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 June 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 July 31, 2021	**17,878,247**

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 June 30,		Six Months Ended June 30,	
	2021	2020	2021	2020
Net sales	$ 435,262	$ 286,040	$ 865,045	$ 664,601
Cost of goods sold (excluding amortization expense - See Note 14)	280,811	188,654	554,400	433,364
Gross profit	154,451	97,386	310,645	231,237
Selling, general and administrative expenses	108,679	86,667	212,989	185,368
Indefinite-lived intangible asset impairment	—	—	—	38,000
Restructuring and related charges	298	486	1,473	2,202
Combination, integration and other acquisition-related expenses	6,658	7,995	12,473	15,873
Operating income (loss)	38,816	2,238	83,710	(10,206)
Other income (expense), net	14,010	(993)	18,697	(22,168)
Interest expense, net	(5,618)	(6,811)	(11,088)	(15,272)
Income (loss) before taxes and equity in net income of associated companies	47,208	(5,566)	91,319	(47,646)
Taxes on income (loss) before equity in net income of associated companies	15,218	3,222	25,907	(9,848)
Income (loss) before equity in net income of associated companies	31,990	(8,788)	65,412	(37,798)
Equity in net income of associated companies	1,610	1,066	6,820	1,732
Net income (loss)	33,600	(7,722)	72,232	(36,066)
Less: Net income attributable to noncontrolling interest	30	13	47	50
Net income (loss) attributable to Quaker Chemical Corporation	$ 33,570	$ (7,735)	$ 72,185	$ (36,116)
Per share data:				
Net income (loss) attributable to Quaker Chemical Corporation common shareholders – basic	$ 1.88	$ (0.43)	$ 4.04	$ (2.03)
Net income (loss) attributable to Quaker Chemical Corporation common shareholders – diluted	$ 1.88	$ (0.43)	$ 4.03	$ (2.03)
Dividends declared	$ 0.395	$ 0.385	$ 0.790	$ 0.770

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 June 30,		Six Months Ended June 30,	
	2021	2020	2021	2020
Net income (loss)	$ 33,600	$ (7,722)	$ 72,232	$ (36,066)
Other comprehensive income (loss), net of tax				
Currency translation adjustments	16,165	10,551	(9,296)	(44,200)
Defined benefit retirement plans	397	213	1,689	17,170
Current period change in fair value of derivatives	452	(111)	1,014	(4,092)
Unrealized gain (loss) on available-for-sale securities	279	1,608	(2,746)	(103)
Other comprehensive income (loss)	17,293	12,261	(9,339)	(31,225)
Comprehensive income (loss)	50,893	4,539	62,893	(67,291)
Less: Comprehensive (income) loss attributable to noncontrolling interest	(38)	(14)	(53)	81
Comprehensive income (loss) attributable to Quaker Chemical Corporation	$ 50,855	$ 4,525	$ 62,840	$ (67,210)

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

Quaker Chemical Corporation

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

	Unaudited	
	June 30, 2021	**December 31, 2020**
ASSETS		
Current assets		
Cash and cash equivalents	$ 145,610	$ 181,833
Accounts receivable, net	418,642	372,974
Inventories		
Raw materials and supplies	116,491	86,148
Work-in-process and finished goods	126,318	101,616
Prepaid expenses and other current assets	60,844	50,156
Total current assets	867,905	792,727
Property, plant and equipment, at cost	424,360	423,253
Less accumulated depreciation	(229,919)	(219,370)
Property, plant and equipment, net	194,441	203,883
Right of use lease assets	36,160	38,507
Goodwill	633,449	631,212
Other intangible assets, net	1,068,795	1,081,358
Investments in associated companies	98,013	95,785
Deferred tax assets	13,392	16,566
Other non-current assets	32,664	31,796
Total assets	$ 2,944,819	$ 2,891,834
LIABILITIES AND EQUITY		
Current liabilities		
Short-term borrowings and current portion of long-term debt	$ 48,079	$ 38,967
Accounts and other payables	219,617	198,872
Accrued compensation	33,399	43,300
Accrued restructuring	5,278	8,248
Other current liabilities	94,061	93,573
Total current liabilities	400,434	382,960
Long-term debt	847,154	849,068
Long-term lease liabilities	25,668	27,070
Deferred tax liabilities	181,264	192,763
Other non-current liabilities	114,898	119,059
Total liabilities	1,569,418	1,570,920
Commitments and contingencies (Note 19)		
Equity		
Common stock $1 par value; authorized 30,000,000 shares; issued and outstanding 2021 –17,878,137 shares; 2020 – 17,850,616 shares	17,878	17,851
Capital in excess of par value	910,862	905,171
Retained earnings	482,001	423,940
Accumulated other comprehensive loss	(35,943)	(26,598)
Total Quaker shareholders' equity	1,374,798	1,320,364
Noncontrolling interest	603	550
Total equity	1,375,401	1,320,914
Total liabilities and equity	$ 2,944,819	$ 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 Six Months Ended June 30, 2021	2020
Cash flows from operating activities		
Net income (loss)	$ 72,232	$ (36,066)
Adjustments to reconcile net income (loss) to net cash (used in) provided by operating activities:		
Amortization of debt issuance costs	2,375	2,375
Depreciation and amortization	44,188	42,079
Equity in undistributed earnings of associated companies, net of dividends	(6,715)	3,219
Acquisition-related fair value adjustments related to inventory	801	229
Deferred compensation, deferred taxes and other, net	(13,849)	(22,033)
Share-based compensation	6,134	7,673
(Gain) loss on disposal of property, plant, equipment and other assets	(5,356)	81
Insurance settlement realized	—	(542)
Indefinite-lived intangible asset impairment	—	38,000
Combination and other acquisition-related expenses, net of payments	(2,305)	1,860
Restructuring and related charges	1,473	2,202
Pension and other postretirement benefits	(2,223)	18,784
(Decrease) increase in cash from changes in current assets and current liabilities, net of acquisitions:		
Accounts receivable	(47,252)	61,659
Inventories	(57,020)	(3,689)
Prepaid expenses and other current assets	(20,111)	(2,849)
Change in restructuring liabilities	(4,214)	(9,592)
Accounts payable and accrued liabilities	22,274	(58,728)
Net cash (used in) provided by operating activities	(9,568)	44,662
Cash flows from investing activities		
Investments in property, plant and equipment	(6,974)	(7,534)
Payments related to acquisitions, net of cash acquired	(29,424)	(3,132)
Proceeds from disposition of assets	14,744	11
Insurance settlement interest earned	—	37
Net cash used in investing activities	(21,654)	(10,618)
Cash flows from financing activities		
Payments of term loan debt	(19,065)	(18,702)
Borrowings on revolving credit facilities, net	29,433	205,500
Repayments on other debt, net	(219)	(684)
Dividends paid	(14,113)	(13,662)
Stock options exercised, other	(416)	(1,923)
Purchase of noncontrolling interest in affiliates	—	(1,047)
Distributions to noncontrolling affiliate shareholders	—	(751)
Net cash (used in) provided by financing activities	(4,380)	168,731
Effect of foreign exchange rate changes on cash	(683)	(4,575)
Net (decrease) increase in cash, cash equivalents and restricted cash	(36,285)	198,200
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	$ 145,610	$ 341,755

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, 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 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 six months ended June 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").

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 six months ended June 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 six months ended June 30, 2021, the Company recorded $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 six months ended June 30, 2020, the Company recorded less than $0.1 million and $0.1 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 this Quarterly Report on Form 10-Q for the period ended June 30, 2021 (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 and acceptance of vaccines as well as their efficacy, 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 speed and frequency of continuously evolving 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 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. As of June 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.

Additionally, in February 2021, the Company acquired a 38% ownership interest in a Germany-based, high-tech provider of coolant control and delivery systems for approximately 1.4 million EUR or approximately $1.7 million. The Company recorded this investment as an equity method investment within the Condensed Consolidated Financial Statements.

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 June 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.

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 2021 and currently estimates it will receive approximately $0.1 million to settle such adjustments.

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

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 six 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 June 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 Europe, Middle East and Africa ("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 June 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 Europe, Middle East and Africa ("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 June 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 cost of goods sold ("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 six months ended June 30, 2021 and 2020. Certain immaterial reclassifications within the segment disclosures for the three and six months ended June 30, 2020 have been made to conform with the Company's current customer industry segmentation.

	Three Months Ended June 30,		Six Months Ended June 30,	
	2021	2020	2021	2020
Net sales				
Americas	$ 139,673	$ 80,576	$ 274,544	$ 210,472
EMEA	123,436	77,702	243,250	182,541
Asia/Pacific	91,559	68,421	188,265	141,973
Global Specialty Businesses	80,594	59,341	158,986	129,615
Total net sales	$ 435,262	$ 286,040	$ 865,045	$ 664,601
Segment operating earnings				
Americas	$ 33,648	$ 10,303	$ 65,882	$ 39,491
EMEA	23,405	10,471	48,649	28,830
Asia/Pacific	23,227	19,261	50,705	38,802
Global Specialty Businesses	24,209	16,393	48,378	36,953
Total segment operating earnings	104,489	56,428	213,614	144,076
Combination, integration and other acquisition-related expenses	(6,658)	(7,995)	(12,473)	(15,873)
Restructuring and related charges	(298)	(486)	(1,473)	(2,202)
Fair value step up of acquired inventory sold	—	(226)	(801)	(226)
Indefinite-lived intangible asset impairment	—	—	—	(38,000)
Non-operating and administrative expenses	(43,077)	(32,045)	(84,069)	(70,496)
Depreciation of corporate assets and amortization	(15,640)	(13,438)	(31,088)	(27,485)
Operating income (loss)	38,816	2,238	83,710	(10,206)
Other income (expense), net	14,010	(993)	18,697	(22,168)
Interest expense, net	(5,618)	(6,811)	(11,088)	(15,272)
Income (loss) before taxes and equity in net income of associated companies	$ 47,208	$ (5,566)	$ 91,319	$ (47,646)

Inter-segment revenues for the three and six months ended June 30, 2021 were $2.4 million and $5.7 million for Americas, $6.3 million and $15.1 million for EMEA, $0.4 million and $0.5 million for Asia/Pacific, and $2.1 million and $4.1 million for Global Specialty Businesses, respectively. Inter-segment revenues for the three and six months ended June 30, 2020 were $2.4 million and $5.3 million for Americas, $5.3 million and $10.8 million for EMEA, $0.1 million and $0.3 million for Asia/Pacific, and $1.0 million and $2.3 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 $16.7 million and $34.5 million for the three and six months ended June 30, 2021, respectively, and $6.2 million and $18.7 million for the three and six months ended June 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 June 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 $4.3 million and $4.0 million of deferred revenue as of June 30, 2021 and December 31, 2020, respectively. For the six months ended June 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 six months ended June 30, 2021 and 2020.

