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, 2021

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.)**
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.

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, $1 par value	KWR	New York Stock Exchange

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, every Interactive Data File required to be submitted 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 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 ☒	Accelerated filer ☐
Non-accelerated filer ☐	Smaller reporting company ☐
Emerging growth 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 October 31, 2021	**17,894,480**

QUAKER CHEMICAL CORPORATION AND CONSOLIDATED SUBSIDIARIES

PART I
FINANCIAL INFORMATION

Item 1. Financial Statements (Unaudited).

Quaker Chemical Corporation

Condensed Consolidated Statements of Operations
(Dollars in thousands, except per share data)

	Unaudited			
	Three Months Ended September 30,		Nine Months Ended September 30,	
	2021	2020	2021	2020
Net sales	$ 449,072	$ 367,224	$ 1,314,117	$ 1,031,825
Cost of goods sold (excluding amortization expense - See Note 14)	303,941	227,032	858,341	660,396
Gross profit	145,131	140,192	455,776	371,429
Selling, general and administrative expenses	104,215	97,037	317,204	282,405
Indefinite-lived intangible asset impairment	—	—	—	38,000
Restructuring and related charges	(880)	1,383	593	3,585
Combination, integration and other acquisition-related expenses	5,786	6,913	18,259	22,786
Operating income	36,010	34,859	119,720	24,653
Other income (expense), net	647	(239)	19,344	(22,407)
Interest expense, net	(5,637)	(6,837)	(16,725)	(22,109)
Income (loss) before taxes and equity in net income of associated companies	31,020	27,783	122,339	(19,863)
Taxes on income (loss) before equity in net income of associated companies	795	2,245	26,702	(7,603)
Income (loss) before equity in net income of associated companies	30,225	25,538	95,637	(12,260)
Equity in net income of associated companies	848	1,804	7,668	3,536
Net income (loss)	31,073	27,342	103,305	(8,724)
Less: Net income attributable to noncontrolling interest	15	38	62	88
Net income (loss) attributable to Quaker Chemical Corporation	$ 31,058	$ 27,304	$ 103,243	$ (8,812)
Per share data:				
Net income (loss) attributable to Quaker Chemical Corporation common shareholders – basic	$ 1.74	$ 1.53	$ 5.78	$ (0.50)
Net income (loss) attributable to Quaker Chemical Corporation common shareholders – diluted	$ 1.73	$ 1.53	$ 5.76	$ (0.50)
Dividends declared	$ 0.415	$ 0.395	$ 1.205	$ 1.165

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

Quaker Chemical Corporation

Condensed Consolidated Statements of Comprehensive Income (Loss)
(Dollars in thousands)

	Unaudited			
	Three Months Ended September 30,		Nine Months Ended September 30,	
	2021	2020	2021	2020
Net income (loss)	$ 31,073	$ 27,342	$ 103,305	$ (8,724)
Other comprehensive (loss) income, net of tax				
Currency translation adjustments	(19,905)	33,618	(29,201)	(10,582)
Defined benefit retirement plans	904	(257)	2,593	16,913
Current period change in fair value of derivatives	436	354	1,450	(3,738)
Unrealized (loss) gain on available-for-sale securities	(215)	556	(2,961)	453
Other comprehensive (loss) income	(18,780)	34,271	(28,119)	3,046
Comprehensive income (loss)	12,293	61,613	75,186	(5,678)
Less: Comprehensive (income) loss attributable to noncontrolling interest	(15)	(56)	(68)	25
Comprehensive income (loss) attributable to Quaker Chemical Corporation	$ 12,278	$ 61,557	$ 75,118	$ (5,653)

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)

	Unaudited September 30, 2021	Unaudited December 31, 2020
ASSETS		
Current assets		
Cash and cash equivalents	$ 141,393	$ 181,833
Accounts receivable, net	433,631	372,974
Inventories		
Raw materials and supplies	121,951	86,148
Work-in-process and finished goods	132,943	101,616
Prepaid expenses and other current assets	63,278	50,156
Total current assets	893,196	792,727
Property, plant and equipment, at cost	423,469	423,253
Less accumulated depreciation	(232,636)	(219,370)
Property, plant and equipment, net	190,833	203,883
Right of use lease assets	34,314	38,507
Goodwill	630,669	631,212
Other intangible assets, net	1,048,688	1,081,358
Investments in associated companies	94,110	95,785
Deferred tax assets	18,409	16,566
Other non-current assets	31,608	31,796
Total assets	$ 2,941,827	$ 2,891,834
LIABILITIES AND EQUITY		
Current liabilities		
Short-term borrowings and current portion of long-term debt	$ 52,611	$ 38,967
Accounts and other payables	219,601	198,872
Accrued compensation	40,655	43,300
Accrued restructuring	4,050	8,248
Other current liabilities	93,042	93,573
Total current liabilities	409,959	382,960
Long-term debt	839,275	849,068
Long-term lease liabilities	24,599	27,070
Deferred tax liabilities	174,405	192,763
Other non-current liabilities	109,893	119,059
Total liabilities	1,558,131	1,570,920
Commitments and contingencies (Note 19)		
Equity		
Common stock $1 par value; authorized 30,000,000 shares; issued and outstanding 2021 –17,888,577 shares; 2020 – 17,850,616 shares	17,889	17,851
Capital in excess of par value	914,277	905,171
Retained earnings	505,635	423,940
Accumulated other comprehensive loss	(54,723)	(26,598)
Total Quaker shareholders' equity	1,383,078	1,320,364
Noncontrolling interest	618	550
Total equity	1,383,696	1,320,914
Total liabilities and equity	$ 2,941,827	$ 2,891,834

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, 2021	2020
Cash flows from operating activities		
Net income (loss)	$ 103,305	$ (8,724)
Adjustments to reconcile net income (loss) to net cash provided by operating activities:		
Amortization of debt issuance costs	3,562	3,562
Depreciation and amortization	65,440	62,818
Equity in undistributed earnings of associated companies, net of dividends	(7,563)	1,415
Acquisition-related fair value adjustments related to inventory	801	229
Deferred compensation, deferred taxes and other, net	(21,865)	(30,657)
Share-based compensation	8,441	17,820
(Gain) loss on disposal of property, plant, equipment and other assets	(4,819)	105
Insurance settlement realized	—	(818)
Indefinite-lived intangible asset impairment	—	38,000
Combination and other acquisition-related expenses, net of payments	(1,705)	2,498
Restructuring and related charges	593	3,585
Pension and other postretirement benefits	(5,638)	16,219
(Decrease) increase in cash from changes in current assets and current liabilities, net of acquisitions:		
Accounts receivable	(68,664)	30,225
Inventories	(72,962)	2,137
Prepaid expenses and other current assets	(24,512)	(113)
Change in restructuring liabilities	(4,557)	(12,772)
Accounts payable and accrued liabilities	32,652	(13,481)
Net cash provided by operating activities	2,509	112,048
Cash flows from investing activities		
Investments in property, plant and equipment	(12,823)	(12,184)
Payments related to acquisitions, net of cash acquired	(31,975)	(3,132)
Proceeds from disposition of assets	14,744	11
Insurance settlement interest earned	—	41
Net cash used in investing activities	(30,054)	(15,264)
Cash flows from financing activities		
Payments of term loan debt	(28,558)	(28,132)
Borrowings (repayments) on revolving credit facilities, net	39,143	(16,485)
Repayments on other debt, net	(585)	(527)
Dividends paid	(21,175)	(20,520)
Stock options exercised, other	704	2,385
Purchase of noncontrolling interest in affiliates	—	(1,047)
Distributions to noncontrolling affiliate shareholders	—	(751)
Net cash used in financing activities	(10,471)	(65,077)
Effect of foreign exchange rate changes on cash	(2,486)	(529)
Net (decrease) increase in cash, cash equivalents and restricted cash	(40,502)	31,178
Cash, cash equivalents and restricted cash at the beginning of the period	181,895	143,555
Cash, cash equivalents and restricted cash at the end of the period	$ 141,393	$ 174,733

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

Note 1 – Basis of Presentation and Description of Business

Basis of Presentation

As used in these Notes to Condensed Consolidated Financial Statements of this Quarterly Report on Form 10-Q for the period ended September 30, 2021 (the "Report"), the terms "Quaker," "Quaker Houghton," the "Company," "we," and "our" refer to Quaker Chemical Corporation (doing business as Quaker Houghton), its subsidiaries, and associated companies, unless the context otherwise requires. As used in these Notes to Condensed Consolidated Financial Statements, the term Legacy Quaker refers to the Company prior to the closing of its combination with Houghton International, Inc. ("Houghton") (herein referred to as the "Combination"). 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 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 nine months ended September 30, 2021 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, 2020 (the "2020 Form 10-K").

During the three months ended September 30, 2020, the Company identified and corrected certain immaterial adjustments relating to the three months ended March 31, 2020 as well as the three and six months ended June 30, 2020. These adjustments related to the Company's over-recognition of cost of goods sold ("COGS") and corresponding under-recognition of inventory, as well as the associated tax impact of these adjustments, in the Company's previously issued interim financial statements for the three months ended March 31, 2020 and the three and six months ended June 30, 2020. These adjustments impact the Company's Americas reportable segment. The cumulative amount of reduction to COGS recorded in the three and nine months ended September 30, 2020 was approximately $1.7 million, with approximately $0.7 million related to the three months ended March 31, 2020 and approximately $1.0 million related to the three months ended June 30, 2020.

Description of Business

The Company was organized in 1918, incorporated as a Pennsylvania business corporation in 1930, and in August 2019 completed the Combination with Houghton to form Quaker Houghton. Quaker Houghton is the global leader in industrial process fluids. With a presence around the world, including operations in over 25 countries, the Company's customers include thousands of the world's most advanced and specialized steel, aluminum, automotive, aerospace, offshore, can, mining, and metalworking companies. Quaker Houghton develops, produces, and markets a broad range of formulated chemical specialty products and offers chemical management services (which the Company refers to as "Fluidcare") for various heavy industrial and manufacturing applications throughout its four segments: Americas; Europe, Middle East and Africa ("EMEA"); Asia/Pacific; and Global Specialty Businesses.

Hyper-inflationary economies

Based on various indices or index compilations being used to monitor inflation in Argentina as well as economic instability, effective July 1, 2018, Argentina's economy was considered hyper-inflationary under U.S. GAAP. As of, and for the three and nine months ended September 30, 2021, the Company's Argentine subsidiaries represented less than 1% of the Company's consolidated total assets and net sales, respectively. During the three and nine months ended September 30, 2021, the Company recorded less than $0.1 million and $0.3 million, respectively, of remeasurement losses associated with the applicable currency conversions related to Argentina. Comparatively, during the three and nine months ended September 30, 2020, the Company recorded $0.2 million and $0.3 million, respectively, of remeasurement losses associated with the applicable currency conversions related to Argentina. These losses were recorded within foreign exchange losses, net, which is a component of other income (expense), net, in the Company's Condensed Consolidated Statements of Operations.

COVID-19

Management continues to monitor the impact that the COVID-19 pandemic is having on the Company, the overall specialty chemical industry, and the economies and markets in which the Company operates. The full extent of the COVID-19 pandemic related business and travel restrictions and changes to business and consumer behavior intended to reduce its spread are uncertain as of the date of the Report as COVID-19 and the responses of governmental authorities continue to evolve globally.

Further, management continues to evaluate how COVID-19-related circumstances, such as remote work arrangements, affect financial reporting processes, internal control over financial reporting, and disclosure controls and procedures. While the circumstances have presented and are expected to continue to present challenges, at this time, Management does not believe that COVID-19 has had a material impact on financial reporting processes, internal control over financial reporting, and disclosure controls and procedures.

The Company cannot reasonably estimate the magnitude of the effects these conditions will have on the Company's operations in the future as they are subject to significant uncertainties relating to the ultimate geographic spread of the virus, the incidence and severity of the symptoms, the duration or resurgences of the outbreak including the impact of new variants, the global availability, acceptance and efficacy of vaccines, the length of the travel restrictions and business closures imposed by governments of impacted countries, and the economic response by governments of impacted countries, all of which continue to evolve.

To the extent that the Company's customers and suppliers continue to be significantly and adversely impacted by COVID-19, this could reduce the availability, or result in delays, of materials or supplies to or from the Company, which in turn could significantly interrupt the Company's business operations. Such impacts could grow and become more significant to the Company's operations and the Company's liquidity or financial position. Therefore, given the continuously evolving global developments with respect to this pandemic, the Company cannot reasonably estimate the magnitude or the full extent to which COVID-19 may impact the Company's results of operations, liquidity or financial position.

Note 2 – Business Acquisitions

2021 Acquisitions

In September 2021, the Company acquired the remaining interest in Grindaix-GmbH ("Grindaix"), a Germany-based, high-tech provider of coolant control and delivery systems for approximately 2.4 million EUR or approximately $2.9 million for its Global Specialty Businesses reportable segment. Previously, in February 2021, the Company acquired a 38% ownership interest in Grindaix for approximately 1.4 million EUR or approximately $1.7 million. The Company recorded its initial investment as an equity method investment within the Condensed Consolidated Financial Statements and accounted for the purchase of the remaining interest as a step acquisition whereby the Company remeasured the previously held equity method investment to its fair value.

In June 2021, the Company acquired certain assets for its chemical maskants product line in the Global Specialty Businesses reportable segment for 2.3 million EUR or approximately $2.8 million. The Company accounted for the acquisition using the asset acquisition method under ASC 805, *Business Combinations*.

In February 2021, the Company acquired a tin-plating solutions business for the steel end market for approximately $25 million. This acquisition is part of each of the Company's geographic reportable segments. The Company allocated $19.6 million of the purchase price to intangible assets, comprised of $18.3 million of customer relationships, to be amortized over 19 years; $0.9 million of existing product technology to be amortized over 14 years; and $0.4 million of a licensed trademark to be amortized over 3 years. In addition, the Company recorded $5.0 million of goodwill related to expected value not allocated to other acquired assets, all of which is expected to be tax deductible in various jurisdictions in which we operate. As of September 30, 2021, the allocation of the purchase price has not been finalized and the one year measurement period has not ended. Further adjustments may be necessary as a result of the Company's on-going assessment of additional information related to the fair value of assets acquired and liabilities assumed.

The results of operations of the acquired assets and businesses subsequent to the respective acquisition dates are included in the Condensed Consolidated Statements of Operations as of September 30, 2021. Applicable transaction expenses associated with these acquisitions are included in Combination, integration and other acquisition-related expenses in the Company's Condensed Consolidated Statements of Operations. Certain pro forma and other information is not presented, as the operations of the acquired assets and businesses are not considered material to the overall operations of the Company for the periods presented.

In November 2021, the Company closed two additional acquisitions that expand its strategic product offerings and increase the Company's presence in its core metalworking industries. The total initial purchase price for these acquisitions was approximately $ 10 million, subject to post-closing adjustments as well as certain earn-out provisions that could total approximately $4 million. Transaction expenses associated with these acquisitions are included in Combination, integration and other acquisition-related expenses in the Condensed Consolidated Statements of Operations. The results of operations of these two acquisitions are not included in the Consolidated Statements of Operations because the date of closing for each was subsequent to September 30, 2021. Preliminary purchase price allocation of assets acquired and liabilities assumed have not been presented as that information is not available as of the date of these Condensed Consolidated Financial Statements.

(Dollars in thousands, except per share amounts, unless otherwise stated)

Previous Acquisitions

In December 2020, the Company completed its acquisition of Coral Chemical Company ("Coral"), a privately held, U.S.-based provider of metal finishing fluid solutions. The acquisition provides technical expertise and product solutions for pre-treatment, metalworking and wastewater treatment applications to the beverage cans and general industrial end markets. The original purchase price was approximately $54.1 million, subject to routine and customary post-closing adjustments related to working capital and net indebtedness levels. The Company anticipates finalizing its post-closing adjustments for the Coral acquisition during the fourth quarter of 2021.

The following table presents the preliminary estimated fair values of Coral net assets acquired:

	December 22, 2020 (1)	Measurement Period Adjustments	December 22, 2020 (as adjusted)
Cash and cash equivalents	$ 958	$ —	$ 958
Accounts receivable	8,473	—	8,473
Inventories	4,527	—	4,527
Prepaid expenses and other assets	181	—	181
Property, plant and equipment	10,467	652	11,119
Intangible assets	30,300	(500)	29,800
Goodwill	2,814	270	3,084
Total assets purchased	57,720	422	58,142
Long-term debt including current portions and finance leases	183	556	739
Accounts payable, accrued expenses and other accrued liabilities	3,482	—	3,482
Total liabilities assumed	3,665	556	4,221
Total consideration paid for Coral	54,055	(134)	53,921
Less: estimated purchase price settlement	—	(134)	(134)
Less: cash acquired	958	—	958
Net cash paid for Coral	$ 53,097	$ —	$ 53,097

(1) As previously disclosed in the Company's 2020 Form 10-K.

Measurement period adjustments recorded during the first nine months of 2021 include certain adjustments related to refining original estimates for assets and liabilities for certain acquired finance leases, as well the adjustment to reflect the expected settlement of post-closing working capital and net indebtedness true ups to the original purchase price. As of September 30, 2021, the allocation of the purchase price for Coral has not been finalized and the one year measurement period has not ended. Further adjustments may be necessary as a result of the Company's on-going assessment of additional information related to the fair value of assets acquired and liabilities assumed.

In May 2020, the Company acquired Tel Nordic ApS ("TEL"), a company that specializes in lubricants and engineering primarily in high pressure aluminum die casting for its EMEA reportable segment. Consideration paid was in the form of a convertible promissory note in the amount of 20.0 million DKK, or approximately $2.9 million, which was subsequently converted into shares of the Company's common stock. An adjustment to the purchase price of approximately 0.4 million DKK, or less than $0.1 million, was made as a result of finalizing a post-closing settlement in the second quarter of 2020. The Company allocated approximately $2.4 million of the purchase price to intangible assets to be amortized over 17 years. In addition, the Company recorded approximately $0.5 million of goodwill, related to expected value not allocated to other acquired assets, none of which will be tax deductible. As of September 30, 2021, the allocation of the purchase price of TEL was finalized and the one year measurement period ended.

In March 2020, the Company acquired the remaining 49% ownership interest in one of its South African affiliates, Quaker Chemical South Africa Limited ("QSA") for 16.7 million ZAR, or approximately $1.0 million, from its joint venture partner PQ Holdings South Africa. QSA is a part of the Company's EMEA reportable segment. As this acquisition was a change in an existing controlling ownership, the Company recorded $0.7 million of excess purchase price over the carrying value of the noncontrolling interest in Capital in excess of par value.

In October 2019, the Company completed its acquisition of the operating divisions of Norman Hay plc ("Norman Hay"), a private U.K. company that provides specialty chemicals, operating equipment, and services to industrial end markets. The original purchase price was 80.0 million GBP, on a cash-free and debt-free basis, subject to routine and customary post-closing adjustments related to working capital and net indebtedness levels. The Company finalized its post-closing adjustments for the Norman Hay acquisition and paid approximately 2.5 million GBP during the first quarter of 2020 to settle such adjustments.

Note 3 – Recently Issued Accounting Standards

Recently Issued Accounting Standards Adopted

The Financial Accounting Standards Board ("FASB") issued Account Standards Update ("ASU") ASU 2019-12, *Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes* in December 2019 to simplify the accounting for income taxes. The guidance within this accounting standard update removes certain exceptions, including the exception to the incremental approach for certain intra-period tax allocations, to the requirement to recognize or not recognize certain deferred tax liabilities for equity method investments and foreign subsidiaries, and to the general methodology for calculating income taxes in an interim period when a year-to-date loss exceeds the anticipated loss for the year. Further, the guidance simplifies the accounting related to franchise taxes, the step up in tax basis for goodwill, current and deferred tax expense, and codification improvements for income taxes related to employee stock ownership plans. The guidance is effective for annual and interim periods beginning after December 15, 2020. The Company adopted this standard on a prospective basis, effective January 1, 2021. There was no cumulative effect of adoption recorded within retained earnings on January 1, 2021.

The FASB issued ASU 2020-04, *Reference Rate Reform (Topic 848): Facilitation of the Effects of Reference Rate Reform on Financial Reporting* in March 2020. The FASB subsequently issued ASU 2021-01, *Reference Rate Reform (Topic 848): Scope* in January 2021 which clarified the guidance but did not materially change the guidance or its applicability to the Company. The amendments provide temporary optional expedients and exceptions for applying U.S. GAAP to contract modifications, hedging relationships and other transactions to ease the potential accounting and financial reporting burden associated with transitioning away from reference rates that are expected to be discontinued, including the London Interbank Offered Rate ("LIBOR"). ASU 2020-04 is effective for the Company as of March 12, 2020 and generally can be applied through December 31, 2022. As of September 30, 2021, the expedients provided in ASU 2020-04 do not presently impact the Company; however, the Company will continue to monitor for potential impacts on its consolidated financial statements.

Note 4 – Business Segments

The Company's operating segments, which are consistent with its reportable segments, reflect the structure of the Company's internal organization, the method by which the Company's resources are allocated and the manner by which the chief operating decision maker assesses the Company's performance. The Company has four reportable segments: (i) Americas; (ii) EMEA; (iii) Asia/Pacific; and (iv) Global Specialty Businesses. The three geographic segments are composed of the net sales and operations in each respective region, excluding net sales and operations managed globally by the Global Specialty Businesses segment, which includes the Company's container, metal finishing, mining, offshore, specialty coatings, specialty grease and Norman Hay businesses.

