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

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

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, 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 (Do not check if a smaller reporting company)

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

As of July 21, 2017, 27,147,346 shares of the registrant's Common Stock, par value \$.01 per share, were outstanding.

CARBO CERAMICS INC.

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(Unaudited)

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PART I. FINANCIAL INFORMATION

ITEM 1. FINANCIAL STATEMENTS

CARBO CERAMICS INC.

CONSOLIDATED BALANCE SHEETS

(\$ in thousands, except per share data)

	June 30, 2017 (Unaudited)	December 31, 2016 (Note 1)
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 39,361	\$ 91,680
Restricted cash	5,723	—
Trade accounts and other receivables, net	37,396	23,622
Inventories:		
Finished goods	69,613	74,133
Raw materials and supplies	22,848	23,041
Total inventories	92,461	97,174
Prepaid expenses and other current assets	5,346	3,548
Income tax receivable	2,396	1,199
Total current assets	182,683	217,223
Restricted cash	5,543	—
Property, plant and equipment:		
Land and land improvements	45,240	45,530
Land-use and mineral rights	19,696	19,696
Buildings	87,470	87,318
Machinery and equipment	647,694	647,753
Construction in progress	92,935	92,704
Total property, plant and equipment	893,035	893,001
Less accumulated depreciation and amortization	420,777	398,898
Net property, plant and equipment	472,258	494,103
Goodwill	3,500	3,500
Intangible and other assets, net	8,674	8,631
Total assets	\$ 672,658	\$ 723,457
LIABILITIES AND SHAREHOLDERS' EQUITY		
Current liabilities:		
Long-term debt, current portion	\$ —	\$ 13,000
Notes payable	1,246	551
Accounts payable	8,967	7,782
Accrued payroll and benefits	3,233	3,434
Derivative instruments	2,490	1,599
Other accrued expenses	10,707	8,438
Total current liabilities	26,643	34,804
Deferred income taxes	1,602	1,236
Long-term debt, net	48,119	42,404
Notes payable, related parties	25,997	25,000

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Other long-term liabilities	4,141	3,443
Shareholders' equity:		
Preferred stock, par value \$0.01 per share, 5,000 shares authorized, none outstanding	—	—
Common stock, par value \$0.01 per share, 80,000,000 shares authorized; 27,147,346 and 26,881,066 shares issued and outstanding at June 30, 2017 and December 31, 2016, respectively	271	269
Additional paid-in capital	123,899	117,192
Retained earnings	475,635	533,435
Accumulated other comprehensive loss	(33,649)	(34,326)
Total shareholders' equity	566,156	616,570
Total liabilities and shareholders' equity	\$ 672,658	\$ 723,457

The accompanying notes are an integral part of these statements.

CARBO CERAMICS INC.

CONSOLIDATED STATEMENTS OF OPERATIONS

(\$ in thousands, except per share data)

(Unaudited)

	Three months ended		Six months ended	
	June 30,		June 30,	
	2017	2016	2017	2016
Revenues	\$43,572	\$20,651	\$78,242	\$53,753
Cost of sales	57,005	40,663	111,133	97,406
Gross loss	(13,433)	(20,012)	(32,891)	(43,653)
Selling, general and administrative expenses	10,265	10,034	21,062	21,509
(Gain) Loss on disposal or impairment of assets	—	(23)	—	925
Operating loss	(23,698)	(30,023)	(53,953)	(66,087)
Other expense:				
Interest expense, net	(1,627)	(1,623)	(3,715)	(2,419)
Other, net	4	8	191	83
	(1,623)	(1,615)	(3,524)	(2,336)
Loss before income taxes	(25,321)	(31,638)	(57,477)	(68,423)
Income tax benefit	(499)	(11,342)	(211)	(23,443)
Net loss	\$(24,822)	\$(20,296)	\$(57,266)	\$(44,980)
Loss per share:				
Basic	\$(0.93)	\$(0.88)	\$(2.15)	\$(1.95)
Diluted	\$(0.93)	\$(0.88)	\$(2.15)	\$(1.95)
Other information:				
Dividends declared per common share	\$—	\$—	\$—	\$—

The accompanying notes are an integral part of these statements.

CARBO CERAMICS INC.

CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS

(\$ in thousands)

(Unaudited)

	Three months ended		Six months ended	
	June 30,		June 30,	
	2017	2016	2017	2016
Net loss	\$(24,822)	\$(20,296)	\$(57,266)	\$(44,980)
Other comprehensive income:				
Foreign currency translation adjustment	(1,027)	1,127	677	2,570
Deferred income taxes	—	—	—	—
Other comprehensive income, net of tax	(1,027)	1,127	677	2,570
Comprehensive loss	\$(25,849)	\$(19,169)	\$(56,589)	\$(42,410)

The accompanying notes are an integral part of these statements.

CARBO CERAMICS INC.

CONSOLIDATED STATEMENTS OF CASH FLOWS

(\$ in thousands)

(Unaudited)

	Six months ended June 30,	
	2017	2016
Operating activities		
Net loss	\$(57,266)	\$(44,980)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	24,101	24,448
Provision for doubtful accounts	413	829
Deferred income taxes	618	(23,340)
Loss on disposal or impairment of assets	—	925
Foreign currency transaction loss (gain), net	2	(111)
Stock compensation expense	2,750	3,399
PIK accrual on notes payable, related parties	997	—
Change in fair value of derivative instruments	159	(3,725)
Changes in operating assets and liabilities:		
Trade accounts and other receivables	(14,128)	26,210
Inventories	4,689	(1,207)
Prepaid expenses and other current assets	(553)	833
Accounts payable	1,214	(2,194)
Accrued expenses	1,853	(9,136)
Income tax receivable, net	(1,171)	37,200
Other, net	1,405	283
Net cash (used in) provided by operating activities	(34,917)	9,434
Investing activities		
Capital expenditures	(1,176)	(6,439)
Net cash used in investing activities	(1,176)	(6,439)
Financing activities		
Repayments on long-term debt	(3,250)	(26,033)
Repayments on insurance financing agreement	(551)	—
Payments of debt issuance costs	(875)	(339)
Proceeds from notes payable, related parties	—	25,000
Purchase of common stock	(533)	(441)
Net cash used in financing activities	(5,209)	(1,813)
Effect of exchange rate changes on cash	249	675
Net (decrease) increase in cash and cash equivalents and restricted cash	(41,053)	1,857
Cash and cash equivalents and restricted cash at beginning of period	91,680	78,866
Cash and cash equivalents and restricted cash at end of period	\$50,627	\$80,723
Supplemental cash flow information		
Interest paid	\$761	\$1,824

Income taxes paid	\$—	\$—
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The accompanying notes are an integral part of these statements.

CARBO CERAMICS INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(\$ in thousands, except per share data)

(Unaudited)

1. Basis of Presentation

The accompanying unaudited consolidated financial statements of CARBO Ceramics Inc. have been prepared in accordance with United States generally accepted accounting principles (“U.S. GAAP”) for interim financial information and with the instructions to Form 10-Q and Article 10 of Regulation S-X. Accordingly, they do not include all of the information and notes required for complete financial statements. In the opinion of management, all adjustments, consisting only of normal recurring adjustments, considered necessary for a fair presentation have been included. The results of the interim periods presented herein are not necessarily indicative of the results to be expected for any other interim period or the full year. The consolidated balance sheet as of December 31, 2016 has been derived from the audited financial statements at that date. These financial statements should be read in conjunction with the audited consolidated financial statements and notes thereto for the year ended December 31, 2016 included in the annual report on Form 10-K of CARBO Ceramics Inc. for the year ended December 31, 2016.

The consolidated financial statements include the accounts of CARBO Ceramics Inc. and its operating subsidiaries (the “Company”). All significant intercompany transactions have been eliminated.