	Three Months Ended June 30, 2021			
	Americas	**EMEA**	**Asia/Pacific**	**Consolidated Total**
Customer Industries				
Metals	$ 51,799	$ 35,634	$ 48,207	$ 135,640
Metalworking and other	87,874	87,802	43,352	219,028
	139,673	123,436	91,559	354,668
Global Specialty Businesses	46,183	21,678	12,733	80,594
	$ 185,856	$ 145,114	$ 104,292	$ 435,262
Timing of Revenue Recognized				
Product sales at a point in time	$ 177,227	$ 137,838	$ 101,264	$ 416,329
Services transferred over time	8,629	7,276	3,028	18,933
	$ 185,856	$ 145,114	$ 104,292	$ 435,262

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

	Three Months Ended June 30, 2020			
	Americas	EMEA	Asia/Pacific	Consolidated Total
Customer Industries				
Metals	$ 32,687	$ 24,924	$ 35,416	$ 93,027
Metalworking and other	47,889	52,778	33,005	133,672
	80,576	77,702	68,421	226,699
Global Specialty Businesses	32,294	15,569	11,478	59,341
	$ 112,870	$ 93,271	$ 79,899	$ 286,040
Timing of Revenue Recognized				
Product sales at a point in time	$ 108,644	$ 87,995	$ 78,195	$ 274,834
Services transferred over time	4,226	5,276	1,704	11,206
	$ 112,870	$ 93,271	$ 79,899	$ 286,040

	Six Months Ended June 30, 2021			
	Americas	EMEA	Asia/Pacific	Consolidated Total
Customer Industries				
Metals	$ 98,592	$ 69,908	$ 97,950	$ 266,450
Metalworking and other	175,952	173,342	90,315	439,609
	274,544	243,250	188,265	706,059
Global Specialty Businesses	91,439	41,950	25,597	158,986
	$ 365,983	$ 285,200	$ 213,862	$ 865,045
Timing of Revenue Recognized				
Product sales at a point in time	$ 348,821	$ 269,000	$ 207,663	$ 825,484
Services transferred over time	17,162	16,200	6,199	39,561
	$ 365,983	$ 285,200	$ 213,862	$ 865,045

	Six Months Ended June 30, 2020			
	Americas	EMEA	Asia/Pacific	Consolidated Total
Customer Industries				
Metals	$ 79,360	$ 54,812	$ 77,005	$ 211,177
Metalworking and other	131,112	127,729	64,968	323,809
	210,472	182,541	141,973	534,986
Global Specialty Businesses	76,525	32,174	20,916	129,615
	$ 286,997	$ 214,715	$ 162,889	$ 664,601
Timing of Revenue Recognized				
Product sales at a point in time	$ 277,446	$ 206,418	$ 159,351	$ 643,215
Services transferred over time	9,551	8,297	3,538	21,386
	$ 286,997	$ 214,715	$ 162,889	$ 664,601

(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 six months ended June 30, 2021 was $3.6 million and $7.2 million, respectively. Comparatively, operating lease expense for the three and six months ended June 30, 2020 was $3.5 million and $6.9 million, respectively. Short-term lease expense for the three and six months ended June 30, 2021 was $0.2 million and $0.5 million, respectively. Comparatively, short-term lease expense for the three and six months ended June 30, 2020 was $0.4 million and $0.9 million, respectively. The Company has no material variable lease costs or sublease income for the three or six months ended June 30, 2021 and 2020.

Cash paid for operating leases during the six months ended June 30, 2021 and 2020 was $7.1 million and $6.8 million, respectively. The Company recorded new right of use lease assets and associated lease liabilities of $3.9 million during the six months ended June 30, 2021.

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

	June 30, 2021	December 31, 2020
Right of use lease assets	$ 36,160	$ 38,507
Other current liabilities	10,064	10,901
Long-term lease liabilities	25,668	27,070
Total operating lease liabilities	$ 35,732	$ 37,971
Weighted average remaining lease term (years)	5.8	6.0
Weighted average discount rate	4.26%	4.20%

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

	June 30, 2021
For the remainder of 2021	$ 6,052
For the year ended December 31, 2022	9,400
For the year ended December 31, 2023	7,234
For the year ended December 31, 2024	5,355
For the year ended December 31, 2025	4,260
For the year ended December 31, 2026 and beyond	8,152
Total lease payments	40,453
Less: imputed interest	(4,721)
Present value of lease liabilities	$ 35,732

(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 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 six months ended June 30, 2021 is as follows:

	QH Program
Accrued restructuring as of December 31, 2020	$ 8,248
Restructuring and related charges	1,473
Cash payments	(4,214)
Currency translation adjustments	(229)
Accrued restructuring as of June 30, 2021	$ 5,278

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 six months ended June 30, 2021 and 2020:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2021	2020	2021	2020
Stock options	$ 332	$ 353	$ 640	$ 785
Non-vested stock awards and restricted stock units	1,290	1,259	2,686	2,523
Non-elective and elective 401(k) matching contribution in stock	—	1,162	1,553	1,162
Director stock ownership plan	216	54	419	94
Performance stock units	517	280	836	280
Annual incentive plan	—	(117)	—	2,829
Total share-based compensation expense	$ 2,355	$ 2,991	$ 6,134	$ 7,673

Share-based compensation expense is recorded in SG&A, except for $0.2 million and $0.5 million for the three and six months ended June 30, 2021, respectively, and $0.3 million and $0.8 million for the three and six months ended June 30, 2020, respectively, recorded within Combination, integration and other acquisition-related expenses.

Stock Options

During the first six 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 June 30, 2021, unrecognized compensation expense related to all stock options granted was $2.4 million, to be recognized over a weighted average remaining period of 2.3 years.

Restricted Stock Awards and Restricted Stock Units

During the six months ended June 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 June 30, 2021, unrecognized compensation expense related to the non-vested restricted shares was $6.3 million, to be recognized over a weighted average remaining period of 1.9 years, and unrecognized compensation expense related to non-vested restricted stock units was $1.1 million, to be recognized over a weighted average remaining period of 2.1 years.

Performance Stock Units

During the first six 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 six 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 June 30, 2021, the Company estimates that it will issue approximately 14,698 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 June 30, 2021, there was approximately $4.2 million of total unrecognized compensation cost related to PSUs, which the Company expects to recognize over a weighted-average period of 2.3 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 June 30, 2020, it was 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 June 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 June 30, 2021, there were no matching contributions in stock. For the six months ended June 30, 2021, total contributions were $1.5 million and for both the three and six months ended June 30, 2020, total contributions were $1.2 million.

(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 six months ended June 30, 2021 and 2020 are as follows:

	Three Months Ended June 30,				Six Months Ended June 30,			
	Pension Benefits		Other Postretirement Benefits		Pension Benefits		Other Postretirement Benefits	
	2021	2020	2021	2020	2021	2020	2021	2020
Service cost	$ 316	$ 1,164	$ 2	$ 1	$ 632	$ 2,338	$ 3	$ 3
Interest cost	1,094	1,486	10	26	2,184	3,255	21	52
Expected return on plan assets	(2,093)	(1,761)	—	—	(4,175)	(3,720)	—	—
Settlement charge	—	—	—	—	—	22,667	—	—
Actuarial loss amortization	857	615	—	16	1,712	1,662	—	31
Prior service cost amortization	3	(41)	—	—	5	(81)	—	—
Net periodic benefit cost	$ 177	$ 1,463	$ 12	$ 43	$ 358	$ 26,121	$ 24	$ 86

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. 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 June 30, 2021, $2.1 million and $0.1 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 currently 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 six months ended June 30, 2021 and 2020 are as follows:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2021	2020	2021	2020
Income from third party license fees	$ 373	$ 208	$ 712	$ 512
Foreign exchange losses, net	(838)	(2,004)	(2,316)	(1,183)
Gain (loss) on disposals of property, plant, equipment and other assets, net	(54)	(83)	5,356	(81)
Non-income tax refunds and other related credits	14,295	832	14,392	2,131
Pension and postretirement benefit income (costs), non-service components	129	(341)	253	(23,866)
Other non-operating income, net	105	395	300	319
Total other income (expense), net	$ 14,010	$ (993)	$ 18,697	$ (22,168)

The Gain (loss) on disposals of property, plant, equipment and other assets, net, during the six months ended June 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 three and six months ended June 30, 2021 includes $13.3 million related to 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 costs, non-service components during the six months ended June 30, 2020 includes $22.7 million related to the Legacy Quaker U.S. Pension Plan non-cash settlement charge 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 six months ended June 30, 2021 were an expense of 32.2% and 28.4%, respectively, compared to an expense of 57.9% and a benefit of 20.7% for the three and six months ended June 30, 2020, respectively. The Company's current year effective tax rates were largely impacted by the sale of certain held-for-sale real property assets related to the Combination, changes in foreign tax credit valuation allowances, tax law changes in a foreign jurisdiction 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 foreign tax credit valuation allowances, tax law changes in a foreign jurisdiction, changes in uncertain tax positions 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 June 30, 2021 was $6.5 million.

As of June 30, 2021, the Company's cumulative liability for gross unrecognized tax benefits was $24.0 million, an increase of $1.8 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 $0.2 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 six months ended June 30, 2021, respectively, and recognized an expense of $0.6 million and $0.6 million for interest and an expense of $0.6 million and $0.5 million for penalties in its Condensed Consolidated Statement of Operations for the three and six months ended June 30, 2020, respectively. As of June 30, 2021, the Company had accrued $3.2 million for cumulative interest and $3.6 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 six months ended June 30, 2021 and 2020, the Company recognized decreases of $0.8 million and $1.5 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 2017, 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 June 30, 2021, the Company has received $1.6 million in refunds from the Netherlands and Spain and expects to pay $2.6 million due to Italy in the second half of 2021. As of June 30, 2021, the Company believes it has adequate reserves for the remaining uncertain tax positions related to 2007.

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 June 30, 2021, the Company has a $5.6 million reserve for uncertain tax positions relating to matters related to this audit. Since 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 $5.6 million indemnification receivable has also been established through purchase accounting.

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 June 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.

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

Note 12 – Earnings Per Share

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

	Three Months Ended June 30,		Six Months Ended June 30,	
	2021	**2020**	**2021**	**2020**
Basic earnings (loss) per common share				
Net income (loss) attributable to Quaker Chemical Corporation	$ 33,570	$ (7,735)	$ 72,185	$ (36,116)
Less: (income) loss allocated to participating securities	(134)	37	(287)	146
Net income (loss) available to common shareholders	$ 33,436	$ (7,698)	$ 71,898	$ (35,970)
Basic weighted average common shares outstanding	17,802,366	17,697,496	17,793,915	17,685,010
Basic earnings (loss) per common share	$ 1.88	$ (0.43)	$ 4.04	$ (2.03)
Diluted earnings (loss) per common share				
Net income (loss) attributable to Quaker Chemical Corporation	$ 33,570	$ (7,735)	$ 72,185	$ (36,116)
Less: (income) loss allocated to participating securities	(134)	37	(287)	146
Net income (loss) available to common shareholders	$ 33,436	$ (7,698)	$ 71,898	$ (35,970)
Basic weighted average common shares outstanding	17,802,366	17,697,496	17,793,915	17,685,010
Effect of dilutive securities	47,155	—	52,095	—
Diluted weighted average common shares outstanding	17,849,521	17,697,496	17,846,010	17,685,010
Diluted earnings (loss) per common share	$ 1.88	$ (0.43)	$ 4.03	$ (2.03)

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 6,793 and 2,952 for the three and six months ended June 30, 2021, respectively. All of the Company's potentially dilutive shares for the three and six months ended June 30, 2020 are anti-dilutive and not included in the dilutive loss per share calculations because of the Company's net loss during the periods.

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 $0.5 million of net payments during the six months ended June 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.

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

	June 30,		December 31,	
	2021	**2020**	**2020**	**2019**
Cash and cash equivalents	$ 145,610	$ 322,497	$ 181,833	$ 123,524
Restricted cash included in other current assets	—	85	62	353
Restricted cash included in other assets	—	19,173	—	19,678
Cash, cash equivalents and restricted cash	$ 145,610	$ 341,755	$ 181,895	$ 143,555

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

Note 14 – Goodwill and Other Intangible Assets

Changes in the carrying amount of goodwill for the six months ended June 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	128	5,270
Currency translation and other adjustments	614	(2,633)	1,127	(2,141)	(3,033)
Balance as of June 30, 2021	$ 215,064	$ 140,155	$ 160,525	$ 117,705	$ 633,449

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

	Gross Carrying Amount		Accumulated Amortization	
	2021	2020	2021	2020
Customer lists and rights to sell	$ 858,025	$ 839,551	$ 127,883	$ 99,806
Trademarks, formulations and product technology	168,004	166,448	34,932	30,483
Other	6,390	6,372	5,909	5,824
Total definite-lived intangible assets	$ 1,032,419	$ 1,012,371	$ 168,724	$ 136,113

The Company amortizes definite-lived intangible assets on a straight-line basis over their useful lives. The Company recorded $15.0 million and $29.8 million of amortization expense for the three and six months ended June 30, 2021, respectively. Comparatively, the Company recorded $13.7 million and $27.7 million of amortization expense for the three and six months ended June 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	$ 59,214
For the year ended December 31, 2022	59,564
For the year ended December 31, 2023	59,394
For the year ended December 31, 2024	58,750
For the year ended December 31, 2025	58,037
For the year ended December 31, 2026	57,740

The Company has four indefinite-lived intangible assets totaling $205.1 million as of both June 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.

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.