Segment operating earnings for each of the Company's reportable segments are comprised of the segment's net sales less directly related COGS and selling, general and administrative expenses ("SG&A"). Operating expenses not directly attributable to the net sales of each respective segment, such as certain corporate and administrative costs, Combination, integration and other acquisition-related expenses, and Restructuring and related charges, are not included in segment operating earnings. Other items not specifically identified with the Company's reportable segments include interest expense, net and other income (expense), net.

(Dollars in thousands, except per share amounts, unless otherwise stated)

The following table presents information about the performance of the Company's reportable segments for the three and nine months ended September 30, 2021 and 2020.

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2021	**2020**	**2021**	**2020**
Net sales				
Americas	$ 150,799	$ 119,540	$ 425,343	$ 330,012
EMEA	122,241	94,005	365,491	276,546
Asia/Pacific	98,659	84,877	286,924	226,850
Global Specialty Businesses	77,373	68,802	236,359	198,417
Total net sales	$ 449,072	$ 367,224	$ 1,314,117	$ 1,031,825
Segment operating earnings				
Americas	$ 31,273	$ 31,099	$ 97,155	$ 70,590
EMEA	20,153	17,439	68,802	46,269
Asia/Pacific	23,285	27,304	73,990	66,106
Global Specialty Businesses	20,663	21,161	69,041	58,114
Total segment operating earnings	95,374	97,003	308,988	241,079
Combination, integration and other acquisition-related expenses	(5,786)	(6,913)	(18,259)	(22,786)
Restructuring and related charges	880	(1,383)	(593)	(3,585)
Fair value step up of acquired inventory sold	—	—	(801)	(226)
Indefinite-lived intangible asset impairment	—	—	—	(38,000)
Non-operating and administrative expenses	(38,691)	(39,786)	(122,760)	(110,282)
Depreciation of corporate assets and amortization	(15,767)	(14,062)	(46,855)	(41,547)
Operating income	36,010	34,859	119,720	24,653
Other income (expense), net	647	(239)	19,344	(22,407)
Interest expense, net	(5,637)	(6,837)	(16,725)	(22,109)
Income (loss) before taxes and equity in net income of associated companies	$ 31,020	$ 27,783	$ 122,339	$ (19,863)

Inter-segment revenues for the three and nine months ended September 30, 2021 were $3.6 million and $9.3 million for Americas, $6.8 million and $21.9 million for EMEA, $0.8 million and $1.3 million for Asia/Pacific, and $1.8 million and $5.9 million for Global Specialty Businesses, respectively. Inter-segment revenues for the three and nine months ended September 30, 2020 were $1.7 million and $7.0 million for Americas, $5.3 million and $16.1 million for EMEA, $0.2 million and $0.5 million for Asia/Pacific, and $1.1 million and $3.4 million for Global Specialty Businesses, respectively. However, all inter-segment transactions have been eliminated from each reportable operating segment's net sales and earnings for all periods presented in the above tables.

Note 5 – 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 ("Fluidcare") for various heavy industrial and manufacturing applications throughout its four segments. A significant portion of the Company's revenues are realized from the sale of process fluids and services made directly to manufacturers through its own employees and its Fluidcare programs, with the balance being handled through distributors and agents.

As part of the Company's Fluidcare business, 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. The Company transferred third-party products under arrangements recognized on a net reporting basis of $18.9 million and $53.4 million for the three and nine months ended September 30, 2021, respectively, and $11.1 million and $29.9 million for the three and nine months ended September 30, 2020, respectively.

(Dollars in thousands, except per share amounts, unless otherwise stated)

As previously disclosed in the Company's 2020 Form 10-K, during 2020, the Company's five largest customers (each composed of multiple subsidiaries or divisions with semiautonomous purchasing authority) accounted for approximately 10% of consolidated net sales, with its largest customer accounting for approximately 3% of consolidated net sales.

Revenue Recognition Model

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. Refer to the Company's 2020 Form 10-K for additional information on the Company's revenue recognition policies, including its practical expedients and accounting policy elections.

Allowance for Doubtful Accounts

As previously disclosed in the Company's 2020 Form 10-K, during 2020, the Company adopted, as required, an accounting standard update related to the accounting and disclosure of credit losses effective January 1, 2020. The Company recognizes an allowance for credit losses, which represents the portion of its trade accounts receivable that the Company does not expect to collect over the contractual life, considering past events and reasonable and supportable forecasts of future economic conditions. The Company's allowance for credit losses on its trade accounts receivables is based on specific collectability facts and circumstances for each outstanding receivable and customer, the aging of outstanding receivables, and the associated collection risk the Company estimates for certain past due aging categories, and also, the general risk to all outstanding accounts receivable based on historical amounts determined to be uncollectible. The Company does not have any off-balance-sheet credit exposure related to its customers.

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 material contract assets recorded on its Condensed Consolidated Balance Sheets as of September 30, 2021 or December 31, 2020.

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 $4.4 million and $4.0 million of deferred revenue as of September 30, 2021 and December 31, 2020, respectively. For the nine months ended September 30, 2021, the Company satisfied all of the associated performance obligations and recognized into revenue the advance payments received and recorded as of December 31, 2020.

Disaggregated Revenue

The following tables disaggregate the Company's net sales by segment, geographic region, customer industry, and timing of revenue recognized for the three and nine months ended September 30, 2021 and 2020.

	Three Months Ended September 30, 2021			
	Americas	**EMEA**	**Asia/Pacific**	**Consolidated Total**
Customer Industries				
Metals	$ 56,954	$ 38,483	$ 53,994	$ 149,431
Metalworking and other	93,845	83,758	44,665	222,268
	150,799	122,241	98,659	371,699
Global Specialty Businesses	46,008	19,253	12,112	77,373
	$ 196,807	$ 141,494	$ 110,771	$ 449,072
Timing of Revenue Recognized				
Product sales at a point in time	$ 188,340	$ 131,982	$ 108,559	$ 428,881
Services transferred over time	8,467	9,512	2,212	20,191
	$ 196,807	$ 141,494	$ 110,771	$ 449,072

(Dollars in thousands, except per share amounts, unless otherwise stated)

	Three Months Ended September 30, 2020			
	Americas	**EMEA**	**Asia/Pacific**	**Consolidated Total**
Customer Industries				
Metals	$ 42,098	$ 25,362	$ 45,001	$ 112,461
Metalworking and other	77,442	68,643	39,876	185,961
	119,540	94,005	84,877	298,422
Global Specialty Businesses	39,197	17,429	12,176	68,802
	$ 158,737	$ 111,434	$ 97,053	$ 367,224
Timing of Revenue Recognized				
Product sales at a point in time	$ 153,820	$ 107,093	$ 94,660	$ 355,573
Services transferred over time	4,917	4,341	2,393	11,651
	$ 158,737	$ 111,434	$ 97,053	$ 367,224

	Nine Months Ended September 30, 2021			
	Americas	**EMEA**	**Asia/Pacific**	**Consolidated Total**
Customer Industries				
Metals	$ 155,546	$ 108,391	$ 151,944	$ 415,881
Metalworking and other	269,797	257,100	134,980	661,877
	425,343	365,491	286,924	1,077,758
Global Specialty Businesses	137,447	61,203	37,709	236,359
	$ 562,790	$ 426,694	$ 324,633	$ 1,314,117
Timing of Revenue Recognized				
Product sales at a point in time	$ 537,161	$ 400,982	$ 316,222	$ 1,254,365
Services transferred over time	25,629	25,712	8,411	59,752
	$ 562,790	$ 426,694	$ 324,633	$ 1,314,117

	Nine Months Ended September 30, 2020			
	Americas	**EMEA**	**Asia/Pacific**	**Consolidated Total**
Customer Industries				
Metals	$ 121,458	$ 80,174	$ 122,006	$ 323,638
Metalworking and other	208,554	196,372	104,844	509,770
	330,012	276,546	226,850	833,408
Global Specialty Businesses	115,722	49,603	33,092	198,417
	$ 445,734	$ 326,149	$ 259,942	$ 1,031,825
Timing of Revenue Recognized				
Product sales at a point in time	$ 431,266	$ 313,511	$ 254,011	$ 998,788
Services transferred over time	14,468	12,638	5,931	33,037
	$ 445,734	$ 326,149	$ 259,942	$ 1,031,825

(Dollars in thousands, except per share amounts, unless otherwise stated)

Note 6 – Leases

The Company determines if an arrangement is a lease at its inception. This determination generally depends on whether the arrangement conveys the right to control the use of an identified fixed asset explicitly or implicitly for a period of time in exchange for consideration. Control of an underlying asset is conveyed if the Company obtains the rights to direct the use of, and obtains substantially all of the economic benefits from the use of, the underlying asset. Lease expense for variable leases and short-term leases is recognized when the obligation is incurred.

The Company has operating leases for certain facilities, vehicles and machinery and equipment with remaining lease terms up to 10 years. In addition, the Company has certain land use leases with remaining lease terms up to 94 years. The lease term for all of the Company's leases includes the non-cancellable period of the lease plus any additional periods covered by an option to extend the lease that the Company is reasonably certain it will exercise. Operating leases are included in right of use lease assets, other current liabilities and long-term lease liabilities on the Condensed Consolidated Balance Sheet. Right of use lease assets and liabilities are recognized at each lease's commencement date based on the present value of its lease payments over its respective lease term. The Company uses the stated borrowing rate for a lease when readily determinable. When a stated borrowing rate is not available in a lease agreement, the Company uses its incremental borrowing rate based on information available at the lease's commencement date to determine the present value of its lease payments. In determining the incremental borrowing rate used to present value each of its leases, the Company considers certain information including fully secured borrowing rates readily available to the Company and its subsidiaries. The Company has immaterial finance leases, which are included in property, plant and equipment, current portion of long-term debt and long-term debt on the Condensed Consolidated Balance Sheet.

Operating lease expense is recognized on a straight-line basis over the lease term. Operating lease expense for the three and nine months ended September 30, 2021 was $3.4 million and $10.6 million, respectively. Comparatively, operating lease expense for the three and nine months ended September 30, 2020 was $3.7 million and $10.6 million, respectively. Short-term lease expense for the three and nine months ended September 30, 2021 was $0.2 million and $0.8 million, respectively. Comparatively, short-term lease expense for the three and nine months ended September 30, 2020 was $0.2 million and $1.1 million, respectively. The Company has no material variable lease costs or sublease income for the three or nine months ended September 30, 2021 and 2020.

Cash paid for operating leases during the nine months ended September 30, 2021 and 2020 was $10.4 million and $10.5 million, respectively. The Company recorded new right of use lease assets and associated lease liabilities of $ 5.6 million during the nine months ended September 30, 2021.

Supplemental balance sheet information related to the Company's leases is as follows:

	September 30, 2021	December 31, 2020
Right of use lease assets	$ 34,314	$ 38,507
Other current liabilities	9,356	10,901
Long-term lease liabilities	24,599	27,070
Total operating lease liabilities	$ 33,955	$ 37,971
Weighted average remaining lease term (years)	5.7	6.0
Weighted average discount rate	4.26%	4.20%

Maturities of operating lease liabilities as of September 30, 2021 were as follows:

	September 30, 2021
For the remainder of 2021	$ 2,978
For the year ended December 31, 2022	9,695
For the year ended December 31, 2023	7,564
For the year ended December 31, 2024	5,623
For the year ended December 31, 2025	4,340
For the year ended December 31, 2026 and beyond	8,104
Total lease payments	38,304
Less: imputed interest	(4,349)
Present value of lease liabilities	$ 33,955

(Dollars in thousands, except per share amounts, unless otherwise stated)

Note 7 – Restructuring and Related Activities

The Company's management approved a global restructuring plan (the "QH Program") as part of its plan to realize certain cost synergies associated with the Combination in the third quarter of 2019. The QH Program includes restructuring and associated severance costs to reduce total headcount by approximately 400 people globally, as well as plans for the closure of certain manufacturing and non-manufacturing facilities. The exact timing and total costs associated with the QH Program will depend on a number of factors and is subject to change; however, the Company currently expects reduction in headcount and site closures to continue to occur throughout 2021 and into 2022 under the QH Program and estimates that anticipated cost synergies realized from the QH Program will approximate one-times the restructuring costs incurred. Employee separation benefits will vary depending on local regulations within certain foreign countries and will include severance and other benefits.

All costs incurred to date relate to severance costs to reduce headcount, including customary and routine adjustments to initial estimates for employee separation costs, as well as costs to close certain facilities and are recorded in Restructuring and related charges in the Company's Condensed Statements of Operations. As described in Note 4 of Notes to Condensed Consolidated Financial Statements, restructuring and related charges are not included in the Company's calculation of reportable segments' measure of operating earnings and therefore these costs are not reviewed by or recorded to reportable segments.

Activity in the Company's accrual for restructuring under the QH Program for the nine months ended September 30, 2021 is as follows:

	QH Program
Accrued restructuring as of December 31, 2020	$ 8,248
Restructuring and related charges	593
Cash payments	(4,557)
Currency translation adjustments	(234)
Accrued restructuring as of September 30, 2021	$ 4,050

Note 8 – Share-Based Compensation

The Company recognized the following share-based compensation expense in its Condensed Consolidated Statements of Operations for the three and nine months ended September 30, 2021 and 2020:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2021	2020	2021	2020
Stock options	$ 298	$ 353	$ 938	$ 1,138
Non-vested stock awards and restricted stock units	1,277	1,259	3,963	3,782
Non-elective and elective 401(k) matching contribution in stock	—	910	1,553	2,072
Director stock ownership plan	241	243	660	337
Performance stock units	491	280	1,327	560
Annual incentive plan	—	7,102	—	9,931
Total share-based compensation expense	$ 2,307	$ 10,147	$ 8,441	$ 17,820

Share-based compensation expense is recorded in SG&A, except for $ 0.2 million and $0.7 million for the three and nine months ended September 30, 2021, respectively, and $0.4 million and $1.2 million for the three and nine months ended September 30, 2020, respectively, recorded within Combination, integration and other acquisition-related expenses.

Stock Options

During the first nine months of 2021, the Company granted stock options under its long-term incentive plan ("LTIP") that are subject only to time-based vesting over a three year period. For the purposes of determining the fair value of stock option awards, the Company used a Black-Scholes option pricing model and which primarily used the assumptions set forth in the table below:

Number of options granted	25,250
Dividend yield	0.85 %
Expected volatility	37.33 %
Risk-free interest rate	0.60 %
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, 2021, unrecognized compensation expense related to all stock options granted was $2.1 million, to be recognized over a weighted average remaining period of 2.1 years.

Restricted Stock Awards and Restricted Stock Units

During the nine months ended September 30, 2021, the Company granted 17,692 non-vested restricted shares and 2,791 non-vested restricted stock units under its LTIP, which are subject to time-based vesting, generally over a three year period. The fair value of these grants 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, 2021, unrecognized compensation expense related to the non-vested restricted shares was $5.1 million, to be recognized over a weighted average remaining period of 1.7 years, and unrecognized compensation expense related to non-vested restricted stock units was $0.9 million, to be recognized over a weighted average remaining period of 2.0 years.

Performance Stock Units

During the first nine months of 2021, the Company granted performance-dependent stock awards ("PSUs") as a component of its LTIP, which will be settled in a certain number of shares subject to market-based and time-based vesting conditions. The number of fully vested shares that may ultimately be issued as settlement for each award may range from 0% up to 200% of the target award, subject to the achievement of the Company's total shareholder return ("TSR") relative to the performance of the Company's peer group, the S&P Midcap 400 Materials group. The service period required for the PSUs is three years and the TSR measurement period for the PSUs is from January 1 of the year of grant through December 31 of the year prior to issuance of the shares upon settlement.

Compensation expense for PSUs is measured based on their grant date fair value and is recognized on a straight-line basis over the three year vesting period. The grant-date fair value of the PSUs granted during the first nine months of 2021 was estimated using a Monte Carlo simulation on the grant date and using the following assumptions: (i) a risk-free rate of 0.29%; (ii) an expected term of 3.0 years; and (iii) a three year daily historical volatility for each of the companies in the peer group, including Quaker Houghton.

As of September 30, 2021, the Company estimates that it will issue approximately 23,756 fully vested shares as of the applicable settlement date of all outstanding PSUs awards based on the conditions of the PSUs and performance to date for each award. As of September 30, 2021, there was approximately $3.7 million of total unrecognized compensation cost related to PSUs, which the Company expects to recognize over a weighted-average period of 2.1 years.

Annual Incentive Plan

The Company maintains an Annual Incentive Plan ("AIP"), which may be settled in cash or a certain number of shares subject to performance-based and time-based vesting conditions. As of September 30, 2020, it had been the Company's intention to settle the 2020 AIP in shares, and therefore, expense associated with the AIP in 2020 was recorded as a component of share-based compensation expense. In the fourth quarter of 2020, the Company determined that it would settle the 2020 AIP in cash. Therefore, the share-based compensation associated with the AIP during the year ended December 31, 2020 was reclassified from a component of share-based compensation expense to incentive compensation. This determination and conclusion had no impact on the classification of AIP expense within the Company's Condensed Consolidated Statement of Operations for the periods as both are a component of SG&A. As of September 30, 2021, it is the Company's intention to settle the 2021 AIP in cash.

Defined Contribution Plan

The Company has a 401(k) plan with an employer match covering a majority of its U.S. employees. The Company matches 50% of the first 6% of compensation that is contributed to the plan, with a maximum matching contribution of 3% of compensation. Additionally, the plan provides for non-elective nondiscretionary contributions on behalf of participants who have completed one year of service equal to 3% of the eligible participants' compensation. Beginning in April 2020 and continuing through March 2021, the Company matched both non-elective and elective 401(k) contributions in fully vested shares of the Company's common stock rather than cash. For the three months ended September 30, 2021, there were no matching contributions in stock. For the nine months ended September 30, 2021, total contributions were $1.5 million. Comparatively, total contributions for the three and nine months ended September 30, 2020 were $0.9 million and $2.1 million, respectively.

(Dollars in thousands, except per share amounts, unless otherwise stated)

Note 9 – Pension and Other Postretirement Benefits

The components of net periodic benefit cost for the three and nine months ended September 30, 2021 and 2020 are as follows:

	Three Months Ended September 30,				Nine Months Ended September 30,			
	Pension Benefits		Other Postretirement Benefits		Pension Benefits		Other Postretirement Benefits	
	2021	2020	2021	2020	2021	2020	2021	2020
Service cost	$ 289	$ 1,227	$ (2)	$ 2	$ 921	$ 3,565	$ 1	$ 5
Interest cost	1,078	1,527	(1)	25	3,262	4,782	20	77
Expected return on plan assets	(2,075)	(3,526)	—	—	(6,250)	(7,246)	—	—
Settlement charge	—	—	—	—	—	22,667	—	—
Actuarial loss amortization	737	626	(85)	15	2,449	2,288	(85)	46
Prior service cost amortization	3	(42)	—	—	8	(123)	—	—
Net periodic benefit cost	$ 32	$ (188)	$ (88)	$ 42	$ 390	$ 25,933	$ (64)	$ 128

As disclosed in the Company's 2020 Form 10-K, in the fourth quarter of 2018, the Company began the process of terminating its legacy Quaker non-contributory U.S. pension plan ("Legacy Quaker U.S. Pension Plan"). During the third quarter of 2019, the Company received a favorable termination determination letter from the Internal Revenue Service ("I.R.S.") and completed the Legacy Quaker U.S. Pension Plan termination during the first quarter of 2020. In order to terminate the Legacy Quaker U.S. Pension Plan in accordance with I.R.S. and Pension Benefit Guaranty Corporation requirements, the Company was required to fully fund the Legacy Quaker U.S. Pension Plan on a termination basis and the amount necessary to do so was approximately $1.8 million, subject to final true up adjustments, which were completed in the third quarter of 2020 resulting in a refund in premium received in the third quarter of 2020 of approximately $1.6 million. In addition, the Company recorded a non-cash pension settlement charge at plan termination of approximately $22.7 million. This settlement charge included the immediate recognition into expense of the related unrecognized losses within accumulated other comprehensive (loss) income ("AOCI") on the balance sheet as of the plan termination date.

Employer Contributions

As of September 30, 2021, $5.7 million and $0.2 million of contributions have been made to the Company's U.S. and foreign pension plans and its other postretirement benefit plans, respectively. Taking into consideration current minimum cash contribution requirements, the Company expects to make full year cash contributions of approximately $6 million to its U.S. and foreign pension plans and less than $1 million to its other postretirement benefit plans in 2021 .