Beginning in late 2014, a severe decline in oil and natural gas prices led to a significant decline in oil and natural gas industry drilling activities and capital spending. As a result of the continued negative impact this has had on its business, the Company continues to operate its plants at significantly reduced levels. As of June 30, 2017, the Company was producing ceramic proppants from its Eufaula, Alabama and Kopeysk, Russia manufacturing facilities, and processing sand at its Marshfield, Wisconsin facility. The Company produces ceramic pellets for the industrial markets in a limited capacity, and when market demands, at our McIntyre, Georgia facility. Our Millen, Georgia facility is currently mothballed, and our Toombsboro, Georgia facility is currently idled. As a result of the steps the Company has taken to enhance its liquidity, the Company currently believes that cash on hand will enable the Company to meet its working capital, capital expenditure, debt service and other funding requirements for at least one year from the date of this Form 10-Q. The Company’s view regarding sufficiency of cash and liquidity is primarily based on our financial forecast for 2017 and 2018, which is impacted by various assumptions regarding demand and sales prices for our products. Although the Company has observed certain factors in the first six months of 2017 that could be indicative of improving industry conditions, its financial forecasts in recent periods have not always been accurate due to the inability to estimate customer demand, which is highly volatile in the current operating environment. The Company has no committed sales backlog from its customers. As a result, there is no guarantee that its financial forecast, which projects sufficient cash will be available to meet planned operating expenses and other cash needs, will be achieved.

Additionally, the construction projects relating to the second production line at Millen, Georgia and the second phase of the retrofit of an existing plant with the KRYPTOSPHERE® technology remain suspended. As of June 30, 2017, the value of the temporarily suspended projects relating to these two projects totaled approximately 93% of the Company’s total construction in progress, and both projects are over 90% complete.

Deferred Taxes – Valuation Allowance

Accounting Standards Codification (“ASC”) Topic 740, Income Taxes, provides the carrying value of deferred tax assets should be reduced by the amount not expected to be realized. A company should reduce deferred tax assets by a valuation allowance if, based on the weight of all available evidence, it is not more likely than not that some portion or all of the deferred tax assets will be realized. The valuation allowance should be sufficient to reduce the deferred tax asset to the amount that is more likely than not to be realized. ASC 740 requires all available evidence, both positive and negative, be considered to determine whether a valuation allowance for deferred tax assets is needed in the financial statements. Additionally there can be statutory limitations and losses also assessed on the deferred tax assets should certain conditions arise. As a result of the significant decline in oil and gas activities and net losses incurred over the several quarters prior to the first quarter of 2017, we determined during the three months ended March 31, 2017 that it was more likely than not that a portion of our deferred tax assets will not be realized in the future. Our valuation allowance against a portion of our deferred taxes as of June 30, 2017 was \$19,703. Our assessment of the realizability of our deferred tax assets is based on the weight of all available evidence, both positive and negative, including future reversals of deferred tax liabilities.

Restricted Cash

As a result of the repayment of the Wells Fargo term loan, combined with the continued use of letters of credit and corporate cards with Wells Fargo (see Note 7), a portion of the Company's cash balance is now restricted to its use in order to provide collateral to Wells Fargo. As of June 30, 2017 and December 31, 2016, restricted cash was \$11,266 and \$0, respectively.

Lower of Cost or Market Adjustments

As of June 30, 2017 and 2016, the Company reviewed the carrying values of all inventories and concluded that no adjustments were warranted for finished goods and raw materials intended for use in the Company's manufacturing process.

Manufacturing Production Levels Below Normal Capacity

As a result of the Company substantially reducing manufacturing production levels, including by idling certain facilities, certain production costs have been expensed instead of being capitalized into inventory. The Company expenses fixed production overhead amounts in excess of amounts that would have been allocated to each unit of production at normal production levels. For the three months ended June 30, 2017 and 2016, the Company expensed \$10,797 and \$13,515, respectively, in production costs. For the six months ended June 30, 2017 and 2016, the Company expensed \$22,009 and \$23,222, respectively, in production costs.

Long-lived and other noncurrent assets impairment considerations

As noted, the Company has temporarily idled production at various manufacturing facilities, including throughout 2017 and 2016. The Company does not assess temporarily idled assets for impairment unless events or circumstances indicate that the carrying amounts of those assets may not be recoverable. Short-term stoppages of production for less than one year do not generally significantly impact the long-term expected cash flows of the idled facility. As of March 31, 2016, as a result of changes in the planned usage of certain long-term bauxite raw materials, the Company evaluated the carrying value of those bauxite raw materials. Based upon this evaluation, during the three months ended March 31, 2016, the Company recognized an impairment charge of \$1,065 on these bauxite raw material inventories. At December 31, 2016, as a result of the continued and severity of the market downturn, the Company identified indicators of impairments related to each of its domestic manufacturing plant asset groups. The Company completed undiscounted cash flow analyses on that date and determined no impairment charge was necessary at that time. As of June 30, 2017, the Company concluded that there were no events or circumstances that would indicate that carrying amounts of long-lived and other noncurrent assets might be impaired given that results for the first six months of 2017 met our expectations from our analysis as of December 31, 2016 and given that our future outlook has not significantly changed since that date. However, the Company continues to monitor market conditions closely. Further deterioration of market conditions could result in impairment charges being taken on the Company's long-lived and other noncurrent assets, including the Company's manufacturing plants, goodwill and intangible assets. The Company will evaluate long-lived and other noncurrent assets for impairment at such time that events or circumstances indicate that carrying amounts might be impaired.

2. Loss Per Share

The following table sets forth the computation of basic and diluted loss per share under the two-class method:

	Three months ended		Six months ended	
	June 30,		June 30,	
	2017	2016	2017	2016
Numerator for basic and diluted loss per share:				
Net loss	\$(24,822)	\$(20,296)	\$(57,266)	\$(44,980)
Effect of reallocating undistributed earnings				
of participating securities	—	—	—	—
Net loss available under the two-class method	\$(24,822)	\$(20,296)	\$(57,266)	\$(44,980)
Denominator:				
Denominator for basic loss per share--weighted-average				
shares	26,665,092	23,108,889	26,636,394	23,085,725
Effect of dilutive potential common shares	—	—	—	—
Denominator for diluted loss per share--adjusted				
weighted-average shares	26,665,092	23,108,889	26,636,394	23,085,725
Basic loss per share	\$(0.93)	\$(0.88)	\$(2.15)	\$(1.95)
Diluted loss per share	\$(0.93)	\$(0.88)	\$(2.15)	\$(1.95)

3. Common Stock Repurchase Program

On January 28, 2015, the Company's Board of Directors authorized the repurchase of up to two million shares of the Company's common stock. Shares are effectively retired at the time of purchase. As of June 30, 2017, the Company had not repurchased any shares under the plan.

4. Natural Gas Derivative Instruments

Natural gas is used to fire the kilns at the Company's domestic manufacturing plants. In an effort to mitigate potential volatility in the cost of natural gas purchases and reduce exposure to short-term spikes in the price of this commodity, from time to time, the Company enters into contracts to purchase a portion of the anticipated monthly natural gas requirements at specified prices. Contracts are geographic by plant location. As a result of the Company's significantly reducing production levels and not taking delivery of all of the contracted natural gas quantities, the Company accounts for relevant contracts as derivative instruments.

Derivative accounting requires the natural gas contracts to be recognized as either assets or liabilities at fair value with an offsetting entry in earnings. The Company uses the income approach in determining the fair value of these derivative instruments. The model used considers the difference, as of each balance sheet date, between the contracted prices and the New York Mercantile Exchange ("NYMEX") forward strip price for each contracted period. The estimated cash flows from these contracts are discounted using a discount rate of 8.0%, which reflects the nature of the contracts as well as the timing and risk of estimated cash flows associated with the contracts. The discount rate had an immaterial impact on the fair value of the contracts for the six months ended June 30, 2017. The last of these natural gas contracts will expire in December 2018. During the three months ended June 30, 2017 and 2016, the Company recognized a \$309 and \$824 loss, respectively, in cost of sales on derivatives instruments. During the six months ended June 30, 2017 and 2016, the Company recognized a \$1,200 loss and a \$597 gain, respectively, in cost of sales on derivative instruments. The cumulative present value of these natural gas derivative contracts as of June 30, 2017 are presented as current and long-term liabilities, as applicable, in the Consolidated Balance Sheet.

