

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

FORM 10-Q

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

For the quarterly period ended September 30, 2018

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)

Pennsylvania
(State or other jurisdiction of
incorporation or organization)

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

Not Applicable

Former name, former address and former fiscal year, if changed since last report.

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

Large accelerated filer
Non-accelerated filer
Emerging growth company

Accelerated filer
Smaller reporting company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

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

Indicate the number of shares outstanding of each of the issuer's classes of common stock, as of the latest practicable date.

**Number of Shares of Common Stock
Outstanding on September 30, 2018**

13,334,364

QUAKER CHEMICAL CORPORATION AND CONSOLIDATED SUBSIDIARIES

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PART I
FINANCIAL INFORMATION

Item 1. Financial Statements (Unaudited).

Quaker Chemical Corporation
Condensed Consolidated Statements of Income
(Dollars in thousands, except per share data)

	Unaudited			
	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
Net sales	\$ 222,022	\$ 212,918	\$ 656,039	\$ 609,010
Cost of goods sold	140,929	138,142	418,562	391,512
Gross profit	81,093	74,776	237,477	217,498
Selling, general and administrative expenses	53,270	51,092	157,360	148,740
Combination-related expenses	2,904	9,675	12,404	23,088
Operating income	24,919	14,009	67,713	45,670
Other (expense) income, net	(523)	249	(631)	(1,427)
Interest expense	(1,510)	(793)	(4,804)	(2,229)
Interest income	521	762	1,581	1,825
Income before taxes and equity in net income of associated companies	23,407	14,227	63,859	43,839
Taxes on income before equity in net income of associated companies	4,330	3,140	13,554	14,229
Income before equity in net income of associated companies	19,077	11,087	50,305	29,610
Equity in net income of associated companies	694	617	1,623	2,049
Net income	19,771	11,704	51,928	31,659
Less: Net income attributable to noncontrolling interest	81	562	260	1,619
Net income attributable to Quaker Chemical Corporation	\$ 19,690	\$ 11,142	\$ 51,668	\$ 30,040
Per share data:				
Net income attributable to Quaker Chemical Corporation				
Common Shareholders – basic	\$ 1.48	\$ 0.84	\$ 3.88	\$ 2.26
Net income attributable to Quaker Chemical Corporation				
Common Shareholders – diluted	\$ 1.47	\$ 0.83	\$ 3.87	\$ 2.25
Dividends declared	\$ 0.370	\$ 0.355	\$ 1.095	\$ 1.055

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

Quaker Chemical Corporation
Condensed Consolidated Statements of Comprehensive Income
(Dollars in thousands)

	Unaudited			
	Three Months Ended		Nine Months Ended	
	September 30,		September 30,	
	2018	2017	2018	2017
Net income	\$ 19,771	\$ 11,704	\$ 51,928	\$ 31,659
Other comprehensive (loss) income, net of tax				
Currency translation adjustments	(6,859)	5,764	(17,111)	18,528
Defined benefit retirement plans	678	62	2,258	2,171
Unrealized gain (loss) on available-for-sale securities	162	286	(493)	453
Other comprehensive (loss) income	(6,019)	6,112	(15,346)	21,152
Comprehensive income	13,752	17,816	36,582	52,811
Less: Comprehensive income attributable to noncontrolling interest	(43)	(409)	(146)	(2,037)
Comprehensive income attributable to Quaker Chemical Corporation	\$ 13,709	\$ 17,407	\$ 36,436	\$ 50,774

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

Quaker Chemical Corporation
Condensed Consolidated Balance Sheets
(Dollars in thousands, except par value and share amounts)

	Unaudited	
	September 30, 2018	December 31, 2017
ASSETS		
Current assets		
Cash and cash equivalents	\$ 99,810	\$ 89,879
Accounts receivable, net	214,056	208,358
Inventories		
Raw materials and supplies	49,913	44,439
Work-in-process and finished goods	46,692	42,782
Prepaid expenses and other current assets	17,446	21,128
Total current assets	427,917	406,586
Property, plant and equipment, at cost	254,881	255,990
Less accumulated depreciation	(172,724)	(169,286)
Net property, plant and equipment	82,157	86,704
Goodwill	83,695	86,034
Other intangible assets, net	65,912	71,603
Investments in associated companies	22,471	25,690
Non-current deferred tax assets	15,072	15,661
Other assets	32,065	30,049
Total assets	\$ 729,289	\$ 722,327
LIABILITIES AND EQUITY		
Current liabilities		
Short-term borrowings and current portion of long-term debt	\$ 5,673	\$ 5,736
Accounts and other payables	96,053	97,732
Accrued compensation	24,099	22,846
Other current liabilities	31,485	29,384
Total current liabilities	157,310	155,698
Long-term debt	46,875	61,068
Non-current deferred tax liabilities	9,543	9,653
Other non-current liabilities	82,925	87,044
Total liabilities	296,653	313,463
Commitments and contingencies (Note 18)		
Equity		
Common stock, \$1 par value; authorized 30,000,000 shares; issued and outstanding 2018 – 13,334,364 shares; 2017 – 13,307,976 shares	13,334	13,308
Capital in excess of par value	96,121	93,528
Retained earnings	402,255	365,182
Accumulated other comprehensive loss	(80,332)	(65,100)
Total Quaker shareholders' equity	431,378	406,918
Noncontrolling interest	1,258	1,946
Total equity	432,636	408,864
Total liabilities and equity	\$ 729,289	\$ 722,327

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

Quaker Chemical Corporation
Condensed Consolidated Statements of Cash Flows
(Dollars in thousands)

	Unaudited	
	Nine Months Ended September 30,	
	2018	2017
Cash flows from operating activities		
Net income	\$ 51,928	\$ 31,659
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation	9,386	9,464
Amortization	5,525	5,490
Equity in undistributed earnings of associated companies, net of dividends	2,658	(1,919)
Deferred compensation and other, net	(898)	(1,190)
Share-based compensation	2,847	3,269
Gain on disposal of property, plant, equipment and other assets	(680)	(50)
Insurance settlement realized	(680)	(542)
Combination-related expenses, net of payments	(349)	10,367
Pension and other postretirement benefits	(1,113)	608
(Decrease) increase in cash from changes in current assets and current liabilities, net of acquisitions:		
Accounts receivable	(14,029)	(12,946)
Inventories	(12,719)	(9,272)
Prepaid expenses and other current assets	2,196	(5,217)
Accounts payable and accrued liabilities	6,824	11,755
Restructuring liabilities	—	(675)
Net cash provided by operating activities	<u>50,896</u>	<u>40,801</u>
Cash flows from investing activities		
Investments in property, plant and equipment	(8,815)	(8,032)
Payments related to acquisitions, net of cash acquired	(500)	(5,363)
Proceeds from disposition of assets	803	67
Insurance settlement interest earned	102	35
Net cash used in investing activities	<u>(8,410)</u>	<u>(13,293)</u>
Cash flows from financing activities		
Proceeds from long-term debt	—	4,472
Repayments of long-term debt	(11,518)	(488)
Dividends paid	(14,385)	(13,893)
Stock options exercised, other	(227)	(2,594)
Distributions to noncontrolling affiliate shareholders	(834)	—
Net cash used in financing activities	<u>(26,964)</u>	<u>(12,503)</u>
Effect of foreign exchange rate changes on cash	<u>(6,168)</u>	<u>4,758</u>
Net increase in cash, cash equivalents and restricted cash	9,354	19,763
Cash, cash equivalents and restricted cash at the beginning of the period	111,050	110,701
Cash, cash equivalents and restricted cash at the end of the period	<u>\$ 120,404</u>	<u>\$ 130,464</u>

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

Quaker Chemical Corporation
Notes to Condensed Consolidated Financial Statements
(Dollars in thousands, except share and per share amounts, unless otherwise stated)
(Unaudited)

Note 1 – Condensed Financial Information

The condensed consolidated financial statements included herein are unaudited and have been prepared in accordance with generally accepted accounting principles in the United States (“U.S. GAAP”) for interim financial reporting and the United States Securities and Exchange Commission (“SEC”) regulations. Certain information and footnote disclosures normally included in financial statements prepared in accordance with U.S. GAAP have been condensed or omitted pursuant to such rules and regulations. In the opinion of management, the financial statements reflect all adjustments (consisting only of normal recurring adjustments, except certain material adjustments, as discussed below) which are necessary for a fair statement of the financial position, results of operations and cash flows for the interim periods. The results for the three and nine months ended September 30, 2018, respectively, are not necessarily indicative of the results to be expected for the full year. These financial statements should be read in conjunction with the Company’s Annual Report filed on Form 10-K for the year ended December 31, 2017.

During the first quarter of 2018, the Company adopted guidance regarding the accounting for and disclosure of net sales and revenue recognition. The Company’s adoption, using the modified retrospective adoption approach, resulted in certain adjustments to its Condensed Consolidated Balance Sheet as of December 31, 2017. In addition, during the first quarter of 2018, the Company adopted an accounting standard update requiring that the statement of cash flows explain both the change in total cash and cash equivalents and also the amounts generally described as restricted cash or restricted cash equivalents. The guidance in this accounting standard update was required to be applied retrospectively which resulted in certain adjustments to the Company’s Condensed Consolidated Statement of Cash Flows for the Nine months ended September 30, 2017. See Note 3 of Notes to Condensed Consolidated Financial Statements.

Hyper-inflationary economies

Economies that have a cumulative three-year rate of inflation exceeding 100 percent are considered hyper-inflationary under U.S. GAAP. A legal entity which operates within an economy deemed to be hyper-inflationary is required to remeasure its monetary assets and liabilities to the applicable published exchange rates and record the associated gains or losses resulting from the remeasurement directly to the Condensed Consolidated Statements of Income. The Company has a 50-50 joint venture in a Venezuelan affiliate, Kelco Quaker Chemical, S.A. Venezuela’s economy has been considered hyper-inflationary under U.S. GAAP since 2010. As of June 30, 2018, the Company’s investment in Kelco Quaker Chemical S.A. was less than \$0.1 million. Due to heightened foreign exchange controls and restrictions currently present within Venezuela, during the third quarter of 2018 the Company concluded that it no longer had significant influence over this affiliate. Based on various indices or index compilations currently being used to monitor inflation in Argentina as well as recent economic instability, effective July 1, 2018, Argentina’s economy was considered hyper-inflationary under U.S. GAAP. As a result, the Company began applying hyper-inflationary accounting with respect to the Company’s wholly owned Argentina subsidiary beginning July 1, 2018. As of, and for the nine months ended September 30, 2018, the Company’s Argentina subsidiary represented less than 1% of the Company’s consolidated total assets and less than 1% of the Company’s consolidated net sales. During the three and nine months ended September 30, 2018, the Company recorded \$0.5 million and \$0.8 million of remeasurement losses associated with the applicable currency conversions related to Venezuela and Argentina. During the three and nine months ended September 30, 2017, the Company recorded less than \$0.1 million and \$0.4 million of remeasurement losses related to Venezuela.

Note 2 – Houghton Combination

On April 4, 2017, Quaker entered into a share purchase agreement with Gulf Houghton Lubricants, Ltd. to purchase the entire issued and outstanding share capital of Houghton International, Inc. (“Houghton”) (herein referred to as “the Combination”). The shares will be bought for aggregate purchase consideration consisting of: (i) \$172.5 million in cash; (ii) a number of shares of common stock, \$1.00 par value per share, of the Company comprising 24.5% of the common stock outstanding upon the closing of the Combination; and (iii) the Company’s assumption of Houghton’s net indebtedness as of the closing of the Combination, which was approximately \$690 million at signing. At closing, the total aggregate purchase consideration is dependent on the Company’s stock price and the level of Houghton’s indebtedness.

The Company secured \$1.15 billion in commitments from Bank of America Merrill Lynch and Deutsche Bank to fund the Combination and to provide additional liquidity, and has since replaced these commitments with a syndicated bank agreement (“the New Credit Facility”) with a group of lenders for \$1.15 billion. The New Credit Facility is contingent upon and will not be effective until the closing of the Combination. During the third quarter of 2018 the Company extended the bank commitment for the New Credit Facility through December 15, 2018. The New Credit Facility is comprised of a \$400.0 million multicurrency revolver, a \$600.0 million USD term loan and a \$150.0 million EUR equivalent term loan, each with a five-year term from the date the New Credit Facility becomes effective. The maximum amount available under the New Credit Facility can be increased by \$200.0 million at the Company’s option if the lenders agree and the Company satisfies certain conditions. Borrowings under the New Credit Facility will bear interest at a base rate or LIBOR rate plus a margin. The Company currently estimates the annual floating rate cost will be in

Quaker Chemical Corporation
Notes to Condensed Consolidated Financial Statements - Continued
(Dollars in thousands, except share and per share amounts, unless otherwise stated)
(Unaudited)

the 3.50% to 3.75% range based on current market interest rates. The New Credit Facility will be subject to certain financial and other covenants, including covenants that the Company's consolidated net debt to adjusted EBITDA ratio cannot initially exceed 4.25 to 1 and the Company's consolidated adjusted EBITDA to interest expense ratio cannot be less than 3.0 to 1. Both the USD and EUR equivalent term loans will have quarterly principal amortization during their respective five-year terms, with 5% amortization of the principal balance due in years 1 and 2, 7.5% in year 3, and 10% in years 4 and 5, with the remaining principal amounts due at maturity. Until closing, the Company will incur certain interest costs paid to maintain the bank commitment ("ticking fees"), which began to accrue on September 29, 2017 and bear an interest rate of 0.30% per annum.

The Company received regulatory approval for the Combination from China and Australia in 2017. In addition, at a shareholder meeting held during the third quarter of 2017, the Company's shareholders overwhelmingly approved the issuance of the new shares of the Company's common stock at closing of the Combination. Currently, the closing of the Combination is contingent upon customary closing conditions and the remaining regulatory approvals in the United States and Europe. The Company has presented a remedy to the European Commission and the United States Federal Trade Commission and expects to receive approval from both regulatory authorities and close the Combination in December 2018 or January 2019.