Note 10 – Other Income (Expense), Net

The components of other income (expense), net, for the three and nine months ended September 30, 2021 and 2020 are as follows:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2021	2020	2021	2020
Income from third party license fees	$ 314	$ 190	$ 1,026	$ 702
Foreign exchange gains (losses), net	368	(1,897)	(1,948)	(3,080)
(Loss) gain on disposals of property, plant, equipment and other assets, net	(537)	(24)	4,819	(105)
Non-income tax refunds and other related credits	3	—	14,395	2,131
Pension and postretirement benefit income (costs), non-service components	343	1,375	596	(22,491)
Other non-operating income, net	156	117	456	436
Total other income (expense), net	$ 647	$ (239)	$ 19,344	$ (22,407)

The (Loss) gain on disposals of property, plant, equipment and other assets, net, during the three months ended September 30, 2021, includes losses related to certain fixed asset disposals resulting from the property damage caused by flooding of the Company's Conshohocken, Pennsylvania headquarters, described in Note 19 of Notes to Condensed Consolidated Financial Statements, and during the nine months ended September 30, 2021, includes the gain on the sale of certain held-for-sale real property assets related to the Combination. Non-income tax refunds and other related credits during the nine months ended September 30, 2021 includes certain non-income tax credits for the Company's Brazilian subsidiaries described in Note 19 of Notes to Condensed Consolidated Financial Statements. Pension and postretirement benefit income (costs), non-service components during both the three and nine months ended September 30, 2020 includes the refund in premium described in Note 9 of Notes to Condensed Consolidated Financial Statements. In addition, this line also includes the Legacy Quaker U.S. Pension Plan non-cash settlement charge during the nine months ended September 30, 2020, also described in Note 9 of Notes to Condensed Consolidated Financial Statements.

Note 11 – Income Taxes and Uncertain Income Tax Positions

The Company's effective tax rates for the three and nine months ended September 30, 2021 were an expense of 2.6% and 21.8%, respectively, compared to an expense of 8.1% and a benefit of 38.3% for the three and nine months ended September 30, 2020, respectively. The Company's current year effective tax rates were largely impacted by changes in permanent reinvestment assertions, changes in foreign tax credit valuation allowances, tax law changes in a foreign jurisdiction, deferred tax benefits related to an intercompany intangible asset transfer and the income tax impacts of certain non-income tax credits recorded by the Company's Brazilian subsidiaries described in Note 19 of Notes to Condensed Consolidated Financial Statements. Comparatively, the prior year effective tax rates were impacted by the tax effect of certain one-time pre-tax losses as well as certain tax charges and benefits in the prior year period including those related to changes in tax regulations and other changes in foreign tax credit valuation allowances, tax law changes in foreign jurisdictions and the tax impacts of the Company's termination of its Legacy Quaker U.S. Pension Plan.

As of December 31, 2020, the Company had a deferred tax liability of $5.9 million, which primarily represents the Company's estimate of non-U.S. taxes it will incur to repatriate certain foreign earnings to the U.S. The balance as of September 30, 2021 was $5.8 million. As of September 30, 2021, the Company's cumulative liability for gross unrecognized tax benefits was $24.0 million, an increase of $1.9 million from the cumulative liability accrued as of December 31, 2020.

The Company continues to recognize interest and penalties associated with uncertain tax positions as a component of taxes on income (loss) before equity in net income of associated companies in its Condensed Consolidated Statements of Operations. The Company recognized an expense for interest of approximately $0.2 million and $0.4 million and a benefit of less than $0.1 million and $0.2 million for penalties in its Condensed Consolidated Statement of Operations for the three and nine months ended September 30, 2021, respectively, and recognized a credit for interest of $0.2 million and an expense of $0.4 million and an expense for penalties of less than $0.1 million and $0.5 million in its Condensed Consolidated Statement of Operations for the three and nine months ended September 30, 2020, respectively. As of September 30, 2021, the Company had accrued $3.3 million for cumulative interest and $3.5 million for cumulative penalties in its Condensed Consolidated Balance Sheets, compared to $3.0 million for cumulative interest and $3.9 million for cumulative penalties accrued at December 31, 2020. During the nine months ended September 30, 2021 and 2020, the Company recognized decreases of $1.2 million and $1.9 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, 2021 it will reduce its cumulative liability for gross unrecognized tax benefits by approximately $1.5 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, 2021.

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 Italy from 2006, Brazil from 2011, the Netherlands and China from 2015, Mexico, Spain, Germany and the United Kingdom from 2016, Canada and the U.S. from 2018, India from fiscal year beginning April 1, 2018 and ending March 31, 2019, and various U.S. state tax jurisdictions from 2011.

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 2015. The Company has filed for competent authority relief from these assessments under the Mutual Agreement Procedures ("MAP") of the Organization for Economic Co-Operation and Development for all years except 2007. In 2020, the respective tax authorities in Italy, Spain and the Netherlands reached agreement with respect to the MAP proceedings which the Company has accepted. As of September 30, 2021, the Company has received $1.6 million in refunds from the Netherlands and Spain and currently expects to pay $2.6 million due to Italy in the fourth quarter of 2021. As of September 30, 2021, the Company believes it has adequate reserves for the remaining uncertain tax positions related to 2007.

(Dollars in thousands, except per share amounts, unless otherwise stated)

Houghton Italia, S.r.l is also involved in a corporate income tax audit with the Italian tax authorities covering tax years 2014 through 2018. As of September 30, 2021, the Company has a $6.0 million reserve for uncertain tax positions relating to matters related to this audit. Because the reserve relates to the tax periods prior to August 1, 2019, the tax liability was established through purchase accounting related to the Combination. The Company has also submitted an indemnification claim against funds held in escrow by Houghton's former owners and as a result, a corresponding $5.4 million indemnification receivable has also been established through purchase accounting. In October 2021, the Company settled a portion of the Houghton Italia S.r.l corporate income tax audit with the Italian tax authorities for the tax year 2015. The Company remains under audit for tax years 2014 and 2016 through 2018 and believes it has adequate reserves for the remaining uncertain tax positions.

Houghton Deutschland GmbH is also under audit by the German tax authorities for the tax years 2015 through 2017. Based on preliminary audit findings, primarily related to transfer pricing, the Company has recorded reserves for $0.9 million as of September 30, 2021. Of this amount, $0.8 million relates to tax periods prior to the Combination and therefore the Company has submitted an indemnification claim with Houghton's former owners for any tax liabilities arising pre-Combination. As a result, a corresponding $0.8 million indemnification receivable has also been established to offset the $0.8 million tax liability. In October 2021 the Company received a settlement proposal from the German tax authorities and is currently reviewing the proposal with Houghton's former owners.

Note 12 – Earnings Per Share

The following table summarizes earnings per share calculations for the three and nine months ended September 30, 2021 and 2020:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2021	2020	2021	2020
Basic earnings (loss) per common share				
Net income (loss) attributable to Quaker Chemical Corporation	$ 31,058	$ 27,304	$ 103,243	$ (8,812)
Less: (income) loss allocated to participating securities	(119)	(113)	(413)	44
Net income (loss) available to common shareholders	$ 30,939	$ 27,191	$ 102,830	$ (8,768)
Basic weighted average common shares outstanding	17,812,216	17,743,538	17,800,082	17,704,662
Basic earnings (loss) per common share	$ 1.74	$ 1.53	$ 5.78	$ (0.50)
Diluted earnings (loss) per common share				
Net income (loss) attributable to Quaker Chemical Corporation	$ 31,058	$ 27,304	$ 103,243	$ (8,812)
Less: (income) loss allocated to participating securities	(119)	(113)	(412)	44
Net income (loss) available to common shareholders	$ 30,939	$ 27,191	$ 102,831	$ (8,768)
Basic weighted average common shares outstanding	17,812,216	17,743,538	17,800,082	17,704,662
Effect of dilutive securities	58,176	57,327	59,986	—
Diluted weighted average common shares outstanding	17,870,392	17,800,865	17,860,068	17,704,662
Diluted earnings (loss) per common share	$ 1.73	$ 1.53	$ 5.76	$ (0.50)

Certain stock options and restricted stock units are not included in the diluted earnings (loss) per share calculation when the effect would have been anti-dilutive. The calculated amount of anti-diluted shares not included was 5,531 and 3,722 for the three and nine months ended September 30, 2021, respectively. All of the Company's potentially dilutive shares for the nine months ended September 30, 2020 are anti-dilutive and not included in the dilutive loss per share calculations because of the Company's net loss during the period. There were no anti-dilutive shares excluded from the diluted earnings per share calculation for the three months ended September 30, 2020.

Note 13 – Restricted Cash

Prior to December 2020, the Company had 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 were restricted and could only be used to pay claims and costs of defense associated with the subsidiary's asbestos litigation. The proceeds of the settlement and release agreements were deposited into interest bearing accounts that earned less than $0.1 million offset by $0.8 million of net payments during the nine months ended September 30, 2020. 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 that continued until the restrictions lapsed. As disclosed in the Company's 2020 Form 10-K, during December 2020, the restrictions ended on these previously received insurance settlements and the Company transferred the cash into an operating account.

(Dollars in thousands, except per share amounts, unless otherwise stated)

The following table provides a reconciliation of cash, cash equivalents and restricted cash as of September 30, 2021 and 2020, as well as December 31, 2020 and 2019:

	September 30,		December 31,	
	2021	2020	2020	2019
Cash and cash equivalents	$ 141,393	$ 155,750	$ 181,833	$ 123,524
Restricted cash included in other current assets	—	82	62	353
Restricted cash included in other assets	—	18,901	—	19,678
Cash, cash equivalents and restricted cash	$ 141,393	$ 174,733	$ 181,895	$ 143,555

Note 14 – Goodwill and Other Intangible Assets

Changes in the carrying amount of goodwill for the nine months ended September 30, 2021 were as follows:

	Americas	EMEA	Asia/Pacific	Global Specialty Businesses	Total
Balance as of December 31, 2020	$ 213,242	$ 140,162	$ 158,090	$ 119,718	$ 631,212
Goodwill additions	1,208	2,626	1,308	1,951	7,093
Currency translation and other adjustments	(621)	(5,530)	1,109	(2,594)	(7,636)
Balance as of September 30, 2021	$ 213,829	$ 137,258	$ 160,507	$ 119,075	$ 630,669

Gross carrying amounts and accumulated amortization for definite-lived intangible assets as of September 30, 2021 and December 31, 2020 were as follows:

	Gross Carrying Amount		Accumulated Amortization	
	2021	2020	2021	2020
Customer lists and rights to sell	$ 847,909	$ 839,551	$ 135,571	$ 99,806
Trademarks, formulations and product technology	167,682	166,448	36,871	30,483
Other	6,325	6,372	5,886	5,824
Total definite-lived intangible assets	$ 1,021,916	$ 1,012,371	$ 178,328	$ 136,113

The Company amortizes definite-lived intangible assets on a straight-line basis over their useful lives. The Company recorded $14.9 million and $44.7 million of amortization expense for the three and nine months ended September 30, 2021, respectively. Comparatively, the Company recorded $14.0 million and $41.7 million of amortization expense for the three and nine months ended September 30, 2020, respectively.

Estimated annual aggregate amortization expense for the current year and subsequent five years is as follows:

For the year ended December 31, 2021	$ 58,852
For the year ended December 31, 2022	59,173
For the year ended December 31, 2023	59,005
For the year ended December 31, 2024	58,338
For the year ended December 31, 2025	57,653
For the year ended December 31, 2026	57,346

The Company has four indefinite-lived intangible assets totaling $205.1 million as of both September 30, 2021 and December 31, 2020, including $204.0 million of indefinite-lived intangible assets for trademarks and tradename associated with the Combination.

Goodwill and intangible assets that have indefinite lives are not amortized and are required to be assessed at least annually for impairment. The Company completes its annual goodwill and indefinite-lived intangible asset impairment test during the fourth quarter of each year. The Company continuously evaluates if triggering events indicate a possible impairment in one or more of its reporting units or indefinite-lived or long-lived assets.

(Dollars in thousands, except per share amounts, unless otherwise stated)

The Company previously disclosed in its 2020 Form 10-K that as of March 31, 2020, the Company concluded that the impact of COVID-19 did not represent a triggering event with regards to the Company's reporting units or indefinite-lived and long-lived assets, except for the Company's Houghton and Fluidcare trademarks and tradename indefinite-lived intangible assets. The determination of estimated fair value of the Houghton and Fluidcare trademarks and tradename indefinite-lived assets was based on a relief from royalty valuation method, which requires management's judgment and often involves the use of significant estimates and assumptions, including assumptions with respect to the weighted average cost of capital ("WACC") and royalty rates, as well as revenue growth rates and terminal growth rates. In the first quarter of 2020, as a result of the impact of COVID-19 driving a decrease in projected legacy Houghton net sales during that year and the impact of the sales decline on projected future legacy Houghton net sales as well as an increase in the WACC assumption utilized in the quantitative impairment assessment, the Company concluded that the estimated fair values of the Houghton and Fluidcare trademarks and tradename intangible assets were less than their carrying values. As a result, an impairment charge of $ 38.0 million was recorded in the first quarter of 2020 to write down the carrying values of these intangible assets to their estimated fair values.

As of September 30, 2021, the Company continued to evaluate all potential triggering events, including the on-going impact of COVID-19 on the Company's operations, and the volatility and uncertainty in the economic outlook as a result of COVID-19, to determine if this indicated it was more likely than not that the carrying value of any of the Company's reporting units or indefinite-lived or long-lived intangible assets were not recoverable. The Company concluded that the impact of COVID-19 did not represent a triggering event as of September 30, 2021. While the Company concluded that the impact of COVID-19 did not represent a triggering event as of September 30, 2021, the Company will continue to evaluate the impact of COVID-19 on the Company's current and projected results. If the current economic conditions worsen or projections of the timeline for recovery are significantly extended, then the Company may conclude in the future that the impact from COVID-19 requires the need to perform further interim quantitative impairment tests, which could result in additional impairment charges in the future.

Note 15 – Debt

Debt as of September 30, 2021 and December 31, 2020 includes the following:

	As of September 30, 2021		As of December 31, 2020	
	Interest Rate	**Outstanding Balance**	**Interest Rate**	**Outstanding Balance**
Credit Facilities:				
Revolver	1.58%	$ 198,543	1.65%	$ 160,000
U.S. Term Loan	1.58%	547,500	1.65%	570,000
EURO Term Loan	1.50%	142,559	1.50%	157,062
Industrial development bonds	5.26%	10,000	5.26%	10,000
Bank lines of credit and other debt obligations	Various	2,060	Various	2,072
Total debt		$ 900,662		$ 899,134
Less: debt issuance costs		(8,776)		(11,099)
Less: short-term and current portion of long-term debts		(52,611)		(38,967)
Total long-term debt		$ 839,275		$ 849,068

Credit facilities

The Company's primary credit facility (as amended, the "Credit Facility") is comprised of a $ 400.0 million multicurrency revolver (the "Revolver"), a $600.0 million term loan (the "U.S. Term Loan"), each with the Company as borrower, and a $150.0 million (as of August 1, 2019) Euro equivalent term loan (the "EURO Term Loan" and together with the "U.S. Term Loan", the "Term Loans") with Quaker Chemical B.V., a Dutch subsidiary of the Company as borrower, each with a five year term maturing in August 2024. Subject to the consent of the administrative agent and certain other conditions, the Company may designate additional borrowers. The maximum amount available under the Credit Facility can be increased by up to $300.0 million at the Company's request if there are lenders who agree to accept additional commitments and the Company has satisfied certain other conditions. Borrowings under the Credit Facility bear interest at a base rate or LIBOR plus an applicable margin based upon the Company's consolidated net leverage ratio. There are LIBOR replacement provisions that contemplate a further amendment when LIBOR ceases to be reported. The variable interest rate incurred on the outstanding borrowings under the Credit Facility as of and during the nine months ended September 30, 2021 was approximately 1.6%. In addition to paying interest on outstanding principal under the Credit Facility, the Company is required to pay a commitment fee ranging from 0.2% to 0.3% depending on the Company's consolidated net leverage ratio to the lenders under the Revolver in respect of the unutilized commitments thereunder. The Company has unused capacity under the Revolver of approximately $ 197 million, net of bank letters of credit of approximately $ 4 million, as of September 30, 2021.

(Dollars in thousands, except per share amounts, unless otherwise stated)

The Credit Facility is subject to certain financial and other covenants. The Company's initial consolidated net debt to consolidated adjusted EBITDA ratio could not exceed 4.25 to 1, with step downs in the permitted ratio over the term of the Credit Facility. As of September 30, 2021, the consolidated net debt to adjusted EBITDA may not exceed 4.00 to 1. The Company's consolidated adjusted EBITDA to interest expense ratio cannot be less than 3.0 to 1 over the term of the agreement. The Credit Facility also prohibits the payment of cash dividends if the Company is in default or if the amount of the dividend paid annually exceeds the greater of $50.0 million and 20% of consolidated adjusted EBITDA unless the ratio of consolidated net debt to consolidated adjusted EBITDA is less than 2.0 to 1, in which case there is no such limitation on amount. As of September 30, 2021 and December 31, 2020, the Company was in compliance with all of the Credit Facility covenants. The Term Loans have quarterly principal amortization during their five year terms, with 5.0% amortization of the principal balance due in years 1 and 2, 7.5% in year 3, and 10.0% in years 4 and 5, with the remaining principal amount due at maturity. During the nine months ended September 30, 2021, the Company made quarterly amortization payments related to the Term Loans totaling $28.6 million. The Credit Facility is guaranteed by certain of the Company's domestic subsidiaries and is secured by first priority liens on substantially all of the assets of the Company and the domestic subsidiary guarantors, subject to certain customary exclusions. The obligations of the Dutch borrower are guaranteed only by certain foreign subsidiaries on an unsecured basis.

The Credit Facility required the Company to fix its variable interest rates on at least 20% of its total Term Loans. In order to satisfy this requirement as well as to manage the Company's exposure to variable interest rate risk associated with the Credit Facility, in November 2019, the Company entered into $170.0 million notional amounts of three year interest rate swaps at a base rate of 1.64% plus an applicable margin as provided in the Credit Facility, based on the Company's consolidated net leverage ratio. At the time the Company entered into the swaps, and as of September 30, 2021, the aggregate interest rate on the swaps, including the fixed base rate plus an applicable margin, was 3.1%. See Note 18 of Notes to Condensed Consolidated Financial Statements.

The Company capitalized $23.7 million of certain third-party debt issuance costs in connection with executing the Credit Facility. Approximately $15.5 million of the capitalized costs were attributed to the Term Loans and recorded as a direct reduction of long-term debt on the Company's Condensed Consolidated Balance Sheet. Approximately $8.3 million of the capitalized costs were attributed to the Revolver and recorded within other assets on the Company's Condensed Consolidated Balance Sheet. These capitalized costs are being amortized into interest expense over the five year term of the Credit Facility. As of September 30, 2021 and December 31, 2020, the Company had $8.8 million and $11.1 million, respectively, of debt issuance costs recorded as a reduction of long-term debt. As of September 30, 2021 and December 31, 2020, the Company had $4.7 million and $5.9 million, respectively, of debt issuance costs recorded within other assets.

Industrial development bonds

As of September 30, 2021 and December 31, 2020, the Company had fixed rate, industrial development authority bonds totaling $10.0 million in principal amount due in 2028. These bonds have similar covenants to the Credit Facility noted above.

Bank lines of credit and other debt obligations

The Company has certain unsecured bank lines of credit and discounting facilities in one of its foreign subsidiaries, which are not collateralized. The Company's other debt obligations primarily consist of certain domestic and foreign low interest rate or interest-free municipality-related loans, local credit facilities of certain foreign subsidiaries and capital lease obligations. Total unused capacity under these arrangements as of September 30, 2021 was approximately $39 million.

In addition to the bank letters of credit described in the "Credit facilities" subsection above, the Company's only other off-balance sheet arrangements include certain financial and other guarantees. The Company's total bank letters of credit and guarantees outstanding as of September 30, 2021 were approximately $7 million.

The Company incurred the following debt related expenses included within Interest expense, net, in the Condensed Consolidated Statements of Operations:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2021	**2020**	**2021**	**2020**
Interest expense	$ 4,779	$ 5,957	$ 14,242	$ 19,621
Amortization of debt issuance costs	1,187	1,188	3,562	3,562
Total	$ 5,966	$ 7,145	$ 17,804	$ 23,183

Based on the variable interest rates associated with the Credit Facility, as of September 30, 2021 and December 31, 2020, the amounts at which the Company's total debt were recorded are not materially different from their fair market value.