At June 30, 2017, the Company had contracted for delivery a total of 3,060,000 MMBtu of natural gas at an average price of \$4.37 per MMBtu through December 31, 2018. Contracts covering 2,880,000 MMBtu are subject to accounting as derivative instruments. Future decreases in the NYMEX forward strip prices will result in additional derivative losses while future increases in the NYMEX forward strip prices will result in derivative gains. Future gains or losses will approximate the change in NYMEX natural gas prices relative to the total quantity of natural gas under contracts now subject to accounting as derivatives. The historical average NYMEX natural gas contract settlement prices for the three months ended June 30, 2017 and 2016 were \$3.18 per MMBtu and \$1.95 per MMBtu, respectively.

5. Fair Value Measurements

The Company's derivative instruments are measured at fair value on a recurring basis. U.S. GAAP establishes a fair value hierarchy that has three levels based on the reliability of the inputs used to determine the fair value. These levels include: (1) Level 1, defined as inputs such as unadjusted quoted prices in active markets for identical assets or liabilities; (2) Level 2, defined as inputs other than quoted prices in active markets that are either directly or indirectly observable; and (3) Level 3, defined as unobservable inputs for use when little or no market data exists, therefore

requiring an entity to develop its own assumptions.

The Company's natural gas derivative instruments are included within Level 2 of the fair value hierarchy (see Note 4 herein for additional information on the derivative instruments). The following table sets forth by level within the fair value hierarchy the Company's assets and liabilities that were accounted for at fair value:

	Fair value as of June 30, 2017			
	Level 1	Level 2	Level 3	Total
Liabilities:				
Derivative instruments	—	(3,626)	—	(3,626)
Total fair value	\$—	\$(3,626)	\$—	\$(3,626)

	Fair value as of December 31, 2016			
	Level 1	Level 2	Level 3	Total
Liabilities:				
Derivative instruments	—	(3,468)	—	(3,468)
Total fair value	\$—	\$(3,468)	\$—	\$(3,468)

At June 30, 2017, the fair value of the Company's long-term debt approximated the carrying value.

6. Stock Based Compensation

On May 16, 2017, the shareholders approved the Amended and Restated 2014 CARBO Ceramics Inc. Omnibus Incentive Plan (the “Amended and Restated 2014 Omnibus Incentive Plan”). Under the Amended and Restated 2014 Omnibus Incentive Plan, the Company may grant cash-based awards, stock options (both non-qualified and incentive) and other equity-based awards (including stock appreciation rights, phantom stock, restricted stock, restricted stock units, performance shares, deferred share units or share-denominated performance units) to employees and non-employee directors. The amount paid under the Amended and Restated 2014 Omnibus Incentive Plan to any single participant in any calendar year with respect to any cash-based award shall not exceed \$5,000. Awards may be granted with respect to a number of shares of the Company’s Common Stock that in the aggregate does not exceed 1,450,000 shares prior to the fifth anniversary of its effective date, plus (i) the number of shares that are forfeited, cancelled or returned, and (ii) the number of shares that are withheld from the participants to satisfy an option exercise price or minimum statutory tax withholding obligations. No more than 100,000 shares may be granted to any single participant in any calendar year. Equity-based awards may be subject to performance-based and/or service-based conditions. With respect to stock options and stock appreciation rights granted, the exercise price shall not be less than the market value of the underlying Common Stock on the date of grant. The maximum term of an option is ten years. Restricted stock awards granted generally vest (i.e., transfer and forfeiture restrictions on these shares are lifted) proportionately on each of the first three anniversaries of the grant date, but subject to certain limitations, awards may specify other vesting periods. As of June 30, 2017, 745,594 shares were available for issuance under the Amended and Restated 2014 Omnibus Incentive Plan. Although the 2009 CARBO Ceramics Inc. Omnibus Incentive Plan (the “2009 Omnibus Incentive Plan”) has expired, certain nonvested restricted shares granted under that plan remain outstanding in accordance with its terms.

A summary of restricted stock activity and related information for the six months ended June 30, 2017 is presented below:

	Weighted-Average	
	Grant-Date	
	Fair Value	
	Shares	Per Share
Nonvested at January 1, 2017	339,140	\$ 28.59
Granted	297,685	\$ 10.30
Vested	(143,094)	\$ 36.02
Forfeited	(37,024)	\$ 18.42
Nonvested at June 30, 2017	456,707	\$ 15.17

As of June 30, 2017, there was \$5,178 of total unrecognized compensation cost related to restricted shares granted under both the expired 2009 Omnibus Incentive Plan and the Amended and Restated 2014 Omnibus Incentive Plan. That cost is expected to be recognized over a weighted-average period of 2.1 years. The total fair value of shares vested during the six months ended June 30, 2017 was \$2,002.

The Company made market-based cash awards to certain executives of the Company pursuant to the Amended and Restated 2014 Omnibus Incentive Plan. As of June 30, 2017, the total target award outstanding was \$2,822. The payout of awards can range from 0% to 200% based on the Company's Relative Total Shareholder Return calculated over a three year period beginning January 1 of the year each grant was made.

The Company also made phantom stock awards to key employees pursuant to the Amended and Restated 2014 Omnibus Incentive Plan. The units subject to a phantom stock award vest and cease to be forfeitable in equal annual installments over a three-year period. Participants awarded units of phantom stock are entitled to a lump sum cash payment equal to the fair market value of a share of Common Stock on the vesting date. In no event will Common Stock of the Company be issued with regard to outstanding phantom stock awards. As of June 30, 2017, there were 163,215 units of phantom stock granted under the Amended and Restated 2014 Omnibus Incentive Plan, of which 4,189 have vested and 8,234 have been forfeited. As of June 30, 2017, nonvested units of phantom stock under the Amended and Restated 2014 Omnibus Incentive Plan had a total value of \$1,033, a portion of which is accrued as a liability within Accrued Payroll and Benefits. Compensation expense for these units of phantom stock will be recognized over the three-year vesting period. The amount of compensation expense recognized each period will be based on the fair value of the Company's common stock at the end of each period.

7. Long-Term Debt and Notes Payable

On March 2, 2017, the Company entered into an Amended and Restated Credit Agreement (the “New Credit Agreement”) with Wilks Brothers, LLC (“Wilks”) to replace its current term loan with Wells Fargo Bank, National Association (“Wells Fargo”) and provide the Company with additional liquidity for a longer term. The New Credit Agreement is a \$65,000 facility maturing on December 31, 2022, that consists of a \$52,651 term loan that was made at closing to pay off Wells Fargo and an additional term loan of \$12,349 that was made in a single advance to the Company in July 2017 after the Company satisfied certain post-closing conditions. The \$52,651 term loan was a non-cash transaction to the Company as Wilks directly paid Wells Fargo and assumed the New Credit Agreement. The Company’s obligations bear interest at 9.00% and are guaranteed by its two domestic operating subsidiaries. No principal repayments are required until maturity (except in unusual circumstances), and there are no financial covenants. In lieu of making cash interest payments, the Company has the option during the first two years of the loan to make interest payments as payment-in-kind, or PIK, by applying an 11.00% rate to the interest payment due (instead of the 9.00% cash interest rate) and capitalizing the resulting amount to the outstanding principal balance of the loan. The Company is required to provide Wilks 30 day notice of its intent to exercise this option for an interest payment. The Company does not anticipate utilizing this option and has therefore accrued interest expense using the 9.00% cash interest rate.

The loan cannot be prepaid during the first three years without making the lenders whole for interest that would have been payable over the entire remaining term of the loan. The Company’s obligations under the New Credit Agreement are secured by: (i) a pledge of all accounts receivable and inventory, (ii) cash in certain accounts, (iii) domestic distribution assets residing on owned real property, (iv) the Company’s Marshfield, Wisconsin and Toombsboro, Georgia plant facilities and equipment, and (v) certain real property interests in mines and minerals. Other liens previously in favor of Wells Fargo were released.

As of June 30, 2017, the Company’s outstanding debt under its New Credit Agreement was \$52,651. During the six months ended June 30, 2017, the Company expensed \$455 of debt issuance costs relating to the previous Wells Fargo Amended Credit Agreement. As of June 30, 2017, the Company had \$825 of unamortized debt issuance costs relating to the New Credit Agreement that are presented as a direct reduction from the carrying amount of the long-term debt obligation. The Company had \$10,230 and \$11,980 in standby letters of credit issued through Wells Fargo as of June 30, 2017 and December 31, 2016, respectively, primarily as collateral relating to our natural gas commitments and railcar leases. As of December 31, 2016, the Company’s outstanding debt under its previous Wells Fargo Amended Credit Agreement was \$55,901, of which \$13,000 was classified as current and \$42,901 was classified as long-term. As of December 31, 2016, the Company had \$497 of debt issuance costs that are presented as a direct reduction from the carrying amount of the long-term debt obligation. For the year ended December 31, 2016, the weighted average interest rate was 6.447% based on LIBOR-based rate borrowings.