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

As of June 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 June 30, 2021. While the Company concluded that the impact of COVID-19 did not represent a triggering event as of June 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 June 30, 2021 and December 31, 2020 includes the following:

	As of June 30, 2021		As of December 31, 2020	
	Interest Rate	Outstanding Balance	Interest Rate	Outstanding Balance
Credit Facilities:				
Revolver	1.59%	$ 189,503	1.65%	$ 160,000
U.S. Term Loan	1.59%	555,000	1.65%	570,000
EURO Term Loan	1.50%	148,115	1.50%	157,062
Industrial development bonds	5.26%	10,000	5.26%	10,000
Bank lines of credit and other debt obligations	Various	2,165	Various	2,072
Total debt		$ 904,783		$ 899,134
Less: debt issuance costs		(9,550)		(11,099)
Less: short-term and current portion of long-term debts		(48,079)		(38,967)
Total long-term debt		$ 847,154		$ 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 if and when LIBOR ceases to be reported. The variable interest rate incurred on the outstanding borrowings under the Credit Facility as of and during the six months ended June 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 $206 million, net of bank letters of credit of approximately $4 million, as of June 30, 2021.

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 June 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 June 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 six months ended June 30, 2021, the Company made quarterly amortization payments related to the Term Loans totaling $19.1 million. The Credit Facility is guaranteed by certain of the

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

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 June 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 June 30, 2021 and December 31, 2020, the Company had $9.6 million and $11.1 million, respectively, of debt issuance costs recorded as a reduction of long-term debt. As of June 30, 2021 and December 31, 2020, the Company had $5.1 million and $5.9 million, respectively, of debt issuance costs recorded within other assets.

Industrial development bonds

As of June 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 June 30, 2021 was approximately $40 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 June 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 June 30,		Six Months Ended June 30,	
	2021	**2020**	**2021**	**2020**
Interest expense	$ 4,813	$ 5,951	$ 9,463	$ 13,663
Amortization of debt issuance costs	1,188	1,188	2,375	2,375
Total	$ 6,001	$ 7,139	$ 11,838	$ 16,038

Based on the variable interest rates associated with the Credit Facility, as of June 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 six months ended June 30, 2021 and 2020:

	Common Stock	Capital in Excess of Par Value	Retained Earnings	Accumulated Other Comprehensive Loss	Noncontrolling Interest	Total
Balance at March 31, 2021	$ 17,875	$ 908,748	$ 455,493	$ (53,228)	$ 565	$ 1,329,453
Net income	—	—	33,570	—	30	33,600
Amounts reported in other comprehensive income	—	—	—	17,285	8	17,293
Dividends ($0.395 per share)	—	—	(7,062)	—	—	(7,062)
Share issuance and equity-based compensation plans	3	2,114	—	—	—	2,117
Balance at June 30, 2021	$ 17,878	$ 910,862	$ 482,001	$ (35,943)	$ 603	$ 1,375,401
Balance at March 31, 2020	$ 17,752	$ 888,533	$ 376,853	$ (121,524)	$ 418	$ 1,162,032
Net (loss) income	—	—	(7,735)	—	13	(7,722)
Amounts reported in other comprehensive income	—	—	—	12,260	1	12,261
Dividends ($0.385 per share)	—	—	(6,853)	—	—	(6,853)
Share issuance and equity-based compensation plans	48	7,575	—	—	—	7,623
Balance at June 30, 2020	$ 17,800	$ 896,108	$ 362,265	$ (109,264)	$ 432	$ 1,167,341

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

	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	—	—	72,185	—	47	72,232
Amounts reported in other comprehensive (loss) income	—	—	—	(9,345)	6	(9,339)
Dividends ($0.790 per share)	—	—	(14,124)	—	—	(14,124)
Share issuance and equity-based compensation plans	27	5,691	—	—	—	5,718
Balance at June 30, 2021	$ 17,878	$ 910,862	$ 482,001	$ (35,943)	$ 603	$ 1,375,401
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	—	—	(36,116)	—	50	(36,066)
Amounts reported in other comprehensive loss	—	—	—	(31,094)	(131)	(31,225)
Dividends ($0.7700 per share)	—	—	(13,687)	—	—	(13,687)
Acquisition of noncontrolling interest	—	(707)	—	—	(340)	(1,047)
Distributions to noncontrolling affiliate shareholders	—	—	—	—	(751)	(751)
Share issuance and equity-based compensation plans	65	8,597	—	—	—	8,662
Balance at June 30, 2020	$ 17,800	$ 896,108	$ 362,265	$ (109,264)	$ 432	$ 1,167,341

(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 six months ended June 30, 2021 and 2020:

	Currency Translation Adjustments	Defined Benefit Pension Plans	Unrealized Gain (Loss) in Available-for-Sale Securities	Derivative Instruments	Total
Balance at March 31, 2021	$ (28,334)	$ (22,175)	$ 317	$ (3,036)	$ (53,228)
Other comprehensive income (loss) before reclassifications	16,157	(260)	341	586	16,824
Amounts reclassified from AOCI	—	852	2	—	854
Related tax amounts	—	(195)	(64)	(134)	(393)
Balance at June 30, 2021	$ (12,177)	$ (21,778)	$ 596	$ (2,584)	$ (35,943)
Balance at March 31, 2020	$ (99,187)	$ (17,576)	$ (460)	$ (4,301)	$ (121,524)
Other comprehensive income (loss) before reclassifications	10,550	(336)	2,128	(144)	12,198
Amounts reclassified from AOCI	—	600	(93)	—	507
Related tax amounts	—	(51)	(427)	33	(445)
Balance at June 30, 2020	$ (88,637)	$ (17,363)	$ 1,148	$ (4,412)	$ (109,264)

	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	(9,302)	521	(404)	1,316	(7,869)
Amounts reclassified from AOCI	—	1,714	(3,083)	—	(1,369)
Related tax amounts	—	(546)	741	(302)	(107)
Balance at June 30, 2021	$ (12,177)	$ (21,778)	$ 596	$ (2,584)	$ (35,943)
Balance at December 31, 2019	$ (44,568)	$ (34,533)	$ 1,251	$ (320)	$ (78,170)
Other comprehensive (loss) income before reclassifications	(44,069)	492	(8)	(5,315)	(48,900)
Amounts reclassified from AOCI	—	24,966	(125)	—	24,841
Related tax amounts	—	(8,288)	30	1,223	(7,035)
Balance at June 30, 2020	$ (88,637)	$ (17,363)	$ 1,148	$ (4,412)	$ (109,264)

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.

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

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 June 30, 2021 Using Fair Value Hierarchy		
Assets	Total Fair Value	Level 1	Level 2	Level 3
Company-owned life insurance	$ 2,137	$ —	$ 2,137	$ —
Total	$ 2,137	$ —	$ 2,137	$ —

		Fair Value Measurements at December 31, 2020 Using Fair Value Hierarchy		
Assets	Total Fair Value	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 June 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:

		Fair Value	
	Condensed Consolidated Balance Sheet Location	June 30, 2021	December 31, 2020
Derivatives designated as cash flow hedges:			
Interest rate swaps	Other non-current liabilities	$ 3,356	$ 4,672
		$ 3,356	$ 4,672

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

		June 30, 2021	December 31, 2020
Derivatives designated as cash flow hedges:			
Interest rate swaps	AOCI	$ 2,584	$ 3,598
		$ 2,584	$ 3,598

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

		Three Months Ended June 30,		Six Months Ended June 30,	
		2021	2020	2021	2020
Amount and location of expense reclassified from AOCI into expense (effective portion)	Interest expense, net	$ (659)	$ (483)	$ (1,302)	$ (465)

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 June 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 June 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 six months ended June 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 six months ended June 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 June 30, 2021, for which $6.0 million was accrued within other accrued liabilities and other non-current liabilities on the Company's Condensed Consolidated Balance Sheet as of June 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 $0.1 million was accrued as of both June 30, 2021 and December 31, 2020, to provide for such anticipated future environmental assessments and remediation costs.

The Company previously disclosed in its 2020 Form 10-K that 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. To date, the Company has not received any assessment from the authority related to potential liabilities that may be due from the Company's subsidiary. Consequently, there is substantial uncertainty with respect to the Company's ultimate liability with respect to this indirect tax, as the application of this tax in its given market is ambiguous and interpreted differently among other peer companies and taxing authorities. The Company, with assistance from independent experts, has performed an evaluation of the applicability of this indirect tax to the Company's subsidiaries in this country. During the six months ended June 30, 2021 and through the date of this Report, there have been no significant changes to the facts or circumstances of this previously disclosed matter, aside from on-going discussions between the Company and the taxing authority related to this notice of inspection and independent testing conducted by third-party consultants at the direction of the Company and the taxing authority to determine if the Company's products have contents which subject them to this indirect tax. Based on all of the information available to the Company at this time, as of June 30, 2021, the Company has recorded a liability of $1.8 million in other accrued liabilities, which reflects the Company's current best estimate of probable indirect tax owed, including interest and taking into account applicable statutes of limitations. Because these amounts in part relate to a Houghton entity acquired in the Combination and for periods prior to the Combination, the Company has submitted an indemnification claim with Houghton's former owners related to this potential indirect tax liability. The Company recorded a receivable in other assets for approximately $1.1 million, which reflects the amount of the initial recorded liability for which the Company anticipates being indemnified. As noted, the Company believes there is substantial uncertainty with respect to its ultimate liability given the ambiguous application of this indirect tax. At this time, the Company's current best estimate of a potential range for possible assessments, including additional amounts that may be assessed under these indirect tax laws, would be $0 to approximately $40 million, which is net of approximately $11 million of estimated income tax deductions and approximately $22 million of applicable rights to indemnification from Houghton's former owners.

During the first six months 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 in the first six months of 2021, the Company recognized non-income tax credits of 67.0 million BRL or approximately $13.3 million, which includes 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 and the Company anticipates completing this step during the second half of 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.

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 losses in accordance with the terms of the Asset Purchase Agreement (“APA”). Under the terms of the APA, the Company has 45 days to review the claim and respond, and as such, the Company is in the early stages of 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.

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 months and six months ended June 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 had solid second quarter results which reflect the continued COVID-19 recovery in the Company's end-markets and customer demand as well as the on-going execution of integration activities and synergy realization, partially offset by raw material cost headwinds driven by global supply chain pressures. Specifically, net sales of $435.3 million in the second quarter of 2021 increased 52% compared to $286.0 million in the second quarter of 2020, primarily due to higher volumes of 40%, including additional net sales from acquisitions of 5%, the positive impact from foreign currency translation of 8%, and increases in selling price and product mix of approximately 4%. The significant increase in sales volumes compared to the second quarter of 2020 was primarily a result of the prior year second quarter being the most severely impacted by COVID-19 globally, while the current quarter continued to experience end-market improvement and continued market share gains. Gross profit increased significantly quarter-over-quarter as a result of higher net sales. Despite significant increases in raw material costs, current quarter gross margin of 35.5% improved as compared to the prior year second quarter, as the prior year was impacted by lower volumes due to COVID-19 on fixed manufacturing costs. Sequentially, the Company experienced lower gross margins compared to the first quarter of 2021 due to significant raw material cost increases and global supply chain and logistics pressures.

The Company had net income in the second quarter of 2021 of $33.6 million, or $1.88 per diluted share, compared to a second quarter of 2020 net loss of $7.7 million, or $0.43 per diluted share. The current quarter result includes $13.3 million of non-operating income related to certain non-income tax credits recorded by the Company's Brazilian subsidiaries. The Company's prior year second quarter net loss was dramatically 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 the Brazil non-income tax credits as well as costs associated with the Combination and other non-core items in each period, the Company's second quarter of 2021 non-GAAP earnings per diluted share were $1.82 compared to $0.21 in the prior year second quarter. The Company's current quarter adjusted EBITDA of $70.1 million increased 118% compared to $32.1 million in the second 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 as compared to the second quarter of 2020, partially offset by higher raw material costs. The Company estimates that it realized cost synergies associated with the Combination of approximately $18.5 million during the second quarter of 2021 compared to approximately $12 million during the second 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 second 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 second quarter of 2020 reflecting the negative impact of COVID-19 on the prior year versus current quarter improvement in the Company's end markets and overall market share gains in each segment. All of the Company's segments benefited from higher sales volumes 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 generally from increases in selling price and product mix. As reported, all of the Company's segment operating earnings were higher compared to the second quarter of 2020 which reflects higher current quarter net sales coupled with a higher gross margin in most segments as compared to the prior year second quarter, partially offset by higher selling, general and administrative expenses ("SG&A"), which was the result of an increase in direct selling expenses associated with the significant increase in net sales and, to a lesser extent, the low levels of prior year period SG&A as a result of COVID-19 temporary cost savings measures. Additional details of each segment's operating performance are further discussed in the Company's Reportable Segments Review, in the Operations section of this Item, below.