The Company incurred total costs of \$3.8 million and \$14.4 million during the three and nine months ended September 30, 2018, and \$9.7 million and \$23.1 million during the three and nine months ended September 30, 2017, respectively, related to the Combination. These costs included legal, environmental, financial, and other advisory and consultant costs related to due diligence, regulatory and shareholder approvals and integration planning associated with the Combination, as well as ticking fees. As of September 30, 2018 and December 31, 2017, the Company had current liabilities related to the Combination of approximately \$5.1 million and \$5.5 million, respectively, primarily recorded within other current liabilities on its Condensed Consolidated Balance Sheets.

Note 3 – Recently Issued Accounting Standards

The Financial Accounting Standards Board ("FASB") issued an accounting standard update in August 2018 that modifies certain disclosure requirements for employers that sponsor defined benefit pension or other postretirement plans. The amendments in this accounting standard update remove disclosures that are no longer considered cost beneficial, clarify the specific requirements of certain disclosures, and add new disclosure requirements as relevant. The guidance within this accounting standard update is effective for annual periods beginning after December 15, 2020, and should be applied retrospectively to all periods presented. Early adoption is permitted. The Company has not early adopted the guidance and is currently evaluating its implementation.

The FASB issued an accounting standard update in August 2018 that clarifies the accounting for implementation costs incurred in a cloud computing arrangement under a service contract. This guidance generally aligns the requirements for capitalizing implementation costs incurred in a hosting arrangement under a service contract with the requirements for capitalizing implementation costs related to internal-use software. The guidance within this accounting standard update is effective for annual periods beginning after December 15, 2019, and should be applied either retrospectively or prospectively to all implementation costs incurred after the date of adoption. Early adoption is permitted. The Company has not early adopted the guidance and is currently evaluating its implementation.

The FASB issued an accounting standard update in August 2018 that modifies certain disclosure requirements for fair value measurements. The guidance removes certain disclosure requirements regarding transfers between levels of the fair value hierarchy as well as the valuation processes for certain fair value measurements. Further, the guidance added certain disclosure requirements including unrealized gains and losses and significant unobservable inputs used to develop certain fair value measurements. The guidance within this accounting standard update is effective for annual and interim periods beginning after December 15, 2019, and should be applied prospectively in the initial year of adoption or prospectively to all periods presented, depending on the amended disclosure requirement. Early adoption is permitted. The Company has not early adopted the guidance and is currently evaluating its implementation.

The FASB issued an accounting standard update in June 2018 to simplify the accounting for share-based payment transactions with non-employees of the Company. The guidance within this accounting standard update generally requires that share-based payment transactions for acquiring goods or services from non-employees of the Company be accounted for under the same guidance and model as all other share-based payment transactions, including employees of the Company. The guidance within this accounting standard update is effective for annual and interim periods beginning after December 15, 2018. Early adoption is permitted. The Company elected to early adopt the guidance within this accounting standard updated in the second quarter of 2018 with no impact to its financial statements.

Quaker Chemical Corporation
Notes to Condensed Consolidated Financial Statements - Continued
(Dollars in thousands, except share and per share amounts, unless otherwise stated)
(Unaudited)

The FASB issued an accounting standard update in February 2018 that allows a reclassification from accumulated other comprehensive income (“AOCI”) to retained earnings for stranded tax effects resulting from the Tax Cuts and Jobs Act enacted in December 2017. The guidance within this accounting standard update is effective for annual and interim periods beginning after December 15, 2018, and should be applied either in the period of adoption or retrospectively to each period in which the effect of the change in the U.S. federal corporate income tax rate in the Tax Cuts and Jobs Act is recognized. Early adoption is permitted. The Company has not early adopted the guidance and is currently evaluating its implementation.

The FASB issued an accounting standard update in January 2017 to clarify the definition of a business with the objective of adding guidance to assist companies with evaluating whether transactions should be accounted for as acquisitions (or disposals) of assets or businesses. The amendments in this accounting standard update provided a more robust framework to use in determining when a set of assets and activities is a business. The guidance within this accounting standard update was effective for annual and interim periods beginning after December 15, 2017. Early adoption was permitted in limited circumstances, and the amendments in this accounting standard update were required to be applied prospectively, with no disclosures required at transition. The Company adopted the guidance in the first quarter of 2018, as required, with no impact to its financial statements.

The FASB issued an accounting standard update in November 2016 requiring that the statement of cash flows explain both the change in the total cash and cash equivalents, and also the amounts generally described as restricted cash or restricted cash equivalents. This required amounts generally described as restricted cash or restricted cash equivalents be included with cash and cash equivalents when reconciling the beginning and ending amounts shown on the statement of cash flows. The guidance within this accounting standard update was effective for annual and interim periods beginning after December 15, 2017. Early adoption was permitted and the guidance required application using a retrospective transition method to each period presented when adopted. The Company adopted the guidance in the first quarter of 2018, as required. Adoption of the guidance did not have an impact on the Company’s earnings or balance sheet but did result in changes to certain disclosures within the statement of cash flows, including cash flows from investing activities and total cash, cash equivalents and restricted cash. See Note 12 of Notes to Condensed Consolidated Financial Statements.

The FASB issued an accounting standard update in October 2016 to improve the accounting for the income tax consequences of intra-entity transfers of assets other than inventory. The provisions in this update allowed an entity to recognize current and deferred income taxes of an intra-entity transfer of an asset other than inventory when the transfer occurs rather than when the asset has been sold to an outside party. The guidance within this accounting standard update was effective for annual and interim periods beginning after December 15, 2017. Early adoption was permitted and the guidance required application on a modified retrospective basis through a cumulative-effect adjustment directly to retained earnings as of the beginning of the period of adoption. The Company adopted the guidance in the first quarter of 2018, as required, with no impact to its financial statements.

The FASB issued an accounting standard update in August 2016 to standardize how certain transactions are classified in the statement of cash flows. Specific transactions covered by the accounting standard update include debt prepayment or debt extinguishment costs, settlement of zero-coupon debt instruments, contingent consideration payments made after a business combination, proceeds from the settlement of insurance claims, proceeds from the settlement of corporate and bank owned life insurance policies, distributions received from equity method investments and beneficial interest in securitization transactions. The guidance within this accounting standard update was effective for annual and interim periods beginning after December 15, 2017. Early adoption was permitted, provided that all of the amendments were adopted in the same period. The guidance required application using a retrospective transition method. The Company adopted the guidance in the first quarter of 2018 as required, with no impact to its financial statements.

The FASB issued an accounting standard update in February 2016 regarding the accounting and disclosure for leases. During 2018, the FASB issued a series of accounting standard updates to clarify and expand on the original 2016 implementation guidance, including certain targeted improvements around comparative reporting requirements and accounting for lease and non-lease components by lessors as well as other technical corrections and improvements. The amendments in these 2018 updates did not change the core principles of the guidance previously issued in February 2016. The guidance within all of the leasing accounting standard updates are effective for annual and interim periods beginning after December 15, 2018, and should be applied on a modified retrospective basis, applying the transition requirements either (a) at the beginning of the earliest period presented in the financial statements in the year of adoption (i.e. January 1, 2017) or (b) in the period of adoption (i.e. January 1, 2019). Early adoption is permitted, but the Company has not early adopted. The Company expects to adopt the guidance in the first quarter of 2019, as required, using a modified retrospective transition approach. The Company currently anticipates electing to apply the transition requirements in the period of adoption (i.e. as of January 1, 2019), as permitted. As such the Company will neither restate comparative periods for the effects of this lease accounting guidance or provide the disclosures requirements for comparative periods. While the Company’s decisions are not finalized, the Company anticipates electing to apply certain of the permitted practical expedients within the new lease accounting guidance, and, also, the Company anticipates making certain accounting policy elections as a result of adopting the new lease accounting guidance.

Quaker Chemical Corporation
Notes to Condensed Consolidated Financial Statements - Continued
(Dollars in thousands, except share and per share amounts, unless otherwise stated)
(Unaudited)

As of September 30, 2018, the Company has substantially completed its implementation planning and has made significant progress towards completing its impact assessment. Work performed to date includes developing a detailed project plan, identifying and establishing a cross-functional implementation team and developing pre-adoption internal controls. In addition, the Company has gathered an inventory of the Company's explicit outstanding leases globally, performed certain review procedures to ensure completeness of its lease population and began abstracting critical lease information from the lease population for inclusion within the Company's leasing software. Also, the Company has begun preliminary considerations for how the new lease accounting guidance may impact Houghton, as it pertains to the potential Combination. The Company anticipates using the remainder of 2018 to further develop its considerations for the potential Houghton Combination as well as finalize its impact assessment and implementation including completing the abstraction of critical lease information for inclusion within the Company's leasing software and calculating a preliminary transition adjustment that will be reflected in the Company's financial statements starting after the effective date of January 1, 2019. While the Company's implementation of this lease accounting guidance is still on-going, the Company anticipates adoption of this guidance will have a material impact on its balance sheet as it expects the majority of its leases will be recorded on its balance sheet by establishing right of use assets and associated lease liabilities. The Company previously disclosed in its Annual Report filed on Form 10-K for the year ended December 31, 2017 that its undiscounted contractual obligations associated with operating leases were \$27.6 million in the aggregate, which will be one of the significant inputs used in calculating the amount of right of use assets and associated lease liabilities the Company will record on its Condensed Consolidated Balance Sheet as of January 1, 2019 upon adoption of this lease accounting guidance.

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. The guidance was effective for annual and interim periods beginning after December 15, 2016, and 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 were permitted to adopt the new revenue standard early but not before the original effective date. During 2016 and 2017, the FASB issued a series of accounting standard updates to clarify and expand on the implementation guidance, including principal versus agent considerations, identification of performance obligations, licensing, other technical corrections and adding certain practical expedients. The amendments in these 2016 and 2017 updates did not change the core principles of the guidance previously issued in May 2014.

As part of the Company's impact assessment for the implementation of the new revenue recognition guidance, the Company reviewed its historical accounting policies and practices to identify potential differences with the requirements of the new revenue recognition standard as it related to the Company's contracts and sales arrangements. In addition, the impact assessment and work performed included global and cross functional interviews and questionnaires, sales agreement and other sales document reviews, as well as technical considerations for the Company's future transactional accounting, financial reporting and disclosure requirements. The Company has also progressed its assessment of how the new revenue recognition guidance may impact Houghton, as it pertains to the pending Combination.

The Company adopted the guidance in the first quarter of 2018 as required, electing to use a modified retrospective adoption approach applied to those contracts which were not completed as of January 1, 2018. Comparative information has not been restated and continues to be reported under the accounting standards in effect for those periods. In addition, the Company elected to apply certain of the permitted practical expedients within the revenue recognition guidance and make certain accounting policy elections including those related to significant financing components, sales taxes and shipping and handling activities. Adoption of the revenue recognition guidance did not have a material impact on the Company's reported earnings or cash flows, however, adoption did increase the amount and level of disclosures concerning the Company's net sales and did result in one adjustment to the Company's balance sheet. As a result of the Company's impact assessment and adoption using the modified retrospective adoption approach, the Company recorded an adjustment to its Condensed Consolidated Balance Sheet as of December 31, 2017 to adjust the Company's estimate of variable consideration relating to customers' expected rights to return product. This adjustment resulted in an increase to other current liabilities of \$1.0 million, an increase to non-current deferred tax assets of \$0.2 million and a decrease to retained earnings of \$0.8 million. There were no other impacts recorded as a result of adopting the revenue recognition guidance. The impact of adoption of the new revenue recognition guidance was immaterial for the three and nine months ended September 30, 2018 and the Company expects the impact to be immaterial on an ongoing basis. See Note 4 of Notes to Condensed Consolidated Financial Statements.

Quaker Chemical Corporation
Notes to Condensed Consolidated Financial Statements - Continued
(Dollars in thousands, except share and per share amounts, unless otherwise stated)
(Unaudited)

Note 4 – Net Sales and Revenue Recognition

Business Description

The Company 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: North America, Europe, Middle East and Africa (“EMEA”), Asia/Pacific and South America. The major product lines in the Company’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) 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); (iii) corrosion preventives (used by steel and metalworking customers to protect metal during manufacture, storage, and shipment); (iv) hydraulic fluids (used by steel, metalworking, and other customers to operate hydraulic equipment); (v) specialty greases (used in automotive and aerospace production processes and applications, the manufacturing of steel, and various other applications); and (vi) metal finishing compounds (used to prepare metal surfaces for special treatments such as galvanizing and tin plating and to prepare metal for further processing).

A substantial portion of the Company’s sales worldwide are made directly through its own employees and its CMS programs, with the balance being handled through distributors and agents. The Company’s employees visit the plants of customers regularly, work on site, and, through training and experience, identify production needs which can be resolved or alleviated either by adapting the Company’s existing products or by applying new formulations developed in its laboratories. The chemical specialty industry comprises many companies of similar size as well as companies larger and smaller than Quaker. The offerings of many of the Company’s 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.

As part of the Company’s CMS, 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, revenue is recognized on a net reporting basis at the amount of the administrative fee earned by the Company for ordering the goods. In determining whether the Company is acting as a principal or an agent in each arrangement, the Company considers whether it is primarily responsible for fulfilling the promise to provide the specified good, has inventory risk before the specified good has been transferred to the customer and has discretion in establishing the prices for the specified goods. Third-party products transferred under arrangements resulting in net reporting totaled \$11.7 million and \$35.8 million for the three and nine months ended September 30, 2018, respectively, and \$11.2 million and \$33.0 million for the three and nine months ended September 30, 2017, respectively.

A significant portion of the Company’s revenues are realized from the sale of process fluids and services to manufacturers of steel, automobiles, aircraft, appliances, and durable goods, and, therefore, the Company is subject to the same business cycles as those experienced by these manufacturers and their customers. The Company’s financial performance is generally correlated to the volume of global production within the industries it serves, rather than discretely related to financial performance of such industries. Furthermore, steel customers typically have limited manufacturing locations compared to other metalworking customers and generally use higher volumes of products at a single location. As previously disclosed in its Annual Report filed on Form 10-K for the year ended December 31, 2017, during 2017 the Company’s five largest customers (each composed of multiple subsidiaries or divisions with semiautonomous purchasing authority) accounted for approximately 18% of consolidated net sales, with its largest customer accounting for approximately 8% of consolidated net sales.

Revenue Recognition Model

The Company applies the FASB’s guidance on revenue recognition which requires the Company to recognize revenue in an amount that reflects the consideration to which the Company expects to be entitled in exchange for goods or services transferred to its customers. To do this, the Company applies the five-step model in the FASB’s guidance, which requires the Company to: (i) identify the contract with a customer; (ii) identify the performance obligations in the contract; (iii) determine the transaction price; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenue when, or as, the Company satisfies a performance obligation.

