that a liability has been incurred and the amount of the liability can be reasonably estimated. Accrued liabilities are exclusive of claims against third parties and are not discounted. Environmental costs and remediation costs are capitalized if the costs extend the life, increase the capacity or improve the safety or efficiency of the property from the date acquired or constructed, and/or mitigate or prevent contamination in the future. Estimates for accruals for environmental matters are based on a variety of potential technical solutions, governmental regulations and other factors, and are subject to a wide range of potential costs for remediation and other actions. A considerable amount of judgment is required in determining the most likely estimate within the range of total costs, and the factors determining this judgment may vary over time. Similarly, reserves for litigation and similar matters are based on a range of potential outcomes and require considerable judgment in determining the most probable outcome. If no amount within the range is considered more probable than any other amount, the Company accrues the lowest amount in that range in accordance with generally accepted accounting principles. See Note 23 of Notes to Consolidated Financial Statements, which appears in Item 8 of this Report.

3. Realizability of equity investments — Quaker holds equity investments in various foreign companies, where it has the ability to influence, but not control, the operations of the entity and its future results. Quaker would record an impairment charge to an investment if it believed a decline in value that was other than temporary occurred. Future adverse changes in market conditions, poor operating results of underlying investments, devaluation of foreign currencies or other events or circumstances could result in losses or an inability to recover the carrying value of the investments. These indicators may result in an impairment charge in the future. The carrying amount of the Company's equity investments at December 31, 2015 was $20.4 million, which included four investments: approximately $14.9 million, or a 32.8% interest, in Primex, Ltd. (Barbados); $5.0 million, or a 50% interest, in Nippon Quaker Chemical, Ltd. (Japan); $0.2 million, or a 50% interest, in Kelko Quaker Chemical, S.A. (Venezuela); and $0.2 million, or a 50% interest, in Kelko Quaker Chemical, S.A. (Panama), respectively. See Note 14 of Notes to Consolidated Financial Statements, which appears in Item 8 of this Report.

4. Tax exposures, valuation allowances and uncertain tax positions — Quaker records expenses and liabilities for taxes based on estimates of amounts that will be ultimately determined to be deductible in tax returns filed in various jurisdictions. The filed tax returns are subject to audit, which often occur several years subsequent to the date of the financial statements. Disputes or disagreements may arise during audits over the timing or validity of certain items or deductions, which may not be resolved for extended periods of time. Quaker applies the provisions of FASB's guidance regarding uncertain tax positions. The guidance applies to all income tax positions taken on previously filed tax returns or expected to be taken on a future tax return. The FASB's guidance regarding accounting for uncertainty in income taxes prescribes the recognition threshold and measurement attributes for financial statement recognition and measurement of tax positions taken or expected to be taken on a tax return. The guidance further requires the determination of whether the benefits of tax positions will be more likely than not sustained upon audit based upon the technical merits of the tax position. For tax positions that are determined to be more likely than not sustained upon audit, a company recognizes the largest amount of benefit that is greater than 50% likely of being realized upon ultimate settlement in the financial statements. For tax positions that are not determined to be more likely than not sustained upon audit, a company does not recognize any portion of the benefit in the financial statements. Additionally, the guidance provides for derecognition, classification, penalties and interest, accounting in interim periods, disclosure and transition. The guidance also requires that the amount of interest expense and income to be recognized related to uncertain tax positions be computed by applying the applicable statutory rate of interest to the difference between the tax position recognized, including timing differences, and the amount previously taken or expected to be taken in a tax return. The Company's continuing practice is to recognize interest and/or penalties related to income tax matters in income tax expense. Also, the Company would net its liability for unrecognized tax benefits against deferred tax assets related to net operating losses or other tax credit carryforwards if the uncertain tax position were settled for the presumed amount at the balance sheet date. Quaker also records valuation allowances when necessary to reduce its deferred tax assets to the amount that is more likely than not to be realized. While Quaker has considered future taxable income and employs prudent and feasible tax planning strategies in assessing the need for a valuation allowance, in the event we were to determine that it would be able to realize its deferred tax assets in the future in excess of its net recorded amount, an adjustment to the deferred tax asset would increase income in the period such determination was made. Likewise, should Quaker determine that it would not be able to realize all or part of its net deferred tax assets in the future, an adjustment to the deferred tax asset would be charged to income in the period such determination was made. Both determinations could have a material impact on the Company's financial statements. In addition, U.S. income taxes have not been provided on the undistributed earnings of non-U.S. subsidiaries since it is the Company's intention to continue to reinvest these earnings in those foreign subsidiaries for working capital needs and certain other growth initiatives. The amount of such undistributed earnings at December 31, 2015 was approximately $203 million. However, U.S. and foreign income taxes that would be payable if such earnings were distributed may be lower than the amount computed at the U.S. statutory rate due to the availability of foreign tax credits. See Note 8 of Notes to Consolidated Financial Statements, which appears in Item 8 of this Report.

5. Goodwill and other intangible assets — The Company accounts for business combinations under the acquisition method of accounting. This method requires the recording of acquired assets, including separately identifiable intangible assets, at their acquisition date fair values. Any excess of the purchase price over the estimated fair value of the identifiable net assets acquired is recorded as goodwill. The determination of the estimated fair value of assets acquired requires management's judgment and often involves the use of significant estimates and assumptions, including assumptions with respect to future cash inflows and outflows, discount rates, royalty rates, asset lives and market multiples, among other items. When necessary, we consult with external advisors to help determine fair value. For non-observable market values, the Company may determine fair value using acceptable valuation principles, such as the excess earnings, relief from royalty, lost profit or cost methods.

The Company amortizes definite-lived intangible assets on a straight-line basis over the useful lives of the intangible assets. Goodwill and intangible assets which have indefinite lives are not amortized and are required to be assessed at least annually for impairment. The Company compares the assets' fair value to their carrying value, primarily based on future discounted cash flows, in order to determine if an impairment charge is warranted. The estimates of future cash flows involve considerable management judgment and are based upon assumptions about expected future operating performance. Assumptions used in these forecasts are consistent with internal planning, but the actual cash flows could differ from management's estimates due to changes in business conditions, operating performance, and economic conditions. The Company's assumption of weighted average cost of capital ("WACC") and estimated future net operating profit after tax ("NOPAT") are particularly important in determining estimated future cash flows.

The Company completed its annual impairment assessment as of the end of the third quarter of 2015, and no impairment charge was warranted. Furthermore, the estimated fair value of each of the Company's reporting units substantially exceeded its carrying value, with none of the Company's reporting units at risk for failing step one of the goodwill impairment test. The Company's consolidated goodwill and indefinite-lived intangible assets at December 31, 2015 and 2014 were $80.2 million and $79.0 million, respectively. The Company used a WACC of approximately 11% and, at September 30, 2015, this assumption would have had to increase by more than 9 percentage points to a WACC of approximately 20% before any of the Company's reporting units would fail step one of the impairment analysis. Further, at September 30, 2015, the Company's estimate of future NOPAT would have had to decrease by more than 36% before any of the Company's reporting units would be considered potentially impaired. See Note 13 of Notes to Consolidated Financial Statements, which appears in Item 8 of this Report.

6. Postretirement benefits — The Company provides certain defined benefit pension and other postretirement benefits to current employees, former employees and retirees. Independent actuaries, in accordance with accounting principles generally accepted in the United States, perform the required valuations to determine benefit expense and, if necessary, non-cash charges to equity for additional minimum pension liabilities. Critical assumptions used in the actuarial valuation include the weighted average discount rate, rates of increase in compensation levels, and expected long-term rates of return on assets. If different assumptions were used, additional pension expense or charges to equity might be required. As of December 31, 2015, the Company has elected to use a split discount rate (spot-rate approach) for the U.S. plans and certain foreign plans. Under the spot rate approach, benefit obligations have been determined based on application of the spot rates on a given yield curve at each future year to each plan's projected cash flows. The use of the spot-rate approach did not have an impact on the Company's 2015 Consolidated Financial Statements, which appear in Item 8 of this Report. The use of the spot-rate approach differs from the historical approach of deriving a single equivalent discount rate from the calculation of the projected benefit obligation and utilizing that average rate to calculate the components of net benefit cost. Depending on the slope of a given yield curve, the Company expects that beginning in 2016, the use of the spot-rate approach may result in lower interest and service costs, which are components of net periodic benefit costs and will be included in pre-tax earnings. The Company's U.S. pension plan year-end is November 30, and the measurement date is December 31. See Note 18 of Notes to Consolidated Financial Statements, which appears in Item 8 of this Report. The following table highlights the potential impact on the Company's pre-tax earnings, due to changes in these assumptions with respect to the Company's pension plans, based on assets and liabilities at December 31, 2015:

	1/2 Percentage Point Increase			1/2 Percentage Point Decrease		
(Amounts in millions)	**Foreign**	**Domestic**	**Total**	**Foreign**	**Domestic**	**Total**
Discount rate (1)	$ 0.4	$ 0.1	$ 0.5	$ (0.5)	$ (0.1)	$ (0.6)
Expected rate of return on plan assets (2)	0.4	0.2	0.6	(0.4)	(0.2)	(0.6)

(1) T he weighted-average discount rate used to determine net periodic benefit costs for the year ended December 31, 2015 was 2.51% for Foreign plans and 3.72% for Domestic plans.

(2) The weighted average expected rate of return on plan assets used to determine net periodic benefit costs for the year ended December 31, 2015 was 2.55% for Foreign plans and 7.30% for Domestic plans.

7. Restructuring and other related liabilities – A restructuring and related activities program may consist of charges for employee severance, rationalization of manufacturing facilities and other related expenses. To account for such, the Company applies FASB's guidance regarding exit or disposal cost obligations. This guidance requires that a liability for a cost associated with an exit or disposal activity be recognized when the liability is incurred, is estimable, and payment is probable. See Note 4 of Notes to Consolidated Financial Statements, which appears in Item 8 of this Report.

Recently Issued Accounting Standards

See Note 2 of Notes to the Consolidated Financial Statements, which appears in Item 8 of this Report for a discussion regarding recently issued accounting standards.

Liquidity and Capital Resources

Quaker's cash and cash equivalents increased to $81.1 million at December 31, 2015 from $64.7 million at December 31, 2014. The approximate $16.3 million increase was the net result of $73.4 million of cash provided by operating activities, $34.2 million of cash used in investing activities, $16.9 million of cash used in financing activities and a $6.0 million negative impact due to the effect of exchange rates on cash. At December 31, 2015, the Company held approximately $77.2 million of its total cash and cash equivalents among its foreign subsidiaries, which is subject to possible limitations on repatriation to the United States.

Net cash flow provided by operating activities increased $18.7 million to $73.4 million in 2015 compared to $54.7 million in 2014, due to strong operating performance and lower cash invested in the Company's working capital during 2015. Specifically, the Company's cash flow from its accounts receivables increased due to the levels of sales at the end of 2015 compared to 2014, and, also, improvements in collection efforts and timing of receipts. In addition to its receivables, the Company had higher cash inflows from inventory due to more stable levels during 2015 compared to 2014, when the Company re-established safety stock levels that were low at year-end 2013. Partially offsetting these increases to net operating cash flow in 2015 were higher cash outflows from prepaid expenses and other current assets, primarily related to higher tax-related payments, and higher cash outflows due to timing of payments related to the Company's trade accounts payable and other accrued liabilities. In addition, the Company received a $0.6 million dividend distribution in the third quarter of 2015 from its captive insurance equity affiliate, which also impacted the 2014 comparison of the Company's operating cash flow.

Net cash flow used in investing activities decreased $50.3 million to $34.2 million in 2015 compared to $84.5 million in 2014, which was primarily the result of lower payments for acquisitions and property, plant and equipment. During 2015, the Company used $24.6 million to purchase Verkol for its EMEA segment, compared to $73.5 million in 2014, primarily related to the purchase of ECLI for its North American segment and Binol for its EMEA segment. In January 2016, the Company paid $1.4 million as part of a post-closing adjustment related to the Verkol acquisition, which was accrued for as of December 31, 2015. See Note 21 of Notes to Consolidated Financial Statements, which appears in Item 8 of this Report. In addition, the Company had a cash inflow of $0.5 million during 2015 due to a post-closing adjustment related to its acquisition of Binol. Related to property, plant and equipment, the decrease in cash used in investing activities was primarily related to lower spending on information technology development and other related initiatives primarily in the Company's EMEA segment. These decreases were partially offset by lower cash inflows from changes in the Company's restricted cash in 2015, which is dependent upon the timing of claims and payments associated with a subsidiary's asbestos litigation.

Net cash flow used in financing activities was $16.9 million in 2015 compared to $30.2 million of cash provided by financing activities in 2014. The $47.1 million decrease in cash provided by financing activities was due to the net impact of several factors. Specifically, proceeds from long-term debt, net of repayments, were $5.7 million in 2015 compared to $57.4 million in 2014, primarily due to lower borrowings in 2015 on the Company's revolving credit line. The lower borrowings year-over-year were primarily the result of lower funding requirements for the acquisition of Verkol in 2015 compared to the 2014 requirements for the purchase of ECLI and Binol, the purchase of the remaining interest in the Company's Australia affiliate, a payment of an acquisition-related earnout liability and dividends to noncontrolling affiliate shareholders. The Company had $2.0 million higher cash outflow from dividend payments in 2015 compared to 2014, due to a larger number of shares outstanding during the year and increased dividends declared per share. Also, the Company had cash outflows of $7.3 million in 2015 to repurchase 87,386 shares of the Company's common stock in connection with the Company's share repurchase program. In May 2015, the Company's Board of Directors authorized a share repurchase program for the repurchase of up to $100 million of Quaker common stock (the "2015 Share Repurchase Program"), which provides a framework of conditions under which management can repurchase shares of the Company's common stock. The Company intends to repurchase shares to at least offset the dilutive impact of shares issued each year as part of its employee benefit and share-based compensation plans, and could repurchase more if the Company considers the share price to be an amount that is an advantageous return for its shareholders. The Company has continued these share repurchases during the first quarter of 2016, with repurchases of approximately 84,000 shares at an average price of $69.8 per share for approximately $5.9 million to date.

The Company's primary credit line is a $300 million syndicated multicurrency credit agreement, with a group of lenders, which matures in June 2018. The maximum amount available under this facility can be increased to $400 million at the Company's option if the lenders agree and the Company satisfies certain conditions. Borrowings under this facility generally bear interest at a base rate or LIBOR rate plus a margin. At December 31, 2015 and 2014, the Company had borrowings outstanding of approximately $62.9 million and $58.4 million primarily under this credit facility, at weighted average borrowing rates of 1.38% and 1.16%, respectively. Access to this credit facility is dependent on meeting certain financial, acquisition and other covenants, but primarily depends on the Company's consolidated leverage ratio calculation, which cannot exceed 3.50 to 1. As of December 31, 2015 and 2014, the Company's consolidated leverage ratio was below 1.0 to 1, and the Company was also in compliance with all of the other covenants.

In the fourth quarter of 2015, Quaker's management approved a global restructuring program to reduce operating costs. This program includes restructuring and associated severance costs to reduce total headcount by approximately 65 people globally and to close certain non-manufacturing locations. As a result of this program, the Company recognized a $6.8 million, or $0.36 per diluted share, restructuring charge and made $0.5 million of operating cash payments related to this program during the fourth quarter of 2015. The Company expects to substantially complete this program in 2016, including operating cash flows for the settlement of its remaining restructuring liabilities. The Company currently projects pre-tax savings as a result of this program to be approximately $3 million in 2016 and approximately $6 million annually in subsequent years. See Note 4 of Notes to Consolidated Financial Statements, which appears in Item 8 of this Report.

At December 31, 2015, the Company's gross liability for uncertain tax positions, including interest and penalties, was $14.4 million. The Company cannot determine a reliable estimate of the timing of cash flows by period related to its uncertain tax position liability. However, should the entire liability be paid, the amount of the payment may be reduced by up to $9.9 million as a result of offsetting benefits in other tax jurisdictions.

The Company believes it is capable of supporting its operating requirements and funding its business objectives, including but not limited to, pension plan contributions, payments of dividends to shareholders, potential share repurchases, possible acquisitions and other business opportunities, capital expenditures and possible resolution of contingencies, through internally generated funds supplemented with debt or equity as needed.

The following table summarizes the Company's contractual obligations at December 31, 2015, and the effect such obligations are expected to have on its liquidity and cash flows in future periods. Pension and other postretirement plan contributions beyond 2016 are not determinable since the amount of any contribution is heavily dependent on the future economic environment and investment returns on pension trust assets. The timing of payments related to other long-term liabilities, which consist primarily of deferred compensation agreements, also cannot be readily determined due to their uncertainty. Interest obligations on the Company's long-term debt and capital leases assume the current debt levels will be outstanding for the entire respective period and apply the interest rates in effect at December 31, 2015.

Contractual Obligations (Amounts in millions)	Payments due by period Total	2016	2017	2018	2019	2020	2021 and Beyond
Long-term debt	$ 82.182	$ 0.601	$ 0.661	$ 66.931	$ 0.656	$ 0.651	$ 12.682
Interest obligations	10.393	1.662	1.652	1.621	0.969	0.583	3.906
Capital lease obligations	0.119	0.061	0.058	—	—	—	—
Non-cancelable operating leases	9.848	5.291	3.040	0.779	0.485	0.172	0.081
Purchase obligations	3.667	3.667	—	—	—	—	—
Pension and other postretirement plan contributions	8.021	8.021	—	—	—	—	—
Other long-term liabilities (See Note 19 of Notes to Consolidated Financial Statements)	6.378	—	—	—	—	—	6.378
Total contractual cash obligations	$ 120.608	$ 19.303	$ 5.411	$ 69.331	$ 2.110	$ 1.406	$ 23.047

Non-GAAP Measures

Included in this Form 10-K filing are non-GAAP (unaudited) financial measures of non-GAAP earnings per diluted share and adjusted EBITDA. The Company believes these non-GAAP financial measures provide meaningful supplemental information as they enhance a reader's understanding of the financial performance of the Company, are more indicative of the future operating performance of the Company, and facilitate a better comparison among fiscal periods, as the non-GAAP financial measures exclude items that are not considered core to the Company's operations. These non-GAAP results are presented for supplemental informational purposes only and should not be considered a substitute for the financial information presented in accordance with GAAP.

The following are reconciliations between the non-GAAP (unaudited) financial measures of non-GAAP earnings per diluted share and adjusted EBITDA to their most directly comparable GAAP financial measures:

	For the years ended December 31, 2015	2014	2013
GAAP earnings per diluted share attributable to Quaker Chemical Corporation Common Shareholders	$ 3.84	$ 4.26	$ 4.27
Equity income in a captive insurance company per diluted share	(0.16)	(0.18)	(0.41)
Restructuring expenses per diluted share	0.36	—	—
Verkol transaction-related expenses per diluted share	0.15	—	—
U.K. pension plan amendment per diluted share	—	0.05	—
Customer bankruptcy costs per diluted share	0.02	0.05	—
Mineral oil excise tax refund per diluted share	—	—	(0.14)
Change in an acquisition-related earnout liability per diluted share	—	—	(0.03)
Cost streamlining initiatives per diluted share	0.01	0.06	0.08
Non-income tax contingency charge per diluted share	—	—	0.04
Currency conversion impact of the Venezuelan bolivar fuerte per diluted share	0.21	0.02	0.03
Non-GAAP earnings per diluted share	$ 4.43	$ 4.26	$ 3.84

	For the years ended December 31,		
	2015	2014	2013
Net income attributable to Quaker Chemical Corporation	$ 51,180	$ 56,492	$ 56,339
Depreciation and amortization	19,206	16,631	15,784
Interest expense	2,585	2,371	2,922
Taxes on income before equity in net income of associated companies	17,785	23,539	20,489
Equity income in a captive insurance company	(2,078)	(2,412)	(5,451)
Restructuring expenses	6,790	—	—
Verkol transaction-related expenses	2,813	—	—
U.K. pension plan amendment	—	902	—
Customer bankruptcy costs	328	825	—
Mineral oil excise tax refund	—	—	(2,540)
Change in an acquisition-related earnout liability	—	—	(497)
Cost streamlining initiatives	173	1,166	1,419
Non-income tax contingency charge	—	—	796
Currency conversion impact of the Venezuelan bolivar fuerte	2,806	321	357
Adjusted EBITDA	$ 101,588	$ 99,835	$ 89,618

Out-of-Period Adjustment (2012)

During 2012, the Company reassessed its ability to significantly influence the operating and financial policies of its captive insurance equity affiliate, Primex Ltd. ("Primex"). Based on its ownership percentage and other factors, the Company determined that, during 2012, the Company obtained the ability to significantly influence Primex and, as a result, changed its method of accounting from the cost to equity method. During the first quarter of 2013, the Company identified errors in Primex's estimated 2012 financial statements, which primarily related to a reinsurance contract held by Primex. The identified errors resulted in a cumulative $1.0 million understatement of the Company's equity in net income from associated companies for the year ended December 31, 2012. The Company corrected the errors related to Primex in the first quarter of 2013, which had the net effect of increasing equity in net income from associated companies by $1.0 million for the three months ended March 31, 2013 and the year ended December 31, 2013. The Company did not believe this adjustment was material to its consolidated financial statements for the year ended December 31, 2012 or to the Company's results for the year ended December 31, 2013 and, therefore, did not restate any prior period amounts. See Note 3 of Notes to Consolidated Financial Statements, which appears in Item 8 of this Report.

Operations

Consolidated Operations Review – Comparison of 2015 with 2014

Net sales for 2015 of $737.6 million decreased 4% from $765.9 million for 2014. This decrease in the Company's net sales was primarily due to the negative impact of foreign currency translation of $53.6 million, or 7%, and declines in selling price and product mix of 1%, which collectively offset a 4% increase in product volume, including $39.1 million of sales attributed to the Company's 2015 and 2014 acquisitions.

Cost of goods sold for 2015 of $460.5 million decreased 7% from $492.7 million for 2014. This decrease was primarily due to the impact of foreign currency translation, a decrease in raw material costs and product mix and a one-time 2014 charge of $0.3 million, or $0.02 per diluted share, related to finalizing a manufacturing cost streamlining initiative in EMEA that began in 2013. These decreases to cost of goods sold were partially offset by increases in product volume, including additional cost of goods sold attributed to the Company's 2015 and 2014 acquisitions.

Gross profit for 2015 increased $3.8 million, or 1%, compared to 2014, driven by an expansion of gross margin to 37.6% for 2015 compared to 35.7% for 2014, partially offset by the negative impact of foreign currency translation. The increase in gross margin was mainly due to the timing of certain raw material cost decreases in 2015 compared to 2014.

SG&A increased $3.1 million from 2014, which was due to the net impact of several factors, including higher overall labor-related costs, incremental costs associated with the Company's recent acquisitions, including certain one-time transaction-related expenses of $2.8 million, or $0.15 per diluted share, incurred in the third quarter of 2015 related to the Verkol acquisition, and certain other one-time 2015 charges, which include $0.3 million, or $0.02 per diluted share, related to certain customer bankruptcies, $0.2 million, or $0.01 per diluted share, related to a cost streamlining initiative in South America, and $0.2 million, or $0.01 per diluted share, related to events at the Company's Venezuela affiliate. These increases to SG&A were partially offset by decreases from foreign currency translation and certain one-time 2014 charges, which include $0.9 million, or $0.05 per diluted share, related to an amendment to the Company's pension plan in the U.K., $0.8 million, or $0.05 per diluted share, related to certain customer bankruptcies, and $0.9 million, or $0.04 per diluted share, related to the Company's cost streamlining activities in South America.

In the fourth quarter of 2015, the Company had restructuring expenses of $6.8 million, or $0.36 per diluted share, related to the initiation of a global restructuring program. This program includes restructuring and associated costs to reduce total headcount by approximately 65 people globally and to close certain non-manufacturing locations. There were no analogous restructuring expenses in 2014. See Note 4 of Notes to Consolidated Financial Statements, which appears in Item 8 of this Report.

Other income decreased $0.8 million in 2015 compared to 2014. The decrease was primarily due to lower receipts of annual government-related grants in one of the Company's regions, lower third party license fees, and higher foreign exchange transaction losses incurred during 2015 compared to 2014.

Interest expense was $0.2 million higher in 2015 compared to 2014, primarily due to higher average borrowings outstanding during 2015 to fund the Company's recent acquisition activity. Interest income was $0.9 million lower in 2015 compared to 2014, primarily due to a decrease in the level of cash invested in certain regions with higher returns and interest received on certain tax-related credits in 2014.

The Company's effective tax rates for 2015 and 2014 were 25.3% and 30.1%, respectively. The primary contributors to the decrease in the 2015 effective tax rate were the mix of earnings between higher and lower tax jurisdictions in 2015, accelerated recognition of certain tax-related credits due to changes in local tax regulations, adjustments related to previous years' tax estimates, and certain one-time items that inflated the 2014 effective tax rate. The Company has experienced and expects to continue to experience volatility in its effective tax rates due to several factors, including the timing of tax audits and the expiration of applicable statutes of limitations as they relate to uncertain tax positions, and the unpredictability of the timing and amount of certain incentives in various tax jurisdictions, among other factors. Going into 2016, we expect the full year effective tax rate will increase to between 28% and 30%. In addition, the Company expects its quarterly effective tax rates will be higher in the first three quarters of 2016, similar to the 2013 quarterly effective tax rate trend, as the Company will book earnings in one of its subsidiaries at the statutory tax rate of 25% while it awaits recertification of a concessionary 15% tax rate. We currently estimate our first quarter of 2016 effective tax rate will be between 31% and 33%.

Equity income decreased $3.3 million in 2015 compared to 2014. The decrease was primarily due to a first quarter of 2015 currency conversion charge of $2.6 million, or $0.20 per diluted share, at the Company's Venezuela affiliate, and lower related earnings from this affiliate. See Note 14 of Notes to Consolidated Financial Statements, which appears in Item 8 of this Report. This 2015 charge was partially offset by a similar 2014 expense related to the conversion of Venezuelan bolivar fuerte to the U.S. dollar of $0.3 million, or $0.02 per diluted share. Excluding these charges, the primary component of equity income is the Company's interest in a captive insurance company. Earnings attributable to this equity interest were $2.1 million, or $0.16 per diluted share, in 2015 compared to $2.4 million, or $0.18 per diluted share, in 2014.

The $0.3 million decrease in net income attributable to noncontrolling interest in 2015 compared to 2014 was primarily due to the Company's June 2014 acquisition of the noncontrolling interest in its Australia affiliate.

Outside the one-time transaction-related expenses mentioned above, the Company realized a minimal impact to net income from its 2015 Verkol acquisition, as its operating results were offset by normal acquisition-related costs and initial adjustments related to fair value accounting.

Changes in foreign exchange rates, excluding the currency conversion effects of the Venezuelan bolivar fuerte, noted above, negatively impacted 2015 net income by approximately 7%, or $0.31 per diluted share.

Consolidated Operations Review – Comparison of 2014 with 2013

Net sales for 2014 of $765.9 million increased 5% from $729.4 million for 2013. This increase in the Company's net sales was primarily due to a 5% increase in product volumes. Included in the Company's net sales growth in 2014 was approximately $12.8 million of additional sales from acquisitions, which was largely offset by a decrease of $10.3 million, or 1%, due to the negative impact of foreign currency translation. The effects on net sales related to selling price and product mix were generally consistent in 2014 compared to 2013.

Cost of goods sold for 2014 of $492.7 million increased 5% from $468.3 million for 2014. This increase was primarily due to increases in product volume, including additional cost of goods sold attributed to the Company's acquisitions, and, also, a one-time 2014 charge of $0.3 million, or $0.02 per diluted share, related to finalizing a manufacturing cost streamlining initiative in EMEA that began in 2013. These increases were partially offset by impacts related to foreign currency translation. The impact of raw material costs and product mix on cost of goods sold were relatively consistent in 2014 compared to 2013.

Gross profit increased $12.1 million, or 5%, from 2013, which was driven by the increase in sales volumes, noted above, on relatively flat gross margins of 35.7% and 35.8% for 2014 and 2013, respectively.

SG&A increased $6.0 million from 2013, which was due to the net impact of several factors, including additional costs acquired with the Company's 2014 acquisitions, higher overall labor-related costs, and certain one-time 2014 charges, which include $0.9 million, or $0.05 per diluted share, related to an amendment to the Company's pension plan in the U.K., $0.8 million, or $0.05 per diluted share, related to certain customer bankruptcies, and $0.9 million, or $0.04 per diluted share, related to the Company's cost streamlining activities in South America. These increases to SG&A for 2014 were partially offset by decreases in foreign currency translation and certain one-time 2013 charges, which include $0.8 million, or $0.04 per diluted share, related to a non-income tax contingency and $1.2 million, or $0.07 per diluted share, related to the Company's cost streamlining activities in South America and EMEA.

Other income decreased $2.8 million in 2014 compared to 2013. This decrease was primarily related to the 2013 refund of $2.5 million, or $0.14 per diluted share, related to past excise taxes paid on certain Italian mineral oil sales and, also, $0.5 million, or $0.03 per diluted share, related to 2013 changes in an acquisition-related earnout liability, net of a 2013 charge of $0.2 million or $0.01 per diluted share, related to cost streamlining initiatives in EMEA.

Interest expense was $0.6 million lower in 2014 compared to 2013, primarily due to interest accretion of an acquisition-related earnout liability in 2013, discussed above, which was settled early in the second quarter of 2014. This decrease to interest expense was net of additional expense from higher average borrowings due to the Company's 2014 acquisition activity.

Interest income was $1.6 million higher in 2014 compared to 2013, primarily due to interest received on several non-income tax-related credits and an increase in the level of the Company's invested cash in regions with higher returns.

The Company's effective tax rates for 2014 and 2013 were 30.1% and 28.1%, respectively. The primary contributors to the Company's higher effective tax rate in 2014 was an increase in reserves related to uncertain tax positions and certain other one-time items that impacted the 2014 effective tax rate.

The decrease in the Company's equity income of $3.0 million in 2014 compared to 2013 was primarily caused by lower earnings related to the Company's equity interest in a captive insurance company. Earnings attributable to this equity interest were $2.4 million, or $0.18 per diluted share, in 2014 compared to $5.5 million, or $0.41 per diluted share, in 2013, including a $1.0 million out-of-period adjustment. See the Out-of-Period Adjustment section in this Item, above. In addition, the Company's equity income includes comparable currency charges related to the conversion of the Venezuelan bolivar fuerte to the U.S. dollar of $0.3 million, or $0.02 per diluted share, in 2014, and $0.4 million, or $0.03 per diluted share, in 2013.

The primary component of the $0.7 million decrease in net income attributable to noncontrolling interest in 2014 compared to 2013 was the Company's second quarter of 2014 acquisition of its noncontrolling interest in its Australia affiliate.

The Company's 2014 acquisitions generally performed in line with their expected positive operating results; however, the Company realized a minimal impact to net income from these acquisitions as their operating results were largely offset by the acquisition-related costs, noted above, and initial adjustments related to fair value accounting.

Changes in foreign exchange rates negatively impacted 2014 net income, compared to 2013, by approximately $1.2 million, or $0.09 per diluted share.

Reportable Operating Segment Review – Comparison of 2015 with 2014

The Company sells its industrial process fluids, chemical specialties and technical expertise to a wide range of industries in a global product portfolio throughout its four segments: (i) North America, (ii) EMEA, (iii) Asia/Pacific and (iv) South America.

North America

North America represented approximately 47% of the Company's consolidated net sales in 2015, and increased $9.8 million, or 3%, compared to 2014. The increase in net sales was generally due to higher product volumes, including acquisitions, of 5%, partially offset by the negative impact of foreign currency translation of 2%. The foreign exchange impact was primarily due to a weaker Mexican peso against the U.S. dollar, as this exchange rate averaged 15.83 in 2015 compared to 13.29 in 2014. This reportable segment's operating earnings, excluding indirect expenses, increased $11.5 million, or 17%, compared to 2014. The 2015 increase was mainly due to the increase in net sales, noted above, and an increase in gross margin due to the timing of certain raw material cost decreases and product mix. These increases to operating earnings were partially offset by higher overall labor-related costs on improved segment performance and incremental SG&A from 2014 acquisition activity.

EMEA

EMEA represented approximately 24% of the Company's consolidated net sales in 2015, and decreased approximately $15.6 million, or 8%, compared to 2014. The decrease in net sales was primarily due to the negative impact of foreign currency translation of 16% and a decrease in selling price and product mix of 2%, partially offset by higher product volumes, including acquisitions, of 10%. The foreign exchange impact was primarily due to a weakening of the euro against the U.S. dollar, as this exchange rate averaged 1.11 in 2015 compared to 1.33 in 2014. This reportable segment's operating earnings, excluding indirect expenses, decreased $4.6 million, or 14%, compared to 2014. The 2015 decrease was mainly driven by lower gross profit on the decrease in net sales, noted above, on relatively flat gross margin, and, also, incremental SG&A from 2015 and 2014 acquisition activity. These decreases to operating earnings were partially offset by the impact of the weaker euro on the segment's operating costs.

Asia/Pacific

Asia/Pacific represented approximately 25% of the Company's consolidated net sales in 2015, and decreased approximately $4.9 million, or 3%, compared to 2014. The decrease in net sales was primarily due to the negative impact of foreign currency translation of 3% and a decrease in selling price and product mix of 2%, partially offset by higher product volumes of 2%. The foreign exchange impact was primarily due to a weakening of the Chinese renminbi, Indian rupee and Australian dollar against the U.S. dollar, as these exchange rates averaged 6.23, 64.07 and 0.75 in 2015 compared to 6.15, 60.95 and 0.90 in 2014, respectively. This reportable segment's operating earnings, excluding indirect expenses, increased $1.3 million, or 3%, compared to 2014. The increase in 2015 was mainly driven by higher gross profit on increased product volumes and higher gross margins due to the timing of certain raw material cost decreases and product mix, and lower costs due to the weaker Chinese renminbi, Indian rupee and Australian dollar to U.S. dollar exchange rates. These increases to operating earnings were partially offset by higher overall labor-related costs.

South America

South America represented approximately 4% of the Company's consolidated net sales in 2015, and decreased $17.6 million, or 35%, compared to 2014. The decrease in net sales was generally attributable to the negative impact of foreign currency translation of 22% and lower product volumes of approximately 16%, partially offset by an increase in selling price and product mix of 3%. The foreign exchange impact was primarily due to a weakening of the Brazilian real and Argentinian peso against the U.S. dollar, as these exchange rates averaged 3.28 and 9.19 in 2015 compared to 2.35 and 8.09 in 2014, respectively. This reportable segment's operating earnings, excluding indirect expenses, decreased $2.5 million, or 58%, compared to 2014. The 2015 decrease was mainly due to the decrease in net sales, noted above, and lower gross margin due to raw material cost increases and product mix, partially offset by lower labor-related costs. The decrease in labor-related costs is primarily due to the segment's lower performance, the positive effects from the cost streamlining initiatives taken in this segment during 2013, 2014, and 2015, and the weaker Brazilian real and Argentinian peso to U.S. dollar exchange rates.

Reportable Operating Segment Review – Comparison of 2014 with 2013

North America

North America represented approximately 44% of the Company's consolidated net sales in 2014, and increased approximately $26.0 million, or 8%, compared to 2013. The increase in net sales was generally attributable to higher product volumes, including acquisitions, of 9%, partially offset by a 1% decrease related to selling price and product mix. This reportable segment's operating earnings, excluding indirect expenses, increased approximately $7.0 million, or 11%, from 2013. The increase in 2014 was mainly due to the increases to net sales, noted above, and a slight margin improvement on a change in raw material costs and product mix, partially offset by higher labor-related costs on improved segment performance.

EMEA

EMEA represented approximately 26% of the Company's consolidated net sales in 2014, and increased approximately $7.5 million, or 4%, compared to 2013. The increase in net sales was generally attributable to higher product volumes, including acquisitions, of 5%, partially offset by decreases related to selling price and product mix of 1%. Effects on net sales from foreign currency translation were generally comparable in 2014 and 2013. This reportable segment's operating earnings, excluding indirect expenses, increased approximately $2.9 million, or 10%, from 2013. This increase in 2014 was mainly due to the increases to net sales, noted above, the incremental 2013 costs related to EMEA's streamlining initiatives and a decrease in 2014's SG&A due to the impacts from the same initiatives, partially offset by higher labor-related costs on improved segment performance.

Asia/Pacific

Asia/Pacific represented approximately 24% of the Company's consolidated net sales in 2014, and increased approximately $16.5 million, or 10%, compared to 2013. The increase in net sales was primarily due to higher product volumes of 9% and an increase due to selling price and product mix of 2%, partially offset by the negative impact of foreign currency translation of 1%. The foreign currency translation impact was primarily due to a weaker Australian dollar against the U.S. dollar, as this exchange rate averaged 0.90 in 2014 compared to 0.97 in 2013. This reportable segment's operating earnings, excluding indirect expenses, increased approximately $1.5 million, or 3%, from 2013. The increase in 2014 was mainly due to the increases to net sales, noted above, partially offset by lower gross margins due to changes in raw material costs and product mix and, also, higher labor-related costs on improved segment performance.

South America

South America represented approximately 6% of the Company's consolidated net sales in 2014, and decreased approximately $13.6 million, or 21%, compared to 2013. The decrease in net sales was generally attributable to lower product volumes of 15% and the negative impact of foreign currency translation of 11%, partially offset by an increase in selling price and product mix of 5%. The foreign currency translation impact was primarily due to a weakening in the Brazilian real and Argentinian peso against the U.S. dollar, as these exchange rates averaged 2.35 and 8.09 in 2014 compared to 2.15 and 5.44 in 2013, respectively. This reportable segment's operating earnings, excluding indirect expenses, decreased approximately $4.9 million, or 53%, from 2013. The decrease in 2014 was mainly due to the decreases to net sales, noted above, a gross margin decline on changes in raw material costs and product mix, incremental costs related to South America's streamlining initiatives and higher labor-related costs, partially offset by the positive impacts from cost streamlining initiatives taken in this segment during 2013 and the impacts on SG&A related to lower segment performance.

Environmental Clean-up Activities

The Company is involved in environmental clean-up activities in connection with an existing plant location and former waste disposal sites. In 1992, the Company identified certain soil and groundwater contamination at AC Products, Inc. ("ACP"), a wholly owned subsidiary. In voluntary coordination with the Santa Ana California Regional Water Quality Board ("SACRWQB"), ACP has been remediating the contamination. In 2007, ACP agreed to operate two groundwater treatment systems, so as to hydraulically contain groundwater contamination emanating from ACP's site until such time as the concentrations of contaminants are below the current Federal maximum contaminant level for four consecutive quarterly sampling events. In February 2014, ACP ceased operation at one of its two groundwater treatment systems, as it had met the above condition for closure. At December 31, 2015, the Company believes that the remaining potential-known liabilities associated with the ACP contamination, namely estimated future cost of the water remediation program, is approximately $0.4 million to $1.0 million, for which the Company has sufficient reserves. Notwithstanding the foregoing, the Company cannot be certain that future liabilities in the form of remediation expenses and damages will not be in excess of the amount reserved. See Note 23 of Notes to Consolidated Financial Statements, which appears in Item 8 of this Report.

General

See Item 7A of this Report for further discussion of certain quantitative and qualitative disclosures about market risk.

Factors that May Affect Our Future Results

(Cautionary Statements Under the Private Securities Litigation Reform Act of 1995)

Certain information included in this Report and other materials filed or to be filed by Quaker with the SEC (as well as information included in oral statements or other written statements made or to be made by us) contain or may contain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. These statements can be identified by the fact that they do not relate strictly to historical or current facts. We have based these forward-looking statements on our current expectations about future events. These forward-looking statements include statements with respect to our beliefs, plans, objectives, goals, expectations, anticipations, intentions, financial condition, results of operations, future performance, and business, including:

- statements relating to our business strategy;
- our current and future results and plans; and
- statements that include the words "may," "could," "should," "would," "believe," "expect," "anticipate," "estimate," "intend," "plan" or similar expressions.

Such statements include information relating to current and future business activities, operational matters, capital spending, and financing sources. From time to time, oral or written forward-looking statements are also included in Quaker's periodic reports on Forms 10-Q and 8-K, press releases and other materials released to, or statements made to, the public.

Any or all of the forward-looking statements in this Report, in Quaker's Annual Report to Shareholders for 2015 and in any other public statements we make may turn out to be wrong. This can occur as a result of inaccurate assumptions or as a consequence of known or unknown risks and uncertainties. Many factors discussed in this Report will be important in determining our future performance. Consequently, actual results may differ materially from those that might be anticipated from our forward-looking statements.

We undertake no obligation to publicly update any forward-looking statements, whether as a result of new information, future events or otherwise. However, any further disclosures made on related subjects in Quaker's subsequent reports on Forms 10-K, 10-Q and 8-K should be consulted. Our forward-looking statements are subject to risks, uncertainties and assumptions about us and our operations that are subject to change based on various important factors, some of which are beyond our control. A major risk is that the demand for the Company's products and services is largely derived from the demand for its customers' products, which subjects the Company to uncertainties related to downturns in a customer's business and unanticipated customer production shutdowns. Other major risks and uncertainties include, but are not limited to, significant increases in raw material costs, customer financial stability, worldwide economic and political conditions, foreign currency fluctuations, future terrorist attacks and other acts of violence, each of which is discussed in greater detail in Item 1A of this Report. Furthermore, the Company is subject to the same business cycles as those experienced by steel, automobile, aircraft, appliance, and durable goods manufacturers. These risks, uncertainties, and possible inaccurate assumptions relevant to our business could cause our actual results to differ materially from expected and historical results. Other factors beyond those discussed in this Report could also adversely affect us. Therefore, we caution you not to place undue reliance on our forward-looking statements. This discussion is provided as permitted by the Private Securities Litigation Reform Act of 1995.

Item 7A. ***Quantitative and Qualitative Disclosures About Market Risk.***

Quaker is exposed to the impact of interest rates, foreign currency fluctuations, changes in commodity prices, and credit risk.

Interest Rate Risk. Quaker's exposure to changes in interest rates relates primarily to its credit facilities. Interest rates for Quaker's credit facilities are generally based on a base rate or LIBOR plus a spread. Accordingly, if interest rates rise significantly, the cost of debt to Quaker will increase. This can have an adverse effect on Quaker, depending on the extent of Quaker's borrowings throughout a given year. As of December 31, 2015, Quaker had $62.9 million outstanding under its credit facilities at a weighted average borrowing rate of approximately 1.38%. If interest rates had changed by 10%, the Company's interest expense would have correspondingly increased or decreased by approximately $0.1 million. Quaker's other long-term and short-term debt consists primarily of fixed rate bonds and loans which are not exposed to interest rate fluctuations. The Company previously used derivative financial instruments primarily for the purposes of hedging exposures to fluctuations in interest rates. The Company did not use any similar instruments in 2015 or 2014, and has not entered into derivative contracts for trading or speculative purposes. See the information included under the caption "Derivatives" in Note 1 of Notes to Consolidated Financial Statements, which appears in Item 8 of this Report and is incorporated herein by reference.

Foreign Exchange Risk. A significant portion of Quaker's revenues and earnings are generated by its foreign operations. These foreign operations also represent a significant portion of Quaker's assets and liabilities. Generally, all of these foreign operations use the local currency as their functional currency. Accordingly, Quaker's financial results are affected by foreign currency fluctuations, particularly between the U.S. dollar and the euro, the Brazilian real, the Mexican peso, the Chinese renminbi and the Indian rupee. Quaker's results can be materially affected depending on the volatility and magnitude of foreign exchange rate changes. If the euro, the Brazilian real, the Mexican peso, the Chinese renminbi and the Indian rupee had all strengthened or weakened by 10% against the U.S. dollar, the Company's 2015 revenues and pre-tax earnings would have correspondingly increased or decreased approximately $35.7 million and $5.0 million, respectively.

The Company generally does not use financial instruments that expose it to significant risk involving foreign currency transactions. However, the size of its non-U.S. activities has a significant impact on reported operating results and the attendant net assets. During the past three years, sales by its non-U.S. subsidiaries accounted for approximately 60% of our consolidated net sales.

In addition, the Company often sources inventory among its worldwide operations. This practice can give rise to foreign exchange risk resulting from the varying cost of inventory to the receiving location, as well as from the revaluation of intercompany balances. The Company primarily mitigates this risk through local sourcing efforts.

Commodity Price Risk. Many of the raw materials used by Quaker are commodity chemicals, and, therefore, Quaker's earnings can be materially affected by market changes in raw material prices. At times, Quaker has entered into fixed-price purchase contracts to manage this risk. These contracts provide protection to Quaker if the prices for the contracted raw materials rise; however, in certain limited circumstances, Quaker will not realize the benefit if such prices decline. If the Company's gross margin had changed by one percentage point, the Company's 2015 pre-tax earnings would have correspondingly increased or decreased by approximately $7.4 million.

Credit Risk. Quaker establishes allowances for doubtful accounts for estimated losses resulting from the inability of its customers to make required payments. If the financial condition of Quaker's customers were to deteriorate, resulting in an impairment of their ability to make payments, additional allowances might be required. Downturns in the overall economic climate may also exacerbate specific customer financial issues. A significant portion of Quaker's revenues is derived from sales to customers in the U.S. steel and automotive industries, including some of our larger customers, where a number of bankruptcies have occurred in past years and where companies have experienced financial difficulty. When a bankruptcy occurs, Quaker must judge the amount of proceeds, if any, that may ultimately be received through the bankruptcy or liquidation process. In addition, as part of its terms of trade, Quaker may custom manufacture products for certain large customers and/or may ship product on a consignment basis. These practices may increase the Company's exposure should a bankruptcy occur, and may require a write-down or disposal of certain inventory due to its estimated obsolescence or limited marketability. Customer returns of products or disputes may also result in similar issues related to the realizability of recorded accounts receivable or returned inventory. The Company recorded an increase in its provision for doubtful accounts of $1.5 million in 2015, compared to a reduction of $0.3 million in 2014 and an increase of $1.1 million in 2013. A change of 10% to the recorded provision would have increased or decreased the Company's pre-tax earnings by approximately $0.2 million, less than $0.1 million, and $0.1 million in 2015, 2014 and 2013, respectively.

Item 8. ***Financial Statements and Supplementary Data.***

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

Report of Independent Registered Public Accounting Firm

To the Shareholders and Board of Directors
of Quaker Chemical Corporation:

In our opinion, the accompanying consolidated balance sheets and the related consolidated statements of income, comprehensive income, changes in equity, and cash flows present fairly, in all material respects, the financial position of Quaker Chemical Corporation and its subsidiaries (the "Company") at December 31, 2015 and 2014, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2015 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2015, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). The Company's management is responsible for these financial statements, for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Report on Internal Control over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on these financial statements and on the Company's internal control over financial reporting based on our integrated audits. We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement and whether effective internal control over financial reporting was maintained in all material respects. Our audits of the financial statements included examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

As described in Management's Report on Internal Control over Financial Reporting appearing under Item 9A, management has excluded Verkol S.A. from its assessment of internal control over financial reporting as of December 31, 2015 because this entity was acquired by the Company in a purchase business combination in July 2015. We have also excluded Verkol S.A. from our audit of internal control over financial reporting. Verkol S.A. is a wholly owned subsidiary of the Company, whose total assets and total revenues represent 6% and 2%, respectively, of the related consolidated financial statement amounts as of and for the year ended December 31, 2015.

/s/ PricewaterhouseCoopers LLP
Philadelphia, PA
February 25, 2016

QUAKER CHEMICAL CORPORATION
CONSOLIDATED STATEMENTS OF INCOME
(Dollars in thousands, except per share data)

	Year Ended December 31, 2015	2014	2013
Net sales	$ 737,555	$ 765,860	$ 729,395
Costs and expenses			
Cost of goods sold	460,515	492,654	468,320
Selling, general and administrative expenses	198,990	195,850	189,832
Restructuring and related activities	6,790	—	—
	666,295	688,504	658,152
Operating income	71,260	77,356	71,243
Other (expense) income, net	(69)	767	3,519
Interest expense	(2,585)	(2,371)	(2,922)
Interest income	1,624	2,541	986
Income before taxes and equity in net income of associated companies	70,230	78,293	72,826
Taxes on income before equity in net income of associated companies	17,785	23,539	20,489
Income before equity in net income of associated companies	52,445	54,754	52,337
Equity in net income of associated companies	261	3,543	6,514
Net income	52,706	58,297	58,851
Less: Net income attributable to noncontrolling interest	1,526	1,805	2,512
Net income attributable to Quaker Chemical Corporation	$ 51,180	$ 56,492	$ 56,339
Earnings per common share data:			
Net income attributable to Quaker Chemical Corporation Common Shareholders – basic	$ 3.84	$ 4.27	$ 4.28
Net income attributable to Quaker Chemical Corporation Common Shareholders – diluted	$ 3.84	$ 4.26	$ 4.27

The accompanying notes are an integral part of these consolidated financial statements.