On March 2, 2017, in connection with entry into the New Credit Agreement, the Company issued a Warrant (the “Warrant”) to Wilks. Subject to the terms of the Warrant, the Warrant entitles the holder thereof to purchase up to 523,022 shares of the Common Stock, at an exercise price of \$14.91 per share, payable in cash. The Warrant expires on December 31, 2022. Based on a Schedule 13D filing with the SEC, as of March 10, 2017, Wilks owned 9.6% of the Company’s outstanding common stock, and should Wilks fully exercise the Warrant to purchase an additional 523,022 shares, it would hold 11.5% of the Company’s outstanding common stock. The Company allocated the proceeds received of \$52,651 to each of these two instruments based on their relative fair values. Accordingly, the Company recorded long-term debt of \$48,780 and warrants of \$3,871 at inception. The amount associated with the Warrant was recorded as an increase to additional paid-in capital. The original issue discount of the long-term debt will be amortized using the effective interest method over the term of the loan. As of June 30, 2017, the unamortized original issue discount was \$3,707.

In May 2016, the Company received proceeds of \$25,000 from the issuance of separate unsecured Promissory Notes (the "Notes") to two of the Company's Directors. Each Note matures on April 1, 2019 and bears interest at 7.00%. On March 2, 2017, in connection with the New Credit Agreement, the Notes were amended to provide for payment-in-kind, or PIK, interest payments at 8.00% until the lenders under the New Credit Agreement receive two consecutive semi-annual cash interest payments. On April 1, 2017, the Company made a \$997 interest payment as PIK, and capitalized the resulting amount to the outstanding principal balance. As of June 30, 2017, the outstanding principal balance of the Notes was \$25,997.

Interest cost for the six months ended June 30, 2017 and 2016 was \$3,965 and \$2,747, respectively, of which \$0 and \$80 was capitalized into the cost of property, plant and equipment in the six months ended June 30, 2017 and 2016, respectively. Interest cost primarily includes interest expense relating to our debts as well as amortization and the write-off of debt issuance costs and amortization of the original issue discount associated with the New Credit Agreement and Warrant.

In June 2017, the Company entered into an agreement with a financing company to finance certain insurance premiums in the amount of \$1,246. Payments are due monthly through April 1, 2018 with an effective interest rate of 0.91%. The liability is included in Notes Payable within Current Liabilities on the Consolidated Balance Sheet.

8. Shareholders' Equity

On July 28, 2016, the Company filed a prospectus supplement and associated sales agreement related to an at-the-market ("ATM") equity offering program pursuant to which the Company may sell, from time to time, common stock having an aggregate offering price of up to \$75,000 through Cowen and Company LLC, as sales agent, for general corporate purposes. As of June 30, 2017, the Company had sold a total of 3,405,709 shares of its common stock under the ATM program for \$46,612, or an average of \$13.69 per share, and received proceeds of \$45,564, net of commissions of \$1,048. These sales occurred in August 2016 and September 2016, and the Company has not utilized the program since those sales.

As of June 30, 2017, the Company's net investment that is subject to foreign currency fluctuations totaled \$15,626, and the Company has recorded a cumulative foreign currency translation loss of \$33,649, all related to the Russian Ruble. This cumulative translation loss is included in and is the only component of accumulated other comprehensive loss within shareholders' equity. No income tax benefits have been recorded on these losses as a result of the uncertainty about recoverability of the related deferred income tax benefits.

9. New Accounting Pronouncements

In August 2015, the FASB issued ASU No. 2015-14, "Revenue from Contracts with Customers (Topic 606) – Deferral of the Effective Date," which revises the effective date of ASU No. 2014-09, "Revenue from Contracts with Customers (Topic 606)," ("ASU 2014-09") to interim and annual periods beginning after December 15, 2017, with early adoption permitted no earlier than interim and annual periods beginning after December 15, 2016. In May 2014, the FASB issued ASU 2014-09, which amends current revenue guidance. The core principle of the guidance is that an entity should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. Upon initial evaluation, the Company does not believe there will be a material impact on its consolidated financial statements, and is currently evaluating the potential impact on disclosures. The Company's analysis of proppant sales contracts under ASC 606 supports the recognition of revenue at a point in time, typically when title passes to the customer upon delivery, for the majority of contracts, which is consistent with the current revenue recognition model. The Company is still evaluating the potential impact, if any, on sales contracts relating to the sale of fracture stimulation software and environmental products and services. The Company expects to utilize the modified retrospective approach, which requires a cumulative adjustment to retained earnings and no adjustments to prior periods. The Company does not expect a material cumulative adjustment upon adoption based on the annual revenue generated from the sale of fracture stimulation software and environmental products and services.

10. Segment Information

The Company has two operating segments: 1) oilfield technologies and services and 2) environmental products and services. Discrete financial information is available for each operating segment. Management of each operating segment reports to our Chief Executive Officer, the Company's chief operating decision maker, who regularly evaluates income before income taxes as the measure to evaluate segment performance and to allocate resources. The accounting policies of each segment are the same as those described in the summary of significant accounting policies in Note 1 of the consolidated financial statements included in the annual report on Form 10-K for the year ended December 31, 2016.

The Company's oilfield technologies and services segment manufactures and sells technology ceramic, base ceramic, and frac sand proppants for use primarily in the hydraulic fracturing of natural gas and oil wells. All of the Company's ceramic proppant products have similar production processes and economic characteristics and are marketed predominantly to pressure pumping companies that perform hydraulic fracturing for major oil and gas companies. The Company's manufacturing facilities also produce ceramic pellets for use in various industrial technology applications, including but not limited to casting and milling. This segment also promotes increased production and Estimated Ultimate Recovery ("EUR") of oil and natural gas by providing industry leading technology to Design, Build, and Optimize the Frac™. Through our wholly-owned subsidiary StrataGen, Inc., we sell one of the most widely used fracture stimulation software under the brand FracPro® and provide fracture design and consulting services to oil and natural gas E&P companies under the brand StrataGen.

Our environmental products and services segment is intended to protect operators' assets, minimize environmental risks, and lower lease operating expense ("LOE"). AGPI, a wholly-owned subsidiary of ours, provides spill prevention, containment and countermeasure systems for the oil and gas industry. AGPI uses proprietary technology designed to enable its clients to extend the life of their storage assets, reduce the potential for hydrocarbon spills and provide containment of stored materials.

Summarized financial information for the Company's operating segments for the three and six months ended June 30, 2017 and 2016 is shown in the following tables. Intersegment sales are not material.

	Oilfield Technologies and Services	Environmental Products and Services	Total
	(\$ in thousands)		
Three Months Ended June 30, 2017			
Revenue from external customers	\$37,202	\$ 6,370	\$43,572
(Loss) income before income taxes	(25,436)	115	(25,321)
Depreciation and amortization	11,340	331	11,671
Three Months Ended June 30, 2016			
Revenue from external customers	\$17,677	\$ 2,974	\$20,651
Loss before income taxes	(30,644)	(994)	(31,638)
Depreciation and amortization	11,753	404	12,157
Six Months Ended June 30, 2017			
Revenue from external customers	\$66,823	\$ 11,419	\$78,242
Loss before income taxes	(57,199)	(278)	(57,477)
Depreciation and amortization	23,434	667	24,101
Six Months Ended June 30, 2016			
Revenue from external customers	\$47,086	\$ 6,667	\$53,753
Loss before income taxes	(66,644)	(1,779)	(68,423)
Depreciation and amortization	23,606	842	24,448

11. Legal Proceedings

The Company is subject to legal proceedings, claims and litigation arising in the ordinary course of business. While the outcome of these matters is currently not determinable, management does not expect that the ultimate costs to resolve these matters will have a material adverse effect on the Company's consolidated financial position, results of operations, or cash flows.