(Dollars in thousands, except per share amounts, unless otherwise stated)

Note 16 – Equity

The following tables present the changes in equity, net of tax, for the three and nine months ended September 30, 2021 and 2020:

	Common Stock	Capital in Excess of Par Value	Retained Earnings	Accumulated Other Comprehensive Loss	Noncontrolling Interest	Total
Balance at June 30, 2021	$ 17,878	$ 910,862	$ 482,001	$ (35,943)	$ 603	$ 1,375,401
Net income	—	—	31,058	—	15	31,073
Amounts reported in other comprehensive loss	—	—	—	(18,780)	—	(18,780)
Dividends ($0.415 per share)	—	—	(7,424)	—	—	(7,424)
Share issuance and equity-based compensation plans	11	3,415	—	—	—	3,426
Balance at September 30, 2021	$ 17,889	$ 914,277	$ 505,635	$ (54,723)	$ 618	$ 1,383,696
Balance at June 30, 2020	$ 17,800	$ 896,108	$ 362,265	$ (109,264)	$ 432	$ 1,167,341
Net income	—	—	27,304	—	38	27,342
Amounts reported in other comprehensive income	—	—	—	34,254	17	34,271
Dividends ($0.395 per share)	—	—	(7,048)	—	—	(7,048)
Share issuance and equity-based compensation plans	31	4,494	—	—	—	4,525
Balance at September 30, 2020	$ 17,831	$ 900,602	$ 382,521	$ (75,010)	$ 487	$ 1,226,431

	Common Stock	Capital in Excess of Par Value	Retained Earnings	Accumulated Other Comprehensive Loss	Noncontrolling Interest	Total
Balance at December 31, 2020	$ 17,851	$ 905,171	$ 423,940	$ (26,598)	$ 550	$ 1,320,914
Net income	—	—	103,243	—	62	103,305
Amounts reported in other comprehensive (loss) income	—	—	—	(28,125)	6	(28,119)
Dividends ($1.205 per share)	—	—	(21,548)	—	—	(21,548)
Share issuance and equity-based compensation plans	38	9,106	—	—	—	9,144
Balance at September 30, 2021	$ 17,889	$ 914,277	$ 505,635	$ (54,723)	$ 618	$ 1,383,696
Balance at December 31, 2019	$ 17,735	$ 888,218	$ 412,979	$ (78,170)	$ 1,604	$ 1,242,366
Cumulative effect of an accounting change	—	—	(911)	—	—	(911)
Balance at January 1, 2020	17,735	888,218	412,068	(78,170)	1,604	1,241,455
Net (loss) income	—	—	(8,812)	—	88	(8,724)
Amounts reported in other comprehensive income (loss)	—	—	—	3,160	(114)	3,046
Dividends ($1.165 per share)	—	—	(20,735)	—	—	(20,735)
Acquisition of noncontrolling interest	—	(707)	—	—	(340)	(1,047)
Distributions to noncontrolling affiliate shareholders	—	—	—	—	(751)	(751)
Share issuance and equity-based compensation plans	96	13,091	—	—	—	13,187
Balance at September 30, 2020	$ 17,831	$ 900,602	$ 382,521	$ (75,010)	$ 487	$ 1,226,431

(Dollars in thousands, except per share amounts, unless otherwise stated)

The following tables show the reclassifications from and resulting balances of AOCI for the three and nine months ended September 30, 2021 and 2020:

	Currency Translation Adjustments	Defined Benefit Pension Plans	Unrealized Gain (Loss) in Available-for-Sale Securities	Derivative Instruments	Total
Balance at June 30, 2021	$ (12,177)	$ (21,778)	$ 596	$ (2,584)	$ (35,943)
Other comprehensive (loss) income before reclassifications	(19,905)	488	(85)	567	(18,935)
Amounts reclassified from AOCI	—	709	(176)	—	533
Related tax amounts	—	(293)	46	(131)	(378)
Balance at September 30, 2021	$ (32,082)	$ (20,874)	$ 381	$ (2,148)	$ (54,723)
Balance at June 30, 2020	$ (88,637)	$ (17,363)	$ 1,148	$ (4,412)	$ (109,264)
Other comprehensive income (loss) before reclassifications	33,601	(901)	810	460	33,970
Amounts reclassified from AOCI	—	584	(104)	—	480
Related tax amounts	—	60	(150)	(106)	(196)
Balance at September 30, 2020	$ (55,036)	$ (17,620)	$ 1,704	$ (4,058)	$ (75,010)

	Currency Translation Adjustments	Defined Benefit Pension Plans	Unrealized Gain (Loss) in Available-for-Sale Securities	Derivative Instruments	Total
Balance at December 31, 2020	$ (2,875)	$ (23,467)	$ 3,342	$ (3,598)	$ (26,598)
Other comprehensive (loss) income before reclassifications	(29,207)	1,009	(489)	1,883	(26,804)
Amounts reclassified from AOCI	—	2,423	(3,259)	—	(836)
Related tax amounts	—	(839)	787	(433)	(485)
Balance at September 30, 2021	$ (32,082)	$ (20,874)	$ 381	$ (2,148)	$ (54,723)
Balance at December 31, 2019	$ (44,568)	$ (34,533)	$ 1,251	$ (320)	$ (78,170)
Other comprehensive (loss) income before reclassifications	(10,468)	(409)	802	(4,855)	(14,930)
Amounts reclassified from AOCI	—	25,550	(229)	—	25,321
Related tax amounts	—	(8,228)	(120)	1,117	(7,231)
Balance at September 30, 2020	$ (55,036)	$ (17,620)	$ 1,704	$ (4,058)	$ (75,010)

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 noncontrolling interest are related to currency translation adjustments.

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:

		Fair Value Measurements at September 30, 2021 Using Fair Value Hierarchy		
Assets	Total Fair Value	Level 1	Level 2	Level 3
Company-owned life insurance	$ 2,135	$ —	$ 2,135	$ —
Total	$ 2,135	$ —	$ 2,135	$ —

(Dollars in thousands, except per share amounts, unless otherwise stated)

Assets	Total Fair Value	Fair Value Measurements at December 31, 2020 Using Fair Value Hierarchy Level 1	Level 2	Level 3
Company-owned life insurance	$ 1,961	$ —	$ 1,961	$ —
Total	$ 1,961	$ —	$ 1,961	$ —

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, 2021 or December 31, 2020, respectively, so related disclosures have not been included.

Note 18 – Hedging Activities

In order to satisfy certain requirements of the Credit Facility as well as to manage the Company's exposure to variable interest rate risk associated with the Credit Facility, in November 2019, the Company entered into $ 170.0 million notional amounts of three year interest rate swaps. See Note 15 of Notes to Condensed Consolidated Financial Statements. These interest rate swaps are designated as cash flow hedges and, as such, the contracts are marked-to-market at each reporting date and any unrealized gains or losses are included in AOCI to the extent effective and reclassified to interest expense in the period during which the transaction affects earnings or it becomes probable that the forecasted transaction will not occur.

The balance sheet classification and fair values of the Company's derivative instruments, which are Level 2 measurements, are as follows:

	Condensed Consolidated Balance Sheet Location	Fair Value September 30, 2021	December 31, 2020
Derivatives designated as cash flow hedges:			
Interest rate swaps	Other non-current liabilities	$ 2,789	$ 4,672
		$ 2,789	$ 4,672

The following table presents the net unrealized loss deferred to AOCI:

		September 30, 2021	December 31, 2020
Derivatives designated as cash flow hedges:			
Interest rate swaps	AOCI	$ 2,148	$ 3,598
		$ 2,148	$ 3,598

The following table presents the net loss reclassified from AOCI to earnings:

		Three Months Ended September 30, 2021	2020	Nine Months Ended September 30, 2021	2020
Amount and location of expense reclassified					
from AOCI into expense (effective portion)	Interest expense, net	$ (672)	$ (640)	$ (1,974)	$ (1,105)

Interest rate swaps are entered into with a limited number of counterparties, each of which allows for net settlement of all contracts through a single payment in a single currency in the event of a default on or termination of any one contract. As such, in accordance with the Company's accounting policy, these derivative instruments are recorded on a net basis within the Condensed Consolidated Balance Sheets.

Note 19 – Commitments and Contingencies

The Company previously disclosed in its 2020 Form 10-K 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, 2021, 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, 2021, 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.

The Company previously disclosed in its 2020 Form 10-K 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, 2021, there have been no significant changes to the facts or circumstances of this previously disclosed matter, 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 $0.4 million (excluding costs of defense).

The Company previously disclosed in its 2020 Form 10-K that it is party to certain environmental matters related to certain domestic and foreign properties currently or previously owned by Houghton. These environmental matters primarily require the Company to perform long-term monitoring as well as operating and maintenance at each of the applicable sites. During the three and nine months ended September 30, 2021, there have been no significant changes to the facts or circumstances of these previously disclosed matters, aside from on-going monitoring and maintenance activities and routine payments associated with each of the sites. The Company continually evaluates its obligations related to such matters, and based on historical costs incurred and projected costs to be incurred over the next 28 years, has estimated the present value range of costs for all of the Houghton environmental matters, on a discounted basis, to be between approximately $5.5 million and $6.5 million as of September 30, 2021, for which $5.7 million was accrued within other accrued liabilities and other non-current liabilities on the Company's Condensed Consolidated Balance Sheet as of September 30, 2021. Comparatively, as of December 31, 2020, the Company had $6.0 million accrued for with respect to these matters.

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 $0.3 million and $0.1 million was accrued as of September 30, 2021 and December 31, 2020, respectively, to provide for such anticipated future environmental assessments and remediation costs.

The Company previously disclosed in its 2020 Form 10-K that during the fourth quarter of 2020, one of the Company's subsidiaries received a notice of inspection from a taxing authority in a country where certain of its subsidiaries operate which related to a non-income (indirect) tax that may be applicable to certain products the subsidiary sells. During the third quarter of 2021, the Company's subsidiary received notice from the taxing authority that the inspection was closed, with no tax assessment issued. Based on this development, during the third quarter of 2021, the Company reversed its previously recorded $1.8 million liability related to this matter. The Company also reversed the associated $1.1 million indemnification receivable, as the asserted tax liability in part related to a Houghton entity acquired in the Combination and for the periods prior to the Combination, for which the Company would be indemnified by Houghton's former owners. Based on all available information as of the date of this Report, the Company does not anticipate further tax inspection or liabilities related to this matter to be asserted by the taxing authority.

During the first half of 2021, one of the Company's Brazilian subsidiaries received a notice that it had prevailed on an existing legal claim in regard to certain non-income (indirect) taxes that had been previously charged and paid. The matter specifically relates to companies' rights to exclude the state tax on goods circulation (a valued-added-tax or VAT equivalent, known in Brazil as "ICMS") from the calculation of certain additional indirect taxes (specifically the program of social integration ("PIS") and contribution for the financing of social security ("COFINS")) levied by the Brazilian States on the sale of goods. In May 2021, the Brazilian Supreme Court concluded that ICMS should not be included in the tax base of PIS and COFINS, and confirmed the methodology for calculating the PIS and COFINS tax credit claims to which taxpayers are entitled. The Company's Brazilian entities had previously filed legal or administrative disputes on this matter and are entitled to receive tax credits and interest dating back to five years preceding the date of their legal claims. As a result of these court rulings, during the second quarter of 2021, the Company recognized non-income tax credits of 67.0 million BRL or approximately $13.3 million, which included approximately $8.4 million for the PIS and COFINS tax credits as well as interest on these tax credits of $4.9 million. The tax credits to which the Company's Brazilian subsidiaries are entitled are claimable once registered with the Brazilian tax authorities. The Company submitted its formal claim for tax credits in October 2021. These tax credits can be used to offset future Brazilian federal taxes and the Company currently anticipates using the full amount of credits during the five year period of time permitted. During the third quarter of 2021, the Brazilian Supreme Court ruled that interest income to which companies are entitled for matters such as this claim should not be taxable, which resulted in a reduction to the estimated income tax expense associated with the tax credits recorded.

In connection with obtaining regulatory approvals for the Combination, certain steel and aluminum related product lines of Houghton were divested on August 1, 2019. In July 2021, the entity that acquired these divested product lines submitted an indemnification claim for certain alleged breaches of representation made by Houghton in the agreement pursuant to which such assets had been divested. The Company and the acquirer have agreed to extend the period for a possible negotiated resolution of this claim through November 30, 2021 so that both parties can evaluate the other's positions with respect to the subject matters of the claim.

The Company is evaluating the merits of the alleged losses in the indemnification claim received. As of the date of this Report, the Company does not believe it is reasonably possible to determine or quantify any possible exposure.

During the third quarter of 2021, two of the Company's locations suffered property damages as a result of flooding and fire. The Company maintains property insurance for all of its facilities globally. In Conshohocken, Pennsylvania, the Company's global headquarters as well as its laboratory experienced property damages as a result of flooding from Hurricane Ida. Also, one of the Company's North American production facilities in its Global Specialty Businesses segment experienced an electrical fire that resulted in damage and the temporary shutdown of production, and also required remediation, cleaning and subsequent restoration. The Company, its insurance adjuster and insurance carrier are actively managing the remediation and restoration activities associated with these events and at this time the Company has concluded, based on all available information and discussions with its insurance adjuster and insurance carrier, that the losses incurred during the third quarter of 2021 will be covered under the Company's property insurance coverage, net of an aggregate deductible of $2.0 million. The Company has received advance payments from its insurers of $1.0 million and has recorded an insurance receivable associated with these events (and a gain on insurance recoveries for losses incurred) of $1.7 million as of September 30, 2021. The Company and its insurance carrier are in early stages of reviewing the impact of the electrical fire on the production facility's operations as it relates to a potential business interruption insurance claim; however, as of the date of this Report, the Company cannot reasonably estimate any probable amount of business interruption insurance claim recoverable, therefore the Company has not recorded a gain contingency for a possible business interruption insurance claim as of September 30, 2021.

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. In addition, the Company has an immaterial amount of contractual purchase obligations.

Item 2. ***Management's Discussion and Analysis of Financial Condition and Results of Operations*.**

As used in this Report, the terms "Quaker Houghton," the "Company," "we" and "our" refer to Quaker Chemical Corporation (doing business as Quaker Houghton), its subsidiaries, and associated companies, unless the context otherwise requires. As used in this Report, the term Legacy Quaker refers to the Company prior to the closing of its combination with Houghton International, Inc. ("Houghton") (herein referred to as the "Combination") on August 1, 2019. Throughout the Report, all figures presented, unless otherwise stated, reflect the results of operations of the combined company for the three and nine months ended September 30, 2021 and 2020.

Executive Summary

Quaker Houghton is the global leader in industrial process fluids. With a presence around the world, including operations in over 25 countries, our customers include thousands of the world's most advanced and specialized steel, aluminum, automotive, aerospace, offshore, can, mining, and metalworking companies. Our high-performing, innovative and sustainable solutions are backed by best-in-class technology, deep process knowledge, and customized services. Quaker Houghton is headquartered in Conshohocken, Pennsylvania, located near Philadelphia in the United States.

The Company's third quarter results were highlighted by record net sales as well as the on-going execution of integration activities and synergy realization, but these positive financial impacts were partially offset by continued raw material cost headwinds and global supply chain pressures. Specifically, net sales of $449.1 million in the third quarter of 2021 increased 22% compared to $367.2 million in the third quarter of 2020, primarily due to higher volumes of approximately 10%, including additional net sales from acquisitions of 4%, increases from selling price and product mix of approximately 10% and the positive impact from foreign currency translation of 2%. The increase in sales volumes compared to the third quarter of 2020 was primarily a result of continued market share gains and the year-over-year improvement in end market conditions since the beginning of the COVID-19 pandemic. The increase in selling price and product mix is primarily the result of the Company's price increases implemented during 2021 to help offset the unprecedented increases in raw material costs the Company has experienced throughout 2021. The Company's current quarter gross margin of 32.3% declined sequentially compared to 35.5% in the second quarter of 2021 which, as the Company had expected, was lower than the 38.2% in the prior year third quarter, driven by the continued increase in raw material costs and logistics pressures.

The Company had net income in the third quarter of 2021 of $31.1 million, or $1.73 per diluted share, compared to a third quarter of 2020 net income of $27.3 million, or $1.53 per diluted share. The current quarter results reflect the gross margin headwinds noted above while the prior year third quarter net income was affected by the COVID-19 pandemic and its impact on the global economy, including most of the Company's end customers. Excluding non-recurring items including costs associated with the Combination and other non-core items in each period, the Company's third quarter of 2021 non-GAAP earnings per diluted share were $1.63 compared to $1.56 in the prior year third quarter. The Company's current quarter adjusted EBITDA of $66.2 million increased 3% compared to $63.9 million in the third quarter of 2020 primarily due to the significant increase in net sales quarter-over-quarter as well as higher realized cost synergies from the Combination and foreign currency transaction gains in the current quarter compared to foreign currency transaction losses in the third quarter of 2020, partially offset by lower gross margins driven by higher raw material costs and the impacts of disruptions in the global supply chain experienced in 2021 as well as higher selling, general and administrative expenses ("SG&A") including the impact of higher sales on direct selling expenses and additional SG&A from recent acquisitions. The Company estimates that it realized cost synergies associated with the Combination of approximately $19 million during the third quarter of 2021 compared to approximately $17 million during the third quarter of 2020. See the Non-GAAP Measures section of this Item below, as well as other items discussed in the Company's Consolidated Operations Review in the Operations section of this Item, below.

The Company's third quarter of 2021 operating performance in each of its four reportable segments: (i) Americas; (ii) Europe, Middle East and Africa ("EMEA"); (iii) Asia/Pacific; and (iv) Global Specialty Businesses, reflect similar drivers to that of its consolidated performance. All four segments had higher net sales compared to the third quarter of 2020 reflecting the continued rebound in 2021 from the negative impacts of COVID-19 on the Company's end markets during 2020 as well as continued success of taking market share in each of the Company's segments during the third quarter of 2021. All of the Company's segments benefited from higher organic sales volumes, which excludes the benefits of recent acquisitions, as compared to the prior year quarter, additional net sales from acquisitions, the positive impact from foreign currency translation due to the strengthening of most major currencies against the U.S. dollar, and from increases in selling price and product mix. As reported, the Company's Americas and EMEA segment operating earnings were higher compared to the third quarter of 2020 reflecting the increase in net sales including the benefits of acquisitions; however, all of the Company's segment's operating earnings were negatively impacted by the unprecedented raw material cost increases and the impacts of disruptions in the global supply chain that continued throughout the third quarter of 2021 as well as higher SG&A which were a result of an increase in direct selling expenses associated with year-over-year inflation increases and increases due to the increase in net sales as well as the lower levels of prior year SG&A as a result of temporary cost saving measures implemented in response to COVID-19.

The Company had a net operating cash flow of $2.5 million in the first nine months of 2021 as compared to net operating cash flow of $112.0 million in the first nine months of 2020. The decrease in net operating cash flow year-over-year was primarily driven by a significant change in working capital compared to the prior year, mainly increases in accounts receivable, due to higher net sales and inventory, due to higher costs as well as building inventories in response to global supply chain and logistics pressures. The key drivers of the Company's operating cash flow and working capital are further discussed in the Company's Liquidity and Capital Resources section of this Item, below.

Overall, the Company's third quarter results were good, despite being negatively impacted by the automotive semiconductor shortage and continued supply chain challenges. Increases in net sales in all segments were driven by the continued year-over-year improvement in the Company's end-markets and increased customer demand from lower levels experienced during 2020 as a result of COVID-19; however, each segment was negatively impacted by the significant escalation of raw material costs as well as higher SG&A. While sequential operating performance as compared to the second quarter of 2021 was slightly lower, continued strong customer demand in the third quarter of 2021 coupled with on-going market share gains and the execution of integration activities and synergy realization helped offset the negative impacts from the continued escalation of raw material costs and continued supply chain pressures.

As the Company looks to the rest of 2021, it expects gross margins to continue to be challenged by increased raw material costs and supply chain headwinds, although it also expects to have sequential improvement in product margins from current quarter levels as it continues to implement price increases. In addition, although the Company expects customer demand for most of its businesses to remain strong, it also anticipates some near-term headwinds due to the power restrictions in China, the global semiconductor shortages in the automotive industry, and some seasonality trends which the Company typically experiences in the last quarter of the year. Looking ahead to 2022, the Company expects another strong year with net sales and earnings growth to be above normal long-term trends as the Company expects good growth in end markets, continued market share gains and higher gross margins as pricing initiatives catch up from the lag experienced in 2021 due to significant raw material inflation.

On-going impact of COVID-19

The global outbreak of COVID-19 has negatively impacted all locations where the Company does business. Although the Company has now operated in this COVID-19 environment for over a year, the full extent of the outbreak and related business impacts continue to remain uncertain and volatile, and therefore the full extent to which COVID-19 may impact the Company's future results of operations or financial condition is uncertain. This outbreak has significantly disrupted the operations of the Company and those of its suppliers and customers. During the pandemic, the Company has experienced volume declines and lower net sales as compared to pre-COVID-19 levels, as further described in this section. Management continues to monitor the impact that the COVID-19 pandemic is having on the Company, the overall specialty chemical industry and the economies and markets in which the Company operates. Given the continuously evolving global developments with respect to this pandemic, the Company cannot, as of the date of this Report, reasonably estimate the magnitude or the full extent of the impact to its future results of operations or to the ability of it or its customers to resume more normal operations, even as certain restrictions are lifted. The prolonged pandemic and resurgences of the outbreak including as new variants continue to emerge, and continued restrictions on day-to-day life and business operations may result in volume declines and lower net sales in future periods. To the extent that the Company's customers and suppliers continue to be significantly and adversely impacted by COVID-19, this could reduce the availability, or result in delays, of materials or supplies to or from the Company, which in turn could significantly interrupt the Company's business operations. Given this ongoing uncertainty, the Company cautions that its future results of operations could be significantly adversely impacted by COVID-19. Further, management continues to evaluate how COVID-19-related circumstances, such as remote work arrangements, illness or staffing shortages and travel restrictions have affected financial reporting processes and systems, internal control over financial reporting, and disclosure controls and procedures. While the circumstances have presented and are expected to continue to present challenges, and have necessitated additional time and resources to be deployed to sufficiently address the challenges brought on by the pandemic, at this time, management does not believe that COVID-19 has had a material impact on financial reporting processes, internal controls over financial reporting, or disclosure controls and procedures.