QUAKER CHEMICAL CORPORATION
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(Dollars in thousands)

	Year Ended December 31,		
	2015	**2014**	**2013**
Net income	$ 52,706	$ 58,297	$ 58,851
Other comprehensive (loss) income, net of tax			
Currency translation adjustments	(24,869)	(15,701)	(3,490)
Defined benefit retirement plans			
Net gain (loss) arising during the period, other	3,821	(6,210)	6,614
Amortization of actuarial loss	2,561	2,162	2,748
Amortization of prior service (gain) loss	(82)	(70)	119
Unrealized loss on available-for-sale securities	(978)	(124)	(142)
Other comprehensive (loss) income	(19,547)	(19,943)	5,849
Comprehensive income	33,159	38,354	64,700
Less: Comprehensive income attributable to noncontrolling interest	(889)	(1,568)	(1,206)
Comprehensive income attributable to Quaker Chemical Corporation	$ 32,270	$ 36,786	$ 63,494

The accompanying notes are an integral part of these consolidated financial statements.

QUAKER CHEMICAL CORPORATION
CONSOLIDATED BALANCE SHEETS
(Dollars in thousands, except par value and share amounts)

	December 31, 2015	December 31, 2014
ASSETS		
Current assets		
Cash and cash equivalents	$ 81,053	$ 64,731
Accounts receivable, net	188,297	189,484
Inventories, net	75,099	77,708
Current deferred tax assets	7,822	8,367
Prepaid expenses and other current assets	13,582	11,228
Total current assets	365,853	351,518
Property, plant and equipment, net	87,619	85,763
Goodwill	79,111	77,933
Other intangible assets, net	73,287	70,408
Investments in associated companies	20,354	21,751
Non-current deferred tax assets	27,071	24,411
Other assets	32,218	33,742
Total assets	$ 685,513	$ 665,526
LIABILITIES AND EQUITY		
Current liabilities		
Short-term borrowings and current portion of long-term debt	$ 662	$ 403
Accounts payable	67,291	74,987
Dividends payable	4,252	3,990
Accrued compensation	19,166	19,853
Accrued restructuring	6,303	—
Accrued pension and postretirement benefits	1,144	1,239
Current deferred tax liabilities	41	732
Other current liabilities	25,696	23,697
Total current liabilities	124,555	124,901
Long-term debt	81,439	75,328
Non-current deferred tax liabilities	15,003	8,584
Non-current accrued pension and postretirement benefits	40,689	46,088
Other non-current liabilities	42,584	45,490
Total liabilities	304,270	300,391
Commitments and contingencies (Note 23)		
Equity		
Common stock $1 par value; authorized 30,000,000 shares; issued and outstanding 2015 – 13,288,113 shares; 2014 – 13,300,891 shares	13,288	13,301
Capital in excess of par value	106,333	99,056
Retained earnings	326,740	299,524
Accumulated other comprehensive loss	(73,316)	(54,406)
Total Quaker shareholders' equity	373,045	357,475
Noncontrolling interest	8,198	7,660
Total equity	381,243	365,135
Total liabilities and equity	$ 685,513	$ 665,526

The accompanying notes are an integral part of these consolidated financial statements.

QUAKER CHEMICAL CORPORATION
CONSOLIDATED STATEMENTS OF CASH FLOWS
(Dollars in thousands)

	Year Ended December 31,		
	2015	2014	2013
Cash flows from operating activities			
Net income	$ 52,706	$ 58,297	$ 58,851
Adjustments to reconcile net income to net cash provided by operating activities			
Depreciation	12,395	12,306	12,339
Amortization	6,811	4,325	3,445
Equity in undistributed earnings of associated companies, net of dividends	578	(3,180)	(4,162)
Deferred income taxes	(2,401)	1,007	(30)
Uncertain tax positions (non-deferred portion)	(1,122)	(1,256)	(1,826)
Acquisition-related fair value adjustments	—	—	200
Deferred compensation and other, net	14	3,174	(259)
Stock-based compensation	5,919	5,309	4,161
Restructuring and related activities	6,790	—	—
(Gain) loss on disposal of property, plant and equipment and other assets	(12)	(86)	200
Insurance settlement realized	(760)	(1,907)	(988)
Pension and other postretirement benefits	2,591	1,265	862
(Decrease) increase in cash from changes in current assets and current liabilities, net of acquisitions:			
Accounts receivable	(188)	(24,944)	(11,837)
Inventories	1,292	(5,484)	406
Prepaid expenses and other current assets	(721)	2,003	(743)
Accounts payable and accrued liabilities	(9,040)	2,999	11,301
Change in restructuring liabilities	(490)	—	—
Estimated taxes on income	(930)	862	1,881
Net cash provided by operating activities	73,432	54,690	73,801
Cash flows from investing activities			
Investments in property, plant and equipment	(11,033)	(13,052)	(11,439)
Payments related to acquisitions, net of cash acquired	(24,058)	(73,527)	(2,478)
Proceeds from disposition of assets	135	201	513
Insurance settlement interest earned	35	44	52
Change in restricted cash, net	725	1,863	936
Net cash used in investing activities	(34,196)	(84,471)	(12,416)
Cash flows from financing activities			
Proceeds from long-term debt	6,163	58,771	—
Repayment of long-term debt	(477)	(1,368)	(12,791)
Dividends paid	(16,513)	(14,562)	(13,018)
Stock options exercised, other	1,048	804	(307)
Payments for repurchase of common stock	(7,276)	—	—
Excess tax benefit related to stock option exercises	384	453	815
Purchase of noncontrolling interest in affiliates, net	—	(7,422)	—
Payment of acquisition-related liabilities	(226)	(4,709)	—
Distributions to noncontrolling affiliate shareholders	—	(1,806)	(905)
Net cash (used in) provided by financing activities	(16,897)	30,161	(26,206)
Effect of exchange rate changes on cash	(6,017)	(4,141)	766
Net increase (decrease) in cash and cash equivalents	16,322	(3,761)	35,945
Cash and cash equivalents at beginning of period	64,731	68,492	32,547
Cash and cash equivalents at end of period	$ 81,053	$ 64,731	$ 68,492
Supplemental cash flow disclosures:			
Cash paid during the year for:			
Income taxes	$ 20,996	$ 22,713	$ 17,744
Interest	2,223	1,894	1,776
Non-cash activities:			
Change in accrued purchases of property, plant and equipment, net	$ 209	$ (1,158)	$ 1,287

The accompanying notes are an integral part of these consolidated financial statements.

QUAKER CHEMICAL CORPORATION
CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY
(Dollars in thousands, except per share amounts)

	Common stock	Capital in excess of par value	Retained earnings	Accumulated other comprehensive loss	Noncontrolling interest	Total
Balance at December 31, 2012	$ 13,095	$ 94,470	$ 215,390	$ (41,855)	$ 8,576	$ 289,676
Net income	—	—	56,339	—	2,512	58,851
Adjustment to prior period earnings	—	—	(335)	—	—	(335)
Amounts reported in other comprehensive income (loss)	—	—	—	7,155	(1,306)	5,849
Dividends ($0.995 per share)	—	—	(13,109)	—	—	(13,109)
Distributions to noncontrolling affiliate shareholders	—	—	—	—	(905)	(905)
Shares issued upon exercise of stock options and other	24	(668)	—	—	—	(644)
Shares issued for employee stock purchase plan	6	331	—	—	—	337
Equity based compensation plans	71	4,090	—	—	—	4,161
Excess tax benefit from stock option exercises	—	815	—	—	—	815
Balance at December 31, 2013	13,196	99,038	258,285	(34,700)	8,877	344,696
Net income	—	—	56,492	—	1,805	58,297
Amounts reported in other comprehensive loss	—	—	—	(19,706)	(237)	(19,943)
Dividends ($1.15 per share)	—	—	(15,253)	—	—	(15,253)
Distributions to noncontrolling affiliate shareholders	—	—	—	—	(1,806)	(1,806)
Acquisition of noncontrolling interests, net	—	(6,443)	—	—	(979)	(7,422)
Shares issued upon exercise of stock options and other	19	369	—	—	—	388
Shares issued for employee stock purchase plan	6	410	—	—	—	416
Equity based compensation plans	80	5,229	—	—	—	5,309
Excess tax benefit from stock option exercises	—	453	—	—	—	453
Balance at December 31, 2014	13,301	99,056	299,524	(54,406)	7,660	365,135
Net income	—	—	51,180	—	1,526	52,706
Amounts reported in other comprehensive loss	—	—	—	(18,910)	(637)	(19,547)
Repurchases of common stock	(87)	—	(7,189)	—	—	(7,276)
Dividends ($1.26 per share)	—	—	(16,775)	—	—	(16,775)
Disposition of noncontrolling interest	—	—	—	—	(351)	(351)
Shares issued upon exercise of stock options and other	17	602	—	—	—	619
Shares issued for employee stock purchase plan	6	423	—	—	—	429
Equity based compensation plans	51	5,868	—	—	—	5,919
Excess tax benefit from stock option exercises	—	384	—	—	—	384
Balance at December 31, 2015	$ 13,288	$ 106,333	$ 326,740	$ (73,316)	$ 8,198	$ 381,243

The accompanying notes are an integral part of these consolidated financial statements.

Note 1 – Significant Accounting Policies

Principles of consolidation: All majority-owned subsidiaries are included in the Company's consolidated financial statements, with appropriate elimination of intercompany balances and transactions. Investments in associated companies (less than majority-owned and in which the Company has significant influence) are accounted for under the equity method. The Company's share of net income or losses in these investments in associated companies is included in the Consolidated Statement of Income. The Company periodically reviews these investments for impairments and, if necessary, would adjust these investments to their fair value when a decline in market value or other impairment indicators are deemed to be other than temporary. See Note 14 of Notes to Consolidated Financial Statements.

The Financial Accounting Standards Board's ("FASB's") guidance regarding the consolidation of certain Variable Interest Entities ("VIEs") generally requires that assets, liabilities and results of the activities of a VIE be consolidated into the financial statements of the enterprise that is considered the primary beneficiary. The consolidated financial statements include the accounts of the Company and all of its subsidiaries in which a controlling interest is maintained and would include any VIEs if the Company was the primary beneficiary pursuant to the provisions of the applicable guidance.

Translation of foreign currency: Assets and liabilities of non-U.S. subsidiaries and associated companies are translated into U.S. dollars at the respective rates of exchange prevailing at the end of the year. Income and expense accounts are translated at average exchange rates prevailing during the year. Translation adjustments resulting from this process are recorded directly in equity as accumulated other comprehensive (loss) income ("AOCI") and will be included as income or expense only upon sale or liquidation of the underlying investment. Generally, all of the Company's non-U.S. subsidiaries use their local currency as their functional currency.

Cash and cash equivalents: The Company invests temporary and excess funds in money market securities and financial instruments having maturities typically within 90 days. The Company considers all highly liquid investments with original maturities of three months or less to be cash equivalents. The Company has not experienced losses from the aforementioned investments.

Inventories: Inventories are valued at the lower of cost or market value, and are valued using the first-in, first-out ("FIFO") method. See Note 11 of Notes to Consolidated Financial Statements.

Long-lived assets: Property, plant and equipment are stated at cost. Depreciation is computed using the straight-line method on an individual asset basis over the following estimated useful lives: buildings and improvements, 10 to 45 years; and machinery and equipment, 1 to 15 years. The carrying values of long-lived assets are evaluated whenever changes in circumstances or current events indicate the carrying amount of such assets may not be recoverable. An estimate of undiscounted cash flows produced by the asset, or the appropriate group of assets, is compared with the carrying value to determine whether an impairment exists. If necessary, the Company recognizes an impairment loss for the difference between the carrying amount of the assets and their estimated fair value. Fair value is based on current and anticipated future cash flows. Upon sale or other dispositions of long-lived assets, the applicable amounts of asset cost and accumulated depreciation are removed from the accounts and the net amount, less proceeds from disposals, is recorded in the Consolidated Statements of Income. Expenditures for renewals or improvements that increase the estimated useful life or capacity of the assets are capitalized, whereas expenditures for repairs and maintenance are expensed when incurred. See Note 12 of Notes to Consolidated Financial Statements.

Capitalized software: The Company capitalizes certain costs in connection with developing or obtaining software for internal use. These costs are amortized over a period of 3 to 5 years once the assets are ready for their intended use. In connection with the implementations and upgrades to the Company's global transaction, consolidation and other related systems, approximately $1,289 and $1,350 of net costs were capitalized in property, plant and equipment on the Company's December 31, 2015 and 2014 Consolidated Balance Sheets, respectively.

Goodwill and other intangible assets: The Company records goodwill, definite-lived intangible assets and indefinite-lived intangible assets at fair value at the date of acquisition. Goodwill and indefinite-lived intangible assets are not amortized, but tested for impairment at least annually. These tests will be performed more frequently if triggering events indicate potential impairment. Definite-lived intangible assets are amortized over their estimated useful lives, generally for periods ranging from 4 to 20 years. The Company continually evaluates the reasonableness of the useful lives of these assets, consistent with the discussion of long-lived assets, above. See Note 13 of Notes to Consolidated Financial Statements.

Revenue recognition: The Company recognizes revenue in accordance with the terms of the underlying agreements, when title and risk of loss have been transferred, when collectability is reasonably assured, and when pricing is fixed or determinable. For the Company, this generally occurs when products are shipped to customers or, for consignment-type arrangements, upon usage by the customer and when services are performed. License fees and royalties are included in other income when recognized in accordance with their agreed-upon terms, when performance obligations are satisfied, when the amount is fixed or determinable, and when collectability is reasonably assured. As part of the Company's chemical management services, certain third-party product sales to customers are managed by the Company. Where the Company acts as a principal, revenues are recognized on a gross reporting basis at the selling price negotiated with its customers. Where the Company acts as an agent, such revenue is recorded using net reporting as service revenue at the amount of the administrative fee earned by the Company for ordering the goods. Third-party products transferred under arrangements resulting in net reporting totaled $48,580, $46,844 and $41,553 for 2015, 2014 and 2013, respectively.

Accounts receivable and allowance for doubtful accounts: Trade accounts receivable subject the Company to credit risk. Trade accounts receivable are recorded at the invoiced amount and generally do not bear interest. The allowance for doubtful accounts is the Company's best estimate of the amount of probable credit losses with its existing accounts receivable. Reserves for customers filing for bankruptcy protection are generally established at 75-100% of the amount outstanding at the bankruptcy filing date. However, initially establishing a reserve and the amount thereto is dependent on the Company's evaluation of likely proceeds to be received from the bankruptcy process, which could result in the Company recognizing minimal or no reserve at the date of bankruptcy. Large and/or financially distressed customers are generally reserved for on a specific review basis while a general reserve is established for other customers based on historical experience. The Company performs a formal review of its allowance for doubtful accounts quarterly. Account balances are charged off against the allowance when the Company feels it is probable the receivable will not be recovered. The Company does not have any off-balance-sheet credit exposure related to its customers. During 2015, the Company's five largest customers accounted for approximately 18% of its consolidated net sales with the largest customer (Arcelor-Mittal Group) accounting for approximately 8% of the Company's consolidated net sales. See Note 10 of Notes to Consolidated Financial Statements.

Research and development costs: Research and development costs are expensed as incurred and are included in selling, general and administrative expenses ("SG&A"). Research and development expenses were $22,090, $22,134 and $21,578 in 2015, 2014 and 2013, respectively.

Environmental liabilities and expenditures: Accruals for environmental matters are recorded when it is probable that a liability has been incurred and the amount of the liability can be reasonably estimated. If there is a range of estimated liability and no amount in that range is considered more probable than another, then the Company records the lowest amount in the range in accordance with generally accepted accounting principles. Accrued liabilities are exclusive of claims against third parties and are not discounted. Environmental costs and remediation costs are capitalized if the costs extend the life, increase the capacity or improve safety or efficiency of the property from the date acquired or constructed, and/or mitigate or prevent contamination in the future. See Note 23 of Notes to Consolidated Financial Statements.

Asset retirement obligations: The Company follows the FASB's guidance regarding asset retirement obligations, which addresses the accounting and reporting for obligations associated with the retirement of tangible long-lived assets and the associated retirement costs. Also, the Company follows the FASB's guidance for conditional asset retirement obligations ("CARO"), which relates to legal obligations to perform an asset retirement activity in which the timing and (or) method of settlement are conditional on a future event that may or may not be within the control of the entity. In accordance with this guidance, the Company records a liability when there is enough information regarding the timing of the CARO to perform a probability-weighted discounted cash flow analysis. At December 31, 2015 and 2014, the Company had limited exposure to such obligations and had immaterial liabilities recorded for such on its Consolidated Balance Sheets.

Pension and other postretirement benefits: The Company maintains various noncontributory retirement plans, the largest of which is in the U.S., covering substantially all of its employees in the U.S. and certain other countries. The plans of the Company's subsidiaries in The Netherlands, the United Kingdom ("U.K."), Mexico and Sweden are subject to the provisions of FASB's guidance regarding employers' accounting for defined benefit pension plans. The plans of the remaining non-U.S. subsidiaries are, for the most part, either fully insured or integrated with the local governments' plans and are not subject to the provisions of the guidance. The guidance requires that employers recognize on a prospective basis the funded status of their defined benefit pension and other postretirement plans on their consolidated balance sheet and, also, recognize as a component of other comprehensive income, net of tax, the gains or losses and prior service costs or credits that arise during the period but are not recognized as components of net periodic benefit cost. The Company's U.S. pension plan year ends on November 30 and the measurement date is December 31. The measurement date for the Company's other postretirement benefits plan is December 31.

The Company's pension investment policy is designed to ensure that pension assets are invested in a manner consistent with meeting the future benefit obligations of the pension plans and maintaining compliance with various laws and regulations including the Employee Retirement Income Security Act of 1974 ("ERISA"). The Company establishes strategic asset allocation percentage targets and appropriate benchmarks for significant asset classes with the aim of achieving a prudent balance between return and risk. The Company's investment horizon is generally long term, and, accordingly, the target asset allocations encompass a long-term perspective of capital markets, expected risk and return and perceived future economic conditions while also considering the profile of plan liabilities. To the extent feasible, the short-term investment portfolio is managed to immunize the short-term obligations, the intermediate portfolio duration is immunized to reduce the risk of volatility in intermediate plan distributions, and the total return portfolio is expected to maximize the long-term real growth of plan assets. The critical investment principles of diversification, assessment of risk and targeting the optimal expected returns for given levels of risk are applied. The Company's investment guidelines prohibit use of securities such as letter stock and other unregistered securities, commodities or commodity contracts, short sales, margin transactions, private placements (unless specifically addressed by addendum), or any derivatives, options or futures for the purpose of portfolio leveraging.

The target asset allocation is reviewed periodically and is determined based on a long-term projection of capital market outcomes, inflation rates, fixed income yields, returns, volatilities and correlation relationships. The interaction between plan assets and benefit obligations is periodically studied to assist in establishing such strategic asset allocation targets. Asset performance is monitored with an overall expectation that plan assets will meet or exceed benchmark performance over rolling five-year periods. The Company's pension committee, as authorized by the Company's Board of Directors, has discretion to manage the assets within established asset allocation ranges approved by senior management of the Company. As of December 31, 2015, the plan's investments were in compliance with all approved ranges of asset allocations. See Note 18 of Notes to Consolidated Financial Statements.

Comprehensive income (loss): The Company presents other comprehensive income (loss) in its Statement of Comprehensive Income. The Company follows the FASB's guidance regarding the disclosure of reclassifications from AOCI which requires the disclosure of significant amounts reclassified from each component of AOCI, the related tax amounts and the income statement line items affected by such reclassifications. The Company elected to present the information in its Notes to the Consolidated Financial Statements. See Note 20 of Notes to Consolidated Financial Statements.

Income taxes and uncertain tax positions: The provision for income taxes is determined using the asset and liability approach of accounting for income taxes. Under this approach, deferred taxes represent the future tax consequences expected to occur when the reported amounts of assets and liabilities are recovered or paid. The provision for income taxes represents income taxes paid or payable for the current year and the change in deferred taxes during the year. Deferred taxes result from differences between the financial and tax bases of the Company's assets and liabilities and are adjusted for changes in tax rates and tax laws when changes are enacted. Valuation allowances are recorded to reduce deferred tax assets when it is more likely than not that a tax benefit will not be realized. The FASB's guidance regarding accounting for uncertainty in income taxes prescribes the recognition threshold and measurement attributes for financial statement recognition and measurement of tax positions taken or expected to be taken on a tax return. The guidance further requires the determination of whether the benefits of tax positions will be more likely than not sustained upon audit based upon the technical merits of the tax position. For tax positions that are determined to be more likely than not sustained upon audit, a company recognizes the largest amount of benefit that is greater than 50% likely of being realized upon ultimate settlement in the financial statements. For tax positions that are not determined to be more likely than not sustained upon audit, a company does not recognize any portion of the benefit in the financial statements. Additionally, the Company monitors and adjusts for derecognition, classification, and penalties and interest in interim periods, with appropriate disclosure and transition thereto. Also, the amount of interest expense and income related to uncertain tax positions is computed by applying the applicable statutory rate of interest to the difference between the tax position recognized, including timing differences, and the amount previously taken or expected to be taken in a tax return. The Company's continuing practice is to recognize interest and/or penalties related to income tax matters in income tax expense. Finally, when applicable, the Company nets its liability for unrecognized tax benefits against deferred tax assets related to net operating losses or other tax credit carryforwards that would apply if the uncertain tax position were settled for the presumed amount at the balance sheet date. See Note 8 of Notes to Consolidated Financial Statements.

Derivatives: The Company is exposed to the impact of changes in interest rates, foreign currency fluctuations, changes in commodity prices and credit risk. The Company is currently not using derivative instruments to mitigate the risks associated with foreign currency fluctuations, changes in commodity prices or credit risk, but has used derivative financial instruments primarily for purposes of hedging exposures to fluctuations in interest rates in the past. When used, the Company recognized all derivatives on its balance sheet at fair value. For derivative instruments designated as cash flow hedges, the effective portion of any hedge would be reported in AOCI until it was cleared to earnings during the same period in which the hedged item affected earnings. The Company currently uses no derivative instruments designated as hedges and, also, has not entered into derivative contracts for trading or speculative purposes.

Fair value measurements: The Company utilizes the FASB's guidance regarding fair value measurements, which establishes a common definition for fair value to be applied to guidance requiring use of fair value, establishes a framework for measuring fair value and expands disclosure about such fair value measurements. Specifically, the guidance utilizes a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value into three broad levels. See Note 22 of Notes to Consolidated Financial Statements. The following is a brief description of those three levels:

- Level 1: Observable inputs such as quoted prices (unadjusted) in active markets for identical assets or liabilities.
- Level 2: Inputs other than quoted prices that are observable for the asset or liability, either directly or indirectly. These include quoted prices for similar assets or liabilities in active markets and quoted prices for identical or similar assets or liabilities in markets that are not active.
- Level 3: Unobservable inputs that reflect the reporting entity's own assumptions.

Stock-based compensation: The Company applies the FASB's guidance regarding share-based payments, which requires the recognition of the fair value of stock-based compensation as a component of expense. The Company has a long-term incentive program ("LTIP") for key employees which provides for the granting of options to purchase stock at prices not less than its market value on the date of the grant. Most options become exercisable between one and three years after the date of the grant for a period of time determined by the Company, but not to exceed seven years from the date of grant. Restricted stock awards and restricted stock units ("RSU") issued under the LTIP program are generally subject to time vesting over a one to five-year period. In addition, as part of the Company's Global Annual Incentive Plan ("GAIP"), nonvested shares may be issued to key employees, which generally vest over a two to five-year period. Based on historical experience, the Company has assumed a forfeiture rate of 13% on its nonvested stock awards. The Company will record additional expense if the actual forfeiture rate is lower than estimated, and will record a recovery of prior expense if the actual forfeiture is higher than estimated. See Note 6 of Notes to Consolidated Financial Statements.

Earnings per share: The Company follows the FASB's guidance regarding the calculation of earnings per share ("EPS") for nonvested stock awards with rights to non-forfeitable dividends. The guidance requires nonvested stock awards with rights to non-forfeitable dividends to be included as part of the basic weighted average share calculation under the two-class method. See Note 9 of Notes to Consolidated Financial Statements.

Segments: The Company's reporting segments are the same as the Company's operating segments. The Company's reportable operating segments evidence the structure of the Company's internal organization, the method by which the Company's resources are allocated and the manner by which the Company assesses its performance. The Company's reportable operating segments are organized by geography as follows: (i) North America, (ii) Europe, Middle East and Africa ("EMEA"), (iii) Asia/Pacific and (iv) South America. See Note 5 of Notes to Consolidated Financial Statements.

Business combinations: The Company accounts for business combinations under the acquisition method of accounting. This method requires the recording of acquired assets, including separately identifiable intangible assets, and assumed liabilities at their respective acquisition date estimated fair values. Any excess of the purchase price over the estimated fair value of the identifiable net assets acquired is recorded as goodwill. The determination of the estimated fair value of assets acquired and liabilities assumed requires significant estimates and assumptions. Based on the assessment of additional information during the measurement period, which may be up to one year from the acquisition date, the Company may record adjustments to the estimated fair value of assets acquired and liabilities assumed. See Note 21 of Notes to Consolidated Financial Statements.

Restructuring activities: Restructuring programs consist of employee severance, rationalization of manufacturing or other facilities and other related items. To account for such programs, the Company applies FASB's guidance regarding exit or disposal cost obligations. This guidance requires that a liability for a cost associated with an exit or disposal activity be recognized when the liability is incurred, is estimable, and payment is probable. See Note 4 of Notes to Consolidated Financial Statements.

Reclassifications: Certain information has been reclassified to conform to the current year presentation.

Accounting estimates: The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities and disclosure of contingencies at the date of the financial statements and the reported amounts of net sales and expenses during the reporting period. Actual results could differ from such estimates.

Note 2 – Recently Issued Accounting Standards

The FASB issued an accounting standard update in November 2015 regarding the classification of deferred taxes on the balance sheet. The update requires that all deferred tax assets and liabilities, along with any related valuation allowance, be classified as noncurrent on the balance sheet. The update does not change the existing requirement that only permits offsetting within a jurisdiction. The guidance within this accounting standards update is effective for annual and interim periods beginning after December 15, 2016, and may be applied either prospectively, for all deferred tax assets and liabilities, or retrospectively. Early adoption is permitted. The Company has not early adopted and is currently evaluating the effects of this guidance but does not expect a material impact.

The FASB issued an accounting standard update in September 2015 regarding the accounting and disclosure for measurement period adjustments for business combinations. The update requires that the cumulative impact of a measurement period adjustment be recognized in the reporting period in which the adjustment is identified, rather than restating prior period financial statements. The guidance within this accounting standard update is effective for annual and interim periods beginning after December 15, 2015, and should be applied on a prospective basis to adjustments to provisional amounts that occur after the effective date, with earlier application permitted for financial statements that have not been issued. As of and for the year ended December 31, 2015 the Company early adopted this guidance without a material impact.

The FASB issued an accounting standard update in July 2015 regarding simplifying the measurement of inventory. The guidance is applicable for entities that measure inventory using the FIFO or average cost methods. Specifically, the update requires that inventory be measured at lower of cost or net realizable value. Net realizable value is the estimated selling price in the ordinary course of business, less reasonably predictable costs of completion, disposal and transportation. The amendments in this update are effective for fiscal years beginning after December 15, 2016, including interim periods within those fiscal years. This guidance should be applied prospectively with early adoption permitted. The Company has not early adopted and is currently evaluating the effects of this guidance but does not expect a material impact.

The FASB issued an accounting standard update in May 2015 regarding the required disclosures for entities that elect to measure the fair value of certain investments using the net asset value per share (or its equivalent) practical expedient in accordance with the fair value measurement authoritative guidance. The update removes the requirement to categorize within the fair value hierarchy, and, also limits the requirement to make certain other disclosures, for all such investments. The amendments in this update are effective for fiscal years beginning after December 15, 2015, and interim periods within those fiscal years, and should be applied on a retrospective basis for the periods presented. Early adoption is permitted. The Company has not early adopted and is currently evaluating the effects of this guidance but does not expect a material impact.

The FASB issued an accounting standard update in April 2015 regarding the presentation of debt issuance costs on the balance sheet. The update requires capitalized debt issuance costs be presented on the balance sheet as a reduction to debt, rather than recorded as a separate asset. The amendments in this update are effective for annual and interim periods beginning after December 15, 2015 and should be applied on a retrospective basis for the periods presented. Early adoption is permitted. Also, in June 2015, the SEC staff announced that the guidance within this accounting standard update was not applicable to revolving debt arrangements or credit facilities. The Company has not early adopted and is currently evaluating the effects of this guidance, and the SEC's announcement, but does not expect a material impact.

The FASB issued an accounting standard update in May 2014 regarding the accounting for and disclosure of revenue recognition. Specifically, the update outlined a single comprehensive model for entities to use in accounting for revenue arising from contracts with customers, which will be common to both U.S. GAAP and International Financial Reporting Standards ("IFRS"). The guidance was effective for annual and interim periods beginning after December 15, 2016, which allowed for full retrospective adoption of prior period data or a modified retrospective adoption. Early adoption was not permitted. In August 2015, the FASB issued an accounting standard update to delay the effective date of the new revenue standard by one year, or, in other words, to be effective for annual and interim periods beginning after December 15, 2017. Entities will be permitted to adopt the new revenue standard early but not before the original effective date. The Company is currently evaluating the effects of this guidance.

(Dollars in thousands, except share and per share amounts)

Note 3 – Out-of-Period Adjustment

During 2012, the Company reassessed its ability to significantly influence the operating and financial policies of its captive insurance equity affiliate, Primex, Ltd. ("Primex"). Based on its ownership percentage and other factors, the Company determined that, during 2012, the Company obtained the ability to significantly influence Primex and, as a result, changed its method of accounting from the cost to equity method. During the first quarter of 2013, the Company identified errors in Primex's estimated 2012 financial statements, which primarily related to a reinsurance contract held by Primex. The identified errors resulted in a cumulative $1,038 understatement of the Company's equity in net income from associated companies for the year ended December 31, 2012. The Company corrected the errors related to Primex in the first quarter of 2013, which had the net effect of increasing equity in net income from associated companies by $1,038 for the three months ended March 31, 2013 and the year ended December 31, 2013. The Company did not believe this adjustment was material to its consolidated financial statements for the year ended December 31, 2012 or to the Company's results for the year ended December 31, 2013 and, therefore, did not restate any prior period amounts.

Note 4 – Restructuring and Related Activities

In response to continued weak economic conditions and market declines in many regions, Quaker's management approved a global restructuring plan (the "2015 Program") in the fourth quarter of 2015 to reduce its operating costs. The 2015 Program includes re-organization of certain commercial functions, the closure of certain distribution, lab and administrative offices, and other related severances. In addition to these actions, the Company made a decision to make available for sale certain technology of one of its existing businesses, which also resulted in employee severance and $340 of intangible assets being reclassified to other current assets as of December 31, 2015.

The 2015 Program includes provisions for the reduction of total headcount by approximately 65 employees globally. As a result of this program, the Company recognized a $6,790, or $0.36 per diluted share, restructuring charge in the fourth quarter of 2015. Employee separation benefits varied depending on local regulations within certain foreign countries and included severance and other benefits. The Company expects to substantially complete all of the initiatives under the 2015 Program during 2016 and expects settlement of these charges to occur primarily in 2016 as well. At this time, there are no material, additional, restructuring expenses expected to be incurred in connection with the 2015 Program. The restructuring charges have been recorded within restructuring and related activities in the Consolidated Statements of Income, with the remaining accrued restructuring balances recorded as accrued restructuring on the Consolidated Balance Sheets.

Restructuring activity recognized in connection with the 2015 Program is as follows:

	North America	EMEA	Asia/Pacific	South America	Total
Accrued restructuring as of December 31, 2014	$ —	$ —	$ —	$ —	$ —
Restructuring charges	2,025	4,390	338	37	6,790
Cash payments	(158)	(130)	(202)	—	(490)
Currency translation adjustments	—	5	(1)	(1)	3
Accrued restructuring as of December 31, 2015	$ 1,867	$ 4,265	$ 135	$ 36	$ 6,303

Note 5 – Business Segments

The Company's reportable operating segments are organized by geography as follows: (i) North America, (ii) EMEA, (iii) Asia/Pacific and (iv) South America. Operating earnings, excluding indirect operating expenses, for the Company's reportable operating segments are comprised of revenues less costs of goods sold and SG&A directly related to the respective regions' product sales. The indirect operating expenses consist of SG&A related expenses that are not directly attributable to the product sales of each respective reportable operating segment. Other items not specifically identified with the Company's reportable operating segments include interest expense, interest income, license fees from non-consolidated affiliates and other (expense) income.

(Dollars in thousands, except share and per share amounts)

The following tables present information about the performance of the Company's reportable operating segments for the years ended December 31, 2015, 2014 and 2013:

	2015	2014	2013
Net sales			
North America	$ 344,248	$ 334,400	$ 308,353
EMEA	179,717	195,309	187,794
Asia/Pacific	181,056	185,974	169,505
South America	32,534	50,177	63,743
Total net sales	$ 737,555	$ 765,860	$ 729,395

	2015	2014	2013
Operating earnings, excluding indirect operating expenses			
North America	$ 79,791	$ 68,296	$ 61,307
EMEA	27,979	32,589	29,643
Asia/Pacific	45,107	43,847	42,373
South America	1,785	4,292	9,177
Total operating earnings, excluding indirect operating expenses	154,662	149,024	142,500
Non-operating charges	(69,602)	(67,110)	(67,145)
Restructuring and related activities	(6,790)	—	—
Depreciation of corporate assets and amortization	(7,010)	(4,558)	(4,112)
Consolidated operating income	71,260	77,356	71,243
Other (expense) income, net	(69)	767	3,519
Interest expense	(2,585)	(2,371)	(2,922)
Interest income	1,624	2,541	986
Consolidated income before taxes and equity in net income of associated companies	$ 70,230	$ 78,293	$ 72,826

The following tables present information regarding the Company's reportable segments' assets as of December 31, 2015, 2014 and 2013:

	2015	2014	2013
Segment assets			
North America (including Corporate)	$ 320,312	$ 340,385	$ 298,305
EMEA	163,787	124,273	103,414
Asia/Pacific	181,652	170,580	144,682
South America	19,762	30,288	37,745
Total segment assets	$ 685,513	$ 665,526	$ 584,146

During 2014, the Company revised its December 31, 2013 segment asset detail, (decreasing) / increasing its previously published amounts in North America by ($5,764), in EMEA by ($1,360), in Asia/Pacific by $14,788 and in South America by ($7,664). The Company considers such revisions to be immaterial.

	2015	2014	2013
Segment long-lived assets			
North America (including Corporate)	$ 87,421	$ 92,319	$ 91,464
EMEA	27,101	20,634	20,863
Asia/Pacific	23,096	24,392	24,695
South America	2,573	3,911	4,130
Total segment long-lived assets	$ 140,191	$ 141,256	$ 141,152

(Dollars in thousands, except share and per share amounts)

The following tables present information regarding the Company's reportable segments' capital expenditures and depreciation as of December 31, 2015, 2014 and 2013:

	2015	2014	2013
Capital expenditures			
North America (including Corporate)	$ 4,166	$ 3,658	$ 2,793
EMEA	3,081	4,811	1,391
Asia/Pacific	3,169	3,202	6,386
South America	617	1,381	869
Total segment capital expenditures	$ 11,033	$ 13,052	$ 11,439

	2015	2014	2013
Depreciation			
North America	$ 5,577	$ 5,231	$ 5,236
EMEA	2,975	3,069	3,145
Asia/Pacific	2,812	2,713	2,080
South America	832	1,060	1,211
Total segment depreciation	$ 12,196	$ 12,073	$ 11,672

The following table presents information regarding the Company's product lines that represent more than 10% of consolidated revenues for December 31, 2015, 2014 and 2013, with the remaining product sales being impractical to present:

	2015	2014	2013
Rolling lubricants	18.6 %	20.1 %	20.7 %
Machining and grinding compounds	15.3 %	16.3 %	17.7 %
Hydraulic fluids	12.6 %	13.0 %	12.9 %
Corrosion preventives	12.0 %	12.5 %	12.5 %

During the years ended December 31, 2015, 2014 and 2013, the North American segment had approximately $33,990, $35,532 and $29,002 of net sales, respectively, which were attributable to non-domestic operations. At December 31, 2015, 2014 and 2013, the North American segment had approximately $2,687, $3,145 and $3,649 of long-lived assets, respectively, which were attributable to non-domestic operations.

Inter-segment revenue for the years ended December 31, 2015, 2014 and 2013 was $9,064, $8,001 and $8,984 for North America, $17,777, $22,321 and $20,135 for EMEA, $1,005, $414 and $504 for Asia/Pacific, and $13, $0 and $0 for South America, respectively. However, all inter-segment transactions have been eliminated from each reportable operating segment's net sales and earnings for all periods presented in the above tables.

Note 6 – Stock-Based Compensation

The Company recognized the following share-based compensation expense in SG&A in its Consolidated Statement of Income for the years ended December 31, 2015, 2014 and 2013:

	December 31,		
	2015	2014	2013
Stock options	$ 730	$ 663	$ 517
Nonvested stock awards and restricted stock units	2,937	2,473	1,900
Employee stock purchase plan	75	73	60
Non-elective and elective 401(k) matching contribution in stock	2,052	1,975	1,612
Director stock ownership plan	125	125	72
Total share-based compensation expense	$ 5,919	$ 5,309	$ 4,161

As of December 31, 2015, 2014 and 2013, the Company recorded $384, $453 and $815, respectively, of excess tax benefits in capital in excess of par value on its Consolidated Balance Sheets related to stock option exercises. The Company also recognized these benefits as a cash inflow from financing activities in its Consolidated Statements of Cash Flows, which represents the Company's estimate of cash savings during 2015, 2014 and 2013, respectively.

(Dollars in thousands, except share and per share amounts)

Stock option activity under all plans is as follows:

	Number of Options	Weighted Average Exercise Price (per option)	Weighted Average Remaining Contractual Term (years)	Aggregate Intrinsic Value
Options outstanding at January 1, 2015	87,075	$ 59.09		
Options granted	38,698	87.30		
Options exercised	(21,157)	46.61		
Options forfeited	(4,945)	78.42		
Options outstanding at December 31, 2015	99,671	$ 71.73	5.1	$ 967
Options expected to vest at December 31, 2015	68,214	$ 78.78	5.6	$ 286
Options exercisable at December 31, 2015	31,457	$ 56.46	4.1	$ 681

The total intrinsic value of options exercised during 2015, 2014 and 2013 was approximately $852, $1,139 and $2,237, respectively. Intrinsic value is calculated as the difference between the current market price of the underlying security and the strike price of a related option.

A summary of the Company's outstanding stock options at December 31, 2015 is as follows:

Range of Exercise Prices	Number of Options Outstanding	Weighted Average Remaining Contractual Term (years)	Weighted Average Exercise Price (per option)	Number of Options Exercisable	Weighted Average Exercise Price (per option)
$ — - $ 10.00	—	—	$ —	—	$ —
$ 10.01 - $ 20.00	2,367	1.1	18.82	2,367	18.82
$ 20.01 - $ 30.00	—	—	—	—	—
$ 30.01 - $ 40.00	6,317	3.2	38.13	6,317	38.13
$ 40.01 - $ 50.00	—	—	—	—	—
$ 50.01 - $ 60.00	21,055	4.2	58.26	11,997	58.26
$ 60.01 - $ 70.00	—	—	—	—	—
$ 70.01 - $ 80.00	33,786	5.2	73.47	10,776	73.47
$ 80.01 - $ 90.00	36,146	6.2	87.30	—	—
	99,671	5.1	71.73	31,457	56.46

As of December 31, 2015, unrecognized compensation expense related to options granted in 2013, 2014 and 2015 was $36, $296 and $595, respectively.

Consistent with prior years, the Company granted stock options under its LTIP plan that are subject only to time vesting over a three-year period in the first quarters of 2012, 2013, 2014 and 2015. Also, in connection with a transition of key employees during the second quarter of 2012, stock options were granted that are also only subject to time vesting over a three-year period. For the purposes of determining the fair value of stock option awards, the Company uses the Black-Scholes option pricing model and the assumptions set forth in the table below:

	For the Year Ended December 31,				June 30,
	2015	2014	2013	2012	2012
Number of stock options granted	38,698	37,048	29,302	37,965	2,192
Dividend yield	1.55 %	2.00 %	2.49 %	3.09 %	2.69 %
Expected volatility	36.32 %	43.34 %	57.28 %	69.90 %	69.09 %
Risk-free interest rate	1.22 %	1.22 %	0.63 %	0.61 %	0.58 %
Expected term (years)	4.0	4.0	4.0	4.0	4.0

(Dollars in thousands, except share and per share amounts)

These awards are being amortized on a straight-line basis over the respective vesting period of each award. The compensation expense recorded on each award during 2015, 2014 and 2013, respectively, is as follows:

	Year Ended December 31, 2015	2014	2013
2015 Stock option awards	$ 232	$ —	$ —
2014 Stock option awards	$ 257	$ 227	$ —
2013 Stock option awards	$ 200	$ 213	$ 174
2012 Stock option awards	$ 41	$ 199	$ 189

Activity of nonvested shares granted under the Company's LTIP plan is shown below:

	Number of Shares	Weighted Average Grant Date Fair Value (per share)
Nonvested awards, December 31, 2014	124,450	$ 61.80
Granted	30,785	$ 86.26
Vested	(33,681)	$ 46.76
Forfeited	(7,644)	$ 61.12
Nonvested awards, December 31, 2015	113,910	$ 72.91

The fair value of the nonvested stock is based on the trading price of the Company's common stock on the date of grant. The Company adjusts the grant date fair value for expected forfeitures based on historical experience for similar awards. As of December 31, 2015, unrecognized compensation expense related to these awards was $3,784, to be recognized over a weighted average remaining period of 1.73 years.

Activity of nonvested restricted stock units granted under the Company's LTIP plan is shown below:

	Number of Units	Weighted Average Grant Date Fair Value (per unit)
Nonvested awards, December 31, 2014	7,158	$ 61.03
Granted	1,450	$ 87.30
Vested	(2,434)	$ 43.45
Nonvested awards, December 31, 2015	6,174	$ 74.14

The fair value of the nonvested restricted stock units is based on the trading price of the Company's common stock on the date of grant. The Company adjusts the grant date fair value for expected forfeitures based on historical experience for similar awards. As of December 31, 2015, unrecognized compensation expense related to these awards was $165 to be recognized over a weighted average remaining period of 1.60 years.

Employee Stock Purchase Plan

In 2000, the Board adopted an Employee Stock Purchase Plan ("ESPP") whereby employees may purchase Company stock through a payroll deduction plan. Purchases are made from the plan and credited to each participant's account at the end of each month (the "Investment Date"). The purchase price of the stock is 85% of the fair market value on the Investment Date. The plan is compensatory and the 15% discount is expensed on the Investment Date. All employees, including officers, are eligible to participate in this plan. A participant may withdraw all uninvested payment balances credited to a participant's account at any time. An employee whose stock ownership of the Company exceeds five percent of the outstanding common stock is not eligible to participate in this plan.

(Dollars in thousands, except share and per share amounts)

2013 Director Stock Ownership Plan

In 2013, the Company adopted the 2013 Director Stock Ownership Plan (the "Plan"), to encourage the Directors to increase their investment in the Company, which was approved at the Company's May 2013 shareholders' meeting. The Plan authorizes the issuance of up to 75,000 shares of Quaker common stock in accordance with the terms of the Plan in payment of all or a portion of the annual cash retainer payable to each of the Company's non-employee directors in 2013 and subsequent years during the term of the Plan. Under the Plan, each director who, on May 1 of the applicable calendar year, owns less than 400% of the annual cash retainer for the applicable calendar year, divided by the average of the closing price of a share of Quaker Common Stock as reported by the composite tape of the New York Stock Exchange for the previous calendar year (the "Threshold Amount"), is required to receive 75% of the annual cash retainer in Quaker common stock and 25% of the retainer in cash, unless the director elects to receive a greater percentage of Quaker common stock (up to 100%) of the annual cash retainer for the applicable year. Each director who owns more than the Threshold Amount may elect to receive common stock in payment of a percentage (up to 100%) of the annual cash retainer. The annual retainer is $50 and the retainer payment date is June 1.

Note 7 – Other (expense) income, net

The components of other (expense) income, net for the years ended December 31, 2015, 2014 and 2013 are as follows:

	2015	2014	2013
Non-income tax refunds and other related credits	$ 141	$ 582	$ 2,876
Change in fair value of acquisition-related liabilities	—	—	497
Income from third party license fees	875	1,063	1,027
Foreign exchange losses, net	(1,184)	(1,039)	(1,076)
Asset impairment related to a cost streamlining initiative	—	—	(211)
Gain on fixed asset disposals, net	6	128	382
Other non-operating income	261	329	247
Other non-operating expense	(168)	(296)	(223)
Total other (expense) income, net	$ (69)	$ 767	$ 3,519

Note 8 – Taxes on Income and Uncertain Tax Positions

Taxes (benefit) on income for the years ended December 31, 2015, 2014 and 2013 are as follows:

	Year Ended December 31,		
	2015	2014	2013
Current:			
Federal	$ 8,924	$ 8,086	$ 7,216
State	188	796	263
Foreign	11,074	13,650	13,040
	20,186	22,532	20,519
Deferred:			
Federal	404	2,548	155
State	(16)	57	138
Foreign	(2,789)	(1,598)	(323)
Total	$ 17,785	$ 23,539	$ 20,489

The components of earnings before income taxes for the years ended December 31, 2015, 2014 and 2013 are as follows:

	Year Ended December 31,		
	2015	2014	2013
Domestic	$ 25,219	$ 32,391	$ 25,900
Foreign	45,011	45,902	46,926
Total	$ 70,230	$ 78,293	$ 72,826

(Dollars in thousands, except share and per share amounts)

Total deferred tax assets and liabilities are composed of the following at December 31, 2015 and 2014:

	December 31, 2015	December 31, 2014
Retirement benefits	$ 9,621	$ 11,747
Allowance for doubtful accounts	2,367	2,237
Insurance and litigation reserves	787	860
Postretirement benefits	1,863	2,137
Supplemental retirement benefits	3,220	3,448
Performance incentives	4,777	4,705
Equity-based compensation	1,823	1,292
Insurance settlement	8,100	8,429
Operating loss carryforward	7,815	8,657
Uncertain tax positions	2,785	4,313
Restructuring	1,897	—
Other	2,402	2,073
	47,457	49,898
Valuation allowance	(6,259)	(7,345)
Total deferred income tax assets, net	$ 41,198	$ 42,553
Depreciation	5,924	4,616
Europe pension and other	1,107	1,654
Amortization and other	14,318	12,821
Total deferred income tax liabilities	$ 21,349	$ 19,091

The following are the changes in the Company's deferred tax asset valuation allowance for the years ended December 31, 2015, 2014 and 2013:

	Balance at Beginning of Period	Additional Valuation Allowance	Allowance Utilization and Other	Effect of Exchange Rate Changes	Balance at End of Period
Valuation Allowance					
Year ended December 31, 2015	$ 7,345	$ 86	$ (802)	$ (370)	$ 6,259
Year ended December 31, 2014	$ 7,666	$ 5	$ (105)	$ (221)	$ 7,345
Year ended December 31, 2013	$ 7,858	$ 26	$ (1)	$ (217)	$ 7,666

The Company's net deferred tax assets and liabilities are classified in the Consolidated Balance Sheets as follows:

	2015	2014
Current deferred tax assets	$ 7,822	$ 8,367
Non-current deferred tax assets	27,071	24,411
Current deferred tax liabilities	41	732
Non-current deferred tax liabilities	15,003	8,584
Net deferred tax asset	$ 19,849	$ 23,462

(Dollars in thousands, except share and per share amounts)

The following is a reconciliation of income taxes at the Federal statutory rate with income taxes recorded by the Company for the years ended December 31, 2015, 2014 and 2013:

	2015	2014	2013
Income tax provision at the Federal statutory tax rate	$ 24,578	$ 27,402	$ 25,489
Differences in tax rates on foreign earnings and remittances	(5,097)	(3,025)	(2,487)
Foreign dividends	2,690	3,278	1,922
Excess foreign tax credit utilization	(4,141)	(5,011)	(3,664)
Research and development activities credit utilization	(245)	(226)	(200)
Uncertain tax positions	226	263	(589)
Domestic production activities deduction	(910)	(567)	(560)
State income tax provisions, net	133	517	171
Non-deductible entertainment and business meals expense	249	278	229
Miscellaneous items, net	302	630	178
Taxes on income	$ 17,785	$ 23,539	$ 20,489

At December 31, 2015, the Company domestically had a net deferred tax asset of $8,582. In addition, the Company has foreign tax loss carryforwards of $10,538 of which $47 expires in 2016, $150 expires in 2017, $479 expires in 2018, $374 expires in 2019, $93 expires in 2020, $354 expires in 2021, $145 expires in 2022, $6 expires in 2023, $62 expires in 2024, $103 expires in 2025, $1,510 expires in 2030, and $59 expires in 2035; the remaining foreign tax losses have no expiration dates. A partial valuation allowance has been established with respect to the tax benefit of these losses for $961.