The Company identifies a contract with a customer when a sales agreement indicates approval and commitment of the parties; identifies the rights of the parties; identifies the payment terms; has commercial substance; and it is probable that the Company will collect the consideration to which it will be entitled in exchange for the goods or services that will be transferred to the customer. In most instances, the Company’s contract with a customer is the customer’s purchase order. For certain customers, the Company may also enter into a sales agreement which outlines a framework of terms and conditions which apply to all future and subsequent

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purchase orders for that customer. In these situations, the Company's contract with the customer is both the sales agreement as well as the specific customer purchase order. Because the Company's contract with a customer is typically for a single transaction or customer purchase order, the duration of the contract is almost always one year or less. As a result, the Company has elected to apply certain practical expedients and omit certain disclosures of remaining performance obligations for contracts which have an initial term of one year or less as permitted by the FASB.

The Company identifies a performance obligation in a contract for each promised good or service that is separately identifiable from other promises in the contract and for which the customer can benefit from the good or service either on its own or together with other resources that are readily available to the customer. The Company determines the transaction price as the amount of consideration it expects to be entitled to in exchange for fulfilling the performance obligations, including the effects of any variable consideration, significant financing elements, amounts payable to the customer or noncash consideration. For any contracts that have more than one performance obligation, the Company allocates the transaction price to each performance obligation in an amount that depicts the amount of consideration to which the Company expects to be entitled in exchange for satisfying each performance obligation.

In accordance with the last step of the FASB's guidance, the Company recognizes revenue when, or as, it satisfies the performance obligation in a contract by transferring control of a promised good or service to the customer. The Company recognizes revenue over time whenever the customer simultaneously receives and consumes the benefits provided by the Company's performance; the Company's performance creates or enhances an asset that the customer controls as the asset is created or enhanced; or the Company's performance does not create an asset with an alternative use to the entity, and the entity has an enforceable right to payment, including a profit margin, for performance completed to date. For performance obligations not satisfied over time, the Company determines the point in time at which a customer obtains control of a promised asset and the Company satisfies a performance obligation by considering when the Company has a right to payment for the asset; the customer has legal title to the asset; the Company has transferred physical possession of the asset; the customer has the significant risks and rewards of ownership of the asset; or the customer has accepted the asset.

The Company typically satisfies its performance obligations and recognizes revenue at a point in time for product sales, generally when products are shipped or delivered to the customer, depending on the terms underlying each arrangement. In circumstances where the Company's products are on consignment, revenue is generally recognized upon usage or consumption by the customer. For any CMS or other services provided by the Company to the customer, the Company typically satisfies its performance obligations and recognizes revenue over time, as the promised services are performed. The Company uses input methods to recognize revenue over time related to these services, including labor costs and time incurred. The Company believes that these input methods represent the most indicative measure of the CMS or other service work performed by the Company.

Other Considerations

The Company does not have standard payment terms for all customers globally, however the Company's general payment terms require customers to pay for products or services provided after the performance obligation is satisfied. The Company does not have significant financing arrangements with its customers. The Company does not have significant amounts of variable consideration in its contracts with customers and where applicable, the Company's estimates of variable consideration are not constrained. The Company records certain third-party license fees in other income (expense), net, in its Condensed Consolidated Statement of Income, which generally include sales-based royalties in exchange for the license of intellectual property. These license fees are recognized in accordance with their agreed-upon terms and when performance obligations are satisfied, which is generally when the third party has a subsequent sale.

Practical Expedients and Accounting Policy Elections

The Company made certain accounting policy elections and elected to use certain practical expedients as permitted by the FASB in applying the guidance on revenue recognition. It is the Company's policy to not adjust the promised amount of consideration for the effects of a significant financing component as the Company expects, at contract inception, that the period between when the Company transfers a promised good or service to the customer and when the customer pays for that good or service will be one year or less. In addition, it is the Company's policy to expense costs to obtain a contract as incurred when the expected period of benefit, and therefore the amortization period, is one year or less. It is also the Company's accounting policy to exclude from the measurement of the transaction price all taxes assessed by a governmental authority that are both imposed on and concurrent with a specific revenue-producing transaction and collected by the entity from a customer, including sales, use, value added, excise and various other taxes. Lastly, the Company has elected to account for shipping and handling activities that occur after the customer has obtained control of a good as a fulfillment cost rather than an additional promised service.

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Contract Assets and Liabilities

The Company recognizes a contract asset or receivable on its Condensed Consolidated Balance Sheet when the Company performs a service or transfers a good in advance of receiving consideration. A receivable is the Company's right to consideration that is unconditional and only the passage of time is required before payment of that consideration is due. A contract asset is the Company's right to consideration in exchange for goods or services that the Company has transferred to a customer. The Company had no contract assets recorded on its Condensed Consolidated Balance Sheets as of September 30, 2018 or December 31, 2017.

A contract liability is recognized when the Company receives consideration, or if it has the unconditional right to receive consideration, in advance of performance. A contract liability is the Company's obligation to transfer goods or services to a customer for which the Company has received consideration, or a specified amount of consideration is due, from the customer. The Company's contract liabilities primarily represent deferred revenue recorded for customer payments received by the Company prior to the Company satisfying the associated performance obligation. Deferred revenues are presented within other current liabilities in the Company's Condensed Consolidated Balance Sheets. The Company had approximately \$1.6 million and \$1.5 million of deferred revenue as of September 30, 2018 and December 31, 2017, respectively. During the three and nine months ended September 30, 2018 the Company satisfied the associated performance obligations and recognized revenue of \$1.6 million and \$4.4 million, respectively, related to advance customer payments previously received.

Disaggregated Revenue

The Company sells its various industrial process fluids, its chemical specialties and its technical expertise as a global product portfolio. The Company generally manages and evaluates its performance by geography first, and then by customer industry, rather than by individual product lines. The Company has provided annual net sales information for its product lines greater than 10% in its previously filed Form 10-K for the year ended December 31, 2017, and those annual percentages are generally consistent with the current year's net sales by product line. Also, net sales of each of the Company's major product lines are generally spread throughout all four of the Company's regions, and in most cases are relatively proportionate to the level of total sales in each region.

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The following disaggregates the Company's net sales by region, customer industry, and timing of revenue recognized for the three and nine months ended September 30, 2018:

	Three Months Ended September 30, 2018				
	North America	EMEA	Asia/Pacific	South America	Consolidated Total
Net sales	\$ 101,706	\$ 55,498	\$ 55,757	\$ 9,061	\$ 222,022

Customer Industries

Primary metals	\$ 40,448	\$ 24,188	\$ 35,108	\$ 4,781	\$ 104,525
Metalworking	45,189	27,986	19,585	3,768	96,528
Coatings and other	16,069	3,324	1,064	512	20,969
	\$ 101,706	\$ 55,498	\$ 55,757	\$ 9,061	\$ 222,022

Timing of Revenue Recognized

Product sales at a point in time	\$ 98,965	\$ 55,437	\$ 53,998	\$ 8,992	\$ 217,392
Services transferred over time	2,741	61	1,759	69	4,630
	\$ 101,706	\$ 55,498	\$ 55,757	\$ 9,061	\$ 222,022

	Nine Months Ended September 30, 2018				
	North America	EMEA	Asia/Pacific	South America	Consolidated Total
Net sales	\$ 290,918	\$ 177,719	\$ 159,882	\$ 27,520	\$ 656,039

Customer Industries

Primary metals	\$ 117,174	\$ 77,692	\$ 101,026	\$ 15,115	\$ 311,007
Metalworking	128,709	88,909	56,486	11,416	285,520
Coatings and other	45,035	11,118	2,370	989	59,512
	\$ 290,918	\$ 177,719	\$ 159,882	\$ 27,520	\$ 656,039

Timing of Revenue Recognized

Product sales at a point in time	\$ 282,513	\$ 177,546	\$ 153,863	\$ 27,298	\$ 641,220
Services transferred over time	8,405	173	6,019	222	14,819
	\$ 290,918	\$ 177,719	\$ 159,882	\$ 27,520	\$ 656,039

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 is comprised of revenues less cost of goods sold ("COGS") and selling, general and administrative expenses ("SG&A") directly related to the respective region's product sales. The indirect operating expenses consist of SG&A 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, amortization expense and other (expense) income, net.

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The following table presents information about the performance of the Company's reportable operating segments for the three and nine months ended September 30, 2018 and 2017:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
Net sales				
North America	\$ 101,706	\$ 90,450	\$ 290,918	\$ 268,122
EMEA	55,498	58,775	177,719	167,209
Asia/Pacific	55,757	54,200	159,882	147,074
South America	9,061	9,493	27,520	26,605
Total net sales	\$ 222,022	\$ 212,918	\$ 656,039	\$ 609,010
Operating earnings, excluding indirect operating expenses				
North America	\$ 24,558	\$ 18,888	\$ 68,160	\$ 59,146
EMEA	8,577	8,862	27,966	26,325
Asia/Pacific	14,761	13,963	41,524	36,018
South America	1,214	965	2,963	2,826
Total operating earnings, excluding indirect operating expenses	49,110	42,678	140,613	124,315
Combination-related expenses	(2,904)	(9,675)	(12,404)	(23,088)
Indirect operating expenses	(19,460)	(17,108)	(54,971)	(50,067)
Amortization expense	(1,827)	(1,886)	(5,525)	(5,490)
Consolidated operating income	24,919	14,009	67,713	45,670
Other (expense) income, net	(523)	249	(631)	(1,427)
Interest expense	(1,510)	(793)	(4,804)	(2,229)
Interest income	521	762	1,581	1,825
Consolidated income before taxes and equity in net income of associated companies	\$ 23,407	\$ 14,227	\$ 63,859	\$ 43,839

Inter-segment revenues for the three and nine months ended September 30, 2018 were \$2.5 million and \$7.4 million for North America, \$5.9 million and \$16.9 million for EMEA, less than \$0.1 million and \$0.5 million for Asia/Pacific, respectively, and less than \$0.1 million for South America in both periods. Inter-segment revenues for the three and nine months ended September 30, 2017 were \$2.8 million and \$7.4 million for North America, \$6.2 million and \$16.0 million for EMEA, \$0.2 million and \$0.3 million for Asia/Pacific, respectively, and less than \$0.1 million for South America in both periods. However, all inter-segment transactions have been eliminated from each reportable operating segment's net sales and earnings for all periods presented above.

Note 6 – Restructuring and Related Activities

As previously disclosed in its Annual Report filed on Form 10-K for the year ended December 31, 2017, in the fourth quarter of 2015 Quaker's management approved a global restructuring plan (the "2015 Program") to reduce its operating costs. The 2015 Program included provisions for the reduction of total headcount of approximately 65 employees globally. The Company completed all of the remaining initiatives under the 2015 Program during the first half of 2017 and does not expect to incur further restructuring charges under this program. Restructuring activity recognized by reportable operating segment in connection with the 2015 Program during the nine months ended September 30, 2017 is as follows:

	North America	EMEA	Total
Accrued restructuring as of December 31, 2016	\$ 196	\$ 474	\$ 670
Restructuring charges and adjustments	(126)	126	—
Cash payments	(70)	(605)	(675)
Currency translation adjustments	—	5	5
Accrued restructuring as of September 30, 2017	\$ —	\$ —	\$ —

There were no accrued restructuring liabilities as of December 31, 2017 and no associated cash payments or other restructuring activity during the nine months ended September 30, 2018.

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Note 7 – Share-Based Compensation

The Company recognized the following share-based compensation expense in SG&A in its Condensed Consolidated Statements of Income for the three and nine months ended September 30, 2018 and 2017:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
Stock options	\$ 267	\$ 243	\$ 785	\$ 714
Nonvested stock awards and restricted stock units	550	717	1,901	2,314
Employee stock purchase plan	24	22	68	66
Non-elective and elective 401(k) matching contribution in stock	—	8	—	72
Director stock ownership plan	31	34	93	103
Total share-based compensation expense	<u>\$ 872</u>	<u>\$ 1,024</u>	<u>\$ 2,847</u>	<u>\$ 3,269</u>

During the first quarter of 2018, the Company granted stock options under its long-term incentive plan (“LTIP”) that are subject only to time vesting over a three-year period. For the purposes of determining the fair value of stock option awards, the Company used the Black-Scholes option pricing model and the assumptions set forth in the table below:

Number of options granted	35,842
Dividend yield	1.37 %
Expected volatility	24.73 %
Risk-free interest rate	2.54 %
Expected term (years)	4.0

The fair value of these options is amortized on a straight-line basis over the vesting period. As of September 30, 2018, unrecognized compensation expense related to options granted was \$1.5 million, to be recognized over a weighted average remaining period of 1.9 years. There were no stock options granted in the second or third quarters of 2018.

During the first nine months of 2018, the Company granted 16,166 nonvested restricted shares and 1,480 nonvested restricted stock units under its LTIP plan that are subject only to time vesting, generally over a three-year period. The fair value of these awards 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 of these awards for expected forfeitures based on historical experience. As of September 30, 2018, unrecognized compensation expense related to the nonvested shares was \$2.7 million, to be recognized over a weighted average remaining period of 1.8 years, and unrecognized compensation expense related to nonvested restricted stock units was \$0.2 million, to be recognized over a weighted average remaining period of 2.0 years.