The Company's top priority, especially during this pandemic, is to protect the health and safety of its employees and customers, while working to ensure business continuity to meet customers' needs. The Company continues to take steps to protect the health and wellbeing of its people in affected areas through various actions, including enabling work at home where needed and possible, and employing social distancing standards, implementing travel restrictions where applicable, enhancing onsite hygiene practices, and instituting visitation restrictions at the Company's facilities. The Company has not and does not expect that it will incur material expenses implementing these health and safety policies. All of the Company's 31 production facilities worldwide are open and operating and are deemed as essential businesses in the jurisdictions where they are operating. The Company believes that to date it has been able to meet the needs of all its customers across the globe despite the current economic challenges. The Company's third quarter of 2021 showed year-over-year improvement from the prior year third quarter and continued a trend of gradual volume improvement which began in the second half of 2020. The Company continues to expect that the impact from COVID-19 will gradually improve subject to the effective containment of the virus and its variants and successful distribution and acceptance of the available vaccines. However, the incidence of reported cases of COVID-19 or a variant in several geographies where the Company has significant operations remains high and continues to evolve and it remains highly uncertain as to how long the global pandemic and related economic challenges will last and when our customers' businesses will recover to pre-COVID-19 levels. The Company took various actions to temporarily conserve cash and reduce costs since the onset of the pandemic and these temporary initiatives were designed and implemented so that the Company could successfully manage through the challenging COVID-19 situation while continuing to protect the health of its employees, meet customers' needs, maintain the Company's long-term competitive advantages and above-market growth, and enable it to continue to effectively integrate Houghton. While the actions taken to date to protect our workforce, to continue to serve our customers with excellence and to conserve cash and reduce costs, have been effective thus far, further actions to respond to the pandemic and its effects may be necessary as conditions continue to evolve.

Liquidity and Capital Resources

At September 30, 2021, the Company had cash, cash equivalents and restricted cash of $141.4 million. Total cash, cash equivalents and restricted cash was $181.9 million at December 31, 2020. The $40.5 million decrease in cash, cash equivalents and restricted cash was the net result of approximately $30.1 million of cash used in investing activities, $10.5 million of cash used in financing activities, and a $2.5 million negative impact due to the effect of foreign currency translation, partially offset by $2.5 million of cash provided by operating activities.

Net cash flows provided by operating activities were $2.5 million in the first nine months of 2021 compared to $112.0 million in the first nine months of 2020. The decrease in net operating cash flows of $109.5 million was primarily driven by a significant change in working capital. The significant increase in current year net sales resulted in a large increase in accounts receivable in the first nine months of 2021 as compared to accounts receivable being a cash inflow in the prior year as sales and the associated accounts receivables significantly declined during the first nine months of 2020 due to the negative impact from COVID-19. In addition, the Company has experienced an increase in inventory in the first nine months of 2021 as a result of continued rising raw material costs as well as a build in inventory to ensure the Company has appropriate stock to meet customer demands in response to ongoing stress on the global supply chain. In addition, the Company had higher cash dividends received from its associated companies in the first nine months of 2020, primarily due to $5.0 million received from the Company's joint venture in Korea with no similar dividend received in the first nine months of 2021 related to the timing of dividends received.

Net cash flows used in investing activities were $30.1 million in the first nine months of 2021 compared to $15.3 million in the first nine months of 2020. This increase in cash outflows was driven by higher cash payments related to acquisitions during the first nine months of 2021, including $25.0 million for certain assets related to tin-plating solutions primarily for steel end markets. These higher cash outflows were partially offset by cash proceeds of approximately $14.7 million from the disposition of assets, which includes the sale of certain held-for-sale real property assets related to the Combination. Capital expenditures were relatively consistent at $12.8 million in the first nine months of 2021 compared to $12.2 million in the first nine months of 2020.

Net cash flows used in financing activities were $10.5 million in the first nine months of 2021 compared to $65.1 million in the first nine months of 2020. The decrease in net cash flows used in financing activities of $54.6 million was primarily driven an increase in borrowings in the current year under the Company's revolving credit facility compared to repayments in the prior year which was primarily driven by the significant working capital investment in the current year described above. In addition, the Company paid $21.2 million of cash dividends during the first nine months of 2021, a $0.7 million or 3% increase in cash dividends compared to the prior year. Finally, during the first nine months of 2020, the Company used $1.0 million to purchase the remaining noncontrolling interest in a South Africa affiliate. Prior to this buyout, this South Africa affiliate made a distribution to the prior noncontrolling affiliate shareholder of approximately $0.8 million in the first nine months of 2020. There were no similar noncontrolling interest activities in the first nine months of 2021.

The Company's primary credit facility (the "Credit Facility") is comprised of a $400.0 million multicurrency revolver (the "Revolver"), a $600.0 million term loan (the "U.S. Term Loan"), each with the Company as borrower, and a $150.0 million (as of August 1, 2019) Euro equivalent term loan (the "Euro Term Loan" and together with the U.S. Term Loan", the "Term Loans") with Quaker Chemical B.V., a Dutch subsidiary of the Company as borrower, each with a five year term maturing in August 2024. Subject to the consent of the administrative agent and certain other conditions, the Company may designate additional borrowers. The maximum amount available under the Credit Facility can be increased by up to $300.0 million at the Company's request if there are lenders who agree to accept additional commitments and the Company has satisfied certain other conditions. Borrowings under the Credit Facility bear interest at a base rate or LIBOR plus an applicable margin based on the Company's consolidated net leverage ratio. There are LIBOR replacement provisions that contemplate a further amendment when LIBOR ceases to be reported. The weighted average interest rate incurred on the outstanding borrowings under the Credit Facility during both the first nine months of 2021 and as of September 30, 2021 was approximately 1.6%. In addition to paying interest on outstanding principal under the Credit Facility, the Company is required to pay a commitment fee ranging from 0.2% to 0.3% depending on the Company's consolidated net leverage ratio to the lenders under the Revolver in respect of the unutilized commitments thereunder.

The Credit Facility is subject to certain financial and other covenants. The Company's initial consolidated net debt to consolidated adjusted EBITDA ratio could not exceed 4.25 to 1, with step downs in the permitted ratio over the term of the Credit Facility. As of September 30, 2021, the consolidated net debt to consolidated adjusted EBITDA ratio may not exceed 4.00 to 1. The Company's consolidated adjusted EBITDA to interest expense ratio may not be less than 3.0 to 1 over the term of the agreement. The Credit Facility also prohibits the payment of cash dividends if the Company is in default or if the amount of the dividends paid annually exceeds the greater of $50.0 million and 20% of consolidated adjusted EBITDA unless the ratio of consolidated net debt to consolidated adjusted EBITDA is less than 2.0 to 1, in which case there is no such limitation on amount. As of September 30, 2021, and December 31, 2020, the Company was in compliance with all of the Credit Facility covenants. The Term Loans have quarterly principal amortization during their five year terms, with 5.0% amortization of the principal balance due in years 1 and 2, 7.5% in year 3, and 10.0% in years 4 and 5, with the remaining principal amount due at maturity. The Credit Facility is guaranteed by certain of the Company's domestic subsidiaries and is secured by first priority liens on substantially all of the assets of the Company and the domestic subsidiary guarantors, subject to certain customary exclusions. The obligations of the Dutch borrower are guaranteed only by certain foreign subsidiaries on an unsecured basis.

The Credit Facility required the Company to fix its variable interest rates on at least 20% of its total Term Loans. In order to satisfy this requirement as well as to manage the Company's exposure to variable interest rate risk associated with the Credit Facility, in November 2019, the Company entered into $170.0 million notional amounts of three year interest rate swaps at a base rate of 1.64% plus an applicable margin as provided in the Credit Facility, based on the Company's consolidated net leverage ratio. At the time the Company entered into the swaps, and as of September 30, 2021, the aggregate interest rate on the swaps, including the fixed base rate plus an applicable margin, was 3.1%.

The Company capitalized $23.7 million of certain third-party debt issuance costs in connection with executing the Credit Facility. Approximately $15.5 million of the capitalized costs were attributed to the Term Loans and recorded as a direct reduction of long-term debt on the Company's Consolidated Balance Sheet. Approximately $8.3 million of the capitalized costs were attributed to the Revolver and recorded within other assets on the Company's Condensed Consolidated Balance Sheet. These capitalized costs are being amortized into interest expense over the five year term of the Credit Facility.

As of September 30, 2021, the Company had Credit Facility borrowings outstanding of $888.6 million. As of December 31, 2020, the Company had Credit Facility borrowings outstanding of $887.1 million. The Company has unused capacity under the Revolver of approximately $197 million, net of bank letters of credit of approximately $4 million, as September 30, 2021. The Company's other debt obligations are primarily industrial development bonds, bank lines of credit and municipality-related loans, which totaled $12.1 million as of both September 30, 2021 and December 31, 2020. Total unused capacity under these arrangements as of September 30, 2021 was approximately $39 million. The Company's total net debt as of September 30, 2021 was $759.3 million.

The Company estimates that it realized cost synergies in the first nine months of 2021 of approximately $56 million compared to approximately $40 million in the first nine months of 2020. The Company continues to expect to realize Combination cost synergies of approximately $75 million in 2021 and $80 million in 2022. The Company continues to expect to incur additional costs and make associated cash payments to integrate Quaker and Houghton and continue realizing the Combination's total anticipated cost synergies. The Company expects total cash payments, including those pursuant to the QH Program, described below, but excluding incremental capital expenditures related to the Combination, will be approximately 1.3 times its total anticipated 2022 cost synergies of $80 million. A significant portion of these costs were already incurred in 2019, 2020 and the first nine months of 2021, but the Company expects to continue to incur such costs throughout the remainder of 2021 and into 2022. The Company incurred $13.6 million of total Combination, integration and other acquisition-related expenses in the first nine months of 2021, which includes $0.7 million of accelerated depreciation and is net of a $5.4 million gain on the sale of certain held-for-sale real property assets, described in the Non-GAAP Measures section of this Item below. Comparatively, in the first nine months of 2020, the Company incurred $23.4 million of total Combination, integration and other acquisition-related expenses, including $0.8 million of accelerated depreciation, described in the Non-GAAP Measures section of this Item below. The Company had aggregate net cash outflows of approximately $20.0 million related to the Combination, integration and other acquisition-related expenses during the first nine months of 2021 as compared to $20.9 million during the first nine months of 2020.

Quaker Houghton's management approved, and the Company initiated, a global restructuring plan (the "QH Program") in the third quarter of 2019 as part of its planned cost synergies associated with the Combination. The QH Program includes restructuring and associated severance costs to reduce total headcount by approximately 400 people globally and plans for the closure of certain manufacturing and non-manufacturing facilities. In connection with the plans for closure of certain manufacturing and non-manufacturing facilities, the Company made a decision to make available for sale certain facilities during the second quarter of 2020. During the first quarter of 2021, certain of these facilities were sold and the Company recognized a gain on disposal of $5.4 million included within other income (expense), net on the Condensed Consolidated Statement of Operations. The exact timing and total costs associated with the QH Program will depend on a number of factors and is subject to change; however, reductions in headcount and site closures have continued into 2021. The Company currently expects additional headcount reductions and site closures to occur into 2022 and estimates that the anticipated cost synergies realized under the QH Program will approximate one-times restructuring costs incurred. The Company made cash payments related to the settlement of restructuring liabilities under the QH Program during the first nine months of 2021 of approximately $4.6 million compared to $12.8 million in the first nine months of 2020.

In the fourth quarter of 2018, the Company began the process of terminating its non-contributory U.S. pension plan ("the Legacy Quaker U.S. Pension Plan") and in this process, which was completed during the first quarter of 2020, the Company was required to fully fund the Legacy Quaker U.S. Pension Plan on a termination basis in the amount of approximately $1.8 million, subject to final true up adjustments. In the third quarter of 2020, the Company finalized the amount of liability and related annuity payments and received a refund in premium of $1.6 million. In addition, the Company recorded a non-cash pension settlement charge at plan termination of approximately $22.7 million in the first quarter of 2020.

As of September 30, 2021, the Company's gross liability for uncertain tax positions, including interest and penalties, was $30.8 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 $7.6 million as a result of offsetting benefits in other tax jurisdictions. During the first nine months of 2021, the Company recorded $13.3 million of non-income tax credits for certain of its Brazilian subsidiaries. The Company expects to utilize these credits to offset certain Brazilian federal tax payments over approximately two years beginning in the fourth quarter of 2021. See Note 19 of Notes to Condensed Consolidated Financial Statements in Item 1 of this Report.

During the third quarter of 2021, two of the Company's locations suffered property damage as a result of flooding and fire. The Company maintains property insurance for all of its facilities globally. The Company, its insurance adjuster and insurance carrier are actively managing the remediation and restoration activities associated with both of these events and at this time the Company has concluded, based on all available information and discussions with its insurance adjuster and insurance carrier, that the losses incurred during the third quarter of 2021 will be covered under the Company's property insurance coverage, net of an aggregate deductible of $2.0 million. The Company has received advance payments from its insurers of $1.0 million and has recorded an insurance receivable associated with these events of $1.7 million as of September 30, 2021. The Company and its insurance carrier are in early stages of reviewing the impact on operations as it relates to a potential business interruption insurance claim; however, as of the date of this report, the Company cannot reasonably estimate any probable amount of business interruption insurance claim recoverable, therefore the Company has not recorded a gain contingency for a possible business interruption insurance claim as of September 30, 2021. See Note 19 of Notes to Condensed Consolidated Financial Statements in Item 1 of this Report.

The Company believes that its existing cash, anticipated cash flows from operations and available additional liquidity will be sufficient to support its operating requirements and fund its business objectives for at least the next twelve months, including but not limited to, payments of dividends to shareholders, costs related to the Combination and integration, pension plan contributions, capital expenditures, other business opportunities (including potential acquisitions) and other potential contingencies. The Company's liquidity is affected by many factors, some based on normal operations of our business and others related to the impact of the pandemic on our business and on global economic conditions as well as industry uncertainties, which we cannot predict. We also cannot predict economic conditions and industry downturns or the timing, strength or duration of recoveries. We may seek, as we believe appropriate, additional debt or equity financing which would provide capital for corporate purposes, working capital funding, additional liquidity needs or to fund future growth opportunities, including possible acquisitions and investments. The timing and amount of potential capital requirements cannot be determined at this time and will depend on a number of factors, including the actual and projected demand for our products, specialty chemical industry conditions, competitive factors, and the condition of financial markets, among others.

Non-GAAP Measures

The information in this Form 10-Q includes non-GAAP (unaudited) financial information that includes EBITDA, adjusted EBITDA, adjusted EBITDA margin, non-GAAP operating income, non-GAAP operating margin, non-GAAP net income and non-GAAP earnings per diluted share. 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 indicative of future operating performance of the Company, and facilitate a comparison among fiscal periods, as the non-GAAP financial measures exclude items that are not considered indicative of future operating performance or 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 Company presents EBITDA which is calculated as net income (loss) attributable to the Company before depreciation and amortization, interest expense, net, and taxes on income (loss) before equity in net income of associated companies. The Company also presents adjusted EBITDA which is calculated as EBITDA plus or minus certain items that are not considered indicative of future operating performance or not considered core to the Company's operations. In addition, the Company presents non-GAAP operating income which is calculated as operating income plus or minus certain items that are not considered indicative of future operating performance or not considered core to the Company's operations. Adjusted EBITDA margin and non-GAAP operating margin are calculated as the percentage of adjusted EBITDA and non-GAAP operating income to consolidated net sales, respectively. The Company believes these non-GAAP measures provide transparent and useful information and are widely used by analysts, investors, and competitors in our industry as well as by management in assessing the operating performance of the Company on a consistent basis.

Additionally, the Company presents non-GAAP net income and non-GAAP earnings per diluted share as additional performance measures. Non-GAAP net income is calculated as adjusted EBITDA, defined above, less depreciation and amortization, interest expense, net, and taxes on income before equity in net income of associated companies, in each case adjusted, as applicable, for any depreciation, amortization, interest or tax impacts resulting from the non-core items identified in the reconciliation of net income attributable to the Company to adjusted EBITDA. Non-GAAP earnings per diluted share is calculated as non-GAAP net income per diluted share as accounted for under the "two-class share method." The Company believes that non-GAAP net income and non-GAAP earnings per diluted share provide transparent and useful information and are widely used by analysts, investors, and competitors in our industry as well as by management in assessing the operating performance of the Company on a consistent basis.

The following tables reconcile the Company's non-GAAP financial measures (unaudited) to their most directly comparable GAAP (unaudited) financial measures (dollars in thousands unless otherwise noted, except per share amounts):

Non-GAAP Operating Income and Margin Reconciliations	**Three Months Ended September 30,**		**Nine Months Ended September 30,**	
	2021	**2020**	**2021**	**2020**
Operating income	$ 36,010	$ 34,859	$ 119,720	$ 24,653
Houghton combination, integration and other acquisition-related expenses (a)	5,963	6,913	18,977	23,442
Restructuring and related charges (b)	(880)	1,383	593	3,585
Fair value step up of acquired inventory sold (c)	—	—	801	226
CEO transition costs (d)	285	—	1,097	—
Inactive subsidiary's non-operating litigation costs (e)	320	—	613	—
Customer bankruptcy costs (f)	—	—	—	463
Facility remediation costs, net (g)	1,490	—	1,490	—
Indefinite-lived intangible asset impairment (h)	—	—	—	38,000
Non-GAAP operating income	$ 43,188	$ 43,155	$ 143,291	$ 90,369
Non-GAAP operating margin (%) (p)	9.6%	11.8%	10.9%	8.8%

EBITDA, Adjusted EBITDA, Adjusted EBITDA Margin and Non-GAAP Net Income Reconciliations	**Three Months Ended September 30,**		**Nine Months Ended September 30,**	
	2021	**2020**	**2021**	**2020**
Net income (loss) attributable to Quaker Chemical Corporation	$ 31,058	$ 27,304	$ 103,243	$ (8,812)
Depreciation and amortization (a)(m)	21,542	21,022	66,334	63,764
Interest expense, net	5,637	6,837	16,725	22,109
Taxes on income (loss) before equity in net income of associated companies	795	2,245	26,702	(7,603)
EBITDA	59,032	57,408	213,004	69,458
Equity income in a captive insurance company (i)	(108)	(542)	(4,071)	(697)
Houghton combination, integration and other acquisition-related expenses (a)	5,786	6,913	12,871	22,679
Restructuring and related charges (b)	(880)	1,383	593	3,585
Fair value step up of acquired inventory sold (c)	—	—	801	226
CEO transition costs (d)	285	—	1,097	—
Inactive subsidiary's non-operating litigation costs (e)	320	—	613	—
Customer bankruptcy costs (f)	—	—	—	463
Facility remediation costs, net (g)	2,019	—	2,019	—
Indefinite-lived intangible asset impairment (h)	—	—	—	38,000
Pension and postretirement benefit (income) costs, non-service components (j)	(343)	(1,375)	(596)	22,491
Brazilian non-income tax credits (k)	—	—	(13,293)	—
Currency conversion impacts of hyper-inflationary economies (l)	58	154	336	278
Adjusted EBITDA	$ 66,169	$ 63,941	$ 213,374	$ 156,483
Adjusted EBITDA margin (%) (p)	14.7%	17.4%	16.2%	15.2%
Adjusted EBITDA	$ 66,169	$ 63,941	$ 213,374	$ 156,483
Less: Depreciation and amortization - adjusted (a)	21,365	21,022	65,616	63,002
Less: Interest expense, net	5,637	6,837	16,725	22,109
Less: Taxes on income before equity in net income of associated companies - adjusted (a)(o)	9,765	8,337	31,277	15,473
Non-GAAP net income	$ 29,402	$ 27,745	$ 99,756	$ 55,899

Non-GAAP Earnings per Diluted Share Reconciliations	Three Months Ended September 30, 2021	Three Months Ended September 30, 2020	Nine Months Ended September 30, 2021	Nine Months Ended September 30, 2020
GAAP earnings (loss) per diluted share attributable to Quaker Chemical Corporation common shareholders	$ 1.73	$ 1.53	$ 5.76	$ (0.50)
Equity income in a captive insurance company per diluted share (i)	(0.01)	(0.03)	(0.23)	(0.04)
Houghton combination, integration and other acquisition-related expenses per diluted share (a)	0.26	0.30	0.58	1.03
Restructuring and related charges per diluted share (b)	(0.04)	0.06	0.03	0.15
Fair value step up of acquired inventory sold per diluted share (c)	—	—	0.03	0.01
CEO transition costs per diluted share (d)	0.01	—	0.05	—
Inactive subsidiary's non-operating litigation costs per diluted share (e)	0.02	—	0.03	—
Customer bankruptcy costs per diluted share (f)	—	—	—	0.02
Facility remediation costs, net, per diluted share (g)	0.09	—	0.09	—
Indefinite-lived intangible asset impairment per diluted share (h)	—	—	—	1.65
Pension and postretirement benefit (income) costs, non-service components per diluted share (j)	(0.02)	(0.06)	(0.03)	0.83
Brazilian non-income tax credits per diluted share (k)	(0.04)	—	(0.48)	—
Currency conversion impacts of hyper-inflationary economies per diluted share (l)	0.00	0.01	0.02	0.02
Impact of certain discrete tax items per diluted share (m)	(0.37)	(0.25)	(0.29)	(0.02)
Non-GAAP earnings per diluted share (q)	$ 1.63	$ 1.56	$ 5.56	$ 3.15

(a) Houghton combination, integration and other acquisition-related expenses include certain legal, financial, and other advisory and consultant costs incurred in connection with post-closing integration activities including internal control readiness and remediation. These costs are not indicative of the future operating performance of the Company. Approximately $0.2 million and $0.7 million in the three and nine months ended September 30, 2021, respectively, and approximately $0.3 million and $1.5 million in the three and nine months ended September 30, 2020, respectively, of these pre-tax costs were considered non-deductible for the purpose of determining the Company's effective tax rate, and, therefore, taxes on income before equity in net income of associated companies - adjusted reflects the impact of these items. During the three and nine months ended September 30, 2021, the Company recorded $0.2 million and $0.7 million, respectively, of accelerated depreciation related to certain of the Company's facilities compared to $0.8 million during the nine months ended September 30, 2020, which is included in the caption "Houghton combination, integration and other acquisition-related expenses" in the reconciliation of operating income to non-GAAP operating income and included in the caption "Depreciation and amortization" in the reconciliation of net income (loss) attributable to the Company to EBITDA, but excluded from the caption "Depreciation and amortization - adjusted" in the reconciliation of adjusted EBITDA to non-GAAP net income attributable to the Company. During the nine months ended September 30, 2021, the Company recorded a $5.4 million gain on the sale of certain held-for-sale real property assets related to the Combination which is included in the caption "Houghton combination, integration and other acquisition-related expenses" in the reconciliation of GAAP earnings (loss) per diluted share attributed to Quaker Chemical Corporation common shareholders to Non-GAAP earnings per diluted share as well as the reconciliation of net income (loss) attributable to Quaker Chemical Corporation to Adjusted EBITDA and Non-GAAP net income. See Note 2 of Notes to Condensed Consolidated Financial Statements, which appears in Item 1 of this Report.