The Company had a net operating cash outflow of $9.6 million in the first six months of 2021 as compared to net operating cash inflow of $44.7 million in the first six months of 2020. The decrease in net operating cash flow year-over-year was primarily driven by a significant investment in working capital compared to the prior year, mainly in accounts receivable, due to higher net sales and volumes, and inventory, due to higher raw material costs and restocking initiatives as a result of 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 second quarter results were strong, despite significant increases in raw material costs and supply chain issues. Significant improvement over the prior year in all segments was driven by the continued recovery in the Company's end-markets and increased customer demand from lower levels experienced during 2020 as a result of COVID-19. While sequential operating performance as compared to the first quarter of 2021 was slightly lower, continued strong customer demand in the second 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 forward to the rest of 2021, it expects raw material costs to continue to increase, and it is implementing additional price increases to help offset them. In addition, while the Company expects customer demand and sales volumes to remain strong, we anticipate some near-term headwinds in automotive due to the semiconductor shortage and some seasonality trends which the Company typically experiences in the second half of the year. Despite these near-term headwinds, the Company continues to expect 2021 will result in a step change in its profitability from 2020 as the Company completes its integration cost synergies, continues to take further share in the marketplace, benefits from projected gradual rebound in demand, and sees the positive impact of its recent acquisitions.

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 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. The Company has experienced volume declines and lower net sales as compared to pre-COVID-19 levels as a result of the outbreak, 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 speed and frequency of the continuously evolving 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 emerge, and continued restrictions on day-to-day life and business operations may result in volume declines and lower net sales in future periods as compared to pre-COVID-19 levels. 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 second quarter of 2021 showed substantial year-over-year improvement from the prior year second quarter, which was the most severely impacted by COVID-19, and continued a trend of gradual 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 vaccines that have been developed. However, the incidence of reported cases of COVID-19 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 during 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 June 30, 2021, the Company had cash, cash equivalents and restricted cash of $145.6 million. Total cash, cash equivalents and restricted cash was $181.9 million at December 31, 2020. The $36.3 million decrease in cash, cash equivalents and restricted cash was the net result of approximately $21.7 million of cash used in investing activities, $9.6 million of cash used in operating activities, $4.4 million of cash used in financing activities and a $0.7 million negative impact due to the effect of foreign currency translation.

Net cash flows used in operating activities were $9.6 million in the first six months of 2021 compared to net cash flows provided by operating activities of $44.7 million in the first six months of 2020. The decrease in net operating cash flows of $54.2 million was primarily driven by a significant change in working capital, partially offset by higher earnings in the current year. The significant increase in current year net sales resulted in a large increase in accounts receivable in the first six months of 2021 as compared to accounts receivable being a cash inflow in the prior year as sales significantly declined during the first six months of 2020 due to the initial negative impact from COVID-19. In addition, the Company has experienced an increase in inventory in the first six months of 2021 as a result of rising raw material costs as well as a build in inventory to ensure the Company has appropriate stock to meet customer demands particularly given the current stress on the global supply chain. In addition, the Company had higher cash dividends received from its associated companies in the first six 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 six months of 2021 related to the timing of dividends received.

Net cash flows used in investing activities were $21.7 million in the first six months of 2021 compared to $10.6 million in the first six months of 2020. This increase in cash outflows was driven by higher cash payments related to acquisitions during the first six 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 $7.0 million in the first six months of 2021 compared to $7.5 million in the first six months of 2020.

Net cash flows used in financing activities were $4.4 million in the first six months of 2021 compared to net cash flows provided by financing activities of $168.7 million in the first six months of 2020. The decrease of $173.1 million in net cash flows was primarily related to the prior year borrowings of most of the available liquidity under the Company's revolving credit facility related to the economic uncertainty brought on by COVID-19. These additional prior year borrowings were repaid during the third quarter of 2020. In addition, the Company paid $14.1 million of cash dividends during the first six months of 2021, a $0.5 million or 3% increase in cash dividends compared to the prior year. Finally, during the first six 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 six months of 2020. There were no similar noncontrolling interest activities in the first six 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 if and when LIBOR ceases to be reported. The weighted average interest rate incurred on the outstanding borrowings under the Credit Facility during both the first six months of 2021 and as of June 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 June 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 June 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 June 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 June 30, 2021, the Company had Credit Facility borrowings outstanding of $892.6 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 $206 million, net of bank letters of credit of approximately $4 million, as of June 30, 2021. The Company's other debt obligations are primarily industrial development bonds, bank lines of credit and municipality-related loans, which totaled $12.2 million and $12.1 million as of June 30, 2021 and December 31, 2020, respectively. Total unused capacity under these arrangements as of June 30, 2021 was approximately $40 million. The Company's total net debt as of June 30, 2021 was $759.2 million.

The Company estimates that it realized cost synergies in the first six months of 2021 of approximately $36.5 million compared to approximately $22 million in the first six 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 six months of 2021, but the Company expects to continue to incur such costs throughout the remainder of 2021. The Company incurred $7.6 million of total Combination, integration and other acquisition-related expenses in the first six months of 2021, which includes $0.5 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 six months of 2020, the Company incurred $16.5 million of total Combination, integration and other acquisition-related expenses. The Company had aggregate net cash outflows of approximately $14.8 million related to the Combination, integration and other acquisition-related expenses during the first six months of 2021 as compared to $13.8 million during the first six 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 six months of 2021 of approximately $4.2 million compared to $9.6 million in the first six months of 2020.

As of June 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 $7.7 million as a result of offsetting benefits in other tax jurisdictions. 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 relate to a non-income (indirect) tax that may be applicable to certain products the subsidiary sells. To date, the Company has not received any assessment from the authority related to potential liabilities that may be due from the Company's subsidiary. Consequently, there is substantial uncertainty with respect to the Company's ultimate liability with respect to this indirect tax. During the first six 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 the following two years beginning in the second half of 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 (loss) 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 June 30,**		**Six Months Ended June 30,**	
	2021	**2020**	**2021**	**2020**
Operating income (loss)	$ 38,816	$ 2,238	$ 83,710	$ (10,206)
Houghton combination, integration and other acquisition-related expenses (a)	6,784	8,253	13,014	16,529
Restructuring and related charges (b)	298	486	1,473	2,202
Fair value step up of acquired inventory sold (c)	—	226	801	226
CEO transition costs (d)	308	—	812	—
Inactive subsidiary's non-operating litigation costs (e)	242	—	293	—
Customer bankruptcy costs (f)	—	—	—	463
Indefinite-lived intangible asset impairment (g)	—	—	—	38,000
Non-GAAP operating income	$ 46,448	$ 11,203	$ 100,103	$ 47,214
Non-GAAP operating margin (%) (o)	10.7%	3.9%	11.6%	7.1%

EBITDA, Adjusted EBITDA, Adjusted EBITDA Margin and Non-GAAP Net Income Reconciliations	**Three Months Ended June 30,**		**Six Months Ended June 30,**	
	2021	**2020**	**2021**	**2020**
Net income (loss) attributable to Quaker Chemical Corporation	$ 33,570	$ (7,735)	$ 72,185	$ (36,116)
Depreciation and amortization (a)(m)	22,344	21,158	44,792	42,742
Interest expense, net	5,618	6,811	11,088	15,272
Taxes on income (loss) before equity in net income of associated companies	15,218	3,222	25,907	(9,848)
EBITDA	76,750	23,456	153,972	12,050
Equity income in a captive insurance company (h)	(883)	(482)	(3,963)	(155)
Houghton combination, integration and other acquisition-related expenses (a)	6,658	7,963	7,085	15,766
Restructuring and related charges (b)	298	486	1,473	2,202
Fair value step up of acquired inventory sold (c)	—	226	801	226
CEO transition costs (d)	308	—	812	—
Inactive subsidiary's non-operating litigation costs (e)	242	—	293	—
Customer bankruptcy costs (f)	—	—	—	463
Indefinite-lived intangible asset impairment (g)	—	—	—	38,000
Pension and postretirement benefit (income) costs, non-service components (i)	(129)	341	(253)	23,866
Brazilian non-income tax credits (j)	(13,293)	—	(13,293)	—
Currency conversion impacts of hyper-inflationary economies (k)	106	73	278	124
Adjusted EBITDA	$ 70,057	$ 32,063	$ 147,205	$ 92,542
Adjusted EBITDA margin (%) (o)	16.1%	11.2%	17.0%	13.9%
Adjusted EBITDA	$ 70,057	$ 32,063	$ 147,205	$ 92,542
Less: Depreciation and amortization - adjusted (a)	22,218	20,869	44,251	41,980
Less: Interest expense, net	5,618	6,811	11,088	15,272
Less: Taxes on income before equity in net income of associated companies - adjusted (a)(n)	9,773	673	21,512	7,136
Non-GAAP net income	$ 32,448	$ 3,710	$ 70,354	$ 28,154

Non-GAAP Earnings per Diluted Share Reconciliations	**Three Months Ended June 30,**		**Six Months Ended June 30,**	
	2021	**2020**	**2021**	**2020**
GAAP earnings (loss) per diluted share attributable to Quaker Chemical Corporation common shareholders	$ 1.88	$ (0.43)	$ 4.03	$ (2.03)
Equity income in a captive insurance company per diluted share (h)	(0.05)	(0.03)	(0.22)	(0.01)
Houghton combination, integration and other acquisition-related expenses per diluted share (a)	0.28	0.37	0.32	0.73
Restructuring and related charges per diluted share (b)	0.02	0.02	0.07	0.09
Fair value step up of acquired inventory sold per diluted share (c)	—	0.01	0.03	0.01
CEO transition costs per diluted share (d)	0.02	—	0.04	—
Inactive subsidiary's non-operating litigation costs per diluted share (e)	0.01	—	0.01	—
Customer bankruptcy costs per diluted share (f)	—	—	—	0.02
Indefinite-lived intangible asset impairment per diluted share (g)	—	—	—	1.65
Pension and postretirement benefit (income) costs, non-service components per diluted share (i)	(0.01)	0.01	(0.01)	0.89
Brazilian non-income tax credits per diluted share (j)	(0.44)	—	(0.44)	—
Currency conversion impacts of hyper-inflationary economies per diluted share (k)	0.01	0.01	0.02	0.01
Impact of certain discrete tax items per diluted share (l)	0.10	0.25	0.08	0.23
Non-GAAP earnings per diluted share (p)	$ 1.82	$ 0.21	$ 3.93	$ 1.59

(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 $0.4 million and $0.5 million in the three and six months ended June 30, 2021, 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 six months ended June 30, 2021, the Company recorded $0.1 million and $0.5 million, respectively, of accelerated depreciation related to certain of the Company's facilities compared to $0.3 million and $0.8 million during the three and six months ended June 30, 2020, respectively, which is included in the caption "Houghton combination, integration and other acquisition-related expenses" in the reconciliation of operating income (loss) 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 six months ended June 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 cost of goods sold ("COGS") is not indicative of the future operating performance of the Company.

(d) CEO transition costs represent the costs related to the Company's on-going search for 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) 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.

(h) 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.

(i) 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 six months ended June 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.

(j) 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 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.

(k) 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 six months ended June 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.

(l) 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, 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 an intercompany intangible asset transfer. See Note 11 of Notes to Condensed Consolidated Financial Statements, which appears in Item 1 of this Report.

(m) Depreciation and amortization for the three and six months ended June 30, 2021 includes approximately $0.3 million and $0.6 million, respectively, and for the three and six months ended June 30, 2020 includes $0.3 million and $0.7 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.