12. Subsequent Events

In July 2017, the Company satisfied certain post-closing conditions of the New Credit Agreement and received additional proceeds of \$12,349 from the Wilks. As of July 27, 2017, the outstanding principal balance of the New Credit Agreement was \$65,000.

On July 21, 2017, the Company entered into a Share Purchase Agreement to sell our Russian proppant business for \$22,000. The transaction is subject to local regulatory approval and is expected to close during the third quarter of 2017. The net book value of net assets held by our Russian proppant business is \$16,113 as of June 30, 2017. The Company also has recorded a cumulative translation adjustment loss of \$33,649 as a reduction of shareholders' equity as of June 30, 2017. Given the terms of the agreement involve the sale of our Russian proppant business, we anticipate reclassifying this amount out of accumulated other comprehensive loss and into earnings upon the close of

the transaction during the third quarter. The exact amount of the loss recorded on this transaction will depend on foreign exchange rates on the date of close.

ITEM 2.MANAGEMENT’S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Overview

CARBO Ceramics Inc. (“we,” “us,” “our” or our “Company”) is a technology company that provides products and services to the global oil and gas and industrial markets to enhance value for its clients. The Company conducts its business within two operating segments: 1) oilfield technologies and services and 2) environmental products and services.

Our oilfield technologies and services segment includes the manufacturing and selling of technology ceramic, base ceramic, and frac sand proppant products for use primarily in the hydraulic fracturing of oil and natural gas wells, Fracpro® software for the design of fracture treatments, and StrataGen consulting services for the optimizing of well completions. Hydraulic fracturing is the most widely used method of increasing production from oil and natural gas wells. The hydraulic fracturing process consists of pumping fluids down a natural gas or oil well at pressures sufficient to create fractures in the hydrocarbon-bearing rock formation. A granular material, called proppant, is suspended and transported in the fluid and fills the fracture, “propping” it open once high-pressure pumping stops. The proppant filled fracture creates a conductive channel through which the hydrocarbons can flow more freely from the formation to the well and then to the surface.

There are three primary types of proppant that can be utilized in the hydraulic fracturing process: sand, resin coated sand and ceramic. Sand is the least expensive proppant, resin-coated sand is more expensive and ceramic proppant is typically the most expensive. The higher initial cost of ceramic proppant is justified by the fact that its use in certain well conditions results in an increase in the production rate of oil and natural gas, an increase in the total oil or natural gas that can be recovered from the well and, consequently, an increase in cash flow for the operators of the well. The increased production rates are primarily attributable to the higher strength and more uniform size and shape of ceramic proppant versus alternative materials. We are one of the world’s largest suppliers of ceramic proppant.

Through our wholly-owned subsidiary StrataGen, Inc., our oilfield technologies and services segment also promotes increased production and EUR of oil and natural gas by selling a widely used fracture stimulation software under the brand FracPro®, and providing fracture design and consulting services to oil and natural gas E&P companies under the brand StrataGen.

FracPro® provides a suite of stimulation software solutions used for designing fracture treatments and for on-site real-time analysis. Use of FracPro has enabled our clients to recognize and remedy potential stimulation problems. FracPro has been integrated with third-party reservoir simulation software, furthering its reach and utility.

Our specialized consulting team operating under the name “StrataGen” works with operators around the world to help optimize well placement, fracture treatment design and production enhancement. The broad range of expertise of the StrataGen consultants includes: fracture treatment design; completion support; on-site treatment supervision; quality control; post-treatment evaluation and optimization; reservoir and fracture studies; rock mechanics and software application and training.

Our industrial technology products are produced at the same manufacturing facilities that produce ceramic proppant. We produce and sell ceramic pellets for use in various industrial technology applications, including but not limited to casting and milling.

We also have begun plant trials at our manufacturing facilities to produce products other than base ceramic proppant. Those mineral processing plant trials have proven successful and have led to increased revenue generation. We continue to develop additional opportunities within the industrial, agricultural and oil and gas industries to reduce our slowing and idling costs.

Our environmental products and services segment is intended to protect operators' assets, minimize environmental risks, and lower lease operating expense ("LOE"). Asset Guard Products Inc. ("AGPI"), the only subsidiary of ours to operate in this segment, provides spill prevention, containment and countermeasure systems for the oil and gas industry. AGPI uses proprietary technology to make products designed to enable its clients to extend the life of their storage assets, reduce the potential for hydrocarbon spills and provide containment of stored materials. AGPI was formerly known as Falcon Technologies and Services, Inc.

Industry Conditions

During the three months ended June 30, 2017, the average price of West Texas Intermediate ("WTI") crude oil increased 6% to \$48.24 per barrel compared to \$45.41 per barrel during the same period in 2016. The average North American rig count increased 115% during the three months ended June 30, 2017 to 1,007 rigs compared to 469 rigs during the same period in 2016. Although commodity prices have shown increases in the last year, they remain at significantly lower levels than prior to the severe industry downturn that began in late 2014, which has not encouraged a broad move away from low-cost completions. E&P operators that are existing or target customers of ours continued to use more raw frac sand than ceramic or resin-coated proppants as a percentage of overall proppant consumption during the three months ended June 30, 2017. We expect this trend to continue as our customers are under increasing pressure to consider lower up-front cost alternatives in the current commodity price environment, notwithstanding the superior performance results of our ceramic products. These events, along with an oversupplied ceramic proppant market that is

liquidating imported inventory, and low oil and natural gas prices, kept demand and average prices low for our proppants during the three months ended June 30, 2017.

Generally, demand for most of our products and services depends primarily upon the supply of and demand for natural gas and oil and on the number of natural gas and oil wells drilled, completed or re-completed worldwide. More specifically, the demand for most of our products and services is dependent on the number of oil and natural gas wells that are hydraulically fractured to stimulate production. Because the demand for these products and services is also dependent on the commodity price of oil and natural gas, lower commodity prices result in fewer of our premium products being purchased. In addition to rig counts and commodity prices, our results of operations are also significantly affected by a host of other factors, including but not limited to (a) well completions activity, which is not necessarily correlated with rig count, (b) customer preferences, (c) new product and technology adoption (including of our KRYPTOSPHERE, CARBOAIR and SCALEGUARD technologies), (d) imports and competition, (e) changes in the product mix of what we sell, (f) costs of developing our products and services and running our business, and (g) changes in our strategy and execution. Current demand for proppant is extremely dynamic, but even if rig count and commodity prices remain constant, our business results are also highly dependent on these additional factors.

Critical Accounting Policies

The consolidated financial statements are prepared in accordance with U.S. GAAP, which require us to make estimates and assumptions (see Note 1 to the consolidated financial statements included in our annual report on Form 10-K for the year ended December 31, 2016). We believe that some of our accounting policies involve a higher degree of judgment and complexity than others. As of December 31, 2016, our critical accounting policies included revenue recognition, estimating the recoverability of accounts receivable, inventory valuation, accounting for income taxes, accounting for long-lived assets, accounting for derivative instruments, and accounting for abnormally low production levels. These critical accounting policies are discussed more fully in our annual report on Form 10-K for the year ended December 31, 2016.

There have been no changes in our evaluation of our critical accounting policies since December 31, 2016.

Results of Operations

Three Months Ended June 30, 2017

Revenues. Oilfield technologies and services segment revenues of \$37.2 million for the three months ended June 30, 2017 increased 110% compared to \$17.7 million for the same period in 2016. The increase was mainly attributable to an increase in frac sand sales, technology product sales, in addition to an increase in base ceramic product sales. We also saw revenue increases from our consulting and software businesses. Our worldwide product sales volumes and average selling price per pound in the three months ended June 30, 2017 compared to the same period in 2016 were as follows:

Product Sales (Volumes in million lbs)	Three months ended			
	June 30, 2017		2016	
	Volume	Average Price / lb	Volume	Average Price / lb
Ceramic	96	\$ 0.25	71	\$ 0.22
Northern White Sand	496	0.02	41	0.02
Total	592	\$ 0.06	112	\$ 0.15

North American (defined as Canada and U.S.) ceramic proppant sales volume increased 50% in the three months ended June 30, 2017 compared to the same period in 2016, primarily due to higher sales of technology products and base ceramic products. International (excluding Canada) ceramic proppant sales volumes increased 15%.

