

QUAKER CHEMICAL CORP  
Form 10-K  
February 25, 2016

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

**FORM 10-K**

**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**  
**(State or other jurisdiction of incorporation or organization)**

**No. 23-0993790**  
**(I.R.S. Employer Identification No.)**

**One Quaker Park, 901 E. Hector Street,**

**Conshohocken, Pennsylvania**  
**(Address of principal executive offices)**

**19428-2380**  
**(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**  
**Common Stock, \$1.00 par value**

**Name of each Exchange on which registered**  
**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  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

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   
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  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

Accelerated filer

Non-accelerated filer

Smaller reporting company

(Do not check if 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

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.

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## 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:

	<b>2015</b>	<b>2014</b>	<b>2013</b>
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 Janeiro, 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," "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.

<b>Name, Age, and Present</b>	<b>Business Experience During the Past Five</b>
<b>Position with the Company</b>	<b>Years and Period Served as an Officer</b>
<p>Michael F. Barry, 57</p> <p>Chairman of the Board, Chief Executive Officer</p> <p>and President and Director</p>	<p>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.</p>
<p>Mary Dean Hall, 58</p> <p>Vice President, Chief Financial Officer</p> <p>and Treasurer</p>	<p>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.</p>
<p>D. Jeffry Benoiel, 57</p> <p>Vice President and Global Leader – Metalworking, Can and Mining</p>	<p>Mr. Benoiel, 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.</p>
<p>Joseph A. Berquist, 44</p>	

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.

<b>Name, Age, and Present</b>	<b>Business Experience During the Past Five</b>
<b>Position with the Company</b>	<b>Years and Period Served as an Officer</b>
<p>Dieter Laininger, 52</p> <p>Vice President and Managing Director – South America and Global Leader – Primary Metals</p>	<p>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.</p>
<p>Joseph F. Matrange, 73</p> <p>Vice President and Global Leader – Coatings</p>	<p>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.</p>
<p>Jan F. Nieman, 54</p> <p>Vice President and Global Leader – Grease and Fluid Power, Global Strategy and Marketing</p>	<p>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.</p>
<p>Wilbert Platzer, 54</p> <p>Vice President and Managing Director – EMEA</p>	<p>Mr. Platzer, who has been employed by the Company since 1995, has served as Vice President and Managing Director – EMEA since January 2006.</p>
<p>Adrian Steeples, 55</p> <p>Vice President and Managing Director – Asia/Pacific</p>	<p>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</p>

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		2015	2014	2015	2014
	High	Low	High	Low				
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:

<b><u>Issuer Purchases of Equity Securities</u></b>			
		(c)	(d)
		Total Number of	Approximate
(a)	(b)	Shares Purchased	Dollar
Total Number	Average	as part of Publicly	Value of Shares that
			May Yet be



<b>Period</b>	<b>of Shares Purchased (1)</b>	<b>Price Paid Per Share</b>	<b>Announced Plans or Programs</b>	<b>Purchased Under the Plans or Programs (1)</b>
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.

	<b>12/31/2010</b>	<b>12/31/2011</b>	<b>12/31/2012</b>	<b>12/31/2013</b>	<b>12/31/2014</b>	<b>12/31/2015</b>
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:

<i>(in thousands, except dividends and per share data):</i>	<b>Year Ended December 31,</b>				
	<b>2015 (1)</b>	<b>2014 (2)</b>	<b>2013 (3)</b>	<b>2012 (4)</b>	<b>2011 (5)</b>
<b>Summary of Operations:</b>					
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
<b>Per share:</b>					
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
<b>Financial Position</b>					
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:

(Amounts in millions)	1/2 Percentage Point Increase			1/2 Percentage Point Decrease		
	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) The 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
	0.21	0.02	0.03

Currency conversion impact of the Venezuelan bolivar fuerte per diluted share

Non-GAAP earnings per diluted share		\$	4.43	\$	4.26	\$	3.84
	20						

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	<b>For the years ended December 31,</b>		
	<b>2015</b>	<b>2014</b>	<b>2013</b>
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
<i>Out-of-Period Adjustment (2012)</i>			

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,” “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**

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**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)

	<b>Year Ended December 31,</b>		
	<b>2015</b>	<b>2014</b>	<b>2013</b>
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)

	<b>Year Ended December 31,</b>		
	<b>2015</b>	<b>2014</b>	<b>2013</b>
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)**

	<b>December 31,</b>	
	<b>2015</b>	<b>2014</b>
<b>ASSETS</b>		
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
<b>LIABILITIES AND EQUITY</b>		
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

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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)

	<b>Year Ended December 31,</b>		
	<b>2015</b>	<b>2014</b>	<b>2013</b>
<b>Cash flows from operating activities</b>			
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
<b>Cash flows from investing activities</b>			
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)
<b>Cash flows from financing activities</b>			
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)

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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
<b>Supplemental cash flow disclosures:</b>			
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

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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.*

**QUAKER CHEMICAL CORPORATION**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS**

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

**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

**QUAKER CHEMICAL CORPORATION**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued**

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

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

**QUAKER CHEMICAL CORPORATION**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued**

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

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.