(b) Restructuring and related charges represent the costs incurred by the Company associated with the QH restructuring program which was initiated in the third quarter of 2019 as part of the Company's plan to realize cost synergies associated with the Combination. These costs are not indicative of the future operating performance of the Company. See Note 7 of Notes to Condensed Consolidated Financial Statements, which appears in Item 1 of this Report.

(c) Fair value step up of acquired inventory sold relates to expense associated with selling inventory of acquired businesses which was adjusted to fair value as a part of purchase accounting. This increase to COGS is not indicative of the future operating performance of the Company.

(d) CEO transition costs represent the costs related to the Company's search and hiring of a new CEO in connection with the previously announced executive transition planned for the end of 2021. These expenses are not indicative of the future operating performance of the Company.

(e) Inactive subsidiary's non-operating litigation costs represents the charges incurred by an inactive subsidiary of the Company and are a result of the termination of restrictions on insurance settlement reserves as previously disclosed in the Company's 2020 Form 10-K. These charges are not indicative of the future operating performance of the Company. See Note 9 of Notes to Condensed Consolidated Financial Statements, which appears in Item 1 of this Report.

(f) Customer bankruptcy costs represent the cost associated with a specific reserve for trade accounts receivable related to a customer who filed for bankruptcy protection. These expenses are not indicative of the future operating performance of the Company.

(g) Facility remediation costs, net, presents the gross costs associated with remediation, cleaning and subsequent restoration costs associated with the property damages to certain of the Company's facilities, net of insurance recoveries received. These charges are non-recurring and are not indicative of the future operating performance of the Company. See Note 19 of Notes to Condensed Consolidated Financial Statements, which appears in Item 1 of this Report.

(h) Indefinite-lived intangible asset impairment represents the non-cash charge taken to write down the value of certain indefinite-lived intangible assets associated with the Houghton Combination. The Company has no prior history of goodwill or intangible asset impairments and this charge is not indicative of the future operating performance of the Company. See Note 14 of Notes to Condensed Consolidated Financial Statements, which appears in Item 1 of this Report.

(i) 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 32% 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.

(j) Pension and postretirement benefit (income) costs, non-service components represent the pre-tax, non-service component of the Company's pension and postretirement net periodic benefit cost in each period. These costs are not indicative of the future operating performance of the Company. The amount in the nine months ended September 30, 2020 includes the $22.7 million settlement charge for the Company's termination of the Legacy Quaker U.S. Pension Plan. See Note 9 of Notes to Condensed Consolidated Financial Statements, which appears in Item 1 of this Report.

(k) Brazilian non-income tax credits represent indirect tax credits related to certain of the Company's Brazilian subsidiaries prevailing in a legal claim as well as the Brazilian Supreme Court ruling on these non-income tax matters. The third quarter of 2021 impact to Non-GAAP earnings per diluted share reflects the tax only adjustment related to the Brazilian Supreme Court ruling on the taxability of interest income. The non-income tax credit is non-recurring and not indicative of the future operating performance of the Company. See Note 19 of Notes to Condensed Consolidated Financial Statements, which appears in Item 1 of this Report.

(l) Currency conversion impacts of hyper-inflationary economies represents the foreign currency remeasurement impacts associated with the Company's affiliates whose local economies are designated as hyper-inflationary under U.S. GAAP. During the three and nine months ended September 30, 2021 and 2020, the Company incurred non-deductible, pre-tax charges related to the Company's Argentine affiliates. These charges related to the immediate recognition of foreign currency remeasurement in the Condensed Consolidated Statements of Operations associated with these entities are not indicative of the future operating performance of the Company. See Note 1 of Notes to Condensed Consolidated Financial Statements, which appears in Item 1 of this Report.

(m) The impact of certain discrete tax items includes the impact of changes in certain valuation allowance recorded on certain of the Company's foreign tax credits, tax law changes in a foreign jurisdiction, changes in withholding rates, the tax impacts of non-income tax credits associated with certain of the Company's Brazilian subsidiaries and the associated impact on previously accrued for distributions at certain of the Company's Asia/Pacific subsidiaries, the one-time deferred tax benefit recorded on the transfer of additional intangible assets between the Company's subsidiaries as well as the offsetting impact and amortization of a deferred tax benefit the Company recorded in the fourth quarters of 2019 and 2020 related to a similar intercompany intangible asset transfer. See Note 11 of Notes to Condensed Consolidated Financial Statements, which appears in Item 1 of this Report.

(n) Depreciation and amortization for the three and nine months ended September 30, 2021 includes approximately $0.3 million and $0.9 million, respectively, and for the three and nine months ended September 30, 2020 includes $0.2 million and $0.9 million, respectively, of amortization expense recorded within equity in net income of associated companies in the Company's Condensed Consolidated Statements of Operations, which is attributable to the amortization of the fair value step up for the Company's 50% interest in a Houghton joint venture in Korea as a result of required purchase accounting.

(o) Taxes on income before equity in net income of associated companies – adjusted presents the impact of any current and deferred income tax expense (benefit), as applicable, of the reconciling items presented in the reconciliation of net income (loss) attributable to Quaker Chemical Corporation to adjusted EBITDA, and was determined utilizing the applicable rates in the taxing jurisdictions in which these adjustments occurred, subject to deductibility. Houghton combination, integration and other acquisition-related expenses described in (a) resulted in incremental taxes of $1.4 million and $3.1 million during the three and nine months ended September 30, 2021, and $1.7 million and $5.1 million during the three and nine months ended September 30, 2020, respectively. Restructuring and related charges described in (b) resulted in a tax benefit of $0.2 million and incremental taxes of $0.1 million during the three and nine months ended September 30, 2021, respectively, and $0.4 million and $0.9 million for the three and nine months ended September 30, 2020, respectively. Fair value step up of acquired inventory sold described in (c) resulted in incremental taxes of $0.2 million during the nine months ended September 30, 2021 and less than $0.1 million during the nine months ended September 30, 2020. CEO transition expenses described in (d) resulted in incremental taxes of $0.1 million and $0.3 million during the three and nine months ended September 30, 2021, respectively. Inactive subsidiary litigation described in (e) resulted in incremental taxes of $0.1 million and approximately $0.2 million during the three and nine months ended September 30, 2021, respectively. Customer bankruptcy costs described in (f) resulted in incremental taxes of $0.1 million during the nine months ended September 30, 2020. Facility fire and flood remediation costs described in (g) resulted in incremental taxes of $0.5 million in each of the three and nine months ended September 30, 2021. Indefinite-lived intangible asset impairment described in (h) resulted in incremental taxes of $8.7 million during the nine months ended September 30, 2020. Pension and postretirement benefit (income) costs, non-service components described in (j) resulted in a tax benefit of approximately $0.1 million during each of the three and nine months ended September 30, 2021, and a reduction of taxes of $0.3 million and incremental taxes of $7.7 million for the three and nine months ended September 30, 2020, respectively. Brazilian non-income tax credits described in (k) resulted in incremental taxes of approximately $0.6 million and a tax benefit of $4.7 million during the three and nine months ended September 30, 2021. Tax impact of certain discrete items described in (m) above resulted in a tax benefit of approximately $6.5 million and $5.1 million during three and nine months ended September 30, 2021, respectively, and resulted in a tax benefit of $4.5 million and $0.4 million for the three and nine months ended September 30, 2020, respectively.

(p) The Company calculates adjusted EBITDA margin and non-GAAP operating margin as the percentage of adjusted EBITDA and non-GAAP operating income to consolidated net sales.

(q) The Company calculates non-GAAP earnings per diluted share as non-GAAP net income attributable to the Company per weighted average diluted shares outstanding using the "two-class share method" to calculate such in each given period.

Off-Balance Sheet Arrangements

The Company had no material off-balance sheet items, as defined under Item 303(a)(4) of Regulation S-K as of September 30, 2021. The Company's only off-balance sheet items outstanding as of September 30, 2021 represented approximately $7 million of total bank letters of credit and guarantees. The bank letters of credit and guarantees are not significant to the Company's liquidity or capital resources. See Note 15 of Notes to Condensed Consolidated Financial Statements in Item 1 of this Report.

Operations

Consolidated Operations Review – Comparison of the Third Quarter of 2021 with the Third Quarter of 2020

Net sales were $449.1 million in the third quarter of 2021 compared to $367.2 million in the third quarter of 2020. The net sales increase of approximately $81.8 million or 22% quarter-over-quarter was primarily due to higher sales volumes of 10%, which includes additional net sales from recent acquisitions of 4%, increases from selling price and product mix of 10% and the positive impact of foreign currency translation of 2%. The increase in organic sales volumes compared to the third quarter of 2020 was primarily the result of the continued year-over-year improvement in end market conditions and continued market share gains realized in the current quarter. Sales from acquisitions is driven by the Company's acquisition of Coral Chemical Company ("Coral") in December 2020 as well as the tin-plating solutions business acquired in February 2021. The increase from selling price and product mix includes the impact of current year selling price increases implemented in response to the increases in raw material costs experienced in 2021. The positive impact from foreign currency translation is primarily the result of the strengthening of the Chinese renminbi, euro, and Mexican peso against the U.S. dollar quarter-over-quarter.

COGS were $303.9 million in the third quarter of 2021 compared to $227.0 million in the third quarter of 2020. The increase in COGS of 34% was driven by the associated COGS on the increase in net sales described above and continued increases in the Company's global raw material costs compared to the prior year quarter and the impacts of supply constraints in the current year.

Gross profit in the third quarter of 2021 of $145.1 million increased $4.9 million or approximately 4% from the third quarter of 2020, due primarily to the increase in net sales noted above. The Company's reported gross margin in the third quarter of 2021 was 32.3% compared to 38.2% in the third quarter of 2020. The lower current quarter gross margin is driven by significant raw material cost increases that began in the fourth quarter of 2020 and have continued throughout 2021 and the impacts of constraints on the world's global supply chain.

SG&A in the third quarter of 2021 increased $7.2 million compared to the third quarter of 2020 due primarily to the impact of sales increases on direct selling costs, year-over-year inflation increases, additional SG&A from recent acquisitions and higher SG&A due to foreign currency translation, partially offset by lower incentive compensation quarter-over-quarter as well as the benefits of additional realized cost savings associated with the Combination quarter-over-quarter. In addition, SG&A was lower in the prior year period as a result of temporary cost saving measures the Company implemented in response to COVID-19. While the Company continues to manage costs during the on-going pandemic, it has incurred higher SG&A quarter-over-quarter as the global economy continues to gradually rebound. The Company estimates that it realized cost synergies associated with the Combination of approximately $19 million during the third quarter of 2021 compared to approximately $17 million during the third quarter of 2020.

During the third quarter of 2021 and 2020, the Company incurred $5.8 million and $6.9 million, respectively, of Combination, integration and other acquisition-related expenses primarily for professional fees related to Houghton integration and other acquisition-related activities. See the Non-GAAP Measures section of this Item, above.

The Company initiated a restructuring program during the third quarter of 2019 as part of its global plan to realize cost synergies associated with the Combination. The Company incurred restructuring and related charges for reductions in headcount and site closures under this program, net of adjustments to initial estimates for severance, of a credit of $0.8 million and expense $1.4 million during the third quarters of 2021 and 2020, respectively. See the Non-GAAP Measures section of this Item, above.

Operating income in the third quarter of 2021 was $36.0 million compared to $34.9 million in the third quarter of 2020. Excluding Combination, integration and other acquisition-related expenses, restructuring and related charges and other non-core items, the Company's current quarter non-GAAP operating income was consistent at $43.2 million in each of the current quarter and the prior year quarter primarily due to the increase in net sales described above and the benefits from cost savings related to the Combination offset by an increase in SG&A as well as the significant increases in raw material costs quarter-over-quarter.

The Company had other income, net, of $0.6 million in the third quarter of 2021 compared to other expense, net, of $0.2 million in the third quarter of 2020. The third quarter of 2021 included foreign currency transaction gains compared to foreign currency transaction losses incurred in the prior year quarter. In addition, the Company had lower non-service components of pension and postretirement benefit costs in the current quarter, partially offset by higher losses on fixed asset disposals related to the events mentioned as facility remediation activities above. See the Non-GAAP Measures section of this Item, above.

Interest expense, net, decreased $1.2 million compared to the third quarter of 2020 driven by lower current quarter borrowings outstanding as a result of the additional revolver borrowings drawn down in March 2020 at the onset of the pandemic which were subsequently repaid in September 2020 and, to a lesser extent, a slight decline in overall interest rates quarter-over-quarter.

The Company's effective tax rates for the third quarters of 2021 and 2020 were 2.6% and 8.1%, respectively. The Company's lower current quarter effective tax rate is primarily driven by a one-time deferred tax benefit related to an intercompany intangible asset transfer, described in the Non-GAAP measures section of this Item, above. Comparatively, the prior year third quarter effective tax rate was impacted by the tax effect of certain one-time items including benefits related to the impact of tax regulations and other changes in foreign tax credit valuation allowances, a change in a foreign subsidiary's statutory rate and impacts related to the Combination. Excluding the impact of these items as well as all other non-core items in each quarter, described in the Non-GAAP Measures section of this Item, above, the Company estimates that its third quarters of 2021 and 2020 effective tax rates would have been approximately 25% and 24%, respectively. The higher estimated current quarter tax rate was primarily driven by the impact of changes in mix of earnings and provision to return adjustments in the prior period, partially offset with a change in permanent reinvestment assertions.

Equity in net income of associated companies decreased $1.0 million in the third quarter of 2021 compared to the third quarter of 2020, primarily due to lower current year quarter income from the Company's interest in a captive insurance company as well as from its 50% interest in a joint venture in Korea compared to the prior year quarter. See the Non-GAAP Measures section of this Item, above.

Net income attributable to noncontrolling interest was less than $0.1 million in both the third quarters of 2021 and 2020.

Foreign exchange positively impacted the Company's third quarter results by approximately 10% driven by the positive impact from foreign currency translation on earnings as well as foreign exchange transaction gains in the current year quarter as compared to foreign exchange transaction losses in the prior year third quarter.

Consolidated Operations Review – Comparison of the First Nine Months of 2021 with the First Nine Months of 2020

Net sales were $1,314.1 million in the first nine months of 2021 compared to $1,031.8 million in the first nine months of 2020. The net sales increase of $282.3 million or 27% period-over-period reflects a benefit from higher sales volumes of 18%, which includes additional net sales from recent acquisitions of 4%, increases in selling price and product mix of 5%, and the positive impact from foreign currency translation of 4%. The increase in sales volumes compared to the first nine months of 2020 was primarily due to improved end market conditions from the prior year impacts of COVID-19 and continued market share gains. Additional net sales from acquisitions relate primarily to the acquisitions of a tin-plating solutions business and Coral, acquired in February 2021 and December 2020, respectively. The increase from selling price and product mix includes the benefits of current year selling price increases implemented to date to help offset the rising raw material and input costs. The positive impact from foreign currency translation is primarily the result of the strengthening of the euro and Chinese Renminbi against the U.S. dollar year-over-year.

COGS were $858.3 million in the first nine months of 2021 compared to $660.4 million in the first nine months of 2020. The increase in COGS of 30% was driven by the associated COGS on the increase in net sales as described above, and the higher raw material costs noted in the quarterly discussion.

Gross profit in the first nine months of 2021 increased $84.3 million or 23% from the first nine months of 2020, due primarily to the increase in net sales described above. The Company's reported gross margin in the first nine months of 2021 was 34.7% compared to 36.0% in the first nine months of 2020. The Company's lower current year gross margin was primarily due to the significant raw material increases described in the third quarter discussion above.

SG&A in the first nine months of 2021 increased $34.8 million compared to the first nine months of 2020 due primarily to the same drivers described in the third quarter discussion above.

During the first nine months of 2021 and 2020, the Company incurred $18.3 million and $22.8 million, respectively, of Combination, integration and other acquisition-related expenses primarily for professional fees related to Houghton integration and other acquisition-related activities. See the Non-GAAP Measures section of this Item, above.

As described above, the Company initiated a restructuring program during the third quarter of 2019 as part of its global plan to realize cost synergies associated with the Combination. The Company recorded restructuring and related charges of $0.6 million during the first nine months of 2021 compared to $3.6 million during the first nine months of 2020 under this program. See the Non-GAAP Measures section of this Item, above.

During the first quarter of 2020, the Company recorded a $38.0 million non-cash impairment charge to write down the value of certain indefinite-lived intangible assets associated with the Combination. This non-cash impairment charge is related to certain acquired Houghton trademarks and tradenames and was primarily the result of the projected negative impacts of COVID-19 as of March 31, 2020 on their estimated fair values. There was no similar impairment charges recorded during the first nine months of 2021.

Operating income in the first nine months of 2021 was $119.7 million compared to $24.7 million in the first nine months of 2020. Excluding Combination, integration and other acquisition-related expenses, restructuring and related charges, the non-cash indefinite-lived intangible asset impairment charge, and other non-core items, the Company's current year non-GAAP operating income of $143.3 million increased compared to $90.4 million in the prior year period, primarily due to the increase in net sales described above and the continued benefits from cost savings related to the Combination, partially offset by higher SG&A and the negative impact of significant increases in raw material costs due to constraints on the overall global supply chain.

The Company's other income, net, was $19.3 million in the first nine months of 2021 compared to other expense, net of $22.4 million in the prior year period. The year-over-year change was primarily due to other income related to certain non-income tax credits recorded by the Company's Brazilian subsidiaries during the second quarter of 2021 as well as the gain on the sale of certain held-for-sale real property assets during the first quarter of 2021 compared to a first quarter of 2020 pension plan settlement charge associated with the termination of the Legacy Quaker U.S. Pension Plan. See the Non-GAAP Measures section of this Item, above.

Interest expense, net, decreased $5.4 million in the first nine months of 2021 compared to the first nine months of 2020 driven by lower current year borrowings outstanding as a result of the additional revolver borrowings drawn down in March 2020 at the onset of the pandemic as well as a decline in overall interest rates year-over-year, as the weighted average interest rate incurred on borrowings under the Company's credit facility was approximately 1.6% during the first nine months of 2021 compared to approximately 2.2% during the first nine months of 2020.

The Company's effective tax rates for the first nine months of 2021 and 2020 were an expense of 21.8% compared to a benefit of 38.3%, respectively. The Company's effective tax rate for the nine months ended September 30, 2021 was impacted by certain U.S. tax law changes, the tax impact of certain non-income tax credits recorded by the Company's Brazilian subsidiaries, and a deferred tax benefit related to an intercompany intangible asset transfer. Comparatively, the prior year first nine months effective tax rate was impacted by the tax effect of certain one-time pre-tax losses as well as certain tax charges and benefits in the period including those related to changes in foreign tax credit valuation allowances, tax law changes in a foreign jurisdiction, the tax impacts of the Company's termination of its Legacy Quaker U.S. Pension Plan and the Houghton indefinite-lived trademarks and tradename intangible asset impairment. Excluding the impact of these items as well as all other non-core items in each year, described in the Non-GAAP Measures section of this Item, above, the Company estimates that its first nine months of 2021 and 2020 effective tax rates were relatively consistent at approximately 25% and 23%, respectively. The year-over-year increase was largely driven by the impact of changes in pre-tax income levels on certain tax adjustments in each period and the mix of earnings, as well as withholding taxes on repatriations and provision to return adjustments in the prior period, partially offset with a change in permanent reinvestment assertions. The Company may experience continued 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. In addition, the foreign tax credit valuation allowance is based on a number of variables, including forecasted earnings, which may vary.