Note 8 – Pension and Other Postretirement Benefits

The components of net periodic benefit cost for the three and nine months ended September 30, 2018 and 2017 are as follows:

	Three Months Ended September 30,				Nine Months Ended September 30,			
	Pension Benefits		Other Postretirement Benefits		Pension Benefits		Other Postretirement Benefits	
	2018	2017	2018	2017	2018	2017	2018	2017
Service cost	\$ 938	\$ 921	\$ —	\$ 2	\$ 2,886	\$ 2,710	\$ 5	\$ 6
Interest cost	1,015	994	31	36	3,096	3,005	97	108
Expected return on plan assets	(1,229)	(1,276)	—	—	(3,793)	(3,857)	—	—
Settlement charge	—	—	—	—	—	1,860	—	—
Actuarial loss amortization	782	798	2	13	2,375	2,459	31	40
Prior service cost amortization	(28)	(28)	—	—	(88)	(76)	—	—
Net periodic benefit cost	<u>\$ 1,478</u>	<u>\$ 1,409</u>	<u>\$ 33</u>	<u>\$ 51</u>	<u>\$ 4,476</u>	<u>\$ 6,101</u>	<u>\$ 133</u>	<u>\$ 154</u>

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During the second quarter of 2017, one of the Company's U.S. pension plans offered a cash settlement to its vested terminated participants which allowed them to receive the value of their pension benefits as a single lump sum payment. As payments from the U.S. pension plan for this cash-out offering exceeded the service and interest cost components of the U.S. pension plan expense for 2017, the Company recorded a settlement charge of approximately \$1.9 million. This settlement charge represents the immediate recognition into expense of a portion of the unrecognized loss within AOCI on the balance sheet in proportion to the share of the projected benefit obligation that was settled by these payments. The gross pension benefit obligation was reduced by approximately \$4.0 million as a result of these payments. The settlement charge was recognized through other expense, net, on the Company's Condensed Consolidated Statement of Income. See Note 9, below, specifically the line "Pension and postretirement benefit costs, non-service components."

Employer Contributions

During the nine months ended September 30, 2018, \$5.1 million and \$0.2 million of contributions have been made to the Company's pension plans and its postretirement benefit plans, respectively. The Company currently estimates that it will make cash contributions to its pension plans of approximately \$6 million in 2018.

Note 9 – Other (Expense) Income, Net

The components of other (expense) income, net, for the three and nine months ended September 30, 2018 and 2017 are as follows:

	Three Months Ended		Nine Months Ended	
	September 30,		September 30,	
	2018	2017	2018	2017
Income from third party license fees	\$ 144	\$ 141	\$ 583	\$ 612
Foreign exchange (losses) gains, net	(285)	545	(1,007)	580
Gain on fixed asset disposals, net	81	22	680	50
Non-income tax refunds and other related credits	127	130	668	748
Pension and postretirement benefit costs, non-service components	(568)	(537)	(1,713)	(3,539)
Other non-operating income	115	47	374	288
Other non-operating expense	(137)	(99)	(216)	(166)
Total other (expense) income, net	<u>\$ (523)</u>	<u>\$ 249</u>	<u>\$ (631)</u>	<u>\$ (1,427)</u>

Gain on fixed asset disposals, net, during the nine months ended September 30, 2018 includes a \$0.6 million gain on the sale of a held-for-sale asset. In addition, foreign exchange (losses) gains, net, during the three and nine months ended September 30, 2018 include both a foreign currency transaction loss of approximately \$0.5 million related to hyper-inflationary accounting for the Company's Argentina subsidiary effective July 1, 2018 and a foreign currency transaction gain of approximately \$0.4 million related to the liquidation of an inactive legal entity.

Note 10 – Income Taxes and Uncertain Income Tax Positions

The Company's effective tax rate for the three and nine months ended September 30, 2018 were 18.5% and 21.2%, respectively, compared to 22.1% and 32.5%, respectively, for the three and nine months ended September 30, 2017. The Company's effective tax rates for each of the periods presented include the impact of certain non-deductible costs related to the pending Combination. The Company's effective tax rate for the three and nine months ended September 30, 2018 also includes tax adjustments of \$1.1 million and \$2.3 million, respectively, as a result of changes to certain of the Company's initial fourth quarter of 2017 estimates associated with the December 2017 Tax Cuts and Jobs Act ("U.S. Tax Reform"), described below. In addition to these items, the Company's current year effective tax rate benefited from the decrease in the U.S. statutory tax rate from 35% in the prior year to 21% in the current year as a result of U.S. Tax Reform.

The Company's tax adjustments associated with U.S. Tax Reform during the three and nine months ended September 30, 2018, included adjustments to decrease its initial estimate of the one-time deemed repatriation of undistributed earnings on previously untaxed accumulated and current earnings and profits of certain of the Company's foreign subsidiaries ("Transition Tax"), specifically related to proposed regulations published by the Internal Revenue Service ("IRS"), the U.S. Treasury and various state taxing authorities, as well as an increase to its initial estimate of the impact from internal revenue code changes associated with the deductibility of certain executive compensation. To date, the Company has not made any other significant changes to its initial assessments made during the fourth quarter of 2017.

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As previously disclosed in its Annual Report filed on Form 10-K for the year ended December 31, 2017, the U.S. government enacted comprehensive tax legislation commonly referred to as U.S. Tax Reform on December 22, 2017. U.S. Tax Reform includes multiple changes to the U.S. tax code with varying effects on the Company's results for the three and nine months ended September 30, 2018. The SEC staff issued guidance on accounting for the tax effects of U.S. Tax Reform and provided a one-year measurement period for companies to complete the accounting. Companies are required to reflect the income tax effects of those aspects of U.S. Tax Reform for which the accounting is complete. To the extent that a company's accounting for certain income tax effects of U.S. Tax Reform are incomplete but the company is able to determine a reasonable estimate, it must record a provisional estimate in its financial statements. The Company has made reasonable interpretations and assumptions with regard to various uncertainties and ambiguities in the application of certain provisions of U.S. Tax Reform. The Company is continuing to evaluate all of the provisions of U.S. Tax Reform and expects to finalize its assessment during the one-year measurement period provided by the SEC to complete the accounting for U.S. Tax Reform. It is possible that the IRS or the U.S. Department of the Treasury could issue subsequent guidance or take positions on audit that differ from the Company's interpretations and assumptions.

As of September 30, 2018, the Company's cumulative liability for gross unrecognized tax benefits was \$7.0 million. As of December 31, 2017, the Company's cumulative liability for gross unrecognized tax benefits was \$6.8 million.

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 Condensed Consolidated Statements of Income. The Company recognized an expense for interest of less than \$0.1 million and \$0.1 million and a credit for penalties of \$0.2 million and an expense for penalties of \$0.1 million for the three and nine months ended September 30, 2018. Comparatively, the Company recognized a credit of less than \$0.1 million and \$0.1 million for interest, and an expense of \$0.1 million and \$0.2 million for penalties in its Condensed Consolidated Statements of Income for the three and nine months ended September 30, 2017, respectively. As of September 30, 2018, the Company had accrued \$0.7 million for cumulative interest and \$1.1 million for cumulative penalties in its Condensed Consolidated Balance Sheets, compared to \$0.6 million for cumulative interest and \$1.0 million for cumulative penalties accrued at December 31, 2017.

During the nine months ended September 30, 2018 and 2017, the Company recognized a decrease of \$0.7 million and \$0.8 million, respectively, in its cumulative liability for gross unrecognized tax benefits due to the expiration of the applicable statutes of limitations for certain tax years.

The Company estimates that during the year ending December 31, 2018 it will reduce its cumulative liability for gross unrecognized tax benefits by approximately \$1.0 to \$1.1 million 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, 2018.

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 and the United Kingdom from 2012; China and Mexico from 2013; India from its fiscal year beginning April 1, 2014 and ending March 31, 2015; Spain from 2014; the United States from 2015, and various domestic state tax jurisdictions from 2008.

As previously reported, the Italian tax authorities have assessed additional tax due from the Company's subsidiary, Quaker Italia S.r.l., relating to the tax years 2007 through 2013. During the second quarter of 2018, the Italian tax authorities assessed additional tax due from Quaker Italia, S.r.l., relating to the tax years 2014 and 2015. The Company plans to meet with the Italian tax authorities by the end of 2018 to discuss these assessments. If these discussions are not successful in materially reducing the assessed tax, then the Company will further evaluate its options including potentially filing for competent authority relief from these assessments under the Mutual Agreement Procedures of the Organization for Economic Co-Operation and Development, consistent with the Company's previous filings for 2008 through 2013. As of September 30, 2018, the Company believes it has adequate reserves for uncertain tax positions with respect to these and all other audits.

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Note 11 – Earnings Per Share

The following table summarizes earnings per share calculations for the three and nine months ended September 30, 2018 and 2017:

	Three Months Ended		Nine Months Ended	
	September 30,		September 30,	
	2018	2017	2018	2017
Basic earnings per common share				
Net income attributable to Quaker Chemical Corporation	\$ 19,690	\$ 11,142	\$ 51,668	\$ 30,040
Less: income allocated to participating securities	(77)	(76)	(226)	(222)
Net income available to common shareholders	\$ 19,613	\$ 11,066	\$ 51,442	\$ 29,818
Basic weighted average common shares outstanding	13,278,259	13,217,165	13,263,417	13,196,255
Basic earnings per common share	\$ 1.48	\$ 0.84	\$ 3.88	\$ 2.26
Diluted earnings per common share				
Net income attributable to Quaker Chemical Corporation	\$ 19,690	\$ 11,142	\$ 51,668	\$ 30,040
Less: income allocated to participating securities	(77)	(76)	(226)	(222)
Net income available to common shareholders	\$ 19,613	\$ 11,066	\$ 51,442	\$ 29,818
Basic weighted average common shares outstanding	13,278,259	13,217,165	13,263,417	13,196,255
Effect of dilutive securities	37,282	34,528	33,928	41,818
Diluted weighted average common shares outstanding	13,315,541	13,251,693	13,297,345	13,238,073
Diluted earnings per common share	\$ 1.47	\$ 0.83	\$ 3.87	\$ 2.25

Certain stock options and restricted stock units are not included in the diluted earnings per share calculation since the effect would have been anti-dilutive. The calculated amount of anti-diluted shares not included were 718 and 3,480 for the three and nine months ended September 30, 2018, respectively, and 4,300 and 4,819 for the three and nine months ended September 30, 2017, respectively.

Note 12 – Restricted Cash

The Company has restricted cash recorded in other assets related to proceeds from an inactive subsidiary of the Company which previously executed separate settlement and release agreements with two of its insurance carriers for an original total value of \$35.0 million. 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. 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.

The following table provides a reconciliation of cash, cash equivalents and restricted cash as of September 30, 2018 and 2017 and December 31, 2017 and 2016:

	September 30,		December 31,	
	2018	2017	2017	2016
Cash and cash equivalents	\$ 99,810	\$ 109,088	\$ 89,879	\$ 88,818
Restricted cash included in other assets	20,594	21,376	21,171	21,883
Cash, cash equivalents and restricted cash	\$ 120,404	\$ 130,464	\$ 111,050	\$ 110,701

Quaker Chemical Corporation
Notes to Condensed Consolidated Financial Statements - Continued
(Dollars in thousands, except share and per share amounts, unless otherwise stated)
(Unaudited)

Note 13 – Goodwill and Other Intangible Assets

The Company completes its annual impairment test during the fourth 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 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 has recorded no impairment charges in its past.

Changes in the carrying amount of goodwill for the nine months ended September 30, 2018 were as follows:

	North America	EMEA	Asia/Pacific	South America	Total
Balance as of December 31, 2017	\$ 47,571	\$ 20,504	\$ 15,456	\$ 2,503	\$ 86,034
Currency translation adjustments	(27)	(930)	(894)	(488)	(2,339)
Balance as of September 30, 2018	<u>\$ 47,544</u>	<u>\$ 19,574</u>	<u>\$ 14,562</u>	<u>\$ 2,015</u>	<u>\$ 83,695</u>

Gross carrying amounts and accumulated amortization for definite-lived intangible assets as of September 30, 2018 and December 31, 2017 were as follows:

	Gross Carrying Amount		Accumulated Amortization	
	2018	2017	2018	2017
Customer lists and rights to sell	\$ 75,424	\$ 76,581	\$ 28,542	\$ 25,394
Trademarks, formulations and product technology	33,561	33,025	15,987	14,309
Other	5,962	6,114	5,606	5,514
Total definite-lived intangible assets	<u>\$ 114,947</u>	<u>\$ 115,720</u>	<u>\$ 50,135</u>	<u>\$ 45,217</u>

The Company recorded \$1.8 million and \$5.5 million of amortization expense for the three and nine months ended September 30, 2018, respectively. Comparatively, the Company recorded \$1.9 million and \$5.5 million of amortization expense for the three and nine months ended September 30, 2017, respectively. Estimated annual aggregate amortization expense for the current year and subsequent five years is as follows:

For the year ended December 31, 2018	\$ 7,373
For the year ended December 31, 2019	7,211
For the year ended December 31, 2020	6,928
For the year ended December 31, 2021	6,571
For the year ended December 31, 2022	6,414
For the year ended December 31, 2023	6,193

The Company has two indefinite-lived intangible assets totaling \$1.1 million for trademarks as of September 30, 2018 and December 31, 2017.

Note 14 – Debt

The Company's primary credit facility ("the Credit Facility") is a \$300.0 million syndicated multicurrency credit agreement with a group of lenders. The maximum amount available under the Credit Facility can be increased to \$400.0 million at the Company's option if the lenders agree and the Company satisfies certain conditions. Borrowings under the Credit Facility generally bear interest at a base rate or LIBOR rate plus a margin. The Credit Facility has certain financial and other covenants, with the key financial covenant requiring that the Company's consolidated total debt to adjusted EBITDA ratio cannot exceed 3.50 to 1. As of September 30, 2018, and December 31, 2017, the Company's total debt to adjusted EBITDA ratio was below 1.0 to 1, and the Company was also in compliance with all of its other covenants. During the third quarter of 2018, the Credit Facility was amended and restated to extend the maturity date to December 15, 2019. As of September 30, 2018, and December 31, 2017, the Company had total credit facility borrowings of \$34.8 million and \$48.5 million, respectively, primarily under the Credit Facility. The Company's other debt obligations were primarily industrial development bonds and municipality-related loans as of September 30, 2018 and December 31, 2017, which includes a \$5.0 million industrial development bond that matures in December 2018. This bond is included within the caption Short-term borrowings and current portion of long-term debt on the Company's Condensed Consolidated Balance Sheets as of September 30, 2018 and December 31, 2017. The Company expects to repay the amount due for this bond at its maturity with available cash on hand.

