

FORM 10-Q

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

For the quarterly period ended September 30, 2018
Commission file number 1-32737



KOPPERS HOLDINGS INC.

(Exact name of registrant as specified in its charter)

Pennsylvania
(State of incorporation)

20-1878963
(IRS Employer Identification No.)

436 Seventh Avenue
Pittsburgh, Pennsylvania 15219
(Address of principal executive offices)

(412) 227-2001
(Registrant's telephone number, including area code)

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" and "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act. (Check one):

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 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

Common Stock, par value \$0.01 per share, outstanding at October 31, 2018 amounted to 20,508,315 shares.

PART I—FINANCIAL INFORMATION

ITEM 1. FINANCIAL STATEMENTS

KOPPERS HOLDINGS INC.

CONDENSED CONSOLIDATED STATEMENT OF OPERATIONS AND COMPREHENSIVE (LOSS) INCOME

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
<i>(Dollars in millions, except per share amounts)</i>				
	(Unaudited)	(Unaudited)	(Unaudited)	(Unaudited)
Net sales	\$ 442.7	\$ 384.8	\$ 1,284.8	\$ 1,109.4
Cost of sales (excluding items below)	359.7	293.5	1,023.9	863.0
Depreciation and amortization	13.0	12.1	38.5	35.0
Impairment and restructuring charges	0.9	2.2	3.8	5.8
Loss on pension settlement	0.0	8.8	0.0	8.8
Selling, general and administrative expenses	37.9	33.2	121.8	95.6
Operating profit	31.2	35.0	96.8	101.2
Other (loss) income	(0.6)	0.3	(1.1)	2.0
Interest expense	15.1	10.5	40.1	31.9
Loss on extinguishment of debt	0.0	0.0	0.0	13.3
Income before income taxes	15.5	24.8	55.6	58.0
Income tax provision	8.6	4.8	24.4	12.4
Income from continuing operations	6.9	20.0	31.2	45.6
Income (loss) from discontinued operations, net of tax (expense) benefit of \$0.0, \$0.0, \$(0.3) and \$0.4	0.0	(0.1)	0.4	(1.3)
Net income	6.9	19.9	31.6	44.3
Net (loss) income attributable to noncontrolling interests	(0.7)	0.1	5.6	0.4
Net income attributable to Koppers	\$ 7.6	\$ 19.8	\$ 26.0	\$ 43.9
Earnings (loss) per common share attributable to Koppers common shareholders:				
Basic -				
Continuing operations	\$ 0.36	\$ 0.96	\$ 1.22	\$ 2.17
Discontinued operations	0.00	0.00	0.02	(0.06)
Earnings per basic common share	\$ 0.36	\$ 0.96	\$ 1.24	\$ 2.11
Diluted -				
Continuing operations	\$ 0.35	\$ 0.91	\$ 1.17	\$ 2.06
Discontinued operations	0.00	0.00	0.02	(0.06)
Earnings per diluted common share	\$ 0.35	\$ 0.91	\$ 1.19	\$ 2.00
Comprehensive (loss) income	\$ (2.0)	\$ 36.8	\$ (6.5)	\$ 73.7
Comprehensive (loss) income attributable to noncontrolling interests	(1.1)	0.2	4.7	0.6
Comprehensive (loss) income attributable to Koppers	\$ (0.9)	\$ 36.6	\$ (11.2)	\$ 73.1
Weighted average shares outstanding (in thousands):				
Basic	20,946	20,746	20,992	20,750
Diluted	21,700	21,911	21,892	21,927

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

KOPPERS HOLDINGS INC.
CONDENSED CONSOLIDATED BALANCE SHEET

	September 30, 2018	December 31, 2017
<i>(Dollars in millions, except per share amounts)</i>		
<i>(Unaudited)</i>		
Assets		
Cash and cash equivalents	\$ 62.5	\$ 60.3
Accounts receivable, net of allowance of \$2.2 and \$2.5	220.8	159.2
Income tax receivable	1.5	1.7
Inventories, net	289.3	236.9
Other current assets	31.5	48.6
Total current assets	605.6	506.7
Property, plant and equipment, net	398.4	328.0
Goodwill	296.5	188.2
Intangible assets, net	193.5	129.6
Deferred tax assets	18.4	18.4
Other assets	23.2	29.3
Total assets	\$ 1,535.6	\$ 1,200.2
Liabilities		
Accounts payable	\$ 166.2	\$ 141.9
Accrued liabilities	101.7	127.9
Current maturities of long-term debt	15.1	11.4
Total current liabilities	283.0	281.2
Long-term debt	1,029.8	665.6
Accrued postretirement benefits	46.6	46.3
Deferred tax liabilities	6.8	7.3
Other long-term liabilities	90.0	94.0
Total liabilities	1,456.2	1,094.4
Commitments and contingent liabilities (Note 18)		
Equity		
Senior Convertible Preferred Stock, \$0.01 par value per share; 10,000,000 shares authorized; no shares issued	0.0	0.0
Common Stock, \$0.01 par value per share; 80,000,000 shares authorized; 22,979,575 and 22,384,476 shares issued	0.2	0.2
Additional paid-in capital	202.3	190.6
Retained earnings	29.8	7.4
Accumulated other comprehensive loss	(73.7)	(40.1)
Treasury stock, at cost, 2,472,299 and 1,606,028 shares	(89.8)	(58.2)
Total Koppers shareholders' equity	68.8	99.9
Noncontrolling interests	10.6	5.9
Total equity	79.4	105.8
Total liabilities and equity	\$ 1,535.6	\$ 1,200.2

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

KOPPERS HOLDINGS INC.
CONDENSED CONSOLIDATED STATEMENT OF CASH FLOWS

	<i>Nine Months Ended September 30,</i>	
	<i>2018</i>	<i>2017</i>
<i>(Dollars in millions)</i>	<i>(Unaudited)</i>	<i>(Unaudited)</i>
Cash provided by (used in) operating activities:		
Net income	\$ 31.6	\$ 44.3
Adjustments to reconcile net cash provided by (used in) operating activities:		
Depreciation and amortization	38.5	35.0
Loss on extinguishment of debt	0.0	13.3
Loss (gain) on disposal of assets and investment	2.2	(1.4)
Gain on insurance proceeds	(1.5)	0.0
Deferred income taxes	5.0	0.8
Change in other liabilities	(6.2)	(18.6)
Non-cash interest expense	1.8	1.5
Stock-based compensation	9.3	7.8
Loss on pension settlement	0.0	8.8
Other - net	6.5	2.0
Changes in working capital:		
Accounts receivable	(36.3)	(37.6)
Inventories	(20.3)	10.5
Accounts payable	17.7	(14.4)
Accrued liabilities	(38.6)	(1.1)
Other working capital	(1.7)	(2.4)
Net cash provided by operating activities	8.0	48.5
Cash (used in) provided by investing activities:		
Capital expenditures	(81.4)	(48.6)
Acquisitions, net of cash acquired	(264.0)	0.0
Insurance proceeds received	1.5	0.0
Repayments received on loan	0.0	9.5
Net cash provided by divestitures and asset sales	2.3	1.1
Net cash used in investing activities	(341.6)	(38.0)
Cash provided by (used in) financing activities:		
Net increase in revolving credit facility borrowings	282.8	74.1
Borrowings of long-term debt	100.0	500.0
Repayments of long-term debt	(12.9)	(541.4)
Issuances of Common Stock	2.5	1.9
Repurchases of Common Stock	(31.7)	(5.1)
Payment of debt issuance costs	(2.9)	(11.0)
Net cash provided by financing activities	337.8	18.5
Effect of exchange rate changes on cash	(2.0)	0.4
Net increase in cash and cash equivalents	2.2	29.4
Cash and cash equivalents at beginning of period	60.3	20.8
Cash and cash equivalents at end of period	\$ 62.5	\$ 50.2