U.S. income taxes have not been provided on the undistributed earnings of non-U.S. subsidiaries because it is the Company's intention to continue to reinvest these earnings in those subsidiaries to support growth initiatives. U.S. and foreign income taxes that would be payable if such earnings were distributed may be lower than the amount computed at the U.S. statutory rate due to the availability of tax credits. The amount of such undistributed earnings at December 31, 2015 was approximately $203,000. Any income tax liability, which might result from ultimate remittance of these earnings, is expected to be substantially offset by foreign tax credits. It is currently impractical to estimate any such incremental tax expense.

As of December 31, 2015, the Company's cumulative liability for gross unrecognized tax benefits was $11,032. The Company had accrued $1,890 for cumulative penalties and $1,465 for cumulative interest at December 31, 2015. As of December 31, 2014, the Company's cumulative liability for gross unrecognized tax benefits was $11,845. The Company had accrued $1,845 for cumulative penalties and $1,868 for cumulative interest at December 31, 2014.

The Company continues to recognize interest and penalties associated with uncertain tax positions as a component of taxes on income before equity in net income of associated companies in its Consolidated Statement of Income. The Company recognized $225 for penalties and ($226) for interest (net of expirations and settlements) on its 2015 Consolidated Statement of Income, ($26) for penalties and ($31) for interest (net of expirations and settlements) on its 2014 Consolidated Statement of Income and $392 for penalties and ($247) for interest (net of expirations and settlements) on its 2013 Consolidated Statement of Income.

The Company estimates that during the year ending December 31, 2016, it will reduce its cumulative liability for gross unrecognized tax benefits by approximately $1,900 to $2,000 due to the expiration of the statute of limitations with regard to certain tax positions. This estimated reduction in the cumulative liability for unrecognized tax benefits does not consider any increase in liability for unrecognized tax benefits with regard to existing tax positions or any increase in cumulative liability for unrecognized tax benefits with regard to new tax positions for the year ending December 31, 2016.

The Company and its subsidiaries are subject to U.S. Federal income tax, as well as the income tax of various state and foreign tax jurisdictions. Tax years that remain subject to examination by major tax jurisdictions include Brazil from 2000, Italy from 2007, the Netherlands from 2009, the United Kingdom from 2010, Spain from 2011, China and the United States from 2012, and various domestic state tax jurisdictions from 1993.

During 2012, the Italian tax authorities initiated a transfer pricing audit of the Company's Italian subsidiary, Quaker Italia S.r.l., relating to the tax years 2007, 2008, 2009 and 2010. During the second quarter of 2015, the Italian tax authorities completed an audit of the Company's Italian subsidiary, Quaker Chemical S.r.l. (formerly NP Coil Dexter Industries, S.r.l.), relating to the tax years 2010, 2011, 2012 and 2013, and proposed adjustments for those years. In the fourth quarter of 2015, the Company paid the tax liability for these proposed adjustments in full. In the fourth quarter of 2015, the Dutch tax authorities assessed the Company's Dutch subsidiary for additional income taxes related to the 2011 tax year and the Dutch subsidiary filed a protest of the assessment. In January 2016, the French tax authorities gave notice that they were auditing the Company's French subsidiary. In February 2016, the Italian tax authorities gave notice that they were starting an audit of the 2013 tax year for Quaker Italia S.r.l. As of December 31, 2015, the Company believes it has adequate reserves, where merited, for uncertain tax positions with respect to these audits.

(Dollars in thousands, except share and per share amounts)

A reconciliation of the beginning and ending amounts of unrecognized tax benefits for the years ended December 31, 2015, 2014 and 2013, respectively, is as follows:

	2015	2014	2013
Unrecognized tax benefits at January 1	$ 11,845	$ 12,596	$ 12,410
(Decrease) increase in unrecognized tax benefits taken in prior periods	(416)	(93)	83
Increase in unrecognized tax benefits taken in current period	2,512	2,678	2,182
(Decrease) in unrecognized tax benefits due to lapse of statute of limitations	(1,924)	(2,078)	(2,485)
(Decrease) increase due to foreign exchange rates	(985)	(1,258)	406
Unrecognized tax benefits at December 31	$ 11,032	$ 11,845	$ 12,596

The amount of unrecognized tax benefits above that, if recognized, would impact the Company's tax expense and effective tax rate is $1,137, $1,066 and $1,194 in 2015, 2014 and 2013, respectively.

Note 9 – Earnings Per Share

The following table summarizes EPS calculations for the years ended December 31, 2015, 2014 and 2013:

	December 31,		
	2015	2014	2013
Basic earnings per common share			
Net income attributable to Quaker Chemical Corporation	$ 51,180	$ 56,492	$ 56,339
Less: income allocated to participating securities	(443)	(503)	(481)
Net income available to common shareholders	$ 50,737	$ 55,989	$ 55,858
Basic weighted average common shares outstanding	13,199,630	13,126,759	13,044,842
Basic earnings per common share	$ 3.84	$ 4.27	$ 4.28
Diluted earnings per common share			
Net income attributable to Quaker Chemical Corporation	$ 51,180	$ 56,492	$ 56,339
Less: income allocated to participating securities	(443)	(503)	(481)
Net income available to common shareholders	$ 50,737	$ 55,989	$ 55,858
Basic weighted average common shares outstanding	13,199,630	13,126,759	13,044,842
Effect of dilutive securities	15,219	21,309	24,770
Diluted weighted average common shares outstanding	13,214,849	13,148,068	13,069,612
Diluted earnings per common share	$ 3.84	$ 4.26	$ 4.27

The following number of stock options are not included in diluted earnings per share since the effect would have been anti-dilutive: 6,684 in 2015, 4,714 in 2014 and 2,863 in 2013.

(Dollars in thousands, except share and per share amounts)

Note 10 – Accounts Receivable and Allowance for Doubtful Accounts

At December 31, 2015 and 2014, the Company had gross trade accounts receivable totaling $196,115 and $195,982 with trade accounts receivable greater than 90 days past due of $15,653 and $10,149, respectively. The following are changes in the allowance for doubtful accounts during the years ended December 31, 2015, 2014 and 2013:

	Balance at Beginning of Period	Changes to Costs and Expenses	Write-Offs Charged to Allowance	Exchange Rate Changes and Other Adjustments	Balance at End of Period
Allowance for Doubtful Accounts					
Year ended December 31, 2015	$ 6,498	$ 1,460	$ (261)	$ 121	$ 7,818
Year ended December 31, 2014	$ 7,133	$ (264)	$ (296)	$ (75)	$ 6,498
Year ended December 31, 2013	$ 6,399	$ 1,136	$ (407)	$ 5	$ 7,133

During 2015, 2014 and 2013, the Company recorded charges of $328, or $0.02 per diluted share, $825, or $0.05 per diluted share and $0, respectively, to its allowance for doubtful accounts and SG&A due to the bankruptcies of certain customers.

Included in exchange rate changes and other adjustments are allowance for doubtful accounts of $380, $77 and $0 acquired in 2015, 2014 and 2013 business acquisitions, respectively.

Note 11 – Inventories

Total inventories as of December 31, 2015 and 2014 were as follows:

	December 31, 2015	December 31, 2014
Raw materials and supplies	$ 36,876	$ 37,961
Work in process and finished goods	38,223	39,747
Total inventories	$ 75,099	$ 77,708

Note 12 – Property, Plant and Equipment

Property, plant and equipment as of December 31, 2015 and 2014 were as follows:

	December 31, 2015	December 31, 2014
Land	$ 9,388	$ 7,962
Building and improvements	80,110	78,911
Machinery and equipment	136,329	142,102
Construction in progress	5,337	5,541
	231,164	234,516
Less accumulated depreciation	(143,545)	(148,753)
	$ 87,619	$ 85,763

(Dollars in thousands, except share and per share amounts)

The Company currently leases certain equipment under capital leases in its North America segment. During 2014, the Company leased certain equipment under capital leases in its North America and EMEA segments. Gross property, plant and equipment includes $460 and $656 of capital leases with $341 and $455 of accumulated depreciation at December 31, 2015 and 2014, respectively. The following is a schedule by years of future minimum lease payments:

2016	$	64
2017		59
2018		—
2019		—
2020		—
2021 and beyond		—
Total net minimum lease payments		123
Less amount representing interest		(4)
Present value of net minimum lease payments	$	119

Note 13 – Goodwill and Other Intangible Assets

The Company completes its annual impairment test as of the end of the third quarter of each year, or more frequently if triggering events indicate a possible impairment in one or more of its reporting units. The Company continually evaluates the financial performance, economic conditions and other relevant developments in assessing if an interim period impairment test for one or more of its reporting units is necessary. The Company completed its annual impairment assessment as of the end of the third quarter of 2015 and no impairment charge was warranted. The estimated fair value of each of the Company's reporting units substantially exceeded its carrying value, with no reporting unit at risk for failing step one of the goodwill impairment test. In addition, the Company has recorded no impairment charges in the past.

Changes in the carrying amount of goodwill for the years ended December 31, 2015 and 2014 were as follows:

	North America	EMEA	Asia/Pacific	South America	Total
Balance as of December 31, 2013	$ 28,127	$ 11,184	$ 15,018	$ 3,822	$ 58,151
Goodwill additions	14,612	6,130	1,075	—	21,817
Currency translation adjustments	(62)	(1,264)	(87)	(622)	(2,035)
Balance as of December 31, 2014	42,677	16,050	16,006	3,200	77,933
Goodwill additions	30	4,761	103	—	4,894
Currency translation adjustments	(264)	(1,531)	(865)	(1,056)	(3,716)
Balance as of December 31, 2015	$ 42,443	$ 19,280	$ 15,244	$ 2,144	$ 79,111

Gross carrying amounts and accumulated amortization for definite-lived intangible assets as of December 31, 2015 and 2014 were as follows:

	Gross Carrying Amount		Accumulated Amortization	
	2015	2014	2015	2014
Customer lists and rights to sell	$ 67,435	$ 63,502	$ 15,806	$ 12,681
Trademarks and patents	23,147	18,944	5,538	4,066
Formulations and product technology	5,808	5,808	4,082	3,896
Other	5,788	6,647	4,565	4,950
Total definite-lived intangible assets	$ 102,178	$ 94,901	$ 29,991	$ 25,593

(Dollars in thousands, except share and per share amounts)

The Company recorded $6,811, $4,325 and $3,445 of amortization expense in 2015, 2014 and 2013, respectively. Estimated annual aggregate amortization expense for the subsequent five years is as follows:

For the year ended December 31, 2016	$	6,785
For the year ended December 31, 2017		6,369
For the year ended December 31, 2018		6,148
For the year ended December 31, 2019		6,047
For the year ended December 31, 2020		5,769

The Company has two indefinite-lived intangible assets totaling $1,100 for trademarks at December 31, 2015 and 2014.

Note 14 – Investments in Associated Companies

As of December 31, 2015, the Company held a 50% investment in and had significant influence over Kelko Quaker Chemical, S.A. (Venezuela), Nippon Quaker Chemical, Ltd. (Japan) and Kelko Quaker Chemical S.A. (Panama) and held a 33% investment in and had significant influence over Primex, Ltd. (Barbados).

The carrying amount of the Company's equity investments at December 31, 2015 was $20,354, which includes its investments of $14,895 in Primex, Ltd. (Barbados); $5,014 in Nippon Quaker Chemical, Ltd. (Japan); $247 in Kelko Quaker Chemical, S.A. (Panama); and $198 in Kelko Quaker Chemical, S.A. (Venezuela).

In 2003, the Venezuela government suspended the free exchange of bolivar fuerte ("BsF") for foreign currency and implemented certain foreign exchange controls that served to centralize the purchase and sale of foreign currency within the country. As of December 31, 2014, there were three legally available exchange rates in Venezuela, the CADIVI (or the official rate, 6.3 BsF per U.S. dollar), the SICAD I (approximately 12 BsF per U.S. dollar) and the SICAD II (approximately 52 BsF per U.S. dollar). In the first quarter of 2015, the Venezuela government announced changes to its exchange controls. There continues to be three exchange mechanisms in Venezuela; however, they now consist of the CADIVI, a combined SICAD I and SICAD II auction mechanism (the "SICAD") and a newly created, marginal currency system (the "SIMADI"). The CADIVI exchange largely remained the same, except that the government further restricted what products qualify and can, therefore, legally be imported or traded under this exchange. The government has not fully disclosed who can access or trade on the newly formed combined SICAD market and minimal related auctions have occurred to date. Finally, the newly created SIMADI is legally available to all parties, however, at significantly higher exchange rates than the CADIVI or SICAD. As of December 31, 2015, the published rate for the SIMADI is approximately 198 BsF per U.S. dollar.

Venezuela's economy has been considered hyper inflationary under U.S. GAAP since 2010, at which time the Company's Venezuela equity affiliate, Kelko Quaker Chemical, S.A. ("Kelko Venezuela"), changed its functional currency to the U.S. dollar. Accordingly, all gains and losses resulting from the remeasurement of Kelko Venezuela's monetary assets and liabilities to the CADIVI, SICAD, SIMADI, or other published exchange rates are required to be recorded directly to the Consolidated Statement of Income.

As of December 31, 2014, Kelko Venezuela had access to the CADIVI for imported goods, had not been invited to participate in any SICAD I auctions and had limited access to the SICAD II mechanism. Accordingly, the Company measured its equity investment and other related assets with Kelko Venezuela at the CADIVI exchange rate at December 31, 2014. In light of the first quarter of 2015 changes to Venezuela's foreign exchange controls and the on-going economic challenges in Venezuela, the Company re-assessed Kelko Venezuela's access to U.S. dollars, the impact on the operations of Kelko Venezuela, and the impact on the Company's equity investment and other related assets. During the first quarter of 2015, the Company determined that the CADIVI was no longer available to Kelko Venezuela for import transactions. As the government has yet to fully disclose who can access or trade on the SICAD mechanism and minimal related auctions have occurred to date, the Company revalued its equity investment in Kelko Venezuela and other related assets to the SIMADI exchange rate of approximately 193 BsF per U.S. dollar as of March 31, 2015. This resulted in a charge of approximately $2,806, or $0.21 per diluted share, recorded in the first quarter of 2015. As of December 31, 2015, the Company's equity investment in Kelko Venezuela continues to be valued at the SIMADI exchange rate.

During the second quarter of 2014, the Company recorded a charge of $321, or $0.02 per diluted share, related to the conversion of certain BsF to U.S. dollars on the historical SICAD II exchange. During the first quarter of 2013, the Venezuela Government announced a devaluation of the BsF, which resulted in a charge of $357, or $0.03 per diluted share.

(Dollars in thousands, except share and per share amounts)

Summarized financial information of Kelko Quaker Chemical, S.A. (Venezuela), Nippon Quaker Chemical, Ltd. (Japan) and Kelko Quaker Chemical S.A. (Panama), in the aggregate, is as follows:

	December 31, 2015	December 31, 2014
Current Assets	$ 36,761	$ 42,828
Noncurrent Assets	606	1,105
Current Liabilities	26,039	28,797
Noncurrent Liabilities	410	397

	Year Ended December 31, 2015	2014	2013
Net Sales	$ 40,282	$ 48,834	$ 47,226
Gross Margin	12,887	15,698	16,096
Income Before Income Taxes	(2,843)	3,546	3,687
Net Income	(3,631)	2,263	2,142

During 2015, the Company identified a correction to the presentation of December 31, 2014 summarized financial information. As a result, the Company revised the December 31, 2014 current assets and current liabilities by increasing such amounts by $15,149 each, from previously disclosed amounts. The Company considers such revisions to the prior period to be immaterial.

Summarized financial information of Primex, Ltd. is as follows:

	December 31, 2015	December 31, 2014
Total Assets	$ 105,585	$ 109,259
Total Liabilities	54,534	59,773

	Year Ended December 31, 2015	2014	2013
Revenue	$ 7,058	$ 10,755	$ 20,895
Income Before Income Taxes	8,407	10,929	25,625
Net Income	6,334	7,352	16,876

During the first quarter of 2013, the Company identified errors in Primex's estimated 2012 financial statements, which primarily related to a reinsurance contract held by Primex. The identified errors resulted in increases to Primex's revenue of $4,905, income before taxes of $5,240 and net income of $3,422, which are included in the 2013 summarized financial information for Primex above. The identified errors resulted in a cumulative $1,038 understatement of the Company's equity in net income from associated companies for the year ended December 31, 2012, which were corrected in the first quarter of 2013. See Note 3 of Notes to Consolidated Financial Statements for further information.

Note 15 – Other Assets

Other assets as of December 31, 2015 and 2014 were as follows:

	December 31, 2015	December 31, 2014
Restricted insurance settlement	$ 22,874	$ 23,599
Uncertain tax positions	6,054	5,516
Supplemental retirement income program	1,336	1,361
Deferred compensation assets	—	779
Other	1,954	2,487
Total other assets	$ 32,218	$ 33,742

(Dollars in thousands, except share and per share amounts)

Previously, an inactive subsidiary of the Company executed separate settlement and release agreements with two of its insurance carriers for $35,000, of which $22,874 remains. The proceeds of both settlements are restricted and can only be used to pay claims and costs of defense associated with the subsidiary's asbestos litigation. The proceeds of the settlement and release agreements have been deposited into interest bearing accounts which earned approximately $35 and $44 in 2015 and 2014, respectively, offset by $760 and $1,907 of net payments in 2015 and 2014, respectively. Due to the restricted nature of the proceeds, a corresponding deferred credit was established in "Other non-current liabilities" for an equal and offsetting amount, and will remain until the restrictions lapse or the funds are exhausted via payments of claims and costs of defense. See also Notes 19 and 23 of Notes to Consolidated Financial Statements.

Note 16 – Other Current Liabilities

Other current liabilities as of December 31, 2015 and 2014 were as follows:

	December 31,	
	2015	2014
Non-income taxes	$ 6,815	$ 7,717
Income taxes payable	6,534	4,210
Selling expenses	1,848	3,352
Freight	2,354	1,547
Professional fees	1,358	1,638
Legal	1,165	754
Acquisition-related liabilities	1,384	246
Other	4,238	4,233
Total other current liabilities	$ 25,696	$ 23,697

Note 17 – Debt

Debt as of December 31, 2015 and 2014 includes the following:

	December 31,	
	2015	2014
Credit facilities	$ 62,884	$ 58,421
Industrial development bonds	15,000	15,000
Municipality-related loans	4,098	2,109
Other debt obligations (including capital leases)	119	201
	82,101	75,731
Current portion of long-term debt	(662)	(403)
	$ 81,439	$ 75,328

Credit facilities

The Company's primary credit line is a $300,000 syndicated multicurrency credit agreement with a group of lenders, which matures in June 2018. The maximum amount available under this credit facility can be increased to $400,000 at the Company's option if the lenders agree and the Company satisfies certain conditions. Borrowings under this credit facility generally bear interest at a base rate or LIBOR rate plus a margin. At December 31, 2015 and 2014, the Company had approximately $62,884 and $58,421 outstanding, primarily on this credit facility, at weighted average borrowing rates of 1.38% and 1.16%, respectively. Access to this credit facility is dependent on meeting certain financial, acquisition and other covenants, but primarily depends on the Company's consolidated leverage ratio calculation, which cannot exceed 3.50 to 1. As of December 31, 2015 and 2014, the Company's consolidated leverage ratio was below 1.0 to 1, respectively, and the Company was also in compliance with all of the other covenants.

Industrial development bonds

The Company has two fixed rate, industrial development authority demand bonds, with $5,000 due in 2018, bearing interest at a rate of 5.60%, and $10,000 due in 2028, bearing interest at a rate of 5.26%. These bonds have similar covenants to the credit facilities noted above.

(Dollars in thousands, except share and per share amounts)

Municipality-related loans

As part of a past expansion project at the Company's Middletown, Ohio facility, it agreed to a low interest rate $3,500 loan with the Ohio Department of Development. Principal repayment on this loan began in September 2010 with its final maturity being in February 2021. The current interest rate of 2% will rise to 3% beginning March 2019 until final maturity. As of December 31, 2015 and 2014, there was $1,784 and $2,109, respectively, outstanding on this loan.

With the third quarter of 2015 acquisition of Verkol S.A. ("Verkol"), the Company assumed certain loans, issued by the local government, which are either interest-free or bear interest at a subsidized rate. These loans mature periodically, with the last maturity occurring in 2026. The Company recorded these loans at fair value based on market interest rates on the date of acquisition and continues to measure the loans at amortized cost, recognizing the implicit interest incurred. As of December 31, 2015, there was $2,314 outstanding for these loans.

During the next five years, payments on the Company's debt, including capital lease maturities, are due as follows:

2016	$	662
2017		719
2018		66,931
2019		656
2020		651

At December 31, 2015 and 2014, the amounts at which the Company's debt is recorded are not materially different from their fair market value.

(Dollars in thousands, except share and per share amounts)

Note 18 – Pension and Other Postretirement Benefits

The following table shows the Company's plans' funded status reconciled with amounts reported in the Consolidated Balance Sheets as of December 31, 2015 and 2014:

	Pension Benefits						Other Post-Retirement Benefits	
	2015			2014			2015	2014
Change in benefit obligation	**Foreign**	**Domestic**	**Total**	**Foreign**	**Domestic**	**Total**	**Domestic**	**Domestic**
Gross benefit obligation at beginning of year	$ 106,827	$ 70,667	$ 177,494	$ 85,745	$ 66,369	$ 152,114	$ 6,045	$ 5,639
Service cost	2,799	250	3,049	2,626	250	2,876	17	19
Interest cost	2,476	2,541	5,017	3,210	2,823	6,033	195	232
Employee contributions	80	—	80	89	—	89	—	—
Effect of plan amendments	—	—	—	242	—	242	—	—
Plan settlements	(328)	—	(328)	—	—	—	—	—
Benefits paid	(1,604)	(4,249)	(5,853)	(1,985)	(4,589)	(6,574)	(533)	(533)
Plan expenses and premiums paid	(57)	(250)	(307)	(361)	(250)	(611)	—	—
Transfer in of business acquisition	—	—	—	2,818	—	2,818	—	—
Actuarial (gain) loss	(7,799)	(2,097)	(9,896)	26,412	6,064	32,476	(302)	688
Translation differences and other	(9,988)	—	(9,988)	(11,969)	—	(11,969)	—	—
Gross benefit obligation at end of year	$ 92,406	$ 66,862	$ 159,268	$ 106,827	$ 70,667	$ 177,494	$ 5,422	$ 6,045
Change in plan assets								
Fair value of plan assets at yearbeginning of year	$ 86,523	$ 49,689	$ 136,212	$ 68,659	$ 50,650	$ 119,309	$ —	$ —
Actual (loss) return on plan assets	(2,170)	223	(1,947)	23,981	2,591	26,572	—	—
Employer contributions	1,804	1,288	3,092	3,778	1,287	5,065	533	533
Employee contributions	80	—	80	89	—	89	—	—
Plan settlements	(328)	—	(328)	—	—	—	—	—
Benefits paid	(1,604)	(4,249)	(5,853)	(1,985)	(4,589)	(6,574)	(533)	(533)
Plan expenses and premiums paid	(57)	(250)	(307)	(361)	(250)	(611)	—	—
Transfer in of business acquisition	—	—	—	2,093	—	2,093	—	—
Translation differences	(8,092)	—	(8,092)	(9,731)	—	(9,731)	—	—
Fair value of plan assets at end of year	$ 76,156	$ 46,701	$ 122,857	$ 86,523	$ 49,689	$ 136,212	$ —	$ —
Net benefit obligation recognized	$ (16,250)	$ (20,161)	$ (36,411)	$ (20,304)	$ (20,978)	$ (41,282)	$ (5,422)	$ (6,045)
Amounts recognized in the balance sheet consist of:								
Current liabilities	$ (52)	$ (575)	$ (627)	$ (94)	$ (577)	$ (671)	$ (517)	$ (568)
Non-current liabilities	(16,198)	(19,586)	(35,784)	(20,210)	(20,401)	(40,611)	(4,905)	(5,477)
Net benefit obligation recognized	$ (16,250)	$ (20,161)	$ (36,411)	$ (20,304)	$ (20,978)	$ (41,282)	$ (5,422)	$ (6,045)
Amounts not yet reflected in net periodic benefit costs and included in accumulated other comprehensive loss:								
Prior service credit (cost)	$ 1,910	$ (185)	$ 1,725	$ 2,306	$ (248)	$ 2,058	$ —	$ —
Accumulated loss	(20,058)	(31,906)	(51,964)	(27,486)	(33,125)	(60,611)	(983)	(1,368)
Accumulated other comprehensive loss ("AOCI")	(18,148)	(32,091)	(50,239)	(25,180)	(33,373)	(58,553)	(983)	(1,368)
Cumulative employer contributions in excess of or (below) net periodic benefit cost	1,898	11,930	13,828	4,876	12,395	17,271	(4,439)	(4,677)
Net benefit obligation recognized	$ (16,250)	$ (20,161)	$ (36,411)	$ (20,304)	$ (20,978)	$ (41,282)	$ (5,422)	$ (6,045)

(Dollars in thousands, except share and per share amounts)

The accumulated benefit obligation for all defined benefit pension plans was $157,486 ($66,862 Domestic and $90,624 Foreign) and $175,431 ($70,667 Domestic and $104,764 Foreign) at December 31, 2015 and 2014, respectively.

Information for pension plans with an accumulated benefit obligation in excess of plan assets:

	2015			2014		
	Foreign	Domestic	Total	Foreign	Domestic	Total
Projected benefit obligation	$ 92,406	$ 66,862	$ 159,268	$ 106,827	$ 70,667	$ 177,494
Accumulated benefit obligation	90,624	66,862	157,486	104,764	70,667	175,431
Fair value of plan assets	76,156	46,701	122,857	86,523	49,689	136,212

Information for pension plans with a projected benefit obligation in excess of plan assets:

	2015			2014		
	Foreign	Domestic	Total	Foreign	Domestic	Total
Projected benefit obligation	$ 92,406	$ 66,862	$ 159,268	$ 106,827	$ 70,667	$ 177,494
Fair value of plan assets	76,156	46,701	122,857	86,523	49,689	136,212

Components of net periodic benefit costs – pension plans:

	2015			2014		
	Foreign	Domestic	Total	Foreign	Domestic	Total
Service cost	$ 2,799	$ 250	$ 3,049	$ 2,626	$ 250	$ 2,876
Interest cost	2,476	2,541	5,017	3,210	2,823	6,033
Expected return on plan assets	(2,092)	(3,453)	(5,545)	(2,543)	(3,817)	(6,360)
Settlement loss	170	—	170	—	—	—
Actuarial loss amortization	1,136	2,353	3,489	1,307	1,757	3,064
Prior service cost amortization	(164)	63	(101)	736	63	799
Net periodic benefit cost	$ 4,325	$ 1,754	$ 6,079	$ 5,336	$ 1,076	$ 6,412

	2013		
	Foreign	Domestic	Total
Service cost	$ 2,864	$ 299	$ 3,163
Interest cost	3,150	2,437	5,587
Expected return on plan assets	(2,245)	(3,664)	(5,909)
Actuarial loss amortization	1,486	2,481	3,967
Prior service cost amortization	30	148	178
Net periodic benefit cost	$ 5,285	$ 1,701	$ 6,986

(Dollars in thousands, except share and per share amounts)

Other changes recognized in other comprehensive income:

	2015			2014		
	Foreign	Domestic	Total	Foreign	Domestic	Total
Net (gain) loss arising during the period	$ (3,537)	$ 1,134	$ (2,403)	$ 4,973	$ 7,290	$ 12,263
Effect of plan amendment	—	—	—	242	—	242
Recognition of amortization in net periodic benefit cost						
Prior service cost	164	(63)	101	(736)	(63)	(799)
Actuarial loss	(1,306)	(2,353)	(3,659)	(1,307)	(1,757)	(3,064)
Effect of exchange rates on amounts included in AOCI	(2,353)	—	(2,353)	(3,076)	—	(3,076)
Total recognized in other comprehensive (income) loss	(7,032)	(1,282)	(8,314)	96	5,470	5,566
Total recognized in net periodic benefit cost and other comprehensive (income) loss	$ (2,707)	$ 472	$ (2,235)	$ 5,432	$ 6,546	$ 11,978

	2013		
	Foreign	Domestic	Total
Net (gain) arising during period	$ (1,558)	$ (5,856)	$ (7,414)
Effect of plan amendment	(2,138)	—	(2,138)
Recognition of amortization in net periodic benefit cost			
Prior service cost	(30)	(148)	(178)
Actuarial loss	(1,486)	(2,481)	(3,967)
Effect of exchange rates on amounts included in AOCI	1,007	—	1,007
Total recognized in other comprehensive (income)	(4,205)	(8,485)	(12,690)
Total recognized in net periodic benefit cost and other comprehensive loss (income)	$ 1,080	$ (6,784)	$ (5,704)

Components of net periodic benefit costs – other postretirement plan:

	2015	2014	2013
Service cost	$ 17	$ 19	$ 34
Interest cost	195	232	185
Actuarial loss amortization	83	65	32
Net periodic benefit costs	$ 295	$ 316	$ 251

Other changes recognized in other comprehensive income – other postretirement benefit plans:

	2015	2014	2013
Net (gain) loss arising during period	$ (302)	$ 688	$ (1,331)
Amortization of actuarial loss in net periodic benefit costs	(83)	(65)	(32)
Total recognized in other comprehensive (income) loss	(385)	623	(1,363)
Total recognized in net periodic benefit cost and other comprehensive (income) loss	$ (90)	$ 939	$ (1,112)

(Dollars in thousands, except share and per share amounts)

Estimated amounts that will be amortized from accumulated other comprehensive loss over the next fiscal year:

	Pension Plans			Other Post-Retirement Benefits
	Foreign	Domestic	Total	
Actuarial loss	$ 843	$ 2,388	$ 3,231	$ 61
Prior service (credit) cost	(161)	63	(98)	—
	$ 682	$ 2,451	$ 3,133	$ 61

Weighted-average assumptions used to determine benefit obligations at December 31, 2015 and 2014:

	Pension Benefits		Other Postretirement Benefits	
	2015	2014	2015	2014
U.S. Plans:				
Discount rate	4.07 %	3.72 %	3.88 %	3.45 %
Rate of compensation increase	3.63 %	3.63 %	N/A	N/A
Foreign Plans:				
Discount rate	2.95 %	2.51 %	N/A	N/A
Rate of compensation increase	2.41 %	3.05 %	N/A	N/A

Weighted-average assumptions used to determine net periodic benefit costs for the years ended December 31, 2015 and 2014:

	Pension Benefits		Other Postretirement Benefits	
	2015	2014	2015	2014
U.S. Plans:				
Discount rate	3.72 %	4.48 %	3.45 %	4.05 %
Expected long-term return on plan assets	7.30 %	7.85 %	N/A	N/A
Rate of compensation increase	3.63 %	3.63 %	N/A	N/A
Foreign Plans:				
Discount rate	2.51 %	3.84 %	N/A	N/A
Expected long-term return on plan assets	2.55 %	3.67 %	N/A	N/A
Rate of compensation increase	3.05 %	3.05 %	N/A	N/A

As of December 31, 2015, the Company has elected to use a split discount rate (spot-rate approach) for the U.S. plans and certain foreign plans. Under the spot rate approach, benefit obligations have been determined based on application of the spot rates on a given yield curve at each future year to each plan's projected cash flows. The use of the spot-rate approach did not have an impact on the Company's 2015 Consolidated Financial Statements.

The long-term rates of return on assets were selected from within the reasonable range of rates determined by (a) historical real returns for the asset classes covered by the investment policy and (b) projections of inflation over the long-term period during which benefits are payable to plan participants. See Note 1 of Notes to Consolidated Financial Statements for further information.

Assumed health care cost trend rates at December 31, 2015 and 2014:

	2015	2014
Health care cost trend rate for next year	6.70 %	6.90 %
Rate to which the cost trend rate is assumed to decline (the ultimate trend rate)	4.50 %	4.50 %
Year that the rate reaches the ultimate trend rate	2037	2027

(Dollars in thousands, except share and per share amounts)

Assumed health care cost trend rates could have a significant effect on the amounts reported for the health care plans. A one-percentage-point change in assumed health care cost trend rates would have the following effects:

	1% Point Increase	1% Point Decrease
Effect on total service and interest cost	$ 20	$ (17)
Effect on postretirement benefit obligations	484	(422)

Plan Assets and Fair Value

The Company's pension plan target asset allocation and the weighted-average asset allocations at December 31, 2015 and 2014 by asset category were as follows:

Asset Category	Target	2015	2014
U.S. Plans			
Equity securities	61%	65%	66%
Debt securities	32%	34%	33%
Other	7%	1%	1%
Total	100%	100%	100%
Foreign Plans			
Equity securities and other	23%	26%	22%
Debt securities	77%	74%	78%
Total	100%	100%	100%

As of December 31, 2015 and 2014, "Other" consisted principally of cash and cash equivalents (approximately 1% to 2% of plan assets in each respective period).

The following is a description of the valuation methodologies used for the investments measured at fair value, including the general classification of such instruments pursuant to the valuation hierarchy:

Cash and Cash Equivalents

Cash and cash equivalents consist of cash and money market funds and are classified as Level 1 investments.

Common Stock

Common stock is valued based on quoted market prices on an exchange in an active market and is classified as Level 1 investments.

Registered Investment Companies

The shares of registered investment companies, which represent the net asset values of shares held by the Plan, are valued based on quoted market prices on an exchange in an active market and are classified as Level 1 investments.

Fixed Income Corporate Securities

Corporate fixed income securities are valued using third party pricing services which are based on a combination of quoted market prices on an exchange in an active market as well as proprietary pricing models and inputs using observable market data and are classified as Level 2 investments.

Fixed Income U.S. and Foreign Government Securities

U.S. and foreign government fixed income securities are valued using third party pricing services which are based on a combination of quoted market prices on an exchange in an active market as well as proprietary pricing models and inputs using observable market data and are classified as Level 2 investments.

Pooled Separate Accounts

Investments in the U.S. pension plan pooled separate accounts consist of insurance annuity contracts and are valued based on the reported unit value at year end. Units of the pooled separate accounts are not traded on an exchange or in an active market; however, valuation is based on the underlying investments of the units and are classified as Level 2 investments.

(Dollars in thousands, except share and per share amounts)

Insurance Contract

Investments in the foreign pension plan insurance contract are valued at the highest value available for the Company at year end, either the reported cash surrender value of the contract or the vested benefit obligation. Both the cash surrender value and the vested benefit obligation are determined based on unobservable inputs, which are contractually or actuarially determined, regarding returns, fees, the present value of the future cash flows of the contract and benefit obligations. The contract is classified as a Level 3 investment.

Diversified Equity Securities - Registered Investment Companies

Investments in the foreign pension plan diversified equity securities of registered investment companies are based upon the quoted redemption value of shares in the fund owned by the plan at year end. The shares of the fund are not available on an exchange or in an active market; however, the fair value is determined based on the underlying investments in the fund as traded on an exchange in an active market and are classified as Level 2 investments.

Fixed Income – Foreign Registered Investment Companies

Investments in the foreign pension plan fixed income securities of foreign registered investment companies are based upon the quoted redemption value of shares in the fund owned by the plan at year end. The shares of the fund are not available on an exchange or in an active market; however, the fair value is determined based on the underlying investments in the fund as traded on an exchange in an active market and are classified as Level 2 investments.

Real Estate

The foreign pension plan's investment in real estate consists of an investment in a property fund. The fund's underlying investments consist of real property, which are valued using unobservable inputs. The property fund is classified as a Level 3 investment.

Commingled Funds

Investments in the foreign pension plan commingled funds represent pooled institutional investments, including primarily investment trusts. As of December 31, 2015, commingled funds included approximately 30 percent of investments in equity, 61 percent of investments in fixed income, and 9 percent of other non-related investments. The commingled funds are not available on an exchange or in an active market; however, the fair value is determined based on the underlying pooled investments. Generally, these underlying investments are traded on an exchange in an active market and, therefore, the funds are classified as Level 2 investments.

As of December 31, 2015 and 2014, the U.S. and foreign plans' investments measured at fair value on a recurring basis were as follows:

		Fair Value Measurements at December 31, 2015 Using Fair Value Hierarchy		
U.S. Pension Assets	**Total Fair Value**	**Level 1**	**Level 2**	**Level 3**
Cash and cash equivalents	$ 753	$ 753	$ —	$ —
Large capitalization common stock	13,346	13,346	—	—
Large capitalization registered investment companies	6,363	6,363	—	—
Small capitalization common stock	773	773	—	—
Small capitalization registered investment companies	2,333	2,333	—	—
International developed and emerging markets registered investment companies	5,166	5,166	—	—
International developed and emerging markets common stock	2,519	2,519	—	—
Fixed income corporate securities	9,601	—	9,601	—
Fixed income registered investment companies	4,147	4,147	—	—
Fixed income U.S. and foreign government securities	308	—	308	—
Pooled separate accounts	1,392	—	1,392	—
Total U.S. pension plan assets	$ 46,701	$ 35,400	$ 11,301	$ —

(Dollars in thousands, except share and per share amounts)

	Total	Fair Value Measurements at December 31, 2015 Using Fair Value Hierarchy		
Foreign Pension Assets	**Fair Value**	**Level 1**	**Level 2**	**Level 3**
Cash and cash equivalents	$ 7	$ 7	$ —	$ —
Insurance contract	62,409	—	—	62,409
Diversified equity securities - registered investment companies	7,180	—	7,180	—
Fixed income - foreign registered investment companies	2,290	—	2,290	—
Commingled funds	1,882	—	1,882	—
Real estate - registered investment companies	2,388	—	—	2,388
Total foreign pension assets	$ 76,156	$ 7	$ 11,352	$ 64,797
Total pension assets at fair value	$ 122,857	$ 35,407	$ 22,653	$ 64,797

	Total	Fair Value Measurements at December 31, 2014 Using Fair Value Hierarchy		
U.S. Pension Assets	**Fair Value**	**Level 1**	**Level 2**	**Level 3**
Cash and cash equivalents	$ 490	$ 490	$ —	$ —
Large capitalization common stock	14,956	14,956	—	—
Large capitalization registered investment companies	6,339	6,339	—	—
Small capitalization common stock	920	920	—	—
Small capitalization registered investment companies	2,416	2,416	—	—
International developed and emerging markets registered investment companies	5,638	5,638	—	—
International developed and emerging markets common stock	2,600	2,600	—	—
Fixed income corporate securities	9,848	—	9,848	—
Fixed income registered investment companies	4,647	4,647	—	—
Fixed income U.S. and foreign government securities	406	—	406	—
Pooled separate accounts	1,429	—	1,429	—
Total U.S. pension plan assets	$ 49,689	$ 38,006	$ 11,683	$ —
Foreign Pension Assets				
Cash and cash equivalents	$ 76	$ 76	$ —	$ —
Insurance contract	72,417	—	—	72,417
Diversified equity securities - registered investment companies	6,565	—	6,565	—
Fixed income - foreign registered investment companies	4,946	—	4,946	—
Commingled funds	2,041	—	2,041	—
Real estate - registered investment companies	478	—	—	478
Total foreign pension assets	$ 86,523	$ 76	$ 13,552	$ 72,895
Total pension assets at fair value	$ 136,212	$ 38,082	$ 25,235	$ 72,895

(Dollars in thousands, except share and per share amounts)

Changes in the fair value of the foreign plans' Level 3 investments during the years ended December 31, 2015 and 2014 were as follows:

	Insurance Contract	Real Estate Fund	Total
Balance at December 31, 2013	$ 57,175	$ 434	$ 57,609
Purchases	3,044	—	3,044
Settlements	(1,705)	—	(1,705)
Unrealized gains	22,802	72	22,874
Currency translation adjustment	(8,899)	(28)	(8,927)
Balance at December 31, 2014	72,417	478	72,895
Purchases	953	1,937	2,890
Settlements	(1,239)	—	(1,239)
Unrealized (losses) gains	(2,402)	60	(2,342)
Currency translation adjustment	(7,320)	(87)	(7,407)
Balance at December 31, 2015	$ 62,409	$ 2,388	$ 64,797

U.S. pension assets include Company common stock in the amounts of $773 (2% of total U.S. plan assets) and $920 (2% of total U.S. plan assets) at December 31, 2015 and 2014, respectively.

During 2013, it was discovered that the Company's subsidiary in the U.K. did not appropriately amend a trust for a legacy change in its pension scheme, as it related to a past retirement age equalization law. Given the lack of an official deed to the pension trust, the effective date of the change to the subsidiary's pension scheme differed from the Company's historical beliefs, but the extent of the potential exposure was not estimable. In the first quarter of 2014, the Company recorded costs of $902, or $0.05 per diluted share, related to prior service cost and interest cost, to appropriately reflect the past plan amendment related to the retirement age equalization law.

Cash Flows

Contributions

The Company expects to make minimum cash contributions of $7,504 to its pension plans ($4,775 Domestic and $2,729 Foreign) and $517 to its other postretirement benefit plan in 2016.

Estimated Future Benefit Payments

The following benefit payments, which reflect expected future service, as appropriate, are expected to be paid:

	Pension Benefits			Other Post-Retirement
	Foreign	Domestic	Total	Benefits
2016	$ 1,779	$ 4,756	$ 6,535	$ 517
2017	1,906	4,535	6,441	512
2018	2,103	4,561	6,664	490
2019	2,248	4,575	6,823	471
2020	2,486	4,297	6,783	440
2021 to 2025	17,147	22,808	39,955	1,870

The Company maintains a plan under which supplemental retirement benefits are provided to certain officers. Benefits payable under the plan are based on a combination of years of service and existing postretirement benefits. Included in total pension costs are charges of $927, $826 and $811 in 2015, 2014 and 2013, respectively, representing the annual accrued benefits under this plan.

Defined Contribution Plan

The Company has a 401(k) plan with an employer match covering a majority of its domestic employees. The plan allows for and the Company has paid a nonelective contribution on behalf of participants who have completed one year of service equal to 3% of the eligible participants' compensation in the form of Company common stock. Total Company contributions were $2,601, $2,498 and $2,027 for 2015, 2014 and 2013, respectively.

(Dollars in thousands, except share and per share amounts)

Note 19 – Other Non-Current Liabilities

Other non-current liabilities as of December 31, 2015 and 2014 were as follows:

	December 31, 2015	December 31, 2014
Restricted insurance settlement	$ 22,874	$ 23,599
Uncertain tax positions (includes interest and penalties)	13,332	14,607
Deferred and other long-term compensation	5,866	6,492
Other	512	792
Total other non-current liabilities	$ 42,584	$ 45,490

See also Notes 15 and 23 of Notes to Consolidated Financial Statements.

Note 20 – Equity and Accumulated Other Comprehensive Loss

In May 2015, the Company's Board of Directors authorized a share repurchase program for the repurchase of up to $100,000 of Quaker Chemical Corporation common stock (the "2015 Share Repurchase Program"). The 2015 Share Repurchase Program has no expiration date. The 2015 Share Repurchase Program provides a framework of conditions under which management can repurchase shares of the Company's common stock. The Company intends to repurchase shares to at least offset the dilutive impact of shares issued each year as part of its employee benefit and share-based compensation plans, and could repurchase more if the Company considers the share price to be an amount that is an advantageous return for its shareholders. The purchases may be made in the open market or in private and negotiated transactions, in accordance with applicable laws, rules and regulations. In connection with the 2015 Share Repurchase Program, the remaining unutilized 1995 and 2005 Board of Directors authorized share repurchase programs were terminated.

In connection with the 2015 Share Repurchase Program, the Company acquired 87,386 shares of common stock for $7,276, during the year ended December 31, 2015. The Company has elected not to hold treasury shares, and, therefore, has retired the shares as they are repurchased. It is the Company's accounting policy to record the excess paid over par value as a reduction in retained earnings for all shares repurchased.

The Company has 30,000,000 shares of common stock authorized, with a par value of $1, and 13,288,113 and 13,300,891 shares issued as of December 31, 2015 and 2014, respectively. The change in shares issued and outstanding during 2015 was primarily related to 87,386 shares repurchased in connection with the 2015 Share Repurchase Program offset by 51,848 shares issued for equity-based compensation plans, 6,084 shares issued for the ESPP and 16,676 shares issued for the exercise of stock options and other employee and director-related share activity.

Holders of record of the Company's common stock for a period of less than 36 consecutive calendar months or less are entitled to one vote per share of common stock. Holders of record of the Company's common stock for a period greater than 36 consecutive calendar months are entitled to 10 votes per share of common stock.

The Company is authorized to issue 10,000,000 shares of preferred stock, $1 par value, subject to approval by the Board of Directors. The Board of Directors may designate one or more series of preferred stock and the number of shares, rights, preferences, and limitations of each series. As of December 31, 2015, no preferred stock had been issued.

(Dollars in thousands, except share and per share amounts)

The following table shows the reclassifications from and resulting balances of AOCI for the years ended December 31, 2015, 2014 and 2013:

	Currency Translation Adjustments	Defined Benefit Pension Plans	Unrealized Gain (Loss) in Available-for-Sale Securities	Total
Balance at December 31, 2012	$ 3,336	$ (46,914)	$ 1,723	$ (41,855)
Other comprehensive (loss) income before reclassifications	(2,184)	9,876	2,543	10,235
Amounts reclassified from AOCI	—	4,177	(2,758)	1,419
Related tax amounts	—	(4,572)	73	(4,499)
Balance at December 31, 2013	1,152	(37,433)	1,581	(34,700)
Other comprehensive (loss) income before reclassifications	(15,464)	(9,232)	2,057	(22,639)
Amounts reclassified from AOCI	—	3,043	(2,245)	798
Related tax amounts	—	2,071	64	2,135
Balance at December 31, 2014	(14,312)	(41,551)	1,457	(54,406)
Other comprehensive (loss) income before reclassifications	(24,232)	5,057	(850)	(20,025)
Amounts reclassified from AOCI	—	3,642	(632)	3,010
Related tax amounts	—	(2,399)	504	(1,895)
Balance at December 31, 2015	$ (38,544)	$ (35,251)	$ 479	$ (73,316)

Approximately 30% and 70% of the amounts reclassified from accumulated other comprehensive loss to the Consolidated Statement of Income for defined benefit retirement plans during the years ended December 31, 2015, 2014 and 2013 were recorded in cost of goods sold and SG&A, respectively. See Note 18 of Notes to Consolidated Financial Statements for further information. All reclassifications related to unrealized gain (loss) in available-for-sale securities relate to the Company's equity interest in a captive insurance company and are recorded in equity in net income of associated companies. The amounts reported on the Consolidated Statement of Changes in Equity for non-controlling interest are related to currency translation adjustments.