Quaker Chemical Corporation
Notes to Condensed Consolidated Financial Statements - Continued
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Note 15 – Equity

The following tables present the changes in equity, net of tax, for the three and nine months ended September 30, 2018 and 2017:

	Common Stock	Capital in Excess of Par Value	Retained Earnings	Accumulated Other Comprehensive Loss	Noncontrolling Interest	Total
Balance at June 30, 2018	\$ 13,331	\$ 94,984	\$ 387,498	\$ (74,351)	\$ 1,215	\$ 422,677
Net income	—	—	19,690	—	81	19,771
Amounts reported in other comprehensive						
loss	—	—	—	(5,981)	(38)	(6,019)
Dividends (\$0.37 per share)	—	—	(4,933)	—	—	(4,933)
Share issuance and equity-based						
compensation plans	3	1,137	—	—	—	1,140
Balance at September 30, 2018	<u>\$ 13,334</u>	<u>\$ 96,121</u>	<u>\$ 402,255</u>	<u>\$ (80,332)</u>	<u>\$ 1,258</u>	<u>\$ 432,636</u>
Balance at June 30, 2017	\$ 13,310	\$ 113,747	\$ 374,001	\$ (72,938)	\$ 11,474	\$ 439,594
Net income	—	—	11,142	—	562	11,704
Amounts reported in other comprehensive						
income (loss)	—	—	—	6,265	(153)	6,112
Dividends (\$0.355 per share)	—	—	(4,722)	—	—	(4,722)
Share issuance and equity-based						
compensation plans	(11)	(618)	—	—	—	(629)
Balance at September 30, 2017	<u>\$ 13,299</u>	<u>\$ 113,129</u>	<u>\$ 380,421</u>	<u>\$ (66,673)</u>	<u>\$ 11,883</u>	<u>\$ 452,059</u>

	Common Stock	Capital in Excess of Par Value	Retained Earnings	Accumulated Other Comprehensive Loss	Noncontrolling Interest	Total
Balance at December 31, 2017	\$ 13,308	\$ 93,528	\$ 365,182	\$ (65,100)	\$ 1,946	\$ 408,864
Net income	—	—	51,668	—	260	51,928
Amounts reported in other comprehensive						
loss	—	—	—	(15,232)	(114)	(15,346)
Dividends (\$1.095 per share)	—	—	(14,595)	—	—	(14,595)
Distributions to noncontrolling affiliate	—	—	—	—	(834)	(834)
Share issuance and equity-based						
compensation plans	26	2,593	—	—	—	2,619
Balance at September 30, 2018	<u>\$ 13,334</u>	<u>\$ 96,121</u>	<u>\$ 402,255</u>	<u>\$ (80,332)</u>	<u>\$ 1,258</u>	<u>\$ 432,636</u>
Balance at December 31, 2016	\$ 13,278	\$ 112,475	\$ 364,414	\$ (87,407)	\$ 9,846	\$ 412,606
Net income	—	—	30,040	—	1,619	31,659
Amounts reported in other comprehensive						
income	—	—	—	20,734	418	21,152
Dividends (\$1.055 per share)	—	—	(14,033)	—	—	(14,033)
Share issuance and equity-based						
compensation plans	21	654	—	—	—	675
Balance at September 30, 2017	<u>\$ 13,299</u>	<u>\$ 113,129</u>	<u>\$ 380,421</u>	<u>\$ (66,673)</u>	<u>\$ 11,883</u>	<u>\$ 452,059</u>

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Notes to Condensed Consolidated Financial Statements - Continued
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The following tables show the reclassifications from and resulting balances of AOCI for the three and nine months ended September 30, 2018 and 2017:

	Currency Translation Adjustments	Defined Benefit Pension Plans	Unrealized (Loss) Gain in Available-for- Sale Securities	Total
Balance at June 30, 2018	\$ (42,069)	\$ (32,513)	\$ 231	\$ (74,351)
Other comprehensive (loss) income before reclassifications				
reclassifications	(6,821)	99	274	(6,448)
Amounts reclassified from AOCI	—	756	(69)	687
Current period other comprehensive (loss) income	(6,821)	855	205	(5,761)
Related tax amounts	—	(177)	(43)	(220)
Net current period other comprehensive (loss) income	(6,821)	678	162	(5,981)
Balance at September 30, 2018	<u>\$ (48,890)</u>	<u>\$ (31,835)</u>	<u>\$ 393</u>	<u>\$ (80,332)</u>
Balance at June 30, 2017	\$ (40,062)	\$ (34,059)	\$ 1,183	\$ (72,938)
Other comprehensive income (loss) before reclassifications				
reclassifications	5,917	(611)	688	5,994
Amounts reclassified from AOCI	—	784	(254)	530
Current period other comprehensive income	5,917	173	434	6,524
Related tax amounts	—	(111)	(148)	(259)
Net current period other comprehensive income	5,917	62	286	6,265
Balance at September 30, 2017	<u>\$ (34,145)</u>	<u>\$ (33,997)</u>	<u>\$ 1,469</u>	<u>\$ (66,673)</u>
	Currency Translation Adjustments	Defined Benefit Pension Plans	Unrealized (Loss) Gain in Available-for- Sale Securities	Total
Balance at December 31, 2017	\$ (31,893)	\$ (34,093)	\$ 886	\$ (65,100)
Other comprehensive (loss) income before reclassifications				
reclassifications	(16,997)	563	(1,064)	(17,498)
Amounts reclassified from AOCI	—	2,318	440	2,758
Current period other comprehensive (loss) income	(16,997)	2,881	(624)	(14,740)
Related tax amounts	—	(623)	131	(492)
Net current period other comprehensive (loss) income	(16,997)	2,258	(493)	(15,232)
Balance at September 30, 2018	<u>\$ (48,890)</u>	<u>\$ (31,835)</u>	<u>\$ 393</u>	<u>\$ (80,332)</u>
Balance at December 31, 2016	\$ (52,255)	\$ (36,168)	\$ 1,016	\$ (87,407)
Other comprehensive income (loss) before reclassifications				
reclassifications	18,110	(684)	1,578	19,004
Amounts reclassified from AOCI	—	4,284	(889)	3,395
Current period other comprehensive income	18,110	3,600	689	22,399
Related tax amounts	—	(1,429)	(236)	(1,665)
Net current period other comprehensive income	18,110	2,171	453	20,734
Balance at September 30, 2017	<u>\$ (34,145)</u>	<u>\$ (33,997)</u>	<u>\$ 1,469</u>	<u>\$ (66,673)</u>

Approximately 75% and 25% of the amounts reclassified from AOCI to the Condensed Consolidated Statements of Income for defined benefit retirement plans during the three and nine months ended September 30, 2018 and 2017 were recorded in SG&A and COGS, respectively. See Note 8 of Notes to Condensed 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 in other comprehensive income for non-controlling interest are related to currency translation adjustments.

Quaker Chemical Corporation
Notes to Condensed Consolidated Financial Statements - Continued
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Note 16 – Business Acquisitions

In March 2018, the Company purchased certain formulations and product technology for the mining industry for its North America reportable operating segment for \$1.0 million. The Company allocated the entire purchase price to intangible assets representing formulations and product technology, to be amortized over 10 years. In accordance with the terms of the agreement, \$0.5 million of the purchase price was paid at signing, with the remaining \$0.5 million of the purchase price expected to be paid within the next 12 months and recorded as an other current liability on the Company's Condensed Consolidated Balance Sheet as of September 30, 2018.

In December 2017, the Company acquired the remaining 45% ownership interest in its India affiliate, Quaker Chemical India Private Limited ("QCIL"), for 2,025.0 million INR or approximately \$31.8 million. QCIL is part of the Company's Asia/Pacific reportable operating segment. In May 2017, the Company acquired assets associated with a business that markets, sells and manufactures certain metalworking fluids for its North America reportable operating segment for 7.3 million CAD or approximately \$5.4 million. In November 2016, the Company acquired Lubricor Inc. and its affiliated entities ("Lubricor"), a metalworking fluids manufacturer headquartered in Waterloo, Ontario, for its North America reportable operating segment for 16.0 million CAD or approximately \$12.0 million. During the first quarter of 2017, the Company identified and recorded an adjustment to the allocation of the purchase price for the Lubricor acquisition. The adjustment was the result of finalizing a post-closing settlement based on the Company's assessment of additional information related to assets acquired and liabilities assumed.

As of December 31, 2017, the allocation of the purchase price for all of the Company's 2016 and 2017 acquisitions were finalized.

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

Note 17 – Fair Value Measurements

The Company has valued its company-owned life insurance policies at fair value. These assets are subject to fair value measurement as follows:

<u>Assets</u>	Fair Value Measurements at September 30, 2018			
	Using Fair Value Hierarchy			
	Total Fair Value	Level 1	Level 2	Level 3
Company-owned life insurance	\$ 1,649	\$ —	\$ 1,649	\$ —
Total	\$ 1,649	\$ —	\$ 1,649	\$ —

<u>Assets</u>	Fair Value Measurements at December 31, 2017			
	Using Fair Value Hierarchy			
	Total Fair Value	Level 1	Level 2	Level 3
Company-owned life insurance	\$ 1,594	\$ —	\$ 1,594	\$ —
Total	\$ 1,594	\$ —	\$ 1,594	\$ —

The fair values of Company-owned life insurance assets are based on quotes for like instruments with similar credit ratings and terms. The Company did not hold any Level 3 investments as of September 30, 2018 or December 31, 2017, respectively, so related disclosures have not been included.

Note 18 – Commitments and Contingencies

The Company previously disclosed in its Annual Report filed on Form 10-K for the year ended December 31, 2017 that AC Products, Inc. ("ACP"), a wholly owned subsidiary, has been operating a groundwater treatment system to hydraulically contain groundwater contamination emanating from ACP's site, the principal contaminant of which is perchloroethylene. As of September 30, 2018, ACP believes it is close to meeting the conditions for closure of the groundwater treatment system, but continues to operate this system while in discussions with the relevant authorities. As of September 30, 2018, the Company believes that the range of potential-known liabilities associated with the balance of the ACP water remediation program is approximately \$0.1 million to \$1.0 million. 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.

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The Company previously disclosed in its Annual Report filed on Form 10-K for the year ended December 31, 2017 that 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. During the three and nine months ended September 30, 2018, there have been no significant changes to the facts or circumstances of this matter previously disclosed, aside from on-going claims and routine payments associated with this litigation. 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 approximately \$1.9 million (excluding costs of defense).

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 \$0.2 million was accrued at September 30, 2018 and December 31, 2017, respectively, to provide for such anticipated future environmental assessments and remediation costs. 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.

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Item 2. 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 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 a strong operating performance in the third quarter of 2018, as solid net sales growth coupled with increased gross margin offset higher selling, general and administrative expenses ("SG&A"). Specifically, net sales increased 4% to \$222.0 million in the third quarter of 2018 compared to \$212.9 million in the third quarter of 2017 driven by volume growth of 4% and selling price and product mix of 3%, partially offset by negative impacts from foreign currency translation of approximately 3%. This increase in net sales, coupled with a higher gross margin of 36.5% in the current quarter compared to 35.1% in the prior year quarter, drove an 8% increase in the Company's gross profit quarter-over-quarter. The increase in the Company's gross margin quarter-over-quarter was primarily driven by pricing initiatives and the mix of certain products sold which more than offset raw material cost increases. In addition, current quarter operating income as a percentage of sales benefited from the Company's continued discipline in managing its SG&A.

The Company's third quarter of 2018 net income and earnings per diluted share were \$19.7 million and \$1.47, respectively, compared to \$11.1 million and \$0.83 per diluted share, respectively, in the third quarter of 2017. During the third quarter of 2018, the Company incurred \$3.8 million, or \$0.23 per diluted share, of total costs associated with the Company's previously announced combination with Houghton International, Inc. ("Houghton") (herein referred to as "the Combination"), compared to \$9.7 million, or \$0.52 per diluted share, of costs related to the Combination during the third quarter of 2017. The Company also recorded a tax adjustment of \$1.1 million, or \$0.08 per diluted share, in the third quarter of 2018 to decrease its initial fourth quarter of 2017 estimates associated with the U.S. Tax Cuts and Jobs Act ("U.S. Tax Reform"), including the one-time charge on deemed repatriation of undistributed earnings ("Transition Tax"). Excluding expenses related to the Combination and the Transition Tax adjustment, as well as other non-core items in each period, the Company's strong current quarter operating performance coupled with a lower third quarter of 2018 effective tax rate, resulted in a 21% increase in its non-GAAP earnings per diluted share to \$1.60 in the third quarter of 2018 compared to \$1.32 in the prior year quarter. In addition, the Company's adjusted EBITDA was \$33.0 million in the third quarter of 2018, an increase of 12% compared to the prior year period. These results were achieved despite a negative impact from foreign exchange on earnings of approximately 6% or \$0.09 per diluted share in the current quarter.

From a regional perspective, the Company's third quarter of 2018 operating performance was highlighted by year-over-year increases in the majority of its regions. The Company's largest region, North America, had particularly strong operating earnings in the third quarter of 2018, increasing 30% compared to the prior year period, which was driven by net sales growth of 12% on higher volumes and selling price and product mix, as well as higher gross margin. Asia/Pacific's net sales also reflected strong volume growth in the third quarter of 2018, partially offset by decreases from foreign currency translation. The region's higher net sales largely drove its operating earnings increase on relatively consistent gross margin. The Company's South America region also achieved operating earnings growth compared to the third quarter of 2017 as benefits from higher volumes, selling price and product mix, higher gross margin and lower SG&A combined to more than offset a significant foreign exchange headwind. These three regions operating earnings growth were partially offset by a decline in the Company's EMEA region compared to the prior year period, as higher gross margin and lower SG&A were more than offset by lower volumes largely due to order pattern timing and the negative impact from foreign currency translation. See the Reportable Operating Segments Review, in the Operations section of this Item, below.

The Company generated net operating cash flow of \$31.2 million in the third quarter of 2018, resulting in a 25% increase in its year-to-date net operating cash flow of \$50.9 million compared to \$40.8 million in the first nine months of 2017. The increase in net operating cash flow year-over-year was primarily due to the Company's strong current year operating performance. The key drivers of the Company's operating cash flow and overall liquidity are further discussed in the Company's Liquidity and Capital Resources section of this Item, below.

Overall, the Company is pleased to have delivered another solid quarter. While operating conditions were mixed across all of its regions and foreign exchange headwinds began to escalate, the Company's continued market share gains drove solid volume and net sales growth, exceeding estimated year-over-year growth in the Company's end markets. In addition, the benefit of recent pricing initiatives and the mix of products sold continued to outpace increasing raw material costs and contributed to the Company's significant gross margin improvement compared to the prior year. These increases to the Company's operating performance coupled with a continued discipline in managing SG&A drove a 12% increase in adjusted EBITDA and, coupled with a lower effective tax rate, resulted in a 21% increase in non-GAAP earnings per diluted share compared to the third quarter of 2017. These increases were achieved despite a 6% negative impact from foreign exchange on earnings compared to the prior year period.