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

1. Basis of Presentation

The accompanying unaudited condensed consolidated financial statements and related disclosures have been prepared in accordance with accounting principles generally accepted in the United States applicable to interim financial information and with the instructions to Form 10-Q and Rule 10-01 of Regulation S-X. Accordingly, they do not include all of the information and footnotes required by generally accepted accounting principles for complete financial statements. In the opinion of management, all adjustments considered necessary for a fair presentation of Koppers Holdings Inc.'s and its subsidiaries' ("Koppers", "Koppers Holdings" or the "Company") financial position and interim results as of and for the periods presented have been included. All such adjustments are of a normal recurring nature unless disclosed otherwise. Because the Company's business is seasonal, results for interim periods are not necessarily indicative of those that may be expected for a full year. The Condensed Consolidated Balance Sheet for December 31, 2017 has been summarized from the audited balance sheet contained in the Annual Report on Form 10-K for the year ended December 31, 2017. Certain prior period amounts in the notes to the consolidated financial statements have been reclassified to conform to the current period's presentation.

The financial information included herein should be read in conjunction with the Company's audited consolidated financial statements and related notes included in its Annual Report on Form 10-K for the year ended December 31, 2017.

2. New Accounting Pronouncements

In August 2018, the Securities and Exchange Commission ("SEC") issued SEC Release No. 33-10532, "Disclosure Update and Simplification", which expanded the interim period disclosure requirements for stockholders' equity. Under the release, a reconciliation of the changes in each caption of stockholders' equity must be provided in a note or separate statement for each period that an income statement is required to be filed. The Company will reflect the requirements of this release in its unaudited condensed consolidated financial statements for the period ended March 31, 2019.

In August 2017, the Financial Accounting Standards Board ("FASB") issued ASU No. 2017-12, "Derivatives and Hedging (Topic 815): Targeted Improvements to Accounting for Hedging Activities." This ASU amends and simplifies existing guidance in order to allow companies to more accurately present the economic effects of risk management activities in the financial statements. The Company adopted this ASU effective January 1, 2018 and the Company reclassified a \$3.6 million unrealized gain, net of tax, from retained earnings to accumulated other comprehensive loss upon adoption.

In March 2017, the FASB issued ASU No. 2017-07, "Compensation – Retirement Benefits (Topic 715)", in order to improve the presentation of net periodic pension and postretirement costs. The amendment requires that an employer report the service cost component in the same line item or items as other compensation costs arising from services rendered by the pertinent employees during the period. The other components of net benefit cost are required to be presented in the income statement separately from the service cost component and outside a subtotal of income from operations. The amendments in this update related to income statement activity are applied. As a practical expedient, the Company has used the amounts disclosed in its pension and post-retirement benefits footnote as the estimation basis for applying the retrospective presentation requirements. The Company adopted this ASU effective January 1, 2018, and for retrospective presentation, reclassified \$0.1 and \$0.6 million from cost of goods sold and \$0.2 and \$0.7 million from selling, general and administrative expenses to other income for the three and nine months ended September 30, 2017, respectively.

In January 2017, the FASB issued ASU No. 2017-04, "Simplifying the Test for Goodwill Impairment (Topic 350)." The update is intended to simplify how an entity is required to test goodwill for impairment by eliminating Step 2 from the goodwill impairment test. Step 2 measures a goodwill impairment loss by comparing the implied fair value of a reporting unit's goodwill with the carrying amount of that goodwill. The amendments in this update are effective for periods beginning after December 15, 2019. Entities are required to apply the amendments in this update prospectively from the date of adoption, with early adoption permitted. The Company adopted this ASU effective January 1, 2018.

In August 2016, the FASB issued ASU No. 2016-15, "Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments." The update clarifies how entities should classify certain cash receipts and cash payments on the statement of cash flow. The amendments in this update are effective for periods beginning after December 15, 2017. The Company adopted this ASU effective January 1, 2018. The impact was not material to the Company's condensed consolidated statement of cash flows.

In February 2016, the FASB issued ASU No. 2016-02, "Leases (Topic 842)." ASU 2016-02 requires an entity to recognize a right-of-use asset and lease liability for all leases with terms of more than one year. The standard is effective January 1, 2019 and recognition, measurement and presentation of expenses will depend on classification as a finance or operating

lease. In July 2018, the FASB issued ASU No. 2018-11, Leases (Topic 842): Targeted Improvements, which provides clarifications and improvements to ASU 2016-02 including allowing entities to elect an additional transition method with which to adopt ASU 2016-02. The approved transition method enables entities to apply the transition requirements in this ASU at the effective date of ASU 2016-02 (rather than at the beginning of the earliest comparative period presented) with the effect of initially applying ASU 2016-02 recognized as a cumulative-effect adjustment to retained earnings in the period of adoption. Consequently, an entity's reporting for the comparative periods presented in the year of adoption would continue to be in accordance with ASC 840, Leases (Topic 840) ("ASC 840"), including the disclosure requirements of ASC 840. We plan to adopt ASU 2016-02 effective at the beginning of 2019 using the modified retrospective approach with no restatement of comparative periods presented. Practical expedients are available for election as a package and if applied consistently to all leases.

The Company has a project team analyzing all of its leases and we have selected our leasing software solution and are in the process of identifying changes to our business processes, systems and controls to support adoption of the new standard in 2019. The Company will elect the practical expedient to retain its current classification of leases, and as a result, anticipates that the initial impact of adopting this new standard on its consolidated statement of income and consolidated statement of cash flows will not be material. The Company is still in the process of determining the impact of this adoption on the balance sheet and expects this analysis will be completed during the fourth quarter of 2018. While we are unable to quantify the impact at this time we expect that the adoption of the new standard to result in a material effect on total assets and total liabilities.

In May 2014, the FASB issued ASU No. 2014-09, "Revenue from Contracts with Customers (Topic 606)." ASU 2014-09 requires an entity to recognize revenue in a manner that depicts 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. Subsequent to the issuance of ASU 2014-09, the FASB issued multiple ASUs which either amended or clarified ASU 2014-09. Collectively, the revenue recognition ASUs were effective for annual reporting periods beginning after December 15, 2017. The Company elected to use the modified retrospective method for transition in which the cumulative effect was recognized at its January 1, 2018 date of adoption with no restatement of comparative periods presented. The implementation of the guidance had no material impact on the measurement of recognition of revenue of prior periods; however, additional disclosures have been added in accordance with the ASU.