Note 21 – Business Acquisitions

In July 2015, the Company acquired Verkol, a leading specialty grease and other lubricants manufacturer based in northern Spain for its EMEA reportable operating segment for approximately 37,737 EUR, or approximately $41,393, which includes a post-closing adjustment of 1,282 EUR, or approximately $1,384, accrued for by the Company as of December 31, 2015 and subsequently paid in January 2016. The purchase included cash acquired of approximately 14,053 EUR, or approximately $15,423, and assumed long-term debt of approximately 2,187 EUR, or approximately $2,400. In addition, the Company incurred approximately $2,813, or $0.15 per diluted share, of one-time transaction expenses in the third quarter of 2015, related to this acquisition. Verkol is a market leader with world-class grease manufacturing capabilities and state-of-the-art research and development facilities, selling products into industrial end markets with a particular strength serving the steel industry. Also, Verkol brings a unique technology in continuous casting products that will provide the Company with cross-selling opportunities to its global steel customer base. The Company allocated $11,743 of the purchase price to intangible assets, comprised of trademarks and formulations, to be amortized over 15 years; a non-compete agreement, to be amortized over 4 years; and customer relationships, to be amortized over 15 years. In addition, the Company recorded $5,165 of goodwill, including the $1,384 post-closing adjustment mentioned above, related to expected value not allocated to other acquired assets, none of which will be tax deductible.

(Dollars in thousands, except share and per share amounts)

As of December 31, 2015, the allocation of the purchase price for the Verkol acquisition has not been finalized and the one-year measurement period has not ended. Further adjustments may be necessary as a result of the Company's assessment of additional information related to the fair value of assets acquired and liabilities assumed. The following table presents the current allocation of the purchase price of the assets acquired and liabilities assumed:

Verkol Acquisition		
Current assets	$	30,998
Property, plant and equipment		7,941
Intangibles		
Customer lists and rights to sell		6,146
Trademarks and patents		5,378
Other intangibles		219
Goodwill		5,165
Other long-term assets		158
Total assets purchased		56,005
Current liabilities		(6,681)
Long-term debt		(2,400)
Other long-term liabilities		(5,531)
Total liabilities assumed		(14,612)
Cash paid for acquisitions	$	41,393

In December 2014, the Company acquired a business that is principally concerned with safety fluid applications for mining sites in its Asia/Pacific reportable operating segment for net consideration of approximately 2,850 Australian dollars, or approximately $2,355. The Company also assumed an additional 300 Australian dollars hold-back of consideration, which was paid out and settled during the fourth quarter of 2015. This acquisition provides a strategic opportunity for Quaker in the core Australian mining market. The Company allocated $1,802 of the purchase price to intangible assets, comprised of trademarks and formulations, to be amortized over 15 years; a non-competition agreement, to be amortized over 5 years; and customer relationships, to be amortized over 15 years. In addition, the Company recorded $1,178 of goodwill, related to expected value not allocated to other acquired assets, none of which will be tax deductible.

In November 2014, the Company acquired Binol AB ("Binol"), a leading bio-lubricants producer primarily serving the Nordic region for its EMEA reportable operating segment for approximately 136,500 SEK, or approximately $18,536, which is net of 4,400 SEK, or approximately $528, received by the Company as part of a post-closing adjustment in the first quarter of 2015. The post-closing adjustment recorded in the first quarter of 2015 adjusted the acquisition's goodwill. This acquisition provides a strategic opportunity for Quaker to leverage Binol's environmentally friendly technology and customer-aligned products, including neat oil technology for metalworking applications and biodegradable hydraulic oils, across the Company's global footprint. The Company allocated $11,805 of the purchase price to intangible assets, comprised of trademarks and formulations, to be amortized over 15 years; a non-competition agreement, to be amortized over 5 years; and customer relationships, to be amortized over 14 years. In addition, the Company recorded $5,726 of goodwill, net of the $528 post-closing adjustment mentioned above, related to expected value not allocated to other acquired assets, none of which will be tax deductible.

In August 2014, the Company acquired ECLI Products, LLC ("ECLI"), a specialty grease manufacturer for its North American reportable operating segment for approximately $53,145, including certain post-closing adjustments. ECLI specializes in greases for OEM first-fill customers across several industry sectors, including automotive, industrial, aerospace/military, electronics, office automation and natural resources. This acquisition complements Quaker's entry into the specialty grease market that began in 2010, and, also, provides an opportunity to leverage Quaker's global footprint with its current market expertise. The Company allocated $31,050 of the purchase price to intangible assets, comprised of trademarks and formulations, to be amortized over 10 years; customer relationships, to be amortized over 15 years; and a non-compete agreement, to be amortized over 5 years. In addition, the Company recorded $14,642 of goodwill, related to expected value not allocated to other acquired assets, all of which will be tax deductible.

(Dollars in thousands, except share and per share amounts)

During 2015, the Company identified and recorded certain adjustments to the allocations of the purchase price for certain 2014 acquisitions. These adjustments were the result of the Company assessing additional information related to assets acquired and liabilities assumed during the one-year measurement period following each acquisition. As of December 31, 2015, the allocations of the purchase price for all of the Company's 2014 acquisitions have been finalized. The following table presents the final allocation of the purchase price of the assets acquired and liabilities assumed in all of the Company's acquisitions in 2014:

2014 Acquisitions		
Current assets	$	12,413
Property, plant and equipment		4,158
Intangibles		
Customer lists and rights to sell		30,924
Trademarks and patents		12,606
Other intangibles		1,127
Goodwill		21,546
Other long-term assets		198
Total assets purchased		82,972
Current liabilities		(4,562)
Long-term liabilities		(4,374)
Total liabilities assumed		(8,936)
Cash paid for acquisitions	$	74,036

Included in the 2014 acquisitions was approximately $1,037 of cash acquired.

Additionally, in June 2014, the Company acquired the remaining 49% ownership interest in its Australian affiliate, Quaker Chemical (Australasia) Pty. Limited ("QCA") for 8,000 Australian dollars, or approximately $7,577, from its joint venture partner, Nuplex Industries. QCA is a part of the Company's Asia/Pacific reportable operating segment. This acquisition further strengthens Quaker's position in Australia, and allows the Company to simplify its overall corporate structure and improve its organizational efficiencies. As this acquisition was a change in an existing controlling ownership, the Company recorded $6,450 of excess purchase price over the carrying value of the noncontrolling interest in Additional Paid in Capital.

In May 2013, the Company acquired a business that primarily related to tin plating for its North American reportable operating segment for net consideration of approximately $1,831.

In January 2013, the Company acquired a chemical milling maskants distribution network for net consideration of approximately $647, which was assigned to the North America reportable operating segment. The Company also assumed a hold-back of consideration for potential indemnity obligations, which was paid to the former shareholders during the first quarter of 2014.

In December 2010, the Company acquired Summit Lubricants, Inc., which manufactures and distributes specialty greases and lubricants, for approximately $29,833, including certain post-closing adjustments finalized in 2011. Liabilities assumed included an earnout to be paid to the former shareholders if certain earnings targets were met by the end of 2013. During 2013, the Company recorded net increases to other income of approximately $497 in its Consolidated Statement of Income to finalize the Company's estimate of the fair value of this contingent consideration liability, which was settled and paid during the second quarter of 2014 with a payment to the former shareholder of approximately $4,709.

The results of operations of the acquired businesses and assets are included in the Consolidated Statements of Income from their respective acquisition dates. Transaction expenses associated with these acquisitions are included in SG&A in the Company's Consolidated Statements of Income. Certain pro forma and other information is not presented, as the operations of the acquired businesses are not material to the overall operations of the Company for the periods presented.

(Dollars in thousands, except share and per share amounts)

Note 22 – Fair Value Measures

The Company has valued its company-owned life insurance policies and various deferred compensation assets and liabilities at fair value. The Company's assets and liabilities subject to fair value measurement were as follows:

		Fair Value Measurements at December 31, 2015 Using Fair Value Hierarchy		
Assets	Total Fair Value	Level 1	Level 2	Level 3
Company-owned life insurance	$ 1,336	$ —	$ 1,336	$ —
Total	$ 1,336	$ —	$ 1,336	$ —

		Fair Value Measurements at December 31, 2014 Using Fair Value Hierarchy		
Assets	Total Fair Value	Level 1	Level 2	Level 3
Company-owned life insurance	$ 1,361	$ —	$ 1,361	$ —
Company-owned life insurance - Deferred compensation assets	310	—	310	—
Other deferred compensation assets				
Large capitalization registered investment companies	71	71	—	—
Mid capitalization registered investment companies	7	7	—	—
Small capitalization registered investment companies	13	13	—	—
International developed and emerging markets registered investment companies	37	37	—	—
Fixed income registered investment companies	6	6	—	—
Total	$ 1,805	$ 134	$ 1,671	$ —

		Fair Value Measurements at December 31, 2014 Using Fair Value Hierarchy		
Liabilities	Total Fair Value	Level 1	Level 2	Level 3
Deferred compensation liabilities				
Large capitalization registered investment companies	$ 404	$ 404	$ —	$ —
Mid capitalization registered investment companies	108	108	—	—
Small capitalization registered investment companies	90	90	—	—
International developed and emerging markets registered investment companies	179	179	—	—
Fixed income registered investment companies	40	40	—	—
Fixed general account	160	—	160	—
Total	$ 981	$ 821	$ 160	$ —

During the second quarter of 2015, the Company's Board of Directors authorized the termination of its Executive Deferred Compensation Plan. As a result, the Company had no deferred compensation assets or liabilities subject to fair value measurement and accounting related to its Executive Deferred Compensation Plan on its Consolidated Balance Sheet as of December 31, 2015. In connection with the termination of the Executive Deferred Compensation Plan, the Company paid out associated liabilities of $1,018 during the third quarter of 2015, which were primarily funded by the Company's previously held deferred compensation assets.

The fair values of Company-owned life insurance ("COLI") and COLI deferred compensation assets are based on quotes for like instruments with similar credit ratings and terms. The fair values of other deferred compensation assets and liabilities are based on quoted prices in active markets. The Company did not hold Level 3 investments as of December 31, 2015 and 2014, respectively, so related disclosures have not been included.

Note 23 – Commitments and Contingencies

In 1992, the Company identified certain soil and groundwater contamination at AC Products, Inc. ("ACP"), a wholly owned subsidiary. In voluntary coordination with the Santa Ana California Regional Water Quality Board ("SACRWQB"), ACP has been remediating the contamination, the principal contaminant of which is perchloroethylene ("PERC"). In 2004, the Orange County Water District ("OCWD") filed a civil complaint against ACP and other parties seeking to recover compensatory and other damages related to the investigation and remediation of the contamination in the groundwater. Pursuant to a settlement agreement with OCWD, ACP agreed, among other things, to operate the two groundwater treatment systems to hydraulically contain groundwater contamination emanating from ACP's site until the concentrations of PERC released by ACP fell below the current Federal maximum contaminant level for four consecutive quarterly sampling events. In February 2014, ACP ceased operation at one of its two groundwater treatment systems, as it had met the above condition for closure. Based on the most recent modeling, it is estimated that the remaining system will operate for another one to three years.

As of December 31, 2015, the Company believes that the range of potential-known liabilities associated with the balance of ACP water remediation program is approximately $360 to $1,030, for which the Company has sufficient reserves. The low and high ends of the range are based on the length of operation of the treatment system as determined by groundwater modeling. Costs of operation include the operation and maintenance of the extraction well, groundwater monitoring and program management.

The Company believes, although there can be no assurance regarding the outcome of other unrelated environmental matters, that it has made adequate accruals for costs associated with other environmental problems of which it is aware. Approximately $295 and $173 was accrued at December 31, 2015 and 2014, respectively, to provide for such anticipated future environmental assessments and remediation costs.

An inactive subsidiary of the Company that was acquired in 1978 sold certain products containing asbestos, primarily on an installed basis, and is among the defendants in numerous lawsuits alleging injury due to exposure to asbestos. The subsidiary discontinued operations in 1991 and has no remaining assets other than proceeds received from insurance settlements. To date, the overwhelming majority of these claims have been disposed of without payment and there have been no adverse judgments against the subsidiary. Based on a continued analysis of the existing and anticipated future claims against this subsidiary, it is currently projected that the subsidiary's total liability over the next 50 years for these claims is less than $3,000 (excluding costs of defense). Although the Company has also been named as a defendant in certain of these cases, no claims have been actively pursued against the Company, and the Company has not contributed to the defense or settlement of any of these cases pursued against the subsidiary. These cases were handled by the subsidiary's primary and excess insurers who had agreed in 1997 to pay all defense costs and be responsible for all damages assessed against the subsidiary arising out of existing and future asbestos claims up to the aggregate limits of their policies. A significant portion of this primary insurance coverage was provided by an insurer that is insolvent, and the other primary insurers asserted that the aggregate limits of their policies have been exhausted. The subsidiary challenged the applicability of these limits to the claims being brought against the subsidiary. In response, two of the three carriers entered into separate settlement and release agreements with the subsidiary in 2005 and 2007 for $15,000 and $20,000, respectively. The proceeds of both settlements are restricted and can only be used to pay claims and costs of defense associated with the subsidiary's asbestos litigation. In 2007, the subsidiary and the remaining primary insurance carrier entered into a Claim Handling and Funding Agreement, under which the carrier is paying 27% of defense and indemnity costs incurred by or on behalf of the subsidiary in connection with asbestos bodily injury claims. The agreement continues until terminated and can only be terminated by either party by providing a minimum of two years prior written notice. As of December 31, 2015, no notice of termination has been given under this agreement. At the end of the term of the agreement, the subsidiary may choose to again pursue its claim against this insurer regarding the application of the policy limits. The Company believes that, if the coverage issues under the primary policies with the remaining carrier are resolved adversely to the subsidiary and all settlement proceeds were used, the subsidiary may have limited additional coverage from a state guarantee fund established following the insolvency of one of the subsidiary's primary insurers. Nevertheless, liabilities in respect of claims may exceed the assets and coverage available to the subsidiary.

If the subsidiary's assets and insurance coverage were to be exhausted, claimants of the subsidiary may actively pursue claims against the Company because of the parent-subsidiary relationship. The Company does not believe that such claims would have merit or that the Company would be held to have liability for any unsatisfied obligations of the subsidiary as a result of such claims. After evaluating the nature of the claims filed against the subsidiary and the small number of such claims that have resulted in any payment, the potential availability of additional insurance coverage at the subsidiary level, the additional availability of the Company's own insurance and the Company's strong defenses to claims that it should be held responsible for the subsidiary's obligations because of the parent-subsidiary relationship, the Company believes it is not probable that the Company will incur losses. The Company has been successful to date having any claims naming it dismissed during initial proceedings. Since the Company may be in this stage of litigation for some time, it is not possible to estimate additional losses or range of loss, if any.

As initially disclosed in 2010, one of the Company's subsidiaries may have paid certain value-added-taxes ("VAT") incorrectly and, in certain cases, may not have collected sufficient VAT from certain customers. The VAT rules and regulations at issue are complex, vary among the jurisdictions and can be contradictory, in particular as to how they relate to the subsidiary's products and to sales between jurisdictions. Since its inception, the subsidiary had been consistent in its VAT collection and remittance practices and had never been contacted by any tax authority relative to VAT. The subsidiary later determined that for certain products, a portion of the VAT was incorrectly paid and that the total VAT due exceeded the amount originally collected and remitted by the subsidiary. In response, the subsidiary modified its VAT invoicing and payment procedures to eliminate or mitigate future exposure.

(Dollars in thousands, except share and per share amounts)

In 2010, three jurisdictions contacted the subsidiary and, since then, the subsidiary has either participated in an amnesty program or entered into a settlement whereby it paid a reduced portion of the amounts owed in resolution of those jurisdictions' claims and no related accruals existed as of December 31, 2015 or 2014.

In 2013, an additional jurisdiction issued an assessment against the subsidiary for certain tax years leading to a net charge of $796, which represented the Company's best estimate of the amount that may ultimately be paid. The subsidiary filed an appeal of the assessment alleging certain errors by such jurisdiction related to the assessment. During the fourth quarter of 2015, the subsidiary participated in an amnesty program whereby it paid a reduced portion of the amounts owed in resolution of the jurisdictions' claims, which was materially in line with the Company's previous estimate. As a result, the Company has no remaining accrual for this or any other related tax assessment at December 31, 2015.

In analyzing the subsidiary's exposure, it is difficult to estimate both the probability and the amount of any potential liabilities due to a number of factors, including: the decrease in exposure over time due to applicable statutes of limitations and actions taken by the subsidiary, the joint liability of customers and suppliers for a portion of the VAT, the availability of a VAT refund for VAT incorrectly paid through an administrative process, any amounts which may have been or will be paid by customers, as well as the timing and structure of any tax amnesties or settlements. In addition, interest and penalties on any VAT due can be a multiple of the base tax. The subsidiary may contest any tax assessment administratively and/or judicially for an extended period of time, but may ultimately resolve its disputes through participation in tax amnesty programs, which are a common practice for settling tax disputes in the jurisdictions in question and which have historically occurred on a regular basis, resulting in significant reductions of interest and penalties. Also, the timing of payments and refunds of VAT may not be contemporaneous, and, if additional VAT is owed, it may not be fully recoverable from customers. As of December 31, 2015, the Company believes there is one potentially impacted jurisdiction remaining, and if the jurisdiction were to initiate audits and issue assessments, the remaining exposure, net of refunds, could be from $0 to $700, assuming the continued availability of future amnesty programs or settlements to reduce the interest and penalties. If there are future assessments but no such future amnesty programs or settlements, the potential exposure could be higher.

The Company is party to other litigation which management currently believes will not have a material adverse effect on the Company's results of operations, cash flows or financial condition.

The Company leases certain manufacturing and office facilities and equipment under non-cancelable operating leases with various terms from 1 to 8 years expiring in 2023. Rent expense for 2015, 2014 and 2013 was $5,921, $5,792, and $5,510, respectively.

The Company's minimum rental commitments under non-cancelable operating leases at December 31, 2015 for future years were approximately:

2016	$	5,291
2017		3,040
2018		779
2019		485
2020		172
2021 and beyond		81

(Dollars in thousands, except share and per share amounts)

Note 24 – Quarterly Results (unaudited)

	First Quarter (1)	Second Quarter (2)	Third Quarter (3)	Fourth Quarter (4)
2015				
Net sales	$ 181,330	$ 183,726	$ 189,224	$ 183,275
Gross profit	66,328	70,617	71,329	68,766
Operating income	17,864	21,445	18,728	13,223
Net income attributable to Quaker Chemical Corporation	10,378	15,038	14,371	11,393
Net income attributable to Quaker Chemical Corporation Common Shareholders - Basic	$ 0.78	$ 1.13	$ 1.08	$ 0.86
Net income attributable to Quaker Chemical Corporation Common Shareholders - Diluted	$ 0.78	$ 1.13	$ 1.08	$ 0.86
2014				
Net sales	$ 181,674	$ 191,286	$ 198,867	$ 194,033
Gross profit	65,114	68,216	70,300	69,576
Operating income	19,373	20,945	20,553	16,485
Net income attributable to Quaker Chemical Corporation	12,730	15,427	15,696	12,639
Net income attributable to Quaker Chemical Corporation Common Shareholders - Basic	$ 0.96	$ 1.17	$ 1.18	$ 0.95
Net income attributable to Quaker Chemical Corporation Common Shareholders - Diluted	$ 0.96	$ 1.16	$ 1.18	$ 0.95

(1) Net income attributable to Quaker Chemical Corporation for both the first quarter of 2015 and 2014 includes earnings from the Company's equity interest in a captive insurance company of approximately $0.06 and $0.06 per diluted share, respectively. Net income attributable to Quaker Chemical Corporation in the first quarter of 2015 includes a currency conversion charge of approximately $0.21 per diluted share related to the Company's 50% owned equity affiliate in Venezuela and costs related to streamlining certain operations in the Company's South America segment of approximately $0.01 per diluted share. Net income attributable to Quaker Chemical Corporation in the first quarter of 2014 includes a pension charge related to an amendment to the Company's U.K. pension plan of approximately $0.05 per diluted share.

(2) Net income attributable to Quaker Chemical Corporation for both the second quarter of 2015 and 2014 includes (losses) earnings from the Company's equity interest in a captive insurance company of approximately ($0.01) and $0.09 per diluted share, respectively. Net income attributable to Quaker Chemical Corporation for the second quarter of 2015 includes a charge due to a certain U.S. customer bankruptcy of approximately $0.01 per diluted share. Net income attributable to Quaker Chemical Corporation in the second quarter of 2014 includes costs related to streamlining certain operations in the Company's EMEA segment of approximately $0.02 per diluted share and a currency conversion charge of approximately $0.02 per diluted share related to the Company's 50% owned equity affiliate in Venezuela.

(3) Net income attributable to Quaker Chemical Corporation for both the third quarter of 2015 and 2014 includes earnings from the Company's equity interest in a captive insurance company of approximately $0.04 and $0.01 per diluted share, respectively. Net income attributable to Quaker Chemical Corporation for the third quarter of 2015 includes charges of approximately $0.15 per diluted share related to certain one-time transaction expenses associated with the Company's third quarter acquisition of Verkol, S.A. Net income attributable to Quaker Chemical Corporation for the third quarter of 2014 includes charges due to a U.S. customer bankruptcy of approximately $0.02 per diluted share.

(4) Net income attributable to Quaker Chemical Corporation for both the fourth quarter of 2015 and 2014 includes earnings from the Company's equity interest in a captive insurance company of approximately $0.07 and $0.02 per diluted share, respectively. Net income attributable to Quaker Chemical Corporation for the fourth quarter of 2015 includes charges of approximately $0.36 per diluted share related to a global restructuring plan and approximately $0.01 per diluted share due to a U.S. customer bankruptcy. Net income attributable to Quaker Chemical Corporation for the fourth quarter of 2014 includes costs of approximately $0.04 per diluted share related to streamlining certain operations in the Company's South America segment and charges due to an EMEA customer bankruptcy of approximately $0.03 per diluted share.

Item 9. ***Changes in and Disagreements With Accountants on Accounting and Financial Disclosure.***

Not Applicable.

Item 9A. ***Controls and Procedures.***

Conclusion Regarding the Effectiveness of Disclosure Controls and Procedures

As required by Rule 13a-15(b) under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), our management, including our principal executive officer and principal financial officer, has evaluated the effectiveness of our disclosure controls and procedures as of the end of the period covered by this report. Based on that evaluation, our principal executive officer and our principal financial officer have concluded that as of the end of the period covered by this report our disclosure controls and procedures (as defined in Rule 13a-15(e) under the Exchange Act) were effective.

Management's Report on Internal Control over Financial Reporting

The management of Quaker is responsible for establishing and maintaining adequate internal control over financial reporting as such term is defined in Rule 13a-15(f) promulgated under the Exchange Act. Internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions or that the degree of compliance with the policies or procedures may deteriorate.

Our management, with the participation of our principal executive officer and principal financial officer, assessed the effectiveness of the Company's internal control over financial reporting as of December 31, 2015. In making this assessment, our management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO") in *Internal Control—Integrated Framework (2013).* Based on its assessment, Quaker's management has concluded that as of December 31, 2015, the Company's internal control over financial reporting is effective based on those criteria.

Management has excluded Verkol S.A. from our assessment of internal control over financial reporting as of December 31, 2015, because this entity was acquired by the Company in a purchase business combination in July 2015. This entity is a wholly owned subsidiary, whose total assets and total revenues represent approximately 6% and 2%, respectively, of the related consolidated financial statement amounts as of and for the year ended December 31, 2015.

The effectiveness of the Company's internal control over financial reporting as of December 31, 2015 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report which is included in "Item 8. Financial Statements and Supplementary Data."

Changes in Internal Controls Over Financial Reporting

As required by Rule 13a-15(d) under the Exchange Act, our management, including our principal executive officer and principal financial officer, has evaluated our internal control over financial reporting to determine whether any changes to our internal control over financial reporting occurred during the fourth quarter of the year ended December 31, 2015 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting. Based on that evaluation, no such changes to our internal control over financial reporting occurred during the fourth quarter of the year ended December 31, 2015.

Item 9B. ***Other Information.***

None.

PART III

Item 10. ***Directors, Executive Officers and Corporate Governance.***

Incorporated by reference is (i) the information beginning with and including the caption “Proposal 1—Election of Directors and Nominee Biographies” in Quaker’s definitive Proxy Statement relating to the Annual Meeting of Shareholders to be held May 4, 2016, to be filed with the SEC no later than 120 days after the close of its fiscal year ended December 31, 2015 (the “2016 Proxy Statement”) to, but not including, the sub-caption “Governance Committee Procedures for Selecting Director Nominees ,” (ii) the information appearing in Item 4(a) of this Report, (iii) the information in the 2016 Proxy Statement beginning with and including the caption, “Section 16(a) Beneficial Ownership Reporting Compliance” to, but not including, the caption “Certain Relationships and Related Transactions,” (iv) the information in the 2016 Proxy Statement beginning with and including the sub-caption “Code of Conduct” to, but not including, the caption “Compensation Committee Interlocks and Insider Participation,” and (v) the information in the 2016 Proxy Statement beginning with and including the sub-caption “Shareholder Nominations and Recommendations” to, but not including, the sub-caption “Board Oversight of Risk.”

Item 11. ***Executive Compensation.***

Incorporated by reference is (i) the information in the 2016 Proxy Statement beginning with and including the caption “Compensation Committee Interlocks and Insider Participation” to, but not including the caption “Proposal 2 – Approval of the Global Annual Incentive Plan” and (ii) the information in the 2016 Proxy Statement beginning with and including the caption “Executive Compensation” to, but not including, the caption “Stock Ownership of Certain Beneficial Owners and Management.”

Item 12. ***Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.***

Incorporated by reference is the information in the 2016 Proxy Statement beginning with and including the caption “Stock Ownership of Certain Beneficial Owners and Management” to, but not including, the caption “Section 16(a) Beneficial Ownership Reporting Compliance.”

Equity Compensation Plans

The following table sets forth certain information relating to the Company’s equity compensation plans as of December 31, 2015. Each number of securities reflected in the table is a reference to shares of Quaker common stock.

	Equity Compensation Plan Information			
Plan Category	**Number of securities to be issued upon exercise of outstanding options, warrants and rights**	**Weighted-average exercise price of outstanding options, warrants and rights**	**Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a))**	
	(a)	**(b)**	**(c)**	
Equity compensation plans approved by security holders	99,671	$ 71.73	642,116	(1)
Equity compensation plans not approved by security holders	—	—	—	
Total	99,671	$ 71.73	642,116	

(1) As of December 31, 2015, 304,900 of these shares were available for issuance as restricted stock awards under the Company’s 2001 Global Annual Incentive Plan, 266,314 shares were available for issuance upon the exercise of stock options and/or as restricted stock awards and/or restricted stock unit awards under the Company’s 2011 Long-Term Performance Incentive Plan, and 70,902 shares were available for issuance under the 2013 Director Stock Ownership Plan.

Item 13. ***Certain Relationships and Related Transactions, and Director Independence.***

Incorporated by reference is (i) the information in the 2016 Proxy Statement beginning with and including the caption “Certain Relationships and Related Transactions” to, but not including, the caption “Proposal 4—Ratification of Appointment of Independent Registered Public Accounting Firm,” (ii) the information in the 2016 Proxy Statement beginning with and including the sub-caption “Director Independence” to, but not including, the sub-caption “Governance Committee Procedures for Selecting Director Nominees,” and (iii) the information in the 2016 Proxy Statement beginning with and including the caption “Meetings and Committees of the Board” to, but not including, the caption “Compensation Committee Interlocks and Insider Participation.”

Item 14. ***Principal Accountant Fees and Services.***

Incorporated by reference is the information in the 2016 Proxy Statement beginning with and including the sub-caption “Audit Fees” to, but not including, the statement recommending a vote for ratification of the appointment of PricewaterhouseCoopers LLP as the Company’s independent registered public accounting firm for the year ending December 31, 2016.

PART IV

Item 15. ***Exhibits and Financial Statement Schedules.***

(a) Exhibits and Financial Statement Schedules

1. Financial Statements and Supplementary Data.

2. Financial Statement Schedules

All schedules are omitted because they are not applicable or the required information is shown in the financial statements or notes thereto. Financial statements of 50% or less owned companies have been omitted because none of the companies meets the criteria requiring inclusion of such statements.

3. Exhibits (numbered in accordance with Item 601 of Regulation S-K)

3(i) —	Articles of Incorporation (as amended through July 31, 2013). Incorporated by reference to Exhibit 3.1 as filed by Registrant with Form 8-K filed on July 31, 2013.
3(ii) —	By-laws (as amended and restated, effective May 6, 2015). Incorporated by reference to Exhibit 3.2 as filed by Registrant with Form 8-K filed on May 8, 2015.
10.1 —	Deferred Compensation Plan as adopted by the Registrant dated December 17, 1999, effective July 1, 1997. Incorporated by reference to Exhibit 10(ff) as filed by Registrant with Form 10-K for the year 1999. *
10.2 —	Supplemental Retirement Income Program adopted by the Registrant on November 6, 1984, as amended November 8, 1989. Incorporated by reference to Exhibit 10(gg) as filed by Registrant with Form 10-K for the year 1999. *
10.3 —	2001 Global Annual Incentive Plan as approved May 9, 2001, effective January 1, 2001. Incorporated by reference to Exhibit 10(hh) as filed by Registrant with Form 10-K for the year 2001. *
10.4 —	Credit Agreement between Registrant and Bank of America, N.A. and ABN AMRO Bank, N.V. and Banc of America Securities, in the amount of $100,000,000, dated October 14, 2005. Incorporated by reference to Exhibit 10(jjj) as filed by the Registrant with Form 10-Q for the quarter ended September 30, 2005.
10.5 —	Settlement Agreement and Release between Registrant, an inactive subsidiary of the Registrant, and Hartford Accident and Indemnity Company dated December 12, 2005. Incorporated by reference to Exhibit 10(nnn) as filed by the Registrant with Form 10-K for the year 2005.
10.6 —	Amendment to Registrant's Deferred Compensation Plan for key officers dated December 20, 2005. Incorporated by reference to Exhibit 10 as filed by Registrant with Form 8-K filed on December 22, 2005. *
10.7 —	2001 Global Annual Incentive Plan, as amended and restated. Incorporated by reference to Appendix D to the Registrant's definitive proxy statement filed on March 31, 2006. *
10.8 —	2006 Long-Term Performance Incentive Plan. Incorporated by reference to Appendix E to the Registrant's definitive proxy statement filed on March 31, 2006. *
10.9 —	Form of Stock Option Agreement provided for associates under the Registrant's 2006 Long-Term Performance Incentive Plan. Incorporated by reference to Exhibit 10.3 as filed by Registrant with Form 8-K filed on May 12, 2006. *

10.10 — Form of Restricted Stock Award Agreement for executive officers and other employees under Registrant's 2006 Long-Term Performance Incentive Plan. Incorporated by reference to Exhibit 10 as filed by Registrant with Form 8-K filed on June 27, 2006. *

10.11 — Employment Agreement by and between L. Willem Platzer and Quaker Chemical B.V., a Netherlands corporation and a subsidiary of Registrant, dated August 21, 2006. Incorporated by reference to Exhibit 10 as filed by the Registrant with Form 8-K filed on August 22, 2006. *

10.12 — First Amendment to Syndicated Multicurrency Credit Agreement between Registrant and Bank of America, N.A. and certain other financial institutions dated October 6, 2006. Incorporated by reference to Exhibit 10.30 as filed by the Registrant with Form 10-K for the year ended 2008.

10.13 — 2006 Long-Term Performance Incentive Plan (amended and restated effective November 8, 2006). Incorporated by reference to Exhibit 10(www) as filed by the Registrant with Form 10-K for the year ended 2006. *

10.14 — Financing Agreement by and among Montgomery County Industrial Development Authority and Registrant and Brown Brothers Harriman & Co. dated February 1, 2007. Incorporated by reference to Exhibit 10(yyy) as filed by the Registrant with Form 10-K for the year ended 2006.

10.15 — Settlement Agreement and Release between Registrant, an inactive subsidiary of Registrant and Federal Insurance Company dated March 26, 2007. Incorporated by reference to Exhibit 10(zzz) as filed by the Registrant with Form 10-Q for the quarter ended March 31, 2007.

10.16 — Change in Control Agreement by and between Registrant and L. Willem Platzer dated April 2, 2007, effective January 1, 2007. Incorporated by reference to Exhibit 10(aaaa) as filed by the Registrant with Form 10-Q for the quarter ended March 31, 2007. *

10.17 — Change in Control Agreement by and between Registrant and Jan F. Nieman dated June 27, 2007, effective January 1, 2007. Incorporated by reference to Exhibit 10 (cccc) as filed by the Registrant with Form 10-Q for the quarter ended June 30, 2007. *

10.18 — Memorandum of Employment dated June 28, 2007 between Registrant and Mark A. Featherstone, effective April 9, 2007. Incorporated by reference to Exhibit 10 as filed by the Registrant with Form 8-K filed on July 2, 2007. *

10.19 — Second Amendment to Syndicated Multicurrency Credit Agreement between Registrant and Bank of America, N.A. and certain other financial institutions dated August 13, 2007. Incorporated by reference to Exhibit 10(eeee) as filed by the Registrant with Form 10-Q for the quarter ended September 30, 2007.

10.20 — Claim Handling and Funding Agreement between SB Decking, Inc., an inactive subsidiary of Registrant, and Employers Insurance Company of Wausau dated September 25, 2007. Incorporated by reference to Exhibit 10(ffff) as filed by the Registrant with Form 10-Q for the quarter ended September 30, 2007.

10.21 — Settlement Agreement and Mutual Release entered into between AC Products, Inc., wholly owned subsidiary of Registrant, and Orange County Water District, effective November 8, 2007. Incorporated by reference to Exhibit 10.47 as filed by the Registrant with Form 10-K for the year ended 2007.

10.22 — Financing Agreement by and among Butler County Port Authority and Registrant and Brown Brothers Harriman & Co. dated May 15, 2008. Incorporated by reference to Exhibit 10.1 as filed by the Registrant with Form 10-Q for the quarter ended June 30, 2008.

10.23 — Engineering, Procurement and Construction Contract by and between Registrant and FMC Technologies, Inc., effective May 14, 2008. Incorporated by reference to Exhibit 10.2 as filed by the Registrant with Form 10-Q for the quarter ended June 30, 2008.

10.24 — Employment Agreement by and between Registrant and Michael F. Barry dated July 1, 2008. Incorporated by reference to Exhibit 10.5 as filed by the Registrant with Form 10-Q for the quarter ended June 30, 2008. *

10.25 — Change in Control Agreement by and between Registrant and Michael F. Barry dated July 1, 2008. Incorporated by reference to Exhibit 10.6 as filed by the Registrant with Form 10-Q for the quarter ended June 30, 2008. *

10.26 — Butler County Port Authority Industrial Development Revenue Bond dated May 15, 2008. Incorporated by reference to Exhibit 10.7 as filed by the Registrant with Form 10-Q for the quarter ended June 30, 2008.

10.27 — Expatriate Agreement by and between Jan F. Nieman and Quaker Chemical Limited (Hong Kong) and Quaker Chemical B.V., both subsidiaries of Registrant, dated June 3, 2003, effective August 1, 2003 and Amended Expatriate Agreement by and between Jan F. Nieman and Quaker Chemical (China) Co. Ltd., Quaker Chemical Limited (Hong Kong) and Quaker Chemical B.V., all subsidiaries of Registrant, dated July 27, 2008, effective August 1, 2008. Incorporated by reference to Exhibit 10.37 as filed by the Registrant with Form 10-K for the year ended December 31, 2009. *

10.28 — Memorandum of Employment by and between Registrant and Joseph F. Matrange dated September 30, 2008. Incorporated by reference to Exhibit 10.48 as filed by the Registrant with Form 10-K for the year ended 2008. *

10.29 — Memorandum of Employment by and between Registrant and D. Jeffry Benoliel dated October 1, 2008. Incorporated by reference to Exhibit 10.49 as filed by the Registrant with Form 10-K for the year ended 2008. *

10.30 — Amendment to Memorandum of Employment by and between Mark A. Featherstone and Registrant dated November 19, 2008, effective January 1, 2008. Incorporated by reference to Exhibit 10.52 as filed by the Registrant with Form 10-K for the year ended 2008. *

10.31 — Change in Control Agreement by and between Registrant and Mark A. Featherstone dated November 19, 2008, effective January 1, 2008. Incorporated by reference to Exhibit 10.53 as filed by the Registrant with Form 10-K for the year ended 2008. *

10.32 — Change in Control Agreement by and between Registrant and D. Jeffry Benoliel dated November 19, 2008, effective January 1, 2008. Incorporated by reference to Exhibit 10.54 as filed by the Registrant with Form 10-K for the year ended 2008. *

10.33 — Change in Control Agreement by and between Registrant and Joseph F. Matrange dated November 19, 2008, effective October 1, 2008. Incorporated by reference to Exhibit 10.55 as filed by the Registrant with Form 10-K for the year ended 2008. *

10.34 — Change in Control Agreement by and between Registrant and Ronald S. Ettinger dated November 19, 2008, effective October 1, 2008. Incorporated by reference to Exhibit 10.56 as filed by the Registrant with Form 10-K for the year ended 2008. *

10.35 — Change in Control Agreement by and between Registrant and George H. Hill dated November 19, 2008, effective October 1, 2008. Incorporated by reference to Exhibit 10.57 as filed by the Registrant with Form 10-K for the year ended 2008. *

10.36 — Supplemental Retirement Income Program (as amended and restated effective January 1, 2008), approved November 19, 2008. Incorporated by reference to Exhibit 10.58 as filed by the Registrant with Form 10-K for the year ended 2008. *

10.37 — Amendment No. 1 to the 2001 Global Annual Incentive Plan (as amended and restated effective January 1, 2006), approved November 19, 2008. Incorporated by reference to Exhibit 10.60 as filed by the Registrant with Form 10-K for the year ended 2008. *

10.38 — Amendment No. 1 to the 2006 Long-Term Performance Incentive Plan (as amended and restated effective November 8, 2006), approved November 19, 2008. Incorporated by reference to Exhibit 10.61 as filed by the Registrant with Form 10-K for the year ended 2008. *

10.39 — Third Amendment to Syndicated Multicurrency Credit Agreement between Registrant and Bank of America, N.A. and certain other financial institutions dated February 13, 2009, effective February 17, 2009. Incorporated by reference to Exhibit 10.62 as filed by the Registrant with Form 10-K for the year ended 2008.

10.40 — Amended Expatriate Agreement by and between Jan F. Nieman and Quaker Chemical (China) Ltd., Quaker Chemical Limited (Hong Kong) and Quaker Chemical B.V., all subsidiaries of Registrant, dated April 6, 2010, effective March 1, 2010. Incorporated by reference to Exhibit 10.1 as filed by the Registrant with Form 10-Q for the quarter ended March 31, 2010. *

10.41 — Employment Agreement by and between Registrant and Joseph Berquist dated April 1, 2010. Incorporated by reference to Exhibit 10.2 as filed by the Registrant with Form 10-Q for the quarter ended March 31, 2010. *

10.42 — Change in Control Agreement by and between Registrant and Joseph Berquist dated April 1, 2010. Incorporated by reference to Exhibit 10.3 as filed by the Registrant with Form 10-Q for the quarter ended March 31, 2010. *

10.43 —	Fourth Amendment to Syndicated Multicurrency Credit Agreement between Registrant and Bank of America, N.A. and certain other financial institutions dated June 21, 2010. Incorporated by reference to Exhibit 10.1 as filed by the Registrant with Form 10-Q for the quarter ended June 30, 2010.
10.44 —	Stock Purchase Agreement by and among Registrant, Summit Lubricants Inc., Ronald Krol, Brian Caputi, Dale M. Perry and Anthony Musilli, dated December 31, 2010. Incorporated by reference to Exhibit 10.54 as filed by the Registrant with Form 10-K for the year ended 2010.
10.45 —	Employment Agreement by and between Carlos Claro and Quaker Chemical Industria e Comercio Ltda., a Brazilian corporation and a subsidiary of the Registrant, dated January 5, 2011. Incorporated by reference to Exhibit 10.56 as filed by the Registrant with Form 10-K for the year ended 2010. *
10.46 —	Employment Agreement by and between Dieter Laininger and Quaker Chemical B.V., a subsidiary of the registrant, dated June 1, 2011, effective June 15, 2011. Incorporated by reference to Exhibit 10.1 as filed by the Registrant with Form 10-Q for the quarter ended June 30, 2011. *
10.47 —	Change in Control Agreement by and between Registrant and Dieter Laininger dated May 31, 2011, effective June 15, 2011. Incorporated by reference to Exhibit 10.1 as filed by the Registrant with Form 10-Q for the quarter ended June 30, 2011. *
10.48 —	Global Annual Incentive Plan (as amended and restated effective May 11, 2011). Incorporated by reference to Appendix B to the Registrant's definitive proxy statement filed on March 31, 2011. *
10.49 —	2011 Long-Term Performance Incentive Plan. Incorporated by reference to Appendix C to the Registrant's definitive proxy statement filed on March 31, 2011. *
10.50 —	Form of Restricted Stock Unit Agreement for executive officers and other employees under Registrant's 2011 Long-Term Performance Incentive Plan. Incorporated by reference to Exhibit 10.1 as filed by the Registrant with Form 10-Q for the quarter ended March 31, 2012. *
10.51 —	Memorandum of Employment by and between Registrant and Margaret M. Loebl, dated May 22, 2012, effective June 29, 2012. Incorporated by reference to Exhibit 10.1 as filed by the Registrant with Form 10-Q for the quarter ended June 30, 2012. *
10.52 —	Change in Control Agreement by and between Registrant and Margaret M. Loebl, dated May 22, 2012, effective June 29, 2012. Incorporated by reference to Exhibit 10.2 as filed by the Registrant with Form 10-Q for the quarter ended June 30, 2012. *
10.53 —	Amendment to Employment Agreement by and between Jan Nieman and Quaker Chemical Limited (Hong Kong) and Quaker Chemical, B.V., both subsidiaries of Registrant, dated August 2, 2012. Incorporated by reference to Exhibit 10.1 as filed by the Registrant with Form 10-Q for the quarter ended September 30, 2012. *
10.54 —	Expatriate Agreement by and between the Registrant and Dieter Laininger, dated January 14, 2013, effective January 15, 2013. Incorporated by reference to Exhibit 10.59 as filed by the Registrant with Form 10-K for the year ended 2013. *
10.55 —	Expatriate Agreement by and between the Registrant and Adrian Steeples, dated January 29, 2013, effective July 1, 2013. Incorporated by reference to Exhibit 10.1 as filed by the Registrant with Form 10-Q for the quarter ended March 31, 2013. *
10.56 —	2013 Director Stock Ownership Plan as approved May 8, 2013. Incorporated by reference to Appendix B to the Registrant's definitive proxy statement filed on March 28, 2013. *
10.57 —	Amended and Restated Multicurrency Credit Agreement by and between Registrant and Bank of America, N.A. and certain other lenders dated June 14, 2013. Incorporated by reference to Exhibit 10.1 as filed by the Registrant with Form 10-Q for the quarter ended June 30, 2013.
10.58 —	Memorandum of Employment and Addendum by and between Registrant and Jan F. Nieman, effective August 1, 2013. Incorporated by reference to Exhibit 10.2 as filed by the Registrant with Form 10-Q for the quarter ended June 30, 2013.*
10.59 —	Expatriate Agreement by and between the Registrant and Dieter Laininger, dated and effective February 27, 2014. Incorporated by reference to Exhibit 10.1 as filed by the Registrant with Form 10-Q for the quarter ended March 31, 2014. *

10.60 —	Memorandum of Employment by and between Registrant and Mary Dean Hall, dated and effective November 30, 2015.*
10.61 —	Change in control agreement by and between Registrant and Mary Dean Hall, dated and effective November 30, 2015.*
10.62 —	Retirement Savings Plan, as amended and restated effective January 1, 2016.*
21 —	Subsidiaries and Affiliates of the Registrant
23 —	Consent of Independent Registered Public Accounting Firm
31.1 —	Certification of Chief Executive Officer of the Company pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934.
31.2 —	Certification of Chief Financial Officer of the Company pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934.
32.1 —	Certification of Michael F. Barry pursuant to 18 U.S.C. Section 1350.
32.2 —	Certification of Mary Dean Hall pursuant to 18 U.S.C. Section 1350.
101.INS —	XBRL Instance Document
101.SCH —	XBRL Extension Schema Document
101.CAL —	XBRL Calculation Linkbase Document
101.DEF —	XBRL Definition Linkbase Document
101.LAB —	XBRL Label Linkbase Document
101.PRE —	XBRL Presentation Linkbase Document

* This exhibit is a management contract or compensation plan or arrangement required to be filed as an exhibit to this Report.

(b) *Exhibits required by Regulation 601 S-K*

See (a) 3 of this Item 15.

(c) *Financial Statement Schedules*

See (a) 2 of this Item 15.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this Report to be signed on its behalf by the undersigned, thereunto duly authorized.

QUAKER CHEMICAL CORPORATION
Registrant

By: /s/ MICHAEL F. BARRY

Michael F. Barry
Chairman of the Board, Chief Executive Officer and President

Date: February 25, 2016

Pursuant to the requirements of the Securities Exchange Act of 1934, this Report has been signed below by the following persons on behalf of the Registrant and in the capacities and on the dates indicated.

Signatures	Capacity	Date
/s/ MICHAEL F. BARRY **Michael F. Barry** **Chairman of the Board, Chief Executive Officer and President**	Principal Executive Officer and Director	February 25, 2016
/s/ MARY DEAN HALL **Mary Dean Hall** **Vice President, Chief Financial Officer and Treasurer**	Principal Financial Officer	February 25, 2016
/s/ SHANE W. HOSTETTER **Shane W. Hostetter** **Global Controller**	Principal Accounting Officer	February 25, 2016
/s/ JOSEPH B. ANDERSON, JR. **Joseph B. Anderson, Jr**	Director	February 25, 2016
/s/ PATRICIA C. BARRON **Patricia C. Barron**	Director	February 25, 2016
/s/ DONALD R. CALDWELL **Donald R. Caldwell**	Director	February 25, 2016
/s/ ROBERT E. CHAPPELL **Robert E. Chappell**	Director	February 25, 2016
/s/ WILLIAM R. COOK **William R. Cook**	Director	February 25, 2016
/s/ MARK A. DOUGLAS **Mark A. Douglas**	Director	February 25, 2016
/s/ JEFFRY D. FRISBY **Jeffry D. Frisby**	Director	February 25, 2016
/s/ ROBERT H. ROCK **Robert H. Rock**	Director	February 25, 2016

MEMORANDUM OF EMPLOYMENT

Effective: November 30, 2015

NAME: Mary Dean Hall

ADDRESS: 1833 Buckingham Court
Kingsport, TN 37660

The parties to this Memorandum of Employment ("Agreement") are **MARY DEAN HALL** and Quaker Chemical Corporation, a Pennsylvania corporation ("Quaker").

WHEREAS, Quaker desires to employ you and you desire to be employed by Quaker;

WHEREAS, both parties wish to define and clarify all terms and conditions of the employment relationship; and

WHEREAS, both parties want to avoid any disputes over any terms and conditions of the employment relationship;

NOW THEREFORE in consideration of the mutual promises and covenants herein contained and intending to be legally bound hereby the parties hereto agree as follows:

1. **Duties**

Effective as of your start date, Quaker agrees to employ you and you agree to serve as Quaker's Vice President, Chief Financial Officer & Treasurer which includes the responsibilities in line with that of a public company Chief Financial Officer, reporting to Michael F. Barry or his replacement as Chief Executive Officer. You shall perform all duties consistent with such position as well as any other duties that are assigned to you from time to time by Quaker's Chief Executive Officer. You agree that during the term of your employment with Quaker to devote your knowledge, skill, and working time solely and exclusively to the business and interests of Quaker and its subsidiaries; provided, however, after one year of employment you are eligible to accept a position as a director on a board of a for-profit public company.

2. **Compensation**

Your base salary will be determined from time to time by the Compensation / Management Development Committee of the Board of Directors, in consultation with the Chairman, Chief Executive Officer & President. In addition, you will be entitled to participate, to the extent eligible, in any of Quaker's annual and long term incentive plans, retirement savings plan (401k plan), stock purchase plan, and will be entitled to vacations, paid holidays, and medical, dental, and other benefits as are made generally available by Quaker to its full-time employees.

3. **Term of Employment**

Your employment with Quaker may be terminated on thirty (30) days' written notice by either party, with or without cause or reason whatsoever. Within thirty (30) days after termination of your employment, you will be given an accounting of all monies due you.