(n) 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 $1.6 million and $1.7 million during the three and six months ended June 30, 2021, and $1.5 million and $3.4 million during the three and six months ended June 30, 2020, respectively. Restructuring and related charges described in (b) resulted in incremental taxes of $0.1 million and $0.3 million during the three and six months ended June 30, 2021, respectively, and $0.1 million and $0.3 million for the three and six months ended June 30, 2020, respectively. Fair value step up of acquired inventory sold described in (c) resulted in incremental taxes of $0.2 million during the six months ending June 30, 2021 and less than $0.1 million during both the three and six months ended June 30, 2020. CEO transition expenses described in (d) resulted in incremental taxes of $0.1 million and $0.2 million during the three and six months ended June 30, 2021, respectively. Inactive subsidiary litigation described in (e) resulted in incremental taxes of $0.1 million during each of the three and six months ended June 30, 2021. Customer bankruptcy costs described in (f) resulted in incremental taxes of $0.1 million during the six months ended June 30, 2020. Indefinite-lived intangible asset impairment described in (g) resulted in incremental taxes of $8.7 million during the six months ended June 30, 2020. Pension and postretirement benefit costs, non-service components described in (i) resulted in a tax benefit of less than $0.1 million during each of the three and six months ended June 30, 2021, and incremental taxes of $0.1 million and $8.0 million for the three and six months ended June 30, 2020, respectively. Brazilian non-income tax credits described in (j) resulted in incremental taxes of $5.3 million during the three and six months ended June 30, 2021. Tax impact of certain discrete items described in (l) above resulted in an incremental taxes of $1.9 million and $1.5 million during the three and six months ended June 30, 2021, respectively, and $4.4 million and $4.0 million for the three and six months ended June 30, 2020, respectively.

(o) 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.

(p) 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 June 30, 2021. The Company's only off-balance sheet items outstanding as of June 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 Second Quarter of 2021 with the Second Quarter of 2020

Net sales were $435.3 million in the second quarter of 2021 compared to $286.0 million in the second quarter of 2020. The net sales increase of approximately $149.2 million or 52% quarter-over-quarter was driven by higher sales volumes of 40%, which includes additional net sales from recent acquisitions of 5%, the positive impact of foreign currency translation of 8% as well as increases from selling price and product mix of approximately 4%. The significant increase in sales volumes compared to the second quarter of 2020 was primarily the result of the prior year quarter being the most severely impacted by COVID-19 globally as well as the continued improvement in end market conditions and continued market share gains realized in the current quarter. Sales from acquisitions includes notably the Company's acquisition of Coral Chemical Company ("Coral") in December 2020. The positive impact from foreign currency translation is primarily the result of the strengthening of the euro, Chinese renminbi and Mexican peso against the U.S. dollar quarter-over-quarter 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 costs.

COGS were $280.8 million in the second quarter of 2021 compared to $188.7 million in the second quarter of 2020. The increase in COGS of 49% was driven by the associated COGS on the increase in net sales described above.

Gross profit in the second quarter of 2021 of $154.5 million increased $57.1 million or 59% from the second quarter of 2020, due primarily to the increase in net sales noted above. The Company's reported gross margin in the second quarter of 2021 was 35.5% compared to 34.0% in the second quarter of 2020. Excluding one-time increases to COGS including accelerated depreciation in both periods and the impact of the inventory fair value step up in the prior year quarter, described in the Non-GAAP section of this Item above, the Company estimates that its gross margins in the second quarters of 2021 and 2020 would have been approximately 35.5% and 34.2%, respectively. While the Company has experienced unprecedented raw material cost increases that began in the fourth quarter of 2020 and are continuing throughout the first half of 2021, the higher gross margin as compared to the prior year quarter was primarily driven by the Company's continued execution of Combination-related logistics, procurement and manufacturing cost savings initiatives versus the prior year impact of fixed manufacturing costs on the abnormally low volumes due to COVID-19.

SG&A in the second quarter of 2021 increased $22.0 million compared to the second quarter of 2020 due primarily to the impact of sales increases on direct selling costs, additional SG&A from recent acquisitions, higher incentive compensation on improved operating performance in the current year, and higher SG&A due to foreign currency translation. In addition, SG&A was lower in the prior year period as a result of certain temporary cost saving measures the Company implemented in response to the onset of COVID-19. While the Company continues to manage costs during the on-going pandemic, it has incurred higher SG&A as the global economy continues to gradually rebound.

During the second quarter of 2021, the Company incurred $6.7 million of Combination, integration and other acquisition-related expenses primarily for professional fees related to Houghton integration and other acquisition-related activities. Comparatively, the Company incurred $8.0 million of expenses in the prior year second quarter, primarily due to various professional fees related to legal, financial and other advisory and consulting expenses for integration 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 of $0.3 million and $0.5 million during the second quarters of 2021 and 2020, respectively. See the Non-GAAP Measures section of this Item, above.

Operating income in the second quarter of 2021 was $38.8 million compared to $2.2 million in the second 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 increased 315% to $46.4 million compared to $11.2 million in 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 increases in raw material costs.

The Company had other income, net, of $14.0 million in the second quarter of 2021 compared to other expense, net, of $1.0 million in the second quarter of 2020. The second quarter of 2021 includes $13.3 million related to certain non-income tax credits recorded by the Company's Brazilian subsidiaries as well as lower foreign currency transaction losses compared to the prior quarter. See the Non-GAAP Measures section of this Item, above.

Interest expense, net, decreased $1.2 million compared to the second 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 as well as a decline in overall interest rates quarter-over-quarter.

The Company's effective tax rates for the second quarters of 2021 and 2020 were 32.2% and 57.9%, respectively. The Company's current quarter effective tax rate was impacted by the changes in foreign tax credit valuation allowances, tax law changes in foreign jurisdictions as well as the tax impacts of certain non-income tax credits recorded by the Company's Brazilian subsidiaries. Comparatively, the prior year second quarter effective tax rate was impacted by the tax effect of certain one-time pre-tax losses. 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 second quarters of 2021 and 2020 effective tax rates would have been approximately 24% and 18%, respectively. The higher estimated current quarter tax rate was driven by the impact of higher pre-tax income in the current quarter as compared to the prior year quarter on certain tax adjustments as well as increased withholding taxes on expected current year repatriated earnings. 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 $0.5 million in the second quarter of 2021 compared to the second quarter of 2020, primarily due to higher current year quarter income from the Company's interest in a captive insurance company 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 second quarters of 2021 and 2020.

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

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

Net sales were $865.0 million in the first six months of 2021 compared to $664.6 million in the first six months of 2020. The net sales increase of $200.4 million or 30% period-over-period reflects a benefit from higher sales volumes of 22%, which includes additional net sales from recent acquisitions of 4%, the positive impact from foreign currency translation of 5%, and increases in selling price and product mix of 3%. The increase in sales volumes compared to the first six 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 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. 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.

COGS were $554.4 million in the first six months of 2021 compared to $433.4 million in the first six months of 2020. The increase in COGS of 28% was driven by the associated COGS on the increase in net sales as described above, and to a lesser extent, an expense of $0.8 million associated with selling acquired Coral inventory in the first six months of 2021 at its fair value described in the Non-GAAP Measures section of this Item above.

Gross profit in the first six months of 2021 increased $79.4 million or 34% from the first six months of 2020, due primarily to the increase in net sales described above. The Company's reported gross margin in the first six months of 2021 was 35.9% compared to 34.8% in the first six months of 2020. Excluding one-time increases to COGS including accelerated depreciation and the impact of the inventory fair value step up in both periods, described in the Non-GAAP section of this Item above, the Company estimates that its gross margins in the first six months of 2021 and 2020 would have been approximately 36.1% and 34.9%, respectively. The Company's higher current year gross margin was primarily due to the same impacts described in the second quarter description above.

SG&A in the first six months of 2021 increased $27.6 million compared to the first six months of 2020 due primarily to the same drivers described in the second quarter description above.

During the first six months of 2021, the Company incurred $12.5 million of Combination, integration and other acquisition-related expenses primarily for professional fees related to Houghton integration and other acquisition-related activities. Comparatively, the Company incurred $15.9 million of expenses in the first six months of 2020, primarily due to various professional fees related to integration 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 $1.5 million during the first six months of 2021 compared to $2.2 million during the first six 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 six months of 2021.

Operating income in the first six months of 2021 was $83.7 million compared to an operating loss of $10.2 million in the first six 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 $100.1 million increased compared to $47.2 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.

The Company's other income, net, was $18.7 million in the first six months of 2021 compared to other expense, net of $22.2 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 $4.2 million in the first six months of 2021 compared to the first six 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 six months of 2021 compared to approximately 2.5% during the first six months of 2020.

The Company's effective tax rates for the first six months of 2021 and 2020 was an expense of 28.4% compared to a benefit of 20.7%, respectively. The Company's effective tax rate for the six months ended June 30, 2021 was impacted by the sale of certain held-for-sale real property assets related to the Combination, certain U.S. tax law changes and the tax impact of certain non-income tax credits recorded by the Company's Brazilian subsidiaries. Comparatively, the prior year first six 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 current period including those related to changes in foreign tax credit valuation allowances, tax law changes in a foreign jurisdiction, and 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 six months of 2021 and 2020 effective tax rates were relatively consistent at approximately 24% and 21%, respectively. The year-over-year increase was largely driven by the impact of higher pre-tax income in the current year period as compared to the prior year period on certain adjustments as well as increased withholding tax on expense on current year repatriated earnings.

Equity in net income of associated companies increased $5.1 million in the first six months of 2021 compared to the first six 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 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 six months of 2021 and 2020.

Foreign exchange positively impacted the Company's first six months of 2021 results by approximately 4% driven by the positive impact from foreign currency translation on earnings partially offset by higher foreign exchange transaction losses in the current year as compared to the prior year period.

Reportable Segments Review - Comparison of the Second Quarter of 2021 with the Second 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 (expense) income, net.

Americas

Americas represented approximately 32% of the Company's consolidated net sales in the second quarter of 2021. The segment's net sales were $139.7 million, an increase of $59.1 million or 73% compared to the second quarter of 2020. The increase in net sales reflects the inclusion of additional net sales from acquisitions, primarily Coral. Excluding sales from acquisitions, the segment's net sales increase quarter-over-quarter of approximately 65% was driven by higher volumes of 54%, a benefit in selling price and product mix of 7% and the positive impact of foreign currency translation of 4%. The current quarter volume increase was driven by the continued economic rebound from the COVID-19 slowdown as the pandemic notably impacted this segment during the second quarter of 2020. The foreign exchange impact was driven by the strengthening of the Mexican peso against the U.S. dollar, as this exchange rate averaged 20.02 in the second quarter of 2021 compared to 23.32 during the second quarter of 2020. This segment's operating earnings were $33.6 million, an increase of $23.3 million or 227% compared to the second quarter of 2020. The increase in segment operating earnings reflects the higher net sales described above coupled with a higher current quarter gross margin, partially offset by higher SG&A, including SG&A from acquisitions and an increase in SG&A as the prior year second quarter included temporary cost savings measures implemented in response to the onset of the COVID-19 pandemic.

EMEA

EMEA represented approximately 28% of the Company's consolidated net sales in the second quarter of 2021. The segment's net sales were $123.4 million, an increase of $45.7 million or 59% compared to the second quarter of 2020. The increase in net sales was driven by increases in volumes of 38%, the positive impact of foreign currency translation of 13%, a benefit from selling price and product mix of 5%, and additional net sales from acquisitions of 3%. The current quarter volume increase was driven by the continued economic rebound from the COVID-19 slowdown as the pandemic notably impacted this segment during the second quarter of 2020. The foreign exchange impact was primarily driven by the strengthening of the euro against the U.S. dollar as this exchange rate averaged 1.20 in the second quarter of 2021 compared to 1.10 in the second quarter of 2020. This segment's operating earnings were $23.4 million, an increase of $12.9 million or 124% compared to the second quarter of 2020. The increase in segment operating earnings reflects the higher net sales described above coupled with a higher current quarter gross margin, partially offset by higher SG&A as the prior year second quarter included temporary cost savings measures implemented in response to the onset of the COVID-19 pandemic.