3. Plant Closures and Divestitures

Over the past four years, the Company has been restructuring its Carbon Materials and Chemicals ("CMC") business unit in order to concentrate its facilities in regions where the Company believes it holds key competitive advantages to better serve its global customers. These closure activities include:

- The anticipated cessation of naphthalene refining activities at the Company's Follansbee, West Virginia coal tar distillation facility in the fourth quarter of 2018 subsequent to commissioning of a new naphthalene refining plant in Stickney, Illinois.
- In September 2018, the Company sold its UK-based specialty chemicals business.
- In November 2016, the Company sold its 30-percent interest in Tangshan Kailuan Koppers Carbon Chemical Company Limited ("TKK") located in the Hebei Province in China.
- In July 2016, the Company discontinued coal tar distillation activities at its CMC plant located in Clairton, Pennsylvania. In October 2018, the Company sold the facility and will recognize a loss on the transaction of \$6.1 million during the three months ended December 31, 2018. As part of the transaction, the Company transferred cash to the buyer and the buyer assumed decommissioning, demolition and site restoration responsibilities.
- In March 2016, the Company discontinued production at its 60-percent owned CMC plant located in Tangshan, China.
- In February 2016, the Company ceased coal tar distillation and specialty pitch operations at both of its United Kingdom CMC facilities. In July 2016, the Company sold substantially all of its CMC tar distillation properties and assets in the United Kingdom. In exchange, the Company transferred cash to the buyer and the buyer assumed historical environmental and asset retirement obligations.
- In April 2014, the Company ceased its coal tar distillation activities at its CMC facility located in Uithoorn, the Netherlands.

Other closure and divestiture activity relates to the Company's Railroad Utility Products and Services ("RUPS") business unit. These actions include:

- In October 2016, the Company agreed to a long-term lease of its wood treatment facility in Houston, Texas to a third party.
- In August 2015, the Company closed its RUPS plant located in Green Spring, West Virginia.

- In July 2015, the Company sold the assets of its 50-percent interest in KSA Limited Partnership, a concrete crosstie manufacturer.
- In January 2015, the Company sold its RUPS North American utility pole business.

In addition, in 2011, the Company ceased carbon black production at its CMC facility located in Kurnell, Australia. Costs associated with this closure are included in "Income (Loss) from discontinued operations" on the Condensed Consolidated Statement of Operations and Comprehensive (Loss) Income.

Details of the restructuring activities and related reserves are as follows:

	<i>Severance and employee benefits</i>	<i>Environmental remediation</i>	<i>Site demolition</i>	<i>Other</i>	<i>Total</i>
<i>(Dollars in millions)</i>					
Reserve at December 31, 2016	\$ 1.4	\$ 1.5	\$ 10.0	\$ 3.2	\$ 16.1
Accrual	0.9	2.1	4.7	6.9	14.6
Cost charged against assets	0.0	0.0	0.0	(6.3)	(6.3)
Reversal of accrued charges	(0.3)	0.0	(1.8)	0.0	(2.1)
Cash paid	(0.3)	(1.1)	(2.4)	(1.0)	(4.8)
Currency translation	0.0	0.2	0.1	0.5	0.8
Reserve at December 31, 2017	\$ 1.7	\$ 2.7	\$ 10.6	\$ 3.3	\$ 18.3
Accrual	0.0	0.9	1.6	2.2	4.7
Cost charged against assets	0.0	0.0	0.0	(2.1)	(2.1)
Cash paid	0.0	(3.4)	(6.3)	(0.1)	(9.8)
Currency translation	0.0	(0.2)	0.0	0.0	(0.2)
Reserve at September 30, 2018	\$ 1.7	\$ 0.0	\$ 5.9	\$ 3.3	\$ 10.9

4. Acquisitions

On April 10, 2018, Koppers Inc. acquired Cox Industries, Inc. ("Cox") for net cash consideration of \$201.2 million. The transaction was funded by borrowings on Koppers Inc.'s revolving credit facility discussed in "Note 14 - Debt." Cox was renamed Koppers Utility and Industrial Products Inc. ("UIP") subsequent to the acquisition. UIP is a manufacturer of treated wood transmission and distribution poles for utility companies and cooperative utility companies. It is also a manufacturer of treated wood pilings used for construction and marine applications. UIP manufactures and sells its treated wood poles and pilings through a network of eight manufacturing facilities and 19 distribution yards located throughout the United States. UIP treats its products with a variety of wood protection chemicals, including copper chromium arsenate and creosote, which are produced by the Company's Performance Chemicals and CMC segments, respectively. UIP's revenues were \$147 million for the year ended December 31, 2017.

On February 28, 2018, Koppers Inc. acquired M.A. Energy Resources, LLC ("MAER") for net cash consideration of \$62.8 million. The purchase price was funded by borrowings on Koppers Inc.'s revolving credit facility. MAER is a vertically-integrated company that provides material recovery services for crossties that have been taken out of service and other biomass material. MAER converts this recovered material into alternative fuels, such as crosstie-derived fuel or biomass-derived fuel, that is used as a substitute for conventional higher-cost carbon-based fuel. MAER currently operates two processing facilities, each of which is located to serve its Class I railroad customer base. MAER's revenues were \$30 million for the year ended December 31, 2017.

The Company has completed a preliminary valuation analysis to determine the fair values of UIP's and MAER's acquired assets and liabilities. Accordingly, the unaudited condensed consolidated financial statements include a preliminary fair value determination based on assumptions and estimates that, while considered reasonable, are subject to changes, which may be material.

Upon completion of detailed valuation analyses, there may be additional increases or decreases to the recorded fair values of the acquired assets and liabilities. This includes, but is not limited to customer contracts, other intangible assets; property, plant and equipment that could give rise to future amounts of depreciation and amortization expense; and changes in related deferred taxes that are not reflected in the information contained in this unaudited condensed consolidated information. Accordingly, once the necessary valuation analyses have been performed and the final fair value determination has been completed, actual results may differ materially from the information presented in the unaudited condensed consolidated financial statements.

The preliminary valuation of identifiable assets acquired and liabilities assumed upon the acquisition of UIP and MAER are shown in the table below.

	UIP		MAER	
<i>(Dollars in millions)</i>				
Cash and cash equivalents	\$	1.5	\$	3.2
Accounts receivable		20.2		4.9
Inventory		43.1		0.0
Other current assets		1.2		0.3
Property, plant and equipment		19.8		6.6
Intangible assets, net		59.4		19.3
Goodwill		76.9		34.0
Other non-current assets		0.2		0.0
Total assets acquired		222.3		68.3
Accounts payable & accrued expenses		18.7		2.3
Other non-current liabilities		0.8		0.0
Net assets acquired	\$	202.8	\$	66.0

Goodwill for both acquisitions has been allocated to the Company's Railroad and Utility Products and Services segment. The Company expects the goodwill recognized will be deductible for tax purposes. Recognized goodwill is attributable to the assembled workforce, expected synergies and other intangible assets that do not qualify for separate recognition. Net assets acquired include identifiable intangible assets with respect to customer contracts, non-compete agreements and trademarks as summarized in the following table.