**QUAKER CHEMICAL CORPORATION**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued**

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

**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.

**QUAKER CHEMICAL CORPORATION**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued**

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

**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.

## QUAKER CHEMICAL CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

(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
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**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.

## QUAKER CHEMICAL CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

(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
<b>Net sales</b>			
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
<b>Total net sales</b>	<b>\$ 737,555</b>	<b>\$ 765,860</b>	<b>\$ 729,395</b>

	2015	2014	2013
<b>Operating earnings, excluding indirect operating expenses</b>			
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
<b>Total operating earnings, excluding indirect operating expenses</b>	<b>154,662</b>	<b>149,024</b>	<b>142,500</b>
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
<b>Consolidated income before taxes and equity in net income of associated companies</b>	<b>\$ 70,230</b>	<b>\$ 78,293</b>	<b>\$ 72,826</b>

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

	2015	2014	2013
<b>Segment assets</b>			
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
<b>Total segment assets</b>	<b>\$ 685,513</b>	<b>\$ 665,526</b>	<b>\$ 584,146</b>

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.

	<b>2015</b>	<b>2014</b>	<b>2013</b>
<b>Segment long-lived assets</b>			
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

**QUAKER CHEMICAL CORPORATION****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued****(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:

	<b>2015</b>		<b>2014</b>		<b>2013</b>
<b>Capital expenditures</b>					
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

	<b>2015</b>		<b>2014</b>		<b>2013</b>
<b>Depreciation</b>					
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:

	<b>2015</b>	<b>2014</b>	<b>2013</b>
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:

	<b>December 31,</b>		
	<b>2015</b>	<b>2014</b>	<b>2013</b>
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.

## QUAKER CHEMICAL CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

(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:



	<b>For the Year Ended December 31,</b>				<b>June 30,</b>
	<b>2015</b>	<b>2014</b>	<b>2013</b>	<b>2012</b>	<b>2012</b>
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

## QUAKER CHEMICAL CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

(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.

## QUAKER CHEMICAL CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

(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:

	<b>2015</b>		<b>2014</b>		<b>2013</b>
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:

	<b>Year Ended December 31,</b>		
	<b>2015</b>	<b>2014</b>	<b>2013</b>
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

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	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:

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

## QUAKER CHEMICAL CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

(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		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



## QUAKER CHEMICAL CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

(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,

## QUAKER CHEMICAL CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

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

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.

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
<b>Unrecognized tax benefits at January 1</b>	\$ 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
<b>Unrecognized tax benefits at December 31</b>	\$ 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:

	2015	December 31, 2014	2013
<b>Basic earnings per common share</b>			
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
<b>Basic earnings per common share</b>	\$ 3.84	\$ 4.27	\$ 4.28
<b>Diluted earnings per common share</b>			
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
<b>Diluted earnings per common share</b>	\$ 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.



## QUAKER CHEMICAL CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

(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:

	<b>Balance at Beginning of Period</b>	<b>Changes to Costs and Expenses</b>	<b>Write-Offs Charged to Allowance</b>	<b>Exchange Rate Changes and Other Adjustments</b>	<b>Balance at End of Period</b>
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:

	<b>December 31,</b>	
	<b>2015</b>	<b>2014</b>
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:

	<b>December 31,</b>	
	<b>2015</b>	<b>2014</b>
Land	\$ 9,388	\$ 7,962
Building and improvements	80,110	78,911

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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

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## QUAKER CHEMICAL CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

(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:

	<b>North</b>		<b>South</b>		
	<b>America</b>	<b>EMEA</b>	<b>Asia/Pacific</b>	<b>America</b>	<b>Total</b>
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:

	<b>Gross Carrying</b>		<b>Accumulated</b>	
	<b>Amount</b>		<b>Amortization</b>	
	<b>2015</b>	<b>2014</b>	<b>2015</b>	<b>2014</b>
Customer lists and rights to sell	\$ 67,435	\$ 63,502	\$ 15,806	\$ 12,681

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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

**QUAKER CHEMICAL CORPORATION****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued****(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 Kelco 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 Kelco Venezuela's access to U.S. dollars, the impact on the operations of Kelco 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 Kelco 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 Kelco 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 Kelco 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.