4. **Covenant Not to Disclose**

You acknowledge that the identity of Quaker's (and any of Quaker's affiliates') customers, the requirements of such customers, pricing and payment terms quoted and charged to such customers, the identity of Quaker's suppliers and terms of supply (and the suppliers and related terms of supply of any of Quaker's customers for which management services are being provided), information concerning the method and conduct of Quaker's (and any affiliate's) business such as formulae, formulation information, application technology, manufacturing information, marketing information, strategic and marketing plans, financial information, financial statements (audited and unaudited), budgets, corporate practices and procedures, research and development efforts, and laboratory test methods and all of Quaker's (and its affiliates') manuals, documents, notes, letters, records, and computer programs are Quaker's trade secrets ("Trade Secrets") and are Quaker's (and/or any of its affiliates', as the case may be) sole and exclusive property. You agree that at no time during or following your employment with Quaker will you appropriate for your own use, divulge or pass on, directly or through any other individual or entity or to any third party, any Quaker Trade Secrets. Upon termination of your employment with Quaker and prior to final payment of all monies due to you under Paragraph 2 or at any other time upon Quaker's request, you agree to surrender immediately to Quaker any and all materials in your possession or control which include or contain any Quaker Trade Secrets.

5. **Covenant Not to Compete**

In consideration of your employment with Quaker and the training you are to receive from Quaker, you agree that during your employment with Quaker and for a period of one (1) year thereafter, regardless of the reason for your termination, you will not:

a. directly or indirectly, together or separately or with any third party, whether as an employee, individual proprietor, partner, stockholder, officer, director, or investor, or in a joint venture or any other capacity whatsoever, actively engage in business or assist anyone or any firm in business as a manufacturer, seller, or distributor of chemical specialty products which are the same, like, similar to, or which compete with Quaker (or any of its affiliates') products or services; and

b. at the Chemical Management Services sites to which you are, have, or will specifically ever be assigned in the future, directly or indirectly, together or separately or with any third party, whether as an employee, individual proprietor, partner, stockholder, officer, director, or investor, or in a joint venture or any other capacity whatsoever, actively engage in business or assist anyone or any firm in business as a provider of chemical management services which are the same, like, similar to, or which compete with Quaker (or any of its affiliates') services; and

c. recruit or solicit any Quaker employee or otherwise induce such employee to leave Quaker's employ, or to become an employee or otherwise be associated with you or any firm, corporation, business, or other entity with which you are or may become associated; and

d. solicit or induce any of Quaker's suppliers of products and/or services (or a supplier of products and/or services of a customer who is being provided or solicited for the provision of chemical management services by Quaker) to terminate or alter its contractual relationship with Quaker (and/or any such customer).

The parties consider these restrictions reasonable, including the period of time during which the restrictions are effective. However, if any restriction or the period of time specified should be found to be unreasonable in any court proceeding, then such restriction shall be modified or the period of time shall be shortened as is found to be reasonable so that the foregoing covenant not to compete may be enforced. You agree that in the event of a breach or threatened breach by you of the provisions of the restrictive covenants contained in Paragraph 4 or in this Paragraph 5, Quaker will suffer irreparable harm, and monetary damages may not be an adequate remedy. Therefore, if any breach occurs, or is threatened, in addition to all other remedies available to Quaker, at law or in equity, Quaker shall be entitled as a matter of right to specific performance of the covenants contained herein by way of temporary or permanent injunctive relief. In the event of any breach of the restrictive covenant contained in this Paragraph 5, the term of the restrictive covenant shall be extended by a period of time equal to that period beginning on the date such violation commenced and ending when the activities constituting such violation cease.

6. **Contractual Restrictions**

You represent and warrant to Quaker that: (a) there are no restrictions, agreements, or understandings to which you are a party that would prevent or make unlawful your employment with Quaker and (b) your employment by Quaker shall not constitute a breach of any contract, agreement, or understanding, oral or written, to which you are a party or by which you are bound.

7. **Inventions**

All improvements, modifications, formulations, processes, discoveries or inventions ("Inventions"), whether or not patentable, which were originated, conceived or developed by you solely or jointly with others (a) during your working hours or at Quaker's expense or at Quaker's premises or at a customer's premises or (b) during your employment with Quaker and additionally for a period of one year thereafter, and which relate to (i) Quaker's business or (ii) any research, products, processes, devices, or machines under actual or anticipated development or investigation by Quaker at the earlier of (i) that time or (ii) as the date of termination of employment, shall be Quaker's sole property. You shall promptly disclose to Quaker all Inventions that you conceive or become aware of at any time during your employment with Quaker and shall keep complete, accurate, and authentic notes, data and records of all Inventions and of all work done by you solely or jointly with others, in the manner directed by Quaker. You hereby transfer and assign to Quaker all of your right, title, and interest in and to any and all Inventions which may be conceived or developed by you solely or jointly with others during your employment with Quaker. You shall assist Quaker in applying, obtaining, and enforcing any United States Letters Patent and Foreign Letters Patent on any such Inventions and to take such other actions as may be necessary or desirable to protect Quaker's interests therein. Upon request, you shall execute any and all applications, assignments, or other documents that Quaker deems necessary and desirable for such purposes. You have attached hereto a list of unpatented inventions that you have made or conceived prior to your employment with Quaker, and it is agreed that those inventions shall be excluded from the terms of this Agreement.

8. Termination

Quaker, in its sole discretion, may terminate your employment at any time and without notice for any reason, including Cause. If you incur a Separation from Service by action of Quaker for any reason other than Cause, death, disability or by obtaining normal retirement age, Quaker agrees to:

a. Provide you with reasonable outplacement assistance, either by providing the services in-kind, or by reimbursing reasonable expenses actually incurred by you in connection with your Separation from Service. The outplacement services must be provided during the one-year period following your Separation from Service. If any expenses are to be reimbursed, you must request the reimbursement within eighteen months of your Separation from Service and reimbursement will be made within 30 days of your request.

b. Pay you one year's severance in twenty-four semi-monthly installments commencing on the Payment Date and continuing on Quaker's normal semi-monthly payroll dates each month thereafter, each of which is equal to your semi- monthly base salary at the time of your Separation from Service, provided you sign (and thereafter do not timely revoke) a Release within 45 days of the later of the date you receive the Release or your Separation from Service. Quaker will provide continuation of medical and dental coverage's at Quaker's cost for one year.

"Separation from Service" means your separation from service with Quaker and its affiliates within the meaning of Treas. Reg. §1.409A-1(h) or any successor thereto.

"Cause" means your employment with Quaker has been terminated by reason of (i) your willful and material breach of this Memorandum of Employment, (ii) dishonesty, fraud, willful malfeasance, gross negligence, or other gross misconduct, in each case relating to the performance of your duties hereunder which is materially injurious to Quaker, or (iii) conviction of or plea of guilty or nolo contendere to a felony.

"Payment Date" means (x) the 60th day after your Separation from Service or (y) if you are a specified employee (as defined in Treas. Reg. §1.409A-1(i)) as of the date of your Separation from Service, and the severance described in subsection (b) is deferred compensation subject to section 409A of the Code, the first business day of the seventh month following the month in which your Separation from Service occurs. If the Payment Date is described in clause (y), the amount paid on the Payment Date shall include all monthly installments that would have been paid earlier had clause (y) not been applicable, plus interest at the Wall Street Journal Prime Rate published in the Wall Street Journal on the date of your Separation from Service (or the previous business day if such day is not a business day), for the period from the date payment would have been made had clause (y) not been applicable through the date payment is made.

"Release" means a release (in a form satisfactory to Quaker) of any and all claims against Quaker and all related parties with respect to all matters arising out of your employment with Quaker, or the termination thereof (other than for claims for any entitlements under the terms of this Memorandum of Employment or any plans or programs of Quaker under which you have accrued a benefit) that Quaker provides to you no later than ten days after your Separation from Service. Such Release will not modify any of your rights to indemnification or director's and officer's insurance coverage as such are available to you based on your position.

9. **Non-Disparagement**

The parties agree not to make any statements, written or verbal, or cause or encourage others to make any statements, written or verbal, that defame, disparage or in any way criticize the personal or business reputation, practices, or conduct of the other party or any of its employees, directors, and officers. The Parties acknowledge and agree that this prohibition extends to statements, written or verbal, made to anyone, including but not limited to, the news media, investors, potential investors, any board of directors or advisory board or directors, industry analysts, competitors, strategic partners, vendors, employees (past and present), and clients.

10. **Miscellaneous**

This Agreement constitutes the entire integrated agreement concerning the subjects covered herein. In case any provision of this Agreement shall be invalid, illegal, or otherwise unenforceable, the validity, legality, and enforceability of the remaining provisions shall not thereby be affected or impaired. You may not assign any of your rights or obligations under this Agreement without Quaker's prior written consent. This Agreement shall be governed by, and construed in accordance with, the laws of the Commonwealth of Pennsylvania without regard to any conflict of laws. This Agreement shall be binding upon you, your heirs, executors, and administrators and shall inure to the benefit of Quaker as well as its successors and assigns.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement the day and year first above written.

ATTEST: QUAKER CHEMICAL CORPORATION

/s/ Robert T. Traub /s/ Michael F. Barry

WITNESS:

/s/ Ronald S. Ettinger /s/ Mary Dean Hall

MARY DEAN HALL

ADDENDUM 1

Base Salary:	Your salary will be payable on a semi-monthly basis at the rate of $14,583.34, which is annualized at $350,000.16. You will be eligible for your next salary increase in 2016.
Annual and Long-Term Bonuses:	For your position, you are eligible to participate in the Global Annual Incentive Plan (GAIP). Your annual cash bonus is up to a maximum of 75% of your base salary with a targeted amount at 41.25% of salary. This bonus is adjusted for annual company performance. For 2015, you will receive a minimum guaranteed GAIP payment of $144,375.00 payable in March of 2016, subject to normal withholdings. You were approved for the LTIP 2016-2018 plan period, by the Compensation/Management Development Committee of the Board of Directors (the "Compensation Committee") with a targeted amount worth $167,000.00 with one-third in restrictive stock, one-third in options, and one-third in performance cash. On your start date you will be awarded with $300,000.00 worth of restricted shares of Quaker common stock. These shares will vest over a three and one-half year period. One quarter of the award will vest on June 1, 2016 and on each annual anniversary or such four year period. You must be actively employed by Quaker on each vesting date to receive any of the respective vested shares. All incentive compensation awards are made at the company's discretion and are subject to change, and require the approval of the Quaker Compensation and Management Development Committee of the Board of Directors.
Financial Planning:	You will be eligible to be reimbursed for up to $3,500.00 per calendar year for expenses incurred for financial planning and/or tax preparation.
Relocation:	You will receive, as soon as administratively possible after your start date, a lump sum payment of $100,000.00 (Gross) to cover all relocation expenses. This payment is subject to all normal withholdings. If you should voluntarily leave Quaker within one year of receipt, all financial relocation assistance must be reimbursed to Quaker.
Benefits:	Quaker offers a Flexible Benefits Program. This gives you the opportunity to choose from a variety of options creating a customized benefits package. The following benefits are part of the program. In each of these areas, you are offered a range of options so you may choose the ones that make the most sense for your personal situation. • Medical • Dental • Life & AD&D Insurance • Long-term Disability • Health Care and Dependent Care Flexible Spending Accounts (FSAs) In addition to these flexible benefits, Quaker also offers the following benefit plans: • Retirement Savings Plan (401K)
Vacation/Holidays:	You are currently eligible for five weeks of vacation annually and you will start to accrue, on a monthly basis, up to an additional 5 days of vacation per calendar year when you meet the next service level as defined in the plan. In addition, you are also eligible for the same paid holidays made generally available by Quaker to its other full-time employees. The company currently has 11 ½ paid holidays.

CHANGE IN CONTROL AGREEMENT

THIS AGREEMENT, dated November 30, 2015 between QUAKER CHEMICAL CORPORATION, a Pennsylvania corporation (the "Company"), and Mary Dean Hall (the "Manager").

W I T N E S S E T H T H A T

WHEREAS, the Board of Directors of the Company has determined that it is in the best interests of the Company and its shareholders that the Company and its subsidiaries be able to attract, retain, and motivate highly qualified management personnel and, in particular, that they be assured of continuity of management in the event of any actual or threatened change in control of the Company; and

WHEREAS, the Board of Directors of the Company believes that the execution by the Company of change in control agreements with certain management personnel, including the Manager, is an important factor in achieving this desired end;

NOW, THEREFORE, IN CONSIDERATION of the mutual obligations and agreements contained herein and intending to be legally bound hereby, the Manager and the Company agree as follows:

1. Term of Agreement.

This Agreement shall become effective on November 30, 2015 (the "Effective Date"), and shall continue in effect through December 31, 2016, provided, however, that the term of this Agreement shall automatically be extended for successive one-year periods thereafter, unless, not later than eighteen (18) months preceding the calendar year for which the term would otherwise automatically extend, the Company shall have given written notice to the Manager of intention not to extend this Agreement for an additional year, in which event this Agreement shall continue in effect until December 31 of the calendar year immediately preceding the calendar year for which the term would have otherwise automatically extended. Notwithstanding any such notice not to extend, if a Change in Control (as defined in Section 2) occurs during the original or extended term of this Agreement, this Agreement shall remain in effect after a Change in Control until all obligations of the parties hereto under this Agreement shall have been satisfied.

2. Change in Control.

As used in this Agreement, a "Change in Control" of the Company shall be deemed to have occurred if:

(a) Any person (a "Person"), as such term is used in Sections 13(d) and 14(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act") (other than (i) the Company and/or its wholly owned subsidiaries; (ii) any ESOP or other employee benefit plan of the Company and any trustee or other fiduciary in such capacity holding securities under such plan; (iii) any corporation owned, directly or indirectly, by the shareholders of the Company in substantially the same proportions as their ownership of stock of the Company; or (iv) any other Person who, within the one year prior to the event which would otherwise be a Change in Control, is an executive officer of the Company or any group of Persons of which he voluntarily is a part), is or becomes the "beneficial owner" (as defined in Rule 13d-3 under the Exchange Act), directly or indirectly, of securities of the Company representing 30% or more of the combined voting power of the Company's then outstanding securities or such lesser percentage of voting power, but not less than 15%, as determined by the members of the Board of Directors of the Company who are independent directors (as defined in the New York Stock Exchange, Inc. Listed Company Manual); provided, however, that a Change in Control shall not be deemed to have occurred under the provisions of this subsection (a) by reason of the beneficial ownership of voting securities by members of the Benoliel family (as defined below) unless and until the beneficial ownership of all members of the Benoliel family (including any other individuals or entities who or which, together with any member or members of the Benoliel family, are deemed under Sections 13(d) or 14(d) of the Exchange Act to constitute a single Person) exceeds 50% of the combined voting power of the Company's then outstanding securities;

(b) During any two-year period after the Effective Date, Directors of the Company in office at the beginning of such period plus any new Director (other than a Director designated by a Person who has entered into an agreement with the Company to effect a transaction within the purview of subsections (a) or (c)) whose election by the Board of Directors of the Company or whose nomination for election by the Company's shareholders was approved by a vote of at least two-thirds of the Directors then still in office who either were Directors at the beginning of the period or whose election or nomination for election was previously so approved shall cease for any reason to constitute at least a majority of the Board;

(c) The consummation of (i) any consolidation or merger of the Company in which the Company is not the continuing or surviving corporation or pursuant to which the Company's voting common shares (the "Common Shares") would be converted into cash, securities, and/or other property, other than a merger of the Company in which holders of Common Shares immediately prior to the merger have the same proportionate ownership of voting shares of the surviving corporation immediately after the merger as they had in the Common Shares immediately before; or (ii) any sale, lease, exchange, or other transfer (in one transaction or a series of related transactions) of all or substantially all the assets or earning power of the Company; or

(d) The Company's shareholders or the Company's Board of Directors shall approve the liquidation or dissolution of the Company.

As used in this Agreement, "members of the Benoliel family" shall mean Peter A. Benoliel, his wife and children and their respective spouses and children, and all trusts created by or for the benefit of any of them.

3. Entitlement to Change in Control Benefits; Certain Definitions.

The Manager shall be entitled to the benefits provided in this Agreement in the event the Manager has a Separation from Service under the circumstances described in (a) below (a "Covered Termination"), provided the Manager executes and does not revoke a Release (as defined below), if any, provided by the Company.

(a) A Covered Termination shall have occurred in the event the Manager's employment with the Company or its affiliates is terminated within two (2) years following a Change in Control by:

(i) The Company or its affiliates without Cause (as defined below); or

(ii) Resignation of the Manager for Good Reason (as defined below).

The Manager shall have no rights to any payments or benefits under this Agreement in the event the Manager's employment with the Company and its affiliates is terminated (i) as a result of death or Disability (as defined below), or (ii) by the Company or its affiliates for Cause. In the event the Manager's employment is terminated for any reason prior to a Change in Control, the Manager shall have no rights to any payments or benefits under this Agreement and, after any such termination, this Agreement shall be of no further force or effect.

"Cause" shall mean (i) the Manager's willful and material breach of the employment agreement, if any, between the Manager and the Company (after having received notice thereof and a reasonable opportunity to cure or correct), (ii) dishonesty, fraud, willful malfeasance, gross negligence, or other gross misconduct, in each case relating to the performance of the Manager's employment with the Company or its affiliates which is materially injurious to the Company, or (iii) conviction of or plea of guilty to a felony, such Cause to be determined, in each case, by a resolution approved by at least two-thirds of the Directors of the Company after having afforded the Manager a reasonable opportunity to appear before the Board of Directors of the Company and present his position.

"Code" shall mean the Internal Revenue Code of 1986, as amended, together with any applicable regulations thereunder.

"Disability" shall mean covered total and permanent disability as defined in the long-term disability plan maintained by the Company for employees generally or, if the Company does not maintain such a plan, the long-term disability plan most recently maintained by the Company for employees generally.

"Good Reason" shall mean any of the following actions without the Manager's consent, other than due to the Manager's death or Disability: (i) any reduction in the Manager's base salary from that provided immediately before the Covered Termination or, if higher, immediately before the Change in Control; (ii) any reduction in the Manager's bonus opportunity (including cash and noncash incentives) or increase in the goals or standards required to accrue that opportunity, as compared to the opportunity and goals or standards in effect immediately before the Change in Control; (iii) a material adverse change in the nature or scope of the Manager's authorities, powers, functions, or duties from those in effect immediately before the Change in Control; (iv) a reduction in the Manager's benefits from those provided immediately before the Change in Control, disregarding any reduction under a plan or program covering employees generally that applies to all employees covered by the plan or program; or (v) the Manager being required to accept a primary employment location which is more than twenty-five (25) miles from the location at which he primarily was employed during the ninety (90) day period prior to a Change in Control.

"Payment Date" shall mean the 60th day after the Manager's Separation from Service, subject to Section 9.

"Release" shall mean a release (in a form satisfactory to the Company) of any and all claims against the Company and all related parties with respect to all matters arising out of the Manager's employment by the Company and its affiliates, or the termination thereof (other than claims for any entitlements under the terms of this Agreement, under any employment agreement between the Manager and the Company, or under any plans or programs of the Company under which the Manager has accrued a benefit) that the Company provides to the Manager no later than three days after the date of the Manager's Covered Termination. Notwithstanding any provision of this Agreement to the contrary, if the Company provides a Release to the Manager, the Manager shall not be entitled to any payments or benefits under this Agreement unless the Manager executes the Release within 45 days of the later of the date he receives the Release or the date of his Covered Termination, and the Manager does not revoke the Release.

"Separation from Service" shall mean the Manager's separation from service with the Company and its affiliates within the meaning of Treas. Reg. §1.409A-1(h) or any successor thereto.

"Specified Employee" shall mean the Manager if he is a specified employee as defined in Section 409A of the Code as of the date of his Separation from Service.

4. Severance Allowance.

(a) Amount of Severance Allowance. In the event of a Covered Termination, the Company shall pay or cause to be paid to the Manager in cash a severance allowance (the "Severance Allowance") equal to 1.5 (one and one-half) times the sum of the amounts determined in accordance with the following paragraphs (i) and (ii):

(i) An amount equivalent to the highest annualized base salary which the Manager was entitled to receive from the Company and its subsidiaries at any time during his employment prior to the Covered Termination; and

(ii) An amount equal to the average of the aggregate annual amounts paid to the Manager in the Applicable Three-Year Period under all applicable annual incentive compensation plans maintained by the Company and its affiliates (other than compensation relating to relocation expense; the grant, exercise, or settlement of stock options, restricted stock or performance incentive units or the sale or other disposition of shares received upon exercise or settlement of such awards); provided, however, that (x) in determining the average amount paid under the annual incentive plan during the Applicable Three-Year Period there shall be excluded any year in which no amounts were paid to the Manager under that plan; and (y) there shall be excluded from such calculation any amounts paid to the Manager under any such incentive compensation plan as a result of the acceleration of such payments under such plan due to termination of the plan, a Change in Control, or a similar occurrence. The Applicable Three-Year Period shall be (A) if the Manager has received an annual incentive compensation plan payment in the calendar year of his Covered Termination, the calendar year in which such Covered Termination occurs and the two preceding calendar years, or (B) in any other case, the three calendar years preceding the calendar year in which the Manager's Covered Termination occurs; provided, however, that the Applicable Three-Year Period shall be determined by substituting "Change In Control" for "Covered Termination" if such substitution results in a higher amount under this subsection (ii).

In no event shall any retention bonus or change in control or success fee be taken into account when determining the amount of the Severance Allowance hereunder.

(b) Payment of Severance Allowance. The Severance Allowance shall be paid to the Manager in a lump sum on the Payment Date if the applicable Change in Control is also a change in control event as defined in Treas. Reg. §1.409A-3(i)(5) (or any successor thereto). In any other case, the Severance Allowance shall be paid in eighteen monthly installments commencing on the Payment Date, each of which is equal to one eighteenth (1/18th) of the amount of the Severance Allowance determined under Section 4(a), which are treated as a right to a series of separate payments for purposes of Section 409A of the Code.

5. Outplacement and Welfare Benefits.

(a) Outplacement. Subject to Section 6, for a period of one year following a Covered Termination of the Manager, the Company shall make or cause to be made available to the Manager, at its expense, outplacement counseling and other outplacement services comparable to those available for the Company's senior managers prior to the Change in Control.

(b) Welfare Benefits. Subject to Section 6, for a period eighteen months following a Covered Termination of the Manager, the Manager and the Manager's dependents shall be entitled to participate in the Company's life, medical, and dental insurance plans at the Company's expense, in accordance with the terms of such plans at the time of such Covered Termination as if the Manager were still employed by the Company or its affiliates under this Agreement. If, however, life, medical, or dental insurance benefits are not paid or provided under any such plan to the Manager or his dependents because the Manager is no longer an employee of the Company or its subsidiaries, the Company itself shall, to the extent necessary, pay or otherwise provide for such benefits to the Manager and his dependents.

6. Effect of Other Employment.

In the event the Manager becomes employed (as defined below) during the period with respect to which benefits are continuing pursuant to Section 5: (a) the Manager shall notify the Company not later than the day such employment commences; and (b) the benefits provided for in Section 5 shall terminate as of the date of such employment. For the purposes of this Section 6, the Manager shall be deemed to have become "employed" by another entity or person only if the Manager becomes essentially a full-time employee of a person or an entity (not more than 30% of which is owned by the Manager and/or members of his family); and the Manager's "family" shall mean his parents, his siblings and their spouses, his children and their spouses, and the Manager's spouse and her parents and siblings. Nothing herein shall relieve the Company of its obligations for compensation or benefits accrued up to the time of termination provided for herein.

7. Other Payments and Benefits.

On the Payment Date, the Company shall pay or cause to be paid to the Manager the aggregate of: (a) the Manager's earned but unpaid base salary through the Covered Termination at the rate in effect on the date of the Covered Termination, or if higher, at the rate in effect at any time during the 90-day period preceding the Change in Control; (b) any unpaid bonus or annual incentive payable to the Manager in respect of the calendar year ending prior to the Covered Termination; (c) the pro rata portion of any and all unpaid bonuses and annual incentive awards for the calendar year in which the Covered Termination occurs, said pro rata portion to be calculated on the fractional portion (the numerator of said fraction being the number of days between January 1 and the date of the Covered Termination, and the denominator of which is 365) of the target bonuses or annual incentive awards for such calendar year; and (d) the pro rata portion of any and all awards under the Company's long term incentive plan for the performance period(s) in which the Covered Termination occurs, said pro rata portion to be calculated on the fractional portion (the numerator of said fraction being the number of days between the first day of the applicable performance period and the date of the Covered Termination, and the denominator of which is the total number of days in the applicable performance period) of the amount of the award which would have been payable had (i) the Covered Termination not occurred, and (ii) the target level of performance been achieved for the applicable performance period. The Manager shall be entitled to receive any other payments or benefits that the Manager is entitled to pursuant to the express terms of any compensation or benefit plan or arrangement of the Company or any of its affiliates; provided that: (x) the Severance Allowance (i) shall be in lieu of any severance payments to which the Manager might otherwise be entitled under the terms of any severance pay plan, policy, or arrangement maintained by the Company or the employment agreement, if any, between the Manager and the Company, and (ii) shall be credited against any severance payments to which the Manager may be entitled by statute; (y) any annual incentive described in subsection (b) or (c) shall decrease (or shall be decreased by), but not below zero, the amount of the annual incentive payable (or paid) with respect to the same calendar year under the Company's annual incentive plan (currently the 2001 Global Annual Incentive Plan); and (z) any amount described in subsection (d) shall decrease (or shall be decreased by), but not below zero, the amount of the analogous performance award payable (or paid) with respect to the same performance period(s) under the Company's long term incentive plan(s) (currently the 2011 Long-Term Performance Incentive Plan).

8. Death After Covered Termination.

In the event the Manager dies after a Covered Termination occurs, (a) any payments due to the Manager under Section 4 and the first sentence of Section 7 and not paid prior to the Manager's death shall be made to the person or persons who may be designated by the Manager in writing or, in the event he fails to so designate, to the Manager's personal representatives, and (b) the Manager's spouse and dependents shall be eligible for the welfare benefits described in Section 5(b). Payments pursuant to subsection (a) shall be made on the later of (i) the date payment would have been made to the Manager without regard to Section 9, or (ii) the date of the Manager's death.

9. Certain Section 409A Rules.

(a) Specified Employee. Notwithstanding any provision of this Agreement to the contrary, if the Manager is a Specified Employee, any payment or benefit under this Agreement that constitutes deferred compensation subject to Section 409A of the Code and for which the payment event is Separation from Service shall not be made or provided before the date that is six months after the date of the Manager's Separation from Service. Any payment or benefit that is delayed pursuant to this Section 9 shall be made or provided on the first business day of the seventh month following the month in which the Manager's Separation from Service occurs. With respect to any cash payment delayed pursuant to this Section 9, the first payment shall include interest, at the Wall Street Journal Prime Rate published in the Wall Street Journal on the date of the Manager's Covered Termination (or the previous business day if such date is not a business day), for the period from the date the payment would have been made but for this Section 9 through the date payment is made. The provisions of this Section 9 shall apply only to the extent required to avoid the Manager's incurrence of any additional tax or interest under Section 409A of the Code.

(b) Reimbursement and In-Kind Benefits. Notwithstanding any provision of this Agreement to the contrary, with respect to in-kind benefits provided or expenses eligible for reimbursement under this Agreement which are subject to Section 409A of the Code, (i) the benefits provided or the amount of expenses eligible for reimbursement during any calendar year shall not affect the benefits provided or expenses eligible for reimbursement in any other calendar year, except as otherwise provided in Treas. Reg. §1.409A-3(i)(1)(iv)(B), and (ii) the reimbursement of an eligible expense shall be made as soon as practicable after the Manager requests such reimbursement (subject to Section 9(a)), but not later than the December 31 following the calendar year in which the expense was incurred.

(c) Interpretation and Construction. This Agreement is intended to comply with Section 409A of the Code and shall be administered, interpreted and construed in accordance therewith to avoid the imposition of additional tax under Section 409A of the Code.

10. Confidentiality and Noncompetition.

(a) Confidential Information. The Manager acknowledges that information concerning the method and conduct of the Company's (and any affiliate's) business, including, without limitation, strategic and marketing plans, budgets, corporate practices and procedures, financial statements, customer and supplier information, formulae, formulation information, application technology, manufacturing information, and laboratory test methods and all of the Company's (and any affiliate's) manuals, documents, notes, letters, records, and computer programs ("Proprietary Business Information"), are the sole and exclusive property of the Company (and/or the Company's affiliates, as the case may be) and are likely to constitute, contain or reveal trade secrets ("Trade Secrets") of the Company (and/or the Company's affiliate's, as the case may be). The term "Trade Secrets" as used herein does not include Proprietary Business Information that is known or becomes known to the public through no act or failure to act on the part of the Manager, or which can be clearly shown by written records to have been known by the Manager prior to the commencement of his employment with the Company.

(i) The Manager agrees that at no time during or following his employment with the Company will he use, divulge, or pass on, directly or through any other individual or entity, any Trade Secrets.

(ii) Upon termination of the Manager's employment with the Company regardless of the reason for the termination of the Manager's employment hereunder, or at any other time upon the Company's request, the Manager agrees to forthwith surrender to the Company any and all materials in his possession or control which constitute or contain any Proprietary Business Information.

(b) Noncompetition. The Manager agrees that during his employment and for a period of one (1) year thereafter, regardless of the reason for the termination of the Manager's employment, he will not:

(i) directly or indirectly, together or separately or with any third party, whether as an individual proprietor, partner, stockholder, officer, director, joint venturer, investor, or in any other capacity whatsoever actively engage in business or assist anyone or any firm in business as a manufacturer, seller, or distributor of specialty chemical products or chemical management services which are the same, like, similar to, or which compete with the products and services offered by the Company (or any of its affiliates);

(ii) directly or indirectly recruit, solicit or encourage any employee of the Company (or any of its affiliates) or otherwise induce such employee to leave the employ of the Company (or any of its affiliates) or to become an employee or otherwise be associated with his or any firm, corporation, business or other entity with which he is or may become associated; or

(iii) solicit, directly or indirectly, for himself or as agent or employee of any person, partnership, corporation, or other entity (other than for the Company), any then or former customer, supplier, or client of the Company with the intent of actively engaging in business which would cause competitive harm to the Company (or any of its affiliates).

(c) Severability. The Manager acknowledges and agrees that all of the foregoing restrictions are reasonable as to the period of time and scope. However, if any paragraph, sentence, clause, or other provision is held invalid or unenforceable by a court of competent and relevant jurisdiction, such provision shall be deemed to be modified in a manner consistent with the intent of such original provision so as to make it valid and enforceable, and this Agreement and the application of such provision to persons and circumstances other than those with respect to which it would be invalid or unenforceable shall not be affected thereby.

(d) Remedies. The Manager agrees and recognizes that in the event of a breach or threatened breach of the provisions of the restrictive covenants contained in this Section 10, the Company may suffer irreparable harm, and monetary damages may not be an adequate remedy. Therefore, if any breach occurs or is threatened, the Company shall be entitled to seek equitable remedies, including injunctive relief in any court of applicable jurisdiction notwithstanding the provisions of Section 12. In the event of any breach of the restrictive covenant contained in this Section 10, the term of the restrictive covenant specified herein shall be extended by a period of time equal to that period beginning on the date such violation commenced and ending when the activities constituting such violation cease. Furthermore, if a court or arbitration panel determines that the Manager has breached any of the provisions of this Section 10, the Company's obligations to pay amounts and continue the benefits under this Agreement to the Manager (and his dependents) shall immediately terminate.

11. **Set-Off Mitigation.**

Except as provided in Section 6, the Company's obligation to make the payments provided for in this Agreement and otherwise to perform its obligations hereunder shall not be affected by any set-off, counterclaim, recoupment, defense, or other claim, right, or action which the Company may have against the Manager or others. In no event shall the Manager be obligated to seek other employment or take any other action by way of mitigation of the amounts payable to the Manager under any of the provisions of this Agreement.

12. **Arbitration: Costs and Expenses of Enforcement.**

(a) Arbitration. Except as otherwise provided in Sections 10(d) and 13, any controversy or claim arising out of or relating to this Agreement or the breach thereof which cannot promptly be resolved by the parties shall be promptly submitted to and settled exclusively by arbitration in the City of Philadelphia, Pennsylvania, in accordance with the laws of the Commonwealth of Pennsylvania by three arbitrators, one of whom shall be appointed by the Company, one by the Manager, and the third of whom shall be appointed by the first two arbitrators. The arbitration shall be conducted in accordance with the rules of the American Arbitration Association, except with respect to the selection of arbitrators which shall be as provided in this Section 12. Judgment upon the award rendered by the arbitrators may be entered in any court having jurisdiction thereof.

(b) Costs and Expenses. In the event that it shall be necessary or desirable for the Manager to retain legal counsel and/or incur other costs and expenses in connection with the enforcement of any and all of his rights under this Agreement at any time during his lifetime, the Company shall pay (or the Manager shall be entitled to recover from the Company, as the case may be) his reasonable attorneys' fees and costs and expenses in connection with the enforcement of his said rights (including those incurred in or related to any arbitration proceedings provided for in subsection (a) and the enforcement of any arbitration award in court), regardless of the final outcome.

13. **Limitation on Payment Obligation.**

(a) Definitions. For purposes of this Section 13, all terms capitalized but not otherwise defined herein shall have the meanings as set forth in Section 280G of the Code. In addition:

(i) the term "Parachute Payment" shall mean a payment described in Section 280G(b)(2)(A) or Section 280G(b)(2)(B) of the Code (including, but not limited to, any stock option rights, stock grants, and other cash and noncash compensation amounts that are treated as payments under either such section) and not excluded under Section 280G(b)(4)(A) or Section 280G(b)(6) of the Code;

(ii) the term "Reasonable Compensation" shall mean reasonable compensation for prior personal services as defined in Section 280G(b)(4)(B) of the Code and subject to the requirement that any such reasonable compensation must be established by clear and convincing evidence; and

(iii) the portion of the "Base Amount" and the amount of "Reasonable Compensation" allocable to any "Parachute Payment" shall be determined in accordance with Section 280G(b)(3) and (4) of the Code.

(b) Limitation. Notwithstanding any other provision of this Agreement, Parachute Payments to be made to or for the benefit of the Manager but for this subsection (b), whether pursuant to this Agreement or otherwise, shall be reduced if and to the extent necessary so that the aggregate Present Value of all such Parachute Payments shall be at least one dollar ($1.00) less than the greater of (i) three times the Manager's Base Amount and (ii) the aggregate Reasonable Compensation allocable to such Parachute Payments. Any reduction in Parachute Payments caused by reason of this subsection (b) shall be applied in the manner least economically detrimental to the Manager. In the event reduction of two or more types of payments would be economically equivalent, the reduction shall be applied pro-rata to such types of payments.

This subsection (b) shall be interpreted and applied to limit the amounts otherwise payable to the Manager under this Agreement or otherwise only to the extent required to avoid any material risk of the imposition of excise taxes on the Manager under Section 4999 of the Code or the disallowance of a deduction to the Company under Section 280G(a) of the Code. In the making of any such interpretation and application, the Manager shall be presumed to be a disqualified individual for purposes of applying the limitations set forth in this subsection (b) without regard to whether or not the Manager meets the definition of disqualified individual set forth in Section 280G(c) of the Code. In the event that the Manager and the Company are unable to agree as to the application of this subsection (b), the Company's independent auditors shall select independent tax counsel to determine the amount of such limits. Such selection of tax counsel shall be subject to the Manager's consent, provided that the Manager shall not unreasonably withhold his consent. The determination of such tax counsel under this Section 13 shall be final and binding upon the Manager and the Company.

(c) Illegal Payments. Notwithstanding any other provision of this Agreement, no payment shall be made hereunder to or for the benefit of the Manager if and to the extent that such payments are determined to be illegal.

14. Notices.

Any notices, requests, demands, and other communications provided for by this Agreement shall be sufficient if in writing, and if hand delivered or if sent by registered or certified mail, if to the Manager, at the last address he had filed in writing with the Company or if to the Company, at its principal executive offices. Notices, requests, etc. shall be effective when actually received by the addressee or at such address.

15. Withholding.

Notwithstanding any provision of this Agreement to the contrary, the Company may, to the extent required by law, withhold applicable Federal, state and local income and other taxes from any payments due to the Manager hereunder.

16. Assignment and Benefit.

(a) This Agreement is personal to the Manager and shall not be assignable by the Manager, by operation of law, or otherwise without the prior written consent of the Company otherwise than by will or the laws of descent and distribution. This Agreement shall inure to the benefit of and be enforceable by the Manager's heirs and legal representatives.

(b) This Agreement shall inure to the benefit of and be binding upon the Company and its successors and assigns, including, without limitation, any subsidiary of the Company to which the Company may assign any of its rights hereunder; provided, however, that no assignment of this Agreement by the Company, by operation of law, or otherwise shall relieve it of its obligations hereunder except an assignment of this Agreement to, and its assumption by, a successor pursuant to subsection (c).

(c) The Company shall require any successor (whether direct or indirect, by purchase, merger, consolidation, operation of law, or otherwise) to all or substantially all of the business and/or assets of the Company to assume expressly and agree to perform this Agreement in the same manner and to the same extent that the Company would be required to perform it if no such succession had taken place, but, irrespective of any such assignment or assumption, this Agreement shall inure to the benefit of and be binding upon such a successor. As used in this Agreement, "Company" shall mean the Company as hereinbefore defined and any successor to its business and/or assets as aforesaid.

17. Governing Law.

The provisions of this Agreement shall be construed in accordance with the laws of the Commonwealth of Pennsylvania without reference to principles of conflicts of laws.

18. Entire Agreement; Amendment.

(a) Except for the change in control provisions set forth in the Company's annual incentive plan and long term incentive plans, this Agreement represents the entire agreement and understanding of the parties with respect to the subject matter hereof. The Manager understands and acknowledges that the Company's severance plan, annual incentive plan and long term incentive plans are hereby amended with respect to the Manager to avoid duplication of benefits, as provided in Section 7.

(b) The Company reserves the right to unilaterally amend this Agreement without the consent of the Manager to the extent the Compensation/Management Development Committee of the Company's Board of Directors (in its sole discretion) determines is necessary or appropriate to avoid the additional tax under Section 409A(a)(1)(B) of the Code; otherwise, this Agreement may not be altered or amended except by an agreement in writing executed by the Company and the Manager.

19. **No Waiver.**

The failure to insist upon strict compliance with any provision of this Agreement by any party shall not be deemed to be a waiver of any future noncompliance with such provision or of noncompliance with any other provision.

20. **Severability.**

In the event that any provision or portion of this Agreement shall be determined to be invalid or unenforceable for any reason, the remaining provisions of this Agreement shall be unaffected thereby and shall remain in full force and effect.

21. **Indemnification.**

The Company shall defend and hold the Manager harmless to the fullest extent permitted by applicable law in connection with any claim, action, suit, investigation or proceeding arising out of or relating to performance by the Manager of services for, or action of the Manager as a director, officer or employee of the Company or any parent, subsidiary or affiliate of the Company, or of any other person or enterprise at the Company's request. Expenses incurred by the Manager in defending such a claim, action, suit or investigation or criminal proceeding shall be paid by the Company in advance of the final disposition thereof upon the receipt by the Company of an undertaking by or on behalf of the Manager to repay said amount unless it shall ultimately be determined that the Manager is entitled to be indemnified hereunder; provided, however, that this shall not apply to a nonderivative action commenced by the Company against the Manager.

IN WITNESS WHEREOF, the Manager has hereunto set his hand and, pursuant to the authorization from its Board of Directors, the Company has caused these presents to be executed in its name and on its behalf and attested by its Secretary or Assistant Secretary, all as of the day and year first above written.

MANAGER

/s/ Mary Dean Hall

QUAKER CHEMICAL CORPORATION

By: /s/ Michael F. Barry

Title: Chairman, CEO & President

ATTEST:

/s/ Robert T. Traub

QUAKER CHEMICAL CORPORATION
RETIREMENT SAVINGS PLAN

(As Amended and Restated Effective January 1, 2016)

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QUAKER CHEMICAL CORPORATION RETIREMENT SAVINGS PLAN

(As Amended and Restated Effective January 1, 2016)

WHEREAS, Quaker Chemical Corporation (the "Company") maintains the Quaker Chemical Corporation Retirement Savings Plan (the "Plan") for the benefit of eligible employees of the Company and participating affiliates;

WHEREAS, the Plan was most recently amended and restated effective January 1, 2015; and
WHEREAS, the Company desires to amend and restate the Plan in order to exclude certain items from the definition of compensation thereunder, effective January 1, 2016;

NOW, THEREFORE, effective January 1, 2016 (except where other effective dates are specifically provided), the Plan is hereby amended and restated, in its entirety, as follows:

ARTICLE I
DEFINITIONS

The following words and phrases, as used in the Plan, shall have the following meanings unless the context clearly indicates otherwise:

1.1 "AC Participant" means a Participant who is employed by AC Products, Inc., other than the individual who was the President of AC Products, Inc. on January 1, 2006.

1.2 "AC Products Discretionary Contributions" means the discretionary contributions, if any, made by AC Products, Inc. pursuant to Section 4.4(c) and allocated pursuant to Section 4.7(b)(iv).

1.3 "Administrator" means the committee designated by the Company to administer the Plan on behalf of the Employer.

1.4 "Affiliated Employer" means any corporation which is a member of a controlled group of corporations (as defined in Code section 414(b)) which includes the Company; any trade or business (whether or not incorporated) which is under common control (as defined in Code section 414(c)) with the Company; any organization (whether or not incorporated) which is a member of an affiliated service group (as defined in Code section 414(m)) which includes the Company; and any other entity required to be aggregated with the Company pursuant to Regulations under Code section 414(o).

1.5 "Aggregate Account" means, with respect to each Participant, the value of all accounts maintained on behalf of the Participant, whether attributable to Employer or Employee contributions.

1.6 "Bargaining Component Plan" means the component of the Plan that covers Employees who are members of a collective bargaining unit.

1.7 "Base Compensation" means, with respect to any Employee, the Compensation of the Employee, excluding overtime payments, shift differential, commissions, all nonsalary and nonwage direct or indirect compensation, Employer contributions to Social Security, contributions to this or any other retirement plan or program, the value of any other fringe benefit provided by or at the expense of the Employer, and any income realized upon the receipt, exercise, or vesting of a grant of a stock option, performance incentive unit, restricted stock, or other equity award pursuant to the Company's long-term performance incentive plan.

1.8 "Beneficiary" means the person to whom the share of a deceased Participant's total account is payable, subject to the restrictions of Sections 6.3 and 6.6.

1.9 "Catch-Up Contributions" means additional contributions that a Catch-Up Eligible Employee may elect to make, including Roth Catch-Up Contributions, in accordance with Section 4.3 and Code section 414(v).

1.10 "Catch-Up Eligible Employee" means, with respect to a Plan Year, an Eligible Employee who is eligible to make Elective Contributions under Section 4.2 and who has attained or will attain age 50 before the end of such Plan Year.

1.11 "Code" means the Internal Revenue Code of 1986, as amended or replaced from time to time, and any Regulations in effect thereunder.

1.12 "Company" means Quaker Chemical Corporation, a Pennsylvania corporation, and any successor thereto.

1.13 "Company Securities" means the common stock of the Company.

1.14 "Compensation" means, with respect to any Employee, (a) the total remuneration earned or accrued on behalf of the Employee during the time period to which reference is made, exclusive of: (i) remuneration paid to any Participant after the date on which such Participant ceased to be employed in a classification eligible for participation in this Plan, other than remuneration with respect to services performed while the Participant was an Eligible Employee that is paid prior to the later of the end of the Plan Year in which the Participant's Severance from Employment occurs or two and one-half months after his or her Severance from Employment; (ii) for purposes of determining Elective Contributions, amounts realized from the exercise of a stock option, when restricted stock (or property) held by an Employee is includible in the Employee's gross income, or when a stock grant is made; (iii) restricted stock dividends; (iv) taxable mileage; and (v) gift cards and other remuneration not received in cash (and any gross-up payments made with respect to such amounts); and (b) differential wage payments (within the meaning of Code section 414(u)(12)). For purposes of allocating AC Products Discretionary Contributions and Quaker Discretionary Contributions pursuant to Section 4.7(b), only Compensation earned by an Employee while he or she is eligible to receive such a Contribution shall be taken into account. The determination of Compensation shall be made by including Deferred Compensation and salary reduction contributions made on behalf of an Employee to a plan maintained under Code section 125 or to a qualified transportation fringe benefit program described under Code section 132(f), but shall be exclusive of any distributions attributable to unused "flex dollars" accumulated by the Employer pursuant to the Quaker

Chemical Corporation Flexible Benefits Program. For purposes of determining Compensation, amounts under Code section 125 include any amounts not available to a Participant in cash in lieu of group health coverage because the Participant is unable to certify that he or she has other health coverage. An amount shall be treated as an amount under Code section 125 only if the Employer does not request or collect information regarding the Participant's other health coverage as part of the enrollment process for the health plan.

The annual Compensation of each Employee taken into account in determining allocations under the Plan for any Plan Year shall not exceed $265,000, as adjusted by the Commissioner of Internal Revenue for increases in the cost-of-living in accordance with Code section 401(a)(17)(B) for Plan Years after 2016. Annual Compensation means Compensation during the Plan Year or such other 12-consecutive-month period over which Compensation is otherwise determined under the Plan (the determination period). The cost-of-living adjustment in effect for a calendar year applies to annual Compensation for the determination period that begins with or within such calendar year. For purposes of determining a Participant's Elective Contributions and Matching Contributions, the limit set forth in this paragraph shall be applied to a Participant's Compensation on a Plan Year basis (or on a determination period basis, if the determination period is other than a Plan Year) and shall not be applied on a first-dollar basis.

Compensation, as defined above, shall include the amount that a Participant would have received from the Employer during a period of Qualified Military Service (or, if the amount of such Compensation is not reasonably certain, the Employee's average earnings from the Employer or an Affiliated Employer for the 12-month period immediately preceding the Employee's period of Qualified Military Service or, if shorter, the period of employment immediately preceding the Qualified Military Service); provided, however, that the Employee returns to work within the period during which his or her right to reemployment is protected by law.

1.15 "Contract" means a life insurance policy or annuity contract (group or individual) issued by the insurer as elected.

1.16 "Deferred Compensation" means, with respect to any Participant, that portion of the Participant's total Compensation which has been contributed to the Plan in accordance with the Participant's salary deferral election pursuant to Section 4.2. The term "Deferred Compensation" shall include Catch-Up Contributions except to the extent provided in Section 4.3, Code section 414(v), or final Regulations or other guidance issued by the Internal Revenue Service.

1.17 "Effective Date" means January 1, 2016, the effective date of this amended and restated Plan, except as otherwise provided herein or as otherwise required by applicable law. Except where an earlier effective date is specified herein, the provisions of this amendment and restatement shall apply only to Employees who complete an Hour of Service on or after the Effective Date. The rights of individuals who terminated employment prior to the Effective Date shall otherwise be governed by the Plan as in effect on the date of their termination from employment. The original effective date of the Plan was December 31, 1953.

1.18 "Elective Contributions" means the Employer's contributions to the Plan that are made pursuant to the Participant's salary deferral election provided in Section 4.2. In addition, any Qualified Nonelective Contribution shall be considered an Elective Contribution for purposes of the Plan; provided, however, that Qualified Nonelective Contributions used to satisfy the Actual Contribution Percentage Test of Section 4.8(b) shall not be used to satisfy the Actual Deferral Percentage Test of Section 4.8(a). The term "Elective Contributions" shall include (i) Roth Elective Contributions, and (ii) Catch-Up Contributions, including Roth Catch-Up Contributions, except to the extent provided in Section 4.3, Code section 414(v), or final Regulations or other guidance issued by the Internal Revenue Service.

1.19 "Eligible Employee" means any Employee, except as follows:

(a) An Employee who is a member of UAW Local 174 shall be deemed an "Eligible Employee" for purposes of being permitted to make Elective Contributions, receiving Matching Contributions, and receiving an allocation of Quaker Discretionary Contributions (if any) and Nonelective Contributions.