<i>(Dollars in millions)</i>	UIP		MAER	
	Amount	Remaining Life	Amount	Remaining Life
Customer contracts	\$ 58.2	15 years	\$ 18.7	15 years
Non-compete agreements	1.2	5 years		
Trademarks			0.6	2 years
Total	\$ 59.4		\$ 19.3	

Combined costs related to these two acquisitions were \$0.6 million and \$6.2 million for the three and nine months ended September 30, 2018, respectively, and are charged to selling, general and administrative expenses. Net sales of \$50.5 million and \$97.4 million and income (loss) before taxes of \$0.5 million and \$(3.8) million, including \$0.5 million and \$6.0 million of inventory fair value purchase price accounting adjustments, was attributable to UIP and included in the Condensed Consolidated Statement of Operations and Comprehensive (Loss) Income for the three and nine months ended September 30, 2018, respectively.

The following unaudited pro forma information presents a summary of the Company's revenues and income from continuing operations as if the UIP acquisition occurred on January 1, 2017 (the first day of the most recently completed fiscal year). The unaudited pro forma information is not necessarily indicative of operating results that would have been achieved had the acquisition been completed as of January 1, 2017 and is not intended to project the future financial results of the Company after the acquisition. The unaudited pro forma information is based on certain assumptions, which management believes are reasonable, and does not reflect the cost of any integration activities or the benefits from the acquisition and synergies that may be derived from any integration activities.

<i>(Dollars in millions)</i>	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
Pro forma revenue	\$ 442.7	\$ 422.7	\$ 1,335.5	\$ 1,221.6
Pro forma income from continuing operations attributable to Koppers	7.9	19.9	34.5	42.6
Pro forma income per share - continuing operations:				
Basic -	\$ 0.38	\$ 0.96	\$ 1.64	\$ 2.05
Diluted -	\$ 0.36	\$ 0.91	\$ 1.58	\$ 1.94

5. Revenue Recognition

On January 1, 2018, the Company adopted Topic 606, the accounting standard for recognized revenue from contracts with customers, using the modified retrospective method. The Company recognized the cumulative effect of applying the new revenue standard as an adjustment to the opening balance of retained earnings. The comparative information has

not been restated and continues to be reported under the accounting standards in effect for those periods. The Company has identified certain contracts with customers where revenue has been accelerated upon adoption of Topic 606 as the related performance obligations under the contract have been satisfied and control of the goods or services have been transferred to the customer.

The Company calculated the cumulative effect to the opening balance of retained earnings recognized at January 1, 2018 to be an increase of \$0.3 million, including \$5.3 million in revenue and \$5.0 million in cost of goods sold not previously recognized during the year ended December 31, 2017. Revenue recognized during the nine months ended September 30, 2018 from the adoption of Topic 606 was \$3.2 million and, as such, the net impact of adopting Topic 606 for the three and nine months ending September 30, 2018 was a decrease in sales and cost of sales as follows:

<i>(Dollars in millions)</i>	<i>Three Months Ended September 30, 2018</i>		<i>Nine Months Ended September 30, 2018</i>	
Sales	\$	(0.1)	\$	(2.1)
Cost of sales		(0.1)		(2.0)

Topic 606 impacted the timing of revenue recognized related to certain services to untreated cross-ties within the Company's RUPS segment where those specific performance obligations were fulfilled prior to shipment and were historically not recognized as revenue until shipped. Refer to "Note 9 – Segment Information" for relevant disclosures regarding the disaggregation of revenue.

Revenue is recognized upon the completion of performance obligations under the Company's contracts with customers and when control of a good or service is transferred to the customer. Substantially all of the Company's contracts with its customers are ship and invoice arrangements where revenue is recognized when the Company transfers control to the customer which is at the time of shipment or delivery. Revenue recognition generally occurs at the point of shipment; however in certain circumstances as shipping terms dictate, the Company transfers control and revenue is recognized at the point of destination. Shipping and handling costs are included as a component of cost of sales.

Contract Balances

The timing of revenue recognition in accordance with Topic 606 and subsequent billings related to such revenue recognized results in both billed accounts receivable and unbilled receivables (contract assets), both classified as accounts receivable, net of allowance within the condensed consolidated balance sheet. Certain contracts with customers within the Company's RUPS and CMC segments have agreed-upon contractual terms for the timing of billing. In some instances, amounts are not billed at the time specific performance obligations are fulfilled. For these contracts with customers, revenue is recognized prior to billings, resulting in contract assets. Contract assets recorded within accounts receivable, net of allowance within the condensed consolidated balance sheet as of September 30, 2018 and January 1, 2018 due to performance obligations being fulfilled prior to billing was \$11.4 million and \$5.3 million, respectively.

6. Comprehensive (Loss) Income and Equity

Total comprehensive (loss) income for the three and nine months ended September 30, 2018 and 2017 is summarized in the table below:

<i>(Dollars in millions)</i>	<i>Three Months Ended September 30, 2018</i>		<i>Three Months Ended September 30, 2017</i>		<i>Nine Months Ended September 30, 2018</i>		<i>Nine Months Ended September 30, 2017</i>	
Net income	\$	6.9	\$	19.9	\$	31.6	\$	44.3
Other comprehensive (loss) income:								
Change in currency translation adjustment		(2.9)		6.3		(18.9)		17.2
Unrealized (loss) gain on cash flow hedges, net of tax (benefit) expense of \$(3.7), \$1.1, \$(12.0) and \$1.4		(6.3)		4.1		(20.3)		5.0
Change in accounting standard		0.0		0.0		0.3		0.0
Unrecognized pension net loss, net of tax expense of \$0.1, \$0.2, \$0.3 and \$0.4		0.3		6.5		0.8		7.2
Total comprehensive (loss) income		(2.0)		36.8		(6.5)		73.7
Less: Comprehensive (loss) income attributable to noncontrolling interests		(1.1)		0.2		4.7		0.6
Comprehensive (loss) income attributable to Koppers	\$	(0.9)	\$	36.6	\$	(11.2)	\$	73.1

Amounts reclassified from accumulated other comprehensive loss to net income consist of amounts shown for changes in unrecognized pension net loss. This component of accumulated other comprehensive loss is included in the computation

of net periodic pension cost as disclosed in "Note 13 – Pensions and Postretirement Benefit Plans". Other amounts reclassified from accumulated other comprehensive loss include income related to derivative financial instruments, net of tax, of \$1.1 million and \$6.5 million for the three and nine months ended September 30, 2018, respectively, and \$2.3 million and \$4.9 million for the three and nine months ended September 30, 2017, respectively.