Primarily due to the change in product mix, the average selling price per pound of all proppant sold by us was \$0.06 during the three months ended June 30, 2017 compared to \$0.15 for the same period in 2016.

Environmental products and services segment revenues of \$6.4 million for the three months ended June 30, 2017 increased 114% compared to \$3.0 million in the same period in 2016. The increase was mainly attributable to an increase in oil and natural gas industry activity.

Gross Loss. Oilfield technologies and services segment gross loss for the three months ended June 30, 2017 was \$14.4 million, or 39% of revenues, compared to gross loss of \$19.8 million, or 112% of revenues, for the same period in 2016. Gross loss improved primarily due to an increase in oil and natural gas industry activity and the resulting increases in our revenues combined with the Company's initiative to reduce our cost base and utilize our idled assets.

Environmental products and services segment gross profit for the three months ended June 30, 2017 was \$1.0 million compared to gross loss of \$0.2 million for the same period in 2016. This \$1.2 million improvement was largely due to a shift in the segment's revenue mix towards more profitable product sales combined with an increase in oil and natural gas industry activity.

Consolidated cost of sales for the three months ended June 30, 2017 and 2016 included the following:

(In thousands)	Three months ended	
	June 30, 2017	2016
Primary cost of sales	\$45,896	\$28,489
Slowing and idling production	10,797	13,515
Loss (gain) on derivative instruments	309	(824)
Other charges (gains)	3	(517)
Total Cost of Sales	\$57,005	\$40,663

Selling, General and Administrative (SG&A) and Other Operating Expenses. Oilfield technologies and services segment SG&A totaled \$9.4 million for the three months ended June 30, 2017 compared to \$9.2 million for the same period in 2016.

Environmental products and services segment SG&A was flat at \$0.8 million for the three months ended June 30, 2017 and 2016.

Income Taxes. Accounting Standards Codification ("ASC") Topic 740, Income Taxes, provides the carrying value of deferred tax assets should be reduced by the amount not expected to be realized. A company should reduce deferred tax assets by a valuation allowance if, based on the weight of all available evidence, it is not more likely than not that some portion or all of the deferred tax assets will be realized. The valuation allowance should be sufficient to reduce the deferred tax asset to the amount that is more likely than not to be realized. ASC 740 requires all available evidence, both positive and negative, be considered to determine whether a valuation allowance for deferred tax assets is needed in the financial statements. Additionally there can be statutory limitations and losses also assessed on the deferred tax assets should certain conditions arise. As a result of the significant decline in oil and gas activities and net losses incurred over the past several quarters, we determined during the three months ended March 31, 2017 that it was more likely than not that a portion of our deferred tax assets will not be realized in the future. Our valuation allowance against a portion of our deferred taxes as of June 30, 2017 was \$19.7 million. Our assessment of the realizability of our deferred tax assets is based on the weight of all available evidence, both positive and negative, including future reversals of deferred tax liabilities. As a result, income tax benefit was \$0.5 million, or 2.0% of pretax loss, for the three months ended June 30, 2017 compared to income tax benefit of \$11.3 million, or 35.8% of pretax loss, for the same period in 2016.

Six Months Ended June 30, 2017

Revenues. Oilfield technologies and services segment revenues of \$66.8 million for the six months ended June 30, 2017 increased 42% compared to \$47.1 million for the same period in 2016. The increase was mainly attributable to an increase in technology product sales and an increase in frac sand sales. These increases were partially offset by decreases in base ceramic proppant sales. Our worldwide product sales volumes and average selling price per pound in the six months ended June 30, 2017 compared to the same period in 2016 were as follows:

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Product Sales (Volumes in million lbs)	Six months ended June 30,			
	2017		2016	
	Volumes	Average Price / lb	Volumes	Average Price / lb
Ceramic	178	\$ 0.25	191	\$ 0.22
Northern White Sand	866	0.02	116	0.02
Total	1,044	\$ 0.06	307	\$ 0.15

North American (defined as Canada and U.S.) ceramic proppant sales volume decreased 8% in the six months ended June 30, 2017 compared to the same period in 2016, primarily due to lower sales of base ceramic proppant, partially offset by higher sales of technology products. International (excluding Canada) ceramic proppant sales volumes decreased 5%.

Primarily due to the change in product mix, the average selling price per pound of all proppant sold by us was \$0.06 during the six months ended June 30, 2017 compared to \$0.15 for the same period in 2016.

Environmental products and services segment revenues of \$11.4 million for the six months ended June 30, 2017 increased 71% compared to \$6.7 million in the same period in 2016. The increase was mainly attributable to an increase in oil and natural gas industry activity.

Gross Loss. Oilfield technologies and services segment gross loss for the six months ended June 30, 2017 was \$34.3 million, or 51% of revenues, compared to gross loss of 43.4 million, or 92% of revenues, for the same period in 2016. Gross loss improved primarily due to an increase in oil and natural gas industry activity and the resulting increases in our revenues combined with the Company's initiative to reduce our cost base and utilize our idled assets. In addition, the Company did not incur severance costs during the six months ended June 30, 2017 compared to \$6.2 million of severance for the same period in 2016.

Environmental products and services segment gross profit for the six months ended June 30, 2017 was \$1.4 million compared to gross loss of \$0.3 million for the same period in 2016. This \$1.7 million improvement was largely due to a shift in the segment's revenue mix towards more profitable product sales combined with an increase in oil and natural gas industry activity.

Consolidated cost of sales for the six months ended June 30, 2017 and 2016 included the following:

(In thousands)	Six months ended	
	2017	2016
Primary cost of sales	\$87,921	\$68,610
Slowing and idling production	22,009	23,222
Loss (gain) on derivative instruments	1,200	(597)
Other charges	3	6,171
Total Cost of Sales	\$111,133	\$97,406

Selling, General and Administrative (SG&A) and Other Operating Expenses. Oilfield technologies and services segment SG&A totaled \$19.4 million for the six months ended June 30, 2017 compared to \$19.9 million for the same period in 2016 due to the continued focus on cash preservation.

Environmental products and services segment SG&A was flat at \$1.6 million for the six months ended June 30, 2017 and 2016.

Consolidated other operating expense was \$0 and \$0.9 million for the six months ended June 30, 2017 and 2016, respectively. Other operating expense in 2016 was primarily related to a \$1.1 million long-term bauxite impairment partially offset by gains on asset sales.

Income Taxes. Accounting Standards Codification ("ASC") Topic 740, Income Taxes, provides the carrying value of deferred tax assets should be reduced by the amount not expected to be realized. A company should reduce deferred tax assets by a valuation allowance if, based on the weight of all available evidence, it is not more likely than not that some portion or all of the deferred tax assets will be realized. The valuation allowance should be sufficient to reduce the deferred tax asset to the amount that is more likely than not to be realized. ASC 740 requires all available evidence, both positive and negative, be considered to determine whether a valuation allowance for deferred tax assets is needed in the financial statements. Additionally there can be statutory limitations and losses also assessed on the deferred tax assets should certain conditions arise. As a result of the significant decline in oil and gas activities and net losses incurred over the past several quarters, we determined during the three months ended March 31, 2017 that it was more likely than not that a portion of our deferred tax assets will not be realized in the future. Our valuation allowance against a portion of our deferred taxes as of June 30, 2017 was \$19.7 million. Our assessment of the realizability of our deferred tax assets is based on the weight of all available evidence, both positive and negative, including future reversals of deferred tax liabilities. As a result, income tax benefit was \$0.2 million, or 0.4% of pretax loss, for the six months ended June 30, 2017 compared to income tax benefit of \$23.4 million, or 34.3% of pretax loss, for the same period in 2016.

Outlook

We continue to execute on our strategy to drive both revenue growth and profitability improvement. The second quarter resulted in a 26% sequential revenue increase and strong sequential incremental operating margins. We anticipate technology products, industrial ceramic products and mineral processing opportunities to lead our revenue growth and return to profitability, and now believe our revenue growth in 2017 will be at least a 60% increase over 2016.

Although the commodity price environment remains tenuous in the oil and gas industry, we are optimistic about our oilfield business for the second half of 2017.