(b) Any other Employee whose employment is governed by the terms of a collective bargaining agreement between employee representatives (within the meaning of Code section 7701(a)(46)) and the Employer under which retirement benefits were the subject of good faith bargaining between the parties shall be an "Eligible Employee" only to the extent such agreement expressly provides for coverage under this Plan.

(c) An Employee of an Affiliated Employer shall not be eligible to participate in this Plan unless such Affiliated Employer has specifically adopted this Plan in writing.

(d) A Leased Employee shall not be eligible to participate in this Plan.

(e) A nonresident alien who receives no earned income (within the meaning of Code section 911(d)(2)) which constitutes United States source income (within the meaning of Code section 861(a)(3)) shall not be eligible to participate in this Plan.

(f) A person shall not be eligible to participate in this Plan if he or she provides services to an Employer or Affiliated Employer pursuant to an agreement with a leasing organization (including, but not limited to, a Leased Employee), or if he or she is classified by an Employer or Affiliated Employer (i) as an independent contractor, or (ii) in any other category which is not a common law employee, as reflected in the official payroll and personnel records of the Employer or Affiliated Employer. The exclusion set forth in this subsection shall be based solely on the classification by the Employer or Affiliated Employer regardless of how such individual is classified by any government or regulatory authority or by any court. If an Employer or an Affiliated Employer reclassifies an individual as an Employee, such reclassification shall apply prospectively from the date of such reclassification (and not retroactively to the date on which he or she was found to have first become an employee for any other purpose), unless the Employer or Affiliated Employer specifically provides otherwise.

(g) Effective with respect to an Employee hired after 2010, an Employee shall not be eligible to participate in this Plan if he or she is (i) employed by an Employer for a temporary or periodic basis or without a regular work schedule pursuant to which the Employee accepts a job assignment having a fixed and limited duration, and (ii) classified by the Employer as a temporary employee.

1.20 "Employee" means any person who is employed by the Employer or an Affiliated Employer, and shall also include a Leased Employee.

1.21 "Employer" means the Company and any Affiliated Employer that has adopted this Plan in writing and joins in the corresponding trust agreement. The Affiliated Employers participating in the Plan as of January 1, 2016, are listed in Exhibit A.

1.22 "Entry Date" means the date as of which an Eligible Employee is eligible to become a Participant in the Plan, as provided in Section 3.1(a).

1.23 "Epmar Participant" means a Participant who is employed by Epmar Corporation.

1.24 "ERISA" means the Employee Retirement Income Security Act of 1974, as it may be amended from time to time.

1.25 "Excess Aggregate Contributions" means, with respect to any Plan Year, the excess of the aggregate amount of the Matching Contributions made on behalf of Highly Compensated Employees for such Plan Year, over the maximum amount of such contributions permitted under the limitations of Section 4.8(b). Excess Aggregate Contributions shall be treated as an "annual addition" pursuant to Section 4.10.

1.26 "Excess Contributions" means, with respect to any Plan Year, the excess of Elective Contributions made on behalf of Highly Compensated Employees for such Plan Year over the maximum amount of such contributions permitted under Section 4.8(a). Excess Contributions shall be treated as an "annual addition" pursuant to Section 4.10.

1.27 "Excess Deferred Compensation" means, with respect to any taxable year of a Participant, the aggregate amount of the Participant's Deferred Compensation claimed by the Participant (pursuant to Section 4.2(d)(i)) or deemed to be claimed by the Participant (pursuant to Section 4.2(d)(ii)) as exceeding the dollar limitation provided for in Code section 402(g), which is incorporated herein by reference. Excess Deferred Compensation distributed pursuant to Section 4.2(d)(iv) shall not be treated as an "annual addition" pursuant to Section 4.10.

1.28 "Fiduciary" means any person or entity who (a) exercises any discretionary authority or discretionary control respecting management of the Plan or exercises any authority or control respecting management or disposition of its assets, (b) renders investment advice for a fee or other compensation, direct or indirect, with respect to any monies or other property of the Plan or has any authority or responsibility to do so, or (c) has any discretionary authority or discretionary responsibility in the administration of the Plan, including, but not limited to, the Trustee, the Company and its representative body, and the Administrator.

1.29 "Forfeiture" means removing that portion of the Participant's Account that is not Vested from the Participant's Account. Forfeiture shall occur on the earlier of (a) the date on which distribution is made to the Participant of the Participant's Vested Aggregate Account, or (b) the last day of the Plan Year in which the Participant incurs five consecutive 1-Year Breaks in Service. In addition, the term Forfeiture shall also include amounts deemed to be Forfeitures pursuant to any other provision of this Plan. If a Participant's Vested Aggregate Account is $0, the Participant shall be deemed to receive a distribution of his or her Vested Aggregate Account on his or her Severance from Employment.

1.30 "415 Compensation" means "compensation" as such word is defined in Regulation sections 1.415(c)-2(b) and (c) (including differential wage payments within the meaning of Code section 414(u)(12)). 415 Compensation shall not include compensation paid following a Participant's Severance from Employment with the Company and any Affiliated Employers, except as otherwise required by Regulation section 1.415(c)-2(e)(3)(i). In no event shall a Participant's 415 Compensation for any limitation year (as defined in Section 4.10(c)) exceed the annual compensation limit of Code section 401(a)(17) for such year.

1.31 "414(s) Compensation" means 415 Compensation, but excluding (i) restricted stock dividends; (ii) taxable mileage; and (iii) gift cards and other remuneration not received in cash.

1.32 "G.W. Smith Participant" means a Participant who is employed by G.W. Smith & Sons, Inc.

1.33 "Highly Compensated Employee" means, with respect to a Plan Year, an Employee who:

(a) was a 5% owner (as defined in Code section 416(i)(1)) of the Employer or an Affiliated Employer at any time during the current or the preceding Plan Year; or

(b) for the immediately preceding Plan Year had 415 Compensation from the Employer and Affiliated Employers in excess of $120,000 (as adjusted by the Secretary of Treasury pursuant to Code section 414(q) for Plan Years after 2015) and was in the top-paid group of Employees for such preceding year.

An Employee is in the top-paid group of Employees for the year if such Employee is in the group consisting of the top 20% of employees when ranked on the basis of 415 Compensation paid during such year. The determination of who is a Highly Compensated Employee, including the determination of 415 Compensation and of the number and identity of Employees in the top-paid group, shall be made in accordance with Code section 414(q) and the Regulations thereunder.

In determining who is a Highly Compensated Employee, Employees who are nonresident aliens and who received no earned income (within the meaning of Code section 911(d)(2)) from the Employer constituting United States source income within the meaning of Code section 861(a)(3) shall not be treated as Employees. All Affiliated Employers, however, shall be taken into account as a single employer.

1.34 "Hour of Service" means (a) each hour for which an Employee is directly or indirectly compensated or entitled to compensation by the Employer for the performance of duties during the applicable computation period; (b) each hour for which an Employee is directly or indirectly compensated or entitled to compensation by the Employer (irrespective of whether the employment relationship has terminated) for reasons other than performance of duties (such as vacation, holidays, sickness, jury duty, disability, layoff, military duty, or leave of absence) during the applicable computation period; (c) each hour for which back pay is awarded or agreed to by the Employer without regard to mitigation of damages; and (d) each hour that constitutes part of the Employee's customary work week during any period of Qualified Military Service, provided the Employee returns to service while his or her reemployment rights are protected by law. For purposes of subsection (c), these hours shall be credited to the Employee for the computation period or periods to which the award or agreement pertains rather than the computation period in which the award, agreement, or payment is made. The same Hours of Service shall not be credited both under subsection (a) or (b), as the case may be, and under subsection (c) or (d), as the case may be.

Notwithstanding the above, (i) except with respect to subsection (d), no more than 501 Hours of Service shall be credited to an Employee on account of any single continuous period during which the Employee performs no duties (whether or not such period occurs in a single computation period); (ii) an hour for which an Employee is directly or indirectly paid, or entitled to payment, on account of a period during which no duties are performed shall not be credited to the Employee if such payment is made or due under a plan maintained solely for the purpose of complying with applicable workers' compensation, unemployment compensation, or disability insurance laws; and (iii) Hours of Service shall not be credited for a payment which solely reimburses an Employee for medical or medically related expenses incurred by the Employee.

For purposes of this Section, a payment shall be deemed to be made by or due from the Employer regardless of whether such payment is made by or due from the Employer directly, or indirectly through, among others, a trust fund or insurer, to which the Employer contributes or pays premiums, and regardless of whether contributions made or due to the trust fund, insurer, or other entity are for the benefit of particular Employees or are on behalf of a group of Employees in the aggregate.

An Hour of Service must be counted for the purposes of determining a Year of Service, a 1-Year Break in Service, and employment commencement date (or reemployment commencement date). In addition, Hours of Service shall be credited for employment with other Affiliated Employers for all purposes under the Plan other than Section 4.7(b)(iii) and (iv) (regarding eligibility to receive an AC Products Discretionary Contribution or a Quaker Discretionary Contribution). The provisions of 29 CFR §2530.200b-2(b) and (c) are incorporated herein by reference.

1.35 "Investment Manager" means an entity that (a) has the power to manage, acquire, or dispose of Plan assets and (b) acknowledges fiduciary responsibility to the Plan in writing. Such entity must be a person, firm, or corporation registered as an investment adviser under the Investment Advisers Act of 1940, a bank, or an insurance company or other person or entity described in ERISA section 3(38).

1.36 "Key Employee" means any Employee or former Employee (and the beneficiaries of such Employee) who at any time during the Plan Year that includes the Determination Date (as defined in Section 2.2(d)) was:

(a) an officer of an Employer or any Affiliated Employer having annual 415 Compensation from the Employer and the Affiliated Employer greater than $170,000 (as adjusted under Code section 416(i)(1) for Plan Years beginning after December 31, 2016);

(b) a 5% owner of an Employer or any Affiliated Employer; or

(c) a 1% owner of an Employer or any Affiliated Employer who has annual 415 Compensation from an Employer and the Affiliated Employer for a Plan Year of more than $150,000.

The determination of who is a Key Employee shall be made in accordance with Code section 416(i) and applicable Regulations and other guidance of general applicability issued thereunder.

1.37 "Leased Employee" means any person (other than a common law employee of the recipient) who, pursuant to an agreement between the recipient and any other person ("leasing organization"), has performed services for the recipient (or for the recipient and related persons determined in accordance with Code section 414(n)(6)) on a substantially full-time basis for a period of at least one year, if such services are performed under the primary direction or control by the recipient. Contributions or benefits provided to a Leased Employee by the leasing organization which are attributable to services performed for the recipient employer shall be treated as provided by the recipient employer.

1.38 "Matching Contribution" means the amount authorized by the Administrator as described in Section 4.4(a) and contributed in cash or Company Securities by the Employer.

1.39 "Nonelective Contributions" means the amount described in Section 4.5 and contributed in cash or Company Securities by the Employer.

1.40 "Nonhighly Compensated Employee" means an Empoyee who is not a Highly Compensated Employee.

1.41 "Non-Safe Harbor Component Plan" means the component of the Plan that covers Employees who (a) are not members of a collective bargaining unit, and (b) have either not completed a Year of Service (for purposes of Section 3.1) or not attained age 21.

1.42 "Normal Retirement Age" means the Participant's 65th birthday.

1.43 "1-Year Break in Service" means the applicable computation period during which an Employee has not completed more than 500 Hours of Service with the Employer or an Affiliated Employer. Further, solely for the purpose of determining whether a Participant has incurred a 1-Year Break in Service, Hours of Service shall be recognized for authorized leaves of absence and maternity and paternity leaves of absence. Years of Service and 1-Year Breaks in Service shall be measured using the same computation period. In addition, an Employee on

Qualified Military Service shall not incur a 1-Year Break in Service, provided he or she returns to service while his or her employment rights are protected by law.

"Authorized leave of absence" means an unpaid, temporary cessation from active employment with the Employer pursuant to an established nondiscriminatory policy, whether occasioned by illness, military service, or any other reason.

A "maternity or paternity leave of absence" means an absence from work for any period by reason of the Employee's pregnancy, birth of the Employee's child, placement of a child with the Employee in connection with the adoption of such child, or any absence for the purpose of caring for such child for a period immediately following such birth or placement. For an individual who is absent from work for maternity or paternity reasons, the 12-consecutive-month period beginning on the date of such absence or the first anniversary of such absence shall not constitute a 1-Year Break in Service.

1.44 "Participant" means an Eligible Employee who is included in the Plan as provided in Article III.

1.45 "Participant's Account" means the account established and maintained by the Administrator for each Participant with respect to his or her total interest in the Plan and Trust resulting from AC Products Discretionary Contributions, Quaker Discretionary Contributions, Matching Contributions, and Nonelective Contributions. A separate accounting shall be maintained with respect to that portion of the Participant's Account attributable to Nonelective Contributions for Plan Years prior to 2008, Nonelective Contributions for Plan Years after 2007, Matching Contributions, AC Products Discretionary Contributions, and Quaker Discretionary Contributions.

1.46 "Participant's Elective Account" means the account established and maintained by the Administrator for each Participant with respect to his or her total interest in the Plan and Trust resulting from Elective Contributions which are not directed by the Participant to the Quaker Stock Fund. A separate accounting shall be maintained with respect to that portion of the Participant's Elective Account attributable to (i) pre-tax Elective Contributions pursuant to Section 4.2 or 4.3, (ii) Roth Elective Contributions (including Roth Catch-Up Contributions) pursuant to Section 4.2 or 4.3, and (iii) any Qualified Nonelective Contributions made pursuant to Section 4.9(f).

1.47 "Plan" means the Quaker Chemical Corporation Retirement Savings Plan as set forth herein, including all amendments thereto. The Plan was formerly known as the "Quaker Chemical Corporation Profit Sharing and Retirement Plan." With the exception of the Stock Bonus Plan portion of the Plan, the Plan is intended to be a profit-sharing plan under Code section 401(a)(27).

1.48 "Plan Year" means the Plan's accounting year of 12 months commencing on January 1 of each year and ending the following December 31.

1.49 "Quaker Discretionary Contributions" means the discretionary contributions, if any, made by the Employer pursuant to Section 4.4(b) and allocated pursuant to Section 4.7(b)(iii).

1.50 "Quaker Stock Fund" means a fund that invests in Company Securities.

1.51 "Qualified Military Service" means any service in the uniformed services (as defined in chapter 43 of title 38, United States Code) where the Employee's right to reemployment is protected by law.

1.52 "Qualified Nonelective Contributions" means the Employer's contributions to the Plan that are made pursuant to Section 4.9(f) and as described in Code section 401(m)(4)(C). Such contributions shall be subject to the provisions of Section 4.2(b) and (c), and either (a) considered Elective Contributions for the purposes of the Plan and used to satisfy the Actual Deferral Percentage Test of Section 4.8(a), or (b) used to satisfy the Actual Contribution Percentage Test of Section 4.8(b).

1.53 "Regulations" means the regulations promulgated by the Secretary of the Treasury from time to time.

1.54 "Rollover Account" means the accounts or subaccounts established and maintained by the Administrator for each Participant with respect to his or her Rollover Contributions Roth Rollover Contributions. The term Rollover Account shall include Roth Rollover Contributions unless expressly distinguished or otherwise required under the Code, Regulations, or other guidance. To the extent necessary for applicable tax and recordkeeping purposes, a separate Roth Rollover subaccount shall be established.

1.55 "Rollover Contribution" means a contribution or direct rollover made pursuant to Section 4.12.

1.56 "Roth Catch-Up Contributions" means Catch-Up Contributions that are includible in a Participant's gross income at the time deferred and have been irrevocably designated as Roth Catch-Up Contributions by the Participant, as described in Section 4.3.

1.57 "Roth Elective Contributions" means Elective Contributions that are includible in a Participant's gross income at the time deferred and have been irrevocably designated as Roth Elective Contributions by the Participant, as described in Section 4.2. The term Roth Elective Contributions shall include Roth Catch-Up Contributions except to the extent provided in Section 4.3, Code section 414(v), or final Regulations or other guidance issued by the Internal Revenue Service.

1.58 "Safe Harbor Component Plan" means the component of the Plan that covers employees who (a) are not members of a collective bargaining unit, (b) have completed a Year of Service (for purposes of Section 3.1), and (c) have attained age 21.

1.59 "Severance from Employment" means a severance from employment within the meaning of Code section 401(k)(2)(B)(i)(I), applicable Regulations thereunder, and other guidance of general applicability issued thereunder.

1.60 "Spouse" or "Surviving Spouse" shall mean the person to whom the Participant is legally married for purposes of Federal law, provided that a former spouse shall be treated as the Spouse or Surviving Spouse to the extent provided under a qualified domestic relations order, as defined in Code section 414(p).

1.61 "Stock Bonus Plan" means the portion of the Plan meant to qualify as a stock bonus plan under Code section 401(a) that invests primarily in Company Securities.

1.62 "Stock Bonus Plan Account" means the account established and maintained by the Administrator for each Participant with respect to his or her Elective Contributions, Matching Contributions, AC Products Discretionary Contributions, Quaker Discretionary Contributions, and Nonelective Contributions invested in the Quaker Stock Fund. A separate accounting shall be maintained with respect to that portion of a Participant's Stock Bonus Plan Account attributable to (a) pre-tax Elective Contributions, (b) Roth Elective Contributions (including Roth Catch-Up Contributions), (c) Matching Contributions, (d) AC Products Discretionary Contributions, (e) Quaker Discretionary Contributions, and (f) Nonelective Contributions.

1.63 "Summit Participant" means a Participant who is employed by Summit Lubricants Inc.

1.64 "Top-Heavy Plan" means a plan described in Section 2.2(a).

1.65 "Top-Heavy Plan Year" means a Plan Year during which the Plan is a Top-Heavy Plan.

1.66 "Total and Permanent Disability" means, (a) with respect to an Epmar Participant who has amounts transferred to the Plan pursuant to Article X, a physical or mental condition of the Participant resulting from bodily injury, disease, or mental disorder which renders such Participant incapable of continuing any gainful occupation and which condition constitutes total disability under the Federal Social Security Acts, and (b) with respect to a Participant not described in subsection (a), a physical or mental condition of the Participant resulting from bodily injury, disease, or mental disorder that continues for a period of at least 24 consecutive months and that renders him or her eligible for disability benefits under Title II of the Social Security Act.

1.67 "Trustee" means the person(s) or entity named as trustee herein or in any separate trust forming a part of this Plan, and any successors.

1.68 "Trust Fund" or "Fund" means the assets of the Plan and Trust as the same shall exist from time to time.

1.69 "Valuation Date" means any business day that the New York Stock Exchange is open for trading.

1.70 "Vested" means the nonforfeitable portion of any account maintained on behalf of a Participant.

1.71 "Year of Service" means:

(a) For all purposes of this Plan except for purposes of Section 3.1, a Plan Year during which an Employee completes 1,000 or more Hours of Service; and

(b) For purposes of Section 3.1, the 12-consecutive-month period beginning with the date the Employee's employment with the Employer or any Affiliated Employer commenced (such date being the first day for which the Employee is credited with an Hour of Service) if, during such consecutive 12-month period, the Employee completes 1,000 Hours of Service; provided, however, that if, during such 12-consecutive-month period, the Employee does not complete 1,000 Hours of Service, then "Year of Service" shall mean any Plan Year beginning after the Employee's date of employment during which the Employee completes 1,000 or more Hours of Service.

(c) For purposes of Section 3.1, a Year of Service is not completed until the end of the 12-consecutive-month period or the Plan Year, as the case may be, without regard to when during that period the 1,000 Hours of Service are completed, and in determining a Participant's Years of Service the Employee shall receive credit for his or her Hours of Service for the Employer or any Affiliated Employer whether or not he or she was an Eligible Employee at the time such Hours of Service were completed.

(d) For purposes of this Plan, service with AC Products, Inc. shall be deemed to constitute service with the Employer.

(e) For purposes of this Plan, service with United Lubricants Corporation prior to March 1, 2002, shall be deemed to constitute service with the Employer.

(f) For purposes of this Plan, service with D.A. Stuart prior to July 16, 2010, shall be deemed to constitute service with the Employer.

(g) For purposes of this Plan, all service credited under the G.W. Smith Plan or the Summit Plan shall also be credited as service under this Plan.

ARTICLE II
TOP-HEAVY RULES AND ADMINISTRATION

2.1 TOP-HEAVY PLAN REQUIREMENTS

For any Top-Heavy Plan Year, the special minimum allocation requirements of Code section 416(c) set forth in Section 4.7(d) of the Plan shall apply.

2.2 DETERMINATION OF TOP-HEAVY STATUS

(a) Top-Heavy Plan. This Plan shall be a Top-Heavy Plan for any Plan Year in which, as of the Determination Date, the present value of accrued benefits of Key Employees and the sum of the Aggregate Accounts of Key Employees under this Plan and all plans of an Aggregation Group exceeds 60% of the present value of accrued benefits and the sum of the Aggregate Accounts of all Key Employees and non-Key Employees under this Plan and all plans of an Aggregation Group.

If any Participant is a non-Key Employee for any Plan Year, but such Participant was a Key Employee for any prior Plan Year, the present value of such Participant's accrued benefit and such Participant's Aggregate Account balance shall not be taken into account for purposes of determining whether this Plan is a Top-Heavy Plan (or whether any Aggregation Group which includes this Plan is a Top-Heavy Group). In addition, the accrued benefits and accounts of any individual who has not performed services for an Employer during the one-year period ending on the Determination Date shall not be taken into account.

(b) Aggregate Account. A Participant's Aggregate Account for purposes of this Article II only shall be defined as the sum of the following as of the Determination Date:

(i) The balance of his or her Aggregate Account as of the most recent valuation occurring within a 12-month period ending on the Determination Date.

(ii) An adjustment for any contributions due as of the Determination Date, which adjustment shall be the amount of any contributions actually made after the most recent Valuation Date but due on or before the Determination Date, except for the first Plan Year of the Plan when such adjustment shall also reflect the amount of any contributions made after the Determination Date that are allocated as of a date in that first Plan Year.

(iii) Any Plan distributions made with respect to the Employee under the Plan and any Plan aggregated with the Plan under Code section 416(g)(2) during the one-year period ending on the Determination Date. The preceding sentence shall also apply to distributions under a terminated plan which, had it not been terminated, would have been aggregated with the Plan under Code section 416(g)(2)(A)(i). In the case of a distribution made for a reason other than separation from service, death, or disability, this provision shall be applied by substituting "five-year period" for "one-year period."

(iv) Any Employee contributions, whether voluntary or mandatory. However, amounts attributable to tax-deductible, qualified voluntary Employee contributions shall not be considered to be a part of the Participant's Aggregate Account balance.

(v) With respect to unrelated rollovers (ones which are both initiated by the Employee and made from a plan maintained by one employer to a plan maintained by another employer), if this Plan permits the rollovers, it shall always consider such rollovers as a distribution for the purposes of this Section.

(vi) With respect to related rollovers and ones either not initiated by the Employee or made to a plan maintained by the same employer, if this Plan permits the rollovers, they shall not be counted as distributions for purposes of this Section. If this Plan is the plan accepting such rollovers, it shall consider such rollovers as part of the Participant's Aggregate Account balance, irrespective of the date on which such rollovers are accepted.

(vii) For the purposes of determining whether two employers are to be treated as the same employer in paragraphs (v) and (vi) above, all employers aggregated under Code section 414(b), (c), (m), and (o) shall be treated as the same employer.

(c) "Aggregation Group" means either a Required Aggregation Group or a Permissive Aggregation Group as hereinafter determined.

(i) Required Aggregation Group: In determining a Required Aggregation Group hereunder, each plan of the Employer in which a Key Employee is a Participant in the Plan Year containing the Determination Date or any of the four preceding Plan Years, and each other plan of the Employer which enables any plan in which a Key Employee participates to meet the requirements of Code sections 401(a)(4) or 410, shall be required to be aggregated. Such group shall be known as a "Required Aggregation Group."

In the case of a Required Aggregation Group, each plan in the group shall be considered a Top-Heavy Plan if the Required Aggregation Group is a Top-Heavy Group. No plan in the Required Aggregation Group shall be considered a Top-Heavy Plan if the Required Aggregation Group is not a Top-Heavy Group.

(ii) Permissive Aggregation Group: The Employer may also include any other plan not required to be included in the Required Aggregation Group, provided the resulting group, taken as a whole, would continue to satisfy the provisions of Code sections 401(a)(4) and 410. Such group shall be known as a "Permissive Aggregation Group."

In the case of a Permissive Aggregation Group, only a plan that is part of the Required Aggregation Group shall be considered a Top-Heavy Plan if the Permissive Aggregation Group is a Top-Heavy Group. No plan in the Permissive Aggregation Group shall be considered a Top-Heavy Plan if the Permissive Aggregation Group is not a Top-Heavy Group.

(iii) Only those plans of the Employer in which the Determination Dates fall within the same calendar year shall be aggregated in order to determine whether such plans are Top-Heavy Plans.

(iv) An Aggregation Group shall include any terminated plan of the Employer if it was maintained within the last five years ending on the Determination Date.

(d) "Determination Date" means (i) the last day of the preceding Plan Year, or (ii) in the case of the first Plan Year, the last day of such Plan Year.

(e) "Present Value of Accrued Benefit" means, in the case of a defined benefit plan, the present value of the accrued benefit for a Participant other than a Key Employee, determined using the single accrual method used for all plans of the Employer and Affiliated Employers, or, if no such single method exists, using a method which results in benefits accruing not more rapidly than the slowest accrual rate permitted under Code section 411(b)(1)(C). The present value of the accrued benefit shall be determined as of the most recent Valuation Date that falls within or ends with the 12-month period ending on the Determination Date, except as provided in Code section 416 and the Regulations thereunder for the first and second plan years of a defined benefit plan.

(f) "Top-Heavy Group" means an Aggregation Group in which, as of the Determination Date, the sum of:

(i) the present value of accrued benefits of Key Employees under all defined benefit plans included in the group; and

(ii) the Aggregate Accounts of Key Employees under all defined contribution plans included in the group,

exceeds 60% of a similar sum determined for all Key Employees and non-Key Employees under this Plan and all plans of the Aggregation Group.

ARTICLE III
ELIGIBILITY

3.1 CONDITIONS OF ELIGIBILITY

(a) Elective Contributions and Matching Contributions. An Eligible Employee who was a Participant in the Plan on December 31, 2015, shall continue to be eligible to participate in the Plan, and to make Elective Contributions to the Plan and receive Matching Contributions, on January 1, 2016. Any other Eligible Employee shall be eligible to become a Participant in the Plan and to make Elective Contributions to the Plan and receive Matching Contributions on the date on which the Eligible Employee's employment with the Employer commences or as soon as administratively practicable thereafter.

(b) Discretionary Contributions and Nonelective Contributions. An Eligible Employee who was a Participant in the Plan and was eligible to receive an allocation of AC Products Discretionary Contributions, Quaker Discretionary Contributions, or Nonelective Contributions on December 31, 2015, shall continue to be eligible to receive such contributions on January 1, 2016. Any other Eligible Employee shall be eligible to receive an allocation of AC Products Discretionary Contributions, Quaker Discretionary Contributions, or Nonelective Contributions only upon completing one Year of Service. Upon completing one Year of Service, an Eligible Employee shall begin to participate in the Plan for purposes of Nonelective Contributions as of the first day of the month coincident with or next following the date on which the Eligible Employee meets the one Year of Service requirement.

3.2 PROCEDURE TO BECOME ACTIVE PARTICIPANT

An Eligible Employee who was a Participant in the Plan on December 31, 2015, shall continue to be a Participant on the Effective Date. Any other Eligible Employee shall become an active Participant effective as of his or her Entry Date by completing such forms and providing such data as are reasonably required by the Administrator at such time in advance as the Administrator may prescribe. If the Eligible Employee declines to make an Elective Contribution pursuant to Section 4.2 effective as of his or her Entry Date, he or she may thereafter elect to make Elective Contributions on the first day of any subsequent pay period on which he or she is an Eligible Employee.

3.3 DETERMINATION OF ELIGIBILITY

The Administrator shall determine the eligibility of each Employee for participation in the Plan based upon information furnished by the Employer. Such determination shall be conclusive and binding upon all persons, as long as the same is made pursuant to the Plan and ERISA.

3.4 CHANGE IN ELIGIBILITY STATUS

(a) Return to Eligible Status. In the event a Participant is no longer an Eligible Employee and becomes ineligible to participate, such Employee shall become eligible to participate immediately upon again becoming an Eligible Employee.

(b) Change to Eligible Status. In the event an Employee who is not an Eligible Employee becomes an Eligible Employee, such Employee shall (i) be eligible to make Elective Contributions to the Plan and receive Matching Contributions immediately, and (ii) be eligible to receive an AC Products Discretionary Contribution (as described in Section 4.4(c)), Quaker Discretionary Contribution (as described in Section 4.4(b)), or a Nonelective Contribution (as described in Section 4.5) if he or she has satisfied the one Year of Service requirement. Otherwise, such an Eligible Employee shall participate on the date determined under Section 3.1.

3.5 OMISSION OF ELIGIBLE EMPLOYEE

If, in any Plan Year, any Employee who should be included as a Participant in the Plan is erroneously omitted and discovery of such omission is not made until after a contribution by his or her Employer for the year has been made, the Employer shall make a subsequent contribution with respect to the omitted Employee in the amount which the Employer would have contributed with respect to him or her had he or she not been omitted. Such contribution shall be made regardless of whether it is deductible in whole or in part in any taxable year under applicable provisions of the Code.

ARTICLE IV
CONTRIBUTION AND ALLOCATION

4.1 FORMULA FOR DETERMINING EMPLOYER'S CONTRIBUTION

(a) Contributions. For each Plan Year, the Employer shall contribute to the Plan as follows:

(i) The amount of the total salary deferral elections of all Participants made pursuant to Section 4.2(a), which amount shall be deemed the Employer's Elective Contribution.

(ii) Matching Contributions made pursuant to Section 4.4(a).

(iii) Such discretionary amounts, if any, made pursuant to Section 4.4(b) and Section 4.4(c), which amount shall be deemed a Quaker Discretionary Contribution or an AC Products Discretionary Contribution, respectively.

(iv) Qualified Nonelective Contributions made pursuant to Section 4.9(f).

(v) Catch-Up Contributions made pursuant to Section 4.3.

(vi) Nonelective Contributions made pursuant to Section 4.5.

(b) Limit on Contributions. Notwithstanding the foregoing, the Employer's contributions for any Plan Year shall not exceed the maximum amount allowable as a deduction to the Employer under the provisions of Code section 404, except as provided in Section 3.5 and to the extent necessary to provide the Top-Heavy minimum allocations.

(c) Form of Contributions. All contributions by the Employer shall be made in cash or newly issued or treasury stock, or in such property as is acceptable to the Trustee.

4.2 PARTICIPANT'S SALARY DEFERRAL ELECTION

(a) Deferral Election. Each Participant may elect to defer his or her Compensation which would have been received in the Plan Year, but for this deferral election, by any whole percentage up to 50%. A deferral election (or modification of an earlier election) may not be made with respect to Compensation which is available on or before the date the Participant executed such election. A deferral election shall specify the portion of the Participant's Elective Contribution that is made on a pre-tax basis and the portion of such contribution that is made on a Roth basis. Elective Contributions contributed to the Plan as made on a pre-tax basis may not later be reclassified as made on Roth basis and vice versa.

The amount by which the Participant's Compensation is reduced shall be the Participant's Deferred Compensation and shall be treated as an Elective Contribution and allocated to the Participant's Elective Account, unless the Participant directs all or part of his or her Elective Contributions to the Quaker Stock Fund. If the Participant directs all or part of his or her Elective Contributions to the Quaker Stock Fund, such Elective Contributions shall be allocated to the Stock Bonus Plan Account.

(b) Full Vesting. The balance in each Participant's Elective Account and Stock Bonus Plan Account attributable to Elective Contributions shall be fully vested at all times and shall not be subject to forfeiture for any reason.

(c) Limits on Distributions. Elective Contribution amounts held in the Participant's Elective Account and Stock Bonus Plan Account may not be distributable earlier than:

(i) the Participant's Severance from Employment, Total and Permanent Disability, or death;

(ii) the Participant's attainment of age 59½ (only if permitted under any other Section of the Plan);

(iii) upon hardship with respect to the Participant (pursuant to Section 6.11); or

(iv) the termination of the Plan without establishment or maintenance of another defined contribution plan (other than an employee stock ownership plan as defined in Code section 4975(e)(7)) as described in Code section 401(k)(10).

(d) Maximum Amount. No Participant shall be permitted to have elective deferrals made under this Plan or any other qualified plan maintained by the Employer during any taxable year in excess of the dollar limitation contained in Code section 402(g) in effect for such taxable year, except to the extent permitted under Section 4.3 and Code section 414(v), if applicable (the "402(g) limit").

(i) If the Participant's Deferred Compensation made under this Plan (reduced by Deferred Compensation previously distributed or returned to the Participant) and the Participant's other elective deferrals to a plan or arrangement described in Code section 402(g)(3) (whether or not maintained by the Employer or an Affiliated Employer) exceed the maximum amount described in this subsection, the Participant shall allocate to the Plan or to such other plan or arrangement described in Code section 402(g)(3) the Excess Deferred Compensation. The Participant shall notify the Administrator of such allocation in writing no later than the March 1 following the Participant's taxable year in which the Excess Deferred Compensation was made.

(ii) A Participant shall be deemed to have made a claim for distribution of Excess Deferred Compensation from the Plan to the extent that the Participant's Deferred Compensation together with the Participant's elective deferrals under any other plan or arrangement maintained by the Employer or an Affiliated Employer exceeds the Code section 402(g) limit.

(iii) A Participant's Excess Deferred Compensation shall be reduced, but not below zero, by any distribution of Excess Contributions pursuant to Section 4.9 for the Plan Year beginning with or within the taxable year of the Participant.

(iv) Notwithstanding any other provisions of the Plan, not later than the April 15 following the close of the taxable year, the Administrator shall cause the Trustee to distribute to the Participant the Excess Deferred Compensation allocated (or deemed to be allocated) to the Plan by the Participant pursuant to this Section. Any Excess Deferred Compensation shall be distributed as follows: (i) Deferred Compensation to which Matching Contributions do not relate shall be distributed before Deferred Compensation to which Matching Contributions relate and (ii) for any year in which a Participant makes Elective Contributions on a pre-tax and on a Roth basis, the distribution of any Excess Deferred Compensation shall be made first from the portion of the Participant's Elective Contributions that is attributable to pre-tax contributions and second from the portion of the Participant's Elective Contributions that is attributable to Roth contributions. The amount so returned shall include the income and loss allocable thereto for the calendar year during which such elective deferrals were made as determined pursuant to Regulations, using a uniformly applicable written determination by the Administrator.

(v) Any Matching Contributions, with earnings thereon, attributable to such Excess Deferred Compensation shall be forfeited and, in the discretion of the Administrator, (A) used to pay any reasonable administrative expenses of the Plan or (B) used to reduce the Employer's obligation to making Matching Contributions under Section 4.4.

(e) Suspension on Hardship Distribution. In the event a Participant has received a hardship distribution pursuant to Regulation 1.401(k)-1(d)(3) (or any successor thereto) from this or any other plan maintained by the Employer, then the suspension rules set forth in Section 6.11(c)(ii) shall apply.

(f) Deferral Elections; Changes in Deferral Elections. The Employer and the Administrator shall implement the Participant's salary deferral elections provided for herein in accordance with the following:

(i) A Participant may commence making Deferred Compensation contributions to the Plan as of the Participant's Entry Date. If the Participant fails to make an initial salary deferral election prior to such time, then such Participant may thereafter make a salary deferral election effective as of any subsequent payroll period. The Participant shall make such an election by filing a salary deferral election in accordance with procedures established by the Administrator.

(ii) A Participant may increase or decrease the percentage of his or her Compensation to be deferred and make a new election by providing the Administrator with notice of such modification in the manner prescribed by the Administrator. Such new election shall initially be effective beginning with the pay period following the acceptance of the notice by the Administrator or as soon as practicable thereafter. Any modification shall not have retroactive effect and shall remain in force until revoked.

(iii) A Participant may elect to revoke his or her salary reduction agreement prospectively in its entirety at any time during the Plan Year by providing the Administrator with notice of such revocation in the manner prescribed by the Administrator. Such revocation shall become effective as of the beginning of the first pay period coincident with or next following the date of notice or as soon as practicable thereafter. Furthermore, the Participant's Severance from Employment, change in status to other than Eligible Employee, or the cessation of participation for any reason, shall be deemed to revoke any salary reduction agreement then in effect, effective immediately following the close of the pay period within which such termination or cessation occurs.

(iv) The Administrator may, in its sole discretion, from time to time prohibit or limit the amount of Elective Contributions made to the Plan on behalf of Highly Compensated Employees to the extent necessary to satisfy either the Actual Deferral Percentage Test set forth in Section 4.8(a) or the Actual Contribution Percentage Test set forth in Section 4.8(b). Any such limit on the amount of Elective Contributions made to the Plan on behalf of Highly Compensated Employees, as determined by the Administrator, shall be deemed an amendment to the Plan for purposes of Regulation 1.401-1, but the adoption of such limit shall not be subject to Section 8.1.

(g) <u>Qualified Military Service</u>. Notwithstanding any provisions of this Plan to the contrary, all contributions with respect to periods of Qualified Military Service shall be provided in a manner consistent with Code section 414(u) as follows:

(i) The Employer shall permit a reemployed Participant to make additional Deferred Compensation contributions during the period which begins on the date of the reemployment of such Participant and has the same length as the lesser of the product of three and the period of Qualified Military Service which resulted in such rights, or five years.

(ii) The amount of additional Deferred Compensation contributions permitted under this subsection is the maximum amount of the Deferred Compensation contributions that the Participant would have been permitted to make under the Plan during the period of Qualified Military Service if the Participant had continued to be employed by the Employer during such period and received Compensation. Proper adjustment shall be made to the amount determined under the preceding sentence for any Deferred Compensation contributions actually made during the period of such Qualified Military Service.

4.3 CATCH-UP CONTRIBUTIONS

(a) <u>In General</u>. A Catch-Up Eligible Employee shall be eligible to make Catch-Up Contributions in accordance with, and subject to the limitations of, Code section 414(v). Such Catch-Up Contributions shall not be taken into account for purposes of the provisions of the Plan implementing the required limitations of Code sections 402(g) and 415. Furthermore, the Plan shall not be treated as failing to satisfy the provisions of the Plan implementing the requirements of Code sections 401(k)(3), 401(k)(11), 401(k)(12), 410(b), or 416, as applicable, by reason of the making of such Catch-Up Contributions.

(b) Rules Regarding Catch-Up Contributions. The Plan shall be administered in accordance with final Regulations and other guidance issued by the Internal Revenue Service under Code section 414(v). Subject to such Regulations and other guidance, the following provisions shall apply with respect to Catch-Up Contributions:

(i) A Catch-Up Eligible Employee shall be given an opportunity to elect to make Catch-Up Contributions for a Plan Year. Such election shall be made at such time and in such manner as prescribed by the Administrator and shall specify the portion of the Participant's Catch-Up Contribution that is made on a pre-tax basis and the portion of such contribution that is made on a Roth basis. Catch-Up Contributions contributed to the Plan as made on a pre-tax basis may not later be reclassified as made on Roth basis and vice versa.

(ii) No Employer Matching Contributions shall be made with respect to Catch-Up Contributions.

(iii) Except as otherwise provided in this Section, Catch-Up Contributions and earnings thereon shall be treated in the same manner as Elective Contributions made pursuant to Section 4.2 (and earnings thereon) and Deferred Compensation.

4.4 EMPLOYER MATCHING AND DISCRETIONARY CONTRIBUTIONS

(a) Matching Contributions. For each Participant who makes Elective Contributions with respect to one or more payroll periods for which a Matching Contribution has been authorized by the Administrator pursuant to this subsection (the "Match Period"), the Employer shall make a Matching Contribution to the Plan on behalf of such Participant in the amount (if any) authorized by the Administrator, in its sole discretion; provided, however, that:

(i) The amount of Matching Contribution authorized by the Administrator shall not exceed 50% of such Participant's Deferred Compensation (other than Catch-Up Contributions) during the Match Period up to the first 6% of such Participant's Compensation during such period, plus a "true-up" Matching Contribution equal to the excess (if any) of (A) 50% of the Participant's Deferred Compensation (other than Catch-Up Contributions) for the Match Period (or, if less, 3% of the Participant's Compensation for the period he or she is eligible to participate in the Plan during such Match Period), over (B) the Matching Contribution already contributed to the Plan on behalf of the Participant for such Match Period;

(ii) With respect to a Participant who is a member of a unit of Employees covered by a collective bargaining unit, the Administrator shall not have the authority to decrease the Matching Contribution to less than the amount (if any) required by such collective bargaining agreement; and

(iii) With respect to a period of Qualified Military Service, the Administrator shall not have the authority to decrease the Matching Contribution to less than the amount (if any) required by Code section 414(u).

The entire Matching Contribution or any portion thereof may be made in cash or Company Securities in the sole discretion of the Administrator. If the entire amount of a Matching

Contribution is made in cash, 50% of such contribution shall be automatically invested in the Quaker Stock Fund, subject to any subsequent reapportionment direction of the Participant, Beneficiary, or alternate payee under Section 4.13(e). To the extent a Matching Contribution is made in Company Securities, the contribution shall be invested in the Quaker Stock Fund, subject to any subsequent reapportionment direction of the Participant, Beneficiary, or alternate payee under Section 4.13(e).

(b) Quaker Discretionary Contributions. The Employer shall make such contributions to the Fund in respect of each calendar year during which this Plan is in effect as are determined in accordance with such formula as may from time to time be approved by the Board of Directors, in its absolute discretion. Such contributions shall be referred to as Quaker Discretionary Contributions. This subsection shall not be construed as requiring the Employer to make contributions in any specific calendar year, whether or not there exists net income out of which such contributions could be made. Notwithstanding the foregoing, no Quaker Discretionary Contributions shall be made on behalf of or allocated to the account of any AC Participant, Epmar Participant, G.W. Smith Participant, or Summit Participant.

(c) AC Products Discretionary Contributions. AC Products, Inc. shall make such contributions to the Fund in respect of each calendar year during which this Plan is in effect as are determined in accordance with such formula as may from time to time be approved by the Board of Directors of AC Products, Inc., in its absolute discretion. This provision shall not be construed as requiring AC Products, Inc. to make contributions in any specific calendar year, whether or not there exists Net Income out of which such contributions could be made. For purposes of this subsection, "Net Income" shall mean the profit from operations of AC Products, Inc., as determined by the Board of Directors of AC Products, Inc., from the internal financial statements of AC Products, Inc. for the calendar year.

4.5 EMPLOYER NONELECTIVE CONTRIBUTIONS

(a) Eligibility Requirements. Nonelective Contributions shall be made on behalf of each Participant who (i) is not included in a unit of Employees covered by a collective bargaining agreement, except to the extent that the applicable collective bargaining agreement so provides, and (ii) has met the conditions of eligibility set forth in Section 3.1(b).

(b) Amount of Contribution. Subject to the limitations of Section 4.10, the Employer shall make Nonelective Contributions to the Fund for a Plan Year in an amount equal to 3% of the Compensation of each Participant who satisfied the eligibility requirements of subsection (a) at any time during such Plan Year; provided, however, that Compensation with respect to any period in which the Participant does not meet the eligibility requirements of subsection (a) shall be disregarded for purposes of determining the amount of the Nonelective Contribution.

(c) Company Securities. The entire Nonelective Contribution or any portion thereof may be made in cash or Company Securities in the sole discretion of the Administrator. To the extent made in Company Securities, the contribution shall be invested in the Quaker Stock Fund, subject to any subsequent reapportionment direction of the Participant, Beneficiary, or alternate payee under Section 4.13(e).

4.6 TIME OF PAYMENT OF EMPLOYER'S CONTRIBUTION

The Employer shall pay to the Trustee Elective Contributions accumulated through payroll deductions as of the earliest date on which such contributions can be reasonably segregated from the general assets, and such amounts shall be segregated no later than the 15th business day of the month following the month in which Elective Contributions were deducted from the Participant's Compensation. The Employer shall pay to the Trustee Matching Contributions, AC Products Discretionary Contributions, Quaker Discretionary Contributions, and Nonelective Contributions for any Plan Year under this Article IV no later than the last day on which amounts so paid may be deducted for Federal income tax purposes for the taxable year of the Employer in which the Plan Year ends. Any additional contributions made by the Employer that are allocable to a Participant's Elective Account for a Plan Year shall be paid to the Plan no later than the end of the 12- month period immediately following the close of the Plan Year in which the contributions were made.

4.7 ALLOCATION OF CONTRIBUTION AND EARNINGS

(a) Accounts. The Administrator shall establish and maintain an account in the name of each Participant to which the Administrator shall credit all amounts allocated to each such Participant as set forth herein.

(b) Allocation of Contributions. The Employer shall provide the Administrator with all information required by the Administrator to make a proper allocation of the Employer's contributions for each Plan Year. Within a reasonable period of time after the date of receipt by the Administrator of such information and sufficient funding, the Administrator shall allocate such contributions as follows:

(i) Elective Contributions. With respect to the Elective Contributions made pursuant to Section 4.2(a) or Section 4.3, to each Participant's Elective Account and Stock Bonus Plan Account, as applicable, in an amount equal to each such Participant's Deferred Compensation for the year.

(ii) Matching Contributions. With respect to Matching Contributions made pursuant to Section 4.4(a), to each Participant's Account and Stock Bonus Plan Account, as applicable, in an amount equal to the Matching Contribution made by the Employer to the applicable account on behalf of the Participant as set forth in Section 4.4(a).

(iii) Quaker Discretionary Contributions. Quaker Discretionary Contributions, if any, made pursuant to Section 4.4(b) for a Plan Year shall be allocated to each eligible Participant's account in the same proportion that each eligible Participant's Base Compensation for such Plan Year bears to the total Base Compensation of all Participants who are eligible to receive the Quaker Discretionary Contribution for such Plan Year, such amount to be allocated to the Participant's Account and Stock Bonus Plan Account, as applicable. Except as provided in Section 4.7(b)(vi), only those Participants who (A) have completed a Year of Service during the Plan Year; (B) are actively employed on the last day of the Plan Year; and (C) are not AC Participants or Epmar Participants, shall be eligible to share in the allocation of the Quaker Discretionary Contributions for the Plan Year.

(iv) AC Products Discretionary Contributions. The AC Products Discretionary Contributions, if any, made pursuant to Section 4.4(c) for a Plan Year shall be allocated to each eligible AC Participant's account in the same proportion that each eligible AC Participant's Compensation for such Plan Year bears to the total Compensation of all Participants who are eligible to receive the AC Products Discretionary Contribution for such Plan Year, such amount to be allocated to the Participant's Account and Stock Bonus Plan Account, as applicable. Except as provided in Section 4.7(b)(vi), only AC Participants who: (A) have completed a Year of Service during the Plan Year; and (B) are actively employed on the last day of the Plan Year, shall be eligible to receive an allocation of the AC Products Discretionary Contributions for the Plan Year.

(v) Nonelective Contributions. Nonelective Contributions made pursuant to Section 4.5 shall be allocated to each eligible Participant's Account in an amount equal to the Nonelective Contribution made by the Employer on behalf of the Participant as set forth in Section 4.5.

(vi) Exception to Last Day of Year Requirement. Notwithstanding the foregoing, Participants who are not actively employed on the last day of the Plan Year due to Retirement (Normal or Late), Total and Permanent Disability, or death shall share in the allocation of Quaker Discretionary Contributions or AC Products Discretionary Contributions for that Plan Year.

(c) Allocation of Earnings and Losses. As of the last day of each Plan Year or other Valuation Date, before allocation of Employer contributions, any earnings or losses (net appreciation or net depreciation) of the Fund shall be allocated in the same proportion that each Participant's nonsegregated accounts bear to the total of all Participants' nonsegregated accounts as of such date. Each segregated account maintained on behalf of a Participant shall be credited or charged with its separate earnings and losses.

(d) Top-Heavy Plan Year.