The following tables present the change in equity for the nine months ended September 30, 2018 and 2017, respectively:

<i>(Dollars in millions)</i>	<i>Total Koppers Shareholders' Equity</i>		<i>Noncontrolling Interests</i>		<i>Total Equity</i>
Balance at December 31, 2017	\$	99.9	\$	5.9	\$ 105.8
Net income		26.0		5.6	31.6
Issuance of common stock		2.5		0.0	2.5
Employee stock plans		9.3		0.0	9.3
Other comprehensive loss		(37.2)		(0.9)	(38.1)
Repurchases of common stock		(31.7)		0.0	(31.7)
Balance at September 30, 2018	\$	68.8	\$	10.6	\$ 79.4

<i>(Dollars in millions)</i>	<i>Total Koppers Shareholders' Equity</i>		<i>Noncontrolling Interests</i>		<i>Total Equity</i>
Balance at December 31, 2016	\$	30.4	\$	4.2	\$ 34.6
Net income		43.9		0.4	44.3
Issuance of common stock		1.9		0.0	1.9
Employee stock plans		8.0		0.0	8.0
Other comprehensive income		29.2		0.2	29.4
Repurchases of common stock		(5.1)		0.0	(5.1)
Balance at September 30, 2017	\$	108.3	\$	4.8	\$ 113.1

7. Earnings per Common Share

The computation of basic earnings per common share for the periods presented is based upon the weighted average number of common shares outstanding during the periods. The computation of diluted earnings per common share includes the effect of non-vested nonqualified stock options and restricted stock units assuming such options and stock units were outstanding common shares at the beginning of the period. The effect of antidilutive securities is excluded from the computation of diluted loss per common share, if any.

The following table sets forth the computation of basic and diluted earnings per common share:

	<i>Three Months Ended September 30,</i>		<i>Nine Months Ended September 30,</i>	
	<i>2018</i>	<i>2017</i>	<i>2018</i>	<i>2017</i>
<i>(Dollars in millions, except share amounts, in thousands, and per share amounts)</i>				
Net income attributable to Koppers	\$ 7.6	\$ 19.8	\$ 26.0	\$ 43.9
Less: Income (loss) from discontinued operations	0.0	(0.1)	0.4	(1.3)
Income from continuing operations attributable to Koppers	\$ 7.6	\$ 19.9	\$ 25.6	\$ 45.2
Weighted average common shares outstanding:				
Basic	20,946	20,746	20,992	20,750
Effect of dilutive securities	754	1,165	900	1,177
Diluted	21,700	21,911	21,892	21,927
Income per common share – continuing operations:				
Basic income per common share	\$ 0.36	\$ 0.96	\$ 1.22	\$ 2.17
Diluted income per common share	0.35	0.91	1.17	2.06
Other data:				
Antidilutive securities excluded from computation of diluted earnings per common share	571	543	214	482

8. Stock-based Compensation

The Company has outstanding stock-based compensation awards that were granted under the amended and restated 2005 Long-Term Incentive Plan (the "2005 LTIP") and the 2018 Long-Term Incentive Plan (the "2018 LTIP"). Both the 2005 LTIP and the 2018 LTIP are collectively referred to as the "LTIP". On May 3, 2018, the 2018 LTIP was approved by our shareholders and the 2005 LTIP was frozen. Similar to the 2005 LTIP, the 2018 LTIP provides for the grant to eligible

persons of stock options, stock appreciation rights, restricted stock, restricted stock units, performance shares, performance awards, dividend equivalents and other stock-based awards, which are collectively referred to as the “awards”.

Restricted Stock Units and Performance Stock Units

Under the LTIP, the board of directors grants restricted stock units and performance stock units to certain employee participants (collectively, the “stock units”). For grants to most employees, the restricted stock units vest in four equal annual installments. Restricted stock units that have one-year vesting periods are also issued under the LTIP to members of the board of directors in connection with annual director compensation and, from time to time, are issued to employees in connection with employee compensation with vesting periods of two years or less.

Compensation expense for non-vested stock units is recorded over the vesting period based on the fair value at the date of grant. The fair value of restricted stock units and performance stock units with a performance condition is the market price of the underlying common stock on the date of grant.

Performance stock units granted prior to 2016 have vesting based upon a performance condition. These performance stock units generally have three-year performance objectives and all performance stock units have a three-year period for vesting (if the applicable performance objective is achieved). For awards granted prior to 2016, the applicable performance objective is based upon a multi-year cumulative value creation calculation that considers the Company’s financial performance commencing on the first day of each grant year. The number of performance stock units granted represents the target award and participants have the ability to earn between zero and 200 percent (depending on the grant date) of the target award based upon actual performance. If minimum performance criteria are not achieved, no performance stock units will vest. Performance stock units granted in 2015 exceeded the maximum value creation and vested at 200 percent in March 2018.

Performance stock units granted in 2016 and thereafter have vesting based upon a market condition. These performance stock units have a three-year performance objective and a three-year period for vesting (if the applicable performance objective is achieved). The applicable performance objective is based on the Company’s total shareholder return relative to the Standard & Poor’s SmallCap 600 Materials Index. The number of performance stock units granted represents the target award and participants have the ability to earn between zero and 200 percent of the target award based upon actual performance. If minimum performance criteria are not achieved, no performance stock units will vest. The Company has the discretion to settle the award in cash rather than shares, although the Company currently expects that all awards will be settled by the issuance of shares.

Compensation expense for non-vested performance stock units with a market condition is recorded over the vesting period based on the fair value at the date of grant. The Company calculated the fair value of the awards on the date of grant using the Monte Carlo valuation model and the assumptions listed below:

	<i>May 2018 Grant</i>	<i>March 2018 Grant</i>	<i>March 2017 Grant</i>	<i>March 2016 Grant</i>
Grant date price per share	\$ 39.10	\$ 41.60	\$ 44.10	\$ 18.11
Expected dividend yield per share	0.00%	0.00%	0.00%	0.00%
Expected volatility	39.40%	39.40%	43.50%	40.86%
Risk-free interest rate	2.35%	2.35%	1.54%	0.96%
Look-back period in years	2.84	2.84	2.83	2.84
Grant date fair value per share	\$ 44.29	\$ 47.12	\$ 64.02	\$ 23.70

Dividends declared, if any, on the Company’s common stock during the period prior to vesting of the stock units are credited at equivalent value as additional stock units and become payable as additional common shares upon vesting. In the event of termination of employment, other than retirement, death or disability, any non-vested stock units are forfeited, including additional stock units credited from dividends. In the event of termination of employment due to retirement, death or disability, pro-rata vesting of the stock units over the service period will result. There are special vesting provisions for the stock units related to a change in control.