Technology product sales are tracking as expected and existing second half of 2017 opportunities are strong compared to the first half of 2017. KRYPTOSPHERE HD continues to see success in deep wells, specifically the Lower Tertiary Gulf of Mexico, where all super majors have now selected the product for use. Currently, there are several wells slated for completion with KRYPTOSPHERE HD in the second half of 2017. Additional technologies, such as SCALEGUARD, continue to grow as well.

We expect the base ceramic business to see higher volumes in the second half as compared to the first half of 2017. We are focused on improving the pricing. We have had modest price increases in base ceramic over the last couple of quarters, and we expect this trend to continue as the industry should move from an inventory liquidation mode, into a mode of increased pricing to produce profit on manufactured proppant. We believe the negative returns throughout the base ceramic industry should lead to increased industry pricing moving forward, given the basic logic that companies want to provide a positive economic return on business.

The frac sand business has grown substantially this year and is part of delivering a complete suite of product offerings to our oil and gas clients. Given the strong demand for frac sand, we ramped to full utilization at our Marshfield, Wisconsin sand plant during the second quarter of 2017. We anticipate similar levels of sand sales in the third quarter of 2017 as compared to the second quarter of 2017. In addition to increased sand volumes, we are also benefiting from rail car revenue generated from leased rail cars dedicated to this business.

We believe the work completed in the second quarter of 2017, to solidify our industrial product offering and increase our sales channels, will allow us to continue to grow industrial products and services in the second half of 2017. Our current product suite, including new products we are introducing in the industrial arena, should allow us to grow this business over the long-term.

We believe AssetGuard, our environmental business, will generally follow industry activity in the second half of 2017. Industrial product sales continue to be identified as we focus resources on growing this business.

Given the sequential improvement in EBITDA in the second quarter of 2017, our expected revenue increases and benefits from fixed cost reductions, we believe our second half of 2017 cash burn and EBITDA should improve.

We are focused on returning CARBO to profitability, and believe our strategy to reduce reliance on any single business line will make us a stronger company in the future.

In July 2017, we entered into a Share Purchase Agreement to sell our Russian proppant business for \$22 million. The transaction is subject to local regulatory approval and is expected to close during the third quarter of 2017. In addition, we continue to explore certain asset monetization opportunities to further strengthen the balance sheet.

Liquidity and Capital Resources

At June 30, 2017, we had cash and cash equivalents and restricted cash of \$50.6 million compared to cash and cash equivalents and restricted cash of \$91.7 million at December 31, 2016. During the six months ended June 30, 2017, we generated \$0.2 million from the effect of exchange rate changes on cash. Uses of cash included \$34.9 million used in operating activities, \$3.3 million in repayments on our long-term debt, \$1.2 million for capital expenditures, \$0.9 million for payments of debt issuance costs, \$0.5 million for purchases of our common stock, and \$0.5 million in repayments on notes payable. In July 2017, we satisfied certain post-closing conditions relating to the New Credit Agreement, and as a result, we received proceeds from long-term debt of \$12.3 million. In July 2017, we entered into a Share Purchase Agreement to sell our Russian proppant business for \$22 million. The transaction is subject to local regulatory approval and is expected to close during the third quarter of 2017.

On January 19, 2016, our Board of Directors suspended our policy of paying quarterly cash dividends. We estimate that our total capital expenditures for the remainder of 2017 will be less than \$2.0 million. Due to market conditions, the completion of the second line at the manufacturing facility in Millen, Georgia and the second phase of a plant retrofit with KRYPTOSPHERE® technology have been suspended until such time that market conditions warrant completion.

We anticipate that cash on hand will be sufficient to meet planned operating expenses and other cash needs for at least one year from the date of this Form 10-Q. Our view regarding sufficiency of cash and liquidity is primarily based on our financial forecast for 2017 and 2018, which is impacted by various assumptions regarding demand and sales prices for our products. Generally, we expect demand for our products and the sales prices to increase in the remainder of 2017 and 2018 compared to 2016. Although we have observed certain factors in the first half of 2017 that could be indicative of improving industry conditions, our financial forecasts are based on estimates of customer demand, which is highly volatile in the current operating environment, and we have no committed sales backlog with our customers. As a result, there is inherent uncertainty in our forecasts.

Off-Balance Sheet Arrangements

The Company had no off-balance sheet arrangements as of June 30, 2017.

Forward-Looking Information

The statements in this Quarterly Report on Form 10-Q that are not historical statements, including statements regarding our future financial and operating performance and liquidity and capital resources, are forward-looking statements within the meaning of the U.S. Private Securities Litigation Reform Act of 1995. Forward-looking statements describe future expectations, plans, results or strategies and can often be identified by the use of terminology such as “may”, “will”, “estimate”, “intend”, “continue”, “believe”, “expect”, “anticipate”, “should”, “could”, “potentially”, “opportunity”, or other similar terminology. All forward-looking statements are based on management's current expectations and estimates, which involve risks and uncertainties that could cause actual results to differ materially from those expressed in forward-looking statements. Among these factors are:

- changes in the cost of raw materials and natural gas used in manufacturing our products;
- risks related to our ability to access needed cash and capital;
 - our ability to meet our current and future debt service obligations, including our ability to maintain compliance with our debt covenants;
- our ability to manage distribution costs effectively;
- our ability to successfully implement strategic changes in our business;
- changes in demand and prices charged for our products;
- technological, manufacturing and product development risks;
- our dependence on and loss of key customers and end users;
 - potential declines or increased volatility in oil and natural gas prices that adversely affect our customers, the energy industry or our production costs;
 - potential reductions in spending on exploration and development drilling in the oil and natural gas industry that reduce demand for our products and services;
- seasonal sales fluctuations;
- an increase in competition in the proppant market, including imports from foreign countries;
- logistical and distribution challenges relating to certain resource plays that do not have the type of infrastructure systems that are needed to efficiently support oilfield services activities;
- the development of alternative stimulation techniques that would not benefit from the use of our existing products and services, such as extraction of oil or gas without fracturing;
- changes in foreign and domestic governmental regulations, including environmental restrictions on operations and regulation of hydraulic fracturing;
- increased regulation of emissions from our manufacturing facilities;
- the development and utilization of alternative proppants for use in hydraulic fracturing;
- general global economic and business conditions;
- weather-related risks and other risks and uncertainties;
- changes in foreign and domestic political and legislative risks;
- risks of war and international and domestic terrorism;
- risks associated with foreign operations and foreign currency exchange rates and controls; and
- the potential expropriation of assets by foreign governments.

Additional factors that could affect our future results or events are described from time to time in our reports filed with the Securities and Exchange Commission (the “SEC”). Please see the discussion set forth under the caption “Risk Factors” in our annual report on Form 10-K for the fiscal year ended December 31, 2016, under the caption “Risk Factors” in this report, and similar disclosures in subsequently filed reports with the SEC. We assume no obligation to update forward-looking statements, except as required by law.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

We are exposed to market risk through foreign currency fluctuations that could impact our investments in Russia. As of June 30, 2017, our net investments subject to foreign currency fluctuations totaled \$15.6 million and we had recorded cumulative foreign currency translation loss of \$33.6 million, all related to the Russian Ruble. This cumulative translation loss is included in Accumulated Other Comprehensive Loss. From time to time, we may enter into forward foreign exchange contracts to hedge the impact of foreign currency fluctuations. There were no such foreign exchange contracts outstanding at June 30, 2017. No income tax benefits have been recorded on these losses as a result of the uncertainty about recoverability of the related deferred income tax benefits.

We are also exposed to market risk in the price of natural gas, which is used in production by our domestic manufacturing facilities and is subject to volatility. In an effort to mitigate potential volatility in the cost of natural gas purchases and reduce exposure to short-term spikes in the price of the commodity, from time to time, we enter into contracts to purchase a portion of our anticipated monthly natural gas requirements at specified prices. At June 30, 2017, we had contracted for a total of 3,060,000 MMBtu of natural gas at an average price of \$4.37 per MMBtu through December 31, 2018.

ITEM 4. CONTROLS AND PROCEDURES

(a) Evaluation of Disclosure Controls and Procedures

Disclosure controls and procedures are designed to ensure that information required to be disclosed in the reports filed or submitted under the Securities Exchange Act of 1934 (the "Exchange Act") is recorded, processed, summarized and reported, within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed in the reports filed under the Exchange Act is accumulated and communicated to management, including the Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure.