(i) Notwithstanding the foregoing, for any Top-Heavy Plan Year, the sum of the Employer's contributions and forfeitures allocated to the Aggregate Account of each non-Key Employee shall be equal to at least 3% of such non-Key Employee's 415 Compensation (reduced by contributions and forfeitures, if any, allocated to each non-Key Employee in any defined contribution plan included with this Plan in a Required Aggregation Group). However, if (i) the sum of the Employer's contributions and forfeitures allocated to the Aggregate Account of each Key Employee for such Top-Heavy Plan Year is less than 3% of each Key Employee's 415 Compensation and (ii) this Plan is not required to be included in an Aggregation Group to enable a defined benefit plan to meet the requirements of Code section 401(a)(4) or 410, the sum of the Employer's contributions and Forfeitures allocated to the Aggregate Account of each non-Key Employee shall be equal to the largest percentage allocated to the Aggregate Account of any Key Employee. Employer Matching Contributions shall be taken into account for purposes of satisfying the minimum contribution requirements of Code section 416(c)(2) and this subsection. Employer Matching Contributions that are used to satisfy the minimum contribution requirements shall be treated as Matching Contributions for purposes of the actual contribution percentage test set forth in Section 4.8(b) and other requirements of Code section 401(m).

However, no such minimum allocation shall be required in this Plan for any non-Key Employee who participates in another defined contribution plan subject to Code section 412 that is included with this Plan in a Required Aggregation Group.

(ii) For purposes of the minimum allocations set forth above, the percentage allocated to the Aggregate Account of any Key Employee shall be equal to the ratio of the sum of the Employer's contributions and Forfeitures allocated on behalf of such Key Employee divided by the 415 Compensation for such Key Employee.

(iii) For any Top-Heavy Plan Year, the minimum allocations set forth above shall be allocated to the Aggregate Accounts of all non-Key Employees who are Participants and who are employed by the Employer on the last day of the Plan Year, including non-Key Employees who have (A) failed to complete a Year of Service; and (B) declined to make mandatory contributions (if required) or, in the case of a cash or deferred arrangement, Elective Contributions to the Plan.

(iv) For the purposes of this Section, 415 Compensation shall be limited by and adjusted in such manner as permitted under Code section 415(d).

(e) <u>Matching Contributions – No Hour of Service Requirement</u>. Notwithstanding anything herein to the contrary, a Participant who terminates employment for any reason during the Plan Year, has made Elective Contributions for the Plan Year, and is otherwise eligible to receive an allocation of Matching Contributions, shall share in an allocation of the Matching Contribution made by the Employer for the year of termination without regard to the Hours of Service credited.

(f) <u>Forfeitures</u>. As of the last day of each Plan Year, any amounts which become a Forfeiture during such Plan Year shall, in the discretion of the Administrator, be used to (i) reduce the Employer's obligation to make Matching Contributions, AC Products Discretionary Contributions, Quaker Discretionary Contributions, and/or Nonelective Contributions, or (ii) pay any administrative expenses of the Plan.

(g) <u>Reemployment after Break in Service</u>. If a Participant is reemployed after five consecutive 1-Year Breaks in Service, then separate accounts shall be maintained as follows:

(i) one account for nonforfeitable benefits attributable to pre-break service; and

(ii) one account representing his or her status in the Plan attributable to post-break service.

(h) <u>Restoration of Forfeitures</u>. If a Participant is reemployed as an Eligible Employee, any Forfeiture of his or her Participant's Account that has occurred under Section 1.29(a) shall be restored to his or her Participant's Account by the Employer if the Participant repays to the Plan in full the amount of the distribution he or she received; provided such repayment is made not later than the earlier of (i) the close of the first period of five consecutive 1-Year Breaks in Service commencing after the distribution, or (ii) five years after the date on which the Participant again becomes an Eligible Employee.

4.8 ACTUAL DEFERRAL PERCENTAGE TEST AND ACTUAL CONTRIBUTION PERCENTAGE TEST

(a) Actual Deferral Percentage Test. This subsection shall be applied separately with respect to the Non-Safe Harbor Component Plan and the Bargaining Component Plan, and the term "Plan" as used in this subsection shall refer to the component plan being tested. The safe harbor set forth in Code section 401(k)(12) shall apply to the Safe Harbor Component Plan.

(i) The actual deferral percentage for Highly Compensated Employees who have met the Plan's eligibility requirements shall not be less than or equal two at least one of the following:

(A) The actual deferral percentage for such Plan Year for all Nonhighly Compensated Employees who have met the Plan's eligibility requirements, multiplied by 1.25; or

(B) The actual deferral percentage for such Plan Year for all Nonhighly Compensated Employees who have met the Plan's eligibility requirements, multiplied by 2.0, provided that the actual deferral percentage for Highly Compensated Employees who have met the Plan's eligibility requirements does not exceed the actual deferral percentage for Nonhighly Compensated Employees who have met the Plan's eligibility requirements by more than two percentage points.

(ii) For purposes of this Section, the term "actual deferral percentage" as applied to a specified group of Employees who have met the Plan's eligibility requirements shall mean the average of the ratios, calculated separately for each such Employee in such group, of:

(A) The amount of Deferred Compensation paid to the Plan on behalf of each such Employee for such Plan Year (excluding (A) any amount of Deferred Compensation paid to the Plan by a Nonhighly Compensated Employee in excess of the Code section 402(g) limit for such Plan Year, and (B) Deferred Compensation made pursuant to Code section 414(u) by reason of a Participant's qualified military service (provided, however, that the portion of Deferred Compensation contributed from differential wage payments (within the meaning of Code section 414(u)(12)) shall be disregarded only if the nondiscrimination requirement set forth in Code section 414(u)(12)(C) is satisfied); to

(B) The Participant's 414(s) Compensation for such Plan Year; provided, however, that the Administrator may determine, for any Plan Year, to consider only that Compensation paid to an Employee while he or she is eligible to participate in the Plan.

(b) Actual Contribution Percentage Test. The Plan shall satisfy the "actual contribution percentage test," which shall mean the numerical test set forth in subsection (a), revised by disregarding any reference to component plans and substituting for the term "actual deferral percentage" the term "actual contribution percentage"; provided, however, that pursuant to Regulation section 1.401(m)-1(b)(2), the Actual Contribution Test shall not apply to the Bargaining Component Plan. The term "actual contribution percentage" as applied to a specified group of Employees shall mean the average of the ratios, calculated separately for each Employee in such group who, if he or she made Elective Deferrals, would have Matching Contributions allocated to his or her account for the year, of:

(i) the amount of Matching Contributions (excluding (A) Matching Contributions forfeited pursuant to Section 4.2(d) or Section 4.9(c), and (B) Matching Contributions made pursuant to Code section 414(u) by reason of a Participant's qualified military service (provided, however, that the portion of the Matching Contribution that is made with respect to any Deferred Compensation contributed from differential wage payments (within the meaning of Code section 414(u)(12)) shall be disregarded only if the nondiscrimination requirement set forth in Code section 414(u)(12)(C) is satisfied) paid to the Plan on behalf of such Employee for such Plan year; to

(ii) the Participant's 414(s) Compensation for such Plan Year; provided, however, that the Administrator may determine, for any Plan Year, to consider only that Compensation paid to an Employee while he or she is eligible to participate in the Plan.

(c) Nonaggregation. Pursuant to Regulation sections 1.401(k)-1(b)(4)(iii)(B) and 1.401(m)-1(b)(4)(iii)(B), the Plan cannot be tested on an aggregate basis with any other cash or deferred arrangement that uses a methodology to satisfy the actual deferral percentage test or the actual contribution percentage test that is inconsistent with the Plan's methodology to satisfy these tests.

4.9 RETURN OF EXCESS CONTRIBUTIONS, RETURN OF EXCESS AGGREGATE CONTRIBUTIONS, AND SPECIAL RULES

Subsections (a) and (c) shall be applied separately to Highly Compensated Employees who are covered by the Non-Safe Harbor Component Plan and Highly Compensated Employees who are covered by the Bargaining Component Plan, and such subsections shall apply only to the extent of the Highly Compensated Employee's contributions under such Component Plan. Subsections (a) and (c) shall not apply to the Safe Harbor Component Plan.

(a) Determination of Aggregate Amount of Excess Contributions. Excess Contributions shall be returned to Highly Compensated Employees in the manner set forth in subsection (c) if the limitations under Section 4.8(a) are exceeded. Excess Contributions to be returned to Highly Compensated Employees shall be determined by:

(i) reducing the actual deferral percentage of the Highly Compensated Employee with the highest actual deferral percentage until the applicable nondiscrimination test of Section 4.8(a) has been satisfied or until the actual deferral percentage of such Highly Compensated Employee is equal to the actual deferral percentage of the Highly Compensated Employee with the next highest actual deferral percentage;

(ii) repeating the process in paragraph (i) above until the applicable nondiscrimination test of Section 4.8(a) is satisfied;

(iii) converting into a dollar amount any reduction in the actual deferral percentage of each affected Highly Compensated Employee; and

(iv) adding together the dollar amounts of the excess Deferred Compensation determined under paragraph (iii) above for each affected Highly Compensated Employee.

(b) Determination of Aggregate Amount of Excess Aggregate Contributions. The amount of excess Matching Contributions ("Excess Aggregate Contributions") to be returned to Highly Compensated Employees shall be determined in the manner set forth in subsection (a). Excess Aggregate Contributions, if any, shall be returned to Highly Compensated Employees in the manner set forth in subsection (d).

(c) Determination of Individual Amount of Excess Contributions. Should the actual deferral percentage of Highly Compensated Employees for a Plan Year exceed the restrictions described in Section 4.8(a), the Excess Contribution shall be distributed to Highly Compensated Employees from the Elective Account (and Stock Bonus Plan Account), starting with the Highly Compensated Employee with the greatest dollar amount of Deferred Compensation for the Plan Year or until the Deferred Compensation made by such Highly Compensated Employee equals the Deferred Compensation made by the Highly Compensated Employee with the next greatest dollar amount of Deferred Compensation for the Plan Year. For purposes of the preceding sentence, any Excess Contributions shall be distributed as follows: (i) Distributions to any Highly Compensated Employee shall first be made with respect to Deferred Compensation that is not taken into account in determining Matching Contributions pursuant to Section 4.4(a); and (ii) for any year in which a Participant makes Elective Contributions on a pre-tax and on a Roth basis, the distribution of any Excess Contribution shall be made first from the portion of the Participant's Elective Contributions that is attributable to pre-tax contributions and second from the portion of the Participant's Elective Contributions that is attributable to Roth contributions. This process shall be repeated until all the excess Deferred Compensation attributable to the applicable test has been distributed. Any Matching Contributions attributable to such Excess Contributions (regardless of whether such Excess Contributions are attributable to Elective Contributions made on a pre-tax or on a Roth basis) distributed to Highly Compensated Employees shall be forfeited in accordance with subsection (e).

(d) Determination of Individual Amount of Excess Aggregate Contributions. Should the actual contribution percentage of Highly Compensated Employees for a Plan Year exceed the restrictions described in Section 4.8(b) the Excess Aggregate Contributions shall be forfeited, if forfeitable, or, if not forfeitable, distributed, starting with the account of the Highly Compensated Employee with the greatest dollar amount of Matching Contributions in the manner described in subsection (c).

(e) Timing of Distribution/Forfeiture. The distribution or forfeiture made pursuant to subsections (c) and (d) above shall be made within two and one-half months following the close of such Plan Year, if administratively practicable, but in no event later than the last day of the 12-month period following the close of such Plan Year. Any distribution or forfeiture for purposes of the preceding sentence shall be determined after taking into account income or loss for the applicable Plan Year. Any Matching Contributions, with earnings thereon, that have been allocated to a Participant on account of Excess Contributions shall be forfeited. Amounts forfeited shall, at the discretion of the Administrator, be (i) used to pay any administrative expenses of the Plan, or (ii) used to reduce the Employer's obligation to make Matching Contributions allocated under Section 4.4(a).

(f) Special Rules.

(i) Qualified Nonelective Contribution. Notwithstanding anything to the contrary herein, within 12 months after the end of the applicable Plan Year, the Employer may make a special Qualified Nonelective Contribution in an amount that does not exceed the minimum amount necessary to satisfy the test(s) set forth in Section 4.8(a) and/or 4.8(b). Such Qualified Nonelective Contribution shall be allocated to the Elective Accounts of the minimum necessary number of Nonhighly Compensated Employees who met the Plan's eligibility requirements for the applicable Plan Year, starting with the Nonhighly Compensated Employee with the lowest Compensation for such Year, and shall be such percentage of the Nonhighly Compensated Employee's Compensation for the year that (i) results in the lowest aggregate amount of Qualified Nonelective Contributions, and (ii) satisfies the rule against disproportionate contributions set forth in Regulation section 1.401(k)-2(a)(6)(iv). For purposes of applying this subsection to Section 4.8(a), the term "Plan" shall refer to the Non-Safe Harbor Component Plan or the Bargaining Component Plan, as applicable.

(ii) Other Contributions Taken Into Account for ACP Test. For purposes of determining the actual contribution percentage and the amount of Excess Aggregate Contributions pursuant to Section 4.8(b), only Matching Contributions credited on behalf of an eligible Employee in accordance with Regulation section 1.401(m)-2(a) for the applicable Plan Year shall be counted. In addition, the Administrator may elect to take into account elective contributions and qualified nonelective contributions (as defined in Regulation section 1.401(m)-2(a)) contributed to any plan maintained by the Employer in determining the actual contribution percentage for each applicable Employee for the applicable Plan Year, provided such amounts comply with the provisions of Regulation section 1.401(m)-2(a). Elective contributions under the Plan shall not be taken into account for purposes of Section 4.8(b).

(iii) Ratios. All ratios and averages of ratios calculated hereunder shall be calculated to the nearest 1/100 of 1%.

(iv) Highly Compensated Employee Participating in Multiple Plans. For purposes of Section 4.8(a), the actual deferral percentage of a Highly Compensated Employee who is eligible to have elective deferrals (or contributions treated as elective deferrals) allocated to his or her accounts under two or more arrangements described in Code section 401(k), that are maintained by the Employer or an Affiliated Employer, shall be determined as if such elective deferrals (or contributions treated as elective deferrals) were made under a single arrangement. If a Highly Compensated Employee participates in two or more cash or deferred arrangements of the Employer or an Affiliated Employer that have different plan years, all elective deferrals made during the Plan Year under all such arrangements shall be aggregated. For purposes of Section 4.8(b), the actual contribution percentage of a Highly Compensated Employee who is eligible to have matching contributions or employee contributions (or contributions treated as matching or employee contributions) allocated to his or her accounts under two or more plans described in Code section 401(a), or arrangements described in Code section 401(k) that are maintained by the Employer or an Affiliated Employer, shall be determined as if the total of such matching contributions or employee contributions (or contributions treated as matching or employee contributions) were made to each plan and arrangement. If a Highly Compensated Employee participates in two or more such plans or arrangements that have different plan years, all matching contributions or employee contributions (or contributions treated as matching or employee contributions) made during the Plan Year under all such plans and arrangements shall be aggregated. Notwithstanding the foregoing, certain plans shall be treated as separate if mandatorily disaggregated under Regulations under Code section 401(k) or Code section 401(m).

(v) Aggregation of Plans. For purposes of Sections 4.8 and 4.9, the Plan shall be aggregated and treated as a single plan with other plans maintained by the Employer and an Affiliated Employer to the extent that the Plan is aggregated with any such other plan for purposes of satisfying Code sections 401(a)(4) and 410(b) (other than Code section 410(b)(2)(A)(ii)). In addition, if this Plan is permissively aggregated with any other plan of the Company or an Affiliated Employer for purposes of satisfying Code section 401(k) or 401(m), this Plan and such other plan or plans shall satisfy Code section 401(a)(4) and 410(b) as if this Plan and such other plan or plans were a single plan.

(vi) Prior Year Testing. Notwithstanding anything herein to the contrary, in accordance with applicable Regulations and applicable guidance, the Employer may elect to apply the tests set forth in Sections 4.8(a) and (b) using the actual deferral percentage and the actual contribution percentage, as applicable, for the preceding Plan Year for Nonhighly Compensated Employees who have met the Plan's eligibility requirements in lieu of such percentages for the current Year.

(vii) Early Participation Rule. For purposes of Sections 4.8(a) and 4.8(b), with respect to any Plan Year for which the Employer elects to apply Code section 410(b)(4)(B) in determining whether the requirements of Code section 401(k)(3)(A)(i) (for purposes of Section 4.8(a)) or Code section 410(b) (for purposes of Section 4.8(b)) are met, the Employer may elect to exclude from consideration all Eligible Employees who are Nonhighly Compensated Employees and who have not attained age 21 and completed at least one year of eligibility service. In no event, however, shall the early participation rule described in this subsection apply to the Safe Harbor Component Plan or the Non-Safe Harbor Component Plan for purposes of Section 4.8(a).

4.10 MAXIMUM ANNUAL ADDITIONS

(a) Limit on Allocations. Except to the extent permitted under Section 4.3 and Code section 414(v), if applicable, the maximum annual addition that may be contributed or allocated to a Participant's accounts under the Plan for any limitation year shall not exceed the lesser of:

(i) $53,000, as adjusted for increases in the cost-of-living under Code section 415(d) for limitation years after 2016; or

(ii) 100% of the Participant's 415 Compensation for such limitation year.

The compensation limit referred to in paragraph (ii) shall not apply to any contribution for medical benefits after separation from service (within the meaning of Code section 401(h) or 419(A)(f)(2)) which is otherwise treated as an annual addition.

(b) Annual Additions. For purposes of applying the limitations of Code section 415, "annual additions" means the sum of all contributions by the Participant, other than rollover contributions, or by the Employer or an Affiliated Employer hereunder or under any defined contribution plan maintained by either, all forfeitures allocated to the Participant's accounts under such plans, and amounts treated as part of an annual addition under the limitations of Code sections 415(l) and 419A(d)(2).

For purposes of applying the limitations of Code section 415, a Rollover Contributions is not an annual addition. In addition, the following are not Employee contributions for purposes of this subsection: (i) rollover contributions (as defined in Code sections 402(c), 403(a)(4), 403(b)(8), and 408(d)(3)); (ii) repayments of loans made to a Participant from the Plan; (iii) repayments of distributions received by an Employee pursuant to Code section 411(a)(7)(B) (cashouts); (iv) repayments of distributions received by an Employee pursuant to Code section 411(a)(3)(D) (mandatory contributions); and (v) Employee contributions to a simplified employee pension excludable from gross income under Code section 408(k)(6).

(c) Limitation Year. For purposes of applying the limitations of Code section 415, the "limitation year" shall be the Plan Year.

(d) Aggregation Rules.

(i) For the purpose of this Section, all qualified defined contribution plans (whether terminated or not) ever maintained by the Employer shall be treated as one defined contribution plan.

(ii) For the purpose of this Section, if the Employer is a member of a controlled group of corporations, trades or businesses under common control (as defined by Code section 1563(a) or Code sections 414(b) and (c) as modified by Code section 415(h)), is a member of an affiliated service group (as defined by Code section 414(m)), or is a member of a group of entities required to be aggregated pursuant to Regulations under Code section 414(o), all Employees of such Employers shall be considered to be employed by a single Employer.

(iii) If a Participant participates in more than one defined contribution plan maintained by the Employer and such plans have different Plan Years, the maximum annual additions under this Plan shall equal the maximum annual additions for the limitation year minus any annual additions previously credited to such Participant's accounts during the limitation year.

(iv) If a Participant participates in both a defined contribution plan subject to Code section 412 and a defined contribution plan not subject to Code section 412 maintained by the Employer which have the same Plan Year, annual additions shall be credited to the Participant's accounts under the defined contribution plan subject to Code section 412 prior to crediting annual additions to the Participant's accounts under the defined contribution plan not subject to Code section 412.

(v) If a Participant participates in more than one defined contribution plan not subject to Code section 412 maintained by the Employer and such plans have the same Plan Year, the maximum annual additions under this Plan shall equal the product of (A) the maximum annual additions for the limitation year minus any annual additions previously credited above, multiplied by (B) a fraction (I) the numerator of which is the annual additions which would be credited to such Participant's Account under this Plan without regard to the limitations of Code section 415 and (II) the denominator of which is such annual additions for all plans described in this subsection.

4.11 CORRECTION OF EXCESS ANNUAL ADDITIONS

If there is an excess annual addition with respect to a Participant for a limitation year, such excess annual addition shall be corrected in accordance with the Internal Revenue Service Employee Plans Compliance Resolution System or as otherwise permitted by applicable law and Regulations.

4.12 ROLLOVERS FROM OTHER PLANS

(a) Rollover Contributions Accepted. With the consent of the Administrator, the Plan shall accept an eligible rollover distribution by a Participant from the following:

(i) a qualified plan described in Code section 401(a) or 403(a), excluding after-tax employee contributions, except to the extent permitted under Section 11.4(c);

(ii) an annuity contract described in Code section 403(b), excluding after-tax contributions;

(iii) an eligible plan under Code section 457(b) which is maintained by a state, political subdivision of a state, or any agency or instrumentality of a state or political subdivision of a state;

(iv) the portion of a distribution from an individual retirement account or annuity described in Code section 408(a) or 408(b) that would otherwise be includable in gross income; and

(v) the portion of a distribution from a designated Roth account under an applicable retirement plan described in Code section 402A, but only to the extent that (i) it is a direct rollover and (ii) is not includible in income when determined without regard to the rollover; provided, however that (A) the rollover will not jeopardize the tax-exempt status of the Plan or Trust or create adverse tax consequences for the Employer, and (B) a distribution to which the Participant is entitled as a Surviving Spouse shall not be rolled over to the Plan. If the Administrator determines the rollover amount contains an invalid rollover amount, such amount plus any earnings shall be distributed within a reasonable time after such determination. The amounts transferred shall be set up in a separate account herein referred to as a Participant's Rollover Account. Such account shall be fully vested at all times and shall not be subject to forfeiture for any reason.

(b) Withdrawals and Distributions Limited. Amounts in a Participant's Rollover Account shall be held by the Trustee pursuant to the provisions of this Plan and may not be withdrawn by or distributed to the Participant, in whole or in part, except as provided in subsection (c).

(c) Distributions. On such date as the Participant or his or her Beneficiary shall be entitled to receive benefits, the fair market value of the Participant's Rollover Account shall be used to provide additional benefits to the Participant or his or her Beneficiary. Any distributions of amounts held in a Participant's Rollover Account shall be made in a manner which is consistent with and satisfies the provisions of Section 6.5, including, but not limited to, all notice and consent requirements of Code section 411(a)(11) and the Regulations thereunder. Furthermore, such amounts shall be considered as part of a Participant's benefit in determining whether an involuntary cash-out of benefits without the Participant's consent may be made.

(d) Evidence of Rollover Eligibility. Prior to accepting any rollovers to which this Section applies, the Administrator may require the Employee to establish that the amounts to be transferred to this Plan meet the requirements of this Section and may also require the Employee to provide an opinion of counsel satisfactory to the Employer that the amounts to be transferred meet the requirements of this Section.

4.13 INVESTMENT OF AGGREGATE ACCOUNTS

(a) Participant Directed. Every Participant, Beneficiary, and alternate payee shall have the right to designate the investment category or categories in which the Trustee is to invest his or her Aggregate Account including, pursuant to Section 4.13(e), any contributions that have been automatically invested in the Quaker Stock Fund at the time of contribution pursuant to Section 4.4(a) or Section 4.5(c).

(b) ERISA Section 404(c) Plan. This Plan is intended to constitute a plan described in section 404(c) of ERISA, and regulations thereunder. Neither the Employer, nor the Administrator, nor the Trustee nor any other Fiduciary shall be liable for any losses which are the result of investment instructions provided by any Participant, Beneficiary, or alternate payee. The Administrator shall designate the available investment categories to which a Participant, Beneficiary, or alternate payee may direct the investment of amounts credited to his or her Aggregate Account. The Administrator, in its discretion, may from time to time designate additional investment categories of the same or different types or modify, cease to offer, or eliminate any existing investment categories, subject to the requirements of section 404(c) of ERISA and the regulations thereunder.

(c) Investment Direction – Future Contributions. Each Participant may designate the percentage of future contributions to be invested in any investment category, and change such designation, on any business day by giving notice, in the manner prescribed by the Trustee; provided, however, that any such designation or change with respect to future contributions shall not apply to the Matching Contributions and Nonelective Contributions that have been automatically invested in the Quaker Stock Fund at the time of contribution pursuant to Section 4.4(a) or Section 4.5(c). Any designation or change in designation of investment categories shall be in increments of at least 1%.

(d) Default Fund. In the absence of any current written (or electronic) designation of investment category(ies) from a Participant, the Trustee shall automatically invest such funds (other than Matching Contributions and Nonelective Contributions that have been automatically invested in the Quaker Stock Fund at the time of contribution pursuant to Section 4.4(a) or Section 4.5(c)) in the default investment fund(s) designated by the Administrator.

(e) Investment Direction – Reapportionment of Aggregate Account. A Participant, Beneficiary, or alternate payee may on any business day, by giving notice in the manner prescribed by the Trustee, transfer all or any portion of the assets held on his or her behalf in any investment category or categories to any other category or categories then provided, including any contributions that have been automatically invested in the Quaker Stock Fund at the time of contribution pursuant to Section 4.4(a) or Section 4.5(c).

(f) Reinvestment of Income, Etc. All interest, dividends, capital gains, distributions, and other income received with respect to any shares of an investment category credited to the separate accounts of a Participant, Beneficiary, or alternate payee under the Plan shall be reinvested by the Trustee in additional shares of the same investment fund and credited to the Participant's, Beneficiary's, or alternate payee's separate accounts.

(g) Company Securities – Rights and Equity Restructuring. Each Participant, Beneficiary, or alternate payee shall have the right to direct the Trustee as to the exercise or sale of any rights to purchase Company Securities allocated to his or her Stock Bonus Plan Account, and his or her Aggregate Account (or Stock Bonus Plan Account) shall be appropriately credited. Company Securities received by the Trustee by reason of a stock split, stock dividend, or other distribution shall be appropriately allocated to accounts holding interests in the Quaker Stock Fund.

(h) Company Securities – Voting Rights. Each Participant, Beneficiary, or alternate payee shall have the right to direct the Trustee as to the exercise of voting rights with respect to Company Securities allocated to his or her Stock Bonus Plan Account. As soon as practicable prior to the occasion for the exercise of such voting rights, the Employer shall deliver or cause to be delivered to each Participant, Beneficiary, or alternate payee all notices, prospectuses, financial statements, proxies, and proxy soliciting material relating to shares of Company Securities allocated to his or her Stock Bonus Plan Account. Instructions by Participants, Beneficiaries, or alternate payees to the Trustee shall be on such form or in such other manner and pursuant to such regulations as the Administrator shall prescribe. Any such instructions shall remain in the strict confidence of the Trustee. Any shares of Company Securities for which no instructions are received by the Trustee within such time specified in the notice shall not be voted, except to the extent that the Trustee determines otherwise consistent with the Trustee's duties under ERISA. Any shares of Company Securities which are not allocated to Participants', Beneficiaries', or alternate payees' Stock Bonus Plan Accounts shall be voted in the same proportions as the shares of Company Securities for which timely instructions were received from Participants, Beneficiaries, and alternate payees except to the extent that the Trustee determines otherwise consistent with the Trustee's duties under ERISA.

(i) Company Securities – Confidentiality. The Administrator is responsible for ensuring that:

(i) procedures are maintained by the Plan to safeguard the confidentiality of information relating to the purchase, holding, and sale of the Company Securities and the exercise of voting, tender, and similar rights with respect to the Company Securities by Participants, Beneficiaries, and alternate payees;

(ii) the procedures described in paragraph (i) are sufficient to maintain confidentiality, except to the extent necessary to comply with Federal law or state laws not preempted by ERISA;

(iii) an independent fiduciary is appointed to carry out activities relating to any situations involving a potential for Employer influence upon Participants, Beneficiaries, or alternate payees with regard to the direct or indirect exercise of shareholder rights; and

(iv) each Participant, Beneficiary, and alternate payee is afforded the appropriate number of votes with respect to the Company Securities allocated to his or her Stock Bonus Plan Accounts.

(j) Company Securities – Tender Offer. In the event of a tender offer or a self tender by the Employer for any Company Securities held in the Plan, the Employer shall as promptly as practicable request or cause to be requested of each Participant, Beneficiary, and alternate payee instructions as to the tender offer response desired by him or her in connection with the shares of Company Securities allocated to his or her Stock Bonus Plan Account and the Trustee shall be bound by the instructions received. Any such instructions shall remain in the strict confidence of the Trustee. Any shares of Company Securities for which no instructions are received by the Trustee within such time specified in the notice shall not be tendered, except to the extent that the Trustee determines otherwise consistent with the Trustee's duties under ERISA. Any shares of Company Securities which are not allocated to Participants', Beneficiary's, or alternate payee's Stock Bonus Plan Accounts shall be tendered by the Trustee in the same proportion as the shares for which timely instructions were received by the Trustee, except to the extent that the Trustee determines otherwise consistent with the Trustee's duties under ERISA.

(k) Form and Manner of Distribution. At the time of distribution or withdrawal of assets held in an Aggregate Account by a Participant, he or she shall be entitled to receive one lump-sum payment; provided, however, that the portion of a Participant's Stock Bonus Plan Account invested in the Quaker Stock Fund shall be distributed in full shares of Company Securities unless the Participant elects to take such distribution in cash in an amount realized from converting such full shares of Company Securities in the Participant's Stock Bonus Plan Account to cash. Any fractional shares of common stock of the Company shall be distributed in cash. The Employer does not guarantee that the fair market value of Company Securities will be equal to the purchase price of such stock or that the total amount withdrawable in cash with respect to any period will be equal to or greater than the amount of the Participant's contributions for such period.

(l) Change in Market Value. Each Participant assumes all risk in connection with any decrease in the market price of the Company Securities, other investments or cash allocated to his or her Stock Bonus Plan Account in accordance with the Plan.

(m) Company Securities – Securities Laws. Any transaction involving Company Securities held in the account of a Participant who is subject to Section 16(b) of the Securities Exchange Act of 1934 shall be subject to all applicable laws, rules, and regulations and to such approvals by stock exchanges or governmental agencies as may be deemed necessary or appropriate by the Administrator. Each Participant may be required to give the Employer a written representation that he or she will not violate any state or Federal securities laws, including the Securities Act of 1933 and the Securities Exchange Act of 1934, as amended; the form of such written representation shall be prescribed by the Administrator.

(n) Inappropriate Trading Practices. In the event of extraordinary transactions or excessive trading, the Administrator reserves the right to adjust the Aggregate Accounts of Participants who initiated the extraordinary transactions or excessive trading to reflect the actual trades executed to fund the activity. Such adjustment may include, but shall not be limited to, adjustment to the unit price, the number of shares or units, or both. If such practices continue, the Administrator reserves the right to take further action to limit the ability of a Participant to engage in extraordinary transactions or excessive trading. The Administrator, in its sole discretion, shall determine which activities constitute extraordinary transactions or excessive trading. In addition, all designations of investment categories by a Participant, Beneficiary, or alternate payee under this Section shall be subject to procedures established by the Administrator. Such procedures may include limitations of frequency of trading (including limitations that cause otherwise available daily elections to be unavailable), circumstances under which investment instructions will not be implemented, redemption fees, and other mechanisms intended to inhibit excessive or inappropriate trading practices, whether instituted by the Administrator or the investment fund.

ARTICLE V
VALUATIONS

5.1 VALUATION OF THE TRUST FUND

The Administrator shall direct the Trustee, as of the Valuation Date, to determine the net worth of the assets comprising the Trust Fund as it exists on the Valuation Date prior to taking into consideration any contribution not yet allocated. In determining such net worth, the Trustee shall value the assets comprising the Trust Fund at their fair market value as of the Valuation Date and shall deduct all expenses for which the Trustee has not yet obtained reimbursement from the Employer or the Trust Fund.

5.2 METHOD OF VALUATION

In determining the fair market value of securities held in the Trust Fund which are listed on a registered stock exchange, the Administrator shall direct the Trustee to value the same at the prices they were last traded on such exchange preceding the close of business on the Valuation Date. If such securities were not traded on the Valuation Date, or if the exchange on which they are traded was not open for business on the Valuation Date, then the securities shall be valued at the prices at which they were last traded prior to the Valuation Date. Any unlisted security held in the Trust Fund shall be valued at its bid price next preceding the close of business on the Valuation Date, which bid price shall be obtained from a registered broker or an investment banker. In determining the fair market value of assets other than securities for which trading or bid prices can be obtained, the Trustee may appraise such assets itself, or in its discretion employ one or more appraisers for that purpose and rely on the value established by such appraiser or appraisers.

ARTICLE VI
DETERMINATION AND DISTRIBUTION OF BENEFITS

6.1 VESTING

(a) Vesting.

(i) Full Vesting. A Participant's Elective Account and Rollover Account shall be fully vested at all times. The portion of a Participant's Stock Bonus Plan Account attributable to Elective Contributions shall be fully vested at all times. Except as provided in paragraph (iii), the portion of a Participant's Account attributable to AC Products Discretionary Contributions, Quaker Discretionary Contributions, and Matching Contributions shall be fully vested at all times.

(ii) Nonelective Contributions. Nonelective Contributions for Plan Years beginning before 2008 that had not become a Forfeiture before January 1, 2008, became fully vested on January 1, 2008. Nonelective Contributions for Plan Years beginning on and after January 1, 2008, shall be fully vested at all times. (Before January 1, 2008, a Participant's Nonelective Contributions were 0% vested if the Participant had completed fewer than three Years of Service and 100% vested if the Participant had completed at least three Years of Service.)

(iii) Complete Vesting. A Participant shall be 100% vested in his or her Participant's Account in the event of his or her attainment of Normal Retirement Age prior to Severance from Employment, Total and Permanent Disability prior to Severance from Employment, or death prior to Severance from Employment.

(b) Effect of Amendment on Nonforfeitable Percentage. The computation of a Participant's nonforfeitable percentage of his or her interest in the Plan shall not be reduced as the result of any direct or indirect amendment to this Plan. For this purpose, the Plan shall be treated as having been amended if the Plan provides for an automatic change in vesting due to a change in Top-Heavy status. In the event that the Plan is amended to change or modify any vesting schedule, a Participant with at least three Years of Service as of the expiration date of the election period may elect to have his or her nonforfeitable percentage computed under the Plan without regard to such amendment. If a Participant fails to make such election, then such Participant shall be subject to the new vesting schedule. The Participant's election period shall commence on the adoption date of the amendment and shall end 60 days after the latest of:

(i) the adoption date of the amendment;

(ii) the effective date of the amendment; or

(iii) the date the Participant receives written notice of the amendment from the Employer or Administrator.

(c) Effect of Break in Service. If a Participant is reemployed after a 1-Year Break in Service has occurred, Years of Service shall include Years of Service prior to his or her 1-Year Break in Service subject to the following rules:

(i) If a Participant has a 1-Year Break in Service, his or her pre-break and post-break service shall be used for computing Years of Service for vesting purposes only after he or she has been employed for one Year of Service following the date of his or her reemployment with the Employer;

(ii) A Participant who under the Plan does not have a nonforfeitable right to any interest in the Plan resulting from Employer contributions shall lose credits otherwise allowable under (i) above if his or her consecutive 1-Year Breaks in Service equal or exceed the greater of (A) five or (B) the aggregate number of his or her pre-break Years of Service; and

(iii) After five consecutive 1-Year Breaks in Service, a Participant's Vested Account balance attributable to pre-break service shall not be increased as a result of post-break service.

(d) Years of Service Excluded. In determining Years of Service for purposes of vesting under the Plan, Years of Service prior to the vesting computation period in which an Employee attained his or her 18th birthday shall be excluded.

(e) Distribution Before Fully Vested. If a distribution is made at a time when a Participant is not fully Vested in his or her Participant's Account and the Participant may increase the Vested percentage in such account:

(i) A separate account shall be established for the Participant's interest in the Plan as of the time of the distribution;

(ii) At any relevant time, the Participant's Vested portion of the separate account shall be equal to an amount ("X") determined by the formula:

X equals P(AB plus (RxD)) – (RxD)

For purposes of applying the formula: P is the Vested percentage at the relevant time, AB is the account balance at the relevant time, D is the amount of distribution, and R is the ratio of the account balance at the relevant time to the account balance after distribution.

6.2 DETERMINATION OF BENEFITS UPON TERMINATION

Upon a Participant's Severance from Employment, the Participant's Aggregate Account shall be subject to the Participant's investment directions in accordance with Section 4.13 and shall share in allocations of earnings and losses pursuant to Section 4.7(c) until such time as a distribution is made to the Participant. Distribution of the Participant's Vested Aggregate Account shall be made as soon as practicable following the Participant's Severance from Employment; provided, however, that in the case of a Participant whose Vested Aggregate Account balance exceeds $1,000, no distribution shall be made without the written consent of the Participant, subject to Section 6.6 (regarding Required Minimum Distributions).

Any distribution under this subsection shall be made in a manner which is consistent with and satisfies the provisions of Section 6.5, including, but not limited to, all notice and consent requirements of Code section 411(a)(11) and the Regulations thereunder.

If the value of a Participant's Vested Aggregate Account does not exceed $1,000, the Administrator shall direct the Trustee to cause the entire benefit to be paid to such Participant in a single lump sum.

6.3 DETERMINATION OF BENEFITS UPON DEATH

(a) Distribution. Upon the death of a Participant all Vested amounts credited to such Participant's Aggregate Account shall be distributed, in accordance with the provisions of Section 6.5(e), to the deceased Participant's Beneficiary.

(b) Loans. Any security interest held by the Plan by reason of an outstanding loan to a deceased Participant shall be taken into account in determining the amount of the death benefit.

(c) Proof of Death. The Administrator may require such proper proof of death and such evidence of the right of any person to receive payment of the value of the account of a deceased Participant as the Administrator may deem desirable. The Administrator's determination of death and of the right of any person to receive payment shall be conclusive.

(d) Beneficiary. The Beneficiary of the death benefit payable pursuant to this Section shall be the Participant's Spouse, except, however, the Participant may designate a Beneficiary other than his or her Spouse if:

(i) the Spouse has waived the right to be the Participant's Beneficiary;

(ii) the Participant is legally separated or has been abandoned (within the meaning of local law) and the Participant has a court order to such effect (and there is no qualified domestic relations order, as defined in Code section 414(p), which provides otherwise);

(iii) the Participant has no Spouse; or

(iv) the Spouse cannot be located.

In such event, the designation of a Beneficiary shall be made on a form satisfactory to the Administrator. A Participant may at any time revoke his or her designation of a Beneficiary or change his or her Beneficiary by filing written notice of such revocation or change with the Administrator. However, the Participant's Spouse must again consent in writing to any change in Beneficiary unless the original consent acknowledged that the Spouse had the right to limit consent only to a specific Beneficiary and that the Spouse voluntarily elected to relinquish such right. In the event no valid designation of a Beneficiary exists at the time of the Participant's death, the death benefit shall be payable to his or her estate.

(e) Spousal Consent. Any consent by the Participant's Spouse to waive any rights to the death benefit must be in writing, must acknowledge the effect of such waiver, and must be witnessed by a Plan representative or a notary public. Further, the Spouse's consent must be irrevocable and must acknowledge the specific nonspouse Beneficiary.

(f) Death While Performing Qualified Military Service. Notwithstanding any provision of the Plan to the contrary, and in accordance with Code section 401(a)(37), in the case of a Participant who dies while performing qualified military service (as defined in Code section 414(u)), the Participant's survivors shall be entitled to any additional benefits (other than contributions relating to the period of qualified military service) provided under the Plan had the Participant resumed and then terminated employment on account of death.

6.4 DETERMINATION OF BENEFITS IN EVENT OF DISABILITY

In the event of a Participant's Total and Permanent Disability prior to his or her Severance from Employment, all amounts credited to such Participant's Aggregate Account shall become fully Vested, and the Trustee, in accordance with the provisions of Sections 6.5 and 6.7, shall, at the election of the Participant, distribute to such Participant all amounts credited to such Participant's Aggregate Account as though he or she had retired.

6.5 DISTRIBUTION OF BENEFITS

(a) Distribution. Subject to subsections (b) and (f), the Administrator shall direct the Trustee to distribute to the Participant or his or her Beneficiary any amount to which he or she is entitled under the Plan in one lump-sum payment in cash.

(b) Participant Consent Required. Except as provided in Section 6.6, any distribution to a Participant who has a Vested Aggregate Account balance which exceeds $1,000 shall require such Participant's consent.

(c) Required Distributions. Notwithstanding any provision in the Plan to the contrary, the distribution of a Participant's benefits shall comply with Section 6.6.

(d) Direct Rollovers. Notwithstanding any provision of the Plan to the contrary that would otherwise limit a distributee's election under this Article VI, a distributee may elect, at the time and in the manner prescribed by the Administrator, to have all or a portion of an eligible rollover distribution paid directly to an eligible retirement plan specified by the distributee in a direct rollover.

(i) For purposes of this subsection, "eligible rollover distribution" shall mean any distribution of all or any portion of the balance to the credit of the distributee, except that an eligible rollover distribution shall not include: (i) any distribution that is one of a series of substantially equal periodic payments made (not less frequently than annually) for the life (or life expectancy) of the distributee or the joint lives (or joint life expectancy) of the distributee and the distributee's designated Beneficiary, or for a specified period of ten years or more; (ii) any distribution to the extent such distribution is required under Code section 401(a)(9); and (iii) any amount that is distributed on account of hardship. A portion of a distribution shall not fail to be an eligible rollover distribution merely because the portion consists of after-tax employee contributions which are not includible in gross income. However, such portion may be transferred only to an individual retirement account or annuity described in Code sections 408(a) or (b), or to a qualified defined contribution plan described in Code section 401(a) or Code section 403(a) or an annuity contract described in Code section 403(b), that agrees to separately account for amounts so transferred, including separately accounting for the portion of such distribution which is includible in gross income and the portion of such distribution which is not so includible.

(ii) For purposes of this subsection, "eligible retirement plan" means any of the following that accepts the distributee's eligible rollover distribution: an individual retirement account described in Code section 408(a), a Roth IRA described in Code section 408A provided the applicable conversion requirements are met, an individual retirement annuity described in Code section 408(b), an annuity plan described in Code section 403(a), a qualified trust described in Code section 401(a), an annuity contract described in Code section 403(b), or an eligible plan under Code section 457(b) which is maintained by a state, political subdivision of a state, or any agency or instrumentality of a state or political subdivision of a state which agrees to separately account for amounts transferred into such plan from this Plan. If any portion of an "eligible rollover distribution" is attributable to payments or distributions from a designated Roth account, an eligible retirement plan with respect to such portion shall include only another designated Roth account of the individual from whose account the payments or distributions were made, or a Roth IRA of such individual, his or her Surviving Spouse or his or her Beneficiary.

(iii) For purposes of this subsection, "distributee" shall include an Employee or former Employee. In addition, the Employee's or former Employee's Surviving Spouse and the Employee's or former Employee's Spouse or former Spouse who is the alternate payee under a qualified domestic relations order (as defined in Code section 414(p)) are distributees with regard to the interest of the Spouse or former spouse. The Beneficiary of a deceased Participant who is not the Surviving Spouse of the Participant is a distributee with respect to (A) a direct rollover to an individual retirement account or annuity under Code section 408(a) or Code section 408(b) established for the purpose of receiving such distribution and which will be treated as an inherited IRA pursuant to Code section 402(c)(11) and (B) a direct rollover to a Roth IRA described in Code section 408A, subject to the rules and provisions set forth in Code section 408A(e) and any related guidance issued by the Treasury Department thereunder, if such distribution otherwise meets the requirements set forth in (i) above.

(iv) For purposes of this subsection, "direct rollover" shall mean a payment by the Plan to the eligible retirement plan specified by the distributee.

(e) Death Benefit. Except as provided in subsection (f), the death benefit payable pursuant to Section 6.3 shall be paid to the Participant's Beneficiary in one lump-sum payment in cash as soon as practicable after the Participant's death, subject to the rules of Section 6.6.

(f) Distribution of Company Securities. Notwithstanding anything to the contrary herein, the portion of a Participant's Stock Bonus Plan Account invested in the Quaker Stock Fund shall be distributed in full shares of Company Securities; provided, however, that the Participant or Beneficiary may elect to take such distribution in cash in an amount realized from converting such full shares of Company Securities in the Participant's Stock Bonus Plan Account to cash. Any fractional shares of common stock of the Company shall be distributed in cash.

6.6 REQUIRED MINIMUM DISTRIBUTIONS

(a) Precedence. The requirements of this Section shall take precedence over any inconsistent provisions of the Plan to the extent required to satisfy Code section 401(a)(9) and the Regulations thereunder. The requirements set forth in this Section repeat the requirements set forth in Code section 401(a)(9), including requirements which may not apply to the Plan because, for example, the Plan does not permit a particular form of distribution or does not permit deferral beyond a particular date. Any such requirement shall not be read as giving a Participant or Beneficiary a form of benefit or deferral not otherwise provided under the Plan.

(b) Requirements of Regulations Incorporated. All distributions required under this Section shall be determined and made in accordance with the Regulations under Code section 401(a)(9).

(c) Time and Manner of Distribution.

(i) Required Beginning Date. The Participant's entire interest shall be distributed, or begin to be distributed, to the Participant no later than the Participant's Required Beginning Date.

(ii) Death of Participant Before Distributions Begin. If the Participant dies before distributions begin, the Participant's entire interest shall be distributed, or begin to be distributed, no later than as follows:

(A) If the Participant's Surviving Spouse is the Participant's sole Designated Beneficiary, then distributions to the Surviving Spouse shall begin by December 31 of the calendar year immediately following the calendar year in which the Participant died, or by December 31 of the calendar year in which the Participant would have attained age 70½, if later.

(B) If the Participant's Surviving Spouse is not the Participant's sole Designated Beneficiary, then distributions to the Designated Beneficiary shall begin by December 31 of the calendar year immediately following the calendar year in which the Participant died.

(C) If there is no Designated Beneficiary as of September 30 of the year following the year of the Participant's death, the Participant's entire interest shall be distributed by December 31 of the calendar year containing the fifth anniversary of the Participant's death.

(D) If the Participant's Surviving Spouse is the Participant's sole Designated Beneficiary and the Surviving Spouse dies after the Participant but before distributions to the Surviving Spouse begin, this paragraph (ii), other than paragraph (ii)(A), shall apply as if the Surviving Spouse were the Participant.

For purposes of this paragraph (ii) and Section 6.6(e), unless paragraph (ii)(D) applies, distributions are considered to begin on the Participant's Required Beginning Date. If paragraph (ii)(D) applies, distributions are considered to begin on the date distributions are required to begin to the Surviving Spouse under paragraph (ii)(A). If distributions under an annuity purchased from an insurance company irrevocably commence to the Participant before the Participant's Required Beginning Date (or to the Participant's Surviving Spouse before the date distributions are required to begin to the Surviving Spouse under paragraph (ii)(A)), the date distributions are considered to begin is the date distributions actually commence.

(iii) Forms of Distribution. Unless the Participant's interest is distributed in the form of an annuity purchased from an insurance company or in a single sum on or before the Required Beginning Date, as of the first Distribution Calendar Year distributions shall be made in accordance with Section 6.6(d) and Section 6.6(e). If the Participant's interest is distributed in the form of an annuity purchased from an insurance company, distributions thereunder shall be made in accordance with the requirements of Code section 401(a)(9) and the Regulations.

(d) Required Minimum Distributions During Participant's Lifetime.

(i) Amount of Required Minimum Distributions For Each Distribution Calendar Year. During the Participant's lifetime, the minimum amount that shall be distributed for each Distribution Calendar Year is the lesser of:

(A) The quotient obtained by dividing the Participant's Account Balance by the distribution period in the Uniform Lifetime Table set forth in Regulation section 1.401(a)(9)-9, using the Participant's age as of the Participant's birthday in the Distribution Calendar Year; or

(B) If the Participant's sole Designated Beneficiary for the Distribution Calendar Year is the Participant's Spouse, the quotient obtained by dividing the Participant's Account Balance by the number in the Joint and Last Survivor Table set forth in Regulation section 1.401(a)(9)-9, using the Participant's and Spouse's attained ages as of the Participant's and Spouse's birthday in the Distribution Calendar Year.

(ii) Lifetime Required Minimum Distributions Continue Through Year of Participant's Death. Required minimum distributions shall be determined under this subsection beginning with the first Distribution Calendar Year and up to and including the Distribution Calendar Year that includes the Participant's date of death.

(e) Required Minimum Distributions After Participant's Death.

(i) Death On or After Date Distributions Begin.