The following table shows a summary of the performance stock units as of September 30, 2018:

<i>Performance Period</i>	<i>Minimum Shares</i>	<i>Target Shares</i>	<i>Maximum Shares</i>
2016 – 2018	0	255,172	510,344
2017 – 2019	0	113,675	227,350
2018 – 2020	0	130,782	261,564

The following table shows a summary of the status and activity of non-vested stock units for the nine months ended September 30, 2018:

	Restricted Stock Units	Performance Stock Units	Total Stock Units	Weighted Average Grant Date Fair Value per Unit
Non-vested at December 31, 2017	238,140	581,551	819,691	\$ 29.14
Granted	118,297	134,351	252,648	\$ 43.91
Performance share adjustment	0	204,866	204,866	\$ 17.57
Vested	(94,589)	(409,732)	(504,321)	\$ 19.41
Forfeited	(7,094)	(11,407)	(18,501)	\$ 38.77
Non-vested at September 30, 2018	254,754	499,629	754,383	\$ 37.20

Stock Options

Stock options to most executive officers vest and become exercisable in four equal annual installments. The stock options have a term of ten years. In the event of termination of employment, other than retirement, death or disability, any non-vested options are forfeited. In the event of termination of employment due to retirement, death or disability, pro-rata vesting of the options over the service period will result. There are special vesting provisions for the stock options related to a change in control.

Compensation expense for non-vested stock options is recorded over the vesting period based on the fair value at the date of grant. The Company calculated the fair value of stock options on the date of grant using the Black-Scholes-Merton model and the assumptions listed below:

	May 2018 Grant	March 2018 Grant	March 2017 Grant	March 2016 Grant	March 2015 Grant
Grant date price per share	\$ 39.10	\$ 41.60	\$ 44.10	\$ 18.11	\$ 17.57
Expected dividend yield per share	0.00%	0.00%	0.00%	0.00%	3.40%
Expected life in years	5.73	5.73	5.77	5.96	5.75
Expected volatility	37.05%	37.05%	39.70%	40.86%	42.27%
Risk-free interest rate	2.82%	2.67%	2.13%	1.45%	1.73%
Grant date fair value per share	\$ 15.48	\$ 16.38	\$ 17.90	\$ 7.41	\$ 5.20

The Company suspended its dividend in February 2015 and does not expect to declare any dividends for the foreseeable future. The expected life in years is based on historical exercise data of options previously granted by the Company. Expected volatility is based on the historical volatility of the Company's common stock and the historical volatility of certain other similar public companies. The risk-free interest rate is based on U.S. Treasury bill rates for the expected life of the option.

The following table shows a summary of the status and activity of stock options for the nine months ended September 30, 2018:

	Options	Weighted Average Exercise Price per Option	Weighted Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value (in millions)
Outstanding at December 31, 2017	942,537	\$ 27.59		
Granted	144,825	\$ 41.50		
Exercised	(70,307)	\$ 27.75		
Forfeited	(12,329)	\$ 30.49		
Outstanding at September 30, 2018	1,004,726	\$ 29.54	6.14	\$ 6.6
Exercisable at September 30, 2018	617,361	\$ 28.49	4.89	\$ 4.2

Stock Compensation Expense

Total stock-based compensation expense recognized under the Company's LTIP and employee stock purchase plan for three and nine months ended September 30, 2018 and 2017 is as follows:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
<i>(Dollars in millions)</i>				
Stock-based compensation expense recognized:				
Selling, general and administrative expenses	\$ 3.2	\$ 2.7	\$ 9.3	\$ 7.8
Less related income tax benefit	1.2	0.6	3.5	1.7
Decrease in net income attributable to Koppers	\$ 2.0	\$ 2.1	\$ 5.8	\$ 6.1
Intrinsic value of exercised stock options	\$ 0.1	\$ 0.0	\$ 1.1	\$ 1.1
Cash received from the exercise of stock options	\$ 0.3	\$ 0.0	\$ 2.5	\$ 1.9

As of September 30, 2018, total future gross compensation expense related to non-vested stock-based compensation arrangements, which are expected to vest, totaled \$18.7 million and the weighted-average period over which this cost is expected to be recognized is approximately 26 months.

9. Segment Information

The Company has three reportable segments: Railroad and Utility Products and Services, Performance Chemicals and Carbon Materials and Chemicals. The Company's reportable segments contain multiple aggregated business units since management believes the long-term financial performance of these business units is affected by similar economic conditions. The reportable segments are each managed separately because they manufacture and distribute distinct products with different production processes.

The Company's Railroad and Utility Products and Services segment sells treated and untreated wood products, manufactured products and services primarily to the railroad and public utility markets. Railroad products and services include procuring and treating items such as crossties, switch ties and various types of lumber used for railroad bridges and crossings and the manufacture of rail joint bars. The segment also operates a railroad services business that conducts engineering, design, repair and inspection services for railroad bridges and a business related to the recovery of used crossties. Utility products include the treating of transmission and distribution poles and pilings. In April 2018, the Company acquired UIP, a manufacturer of treated wood utility transmission and distribution poles for utility companies and cooperative utility companies. It is also a manufacturer of treated wood pilings used for construction and marine applications. In February 2018, the Company acquired MAER, a vertically-integrated provider of crosstie recovery and disposal services. MAER converts recovered material into alternative fuels, such as crosstie-derived fuel or biomass-derived fuel, that is used as a substitute for conventional higher-cost carbon-based fuel.

The Company's Performance Chemicals segment develops, manufactures, and markets wood preservation chemicals and wood treatment technologies and services a diverse range of end-markets including infrastructure, residential and commercial construction, and agriculture.

The Company's Carbon Materials and Chemicals segment is primarily a manufacturer of creosote, carbon pitch, naphthalene, phthalic anhydride and carbon black feedstock. Creosote is used in the treatment of wood and carbon black feedstock is used in the production of carbon black. Carbon pitch is a critical raw material used in the production of aluminum and for the production of steel in electric arc furnaces. Naphthalene is used for the production of phthalic anhydride and as a surfactant in the production of concrete. Phthalic anhydride is used in the production of plasticizers, polyester resins and alkyd paints.

The Company evaluates performance and determines resource allocations based on a number of factors, the primary measure being operating profit or loss from operations. Operating profit does not include equity in earnings of affiliates, other (loss) income, interest expense, income taxes or operating costs of Koppers Holdings Inc. The accounting policies of the reportable segments are the same as those described in the summary of significant accounting policies as disclosed in the Company's Annual Report on Form 10-K for the year ended December 31, 2017. Refer to "Note 5 – Revenue Recognition" for accounting policies specific to revenue recognition. Intersegment transactions are eliminated in consolidation.