**QUAKER CHEMICAL CORPORATION****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued****(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:

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

	<b>Year Ended December 31,</b>					
	<b>2015</b>		<b>2014</b>		<b>2013</b>	
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:

	<b>December 31,</b>			
	<b>2015</b>		<b>2014</b>	
Total Assets	\$	105,585	\$	109,259
Total Liabilities		54,534		59,773

	<b>Year Ended December 31,</b>					
	<b>2015</b>		<b>2014</b>		<b>2013</b>	
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:

		<b>December 31,</b>	
		<b>2015</b>	<b>2014</b>
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

## QUAKER CHEMICAL CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

(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:

	<b>December 31,</b>	
	<b>2015</b>	<b>2014</b>
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:

	<b>December 31,</b>	
	<b>2015</b>	<b>2014</b>
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.

## QUAKER CHEMICAL CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

(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.

## QUAKER CHEMICAL CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

(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:

Change in benefit obligation	Pension Benefits						Other Postretirement Benefits	
	2015			2014			2015	2014
	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	\$ 5,422
Service cost	2,799	250	3,049	2,626	250	2,876	17	—
Interest cost	2,476	2,541	5,017	3,210	2,823	6,033	195	—
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)	—
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	\$ 5,422
<b>Change in plan assets</b>								
Fair value of plan assets at year beginning 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	—
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)	\$ (5,422)
Amounts recognized in the balance sheet consist of:								
Current liabilities	\$ (52)	\$ (575)	\$ (627)	\$ (94)	\$ (577)	\$ (671)	\$ (517)	\$ (517)
Non-current liabilities	(16,198)	(19,586)	(35,784)	(20,210)	(20,401)	(40,611)	(4,905)	(5,422)
Net benefit obligation recognized	\$ (16,250)	\$ (20,161)	\$ (36,411)	\$ (20,304)	\$ (20,978)	\$ (41,282)	\$ (5,422)	\$ (5,422)
Amounts not yet reflected in net periodic benefit costs and included in								

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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,	
Accumulated other comprehensive loss ("AOCI")	(18,148)	(32,091)	(50,239)	(25,180)	(33,373)	(58,553)	(983)	(1,	
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,	
Net benefit obligation recognized	\$ (16,250)	\$ (20,161)	\$ (36,411)	\$ (20,304)	\$ (20,978)	\$ (41,282)	\$ (5,422)	\$ (6,	



## QUAKER CHEMICAL CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

(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

## QUAKER CHEMICAL CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

(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
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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)

## QUAKER CHEMICAL CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

(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		Total	Other Post-Retirement Benefits
	Foreign	Domestic		
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
<b>U.S. Plans:</b>				
Discount rate	4.07 %	3.72 %	3.88 %	3.45 %
Rate of compensation increase	3.63 %	3.63 %	N/A	N/A
<b>Foreign Plans:</b>				
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
<b>U.S. Plans:</b>				
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
<b>Foreign Plans:</b>				
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:**

	<b>2015</b>	<b>2014</b>
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

## QUAKER CHEMICAL CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

(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:

	<b>1% Point Increase</b>	<b>1% Point Decrease</b>
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:

<i>Asset Category</i>	<b>Target</b>	<b>2015</b>	<b>2014</b>
<b>U.S. Plans</b>			
Equity securities	61%	65%	66%
Debt securities	32%	34%	33%
Other	7%	1%	1%
Total	100%	100%	100%
<b>Foreign Plans</b>			
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.

## QUAKER CHEMICAL CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

(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:

<b><u>U.S. Pension Assets</u></b>	<b>Total Fair Value</b>	<b>Fair Value Measurements at December 31, 2015 Using Fair Value Hierarchy</b>		
		<b>Level 1</b>	<b>Level 2</b>	<b>Level 3</b>



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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	\$	—

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## QUAKER CHEMICAL CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

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

	Fair Value Measurements at December 31, 2015			
	Total Fair Value	Using Fair Value Hierarchy		
		Level 1	Level 2	Level 3
<b>Foreign Pension Assets</b>				
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

	Fair Value Measurements at December 31, 2014			
	Total Fair Value	Using Fair Value Hierarchy		
		Level 1	Level 2	Level 3
<b>U.S. Pension Assets</b>				
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	\$ —

<b>Foreign Pension Assets</b>				
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

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Total pension assets at fair value	\$	136,212	\$	38,082	\$	25,235	\$	72,895
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## QUAKER CHEMICAL CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

(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:

	<b>Insurance Contract</b>	<b>Real Estate Fund</b>	<b>Total</b>
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:

	<b>Pension Benefits</b>		<b>Total</b>	<b>Other Post- Retirement Benefits</b>
	<b>Foreign</b>	<b>Domestic</b>		
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.