Asia/Pacific

Asia/Pacific represented approximately 21% of the Company's consolidated net sales in the second quarter of 2021. The segment's net sales were $91.6 million, an increase of approximately $23.1 million or 34% compared to the second quarter of 2020. The increase in net sales quarter-over-quarter was driven by increases in volumes of 26% and the positive impact of foreign currency translation of 9% and additional net sales from acquisitions of less than 1%, partially offset by decreases from selling price and product mix of 2%. The current quarter 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 Chinese renminbi against the U.S. dollar as this exchange rate averaged 6.46 in the second quarter of 2021 compared to 7.09 in the second quarter of 2020. This segment's operating earnings were $23.2 million, an increase of $4.0 million or 21% compared to the second quarter of 2020. The increase in segment operating earnings reflects the higher net sales described above partially offset by lower gross margins on rising raw material costs as well as higher SG&A which includes an increase in direct selling costs associated with higher net sales.

Global Specialty Businesses

Global Specialty Businesses represented approximately 19% of the Company's consolidated net sales in the second quarter of 2021. The segment's net sales were $80.6 million, an increase of $21.3 million or 36% compared to the second quarter of 2020. The increase in net sales reflects the inclusion of additional net sales from acquisitions, primarily Coral. Excluding net sales from acquisitions, the segment's net sales would have increased 27% quarter-over-quarter driven by increases in selling price and product mix, including Norman Hay, of 15%, increases in volumes of 7% and the positive impact of foreign currency translation of approximately 5%. 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 $24.2 million, an increase of $7.8 million or 48% compared to the second quarter of 2020. The increase in segment operating earnings reflects the higher net sales described above coupled with higher gross margins compared to the second quarter of 2020, partially offset by higher SG&A as the prior year second quarter included temporary cost savings measures implemented in response to the onset of the COVID-19 pandemic.

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

Americas

Americas represented approximately 32% of the Company's consolidated net sales in the first six months of 2021. The segment's net sales were $274.5 million, an increase of $64.0 million or 30% compared to the first six months of 2020. The increase in net sales was due to higher sales volumes of 21%, additional net sales from acquisitions of 6% primarily resulting from Coral, and benefits from selling price and product mix of 3%. The current year volume increase was driven by the continued economic rebound from the COVID-19 slowdown as the pandemic began in late March and continued throughout the second quarter of 2020. This segment's operating earnings were $65.9 million, an increase of $26.4 million or 67% compared to the first six months of 2020. The increase in segment operating earnings reflects the higher net sales described above coupled with higher gross margins in the current year period, partially offset by higher SG&A.

EMEA

EMEA represented approximately 28% of the Company's consolidated net sales in the first six months of 2021. The segment's net sales were $243.3 million, an increase of $60.7 million or 33% compared to the first six months of 2020. The increase in net sales was due to higher sales volumes of 17%, the positive impacts from foreign exchange translation of 10%, increases in selling price and product mix of 4% 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 as the pandemic began in late March and continued throughout the second quarter of 2020. 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 1.21 and 1.39, respectively, during the first six months of 2021 compared to 1.10 and 1.26, respectively, during the first six months of 2020. This segment's operating earnings were $48.6 million, an increase of $19.8 million or 69% compared to the first six months of 2020. The increase in segment operating earnings reflect the higher net sales described above coupled with improved gross margins in the current year period, partially offset by higher SG&A.

Asia/Pacific

Asia/Pacific represented approximately 22% of the Company's consolidated net sales in the first six months of 2021. The segment's net sales were $188.3 million, an increase of $46.3 million or 33% compared to the first six months of 2020. The increase in net sales was driven by higher sales volumes of approximately 26% 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 during the first quarter of 2020 and then the rest of the region during the second 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 six months of 2021 compared to 7.03 during the first six months of 2020. This segment's operating earnings were $50.7 million, an increase of $11.9 million or 31% compared to the first six months of 2020. The increase in segment operating earnings were a result of the higher net sales described above partially offset by lower gross margins compared to the first six months of 2020 driven by increasing raw material costs in the current year, as well as higher SG&A.

Global Specialty Businesses

Global Specialty Businesses represented 18% of the Company's consolidated net sales in the first six months of 2021. The segment's net sales were $159.0 million, an increase of $29.4 million or 23% compared to the first six months of 2020. The increase in net sales was driven by benefits from selling price and product mix, including Norman Hay, of 18%, additional net sales from acquisitions of 7% primarily driven by Coral, and the positive impact of foreign currency transaction of 4%, partially offset by decreases in volumes of 6%. 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 $48.4 million, an increase of $11.4 million of 31% compared to the first six months of 2020. The increase in segment operating earnings reflects the higher net sales described above on relatively consistent gross margins period-over-period, partially offset by slightly higher SG&A in the current year.

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 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 to the pandemic;
- 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. 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, including 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 by 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 June 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 June 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 six month periods ended June 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 July 2021 and through the date of this Form 10-Q filing for the period ended June 30, 2021, the Company has been in the process of implementing these design changes both centrally and locally. We expect to complete the implementation in the third quarter of 2021. 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 implemented and tested, this material weakness is not yet remediated. The existing material weakness will not be considered remediated until the applicable remedial controls have been fully implemented and operate 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 implement the enhanced design of its revenue processes and have a sufficient operational effectiveness period to evidence remediation over its price and quantity material weakness and, concurrently, evidence remediation over its risk assessment material weakness in 2021 as well.

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 June 30, 2021 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting. Based on that evaluation, there were no changes that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting during the quarter ended June 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)
April 1 - April 30	616	$ 243.71	—	$ 86,865,026
May 1 - May 31	—	$ —	—	$ 86,865,026
June 1 - June 30	—	$ —	—	$ 86,865,026
Total	616	$ 243.71	—	$ 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.

(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 or restricted stock 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 June 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	–	Form of Restricted Stock Award Agreement for non-employee directors under Registrant's 2016 Long-Term Performance Incentive Plan.*†
10.2	–	Form of Restricted Stock Award Agreement for executive officers and other employees under Registrant's 2016 Long-Term Performance Incentive Plan.*†
10.3	–	Form of Incentive Stock Option Award Agreement for executive officers and other employees under Registrant's 2016 Long-Term Performance Incentive Plan.*†
10.4	–	Form of Non-Qualified Stock Option Award Agreement for executive officers and other employees under Registrant's 2016 Long-Term Performance Incentive Plan.*†
10.5	–	Form of Restricted Stock Unit Award Agreement for executive officers and other employees under Registrant's 2016 Long-Term Performance Incentive Plan.*†
10.6	–	Form of Performance Stock Unit Award Agreement for executive officers and other employees under Registrant's 2016 Long-Term Performance Incentive Plan.*†
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: August 5, 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

RESTRICTED STOCK AWARD

Pursuant to the current compensation structure for a member of the Board of Directors of Quaker Houghton (the "Board"), First Name Last Name (the "Grantee"), is hereby issued shares of $1.00 par value Common Stock of Quaker Houghton (the "Company") as a Restricted Stock Award (the "Award") under the Quaker Houghton 2016 Long-Term Performance Incentive Plan (the "Plan") representing a $110,000.00 equity award calculated as of MM DD, YYYY (the "Effective Date") at $XXX.XX per share. This Award is subject to Grantee's acceptance of the terms and conditions of this Award set forth in this agreement (the "Agreement").

Except as provided herein and in the Plan, shares of Restricted Stock subject to this Award will vest in a single installment on the earlier of (i) MM DD, YYYY or (ii), if Grantee's retirement date is the date of the Company's annual meeting in the next service year (and Grantee is not up for re-election to serve a new term on the Board), the day before the date of the Company's annual meeting in that year.

The terms and conditions of this Award are governed by this Agreement and the Plan. Unless otherwise defined herein, terms used in this Agreement have the meanings assigned to them in the Plan. In the event of any inconsistency between the terms of this Agreement and the terms of the Plan, the terms of the Plan shall govern.

1. As soon as practicable after the Effective Date of this Award, the Company will transfer the number of shares of Common Stock designated in this Award into a book entry account, opened in Grantee's name with the Company's transfer agent.

2. Shares of Restricted Stock transferred under paragraph 1 are subject to certain restrictions for so long as such shares remain unvested and subject to a risk of forfeiture. Shares of Restricted Stock that have not fully vested under the vesting provisions described herein, notwithstanding Grantee's right to vote such stock and receive dividends thereon, may not be sold, assigned, transferred, exchanged, pledged, hypothecated or otherwise encumbered. Grantee may, however, grant to another person a revocable proxy to vote unvested shares of Restricted Stock at a Company stockholders' meeting.

3. Grantee (or Grantee's beneficiary) will have full voting rights with respect to shares of Restricted Stock granted pursuant to this Award.

4. Grantee will be entitled to receive cash dividends on shares of Restricted Stock payable to shareholders of record after the Effective Date (unless and until such Restricted Stock is forfeited). Cash dividends paid on unvested shares of Restricted Stock will be treated as ordinary compensation and are subject to withholding. Any stock dividends (or other non-cash dividends) on shares of Restricted Stock will be subject to the same restrictions as the Restricted Stock.

5. Under the Plan, unvested shares of Restricted Stock will be forfeited in the event Grantee's Board directorship ends prior to the completion of the vesting period, unless such termination is due to (i) death, (ii) Total Disability or (iii) retirement after attaining the retirement age under the Board's retirement policy.

6. Shares of Restricted Stock that are no longer subject to forfeiture, will be deposited to Grantee's stock plan account with the Company's third-party administrator as soon as practicable after the date on which they irrevocably vest. Upon the vesting of shares of Restricted Stock, the prohibition against the sale or transfer of such shares will be lifted and such shares may be treated as any other shares of Common Stock of the Company, subject to any restrictions on transfer that may be applicable under Federal securities laws or the Company's Insider Trading Policy.

7. Nothing in the Plan or this Agreement will be construed as creating any right in the Grantee to continued employment or service, or as altering or amending the existing terms and conditions of the Grantee's employment or service.

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

8. All notices required to be given hereunder shall be mailed by registered or certified mail to the Company to the attention of its Secretary, at 901 E. Hector Street, Conshohocken, Pennsylvania 19428, and to Grantee at Grantee's address as it appears on the Company's books and records unless either of said parties has duly notified the other in writing of a change in address.

9. To the extent not preempted by Federal law, this Agreement shall be construed, administered and governed in all respects under and by the laws of the Commonwealth of Pennsylvania, without giving effect to its conflict of laws principles.

10. This Agreement contains all the understandings between the parties hereto pertaining to the matter referred to herein, and supersedes all undertakings and agreements, whether oral or in writing, previously entered into by them with respect thereto. Grantee represents that, in executing this Agreement, Grantee has not relied upon any representation or statement not set forth herein made by the Company with regard to the subject matter of this Agreement.

QUAKER HOUGHTON

By: ________________________________
Robert T. Traub

Grantee represents that Grantee is familiar with the terms and provisions of the Plan, and hereby accepts this Award subject to the terms and provisions of the Plan insofar as they relate to Restricted Stock granted thereunder. Grantee agrees hereby to accept as binding, conclusive, and final all decisions or interpretations of the Committee upon any questions arising under the Plan or this Grant. Grantee authorizes the Company to withhold in accordance with applicable law from any compensation payable to Grantee any taxes required to be withheld by Federal, state, or local law as a result of the vesting of this Award. Grantee represents that, in executing this Agreement, Grantee has not relied upon any representation or statement not set forth herein made by the Company with regard to the subject matter of this Agreement.

By: ________________________________
First Name Last Name

EXHIBIT 10.2

RESTRICTED STOCK AWARD

The Compensation and Human Resources Committee (the "Committee") of the Board of Directors of Quaker Houghton ("the Company") has approved the award (the "Award") to First Name Last Name (the "Grantee"), of XXX shares of $1.00 par value Common Stock of the Company as a Restricted Stock Award under the Quaker Houghton 2016 Long-Term Performance Incentive Plan (the "Plan"). Subject to Grantee's acceptance of the terms and conditions of this Award set forth in this agreement (the "Agreement"), the Award is effective as of MM DD, YYYY (the "Effective Date").

Except as provided herein and in the Plan, shares of Restricted Stock subject to this Award will vest in a single installment on MM DD, YYYY (the "Vesting Date") (the period from the Effective Date to the Vesting Date, the "Restriction Period").