The following table sets forth certain sales and operating data, net of all intersegment transactions, for the Company's segments for the periods indicated:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
<i>(Dollars in millions)</i>				
Revenues from external customers:				
Railroad and Utility Products and Services	\$ 185.0	\$ 131.7	\$ 470.6	\$ 403.1
Performance Chemicals	108.2	109.7	320.7	318.2
Carbon Materials and Chemicals	149.5	143.4	493.5	388.1
Total	\$ 442.7	\$ 384.8	\$ 1,284.8	\$ 1,109.4
Intersegment revenues:				
Performance Chemicals	\$ 3.8	\$ 1.8	\$ 8.0	\$ 5.0
Carbon Materials and Chemicals	21.4	22.1	58.8	60.0
Total	\$ 25.2	\$ 23.9	\$ 66.8	\$ 65.0
Depreciation and amortization expense:				
Railroad and Utility Products and Services	\$ 4.9	\$ 2.9	\$ 12.8	\$ 8.8
Performance Chemicals	4.4	4.4	13.3	13.3
Carbon Materials and Chemicals	3.7	4.8	12.4	12.9
Total	\$ 13.0	\$ 12.1	\$ 38.5	\$ 35.0
Operating profit (loss):				
Railroad and Utility Products and Services ^(a)	\$ 5.8	\$ 9.5	\$ 5.9	\$ 30.1
Performance Chemicals	11.0	18.4	28.2	56.6
Carbon Materials and Chemicals	14.9	16.3	64.6	24.9
Corporate ^(b)	(0.5)	(9.2)	(1.9)	(10.4)
Total	\$ 31.2	\$ 35.0	\$ 96.8	\$ 101.2

(a) Operating profit for the three and nine months ended September 30, 2018 includes \$0.5 million and \$6.0 million of inventory fair value purchase price adjustment related to the Company's UIP acquisition, respectively.

(b) Operating loss for Corporate includes primarily general and administrative costs for Koppers Holdings Inc., the parent company of Koppers Inc.

The following table sets forth revenues for significant product lines, net of all intersegment transactions, for the Company's segments for the periods indicated:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
<i>(Dollars in millions)</i>				
Railroad and Utility Products and Services:				
Railroad treated products	\$ 96.7	\$ 96.1	\$ 259.8	\$ 299.8
Utility poles	59.5	12.9	129.9	34.0
Rail joints	8.5	7.1	26.5	22.1
Railroad infrastructure services	10.0	9.0	26.2	27.0
Other products	10.3	6.6	28.2	20.2
	185.0	131.7	470.6	403.1
Performance Chemicals:				
Wood preservative products	101.5	101.7	299.0	295.5
Other products	6.7	8.0	21.7	22.7
	108.2	109.7	320.7	318.2
Carbon Materials and Chemicals:				
Pitch and related products	88.9	78.6	304.1	195.4
Creosote and distillates	19.2	21.6	61.3	61.0
Phthalic anhydride and other chemicals	23.3	24.5	64.0	69.3
Naphthalene	8.8	9.9	31.5	27.8
Other products	9.3	8.8	32.6	34.6
	149.5	143.4	493.5	388.1
Total	\$ 442.7	\$ 384.8	\$ 1,284.8	\$ 1,109.4

The following table sets forth certain tangible and intangible assets allocated to each of the Company's segments as of the dates indicated:

	September 30, 2018	December 31, 2017
<i>(Dollars in millions)</i>		
Segment assets:		
Railroad and Utility Products and Services ^(a)	\$ 556.3	\$ 249.7
Performance Chemicals	472.0	494.0
Carbon Materials and Chemicals	469.3	414.2
All other	38.0	42.3
Total	\$ 1,535.6	\$ 1,200.2
Goodwill:		
Railroad and Utility Products and Services ^(a)	\$ 120.8	\$ 10.5
Performance Chemicals	175.7	177.7
Total	\$ 296.5	\$ 188.2

(a) The increase in RUPS assets and goodwill as of September 30, 2018 includes \$279.3 million and \$110.9 million, respectively, attributable to the Company's acquisitions of UIP and MAER during 2018.

10. Income Taxes

Effective Tax Rate

The income tax provision for interim periods is comprised of an estimated annual effective income tax rate applied to current year ordinary income and tax associated with discrete items. These discrete items generally relate to excess stock compensation deductions, changes in tax laws, adjustments to uncertain tax positions and changes of estimated tax to the actual liability determined upon filing tax returns. To determine the annual effective tax rate, management is required to make estimates of annual pretax income in each domestic and foreign jurisdiction in which the Company conducts business. Entities that have historical pre-tax losses and current year estimated pre-tax losses that are not projected to generate a future benefit are excluded from the estimated annual effective income tax rate.

On December 22, 2017, the Tax Cut and Jobs Act ("Tax Act") was signed into law. The Tax Act significantly revised the U.S. corporate income tax system with changes that are effective in 2017 and 2018. The Tax Act lowered the corporate income tax rate to 21 percent from 35 percent and imposed a one-time transition tax on certain unrepatriated earnings of foreign subsidiaries. Changes in tax rates and tax laws and their impact on deferred taxes are accounted for in the period of legislative enactment. As of September 30, 2018, the Company has completed its accounting for the one-time transition tax.

The Company recorded income tax expense of \$21.2 million for this one-time transition tax. In its December 31, 2017 income tax provision, the Company provisionally recorded income tax expense of \$13.1 million. In both of the three months ended June 30, 2018 and September 30, 2018, the Company revised its original estimate and recorded additional income tax expense as a result of additional guidance issued by the IRS. The increase in the transition tax was partially offset by revisions to the carrying value of its deferred tax assets and liabilities of \$3.8 million. Due to the availability of net operating losses, the Company's cash payments for this one-time transition tax is approximately \$5.0 million. The Company elected to pay this amount in pre-defined installments through 2024.

If the IRS releases additional guidance regarding the one-time transition tax, the ultimate impact of the Tax Act may differ from the current estimates, possibly materially, due to changes in interpretations and assumptions that the Company has made, future guidance that may be issued, and actions that the Company may take as a result.

The Tax Act introduced a new provision that imposes a minimum tax on earnings of a foreign corporation that are deemed to exceed a certain threshold return relative to the underlying business investment. These earnings are referred to as global intangible low-taxed income ("GILTI") and this GILTI provision is effective for 2018. The Company has elected to treat the effect of this GILTI provision as a period expense in the year incurred and has included an estimate of the impact in its estimated annual effective income tax rate. The Company will continue to analyze this GILTI provision and it is possible that the Company's current estimate of the impact of this GILTI provision may materially change.

The Tax Act introduces other new provisions that are effective for 2018 and changes how certain provisions are calculated beginning in 2018. Other than the GILTI provision, the Company does not expect that any of these new provisions or changes will have a material impact to the Company's income tax expense.

The estimated annual effective income tax rate, excluding discrete items discussed above, was 37.1 percent and 21.7 percent for the nine months ended September 30, 2018 and 2017, respectively. The estimated annual effective income tax rate differs from the U.S. federal statutory tax rate due to:

	September 30, 2018	September 30, 2017
Federal income tax rate	21.0%	35.0%
State income taxes, net of federal tax benefit	(0.8)	1.1
Foreign earnings taxed at different rates	1.8	(16.8)
GILTI inclusion (net of foreign tax credits)	16.7	0.0
Valuation allowance adjustments	(11.5)	0.0
Interest expense deduction limitation	7.7	0.0
Nondeductible expenses	2.6	1.6
Change in tax contingency reserves	0.2	0.2
Other	(0.6)	0.6
Estimated annual effective income tax rate	37.1%	21.7%

The estimated annual effective income tax rate included a benefit related to the release of a valuation allowance adjustment for a subsidiary in China. Management determined that sufficient positive evidence exists to support that this entity's net operating losses are more likely than not to be realized.