(A) Participant Survived by Designated Beneficiary. If the Participant dies on or after the date distributions begin and there is a Designated Beneficiary, the minimum amount that shall be distributed for each Distribution Calendar Year after the year of the Participant's death is the quotient obtained by dividing the Participant's Account Balance by the longer of the remaining Life Expectancy of the Participant or the remaining Life Expectancy of the Participant's Designated Beneficiary, determined as follows:

(I) The Participant's remaining Life Expectancy is calculated using the age of the Participant in the year of death, reduced by one for each subsequent year.

(II) If the Participant's Surviving Spouse is the Participant's sole Designated Beneficiary, the remaining Life Expectancy of the Surviving Spouse is calculated for each Distribution Calendar Year after the year of the Participant's death using the Surviving Spouse's age as of the Spouse's birthday in that year. For Distribution Calendar Years after the year of the Surviving Spouse's death, the remaining Life Expectancy of the Surviving Spouse is calculated using the age of the Surviving Spouse as of the Spouse's birthday in the calendar year of the Spouse's death, reduced by one for each subsequent calendar year.

(III) If the Participant's Surviving Spouse is not the Participant's sole Designated Beneficiary, the Designated Beneficiary's remaining Life Expectancy is calculated using the age of the beneficiary in the year following the year of the Participant's death, reduced by one for each subsequent year.

(B) No Designated Beneficiary. If the Participant dies on or after the date distributions begin and there is no Designated Beneficiary as of September 30 of the year after the year of the Participant's death, the minimum amount that shall be distributed for each Distribution Calendar Year after the year of the Participant's death is the quotient obtained by dividing the Participant's Account Balance by the Participant's remaining Life Expectancy calculated using the age of the Participant in the year of death, reduced by one for each subsequent year.

(ii) Death Before Date Distributions Begin.

(A) Participant Survived by Designated Beneficiary. If the Participant dies before the date distributions begin and there is a Designated Beneficiary, the minimum amount that shall be distributed for each Distribution Calendar Year after the year of the Participant's death is the quotient obtained by dividing the Participant's Account Balance by the remaining life expectancy of the Participant's designated beneficiary, determined as provided in Section 6.6(e)(i).

(B) No Designated Beneficiary. If the Participant dies before the date distributions begin and there is no Designated Beneficiary as of September 30 of the year following the year of the Participant's death, distribution of the Participant's entire interest shall be completed by December 31 of the calendar year containing the fifth anniversary of the Participant's death.

(C) Death of Surviving Spouse Before Distributions to Surviving Spouse are Required to Begin. If the Participant dies before the date distributions begin, the Participant's Surviving Spouse is the Participant's sole designated beneficiary, and the Surviving Spouse dies before distributions are required to begin to the Surviving Spouse under Section 6.6(c)(ii)(A), this paragraph (ii) shall apply as if the Surviving Spouse were the Participant.

(f) Distribution Forms. This Section shall not entitle the Participant or beneficiary to any form of distribution not otherwise available under the Plan, or delay the date as of which any benefit is to be paid under any other provision of the Plan.

(g) Definitions.

(i) Designated Beneficiary. The individual who is designated as the Beneficiary under Section 1.8 and is the designated beneficiary under Code section 401(a)(9) and Regulation section 1.401(a)(9)-1, Q&A-4.

(ii) Distribution Calendar Year. A calendar year for which a minimum distribution is required. For distributions beginning before the Participant's death, the first Distribution Calendar Year is the calendar year immediately preceding the calendar year which contains the Participant's Required Beginning Date. For distributions beginning after the Participant's death, the first Distribution Calendar Year is the calendar year in which distributions are required to begin under Section 6.6(c)(ii). The required minimum distribution for the Participant's first Distribution Calendar Year shall be made on or before the Participant's Required Beginning Date. The required minimum distribution for other Distribution Calendar Years, including the required minimum distribution for the Distribution Calendar Year in which the Participant's Required Beginning Date occurs, shall be made on or before December 31 of that Distribution Calendar Year.

(iii) Life Expectancy. Life expectancy as computed by use of the Single Life Table in Regulation section 1.401(a)(9)-9.

(iv) Participant's Account Balance. The balance in the Participant's Aggregate Account as of the last valuation date in the calendar year immediately preceding the Distribution Calendar Year ("Valuation Calendar Year") increased by the amount of any contributions made and allocated or forfeitures allocated to the Participant's Aggregate Account as of dates in the Valuation Calendar Year after the valuation date and decreased by distributions made in the Valuation Calendar Year after the valuation date. The balance in the Participant's Aggregate Account for the Valuation Calendar Year includes any amounts rolled over or transferred to the Plan either in the Valuation Calendar Year or in the Distribution Calendar Year if distributed or transferred in the Valuation Calendar Year.

(v) Required Beginning Date. Effective for Participants who attain age 70½ on or after January 1, 1997, a Participant's Required Beginning Date shall mean the April 1 following the later of (i) the calendar year in which the Participant attains age 70½ or (ii) the calendar year in which the Participant retires; provided, however, that the Required Beginning Date for a Participant who is a 5% owner (as defined in Code section 416(i)) at any time during the five Plan Year period ending in the calendar year in which he or she attains age 70½, or in the case of a Participant who becomes a 5% owner during any subsequent Plan Year, shall be the April 1 following the calendar year in which he or she attains age 70½. Notwithstanding the foregoing, a Participant (who is not a 5% owner) who attained age 70½ on or after January 1, 1997, but prior to January 1, 2002, may elect to commence distribution on the April 1 of the calendar year following the calendar year in which he or she attains age 70½.

6.7 LATEST DATE OF COMMENCEMENT OF PAYMENTS

Unless the Participant elects otherwise, the payments of benefits shall occur not later than (a) the 60th day after the close of the Plan Year in which the Participant attains his or her Normal Retirement Age, (b) the tenth anniversary of the year in which the Participant commenced participation in the Plan, or (c) the date the Participant terminates his or her service with the Employer. A Participant's failure to apply for benefits shall be deemed an election to defer commencement of benefits for purposes of this Section.

6.8 DISTRIBUTION FOR MINOR BENEFICIARY

In the event a distribution is to be made to a minor, the Administrator may direct that such distribution be paid to the legal guardian or, if none, to a parent of such Beneficiary or a responsible adult with whom the Beneficiary maintains his or her residence, or to the custodian for such Beneficiary under the Uniform Transfers to Minors Act, if such is permitted by the laws of the state in which such Beneficiary resides. Such a payment to the legal guardian, custodian or parent of a minor Beneficiary shall fully discharge the Trustee, Employer, and Plan from further liability on account thereof.

6.9 LOCATION OF PARTICIPANT OR BENEFICIARY UNKNOWN

In the event that all, or any portion, of the distribution payable to a Participant or his or her Beneficiary hereunder shall, at his or her Normal Retirement Age, remain unpaid solely by reason of the inability of the Administrator, after sending a registered letter, return receipt requested, to the last known address, and after further diligent effort, to ascertain the whereabouts of such Participant or his or her Beneficiary, the amount so distributable shall be forfeited and used as provided in Section 4.7(f). In the event a Participant or Beneficiary is located subsequent to his or her benefit being reallocated, such benefit shall be restored.

6.10 LIMITATIONS ON BENEFITS AND DISTRIBUTIONS

All rights and benefits, including elections, provided to a Participant in this Plan shall be subject to the rights afforded to any alternate payee under a qualified domestic relations order. Furthermore, a distribution to an alternate payee shall be permitted if such distribution is authorized by a qualified domestic relations order, even if the affected Participant has not reached the earliest retirement age under the Plan. For the purposes of this Section, “alternate payee,” “qualified domestic relations order,” and “earliest retirement age” shall have the meanings set forth under Code section 414(p).

6.11 HARDSHIP DISTRIBUTIONS

(a) In General. Distributions of Elective Contributions (other than Qualified Nonelective Contributions) may be made to a Participant in the event of hardship. For the purposes of this Section, hardship is defined as an immediate and heavy financial need of the Participant where such Participant lacks other available resources. Hardship distributions shall be made in the minimum amount of $1,000 or to the extent of all available Elective Contributions, if less.

(b) Immediate and Heavy Financial Need. For purposes of this Section, an “immediate and heavy financial need,” as such term is defined under Code section 401(k) and the Regulations thereunder, shall include the following: (i) expenses incurred or necessary for medical care that would be deductible under Code section 213(d) (determined without regard to whether the expenses exceed 7.5% of adjusted gross income); (ii) costs directly related to the purchase (excluding mortgage payments) of a principal residence for the Participant; (iii) payment of tuition, room and board, and related educational fees for up to the next 12 months of post-secondary education for the Participant, Participant’s Spouse, children, or dependents (as defined in Code section 152 without regard to Code sections 152(b)(1), (b)(2), and (d)(1)(B)); (iv) payments necessary to prevent the eviction of the Participant from, or a foreclosure on the mortgage of, the Participant’s principal residence; (v) payment of burial or funeral expenses for the Participant’s deceased parent, Spouse, children, or dependents (as defined in Code section 152 without regard to Code section 152(d)(1)(B)); (vi) expenses for the repair of damage to the Participant’s principal residence that would qualify for the casualty deduction under Code section 165 (determined without regard to whether the loss exceeds 10% of adjusted gross income); and (vii) any other type of immediate and heavy financial need permissible under Code section 401(k) and the Regulations thereunder.

(c) Distribution Necessary to Satisfy Need. A distribution shall be considered as necessary to satisfy an immediate and heavy financial need of the Participant only if:

(i) the Participant has obtained all distributions, other than hardship distributions, and all nontaxable loans under all plans maintained by the Employer;

(ii) all plans maintained by the Employer provide that the Participant's Elective Contributions (and any employee contributions) shall be suspended for six months after the receipt of the hardship distribution; and

(iii) the distribution is not in excess of the amount of an immediate and heavy financial need (including amounts necessary to pay any Federal, state, or local income taxes or penalties reasonably anticipated to result from the distribution).

(d) Investment Funds. A distribution pursuant to this Section shall be made from one or more of the investment categories designated by the Participant for investment of his or her Account pursuant to Section 4.13.

6.12 WITHDRAWALS OF PREVIOUSLY CONTRIBUTED AMOUNTS

With respect to Discretionary Contributions made in Plan Years ending before January 1, 1992 only ("Pre-1992 Discretionary Contributions"), each Participant who has received an allocation of such Pre-1992 Discretionary Contributions shall have the right to elect, in writing on forms provided by the Administrator, to withdraw (i) 100%, (ii) 50%, or (iii) 0% of the Pre-1992 Discretionary Contributions allocated to his or her account. Such permitted withdrawals shall be in cash and made as promptly as practicable after the end of the Plan Year in which the election is made. Such amount shall be adjusted (as of the last day of the calendar year preceding the date of the withdrawal) to the fair market value of the assets of the Fund attributable to such deferred, allocated amount. All elections under this Section shall be made on or before the November 30 preceding the date of the withdrawal. Failure to timely file a written election with respect to the withdrawal privilege for the respective Plan Year shall constitute a binding election to waive the right of withdrawal.

6.13 LOANS

(a) In General. Loans to Participants shall be allowed if such loans comply with this Section. Subject to such uniform and nondiscriminatory rules as may from time to time be adopted by the Administrator, the Trustee, upon instructions from the Administrator, may make a loan or loans to a Participant. All loans to Participants shall be considered investments of the Fund.

(b) Limits on Loans. A Participant's loan (when added to the outstanding balance of all other loans from the Plan) shall be limited to the lesser of (i) $50,000 reduced by the excess, if any, of the highest outstanding balance of loans during the one-year period ending on the day before the loan is made over the outstanding balance of loans on the date the loan is made or (ii) 50% of the vested interest in the Participant's Aggregate Account as of the date on which the loan is made. For purposes of this limit, all loans from all other plans maintained by the Employer or by any Affiliated Employer other entity shall be considered as a loan from the Plan.

(c) Quaker Stock Fund Not Available for Loans. Amounts invested in the Quaker Stock Fund shall be taken into account in calculating the amount of the loan, but such amounts may not be borrowed from the Plan.

(d) No Offset Until Distributable Event. In the event of default, foreclosure on the note and attachment of security shall not occur until a distributable event occurs under the terms of the Plan.

(e) Security. All loans to Participants made by the Trustee shall be secured by the pledge of no more than 50% of the Participant's interest in the Fund.

(f) Interest Rate. Interest shall be charged at a reasonable rate equal to the prevailing rate of interest charged for similar loans by lending institutions in the community plus 1% on the date of the loan; provided, however, that in no event shall the interest rate charged be in violation of any applicable state usury law or 29 CFR §2550.408b-1(E). Notwithstanding the foregoing, in the case of a loan taken by a Participant prior to commencement of "military service" (as defined for purposes of the Servicemembers Civil Relief Act or any successor thereto), the interest charged on such loan shall not exceed 6% for the duration of such military service.

(g) General Term of Loan. The Administrator shall determine the term of the loan (which, except as provided in subsection (h), may not be more than five years). To the extent that a Participant becomes entitled to payments of benefits or withdraws all or a portion of the Participant's Aggregate Account, the payments or withdrawals, as the case may be, shall be immediately applied against the balance outstanding, including interest on the loan, and such amount shall then be deemed immediately due and payable. Loans shall be nonrenewable and nonextendable.

(h) Term of Principal Residence Loan. To the extent that a loan to a Participant is made for the express purpose of acquiring or constructing a principal residence of the Participant, the loan shall generally be for a term the Administrator determines to be appropriate, but in no event shall the term exceed the maximum period of time prescribed by the Code and the rulings, announcements, and Regulations issued thereunder.

(i) Amortization. Loans shall be amortized in level payments not less frequently than quarterly. The level amortization requirement shall not apply (A) for a period, not longer than one year, that a Participant is on a bona fide leave of absence either without pay or at a rate of pay (after applicable employment tax withholdings) that is less than the amount of the installment payments required under the terms of the loan, and (B) during a period the Participant is performing service in the uniformed services (as defined in Chapter 43 of Title 38 of the United States Code), both as described in Regulation section 1.72(p)-1.

(j) Offset on Default. Except as described in subsection (d), if a loan is not paid as and when due, such outstanding loan or loans may be deducted from any benefit which is or becomes payable to the borrower-Participant, and any other security pledged shall be sold by the Trustee at public or private sale as soon as is practicable after such default. The proceeds of any sale shall first be applied to pay the expenses of conducting the sale, including reasonable attorneys' fees, and then to pay any sums due from the borrower-Participant to the Fund, with such payment to be applied first to accrued interest and then to principal. The Participant shall remain liable for any deficiency, and any surplus remaining shall be paid to the Participant.

(k) Repayments. All loan repayments shall be allocated to the designated investment categories in accordance with the Participant's investment designation applicable at the time of the repayment. The Employer shall be permitted to implement salary withholding as a means of facilitating the repayment of any loan.

(l) Loan Under Prior Plans. Notwithstanding the foregoing, any loan under a plan which is merged with and into the Plan ("Merged Plan") which is outstanding at the time of such merger shall continue in accordance with the terms of the loan as made under the Merged Plan.

6.14 DISTRIBUTIONS FROM THE ROLLOVER ACCOUNT

(a) Timing of Distribution. Amounts credited to a Participant's Rollover Account may be distributed at any time upon a request by the Participant in accordance with the procedures established by the Administrator.

(b) Investment Funds. A distribution pursuant to this Section shall be made from one or more of the investment categories designated by the Participant for investment of his or her Account pursuant to Section 4.13.

6.15 DISTRIBUTIONS AT OR AFTER AGE 59½.

(a) Timing of Distribution. Amounts credited to a Participant's Aggregate Account may be distributed at any time upon a request by the Participant after attainment of age 59½ in accordance with the procedures established by the Administrator.

(b) Investment Funds. A distribution pursuant to this Section shall be made from one or more of the investment categories designated by the Participant for investment of his or her Account pursuant to Section 4.13.

6.16 DISTRIBUTIONS OF G.W. SMITH ACCOUNTS. Notwithstanding any other provision of the Plan to the contrary, any amounts attributable to employer contributions under the G.W. Smith & Sons, Inc. 401(k) Profit Sharing Plan (the "G.W. Smith Plan") which (i) were transferred to this Plan in connection with the merger of the G.W. Smith Plan with and into this Plan effective January 1, 2014, and (ii) were available under the terms of the G.W. Smith Plan for withdrawal at age 55 shall remain available for withdrawal at age 55, provided that no more than two such withdrawals shall be permitted in any 12-month period until attainment of age 59½. Separate subaccounts shall be maintained under this Plan for such amounts to the extent necessary.

6.17 DISCLAIMER. An individual who has been designated as a Beneficiary under this Article VI may disclaim the benefit payable to him or her under the Plan by submitting a qualified disclaimer in accordance with Code section 2518.

ARTICLE VII
ADMINISTRATION

7.1 POWERS AND RESPONSIBILITIES OF THE COMPANY

(a) Appointment and Removal of Trustee and Administrator. The Company shall be empowered to appoint and remove the Trustee and the Administrator from time to time as it deems necessary for the proper administration of the Plan to assure that the Plan is being operated for the exclusive benefit of the Participants and their Beneficiaries in accordance with the terms of the Plan, the Code, and ERISA.

(b) Funding Policy and Method. The Company shall establish a “funding policy and method,” i.e., it shall determine whether the Plan has a short-run need for liquidity (e.g., to pay benefits) or whether liquidity is a long-run goal and investment growth (and stability of same) is a more current need, or shall appoint a qualified person to do so. The Company or its delegate shall communicate such needs and goals to the Trustee, who shall coordinate such Plan needs with its investment policy. The communication of such a funding policy and method shall not, however, constitute a directive to the Trustee as to investment of the Trust Fund. Such funding policy and method shall be consistent with the objectives of this Plan and with the requirements of Title I of ERISA.

(c) Periodic Review of Fiduciaries. The Company shall periodically review the performance of any Fiduciary or other person to whom duties have been delegated or allocated by it under the provisions of this Plan or pursuant to procedures established hereunder. This requirement may be satisfied by formal periodic review by the Company or by a qualified person specifically designated by the Company, through day-to-day conduct and evaluation, or through other appropriate ways.

7.2 DESIGNATION OF ADMINISTRATIVE AUTHORITY

The Administrator shall consist of a committee of two or more individuals appointed by the Company. Any person, including, but not limited to, an Employee of the Employer, shall be eligible to serve on the committee. Any person so appointed shall signify his or her acceptance by filing written acceptance with the Company. A member of the committee may resign by delivering his or her written resignation to the Company or be removed by the Company by delivery of written notice of removal, to take effect at a date specified therein, or upon delivery to the committee member if no date is specified. The committee shall act in accordance with bylaws or procedures adopted by the committee and approved by the Company.

The Company, upon the resignation or removal of a committee member, shall promptly designate in writing a successor to this position. If the Company does not appoint a committee, the Company shall function as the Administrator.

7.3 ALLOCATION AND DELEGATION OF RESPONSIBILITIES

If more than one person is appointed as Administrator, the responsibilities of each Administrator may be specified by the Company and accepted in writing by each Administrator.

In the event that no such delegation is made by the Company, the Administrators may allocate the responsibilities among themselves, in which event the Administrators shall notify the Company and the Trustee in writing of such action and specify the responsibilities of each Administrator. The Trustee thereafter shall accept and rely upon any documents executed by the appropriate Administrator until such time as the Company or the Administrators file with the Trustee a written revocation of such designation.

7.4 POWERS AND DUTIES OF THE ADMINISTRATOR

The primary responsibility of the Administrator is to administer the Plan for the exclusive benefit of the Participants and their Beneficiaries, subject to the specific terms of the Plan. The Administrator shall administer the Plan in accordance with its terms and shall have the power and discretion to construe the terms of the Plan and to determine all questions arising in connection with the administration, interpretation, and application of the Plan. Any such determination by the Administrator shall be conclusive and binding upon all persons. The Administrator may establish procedures, supply any information, or reconcile any inconsistency in such manner and to such extent as shall be deemed necessary or advisable to carry out the purpose of the Plan; provided, however, that any procedure, discretionary act, interpretation, or construction shall be done in a nondiscriminatory manner based upon uniform principles consistently applied and shall be consistent with the intent that the Plan shall continue to be deemed a qualified plan under the terms of Code section 401(a), and shall comply with the terms of ERISA and all regulations issued pursuant thereto. The Administrator shall have all powers necessary or appropriate to accomplish his or her duties under its Plan.

The Administrator shall be charged with the duties of the general administration of the Plan, including, but not limited to, the following:

(a) the discretion to determine all questions relating to the eligibility of an Employee to become a Participant or remain a Participant hereunder and to receive benefits under the Plan;

(b) to correct any defect, reconcile any inconsistency, resolve any ambiguity, or supply any omission with respect to the Plan;

(c) to make all other determinations, factual or otherwise, necessary or advisable for the discharge of the Administrator's duties under the Plan;

(d) to compute, certify, and direct the Trustee with respect to the amount and the kind of benefits to which any Participant shall be entitled hereunder;

(e) to authorize and direct the Trustee with respect to all nondiscretionary or otherwise directed disbursements from the Trust;

(f) to maintain all necessary records for the administration of the Plan;

(g) to interpret the provisions of the Plan and to make and publish such rules for regulation of the Plan as are consistent with the terms hereof;

(h) to determine the size and type of any Contract to be purchased from any insurer, and to designate the insurer from which such Contract shall be purchased;

(i) to compute and certify to the Employer and to the Trustee from time to time the sums of money necessary or desirable to be contributed to the Plan;

(j) to consult with the Company and the Trustee regarding the short- and long-term liquidity needs of the Plan in order that the Trustee can exercise any investment discretion in a manner designed to accomplish specific objectives;

(k) to prepare and implement a procedure to notify Eligible Employees that they may elect to have a portion of their Compensation deferred or paid to them in cash;

(l) to assist any Participant regarding his or her rights, benefits, or elections available under the Plan; and

(m) to determine whether any domestic relations order constitutes a qualified domestic relations order, as defined in Code section 414(p), and to take such action as the Administrator deems appropriate in light of such domestic relation order.

7.5 RECORDS AND REPORTS

The Administrator shall keep a record of all actions taken and shall keep all other books of account, records, and other data that may be necessary for proper administration of the Plan and shall be responsible for supplying all information and reports to the Internal Revenue Service, Department of Labor, Participants, Beneficiaries and others as required by law.

7.6 APPOINTMENT OF ADVISERS

The Administrator or Trustee, with the consent of the Company, may appoint counsel, specialists, advisers, and other persons as the Administrator or Trustee deems necessary or desirable in connection with the administration of this Plan.

7.7 INFORMATION FROM EMPLOYER

To enable the Administrator to perform its functions, the Employer shall supply full and timely information to the Administrator on all matters relating to the Compensation of all Participants, their Hours of Service, their Years of Service, their retirement, death, disability, or Severance from Employment and such other pertinent facts as the Administrator may require; and the Administrator shall advise the Trustee of such of the foregoing facts as may be pertinent to the Trustee's duties under the Plan. The Administrator may rely upon such information as is supplied by the Employer and shall have no duty or responsibility to verify such information.

7.8 PAYMENT OF EXPENSES

All expenses of administration may be paid out of the Fund unless paid by the Employer. Such expenses shall include any expenses incident to the functioning of the Administrator, including, but not limited to, fees of accountants, counsel, and other specialists and their agents, and other costs of administering the Plan. Until paid, the expenses shall constitute a liability of the Fund. However, the Employer may reimburse the Fund for any administration expense incurred. Any administration expense paid to the Fund as a reimbursement shall not be considered an Employer contribution.

7.9 MAJORITY ACTIONS

The members of the committee shall act by a majority of their number, but may authorize one or more of them to sign all papers on their behalf.

7.10 CLAIMS PROCEDURE

(a) Initial Claim. A Participant, Spouse, or Beneficiary ("claimant") who believes he or she is entitled to benefits hereunder, may claim those benefits by submitting to the Administrator a written notification of any claim of right to such benefits. The Administrator shall make all determinations as to the right of any person to receive benefits under the Plan. If such benefits are wholly or partially denied, the Administrator shall notify the claimant of the denial of the claim.

(b) Notice of Denial of Claim. Any notice of denial of a claim shall:

(i) be in writing and sent to the claimant by registered or certified mail (or by means of an electronic medium that satisfies the requirements of 29 CFR §2520.104b-1(c)(1)(i), (iii), and (iv));

(ii) be written in a manner calculated to be understood by the claimant;

(iii) contain (A) the specific reason or reasons for the denial of the claim, (B) specific reference to the pertinent provisions of the Plan upon which the denial is based, (C) a description of the required documentation and procedures necessary to perfect the claim, along with an explanation of why such material or information is necessary, (D) an explanation of the claims review procedure, including time limits applicable to the procedure, and (E) a statement of the claimant's right to bring a civil action under section 502(a) of the Act following an adverse determination on review; and

(iv) be given to a claimant within 90 days after receipt of his or her claim by the Administrator unless special circumstances require an extension of time for processing of the claim. If such extension of time for processing is required, written notice of the extension shall be furnished to the claimant prior to the termination of such 90-day period, and such notice shall indicate the special circumstances which make the postponement appropriate and the date the determination is expected. In no event may the extension exceed a total of 180 days from the date of the original receipt of the claim.

(c) Procedure for Appeal. In case of a denial as outlined in Section 7.10(b), the claimant or his or her representative shall have the opportunity to appeal to the Administrator for review thereof by requesting such review in writing to the Administrator; provided, however, that such written request must be received by the Administrator (or his or her delegate to receive such requests) within 60 days after receipt by the claimant of written notification of the denial or limitation of the claim. The claimant or his or her representative shall have a right to review all pertinent documents and submit comments in writing. The claimant or his or her duly authorized representative shall also be provided, upon request and without charge, reasonable access to and copies of, all documents, records, or other information relevant to the claim. The claimant or his or her duly authorized representative shall also be permitted to submit to the Administrator documents, records, and other information relating to the claim.

(d) Decision on Appeal. No later than 60 days after its receipt of the request for review, the Administrator shall render a decision in writing (or by means of an electronic medium that satisfies the requirements of 29 CFR §2520.104b-1(c)(1)(i), (iii), and (iv)) stating specific reasons therefor and citing specific Plan references. If special circumstances require extension, and upon prior written notice to the claimant, the Administrator's decision may be given within 120 days after receipt of the request for review. The extension notice shall indicate the special circumstances requiring an extension and the date that the determination on review is expected.

Notwithstanding the foregoing, if the Administrator is a committee that holds regularly scheduled meetings at least quarterly, an individual's request for review shall be acted upon at the meeting immediately following the receipt of the individual's request, unless such request is filed within 30 days preceding such meeting. In such instance, the decision shall be made no later than the date of the second meeting following receipt of such request. If special circumstances (such as a need to hold a hearing) require a further extension of time for processing a request, a decision shall be rendered not later than the third meeting of the Administrator following the receipt of such request for review and written notice of the extension shall be furnished to the individual prior to the commencement of the extension. The extension notice shall indicate the special circumstances requiring an extension and the date that the determination on review will be made. The Administrator shall notify the claimant or his or her representative of the determination as soon as possible, but not later than five days after the determination is made.

In the event that the decision denies in whole or in part a claim on appeal, the notice furnished to the claimant shall also specify that the claimant or his or her duly authorized representative has a right to be provided, upon request and without charge, reasonable access to, and copies of, all documents, records, or other information relevant to the claim and specify that the claimant has a right to bring a civil action under section 502(a) of the Act. Claims for benefits under the Plan may be filed in writing with the Administrator. Written notice of the disposition of a claim shall be furnished to the claimant within 90 days after the application is filed. In the event the claim is denied, the reasons for the denial shall be specifically set forth in the notice in language calculated to be understood by the claimant, pertinent provisions of the Plan shall be cited, and, where appropriate, an explanation as to how the claimant can perfect the claim shall be provided. In addition, the claimant shall be furnished with an explanation of the Plan's claims review procedure.

7.11 LIMITATIONS ON ACTIONS

(a) A claimant (as defined in Section 7.10) shall have no right to bring any action at law or in equity regarding a claim for benefits, unless and until he or she exhausts his or her rights to review under Section 7.10 in accordance with the time frames set forth in those procedures.

(b) No action at law or in equity shall be brought to recover benefits under the Plan later than two years from the date of the final adverse benefit determination of the claimant's appeal of the denial of his or her claim for benefits under Section 7.10. Notwithstanding the foregoing, if the applicable, analogous Pennsylvania statute of limitations has run or will run before the aforementioned two-year period, the Pennsylvania statute of limitations is controlling.

(c) No action at law or in equity shall be brought in connection with the Plan except in Federal district court in Philadelphia, Pennsylvania.

7.12 DISCRETIONARY AUTHORITY

The Administrator (or its designee, in the case of any delegated duties) shall have sole discretion to carry out its responsibilities under this Article VII, to construe and interpret the provisions of the Plan and to determine all questions concerning benefit entitlements, including the power to construe and determine disputed or doubtful terms. To the maximum extent permissible under law, the Administrator's (or its designee's) determinations on all such matters shall be final and binding upon all persons involved.

ARTICLE VIII
AMENDMENT, TERMINATION AND MERGERS

8.1 RIGHT TO AMEND

(a) By The Board of Directors. The Board of Directors of the Company shall have the right to amend the Plan at any time by resolution, subject to the following limitations:

(i) No such amendment shall cause any part of the Trust assets to be used for or diverted to any purpose other than the exclusive benefit of the Participants or their Beneficiaries, except as provided in Section 9.6(b).

(ii) No such amendment shall cause any reduction in the amount of any Participant's accrued benefit. For purposes of this paragraph, an amendment which has the effect of (A) eliminating or reducing an early retirement benefit or a retirement-type subsidy, or (B) eliminating an optional form of benefit, with respect to benefits attributable to service before the amendment, shall be treated as reducing accrued benefits except as provided in Code section 411(d)(6) and the Regulations thereunder.

(iii) No such amendment shall change any vesting schedule unless, in the case of an Employee who is a Participant on:

(A) The date the amendment is adopted; or

(B) The date the amendment is effective, if later,

the vested percentage of such Participant's right to his or her Aggregate Account is not less than such percentage computed under the Plan without regard to such amendment. Furthermore, no such amendment shall otherwise change any vesting schedule unless each Participant having three or more Years of Service is permitted to elect, in accordance with the Code and applicable Regulations, to have the vested percentage of his or her Aggregate Account determined under the Plan without regard to such amendment; provided, however, that no election shall be given to any Participant whose vested percentage under the Plan as amended cannot at any time be less than such percentage determined without regard to such amendment.

(b) By the Administrator. The Administrator shall have the right to amend the Plan at any time, subject to the limitations set forth in Section 8.1(a), except to the extent the Board of Directors of the Company has retained amendment authority. The Board has retained amendment authority with respect to (i) any increase in the rate of Matching Contributions under the Plan (except as provided in Section 4.4(a)), (ii) any increase in the rate of Nonelective Contributions above 3% of Compensation, (iii) any new type of employer contribution under the Plan, (iv) any increase in the amount of any benefit payable to a terminated Participant or Beneficiary, and (v) any amendment authorizing one or more new groups of employees to become Participants in the Plan if the aggregate number of Participants added is 5% or more of the number of Participants at the beginning of the Plan Year, except, in the case of clauses (i) and (ii), to the extent such amendment is required under the terms of a collective bargaining agreement between employee representatives (within the meaning of Code section 7701(a)(46)) and the Employer under which retirement benefits were the subject of good faith bargaining between the parties. The Administrator shall supply the Secretary of the Board of Directors of the Company with copies of all Plan amendments adopted by the Administrator as well as signed resolutions adopting such amendment.

8.2 TERMINATION

(a) Right to Terminate. The Company shall have the right to terminate the Plan at any time and for any reason by delivering to the Trustee and Administrator written notice of such termination. Upon any full or partial termination or complete discontinuance of the Employer's contributions to the Plan, all amounts credited to the affected Participants' Aggregate Accounts shall be 100% Vested and shall not thereafter be subject to forfeiture, and any unallocated amounts shall be allocated to the accounts of all Participants in accordance with the provisions hereof.

(b) Distribution Upon Termination. Upon the full termination of the Plan, the Company shall direct the distribution of the assets of the Fund to Participants in a manner which is consistent with and satisfies the provisions of Section 6.5, except that Participant consent shall not be required if not required under applicable Regulations. Distributions to a Participant shall be made in cash or through the purchase of irrevocable nontransferable deferred commitments from an insurer. Except as permitted by Regulations, the termination of the Plan shall not result in the reduction of section 411(d)(6) protected benefits. Notwithstanding the foregoing, amounts held by a Participant's Aggregate Account that are attributable to Nonelective Contributions for a Plan Year beginning on or after January 1, 2008 or Elective Contributions shall not be distributed on termination of the Plan unless (i) distribution is permitted under another Section of the Plan (e.g., on account of Severance from Employment), or (ii) distribution may be made pursuant to Regulation section 1.401(k)-1(d)(4) (or any successor thereto).

8.3 MERGER OR CONSOLIDATION

This Plan and Trust may be merged or consolidated with, or its assets and/or liabilities may be transferred to, any other plan and trust only if the benefits which would be received by a Participant of this Plan, in the event of a termination of the Plan immediately after such transfer, merger or consolidation, are at least equal to the benefits the Participant would have received if the Plan had terminated immediately before the transfer, merger or consolidation, and such transfer, merger or consolidation does not otherwise result in the elimination or reduction of any section 411(d)(6) protected benefits.

ARTICLE IX
MISCELLANEOUS

9.1 PARTICIPANT'S RIGHTS

This Plan shall not be deemed to constitute a contract between the Employer and any Participant or to be a consideration or an inducement for the employment of any Participant or Employee. Nothing contained in this Plan shall be deemed to give any Participant or Employee the right to be retained in the service of the Employer or to interfere with the right of the Employer to discharge any Participant or Employee at any time regardless of the effect which such discharge shall have upon him or her as a Participant of this Plan.

9.2 ALIENATION

(a) In General. Subject to the exceptions provided below, no benefit which shall be payable under the Plan to any person (including a Participant or his or her Beneficiary) shall be subject in any manner to anticipation, alienation, sale, transfer, assignment, pledge, encumbrance, or charge, and any attempt to anticipate, alienate, sell, transfer, assign, pledge, encumber, or charge the same shall be void; and no such benefit shall in any manner be liable for, or subject to, the debts, contracts, liabilities, engagements, or torts of any such person, nor shall it be subject to attachment or legal process for or against such person, and the same shall not be recognized by the Trustee, except to such extent as may be required by law.

(b) Loans. Subsection (a) shall not apply to the extent a Participant or Beneficiary is indebted to the Plan as a result of a loan from the Plan. At the time a distribution is to be made to or for a Participant's or Beneficiary's benefit, such proportion of the amount distributed as shall equal such loan indebtedness shall be paid by the Trustee to the Trustee or the Administrator, at the direction of the Administrator, to apply against or discharge such loan indebtedness. Prior to making a payment, however, the Participant or Beneficiary must be given written notice by the Administrator that such loan indebtedness is to be so paid in whole or part from his or her Aggregate Account. If the Participant or Beneficiary does not agree that the loan indebtedness is a valid claim against his or her Aggregate Account, he or she shall be entitled to a review of the validity of the claim in accordance with procedures provided in Section 7.10.

(c) Qualified Domestic Relations Orders. Subsection (a) shall not apply to a qualified domestic relations order as defined in Code section 414(p), and those other domestic relations orders permitted to be so treated by the Administrator under the provisions of ERISA. The Administrator shall establish a written procedure to determine the qualified status of domestic relations orders and to administer distributions under such qualified orders. Further, to the extent provided under a qualified domestic relations order, a former spouse of a Participant shall be treated as the Spouse or Surviving Spouse for all purposes under the Plan.

(d) Other Exceptions to Nonalienation. Subsection (a) shall not apply to an amount necessary to satisfy a Federal tax levy made pursuant to Code section 6331 or, subject to the provisions of Code section 401(a)(13), a judgment relating to the Participant's conviction of a crime involving the Plan, to a judgment, order, decree, or settlement agreement between the Participant and the Secretary of Labor relating to a violation (or an alleged violation) of part 4 of subtitle B of title I of ERISA. Notwithstanding anything in the Plan or this Section to the contrary, this Section is intended to address the requirements of Code section 401(a)(13) and Section 206 of ERISA and Federal rulings and regulations issued thereunder, and to permit action by Plan fiduciaries (including, but not limited to, the recovery of benefit overpayments by reducing Plan benefits or the withholding of taxes from Plan benefits) that do not violate the principles of Code section 401(a)(13) or section 206 of ERISA as described in such rulings and regulations.

9.3 CONSTRUCTION OF PLAN

Construction, validity, and administration of this Plan shall be governed by the laws of the Commonwealth of Pennsylvania (without reference to principles of conflicts of laws) except to the extent that such laws have been superseded by ERISA.

9.4 GENDER AND NUMBER

Wherever any words are used herein in the masculine, feminine, or neuter gender, they shall be construed as though they were also used in another gender in all cases where they would so apply, and whenever any words are used herein in the singular or plural form, they shall be construed as though they were also used in the other form in all cases where they would so apply.

9.5 LEGAL ACTION

In the event any claim, suit, or proceeding is brought regarding the Trust and/or Plan established hereunder to which the Trustee or the Administrator may be a party, and such claim, suit, or proceeding is resolved in favor of the Trustee or Administrator, the Trustee or Administrator shall be entitled to be reimbursed from the Trust Fund for any and all costs, attorneys' fees, and other expenses pertaining thereto incurred by the Trustee or Administrator for which the Trustee or Administrator shall have become liable.

9.6 PROHIBITION AGAINST DIVERSION OF FUNDS

(a) Exclusive Benefit Rule. Except as provided below and otherwise specifically permitted by law, it shall be impossible by operation of the Plan or of the Trust, by termination of either, by power of revocation or amendment, by the happening of any contingency, by collateral arrangement, or by any other means, for any part of the corpus or income of any trust fund maintained pursuant to the Plan or any funds contributed thereto to be used for, or diverted to, purposes other than the exclusive benefit of Participants or their Beneficiaries.

(b) Exceptions.

(i) In the event the Employer shall make an excessive contribution under a mistake of fact pursuant to ERISA section 403(c)(2)(A), the Employer may demand repayment of such excessive contribution at any time within one year following the time of payment and the Trustee shall return such amount to the Employer within the one year period. Earnings of the Plan attributable to the excess contributions may not be returned to the Employer but any losses attributable thereto must reduce the amount so returned.

(ii) Notwithstanding any provision of the Plan to the contrary, except Section 3.5, any contribution by the Employer to the Trust Fund is conditioned upon the deductibility of the contribution by the Employer under the Code and, to the extent any such deduction is disallowed, the Employer may, within one year following the disallowance of the deduction, demand repayment of such disallowed contribution, and the Trustee shall return such contribution within one year following the disallowance. Earnings of the Plan attributable to the excess contribution may not be returned to the Employer, but any losses attributable thereto must reduce the amount so returned.

9.7 BONDING

Every Fiduciary, except a bank or an insurance company, unless exempted by ERISA and the regulations thereunder, shall be bonded in an amount required by law and in a form required by law. Notwithstanding anything in the Plan to the contrary, the cost of such bonds shall be an expense of and may, at the election of the Administrator, be paid from the Fund or by the Employer. No bonding in excess of the amount required by law shall be considered required by the Plan.

9.8 RECEIPT AND RELEASE FOR PAYMENTS

Any payment to any Participant, his or her legal representative, Beneficiary, or to any guardian or committee appointed for such Participant or Beneficiary in accordance with the provisions of the Plan, shall, to the extent thereof, be in full satisfaction of all claims hereunder against the Trustee and the Employer, either of whom may require such Participant, legal representative, Beneficiary, guardian, or committee, as a condition precedent to such payment, to execute a receipt and release thereof in such form as shall be determined by the Trustee or Employer.

9.9 ACTION BY THE EMPLOYER

Whenever the Employer under the terms of the Plan is permitted or required to do or perform any act or matter or thing, it shall be done and performed by a person duly authorized by its legally constituted authority.

9.10 NAMED FIDUCIARIES AND ALLOCATION OF RESPONSIBILITY

The "Named Fiduciaries" of this Plan are (1) the Company, (2) the Administrator, and (3) the Trustee. The Named Fiduciaries shall have only those specific powers, duties, responsibilities, and obligations as are specifically given them under the Plan. In general, the Company (and any other Employer) shall have the sole responsibility for making the contributions provided for under Section 4.1. The Company shall have the sole authority to appoint and remove the Trustee and the Administrator, to formulate the Plan's funding policy and method, and to amend or terminate, in whole or in part, the Plan. The Administrator shall have the sole responsibility for the administration of the Plan, which responsibility is specifically described in the Plan. The Trustee shall have the sole responsibility for the management of the assets held under the Trust, except those assets the management of which has been assigned to an Investment Manager, who shall be solely responsible for the management of the assets assigned to it, all as specifically provided in the Plan. Each Named Fiduciary warrants that any directions given, information furnished, or action taken by it shall be in accordance with the provisions of the Plan, authorizing or providing for such direction, information, or action. Furthermore, each Named Fiduciary may rely upon any such direction, information, or action of another Named Fiduciary as being proper under the Plan, and is not required under the Plan to inquire into the propriety of any such direction, information, or action. It is intended under the Plan that each Named Fiduciary shall be responsible for the proper exercise of its own powers, duties, responsibilities, and obligations under the Plan. No Named Fiduciary shall guarantee the Trust Fund in any manner against investment loss or depreciation in asset value. Any person or group may serve in more than one fiduciary capacity.

9.11 HEADINGS

The headings and subheadings of this Plan have been inserted for convenience of reference and are to be ignored in any construction of the provisions hereof.

9.12 ELECTRONIC MEDIA

Whenever elections, notices, consents, or other communications are required to be in writing herein, the Administrator may designate that such elections, notices, consents, or other communications shall be by other means, including the use of electronic media, if such use is permitted by law; provided, however, that such elections, notices, consents, or other communications shall be in such form as the Administrator shall specify and approve.

9.13 CLERICAL ERROR

If any fact pertaining to eligibility for an amount of benefits payable under the Plan to a Participant or other payee has been misstated, or in the event of clerical error, the benefits shall be adjusted by the Committee or its delegate on the basis of the correct facts in a manner precluding individual selection.

9.14 UNIFORMITY

All provisions of this Plan shall be interpreted and applied in a uniform, nondiscriminatory manner. In the event of any conflict between the terms of this Plan and any Contract purchased hereunder, the Plan provisions shall control.

IN WITNESS WHEREOF, Quaker Chemical Corporation has caused these presents to be duly executed on this 8th day of December, 2015.

QUAKER CHEMICAL CORPORATION

Attest: /s/ Irene M. Kisleiko By: /s/ Ronald S. Ettinger
Ronald S. Ettinger
Vice President, Human Resources

EXHIBIT A

PARTICIPATING EMPLOYERS
AS OF JANUARY 1, 2016

The following Affiliated Employers were participating in the Plan as of January 1, 2016:

AC Products, Inc.
Epmar Corporation
G.W. Smith & Sons, Inc.
Summit Lubricants Inc.

Exhibit 21

SUBSIDIARIES AND AFFILIATES OF THE REGISTRANT

Name	Jurisdiction of Incorporation	Percentage of Voting Securities Owned Directly or Indirectly by Quaker
*Quaker Chemical Corporation	Delaware, U.S.A.	100%
+*SB Decking, Inc. (formerly Selby, Battersby & Co.)	Delaware, U.S.A.	100%
*AC Products, Inc.	California, U.S.A.	100%
*Epmar Corporation	California, U.S.A.	100%
*Summit Lubricants, Inc.	New York, U.S.A.	100%
*G.W. Smith and Sons, Inc.	Ohio, U.S.A	100%
*Tecniquimia Mexicana S.A. de C.V.	Mexico	100%
*Unitek Servicios De Asesoiria Especializad S.A.	Mexico	100%
+*Quaker Chemical Europe B.V.	Holland	100%
*Quaker Chemical B.V.	Holland	100%
+*Quaker Russia B.V. (formerly KWR Holdings B.V.)	Holland	100%
*Quaker Chemical (China) Co. Ltd.	China	100%
+*Quaker China Holdings B.V.	Holland	100%
*Quaker Chemical Canada Limited	Ontario, Canada	100%
*Quaker Chemical Limited	United Kingdom	100%
*Quaker Chemical S.A.	France	100%
*Quaker Chemical, S.A.	Spain	100%
+*Quaker Denmark ApS	Denmark	100%
*Quaker Chemical S.A.	Argentina	100%
+*Quaker Chemical Participacoes, Ltda.	Brazil	100%
*Quaker Chemical Limited	Hong Kong	100%
+*Quaker Chemical Holdings South Africa (Pty) Limited	Republic of South Africa	100%
*Quaker Italia S.r.l.	Italy	100%
*Quaker Chemical S.r.l.	Italy	100%
+*Quaker Australia Holdings Pty. Limited	Victoria, Australia	100%
*Quaker Shanghai Trading Company Limited	China	100%
*Quaker Chemical Industria e Comercio Ltda.	Brazil	100%
*Quaker Chemical Operacoes, Ltda.	Brazil	100%
*Quaker Chemical India Private Limited	India	55%
*Quaker Chemical (Australasia) Pty. Limited	New South Wales, Australia	100%
*Quaker (Thailand) Ltd.	Thailand	100%
*Quaker Chemical South Africa (Pty.) Limited	Republic of South Africa	51%
*Quaker Chemical Corporation Mexico, S.A. de C.V.	Mexico	100%
*Quaker Chemical HR Mexico, S.A. de C.V.	Mexico	100%
*ECLI Products, LLC	Illinois, U.S.A.	100%
*Engineered Custom Lubricants GmbH	Germany	100%
*Binol AB	Sweden	100%
*Binol Biosafe OY	Finland	100%
*Quaker Chemical MEA FZE	Dubai	100%
*Verkol S.A.	Spain	100%
+*Quaker Spain Holding, SLU	Spain	100%
**Nippon Quaker Chemical, Ltd.	Japan	50%
**Kelko Quaker Chemical, S.A.	Venezuela	50%
**Kelko Quaker Chemical, S.A.	Panama	50%
**Primex, Ltd.	Barbados	33%

+A non-operating company.
*Included in the consolidated financial statements.
**Accounted for in the consolidated financial statements under the equity method.

EXHIBIT 23

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statements on Form S-3 (Registration No. 333-155607) and on Form S-8 (Registration Nos. 333-48130, 033-54158, 333-58676, 333-115713, 333-136648, 333-159513, 333-174145, 333-208188 and 333-188594) of Quaker Chemical Corporation of our report dated February 25, 2016 relating to the financial statements and the effectiveness of internal control over financial reporting, which appears in this Form 10-K.

/s/ PricewaterhouseCoopers LLP
Philadelphia, PA
February 25, 2016

EXHIBIT 31.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER OF THE COMPANY PURSUANT TO RULE 13a-14(a) OF THE SECURITIES EXCHANGE ACT OF 1934

I, Michael F. Barry, certify that:

1. I have reviewed this Annual Report on Form 10-K of Quaker Chemical Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 25, 2016

/s/ MICHAEL F. BARRY

Michael F. Barry

Chief Executive Officer

EXHIBIT 31.2

CERTIFICATION OF CHIEF FINANCIAL OFFICER OF THE COMPANY PURSUANT TO RULE 13a-14(a) OF THE SECURITIES EXCHANGE ACT OF 1934

I, Mary Dean Hall, certify that:

1. I have reviewed this Annual Report on Form 10-K of Quaker Chemical Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 25, 2016

/s/ MARY DEAN HALL

Mary Dean Hall

Chief Financial Officer

EXHIBIT 32.1

CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350

The undersigned hereby certifies that the Form 10-K Annual Report of Quaker Chemical Corporation (the "Company") for the annual period ended December 31, 2015 filed with the Securities and Exchange Commission (the "Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and that the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: February 25, 2016

/s/ MICHAEL F. BARRY

Michael F. Barry

Chief Executive Officer of Quaker Chemical Corporation

EXHIBIT 32.2

CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350

The undersigned hereby certifies that the Form 10-K Annual Report of Quaker Chemical Corporation (the "Company") for the annual period ended December 31, 2015 filed with the Securities and Exchange Commission (the "Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and that the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: February 25, 2016

/s/ MARY DEAN HALL

Mary Dean Hall

Chief Financial Officer of Quaker Chemical Corporation