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Looking forward to the fourth quarter of 2018, the Company expects to receive approval from both regulatory authorities and close the Combination in December 2018 or January 2019. As previously disclosed, the Combination is expected to approximately double the Company's annual sales and adjusted EBITDA, not including estimated synergies which are expected to meet or exceed \$45 million once fully achieved by the third year after close. Depending upon the exact timing of the Combination's close, the Company may realize a portion of Houghton's net sales and adjusted EBITDA in 2018.

For Quaker's current business, the Company expects some potential headwinds in the fourth quarter of 2018, such as a strong U.S. dollar and higher raw material costs. However, the Company also expects continued market share gains to help offset some of these sales headwinds and additional price increases to keep its gross margins in the low to mid 36% range. In addition, the Company expects to continue its year-over-year non-GAAP earnings per diluted share and adjusted EBITDA growth in the fourth quarter of 2018. Overall, the Company remains confident in its future given its modestly growing global end markets, continued market share gains and U.S. Tax Reform and expects 2018 to be another good year for the current Quaker business, and looks forward to the combined new company post-closing of the Combination.

Liquidity and Capital Resources

At September 30, 2018, Quaker had cash, cash equivalents and restricted cash of \$120.4 million, including \$20.6 million of restricted cash. Total cash, cash equivalents and restricted cash was \$111.1 million at December 31, 2017, which included \$21.2 million of restricted cash. The inclusion of restricted cash in total cash on the Company's Condensed Consolidated Statements of Cash Flows is the result of a change in presentation required by the Financial Accounting Standards Board. See Note 3 of Notes to Condensed Consolidated Financial Statements. The approximately \$9.3 million increase was the net result of \$50.9 million of cash provided by operating activities offset by \$8.4 million of cash used in investing activities, \$27.0 million of cash used in financing activities and a \$6.2 million negative impact due to the effect of foreign exchange rate changes on cash.

Net cash provided by operating activities was \$50.9 million in the first nine months of 2018 compared to \$40.8 million in the first nine months of 2017. The \$10.1 million increase in net cash flows provided by operating activities was primarily due to increased cash generation as a result of the Company's strong current year operating performance as well as a \$4.1 million second quarter of 2018 cash dividend received from a captive insurance company in which the Company has an equity interest. The Company's level of cash invested in working capital was slightly higher in the first nine months of 2018 compared to the prior year. The Company's operating cash flows for both the first nine months of 2018 and 2017, were also impacted by the timing and amount of combination-related expenses and associated cash payments, described below. Finally, the nine months ended September 30, 2017 included restructuring payments made as part of the Company's global restructuring program initiated in the fourth quarter of 2015 and completed during the first half of 2017, described below.

Net cash used in investing activities decreased from \$13.3 million in the first nine months of 2017 to \$8.4 million in the first nine months of 2018, primarily due to lower payments for acquisitions in the current year. During the first nine months of 2017, the Company had cash outflows of \$5.4 million for the acquisition of assets associated with a business that markets, sells and manufactures certain metalworking fluids, whereas during the first nine months of 2018, the Company paid \$0.5 million for certain formulations and product technology in the mining industry. In accordance with the terms of that acquisition agreement, an additional \$0.5 million of the purchase price is expected to be paid within the next 12 months. In addition, the Company had higher cash proceeds from dispositions of assets during the first nine months of 2018 as compared to the first nine months of 2017, primarily as a result of \$0.6 million of cash proceeds received during the second quarter of 2018 related to the sale of a held-for-sale asset. These lower investing cash flows were partially offset by slightly higher additions to property, plant and equipment during the first nine months of 2018 as compared to the first nine months of 2017, primarily due to higher expenditures for several small projects, as well as an increase in spending related to a new manufacturing facility in India that is expected to be completed during the first quarter of 2019.

Net cash used in financing activities was \$27.0 million in the first nine months of 2018 compared to cash used in financing activities of \$12.5 million in the first nine months of 2017. The \$14.5 million increase in net cash used in financing activities was primarily due to repayments of long-term debt of \$11.5 million in the first nine months of 2018 compared to proceeds from long-term debt, net of repayments, of \$4.0 million in the first nine months of 2017. In addition, the Company paid cash dividends of \$14.4 million during the first nine months of 2018, a \$0.5 million increase in cash dividends compared to the prior year period. Finally, during the first nine months of 2018, one of the Company's less than 100% owned consolidated affiliates made a distribution to the noncontrolling affiliate shareholder of approximately \$0.8 million. There were no similar distributions during the first nine months of 2017.

The Company's primary credit facility ("the Credit Facility") is a \$300.0 million syndicated multicurrency credit agreement with a group of lenders. The maximum amount available under the Credit Facility can be increased to \$400.0 million at the Company's option if the lenders agree and the Company satisfies certain conditions. Borrowings under the Credit Facility generally bear interest at a base rate or LIBOR rate plus a margin. The Credit Facility has certain financial and other covenants, with the key financial covenant requiring that the Company's consolidated total debt to adjusted EBITDA ratio cannot exceed 3.50 to 1. As of September 30, 2018, and December 31, 2017, the Company's total debt to adjusted EBITDA ratio was below 1.0 to 1, and the Company was also

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in compliance with all of its other covenants. During the third quarter of 2018, the Credit Facility was amended and restated to extend the maturity date to December 15, 2019. As of September 30, 2018 and December 31, 2017, the Company had total credit facility borrowings of \$34.8 million and \$48.5 million, primarily under the Credit Facility. The Company's other debt obligations were primarily industrial development bonds and municipality-related loans as of September 30, 2018 and December 31, 2017, which includes a \$5.0 million industrial development bond that matures in December 2018. The Company expects to repay the amount due for this bond at its maturity with available cash on hand.

Quaker's management approved a global restructuring plan in the fourth quarter of 2015 (the "2015 Program") to reduce its operating costs. The Company completed all of the initiatives under the 2015 Program during the first half of 2017. The Company has not incurred costs in 2018 and does not expect to incur any further restructuring charges under this program. During the nine months ended September 30, 2017, the company incurred \$0.7 million of cash payments utilizing operating cash flows for the settlement of these restructuring liabilities.

On April 4, 2017, Quaker entered into a share purchase agreement with Gulf Houghton Lubricants, Ltd. to purchase the entire issued and outstanding share capital of Houghton. The shares will be bought for aggregate purchase consideration consisting of: (i) \$172.5 million in cash; (ii) a number of shares of common stock, \$1.00 par value per share, of the Company comprising 24.5% of the common stock outstanding upon the closing of the Combination; and (iii) the Company's assumption of Houghton's net indebtedness as of the closing of the Combination, which was approximately \$690 million at signing. See Note 2 to Condensed Consolidated Financial Statements.

In connection with the Combination, the Company secured \$1.15 billion in commitments from Bank of America Merrill Lynch and Deutsche Bank to fund the purchase consideration and provide additional liquidity, and has since replaced these commitments with a syndicated bank agreement ("the New Credit Facility") with a group of lenders for \$1.15 billion. The New Credit Facility is contingent upon and will not be effective until the closing of the Combination. During the third quarter of 2018, the Company extended the bank commitment through December 15, 2018. The New Credit Facility is comprised of a \$400.0 million multicurrency revolver, a \$600.0 million USD term loan and a \$150.0 million EUR equivalent term loan, each with a five-year term from the date the New Credit Facility becomes effective. The maximum amount available under the New Credit Facility can be increased by \$200.0 million at the Company's option if the lenders agree and the Company satisfies certain conditions. Borrowings under the New Credit Facility will bear interest at a base rate or LIBOR rate plus a margin, and the Company currently estimates the annual floating rate cost will be in the 3.50% to 3.75% range based on current market interest rates. The New Credit Facility will be subject to certain financial and other covenants, including covenants that the Company's consolidated net debt to adjusted EBITDA ratio cannot initially exceed 4.25 to 1 and the Company's consolidated adjusted EBITDA to interest expense ratio cannot be less than 3.0 to 1. Both the USD and EUR equivalent term loans will have quarterly principal amortization during their respective five-year terms, with 5% amortization of the principal balance due in years 1 and 2, 7.5% in year 3, and 10% in years 4 and 5, with the remaining principal amounts due at maturity. Until closing, the Company will incur certain interest costs paid to maintain the bank commitment ("ticking fees"), which began to accrue on September 29, 2017. The ticking fees bear an interest rate of 0.30% per annum.

The Company incurred \$14.4 million of total combination-related expenses during the first nine months of 2018, which includes \$2.6 million of ticking fees as well as a \$0.6 million gain on the sale of a held-for-sale asset, described in the Non-GAAP measures section of this Item below. The Company had net cash outflows related to these costs of approximately \$14.7 million during the nine months ended September 30, 2018. Comparatively, during the nine months ended September 30, 2017, combination-related expenses totaled \$23.1 million and cash payments made were \$12.7 million. The Company currently estimates it will incur additional costs and have associated cash outflows of approximately \$25 to \$30 million through closing of the Combination for similar combination-related expenses, including cash payments for bank fees which we expect to capitalize. In addition, post-closing of the combination, the Company expects it will incur additional costs and make associated cash payments to integrate the Company and Houghton and to begin realizing the Combination's total anticipated cost synergies, which we currently estimate to meet or exceed \$45 million. The timing and an accurate range of these additional costs and cash payments post-closing are not estimable at this time. However, based on market precedents, the Company currently projects these costs to approximate one times anticipated synergies, and the Company expects them to be incurred over a three-year period post-close.

The Company received regulatory approval for the Combination from China and Australia in 2017. In addition, at a shareholder meeting held during the third quarter of 2017, the Company's shareholders overwhelmingly approved the issuance of the new shares of the Company's common stock at closing of the Combination. Currently, the closing of the Combination is contingent upon customary closing conditions and the remaining regulatory approvals in the United States and Europe. The Company continues to expect a regulatory remedy will involve divestment of some product lines, which in total are approximately 3% of the combined company's net sales and is consistent with the Company's original projection. The Company has presented a remedy to the European Commission and the United States Federal Trade Commission and expects to receive approval from both regulatory authorities and close the Combination in December 2018 or January 2019. Given these contingencies and the overall timing of the Combination, the Company has not recorded any estimated costs for additional expenses that the Company expects, but had yet to incur as of September 30, 2018, related to the Combination.

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Management's Discussion and Analysis

As of September 30, 2018, the Company's gross liability for uncertain tax positions, including interest and penalties, was approximately \$8.7 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 \$4.9 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, payments of dividends to shareholders, costs related to the Combination, pension plan contributions, capital expenditures, other business opportunities and other potential contingencies, through internally generated funds supplemented with debt or equity as needed.

Non-GAAP Measures

Included in this Form 10-Q filing are two non-GAAP (unaudited) financial measures: 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 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. 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 tables reconcile non-GAAP earnings per diluted share (unaudited) and adjusted EBITDA (unaudited) to their most directly comparable GAAP (unaudited) financial measures:

	Three Months Ended		Nine Months Ended	
	September 30,		September 30,	
	2018	2017	2018	2017
GAAP earnings per diluted share attributable to Quaker Chemical Corporation				
common shareholders	\$ 1.47	\$ 0.83	\$ 3.87	\$ 2.25
Equity income in a captive insurance company per diluted share (a)	(0.03)	(0.03)	(0.08)	(0.11)
Houghton combination-related expenses per diluted share (b)	0.23	0.52	0.89	1.47
Transition Tax adjustments per diluted share (c)	(0.08)	—	(0.17)	—
U.S. pension plan settlement charge per diluted share (d)	—	—	—	0.09
Cost streamlining initiative per diluted share (e)	—	—	—	0.01
Gain on liquidation of an inactive legal entity per diluted share (f)	(0.03)	—	(0.03)	—
Currency conversion impacts of hyper-inflationary economies per diluted share (g)	0.04	0.00	0.06	0.03
Non-GAAP earnings per diluted share (h)	\$ 1.60	\$ 1.32	\$ 4.54	\$ 3.74

	Three Months Ended		Nine Months Ended	
	September 30,		September 30,	
	2018	2017	2018	2017
Net income attributable to Quaker Chemical Corporation	\$ 19,690	\$ 11,142	\$ 51,668	\$ 30,040
Depreciation and amortization	4,883	5,017	14,911	14,954
Interest expense (b)	1,510	793	4,804	2,229
Taxes on income before equity in net income of associated companies (c)	4,330	3,140	13,554	14,229
Equity income in a captive insurance company (a)	(440)	(400)	(1,083)	(1,427)
Houghton combination-related expenses (b)	2,904	9,675	11,794	23,088
U.S. pension plan settlement charge (d)	—	—	—	1,860
Cost streamlining initiative (e)	—	—	—	286
Gain on liquidation of an inactive legal entity (f)	(446)	—	(446)	—
Currency conversion impacts of hyper-inflationary economies (g)	520	35	764	375
Adjusted EBITDA	\$ 32,951	\$ 29,402	\$ 95,966	\$ 85,634
Adjusted EBITDA margin (%) (i)	14.8%	13.8%	14.6%	14.1%