The terms and conditions of this Award are governed by this Agreement and the Plan. Unless otherwise defined herein, terms used in this Agreement have the meanings assigned to them in the Plan. In the event of any inconsistency between the terms of this Agreement and the terms of the Plan, the terms of the Plan shall govern.

1. As soon as practicable after the Effective Date of this Award, the Company will transfer the number of shares of Common Stock designated in this Award into a book entry account, opened in Grantee's name with the Company's transfer agent.
2. Shares of Restricted Stock transferred under paragraph 1 are subject to certain restrictions for so long as such shares remain unvested and subject to a risk of forfeiture. Shares of Restricted Stock that have not fully vested under the vesting provisions described herein, notwithstanding Grantee's right to vote such stock and receive dividends thereon, may not be sold, assigned, transferred, exchanged, pledged, hypothecated or otherwise encumbered. Grantee may, however, grant to another person a revocable proxy to vote unvested shares of Restricted Stock at a Company stockholders' meeting.
3. Grantee (or Grantee's beneficiary) will have full voting rights with respect to shares of Restricted Stock granted pursuant to this Award.
4. Grantee will be entitled to receive cash dividends on shares of Restricted Stock payable to shareholders of record after the Effective Date (unless and until such Restricted Stock is forfeited). Cash dividends paid on unvested shares of Restricted Stock will be treated as ordinary compensation and are subject to withholding. Any stock dividends (or other non-cash dividends) on shares of Restricted Stock will be subject to the same restrictions as the Restricted Stock.
5. Under the Plan, unvested shares of Restricted Stock will be forfeited immediately after Grantee's Termination of Service with the Company and its subsidiaries, unless such termination is due to death or Total Disability or on or after attaining age 60, in which case the restrictions will lapse on the date of termination on a pro rata basis (based on the number of full months of active service with the Company or a subsidiary during the Restriction Period over the total number of full months in the Restriction Period). Restrictions will also lapse prior to the vesting date set forth above upon a Change in Control which occurs before Grantee's Termination of Service.

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6. Subject to satisfaction of any tax withholding obligation as described below, shares of Restricted Stock that are no longer subject to forfeiture will be deposited to Grantee's stock plan account with the Plan's third-party administrator, as soon as practicable after the date on which they irrevocably vest. Upon the vesting of shares of Restricted Stock, the prohibition against the sale or transfer of such shares will be lifted and such shares may be treated as any other shares of Common Stock of the Company owned by Grantee, subject to the Company's stock ownership guidelines and any restrictions on transfer that may be applicable under Federal securities laws or the Company's Insider Trading Policy. Delivery of such shares of Restricted Stock to Grantee or to Grantee's beneficiary upon vesting will be subject to withholding by the Plan's third-party administrator of amounts sufficient to cover the applicable withholding obligations, unless Grantee elects to make a payment to the Company or to the Plan's third-party administrator. In the event that any required tax withholding upon the settlement of such Awards exceeds Grantee's other compensation due from the Company, Grantee agrees to remit to the Company, as a condition to the settlement of such Awards, such additional amounts in cash as are necessary to satisfy such required withholding. Any and all withholding obligations may be settled with shares of Common Stock.

7. Nothing in the Plan or this Agreement will be construed as creating any right in the Grantee to continued employment or service, or as altering or amending the existing terms and conditions of the Grantee's employment or service.

8. All notices required to be given hereunder shall be mailed by registered or certified mail to the Company to the attention of its Secretary, at 901 E. Hector Street, Conshohocken, Pennsylvania 19428, and to Grantee at Grantee's address as it appears on the Company's books and records unless either of said parties has duly notified the other in writing of a change in address.

9. To the extent not preempted by Federal law, this Agreement shall be construed, administered and governed in all respects under and by the laws of the Commonwealth of Pennsylvania, without giving effect to its conflict of laws principles.

10. This Agreement contains all the understandings between the parties hereto pertaining to the matter referred to herein, and supersedes all undertakings and agreements, whether oral or in writing, previously entered into by them with respect thereto. Grantee represents that, in executing this Agreement, Grantee has not relied upon any representation or statement not set forth herein made by the Company with regard to the subject matter of this Agreement.

QUAKER HOUGHTON

BY:________________________________
Michael F. Barry

Grantee represents that Grantee is familiar with the terms and provisions of the Plan, and hereby accepts this Award subject to the terms and provisions of the Plan insofar as they relate to Restricted Stock granted thereunder. Grantee agrees hereby to accept as binding, conclusive, and final all decisions or interpretations of the Committee upon any questions arising under the Plan or this Grant. Grantee authorizes the Company to withhold in accordance with applicable law from any compensation payable to Grantee any taxes required to be withheld by Federal, state, or local law as a result of the vesting of this Award. Grantee represents that, in executing this Agreement, Grantee has not relied upon any representation or statement not set forth herein made by the Company with regard to the subject matter of this Agreement.

By:________________________________
First Name Last Name

Exhibit 10.3

INCENTIVE STOCK OPTION AWARD

An Incentive Stock Option (the "Option") for a total of XXX shares of $1.00 par value per share Common Stock (the "Stock") of Quaker Chemical Corporation, also known as Quaker Houghton, a Pennsylvania corporation (the "Company"), is hereby granted as of MM DD, YEAR (the "Grant Date") to First Name Last Name (the "Optionee"), subject to the terms and provisions of the Quaker Houghton 2016 Long-Term Performance Incentive Plan (the "Plan") insofar as the same are applicable to Options granted thereunder. The terms and provisions of the Plan are incorporated herein by reference. In the event of any inconsistency between the terms of this Agreement and the terms of the Plan, the terms of the Plan shall govern.

1. The Option Price as determined by the Compensation and Human Resources Committee (the "Committee") which has the authority for administering the Plan for the Company is $XXX.XX per share, having been determined pursuant to Section 3.2 of the Plan, which is equal to 100% of the Fair Market Value (as defined in the Plan) of the Stock on the Grant Date.

2. Subject to the provisions of Paragraphs 3 and 4 hereof, the Option may be exercised in whole at any time or in part from time to time on or after the date the Option, or any portion thereof, first becomes exercisable. The Option terminates on the earlier of the date when fully exercised under the provisions of the Plan, the date fixed pursuant to Section 3.7(a), 3.7(b), or 3.7(c) of the Plan, or DATE.

3. The Option may not be exercised if the issuance of the Stock upon such exercise would constitute a violation of any applicable Federal or state securities or other law or valid regulation. Further, exercise of an Option granted pursuant to this Agreement shall be under and subject to Paragraph 3.4 of the Plan.

4. The Option shall be exercisable in consecutive and near equal installments in accordance with the following Schedule:

Incentive Stock Options	Exercisable on or After
XXX	VESTING DATE

   Notwithstanding any provision to the contrary, following termination of Optionee's employment by the Company or a Subsidiary of the Company for any reason not specified in Sections 3.7(a) or (b) of the Plan, the Option shall not be or become exercisable as to any shares other than those shares as to which the Option shall have been exercisable in accordance with the preceding Schedule on the date of such termination.

5. The Option may not be transferred in any manner other than by will or the laws of descent or distribution and may be exercised during the lifetime of the Optionee only by the Optionee, pursuant to the terms of the Plan. The terms of the Option shall be binding upon the executors, administrators, heirs, successors, and assigns of the Optionee.

6. The Option may be exercised in accordance with such procedures as the Company may determine, through the Optionee's stock plan account with the Plan's third-party administrator. The Optionee may exercise the Option by logging in to the Optionee's stock plan account: https://shareworks.solium.com. The Company reserves the right to change the means of exercising options or the third-party administrator at any time. The third-party administrator, on behalf of the Company, shall be entitled to withhold (or secure payment from the Optionee in lieu of withholding) the amount of any withholding or other tax required by law to be withheld or paid by the Company with respect to the Option exercise.

7. Optionee shall have none of the rights of a shareholder with respect to any shares of Stock subject to the Option, except as to the shares with respect to which Optionee has validly exercised the Option granted herein and tendered to the Company the full price therefor.

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8. Nothing in the Plan or this Agreement will be construed as creating any right in the Optionee to continued employment or service, or as altering or amending the existing terms and conditions of the Optionee's employment or service.

9. All notices required to be given hereunder shall be mailed by registered or certified mail to the Company to the attention of its Secretary, at 901 E. Hector Street, Conshohocken, Pennsylvania 19428, and to Optionee at Optionee's address as it appears on the Company's books and records unless either of said parties has duly notified the other in writing of a change in address.

10. To the extent not preempted by Federal law, this Agreement shall be construed, administered and governed in all respects under and by the laws of the Commonwealth of Pennsylvania, without giving effect to its conflict of laws principles.

11. This Agreement contains all the understandings between the parties hereto pertaining to the matter referred to herein, and supersedes all undertakings and agreements, whether oral or in writing, previously entered into by them with respect thereto. You represent that, in executing this Agreement, you have not relied upon any representation or statement not set forth herein made by the Company with regard to the subject matter of this Agreement.

QUAKER HOUGHTON

By: ______________________________

Michael F. Barry

Optionee represents that Optionee is familiar with the terms and provisions of the Plan, and hereby accepts the Option subject to the terms and provisions of the Plan insofar as they relate to Options granted thereunder. Optionee agrees hereby to accept as binding, conclusive, and final all decisions or interpretations of the Committee upon any questions arising under the Plan or the Option. Optionee authorizes the Company to withhold in accordance with applicable law from any compensation payable to Optionee any taxes required to be withheld by Federal, state, or local law as a result of the exercise of the Option. Optionee represents that, in executing this Agreement, Optionee has not relied upon any representation or statement not set forth herein made by the Company with regard to the subject matter of this Agreement.

OPTIONEE REPRESENTS THAT, AT THE TIME THE OPTION IS GRANTED, OPTIONEE DOES NOT OWN DIRECTLY OR INDIRECTLY (AS DETERMINED UNDER SECTION 424(d) OF THE INTERNAL REVENUE CODE OF 1986, AS AMENDED), STOCK POSSESSING MORE THAN 10% OF THE TOTAL COMBINED VOTING POWER OF ALL CLASSES OF STOCK OF QUAKER CHEMICAL CORPORATION OR ANY OF ITS SUBSIDIARIES.

By: ______________________________

First Name Last Name

EXHIBIT 10.4

NON-QUALIFIED STOCK OPTION AWARD

A Non-Qualified Stock Option (the “Option”) for a total of XXX shares of $1.00 par value per share Common Stock (the “Stock”) of Quaker Chemical Corporation, also known as Quaker Houghton, a Pennsylvania corporation (the “Company”), is hereby granted as of MM DD, YEAR (the “Grant Date”) to First Name Last Name (the “Optionee”), subject to the terms and provisions of the Quaker Houghton 2016 Long-Term Performance Incentive Plan (the “Plan”) insofar as the same are applicable to Options granted thereunder. The terms and provisions of the Plan are incorporated herein by reference. In the event of any inconsistency between the terms of this Agreement and the terms of the Plan, the terms of the Plan shall govern.

1. The Option Price as determined by the Compensation and Human Resources Committee (the “Committee”) which has the authority for administering the Plan for the Company is $XXX.XX per share, having been determined pursuant to Section 3.2 of the Plan, which is equal to 100% of the Fair Market Value (as defined in the Plan) of the Stock on the Grant Date.

2. Subject to the provisions of Paragraphs 3 and 4 hereof, the Option may be exercised in whole at any time or in part from time to time on or after the date the Option, or any portion thereof, first becomes exercisable. The Option terminates on the earlier of the date when fully exercised under the provisions of the Plan, the date fixed pursuant to Section 3.7(a), 3.7(b), or 3.7(c) of the Plan, or DATE.

3. The Option may not be exercised if the issuance of the Stock upon such exercise would constitute a violation of any applicable Federal or state securities or other law or valid regulation. Further, exercise of an Option granted pursuant to this Agreement shall be under and subject to Paragraph 3.4 of the Plan.