As of June 30, 2017, management had carried out an evaluation, under the supervision and with the participation of the Chief Executive Officer and Chief Financial Officer, of the effectiveness of the design and operation of our disclosure controls and procedures. There are inherent limitations to the effectiveness of any system of disclosure controls and procedures. Accordingly, even effective disclosure controls and procedures can only provide reasonable assurances of achieving their control objectives. Based upon and as of the date of that evaluation, the Chief Executive Officer and Chief Financial Officer have concluded that our disclosure controls and procedures were effective to ensure that information required to be disclosed by the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the SEC's rules and forms, and to ensure that information we are required to disclose in the reports that we file or submit under the Exchange Act is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure.

(b) Changes in Internal Control over Financial Reporting

There were no changes in the Company's internal control over financial reporting during the quarter ended June 30, 2017 that materially affected, or are reasonably likely to materially affect, our internal controls over financial reporting.

PART II. OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS

We are subject to legal proceedings, claims and litigation arising in the ordinary course of business. While the outcome of these matters is currently not determinable, we do not expect that the ultimate costs to resolve these matters will have a material adverse effect on our consolidated financial position, results of operations, or cash flows.

ITEM 1A. RISK FACTORS

There have been no material changes to the risk factors discussed in our Annual Report on Form 10-K for the year ended December 31, 2016 except as follows. The risk factors below update the risk factors previously disclosed in our annual report on Form 10-K for the fiscal year ended December 31, 2016:

We may not have sufficient cash and/or be able to access liquidity alternatives in the credit and capital markets to meet our liquidity needs.

Our primary sources of liquidity are cash on hand and cash flow from operations. Our ability to fund our working capital and capital expenditures and other obligations depends on our future operating performance and cash from operations and other liquidity-generating transactions, which are in turn subject to prevailing oil and natural gas prices, economic conditions and other factors, many of which are beyond our control.

If our future operating performance falls materially below our expectations, our plans prove to be materially inaccurate, or industry conditions do not materially improve, we may require additional financing. Even if additional or alternative financing becomes available to us, future financing transactions may significantly increase the Company's interest expense, which could in turn reduce our financial flexibility and our ability to fund other activities and could make us more vulnerable to changes in operating performance or economic downturns generally. The inability to generate sufficient cash, modify our New Credit Agreement, or obtain replacement or additional financing, or an event of default under our New Credit Agreement, could have a material adverse effect on our financial condition.

We therefore cannot provide any assurance that we will be able to access the capital or credit markets on acceptable terms or timing, or at all. Access to the capital markets and the cost and availability of credit may be adversely affected by factors beyond our control, including turmoil in the financial services industry, volatility in securities trading markets, the continuing downturn in the oil and gas industry and general economic conditions. Currently, we no longer qualify as a "well-known seasoned issuer," which previously enabled us to, among other things, file automatically effective shelf registration statements. Now, even if we are able to access the public capital markets, any attempt to do so could be more expensive or subject to significant delays when compared with previous periods.

The outstanding indebtedness under our New Credit Agreement is secured by a substantial portion of our domestic assets and guaranteed by our two domestic operating subsidiaries, subject to certain exceptions.

The outstanding indebtedness under our New Credit Agreement is secured by (i) a pledge of all accounts receivable and inventory, (ii) cash in certain accounts, (iii) domestic distribution assets residing on owned real property, (iv) our Marshfield, Wisconsin and Toombsboro, Georgia plant facilities and equipment, and (v) certain real property interests in mines and minerals. In the event of a default, our lenders may (1) elect to declare all outstanding borrowings made under the New Credit Agreement and the guaranties of the two operating subsidiaries, together with accrued interest and other fees, to be immediately due and payable; (2) exercise their set-off rights; and/or (3) enforce and foreclose on their security interest and liquidate some or all of such pledged assets. Any of these actions could, individually or in the aggregate, have a substantial negative impact on our financial condition and results of operations.

ITEM 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS

The following table provides information about our repurchases of Common Stock during the quarter ended June 30, 2017:

ISSUER PURCHASES OF EQUITY SECURITIES

Period	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plan ⁽¹⁾	Maximum Number of Shares that May be Purchased Under the Plan ⁽¹⁾
04/01/17 to 04/30/17	—	—	—	2,000,000
05/01/17 to 05/31/17	—	—	—	2,000,000
06/01/17 to 06/30/17	1,923	\$ 7.87	—	2,000,000
Total	1,923	(2)	—	

(1) On January 28, 2015, we announced the authorization by our Board of Directors for the repurchase of up to two million shares of our Common Stock. The Plan is effective until all shares have been purchased under the Plan, or until such date that our Board of Directors cancels the Plan. No shares have been purchased under the Plan.

(2) Represents shares of stock withheld for the payment of withholding taxes upon the vesting of restricted stock.

ITEM 3. DEFAULTS UPON SENIOR SECURITIES

Not applicable.

ITEM 4. MINE SAFETY DISCLOSURE

Our U.S. manufacturing facilities process mined minerals, and therefore are viewed as mine operations subject to regulation by the federal Mine Safety and Health Administration under the Federal Mine Safety and Health Act of 1977. Information concerning mine safety violations or other regulatory matters required by section 1503(a) of the Dodd-Frank Wall Street Reform and Consumer Protection Act and the recently proposed Item 106 of Regulation S-K (17 CFR 229.106) is included in Exhibit 95 to this quarterly report.

ITEM 5. OTHER INFORMATION

On July 21, 2017, subsidiaries of the Company Carbo Ceramics (Mauritius) Inc. and Carbo LLC (together, the “Sellers”) entered into a Share Purchase Agreement with Petro Welt Technologies AG and PeWeTe Evolution Limited (together, the “Purchasers”) to sell the Company’s Russian proppant business.

Under the Terms of the Share Purchase Agreement, the Purchasers will pay an aggregate purchase price of \$22,000,000 (subject to certain net working capital and net debt purchase price adjustments) for all of the shares of CARBO Ceramics Cyprus Limited held by the Sellers. The Share Purchase Agreement contains certain customary warranties (the “Warranties”) and certain customary covenants. The Share Purchase Agreement also provides that the Sellers’ liability to the Purchasers for losses stemming from breaches of the Sellers’ Warranties will be capped at certain agreed levels and in no case more than the purchase price, and subject to a minimum deductible.

The transaction is subject to customary local regulatory approval and satisfaction of other customary closing conditions and is expected to close during the third quarter of 2017.

The foregoing description of the Share Purchase Agreement and the transactions contemplated does not purport to be complete and is qualified in its entirety by reference to the Share Purchase Agreement itself.

ITEM 6. EXHIBITS

The following exhibits are filed as part of, or incorporated by reference into, this Quarterly Report on Form 10-Q:

- 10.1 Amended and Restated 2014 CARBO Ceramics Inc. Omnibus Incentive Plan
- 10.2 Share Purchase Agreement between CARBO Ceramics (Mauritius) Inc. and CARBO LLC and Petro Welt Technologies AG and PeWeTe Evolution Limited, dated as of July 21 2017. *
- 31.1 Rule 13a-14(a)/15d-14(a) Certification by Gary A. Kolstad
- 31.2 Rule 13a-14(a)/15d-14(a) Certification by Ernesto Bautista III
- 32 Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
- 95 Mine Safety Disclosure
- 101 The following financial information from the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2017, formatted in XBRL: (i) Consolidated Balance Sheets; (ii) Consolidated Statements of Operations; (iii) Consolidated Statements of Comprehensive Loss; (iv) Consolidated Statements of Cash Flows; and (v) Notes to the Consolidated Financial Statements.

* The schedules and Exhibit A to the Share Purchase Agreement have been omitted from this filing pursuant to Item 601(b)(2) of Regulation S-K. The Company agrees to furnish supplementally a copy of any omitted schedule to the SEC upon request.

SIGNATURES

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.

CARBO CERAMICS INC.

/s/ Gary A. Kolstad
Gary A. Kolstad
President and Chief Executive Officer

/s/ Ernesto Bautista III
Ernesto Bautista III
Chief Financial Officer

Date: July 27, 2017

EXHIBIT INDEX

EXHIBIT DESCRIPTION

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