Quaker Chemical Corporation
Management's Discussion and Analysis

- (a) Equity income in a captive insurance company represents the after-tax income attributable to the Company's interest in Primex, Ltd. ("Primex"), a captive insurance company. The Company holds a 33% investment in and has significant influence over Primex, and therefore accounts for this interest under the equity method of accounting. The income attributable to Primex is not indicative of the future operating performance of the Company and is not considered core to the Company's operations.
- (b) Houghton combination-related expenses include certain legal, environmental, financial, and other advisory and consultant costs incurred in connection with the strategic evaluation of, diligence on, and execution of the definitive agreement to combine with Houghton, as well as regulatory and shareholder approvals and integration planning associated with the pending Combination. These costs are not indicative of the future operating performance of the Company. Certain of these costs were considered non-deductible for the purpose of determining the Company's effective tax rate and, therefore, the earnings per diluted share amount reflects this impact. Also, included in the caption Houghton combination-related expenses for the nine months ended September 30, 2018 is a \$0.6 million gain on the sale of a held-for-sale asset recorded in Other (expense) income, net, in the Company's Condensed Consolidated Statements of Income. In addition, during the three and nine months ended September 30, 2018, the Company incurred \$0.9 million and \$2.6 million of ticking fees, respectively, to maintain the bank commitment related to the pending Combination. Comparatively, the Company began incurring ticking fees as of September 29, 2017 and recognized a nominal amount during the three and nine months ended September 30, 2017. These interest costs are included in the caption Houghton combination-related expenses in the reconciliation of GAAP earnings per diluted share attributable to Quaker Chemical Corporation common shareholders to Non-GAAP earnings per diluted share above, but are included in the caption Interest expense in the reconciliation of Net income attributable to Quaker Chemical Corporation to Adjusted EBITDA above. See Note 2 of Notes to Condensed Consolidated Financial Statements, which appears in Item 1 of this Report.
- (c) Transition Tax adjustments include certain tax adjustments recorded by the Company as a result of changes to the Company's initial fourth quarter of 2017 estimates associated with U.S. Tax Reform in December 2017. Specifically, the Company has adjusted the initial amount estimated for the one-time charge on the gross deemed repatriation Transition Tax on previously untaxed accumulated and current earnings and profits of certain of the Company's foreign subsidiaries. In addition, the Company has adjusted its initial estimate of the impact from certain internal revenue code changes associated with the deductibility of certain executive compensation. These adjustments were based on guidance issued during 2018 by the Internal Revenue Service, the U.S. Treasury and various state taxing authorities and were the result of specific one-time events that are not indicative of future operating performance of the Company. Transition Tax adjustments are included within Taxes on income before equity in net income of associated companies in the reconciliation of Net income attributable to Quaker Chemical Corporation to Adjusted EBITDA. See Note 10 of Notes to Condensed Consolidated Financial Statements, which appears in Item 1 of this Report.
- (d) U.S. pension plan settlement charge represents the expense recorded for the settlement of one of the Company's U.S. pension plans vested terminated participants. This settlement charge represents the immediate recognition into expense of a portion of the unrecognized loss within accumulated other comprehensive loss ("AOCI") on the balance sheet in proportion to the share of the projected benefit obligation that was settled by these payments. This charge was the result of a specific one-time event and is not indicative of the future operating performance of the Company. See Note 8 of Notes to Condensed Consolidated Financial Statements, which appears in Item 1 of this Report.
- (e) Cost streamlining initiative represents expenses associated with certain actions taken to reorganize the Company's corporate staff. Overall, these costs are non-core and are indirect operating expenses that are not attributable to the product sales of any respective reportable operating segment, and, therefore, are not indicative of the future operating performance of the Company.
- (f) Gain on liquidation of an inactive legal entity represents the decrease in historical cumulative currency translation adjustments associated with an inactive legal entity which was closed during the third quarter of 2018. These cumulative currency translation adjustments were the result of remeasuring the legal entity's monetary assets and liabilities to the applicable published exchange rates and were a component of accumulated other comprehensive income (loss), which was included in total shareholder's equity on the Company's Condensed Consolidated Balance Sheets. As required under U.S. GAAP, when a legal entity is liquidated, any amount attributable to that legal entity and accumulated in the currency translation adjustment component of equity is required to be removed from equity and reported as part of the gain or loss on liquidation of the legal entity during the period which the liquidation occurs. This recognized gain is not indicative of the future operating performance of the Company.
- (g) Currency conversion impacts of hyper-inflationary economies represents the foreign currency remeasurement impacts associated with the Company's Venezuelan and Argentina affiliates whose local economies are designated as hyper-inflationary under U.S. GAAP. An entity which operates within an economy deemed to be hyper-inflationary under U.S. GAAP is required to remeasure its monetary assets and liabilities to the applicable published exchange rates and record the associated gains or losses resulting from the remeasurement directly to the Condensed Consolidated Statements of Income. Venezuela's economy has been considered hyper-inflationary under U.S. GAAP since 2010 while Argentina's economy has been considered hyper-inflationary beginning July 1, 2018. The charges incurred related to the immediate recognition of foreign currency remeasurement in the Condensed Consolidated Statements of Income associated with these entities are not indicative of the future operating performance of the Company.

Quaker Chemical Corporation
Management's Discussion and Analysis

- (h) Within the Company's calculation of Non-GAAP earnings per diluted share above, each reconciling item includes the impact of any current and deferred income tax expense (benefit) as applicable. The income tax expense (benefit) related to these items was determined utilizing the applicable rates in the taxing jurisdictions in which these adjustments occurred.
- (i) The Company calculates Adjusted EBITDA margin as the percentage of Adjusted EBITDA to consolidated net sales.

Operations

Consolidated Operations Review – Comparison of the Third Quarter of 2018 with the Third Quarter of 2017

Net sales grew \$9.1 million or 4% in the third quarter of 2018, increasing to \$222.0 million compared to \$212.9 million in the third quarter of 2017. The Company's third quarter of 2018 net sales benefited from quarter-over-quarter increases in volume of 4% as well as selling price and product mix of 3%, partially offset by the negative impact from foreign currency translation of approximately 3% or \$5.2 million.

Costs of goods sold ("COGS") in the third quarter of 2018 of \$140.9 million increased 2% from \$138.1 million in the third quarter of 2017. The increase in COGS was primarily due to the increase in product volumes, noted above, partially offset by changes in product mix and the positive impact of foreign currency translation.

Gross profit in the third quarter of 2018 increased \$6.3 million or 8% from the third quarter of 2017. The increase in gross profit was primarily due to the increase in net sales and product volumes, noted above, as well as a higher gross margin of 36.5% in the third quarter of 2018 compared to 35.1% in the third quarter of 2017. The increase in the Company's gross margin quarter-over-quarter was primarily driven by pricing initiatives and the mix of certain products sold which more than offset raw material cost increases.

SG&A in the third quarter of 2018 increased \$2.2 million compared to the third quarter of 2017 driven by the impact of higher labor-related costs primarily from annual merit increases as well as the amount and timing of incentive based compensation accruals related to the Company's strong current year operating performance, partially offset by the positive impact of foreign currency translation.

During the third quarter of 2018, the Company incurred \$2.9 million of legal, financial, and other advisory and consultant expenses for integration planning and regulatory approvals related to the pending combination with Houghton. Comparatively, the Company incurred \$9.7 million of combination-related expenses during the third quarter of 2017 related to similar costs to the current quarter. See the Non-GAAP Measures section of this Item, above.

Operating income in the third quarter of 2018 was \$24.9 million compared to \$14.0 million in the third quarter of 2017. The increase in operating income was due to strong net sales and gross profit increases as well as lower Houghton combination-related expenses, noted above, partially offset by an increase in SG&A not related to the pending Houghton combination.

The Company had other expense, net, of \$0.5 million in the third quarter of 2018 compared to other income, net, of \$0.2 million in the third quarter of 2017. The increase in other expense, net, was primarily the result of foreign currency transaction losses in the current quarter as compared to foreign currency transaction gains in the third quarter of 2017. In addition to recurring foreign currency transaction activity, the current quarter's other expense, net, also includes a foreign currency transaction loss of approximately \$0.5 million related to hyper-inflationary accounting for the Company's Argentina subsidiary effective July 1, 2018 and a foreign currency transaction gain of approximately \$0.4 million related to the liquidation of an inactive legal entity, both of which are described in the Non-GAAP measures section of this Item, above.

Interest expense increased \$0.7 million in the third quarter of 2018 compared to the third quarter of 2017, primarily due to higher current quarter costs incurred to maintain the bank commitment for the pending Houghton Combination, described in the Non-GAAP measures section of this Item, above. Interest income decreased by \$0.2 million in the third quarter of 2018 compared to the third quarter of 2017 primarily due to changes in the level of the Company's invested cash in certain regions with higher returns.

The Company's effective tax rates for the third quarters of 2018 and 2017 were 18.5% and 22.1%, respectively. Both the Company's third quarters of 2018 and 2017 effective tax rates include the impact of Houghton combination-related expenses, noted above, certain of which were considered non-deductible for the purpose of determining the Company's effective tax rate. In addition, the Company's third quarter of 2018 effective tax rate includes a \$1.1 million Transition Tax adjustment, described in the Non-GAAP measures section of this Item, above. Excluding the current quarter Transition Tax adjustment and the impact of combination-related expenses in each quarter, the Company estimates that its third quarters of 2018 and 2017 effective tax rates would have been approximately 22% and 25%, respectively. This decrease quarter-over-quarter was primarily due to a lower U.S. statutory tax rate of 21% in the current quarter compared to 35% in the prior year period. 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, the unpredictability of the timing and amount of certain incentives in various tax jurisdictions, the treatment of certain acquisition-related costs and the timing and amount of certain share-based compensation-related tax benefits, among other factors.

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Management's Discussion and Analysis

Equity in net income of associated companies ("equity income") increased \$0.1 million in the third quarter of 2018 compared to the third quarter of 2017 which included higher earnings from the Company's interest in a captive insurance company in the current quarter. See the Non-GAAP Measures section of this Item, above.

Net income attributable to noncontrolling interest decreased \$0.5 million in the third quarter of 2018 compared to the third quarter of 2017, primarily due to the Company's purchase of the remaining interest in its India joint venture in December 2017.

Foreign exchange negatively impacted the Company's third quarter of 2018 earnings by approximately 6% or \$0.09 per diluted share, including both the negative impact from foreign currency translation and foreign currency transactions quarter-over-quarter, noted above.

Consolidated Operations Review – Comparison of the First Nine Months of 2018 with the First Nine Months of 2017

Net sales grew \$47.0 million or 8% in the first nine months of 2018, increasing to \$656.0 million compared to \$609.0 million in the first nine months of 2017. The Company's first nine months of 2018 net sales benefited from increases in volume of 3%, selling price and product mix of 3%, as well as a positive impact from foreign currency translation of 2% or \$10.2 million.

COGS in the first nine months of 2018 of \$418.6 million increased 7% from \$391.5 million in the first nine months of 2017. The increase in COGS was primarily due to the increase in product volumes, noted above, and the negative impact of foreign currency translation.

Gross profit for the first nine months of 2018 increased \$20.0 million or 9% from the first nine months of 2017, primarily driven by the increase in net sales and product volumes, noted above, as well as a higher gross margin of 36.2% in the first nine months of 2018 compared to 35.7% in the prior year period. The increase in the Company's current year gross margin was primarily driven by pricing initiatives and the mix of certain products sold which more than offset raw material cost increases.

SG&A for the first nine months of 2018 increased \$8.6 million compared to the first nine months of 2017 primarily due to similar factors noted in the quarter-over-quarter discussion, above, including higher labor-related costs and a negative impact from foreign currency translation. These increases in SG&A year-over-year were partially offset by a first quarter of 2017 cost streamlining initiative described in the Non-GAAP measures section of this Item, above.

During the first nine months of 2018, the Company incurred \$12.4 million of legal, financial, and other advisory and consultant expenses for integration planning and regulatory approvals related to the pending combination with Houghton. Comparatively, the Company incurred \$23.1 million of combination-related expenses during the first nine months of 2017 related to similar costs to the current year as well as due diligence-related costs. See the Non-GAAP Measures section of this Item, above.

Operating income in the first nine months of 2018 was \$67.7 million compared to \$45.7 million in the first nine months of 2017. The increase in operating income was due to strong net sales and gross profit increases as well as lower Houghton combination-related expenses, noted above, partially offset by an increase in SG&A not related to the Houghton combination.

The Company had other expense, net, of \$0.6 million in the first nine months of 2018 compared to \$1.4 million in the first nine months of 2017. The decrease in other expense, net, was primarily due to the \$1.9 million prior year settlement charge in one of the Company's U.S. pension plans and a current year gain of \$0.6 million on the sale of a held-for-sale asset, both of which are included in the Non-GAAP measures section of this Item, above. The positive year-over-year impact of these two items was partially offset by foreign currency transaction losses in the current year compared with foreign currency transaction gains in the first nine months of 2017. In addition to recurring foreign currency transaction activity, the first nine months of 2018 other expense, net, also includes a foreign currency transaction loss of approximately \$0.5 million related to the Company's Argentina subsidiary and a foreign currency transaction gain of approximately \$0.4 million related to the liquidation of an inactive legal entity, described in both the quarter-over-quarter discussion as well as the Non-GAAP measures section of this Item, above.

Interest expense increased \$2.6 million during the first nine months of 2018 compared to the first nine months of 2017, primarily due to higher current year costs incurred to maintain the bank commitment for the pending Houghton combination, described in the Non-GAAP measures section of this Item, above. Interest income decreased by \$0.2 million in the first nine months of 2018 compared to the first nine months of 2017 due to the same factors noted in the quarter-over-quarter discussion, above.

The Company's effective tax rates for the first nine months of 2018 and 2017 were 21.2% and 32.5%, respectively. Similar to the quarter-over-quarter discussion, above, the Company's first nine months of 2018 and 2017 effective tax rates include the impact of Houghton combination-related expenses in both periods, certain of which were considered non-deductible for the purpose of determining the Company's effective tax rate, as well as \$2.3 million of current year Transition Tax adjustments, described in the Non-GAAP measures section of this Item, above. Excluding the cumulative current year Transition Tax adjustments and the impact of non-deductible combination-related expenses in each period, the Company estimates that its first nine months of 2018 and 2017 effective tax rates would have been approximately 23% and 27%, respectively. The decrease in the Company's effective tax rate year-over-year was primarily due to a lower U.S. statutory tax rate of 21% in the current year compared to 35% in the prior year.

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Equity income decreased \$0.4 million in the first nine months of 2018 compared to the first nine months of 2017. The decrease was primarily due to lower earnings from the Company's interest in a captive insurance company in the current year, partially offset by higher currency conversion charges in the prior year related to the Company's hyper-inflationary Venezuelan affiliate, both described in the Non-GAAP measures section of this Item, above.

The Company had a \$1.4 million decrease in net income attributable to noncontrolling interest in the first nine months of 2018 compared to the first nine months of 2017, primarily due to the purchase of the remaining interest in its India joint venture in December 2017.

Foreign exchange negatively impacted the Company's first nine months of 2018 earnings by less than 1% or \$0.02 per diluted share, driven by the negative impact from foreign currency transactions year-over-year, noted above, net of a positive impact from foreign currency translation.