4. The Option shall be exercisable in consecutive and near equal installments in accordance with the following Schedule:

Non-Qualified Stock Options	Exercisable on or After
X,XXX	VESTING DATE 1
X,XXX	VESTING DATE 2
X,XXX	VESTING DATE 3

   Notwithstanding any provision to the contrary, following termination of Optionee’s employment by the Company or a Subsidiary of the Company for any reason not specified in Sections 3.7(a) or (b) of the Plan, the Option shall not be or become exercisable as to any shares other than those shares as to which the Option shall have been exercisable in accordance with the preceding Schedule on the date of such termination.

5. The Option may not be transferred in any manner other than by will or the laws of descent or distribution and during the lifetime of the Optionee may be exercised only by the Optionee, pursuant to the terms of the Plan. The terms of the Option shall be binding upon the executors, administrators, heirs, successors, and assigns of the Optionee.

6. The Option may be exercised in accordance with such procedures as the Company may determine, through the Optionee’s stock plan account with the Plan’s third-party administrator. The Optionee may exercise the Option by logging in to the Optionee’s stock plan account at https://shareworks.solium.com. The Company reserves the right to change the means of exercising options or the third-party administrator at any time. The third-party administrator, on behalf of the Company, shall be entitled to withhold (or secure payment from the Optionee in lieu of withholding) the amount of any withholding or other tax required by law to be withheld or paid by the Company with respect to the Option exercise.

7. Optionee shall have none of the rights of a shareholder with respect to any shares of Stock subject to the Option, except as to the shares with respect to which Optionee has validly exercised the Option granted herein and tendered to the Company the full price therefor.

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

8. Nothing in the Plan or this Agreement will be construed as creating any right in the Optionee to continued employment or service, or as altering or amending the existing terms and conditions of the Optionee's employment or service.

9. All notices required to be given hereunder shall be mailed by registered or certified mail to the Company to the attention of its Secretary, at 901 E. Hector Street, Conshohocken, Pennsylvania 19428, and to Optionee at Optionee's address as it appears on the Company's books and records unless either of said parties has duly notified the other in writing of a change in address.

10. To the extent not preempted by Federal law, this Agreement shall be construed, administered and governed in all respects under and by the laws of the Commonwealth of Pennsylvania, without giving effect to its conflict of laws principles.

11. This Agreement contains all the understandings between the parties hereto pertaining to the matter referred to herein, and supersedes all undertakings and agreements, whether oral or in writing, previously entered into by them with respect thereto. You represent that, in executing this Agreement, you have not relied upon any representation or statement not set forth herein made by the Company with regard to the subject matter of this Agreement.

QUAKER HOUGHTON

By: ______________________________

Michael F. Barry

Optionee represents that Optionee is familiar with the terms and provisions of the Plan, and hereby accepts the Option subject to the terms and provisions of the Plan insofar as they relate to Options granted thereunder. Optionee agrees hereby to accept as binding, conclusive, and final all decisions or interpretations of the Committee upon any questions arising under the Plan or the Option. Optionee authorizes the Company to withhold in accordance with applicable law from any compensation payable to Optionee any taxes required to be withheld by Federal, state, or local law as a result of the exercise of the Option. Optionee represents that, in executing this Agreement, Optionee has not relied upon any representation or statement not set forth herein made by the Company with regard to the subject matter of this Agreement.

By: ______________________________

First Name Last Name

EXHIBIT 10.5

RESTRICTED STOCK UNIT AWARD

The Compensation and Human Resources Committee (the "Committee") of the Board of Directors of Quaker Houghton (the "Company") has approved the award (the "Award") to First Name Last Name ("the Grantee"), of XX Restricted Stock Units ("RSUs") under the Quaker Houghton 2016 Long-Term Performance Incentive Plan (the "Plan"). Each vested RSU entitles Grantee to receive one share of Common Stock of the Company on the Distribution Date. Subject to Grantee's acceptance of the terms and conditions of this Award set forth in this agreement (the "Agreement"), this Award is effective as of MM DD, YYYY (the "Effective Date").

Except as provided herein and in the Plan, RSUs subject to this Award will vest in a single installment on MM DD, YYYY (the "Vesting Date") (the period from the Effective Date to the Vesting Date, the "Restriction Period").

The terms and conditions of this Award are governed by this Agreement and the Plan. Unless otherwise defined herein, terms used in this Agreement have the meanings assigned to them in the Plan. In the event of any inconsistency between the terms of this Agreement and the terms of the Plan, the terms of the Plan shall govern.

1. As soon as practicable after the Effective Date of this Award, the RSUs will be credited to a separate account maintained by the Plan's third-party administrator on Grantee's behalf.

2. The RSUs may not be transferred in any manner other than by will or the laws of descent or distribution.

3. The RSUs are not actual shares of Common Stock, and do not have voting rights.

4. Grantee will receive dividend equivalents on RSUs. On each date that the Company pays a cash dividend on a share of Common Stock, the Company, through the Plan's third-party administrator, will credit to Grantee's account an additional number of RSUs equal to the total number of RSUs credited to Grantee's account on such date, multiplied by the amount of the per share cash dividend, and divided by the Fair Market Value of a share of Common Stock on such date. RSUs credited pursuant to this paragraph will be subject to the same terms and conditions as the RSUs to which the dividend equivalent rights relate.

5. Under the Plan, unvested RSUs will be forfeited immediately after Grantee's Termination of Service with the Company and its subsidiaries, unless such termination is due to death or Total Disability or on or after attainment of age 60, in which case the unvested RSUs will vest on the date of termination on a pro rata basis (based on the number of full months of active service with the Company or a subsidiary during the Vesting Period over the total number of full months in the Vesting Period). In the event of a Change in Control which occurs before Grantee's Termination of Service, all unvested RSUs will fully vest as of the date of such Change in Control.

6. With respect to vested RSUs, a corresponding number of actual shares of Common Stock will be deposited into a stock plan account established under Grantee's name by the Plan's third-party administrator. The date of such transfer shall be referred to as the "Distribution Date."

7. All distributions to Grantee or to Grantee's beneficiary upon vesting of the RSUs hereunder will be subject to withholding by the Plan's third-party administrator of amounts sufficient to cover the applicable withholding obligations. In the event that any required tax withholding upon the settlement of such RSUs exceeds your other compensation due from the Company, Grantee agrees to remit to the Company, as a condition to settlement of such RSUs, such additional amounts in cash as are necessary to satisfy the required withholding. Any and all withholding obligations may be settled with shares of Common Stock.

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

8. Nothing in the Plan or this Agreement will be construed as creating any right in the Grantee to continued employment or service, or as altering or amending the existing terms and conditions of the Grantee's employment or service.

9. All notices required to be given hereunder shall be mailed by registered or certified mail to the Company to the attention of its Secretary, at 901 E. Hector Street, Conshohocken, Pennsylvania 19428, and to Grantee at Grantee's address as it appears on the Company's books and records unless either of said parties has duly notified the other in writing of a change in address.

10. To the extent not preempted by Federal law, this Agreement shall be construed, administered and governed in all respects under and by the laws of the Commonwealth of Pennsylvania, without giving effect to its conflict of laws principles.

11. This Agreement contains all the understandings between the parties hereto pertaining to the matter referred to herein, and supersedes all undertakings and agreements, whether oral or in writing, previously entered into by them with respect thereto. Grantee represents that, in executing this Agreement, Grantee has not relied upon any representation or statement not set forth herein made by the Company with regard to the subject matter of this Agreement.

QUAKER HOUGHTON

BY:________________________________
Michael F. Barry

Grantee represents that Grantee is familiar with the terms and provisions of the Plan, and hereby accepts this Award subject to the terms and provisions of the Plan insofar as they relate to RSUs granted thereunder. Grantee agrees hereby to accept as binding, conclusive, and final all decisions or interpretations of the Committee upon any questions arising under the Plan or this Grant. Grantee authorizes the Company to withhold in accordance with applicable law from any compensation payable to Grantee any taxes required to be withheld by Federal, state, or local law as a result of the vesting of this Award. Grantee represents that, in executing this Agreement, Grantee has not relied upon any representation or statement not set forth herein made by the Company with regard to the subject matter of this Agreement.

By:________________________________
First Name Last Name

EXHIBIT 10.6

PERFORMANCE STOCK UNIT AWARD

The Compensation and Human Resources Committee (the “Committee”) of the Board of Directors of Quaker Houghton has approved the award (the “Award”) to FIRST NAME LAST NAME (the “Grantee”), of XXX performance stock units (PSUs) as of YEAR MM DD, (the “Grant Date”), subject to achieving a pre-determined targeted performance based on the Company’s relative total shareholder return (“TSR”) as compared to the TSR of the S&P Mid Cap 400 (Materials Group) over the three-year period from January 1, 2022 to December 31, 2024 under the Quaker Houghton 2016 Long-Term Performance Incentive Plan (the “Plan”). This Award is subject to your acceptance of the terms and conditions of this Award set forth in this agreement (the “Agreement”). The level of payment can range from 0% to 200% (the “achievement percentage”) of the Target PSU award depending on our TSR performance.

The terms and conditions of this Award are governed by this Agreement and the Plan. Unless otherwise defined herein, terms used in this Agreement have the meanings assigned to them in the Plan. In the event of any inconsistency between the terms of this Agreement and the terms of the Plan, the terms of the Plan shall govern.

1. PSUs will be paid in the calendar year following the end of the performance period. The number of shares of Quaker Houghton that will be paid under the PSU award will be equal to (i) the achievement percentage times (ii) the Target PSU award.

2. Grantee (or Grantee’s beneficiary) will have no voting rights with respect to the PSUs.

3. Grantee will not be entitled to receive cash dividends or dividend equivalents on PSUs.

4. PSUs may not be transferred in any manner other than by will or the laws of descent or distribution.

5. Unvested PSUs will be forfeited in the event Grantee’s employment ends prior to the completion of the vesting period, unless such termination is due to (i) death, (ii) Total Disability or (iii) retirement on or after attainment of age 60, in each case as provided in the Plan. If the Grantee’s termination occurs due to the aforementioned circumstances, then the Grantee’s PSUs will be prorated based on active service during the performance period, as provided in the Plan.

6. All distributions to Grantee or to Grantee’s beneficiary upon vesting of the PSUs hereunder will be subject to withholding by the Plan’s third-party administrator of amounts sufficient to cover the applicable withholding obligations. In the event that any required tax withholding upon the settlement of such PSUs exceeds your other compensation due from the Company, Grantee agrees to remit to the Company, as a condition to settlement of such PSUs, such additional amounts in cash as are necessary to satisfy the required withholding. Any and all withholding obligations may be settled with shares of Common Stock.

7. Nothing in the Plan or this Agreement will be construed as creating any right in the Grantee to continued employment or service, or as altering or amending the existing terms and conditions of the Grantee’s employment or service.

8. All notices required to be given hereunder shall be mailed by registered or certified mail to the Company to the attention of its Secretary, at 901 E. Hector Street, Conshohocken, Pennsylvania 19428, and to Grantee at Grantee’s address as it appears on the Company’s books and records unless either of said parties has duly notified the other in writing of a change in address.

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9. To the extent not preempted by Federal law, this Agreement shall be construed, administered and governed in all respects under and by the laws of the Commonwealth of Pennsylvania, without giving effect to its conflict of laws principles.

10. This Agreement contains all the understandings between the parties hereto pertaining to the matter referred to herein, and supersedes all undertakings and agreements, whether oral or in writing, previously entered into by them with respect thereto. Grantee represents that, in executing this Agreement, Grantee has not relied upon any representation or statement not set forth herein made by the Company with regard to the subject matter of this Agreement.

QUAKER HOUGHTON

BY:________________________________
Michael F. Barry

Grantee represents that Grantee is familiar with the terms and provisions of the Plan, and hereby accepts this Award subject to the terms and provisions of the Plan insofar as they relate to PSUs granted thereunder. Grantee agrees hereby to accept as binding, conclusive, and final all decisions or interpretations of the Committee upon any questions arising under the Plan or this Grant. Grantee authorizes the Company to withhold in accordance with applicable law from any compensation payable to Grantee any taxes required to be withheld by Federal, state, or local law as a result of the vesting of this Award. Grantee represents that, in executing this Agreement, Grantee has not relied upon any representation or statement not set forth herein made by the Company with regard to the subject matter of this Agreement.

BY:____________________________
First Name Last Name

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: August 5, 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: August 5, 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 June 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: August 5, 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 June 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: August 5, 2021

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