**QUAKER CHEMICAL CORPORATION****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued****(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:

	<b>December 31,</b>	
	<b>2015</b>	<b>2014</b>
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.

## QUAKER CHEMICAL CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

(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
<b>Balance at December 31, 2012</b>	\$ 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)
<b>Balance at December 31, 2013</b>	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
<b>Balance at December 31, 2014</b>	(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)
<b>Balance at December 31, 2015</b>	\$ (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.

**QUAKER CHEMICAL CORPORATION****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued****(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:

<b><u>Verkol Acquisition</u></b>		
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.

**QUAKER CHEMICAL CORPORATION****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued****(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:

<b><u>2014 Acquisitions</u></b>		
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.

## QUAKER CHEMICAL CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

(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:

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

<u>Assets</u>	Fair Value Measurements at December 31, 2014			
	Total Fair Value	Using Fair Value Hierarchy		
		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	\$ —

<u>Liabilities</u>	Fair Value Measurements at December 31, 2014			
	Total Fair Value	Using Fair Value Hierarchy		
		Level 1	Level 2	Level 3
Deferred compensation liabilities				
Large capitalization registered investment companies	\$ 404	\$ 404	\$ —	\$ —
Mid capitalization registered investment companies	108	108	—	—
	90	90	—	—

Small capitalization registered investment companies  
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

**QUAKER CHEMICAL CORPORATION**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued**

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

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.

**QUAKER CHEMICAL CORPORATION****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued****(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



## QUAKER CHEMICAL CORPORATION

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

(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)
<b>2015</b>				
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
<b>2014</b>				
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.

<b>Equity Compensation Plan Information</b>			<b>Number of securities remaining available for future issuance under</b>
<b>Number of securities to be issued upon exercise of</b>	<b>Weighted-average exercise price of</b>		



<b><u>Plan Category</u></b>	<b>outstanding options, warrants and rights (a)</b>	<b>outstanding options, warrants and rights (b)</b>	<b>equity compensation plans (excluding securities reflected in column (a)) (c)</b>
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.**

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Financial Statements:	
<u>Report of Independent Registered Public Accounting Firm</u>	28
<u>Consolidated Statements of Income</u>	29
<u>Consolidated Statements of Comprehensive Income</u>	30
<u>Consolidated Balance Sheets</u>	31
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**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. Jeffrey 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. Jeffrey 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. Loebel, 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. Loebel, 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

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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.

<u>Signatures</u>	<u>Capacity</u>	<u>Date</u>
/s/ MICHAEL F. BARRY <b>Michael F. Barry</b> <b>Chairman of the Board, Chief Executive Officer and President</b>	Principal Executive Officer and Director	February 25, 2016
/s/ MARY DEAN HALL <b>Mary Dean Hall</b> <b>Vice President, Chief Financial Officer and Treasurer</b>	Principal Financial Officer	February 25, 2016
/s/ SHANE W. HOSTETTER <b>Shane W. Hostetter</b> <b>Global Controller</b>	Principal Accounting Officer	February 25, 2016
/s/ JOSEPH B. ANDERSON, JR.	Director	February 25, 2016

**Joseph B. Anderson, Jr**

/s/ PATRICIA C. BARRON <b>Patricia C. Barron</b>	Director	February 25, 2016
/s/ DONALD R. CALDWELL <b>Donald R. Caldwell</b>	Director	February 25, 2016
/s/ ROBERT E. CHAPPELL <b>Robert E. Chappell</b>	Director	February 25, 2016
/s/ WILLIAM R. COOK <b>William R. Cook</b>	Director	February 25, 2016
/s/ MARK A. DOUGLAS <b>Mark A. Douglas</b>	Director	February 25, 2016
/s/ JEFFRY D. FRISBY <b>Jeffry D. Frisby</b>	Director	February 25, 2016
/s/ ROBERT H. ROCK <b>Robert H. Rock</b>	Director	February 25, 2016