Equity in net income of associated companies increased $4.1 million in the first nine months of 2021 compared to the first nine months of 2020, primarily due to higher current year earnings from the Company's interest in a captive insurance company. See the Non-GAAP Measures section of this Item, above. In addition, the Company had slightly higher earnings year-over-year from the Company's 50% interest in its joint venture in Korea.

Net income attributable to noncontrolling interest was less than $0.1 million in both the first nine months of 2021 and 2020.

Foreign exchange positively impacted the Company's first nine months of 2021 results by approximately 6% driven by the positive impact from foreign currency translation on earnings as well as lower foreign exchange transaction losses in the current year as compared to the prior year period.

Reportable Segments Review - Comparison of the Third Quarter of 2021 with the Third Quarter of 2020

The Company's reportable segments reflect the structure of the Company's internal organization, the method by which the Company's resources are allocated and the manner by which the chief operating decision maker of the Company assesses its performance. The Company has four reportable segments: (i) Americas; (ii) EMEA; (iii) Asia/Pacific; and (iv) Global Specialty Businesses. The three geographic segments are composed of the net sales and operations in each respective region, excluding net sales and operations managed globally by the Global Specialty Businesses segment, which includes the Company's container, metal finishing, mining, offshore, specialty coatings, specialty grease and Norman Hay businesses.

Segment operating earnings for the Company's reportable segments are comprised of net sales less COGS and SG&A directly related to the respective segment's product sales. Operating expenses not directly attributable to the net sales of each respective segment, such as certain corporate and administrative costs, Combination, integration and other acquisition-related expenses, Restructuring and related charges, and COGS related to acquired inventory sold, which is adjusted to fair value as part of purchase accounting, are not included in segment operating earnings. Other items not specifically identified with the Company's reportable segments include interest expense, net, and other income (expense), net.

Americas

Americas represented approximately 34% of the Company's consolidated net sales in the third quarter of 2021. The segment's net sales were $150.8 million, an increase of $31.3 million or 26% compared to the third quarter of 2020. Excluding sales from acquisitions, the segment's net sales increase quarter-over-quarter of approximately 21% was driven by higher volumes of 9%, a benefit in selling price and product mix of 10% and the positive impact of foreign currency translation of 2%. The current quarter organic volume increase was driven by the continued improvement in end market conditions compared to the prior year quarter which was impacted by COVID-19. The increase in selling price and product mix is primarily driven by price increases implemented to help offset the significant increases in raw material and other input costs incurred during 2021. The foreign exchange impact was primarily driven by the strengthening of the Mexican peso against the U.S. dollar, as this exchange rate averaged 20.02 in the third quarter of 2021 compared to 22.06 during the third quarter of 2020. This segment's operating earnings were $31.3 million, an increase of $0.2 million or 1% compared to the third quarter of 2020. The relatively consistent segment operating earnings quarter-over-quarter is the net result of increases in net sales, described above, offset by lower gross margins driven by the continued raw material cost increases and global supply chain and logistics pressures coupled with higher SG&A including an increase in direct selling costs associated with higher net sales, SG&A from acquisitions and an increase in SG&A as the prior year third quarter included temporary cost savings measures implemented in response to the onset of the COVID-19 pandemic.

EMEA

EMEA represented approximately 27% of the Company's consolidated net sales in the third quarter of 2021. The segment's net sales were $122.2 million, an increase of $28.3 million or 30% compared to the third quarter of 2020. The increase in net sales was driven by a benefit from selling price and product mix of 19%, increases in organic volumes of approximately 9%, the positive impact of foreign currency translation of 1%, and additional net sales from acquisitions of 1%. The increase in selling price and product mix is primarily driven by price increases implemented to offset the significant increase in raw material and other input costs incurred during 2021. The current quarter volume increase was driven by the continued improvement in end market conditions compared to the prior year quarter which was heavily impacted by COVID-19. The foreign exchange impact was primarily driven by the strengthening of the euro against the U.S. dollar as this exchange rate averaged 1.18 in the third quarter of 2021 compared to 1.17 in the third quarter of 2020. This segment's operating earnings were $20.2 million, an increase of $2.7 million or 16% compared to the third quarter of 2020. The increase in segment operating earnings reflects the higher net sales described above, partially offset by lower current quarter gross margins driven by the continued raw material cost increases and global supply chain and logistics pressures as well as higher SG&A including increases in direct selling costs associated with higher net sales as well as increases as the prior year third quarter included temporary cost savings measures implemented in response to the onset of the COVID-19 pandemic.

Asia/Pacific

Asia/Pacific represented approximately 22% of the Company's consolidated net sales in the third quarter of 2021. The segment's net sales were $98.7 million, an increase of approximately $13.8 million or 16% compared to the third quarter of 2020. The increase in net sales quarter-over-quarter was driven by increases in volumes of 7%, the positive impact of foreign currency translation of 5%, increases from selling price and product mix of 3% and additional net sales from acquisitions of 1%. The current quarter volume increase was driven by the continued improvement in end market conditions compared to the prior year quarter which was impacted by COVID-19. The foreign exchange impact was primarily due to the strengthening of the Chinese renminbi against the U.S. dollar as this exchange rate averaged 6.47 in the third quarter of 2021 compared to 6.92 in the third quarter of 2020. This segment's operating earnings were $23.3 million, a decrease of $4.0 million or 15% compared to the third quarter of 2020. The decrease in segment operating earnings was largely driven by the continued raw material cost increases and global supply chain and logistics pressures as well as higher direct selling costs associated with higher net sales.

Global Specialty Businesses

Global Specialty Businesses represented approximately 17% of the Company's consolidated net sales in the third quarter of 2021. The segment's net sales were $77.4 million, an increase of $8.6 million or 12% compared to the third quarter of 2020. Excluding net sales from acquisitions, the segment's net sales would have increased 5% quarter-over-quarter driven by increases in selling price and product mix, including Norman Hay, of 13% and the positive impact of foreign currency translation of 2% partially offset by volume declines of 10%. Both the changes in selling price and product mix and sales volumes were primarily driven by higher amounts of shipments of a lower priced product in the Company's mining business in the prior year period. The foreign exchange impact was a result of similar strengthening of certain currencies in EMEA and Americas as described above. This segment's operating earnings were $20.7 million, a decrease of $0.5 million or 2% compared to the third quarter of 2020. The decrease in segment operating earnings was driven by the continued raw material cost increases and global supply chain and logistics pressures as well as higher SG&A, including SG&A from acquisitions in the current year quarter.

Reportable Segments Review - Comparison of the First Nine months of 2021 with the First Nine months of 2020

Americas

Americas represented approximately 32% of the Company's consolidated net sales in the first nine months of 2021. The segment's net sales were $425.3 million, an increase of $95.3 million or 29% compared to the first nine months of 2020. The increase in net sales was due to higher sales volumes of approximately 16%, additional net sales from acquisitions of 6% primarily resulting from Coral, benefits from selling price and product mix of 6%, and the positive impact of foreign currency translation of 1%. The current year volume increase was driven by the continued economic rebound from the COVID-19 slowdown that began in late March and continued throughout the third quarter of 2020. This segment's operating earnings were $97.2 million, an increase of $26.6 million or 38% compared to the first nine months of 2020. The increase in segment operating earnings reflects the higher net sales described above, partially offset by lower gross margins in the current year period coupled with higher SG&A, including SG&A from acquisitions primarily due to the same drivers as described in the third quarter discussion above.

EMEA

EMEA represented approximately 28% of the Company's consolidated net sales in the first nine months of 2021. The segment's net sales were $365.5 million, an increase of $88.9 million or 32% compared to the first nine months of 2020. The increase in net sales was due to higher sales volumes of 15%, increases in selling price and product mix of 8%, the positive impacts from foreign exchange translation of 7% and additional net sales from acquisitions of 2%. The current year volume increase was driven by the continued economic rebound from the COVID-19 slowdown. The foreign exchange impact was primarily due to the strengthening of the euro and British pound against the U.S. dollar as these exchange rates averaged 1.20 and 1.39, respectively, during the first nine months of 2021 compared to 1.12 and 1.27, respectively, during the first nine months of 2020. This segment's operating earnings were $68.8 million, an increase of $22.5 million or 49% compared to the first nine months of 2020. The increase in segment operating earnings reflect the higher net sales described above partially offset lower gross margins in the current year period coupled with higher direct selling expenses on the increase in net sales primarily due to the same drivers as described in the third quarter discussion above.

Asia/Pacific

Asia/Pacific represented approximately 22% of the Company's consolidated net sales in the first nine months of 2021. The segment's net sales were $286.9 million, an increase of $60.1 million or 26% compared to the first nine months of 2020. The increase in net sales was driven by higher sales volumes of approximately 19% and the positive impact of foreign currency translation of 7%. The current year volume increase was driven by the continued gradual economic rebound from the COVID-19 slowdown as the pandemic notably impacted China beginning in the first quarter of 2020 and then the rest of the region through the third quarter of

2020. The foreign exchange impact was primarily due to the strengthening of the Chinese renminbi against the U.S. dollar as this exchange rate averaged 6.47 during the first nine months of 2021 compared to 6.99 during the first nine months of 2020. This segment's operating earnings were $74.0 million, an increase of $7.9 million or 12% compared to the first nine months of 2020. The increase in segment operating earnings reflect the higher net sales described above partially offset lower gross margins in the current year period coupled with higher direct selling expenses on the increase in net sales primarily due to the same drivers as described in the third quarter discussion above.

Global Specialty Businesses

Global Specialty Businesses represented 18% of the Company's consolidated net sales in the first nine months of 2021. The segment's net sales were $236.4 million, an increase of $37.9 million or 19% compared to the first nine months of 2020. The increase in net sales was driven by benefits from selling price and product mix, including Norman Hay, of 16%, additional net sales from acquisitions of 7% primarily driven by Coral, and the positive impact of foreign currency transaction of 3%, partially offset by decreases in volumes of 7%. The foreign exchange impact was a result of similar strengthening of certain currencies in EMEA and Americas as described above. Both the changes in selling price and product mix and sales volumes were primarily driven by higher shipments of a lower priced product in the Company's mining business in the period year period. This segment's operating earnings were $69.0 million, an increase of $10.9 million or 19% compared to the first nine months of 2020. The increase in segment operating earnings reflects the higher net sales described above, partially offset by lower gross margins in the current year period coupled with higher SG&A, including SG&A from acquisitions primarily due to the same drivers as described in the third quarter discussion above.

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 Chemical Corporation with the Securities and Exchange Commission ("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, including statements regarding the potential effects of the COVID-19 pandemic and global supply chain constraints on the Company's business, results of operations, and financial condition, our expectation that we will maintain sufficient liquidity and remediate any of our material weaknesses in internal control over financial reporting, and statements regarding the impact of increased raw material costs and pricing initiatives 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:

- the potential benefits of the Combination and other acquisitions;
- the impacts on our business as a result of the COVID-19 pandemic and any projected global economic rebound or anticipated positive results due to Company actions taken in response;
- cost increases in prices of raw materials and the impacts of constraints and disruptions in the global supply chain;
- our current and future results and plans; and
- statements that include the words "may," "could," "should," "would," "believe," "expect," "anticipate," "estimate," "intend," "plan" or similar expressions.

Such statements include information relating to current and future business activities, operational matters, capital spending, and financing sources. From time to time, forward-looking statements are also included in the Company'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, in the Company's Annual Report to Shareholders for 2020 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 the Company's subsequent reports on Forms 10-K, 10-Q, 8-K and other related filings should be consulted. A major risk is that demand for the Company's products and services is largely derived from the demand for our customers' products, which subjects the Company to uncertainties related to downturns in a customer's business and unanticipated customer production slowdowns and shutdowns, including as is currently being experienced by many automotive industry companies as a result of supply chain disruption. Other major risks and uncertainties include, but are not limited to, the primary and secondary impacts of the COVID-19 pandemic, including actions taken in response to the pandemic by various governments, which could exacerbate some or all of the other risks and uncertainties faced by the Company, as well as the potential for significant increases in raw material costs, supply chain disruptions, customer financial instability, worldwide economic and political disruptions, foreign currency fluctuations, significant changes in applicable tax rates and regulations, future terrorist attacks and other acts of violence. Furthermore, the Company is subject to the same business cycles as those experienced by our customers in the steel, automobile, aircraft, industrial equipment, and durable goods industries. The ultimate impact of COVID-19 on our business will depend on, among other things, the extent and duration of the pandemic, the severity of the disease and the number of people infected with the virus including as new variants emerge, the continued uncertainty regarding global availability, administration, acceptance and long-term efficacy of vaccines, or other treatments for COVID-19 or its variants, the longer-term effects on the economy of the pandemic, including the resulting market volatility, and by the measures taken by governmental authorities and other third parties restricting day-to-day life and business operations and the length of time that such measures remain in place, as well as laws and other governmental programs implemented to address the pandemic or assist impacted businesses, such as fiscal stimulus and other legislation designed to deliver monetary aid and other relief. Other factors could also adversely affect us, including those related to the Combination and other acquisitions and the integration of acquired businesses. Our forward-looking statements are subject to risks, uncertainties and assumptions about the Company and its operations that are subject to change based on various important factors, some of which are beyond our control. These risks, uncertainties, and possible inaccurate assumptions relevant to our business could cause our actual results to differ materially from expected and historical results.

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, refer to the Risk Factors section, which appears in Item 1A in our 2020 Form 10-K 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.

Quaker Houghton on the Internet

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

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, 2020, 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 defined in Rule 13a-15(e) under the Exchange Act) 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 not effective as of September 30, 2021 because of the material weaknesses in our internal control over financial reporting, as described below.

As previously disclosed in "Item 9A. Controls and Procedures." in the Company's 2020 Form 10-K, through the process of evaluating risks and corresponding changes to the design of existing or the implementation of new controls in light of the significant non-recurring transactions that occurred during 2019, including the Combination, the Company identified certain deficiencies in its application of the principles associated with the *Committee of Sponsoring Organization of the Treadway Commission in Internal Control – Integrated Framework (2013)* that management has concluded in the aggregate constitute a material weakness. A material weakness is a deficiency, or combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of annual or interim financial statements will not be prevented or detected on a timely basis. We did not design and maintain effective controls in response to the risks of material misstatement. Specifically, changes to existing controls or the implementation of new controls were not sufficient to respond to changes to the risks of material misstatement in financial reporting as a result of becoming a larger, more complex global organization due to the Combination. This material weakness also contributed to an additional material weakness as we did not design and maintain effective controls over the review of pricing, quantity and customer data to verify that revenue recognized was complete and accurate. These material weaknesses did not result in material misstatements to the interim or annual consolidated financial statements. However, these material weaknesses could result in misstatements to our account balances and disclosures that could result in a material misstatement to the interim or annual consolidated financial statements that would not be prevented or detected.

Notwithstanding these material weaknesses, the Company has concluded that the unaudited condensed consolidated financial statements included in this Report present fairly, in all material respects, the financial position of the Company as of September 30, 2021 and December 31, 2020, and that the results of its operations and its cash flows and changes in equity for both the three and nine month periods ended September 30, 2021 and 2020, are in conformity with accounting principles generally accepted in the United States of America.

Progress on Remediation of Material Weaknesses

The Company and its Board of Directors, including the Audit Committee of the Board of Directors, are committed to maintaining a strong internal control environment. Since identifying the material weaknesses, the Company has dedicated a significant amount of time and resources to remediate all of the previously identified material weaknesses as quickly and effectively as possible. During 2020 and into 2021, the Company dedicated multiple internal resources and supplemented those internal resources with various third-party specialists to assist with the formalization of a robust and detailed remediation plan. In undertaking remediation activities, the Company has hired additional personnel dedicated to financial and information technology compliance to further supplement its internal resources. In addition, the Company has established a global network of personnel to assist local management in understanding control performance and documentation requirements. In order to sustain this network, the Company conducts periodic trainings and hosts discussions to address questions on a current basis. However, the impact of COVID-19, including travel restrictions and remote work arrangements required the Company to adapt and make changes to its internal controls integration plans as well as its remediation plans, and has presented and is expected to continue to present challenges with regards to the timing of the Company's remediation and integration plan activities.

Despite the challenges brought on by COVID-19 and driven by the Company's priority of creating a long-term sustainable control structure to ensure stability for a company that has more than doubled in size since August 2019, the Company continues to make substantial strides towards remediating the underlying causes of the previously disclosed material weaknesses in our risk assessment process and within our revenue process, as further discussed below.

Risk Assessment – We previously determined that our risk assessment process was not designed adequately to respond to changes to the risks of material misstatement to financial reporting. In order to remediate this material weakness, we have designed and implemented an improved risk assessment process, including identifying and assessing those risks attendant to the significant changes within the Company as a result of becoming a larger, more complex global organization due to the Combination. During 2020, a full review was performed of our processes and controls across significant locations in order to identify and address potential design gaps. In addition to individual transactional-level control enhancements, this review resulted in (i) an enhanced financial statement risk assessment, (ii) the standardization of existing legal entity and newly implemented segment quarterly analytics and quarterly closing packages completed by key financial reporting personnel, (iii) a global account reconciliation review program and (iv) enhancements to our quarterly identification and reassessment of new and existing business and information technology risks that could affect our financial reporting. Monitoring is also performed through our enhanced quarterly controls certification process, whereby changes in business or information technology processes or control owners are identified and addressed timely. Although we have implemented and tested the additional controls as noted in our remediation plan and found them to be effective, this material weakness will not be considered remediated due to the Revenue – Price and Quantity material weakness, discussed below. Once the Revenue – Price and Quantity material weakness is remediated, we expect the Risk Assessment material weakness will also be remediated.

Revenue – Price and Quantity – We previously determined that we did not design and maintain effective controls over the review of pricing, quantity and customer data to verify that revenue recognized was complete and accurate. In order to remediate this material weakness, the Company made significant progress in its redesign of certain aspects of its revenue process and related controls. The Company has identified and agreed upon design enhancements and requirements for each revenue sub-process. The design includes enhancements to entity-level and transactional-level manual controls as well as IT general and application controls. During the third quarter of 2021 and through the date of this Form 10-Q filing for the period ended September 30, 2021, the Company has implemented these design changes. While the Company believes that the enhancements to these entity-level, transactional and IT general and application controls will sufficiently address the material weakness previously identified, because the additional controls have not been fully tested, this material weakness is not yet remediated. The existing material weakness will not be considered remediated until the applicable remedial controls have been operating for a sufficient period of time and management has concluded, through testing, that the controls are operating effectively.

Given the significant resources the Company has dedicated to remediation of its material weaknesses, the Company is committed to remediation and expects that in 2021 it will successfully remediate its price and quantity and its risk assessment material weaknesses.

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, 2021 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting. Based on that evaluation, as described above, there were changes that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting during the quarter ended September 30, 2021.

PART II.
OTHER INFORMATION

Items 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 19 of the Notes to the Condensed Consolidated Financial Statements in Part I, Item 1, of this Report.

Item 1A. Risk Factors.

The Company's business, financial conditions, results of operations and cash flows are subject to various risks that could cause actual results to vary materially from recent results or from anticipated future results. In addition to the other information set forth in this Report, you should carefully consider the risk factors previously disclosed in Part I, Item 1A of our 2020 Form 10-K. There have been no material changes to the risk factors described therein.

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 (2)	(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 (3)
July 1 - July 31	**—**	**$ —**	**—**	**$ 86,865,026**
August 1 - August 31	**491**	**$ 251.74**	**—**	**$ 86,865,026**
September 1 - September 30	**34**	**$ 240.64**	**—**	**$ 86,865,026**
Total	**525**	**$ 251.02**	**—**	**$ 86,865,026**

(1) All of these shares were acquired from employees upon their surrender of Quaker Chemical Corporation shares in payment of the exercise price of employee stock options exercised or for the payment of taxes upon exercise of employee stock options or the vesting of restricted stock awards or units.

(2) The price paid for shares acquired from employees pursuant to employee benefit and share-based compensation plans is, in each case, based on the closing price of the Company's common stock on the date of exercise or vesting as specified by the plan pursuant to which the applicable option, restricted stock award, or restricted stock unit was granted.

(3) On May 6, 2015, the Board of Directors of the Company approved, and the Company announced, a 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"), and it 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, 2021.

Limitation on the Payment of Dividends

The Credit Facility has certain limitations on the payment of dividends and other so-called restricted payments. See Note 15 of Notes to Condensed Consolidated Financial Statements, in Part I, Item 1, of this Report.

Item 6. Exhibits.