Reportable Operating Segments Review - Comparison of the Third Quarter of 2018 with the Third Quarter of 2017

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 46% of the Company's consolidated net sales in the third quarter of 2018. The segment's net sales were \$101.7 million, an increase of \$11.3 million or 12% compared to the third quarter of 2017. The increase in net sales was primarily due to higher volumes of 9% and an increase in selling price and product mix of 4%, partially offset by the negative impact of foreign currency translation of 1%. The foreign exchange impact was primarily due to the weakening of the Mexican peso against the U.S. dollar as this exchange rate averaged 18.95 in the third quarter of 2018 compared to 17.81 in the third quarter of 2017. This segment's operating earnings, excluding indirect expenses, were \$24.6 million, an increase of \$5.7 million or 30% compared to the third quarter of 2017. The increase in operating earnings quarter-over-quarter was the result of higher gross profit on the higher net sales noted above, coupled with an increase in gross margin due to changes in product mix and the impact of pricing initiatives which more than offset raw material cost increases. These increases to the segment's current quarter operating earnings were partially offset by higher SG&A, primarily due to higher labor costs associated with annual merit increases and improved segment performance.

EMEA

EMEA represented approximately 25% of the Company's consolidated net sales in the third quarter of 2018. The segment's net sales were \$55.5 million, a decrease of \$3.3 million or 6% compared to the third quarter of 2017. The decrease in net sales was primarily due to lower volumes of 6% and the negative impact of foreign currency translation of approximately 2% which were partially offset by increases in selling price and product mix of 2%. The segment's volume decrease was primarily due to the timing of customers' order patterns at the end of the third quarter of 2018 and, to a lesser extent, a decrease in volumes associated with a specific piece of business which the Company stopped selling during 2018 primarily due to its limited profitability. The foreign exchange impact was primarily due to the weakening of the euro against the U.S. dollar as this exchange rate averaged 1.16 in the third quarter of 2018 compared to 1.18 in the third quarter of 2017. This segment's operating earnings, excluding indirect expenses, were \$8.6 million, a decrease of \$0.3 million or 3% compared to the third quarter of 2017. The decrease in operating earnings quarter-over-quarter was driven by lower gross profit on the decline in net sales, noted above, partially offset by a higher gross margin in the current quarter due to changes in product mix and the impact of pricing initiatives. EMEA also benefited from slightly lower SG&A in the third quarter of 2018 compared to the prior year quarter, primarily due to the impact of foreign currency translation.

Asia/Pacific

Asia/Pacific represented approximately 25% of the Company's consolidated net sales in the third quarter of 2018. The segment's net sales were \$55.8 million, an increase of \$1.6 million or 3% compared to the third quarter of 2017. The increase in net sales was primarily due to higher volumes of approximately 6%, partially offset by the negative impact of foreign currency translation of 3%. The foreign exchange impact was primarily due to the weakening of the Chinese renminbi and Indian rupee against the U.S. dollar as these exchange rates averaged 6.81 and 70.05 in the third quarter of 2018 compared to 6.67 and 64.30 in the third quarter of 2017, respectively. This segment's operating earnings, excluding indirect expenses, were \$14.8 million, an increase of \$0.8 million or 6% compared to the third quarter of 2017. The increase in operating earnings was primarily driven by higher gross profit on the increased net sales, noted above, on a consistent gross margin in both periods. Asia/Pacific also benefited from slightly lower SG&A in the third quarter of 2018 compared to the prior year quarter, which was primarily due to the impact of foreign currency translation.

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Management's Discussion and Analysis

South America

South America represented approximately 4% of the Company's consolidated net sales in the third quarter of 2018. The segment's net sales were \$9.1 million, a decrease of \$0.4 million or 5% compared to the third quarter of 2017. The decrease in net sales was primarily due to the negative impact of foreign currency translation of 20% which was partially offset by an increase in selling price and product mix of 10% and higher volumes of 5%. The foreign exchange impact was primarily due to the weakening of the Brazilian real against the U.S. dollar as this exchange rate averaged 3.94 in the third quarter of 2018 compared to 3.16 in the third quarter of 2017. This segment's operating earnings, excluding indirect expenses, were \$1.2 million, an increase of \$0.2 million or 26% compared to the third quarter of 2017. The increase in operating earnings was driven by lower SG&A in the third quarter of 2018 compared to the prior year quarter, which was primarily due to the impact of foreign currency translation. The segment's gross profit was relatively consistent in both periods, as the decrease in net sales, noted above, was offset by a higher gross margin in the current quarter due to changes in product mix and the impact of pricing initiatives, which more than offset raw material cost increases.

Reportable Operating Segments Review - Comparison of the First Nine Months of 2018 with the First Nine Months of 2017

North America

North America represented approximately 44% of the Company's consolidated net sales in the first nine months of 2018. The segment's net sales were \$290.9 million, an increase of \$22.8 million or approximately 9% compared to the first nine months of 2017. The increase in net sales was primarily due to higher volumes of 5% and an increase in selling price and product mix of 4%. The impact of foreign currency translation was less than 1%. This reportable segment's operating earnings, excluding indirect expenses, were \$68.2 million, an increase of \$9.0 million or 15% compared to the first nine months of 2017. The increase during the first nine months of 2018 was mainly driven by higher gross profit on the increased net sales, noted above, coupled with a higher gross margin in the current year compared to the first nine months of 2017, primarily driven by pricing initiatives and the mix of certain products sold which more than offset raw material cost increases. Partially offsetting the increase in gross profit was higher SG&A in the first nine months of 2018 compared to the prior year, which was primarily due to higher labor costs associated with annual merit increases and improved segment performance.

EMEA

EMEA represented approximately 27% of the Company's consolidated net sales in the first nine months of 2018. The segment's net sales were \$177.7 million, an increase of \$10.5 million or 6% compared to the first nine months of 2017. The increase in net sales was primarily due to the positive impact of foreign currency translation of 7% and increases in selling price and product mix of 3%, partially offset by lower volumes of 4%. The year-to-date volume comparison was impacted by an atypically high sales pattern in EMEA during the first quarter of 2017 and, also, lower order patterns toward the end of the third quarter of 2018, largely due to timing. The foreign exchange impact was primarily due to a strengthening of the euro against the U.S. dollar as this exchange rate averaged 1.19 in the first nine months of 2018 compared to 1.11 in the first nine months of 2017. This reportable segment's operating earnings, excluding indirect expenses, were \$28.0 million, an increase of \$1.6 million or 6% compared to the first nine months of 2017. The increase during the first nine months of 2018 was the result of higher gross profit on the increased net sales, noted above, coupled with a slightly higher gross margin. Partially offsetting the increase in gross profit was higher SG&A in the first nine months of 2018 compared to the prior year, which was primarily due to the impact of foreign currency translation as well as higher labor costs associated with annual merit increases.

Asia/Pacific

Asia/Pacific represented approximately 25% of the Company's consolidated net sales in the first nine months of 2018. The segment's net sales were \$159.9 million, an increase of \$12.8 million or 9% compared to the first nine months of 2017. The increase in net sales was primarily due to higher volumes of 8% and the positive impact of foreign currency translation of 2% partially offset by decreases in selling price and product mix of 1%. The foreign exchange impact was primarily due to the strengthening of the Chinese renminbi against the U.S. dollar as this exchange rate averaged 6.51 in the first nine months of 2018 compared to 6.80 in the first nine months of 2017. This reportable segment's operating earnings, excluding indirect expenses, were \$41.5 million, an increase of \$5.5 million or 15% compared to the first nine months of 2017. The increase during the first nine months of 2018 was the result of higher gross profit on the increased net sales, noted above, coupled with a slightly higher gross margin. Partially offsetting the increase in gross profit was higher SG&A in the first nine months of 2018 compared to the prior year, which was primarily due to the impact of foreign currency translation as well as higher labor costs associated with annual merit increases and improved segment performance.

Quaker Chemical Corporation
Management's Discussion and Analysis

South America

South America represented approximately 4% of the Company's consolidated net sales in the first nine months of 2018. The segment's net sales were \$27.5 million, an increase of \$0.9 million or approximately 4% compared to the first nine months of 2017. The increase in net sales was primarily due to higher volumes of 10% and an increase in selling price and product mix of 9%, partially offset by the negative impact of foreign currency translation of approximately 15%. The foreign exchange impact was primarily due to the weakening of the Brazilian real and Argentinian peso against the U.S. dollar as these exchange rates averaged 3.57 and 23.79 in the first nine months of 2018 compared to 3.17 and 16.18 in the first nine months of 2017, respectively. This reportable segment's operating earnings, excluding indirect expenses, were \$3.0 million, an increase of \$0.1 million or 5% compared to the first nine months of 2017. The increase during the first nine months of 2018 was the result of the increased net sales, noted above, as well as slightly lower SG&A, partially offset by a lower gross margin on raw material changes and impacts due to foreign currency translation.

Factors That May Affect Our Future Results

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

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

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

Such statements include information relating to current and future business activities, operational matters, capital spending, and financing sources. From time to time, forward-looking statements are also included in Quaker's other 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 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 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, significant changes in applicable tax rates and regulations, future terrorist attacks and other acts of violence. Other factors could also adversely affect us, including factors related to the previously announced pending Houghton combination and the risk that the transaction may not receive regulatory approval or that regulatory approval may include conditions or other terms not acceptable to us. 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.

Quaker Chemical Corporation
Management's Discussion and Analysis

Other factors beyond those discussed in this Report, including those related to the Combination, could also adversely affect us including, but not limited to:

- the risk that a required regulatory approval will not be obtained or is subject to conditions that are not anticipated or acceptable to us;
- the potential that regulatory authorities may require that we make divestitures in connection with the Combination of a greater amount than we anticipated, which would result in a smaller than anticipated combined business;
- the risk that a closing condition to the Combination may not be satisfied in a timely manner;
- risks associated with the financing of the Combination;
- the occurrence of any event, change or other circumstance that could give rise to the termination of the share purchase agreement;
- potential adverse effects on Quaker Chemical's business, properties or operations caused by the implementation of the Combination;
- Quaker Chemical's ability to promptly, efficiently and effectively integrate the operations of Houghton and Quaker Chemical;
- risks related to each company's distraction from ongoing business operations due to the Combination; and,
- the outcome of any legal proceedings that may be instituted against the companies related to the Combination.

Therefore, we caution you not to place undue reliance on our forward-looking statements. For more information regarding these risks and uncertainties as well as certain additional risks that we face, you should refer to the Risk Factors detailed in Item 1A of our Form 10-K for the year ended December 31, 2017, as well as the proxy statement the Company filed on July 31, 2017 and in our quarterly and other reports filed from time to time with the SEC. This discussion is provided as permitted by the Private Securities Litigation Reform Act of 1995.

Item 3. Quantitative and Qualitative Disclosures About Market Risk.

We have evaluated the information required under this Item that was disclosed in Part II, Item 7A, of our Annual Report on Form 10-K for the year ended December 31, 2017, and we believe there has been no material change to that information.

Item 4. Controls and Procedures.

Evaluation 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.

Changes in internal control 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 quarter ended September 30, 2018 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 quarter ended September 30, 2018.

PART II.
OTHER INFORMATION

Items 1A, 3, 4 and 5 of Part II are inapplicable and have been omitted.

Item 1. Legal Proceedings.

Incorporated by reference is the information in Note 18 of the Notes to the Condensed Consolidated Financial Statements in Part I, Item 1, of this Report.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds.

The following table sets forth information concerning shares of the Company's common stock acquired by the Company during the period covered by this report:

Period	(a) Total Number of Shares Purchased (1)	(b) Average Price Paid Per Share	(c) Total Number of Shares Purchased as part of Publicly Announced Plans or Programs	(d) Approximate Dollar Value of Shares that May Yet be Purchased Under the Plans or Programs (2)
July 1 - July 31	—	\$ —	—	\$ 86,865,026
August 1 - August 31	—	\$ —	—	\$ 86,865,026
September 1 - September 30	—	\$ —	—	\$ 86,865,026
Total	<u>—</u>	<u>\$ —</u>	<u>—</u>	<u>\$ 86,865,026</u>

- (1) There were no Quaker shares acquired by or on behalf of the company during the quarter ended September 30, 2018.
- (2) On May 6, 2015, the Board of Directors of the Company 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, which replaced the Company's other share repurchase plans then in effect, has no expiration date. There were no shares acquired by the Company pursuant to the 2015 Share Repurchase Program during the quarter ended September 30, 2018.

Item 6. Exhibits.

(a) Exhibits

- 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 Chief Executive Officer of the Company Pursuant to 18 U.S. C. Section 1350](#)
- 32.2 – [Certification of Chief Financial Officer of the Company 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

Pursuant to the requirements 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)

Date: November 1, 2018

/s/ Mary Dean Hall
**Mary Dean Hall, Vice President, Chief Financial Officer and
Treasurer (officer duly authorized on behalf of, and principal
financial officer of, the Registrant)**

**CERTIFICATION OF CHIEF EXECUTIVE OFFICER OF THE COMPANY PURSUANT TO RULE 13a-14(a) OF THE SECURITIES EXCHANGE
ACT OF 1934**

I, Michael F. Barry, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Quaker Chemical Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: November 1, 2018

/s/ Michael F. Barry
Michael F. Barry
Chief Executive Officer

**CERTIFICATION OF CHIEF FINANCIAL OFFICER OF THE COMPANY PURSUANT TO RULE 13a-14(a) OF THE SECURITIES EXCHANGE
ACT OF 1934**

I, Mary Dean Hall, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Quaker Chemical Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: November 1, 2018

/s/ Mary Dean Hall
Mary Dean Hall
Chief Financial Officer

CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350

The undersigned hereby certifies that the Form 10-Q Quarterly Report of Quaker Chemical Corporation (the "Company") for the quarterly period ended September 30, 2018 filed with the Securities and Exchange Commission (the "Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and that the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: November 1, 2018

/s/ Michael F. Barry

Michael F. Barry
Chief Executive Officer of Quaker Chemical Corporation

CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350

The undersigned hereby certifies that the Form 10-Q Quarterly Report of Quaker Chemical Corporation (the "Company") for the quarterly period ended September 30, 2018 filed with the Securities and Exchange Commission (the "Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and that the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: November 1, 2018

/s/ Mary Dean Hall

Mary Dean Hall
Chief Financial Officer of Quaker Chemical Corporation