(a) Exhibits

3.1	–	Amended and Restated Articles of Incorporation (as amended through July 24, 2019). Incorporated by reference to Exhibit 3.1 as filed by the Registrant with its quarterly report on Form 10-Q filed on August 1, 2019.
3.2	–	Restated By-laws (effective May 6, 2015, as amended through March 27, 2020). Incorporated by reference to Exhibit 3.2 as filed by the Registrant within its quarterly report on Form 10-Q filed on May 11, 2020.
10.1	–	Employment Agreement by and between Registrant and Andrew Tometich dated September 2, 2021, effective on October 11, 2021. *†
10.2	–	Change in Control Agreement by and between Registrant and Andrew Tometich dated September 2, 2021, effective on October 11, 2021. *†
10.3	–	Employment Agreement by and between Registrant and Joseph Berquist dated August 18, 2021, effective on September 9, 2021. *†
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		Inline XBRL Instance Document*
101.SCH		Inline XBRL Taxonomy Extension Schema Document*
101.CAL		Inline XBRL Taxonomy Extension Calculation Linkbase Document*
101.DEF		Inline XBRL Taxonomy Extension Definition Linkbase Document*
101.LAB		Inline XBRL Taxonomy Extension Label Linkbase Document*
101.PRE		Inline XBRL Taxonomy Extension Presentation Linkbase Document*
104		Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101.INS)*

* Filed herewith.
** Furnished herewith.
† Management contract or compensatory plan.

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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)

/s/ Shane W. Hostetter

Date: November 4, 2021

Shane W. Hostetter, Senior Vice President, Chief Financial Officer (officer duly authorized on behalf of, and principal financial officer of, the Registrant)

EXHIBIT 10.1

EMPLOYMENT AGREEMENT

September 2, 2021

NAME: **Andrew Tometich**

[REDACTED]

[REDACTED]

The parties to this Employment Agreement (“Agreement”) are Andrew Tometich (“You” or the “Executive”) and Quaker Chemical Corporation, d/b/a Quaker Houghton, a Pennsylvania corporation (“Quaker Houghton” or the “Company”).

You are hereby appointed as the Company’s Chief Executive Officer and President effective December 1, 2021 with an anticipated start date of on or about October 11, 2021.

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

1. <u>Duties</u>

Quaker Houghton agrees to employ you and you agree to serve as Quaker Houghton’s Chief Executive Officer and President. You shall perform all duties consistent with such position as well as any other duties that are assigned to you from time to time by Quaker Houghton’s Board of Directors. You agree that during the term of your employment with Quaker Houghton to devote your knowledge, skill, and working time solely and exclusively to the business and interests of Quaker Houghton and its subsidiaries.

2. <u>Compensation</u>

Your base salary will be determined from time to time by the Quaker Houghton Board of Directors. In addition, you will be entitled to participate, to the extent eligible, in any of Quaker Houghton’s annual and long term incentive plans, retirement savings plan (401k plan), and will be entitled to vacations, paid holidays, and medical, dental, and other benefits as are made generally available by Quaker Houghton to its full-time U.S. employees. During your employment with Quaker Houghton, your salary will not be reduced by Quaker Houghton without your prior written consent. Your initial compensation and benefits are outlined on Addendum 1, which is attached hereto and made a part hereof.

3. <u>Term of Employment</u>

Your employment with Quaker Houghton may be terminated on ninety (90) days' written notice by either party, with or without cause or reason whatsoever. Within ninety (90) days after termination of your employment, you will be given an accounting of all monies due you. Notwithstanding the foregoing, Quaker Houghton has the right to terminate your employment upon less than ninety (90) days’ notice for Cause (as defined below).

4. Covenant Not to Disclose

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

b. You acknowledge that, by this Section 4(b), you have been notified in accordance with the Defend Trade Secrets Act that, notwithstanding the foregoing:

(i) You will not be held criminally or civilly liable under any federal or state trade secret law or this Agreement for the disclosure of Confidential Information that: (A) you make (1) in confidence to a federal, state, or local government official, either directly or indirectly, or to your attorney; and (2) solely for the purpose of reporting or investigating a suspected violation of law; or (B) you make in a complaint or other document that is filed under seal in a lawsuit or other proceeding.

(ii) If you file a lawsuit for retaliation by Quaker Houghton for reporting a suspected violation of law, you may disclose Confidential Information to your attorney and use the Confidential Information in the court proceeding if you: (A) file any document containing Confidential Information under seal and (B) do not disclose Confidential Information, except pursuant to court order.

c. Additionally, Quaker Houghton confirms that nothing in this Agreement is intended to or shall prevent, impede or interfere with your right, without prior notice to Quaker Houghton, to provide information to the government, participate in any government investigations, file a court or administrative complaint, testify in proceedings regarding Quaker Houghton's past or future conduct, or engage in any future activities protected under any statute administered by any government agency.

5. Covenant Not to Compete

In consideration of your position of Chief Executive Officer for Quaker Houghton and the training and Confidential Information you are to receive from Quaker Houghton, you agree that during your employment with Quaker Houghton and for a period of eighteen (18) months thereafter, regardless of the reason for your termination, you will not:

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

b. directly or indirectly recruit, solicit or encourage any Quaker Houghton (or any of its affiliates') employee or otherwise induce such employee to leave Quaker Houghton's (or any of its affiliates') employ, or to become an employee or otherwise be associated with you or any firm, corporation, business, or other entity with which you are or may become associated; and

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

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

6. <u>Contractual Restrictions</u>

You represent and warrant to Quaker Houghton that: (a) there are no restrictions, agreements, or understandings to which you are a party that would prevent or make unlawful your employment with Quaker Houghton and (b) your employment by Quaker Houghton shall not constitute a breach of any contract, agreement, or understanding, oral or written, to which you are a party or by which you are bound. You further represent that you will not use any trade secret, proprietary or otherwise confidential information belonging to a prior employer or other third party in connection with your employment with Quaker Houghton.

7. <u>Inventions</u>

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

8. <u>Termination</u>

(a) Either party may terminate this Agreement per the terms of Section 3 hereof and Quaker Houghton, in its sole discretion, may terminate your employment at any time for Cause (as defined herein). If you incur a Separation from Service (as defined below) by decision and action of Quaker Houghton for any reason other than Cause or death Quaker Houghton agrees to:

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

2. Pay you a severance consisting of 18 months of salary and bonus at target paid biweekly over eighteen months commencing on the Payment Date (as defined below) and continuing on such Quaker Houghton's normal payroll dates thereafter; provided you sign a Release within 45 days of the later of the date you receive the Release or your Separation from Service. Continuation of all medical and dental coverage's will also be available for 18 months at a level equal to the coverage provided before your Separation from Service.

(b) If the Executive dies during the Term of Employment, the Company shall not thereafter be obligated to make any further payments under this Agreement except for amounts accrued as of the date of the Executive's death, and except that the Company shall pay a death benefit equal to 100% of base salary in effect on the day before death and 50% of base salary in each of the four years thereafter. "Beneficiary" shall mean the person designated by the Executive to receive benefits under this Agreement in a writing filed by the Executive with the Company's human resources department before the Executive's death or, if the Executive fails to designate a beneficiary or the designated beneficiary predeceases the Executive, the Executive's Beneficiary shall be his surviving spouse or, if the Executive has no surviving spouse, his estate.

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

"Cause" means your employment with Quaker Houghton has been terminated by reason of (i) your willful and material breach of this Agreement (after having received notice thereof and a reasonable opportunity to cure or correct) or the Company's policies, (ii) dishonesty, fraud, willful malfeasance, gross negligence, or other gross misconduct, in each case relating to the performance of your duties hereunder which is materially injurious to Quaker Houghton, or (iii) conviction of or plea of guilty or nolo contendere to a felony.

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

"Release" means a release (in a form satisfactory to Quaker Houghton) of any and all claims against Quaker Houghton and all related parties with respect to all matters arising out of your employment with Quaker Houghton, or the termination thereof (other than for claims for any entitlements under the terms of this Agreement or any plans or programs of Quaker Houghton under which you have accrued a benefit) that Quaker Houghton provides to you no later than ten days after your Separation from Service. If a release is not provided to you within this time period, the severance shall be paid even if you do not sign a release.

9. Indemnification

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

10. <u>Governing Law</u>.

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

11. <u>Miscellaneous</u>

This Agreement and the Change in Control Agreement to which you are a party, constitute the entire integrated agreement concerning the subjects covered herein. In case any provision of this Agreement shall be invalid, illegal, or otherwise unenforceable, the validity, legality, and enforceability of the remaining provisions shall not thereby be affected or impaired. You may not assign any of your rights or obligations under this Agreement without Quaker Houghton's prior written consent. Quaker Houghton may assign this Agreement in its discretion, including to any affiliate or upon a sale of assets or equity, merger or other corporate transaction; provided that Quaker Houghton obtains the assignee's written commitment to honor the terms and conditions contained herein. This Agreement shall be governed by, and construed in accordance with, the laws of the Commonwealth of Pennsylvania without regard to any conflict of laws. This Agreement shall be binding upon you, your heirs, executors, and administrators and shall inure to the benefit of Quaker Houghton as well as its successors and assigns. In the event of any overlap in the restrictions contained herein, including Sections 4 and/or 5 above, with similar restrictions contained in any other agreement, such restrictions shall be read together so as to provide the broadest restriction possible.

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

WITNESS:	QUAKER CHEMICAL CORPORATION DBA QUAKER HOUGHTON
/s/ Robert T. Traub	/s/ Michael F. Barry
WITNESS:	
/s/ Danielle R. Tometich	/s/ Andrew E. Tometich ANDREW TOMETICH

ADDENDUM 1

Base Salary:

Your salary will be payable on a bi-weekly basis at the rate of $30,769.23, which is annualized at $800,000. You will be eligible for your next salary increase in 2023.

Annual and Long-Term Bonuses:

For your position, you are eligible to participate in the Annual Incentive Plan ("AIP") with a target award percentage for 2022 year of 100% of your base salary, dependent upon Quaker Houghton's financial results and personal objectives to be determined.

You will be eligible to participate in the 2022-2024 Long-Term Incentive Plan ("LTIP"). Your award for the 2022-2024 performance period includes a mix of time-based restricted stock, stock options, and target performance stock units (PSU's), such mix to be determined by the Company's Compensation and Human Resources Committee. The value, at a target level, is $1,680,000.

All incentive compensation awards are made at the Company's discretion, are subject to change, and require the approval of the Company's Compensation and Human Resources Committee.

Special One-time Grants:

You will be provided a one-time cash payment $550,000 to offset the annual incentive at your current employment and in lieu of any potential annual incentive earned in 2021 at Quaker Houghton. This cash payment will be payable in the first quarter of 2022 at the time the Quaker Houghton AIP payments are made to AIP participants generally. Such cash payment is subject to a claw-back and must be repaid to the Company if you terminate your employment with Quaker Houghton for any reason other than for cause or if a change a control occurs within the first two (2) years of your tenure with Quaker Houghton.

You will also be provided a one-time equity award equaling a cash value at time of grant of $1,750,000 in order to offset the equity that will expire upon your accepting employment with Quaker Houghton. Such award will be provided as a mix of 50% time-based restricted stock and 50% PSU's. The time based restricted stock will vest one year from the date of grant, which will be on your first day of employment with Quaker Houghton (currently anticipated to be October 11, 2021). However, in the event that your employment is terminated for any reason (other than cause) within the first twelve (12) months of your start date, then the vesting date of the time based restricted stock described in this paragraph will be accelerated to the date of termination. The grant of 50% PSUs will also be made on your first day of employment and will be based on the three year period starting October 1, 2021 and ending September 30, 2024.

Relocation:

You will receive, as soon as administratively possible after your start date, a lump sum payment of $150,000.00 to cover all relocation expenses, which will be grossed up for taxes. If you should voluntarily leave Quaker within one year of receipt of these funds, all financial relocation assistance must be reimbursed to Quaker Houghton.

Financial Planning: You will be eligible to be reimbursed for up to $8,000 per calendar year for expenses incurred for financial planning and/or tax preparation.

Benefits: Quaker Houghton offers a Flexible Benefits Program that is subject to change. This gives you the opportunity to choose from a variety of options creating a customized benefits package. The following benefits are currently part of the program. In each of these areas, you are offered a range of options so you may choose the ones that make the most sense for your personal situation.

- Medical
- Dental
- Life & AD&D Insurance
- Long-term Disability
- Health Care and Dependent Care Flexible Spending Accounts (FSAs)
- Retirement Savings Plan (401K)
- The Company is reviewing a non-qualified deferred compensation (excess) plan, which if adopted will be part of your overall benefits package

Vacation / Holidays: You will be eligible for 25 PTO days per calendar year while you are working in the U.S. You will begin to accrue an additional 5 days of PTO per calendar year when you meet the next service level as defined in the plan. In addition, you will be eligible to be paid for regional holidays. Unused vacation days will not roll over from year to year, unless applicable law requires otherwise.

EXHIBIT 10.2

CHANGE IN CONTROL AGREEMENT

THIS AGREEMENT, dated September 2, 2021 between QUAKER CHEMICAL CORPORATION, d/b/a QUAKER HOUGHTON, a Pennsylvania corporation (the “Company”), and Andrew Tometich (the “Executive”).

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

WHEREAS, the Executive and the Company entered into an employment agreement dated September 2, 2021; and

WHEREAS, the Executive and the Company wish to enter into this Change in Control Agreement (the “Agreement”);

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

1. Term of Agreement.

This Agreement shall become effective on October 11, 2021 (the “Effective Date”), and shall continue in effect through December 31, 2022; provided, however, that the term of this Agreement shall automatically be extended for successive one-year periods thereafter, unless, not later than eighteen (18) months preceding the calendar year for which the term would otherwise automatically extend, the Company shall have given written notice to the Executive of intention not to extend this Agreement for an additional year, in which event this Agreement shall continue in effect until December 31 of the calendar year immediately preceding the calendar year for which the term would have otherwise automatically extended. Notwithstanding any such notice not to extend, if a Change in Control (as defined in Section 2) occurs during the original or extended term of this Agreement, this Agreement shall remain in effect after a Change in Control until all obligations of the parties hereto under this Agreement shall have been satisfied.

2. Change in Control.

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

(a) Any person (a “Person”), as such term is used in Sections 13(d) and 14(d) of the Securities Exchange Act of 1934, as amended (the “Exchange Act”) (other than (i) the Company and/or its wholly owned subsidiaries; (ii) any ESOP or other employee benefit plan of the Company and any trustee or other fiduciary in such capacity holding securities under such plan; (iii) any corporation owned, directly or indirectly, by the shareholders of the Company in substantially the same proportions as their ownership of stock of the Company; or (iv) any other Person who, within the one year prior to the event which would otherwise be a Change in Control, is an executive officer of the Company or any group of Persons of which he voluntarily is a part), is or becomes the “beneficial owner” (as defined in Rule 13d-3 under the Exchange Act), directly or indirectly, of securities of the Company representing 30% or more of the combined voting power of the Company’s then outstanding securities or such lesser percentage of voting power, but not less than 15%, as determined by the members of the Board of Directors of the Company who are independent directors (as defined in the New York Stock Exchange, Inc. Listed Company Manual);

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

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

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

3. <u>Entitlement to Change in Control Benefits; Certain Definitions</u>.

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

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

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

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

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

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

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

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

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

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

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

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

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

4. Severance Allowance.

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

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

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

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

(b) Payment of Severance Allowance. The Severance Allowance shall be paid to the Executive in a lump sum on the Payment Date if the applicable Change in Control is also a change in control event as defined in Treas. Reg. §1.409A-3(i)(5) (or any successor thereto). In any other case, the Severance Allowance shall be paid in twenty-four monthly installments commencing on the Payment Date, each of which is equal to one-twenty-fourth (1/24th) of the amount of the Severance Allowance determined under Section 4(a), which are treated as a right to a series of separate payments for purposes of Section 409A of the Code.

5. Outplacement and Welfare Benefits.

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

(b) Welfare Benefits. Subject to Section 6, for a period of 24 months following a Covered Termination of the Executive, the Executive and the Executive's dependents shall be entitled to participate in the Company's life, medical, and dental insurance plans at the Company's expense, in accordance with the terms of such plans at the time of such Covered Termination as if the Executive were still employed by the Company or its affiliates under this Agreement. If, however, life, medical, or dental insurance benefits are not paid or provided under any such plan to the Executive or his dependents because the Executive is no longer an employee of the Company or its subsidiaries, the Company itself shall, to the extent necessary, pay or otherwise provide for such benefits to the Executive and his dependents.

6. **Effect of Other Employment**.

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

7. <u>Other Payments and Benefits</u>.

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

8. <u>Death After Covered Termination</u>.

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

9. Certain Section 409A Rules.

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

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

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

10. Confidentiality and Noncompetition.

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

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

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

(b) Noncompetition. The Executive agrees that during his employment and for a period of two (2) years thereafter, regardless of the reason for the termination of the Executive's employment, he will not:

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

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

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

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

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

11. Set-Off Mitigation.

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

12. Arbitration: Costs and Expenses of Enforcement.

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

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

13. Limitation on Payment Obligation.

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

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

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

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

(b) Limitation. Notwithstanding any other provision of this Agreement, Parachute Payments to be made to or for the benefit of the Executive but for this subsection (b), whether pursuant to this Agreement or otherwise, shall be reduced if and to the extent necessary so that the aggregate Present Value of all such

Parachute Payments shall be at least one dollar ($1.00) less than the greater of (i) three times the Executive's Base Amount and (ii) the aggregate Reasonable Compensation allocable to such Parachute Payments. Any reduction in Parachute Payments caused by reason of this subsection (b) shall be applied in the manner least economically detrimental to the Executive. In the event reduction of two or more types of payments would be economically equivalent, the reduction shall be applied pro-rata to such types of payments.

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

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

14. Notices.

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

15. Withholding.

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

16. Assignment and Benefit.

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

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

(c) The Company shall require any successor (whether direct or indirect, by purchase, merger, consolidation, operation of law, or otherwise) to all or substantially all of the business and/or assets of the

Company to assume expressly and agree to perform this Agreement in the same manner and to the same extent that the Company would be required to perform it if no such succession had taken place, but, irrespective of any such assignment or assumption, this Agreement shall inure to the benefit of and be binding upon such a successor. As used in this Agreement, “Company” shall mean the Company as hereinbefore defined and any successor to its business and/or assets as aforesaid.

17. Governing Law.

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

18. Entire Agreement; Amendment.

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

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

19. No Waiver.

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

20. Severability.

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

21. Indemnification.

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

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

QUAKER CHEMICAL CORPORATION
DBA QUAKER HOUGHTON

By: /s/ Michael F. Barry

EXECUTIVE
/s/ Andrew E Tometich
Andrew Tometich

EXHIBIT 10.3

August 18, 2021

Joe Berquist
Quaker Houghton

Dear Joe:

Congratulations! I am pleased to offer you this promotion to the EVP, Chief Strategy Officer and MD, Global Specialty Businesses. In addition to your current responsibilities for directing the Company's strategic priorities and leading the Global Specialty Business segment, you will be responsible for directing the Company's global merger & acquisition process and organization, leading our Corporate Sustainability efforts, directing our strategic and operational approach for supporting our information technology infrastructure, and our plan and execution for digitization by leading our Information Technology organization.

Your tentative start date for this position is September 9, 2021. We believe you can make significant contributions in this role and will find this opportunity engaging and rewarding. Please review the details of the offer below.

Salary
Your new annualized salary is $500,000, effective on September 9, 2021. You will be eligible for your next merit increase in April 2022, reflective of performance year 2021.

Annual Incentive Plan
You will continue to participate in our 2021 Annual Incentive Plan (AIP), with an annual bonus target of 65% of your base salary. This is inclusive of the full 2021 annual performance for your responsibility areas and based on your revised base salary.

Long Term Incentive Plan
You will be eligible to participate in our Long Term Incentive Plan (LTIP) at a target value of 100% of your base salary. For the 2021 plan year, you received a grant on March 15th valued at $270,000. You will receive an additional Restricted Stock grant valued at $230,000 in October 2021 to reflect the difference from the grant provided in March of 2021. The Restricted Stock grant is time based and will vest in accordance with the LTIP rules.

The terms and conditions of your employment remain in effect, except as specifically set forth above. Quaker Houghton reserves the right to modify your job title, duties and compensation, as well as all company rules, practices and other terms of employment.

We are excited about this opportunity for you Joe and look forward to you accepting this expanded role with Quaker Houghton. After your review of this offer, please sign below to confirm your acceptance and return to me with a copy to Rob Traub and Kym Johnson.

Sincerely,

/s/ Michael F. Barry

Mike Barry
CEO, President and Chairman of the Board

Quaker Chemical Corporation
A Quaker Houghton Company
901 E. Hector Street
Conshohocken, PA 19428-2380
T: 610.832.4000
quakerhoughton.com

Employee Offer Acceptance
I accept the terms and conditions outlined above:

/s/ Joseph C. Berquist	18-August-2021
Joseph Berquist	Date

EXHIBIT 31.1

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

I, Michael F. Barry, certify that:

1. I have reviewed this 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 4, 2021

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

EXHIBIT 31.2

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

I, Shane Hostetter, 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 4, 2021

/s/ Shane W. Hostetter
Shane W. Hostetter
Chief Financial Officer

EXHIBIT 32.1

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, 2021 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 4, 2021

/s/ Michael F. Barry
Michael F. Barry
Chief Executive Officer of Quaker Chemical Corporation

EXHIBIT 32.2

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

The undersigned hereby certifies that the Form 10-Q Quarterly Report of Quaker Chemical Corporation (the “Company”) for the quarterly period ended September 30, 2021 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 4, 2021

/s/ Shane W. Hostetter
Shane W. Hostetter
Chief Financial Officer of Quaker Chemical Corporation