Income taxes as a percentage of pretax income were 55.5 percent for the three months ended September 30, 2018. This was higher than the estimated annual effective income tax rate primarily due to an increase in the estimated annual effective income tax rate when compared to the previous quarter's estimate due to a higher estimated interest expense deduction limitation. Discrete items included in income taxes for the three months ended September 30, 2018 were a net cost of \$1.0 million, which includes additional income tax expense to account for the filing of the Company's 2017 domestic and foreign tax returns.

Income taxes as a percentage of pretax income were 19.4 percent for the three months ended September 30, 2017. This was lower than the estimated annual effective income tax rate primarily due to a reduction in the estimated annual effective income tax rate when compared to the previous quarter's estimate. As a result, income tax expense for the previous quarter was favorably adjusted in the three months ended September 30, 2017. Discrete items included in income taxes for the three months ended September 30, 2017 were not material.

Income taxes as a percentage of pretax income were 43.9 percent for the nine months ended September 30, 2018. This is higher than the estimated annual effective income tax rate due to discrete items. Discrete items included in income taxes for the nine months ended September 30, 2018 were a net cost of \$3.8 million. Discrete items of \$6.1 million include income tax expense related to the impact of the Tax Act and based on the filings of the Company's 2017 domestic and foreign tax returns. This expense is offset by \$2.3 million of excess tax benefits for stock-based compensation and an income tax benefit of \$0.5 million for the reversal of uncertain tax positions due to statute expirations.

Income taxes as a percentage of pretax income were 21.4 percent for the nine months ended September 30, 2017. This was lower than the estimated annual effective tax rate due to discrete items. Discrete items included in income taxes for the nine months ended September 30, 2017 were a net benefit of \$0.2 million. This discrete benefit primarily relates to excess tax benefits for stock-based compensation of \$0.9 million, a benefit of \$0.5 million for the reversal of uncertain tax positions due to statute expirations partially offset by additional accruals of \$0.8 million for uncertain tax positions and \$0.4 million for adjustments to deferred tax assets.

During the year, management regularly updates estimates of pre-tax income and income tax expense based on changes in pre-tax income projections by taxable jurisdiction, repatriation of foreign earnings, uncertain tax positions and other tax matters. To the extent that actual results vary from these estimates, the actual annual effective income tax rate at the end of the year could be materially different from the estimated annual effective income tax rate for the nine months ended September 30, 2018.

Uncertain Tax Positions

The Company and its subsidiaries file income tax returns in the U.S. federal jurisdiction, individual U.S. state jurisdictions and non-U.S. jurisdictions. With few exceptions, the Company is no longer subject to U.S. federal, state and local, or non-U.S. income tax examinations by tax authorities for years prior to 2014.

Unrecognized tax benefits totaled \$8.5 million and \$8.7 million as of September 30, 2018 and December 31, 2017, respectively. As of September 30, 2018 and December 31, 2017, the total amount of unrecognized tax benefits that, if recognized, would affect the effective tax rate, was approximately \$4.2 million and \$4.4 million, respectively. The

Company recognizes interest expense and any related penalties from uncertain tax positions in income tax expense. As of September 30, 2018 and December 31, 2017, the Company had accrued approximately \$4.3 million and \$3.6 million for interest and penalties, respectively.

The Company believes that it is reasonably possible that the amount of unrecognized tax benefits will decrease in the next twelve months by approximately \$2 million due to the expirations of certain foreign and state statutes of limitations and potential audit resolutions. The Company does not anticipate significant increases to the amount of unrecognized tax benefits within the next twelve months.

11. Inventories

Net inventories as of September 30, 2018 and December 31, 2017 are summarized in the table below:

	September 30, 2018	December 31, 2017
<i>(Dollars in millions)</i>		
Raw materials	\$ 203.4	\$ 173.6
Work in process	14.8	11.2
Finished goods	123.9	98.4
	\$ 342.1	\$ 283.2
Less revaluation to LIFO	52.8	46.3
Net	\$ 289.3	\$ 236.9

12. Property, Plant and Equipment

Property, plant and equipment as of September 30, 2018 and December 31, 2017 are summarized in the table below:

	September 30, 2018	December 31, 2017
<i>(Dollars in millions)</i>		
Land	\$ 17.0	\$ 17.6
Buildings	61.9	63.4
Machinery and equipment	835.2	756.6
	\$ 914.1	\$ 837.6
Less accumulated depreciation	515.7	509.6
Net	\$ 398.4	\$ 328.0

Impairments – There were no impairment charges incurred for the nine months ended September 30, 2018 and 2017.

13. Pensions and Post-Retirement Benefit Plans

The Company and its subsidiaries maintain a number of defined benefit and defined contribution plans to provide retirement benefits for employees in the U.S., as well as employees outside the U.S. These plans are maintained and contributions are made in accordance with the Employee Retirement Income Security Act of 1974 (“ERISA”), local statutory law or as determined by the board of directors. The defined benefit pension plans generally provide benefits based upon years of service and compensation. Pension plans are funded except for three domestic non-qualified defined benefit pension plans for certain key executives.

In the U.S., all qualified and two of the non-qualified defined benefit pension plans for salaried and hourly employees have been closed to new participants and have been frozen. Accordingly, these pension plans no longer accrue additional years of service or recognize future increases in compensation for benefit purposes.

The defined contribution plans generally provide retirement assets to employee participants based upon employer and employee contributions to the participant’s individual investment account. The Company also provides retiree medical insurance coverage to certain U.S. employees and a life insurance benefit to most U.S. employees. For salaried employees, the retiree medical and retiree insurance plans have been closed to new participants.

The following table provides the components of net periodic benefit cost for the pension plans for the three and nine months ended September 30, 2018 and 2017:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
<i>(Dollars in millions)</i>				
Service cost	\$ 0.5	\$ 0.5	\$ 1.4	\$ 1.5
Interest cost	1.8	2.1	5.6	7.0
Expected return on plan assets	(2.1)	(2.4)	(6.4)	(7.4)
Amortization of net loss	0.4	0.5	1.1	1.5
Settlements	0.0	8.8	0.0	8.8
Net periodic benefit cost	\$ 0.6	\$ 9.5	\$ 1.7	\$ 11.4
Defined contribution plan expense	\$ 1.3	\$ 2.1	\$ 5.5	\$ 6.1

14. Debt

Debt as of September 30, 2018 and December 31, 2017 was as follows:

<i>(Dollars in millions)</i>	Weighted Average Interest Rate	Maturity	September 30, 2018	December 31, 2017
	Term Loan	5.16%	2023	\$ 95.0
Revolving Credit Facility	5.16%	2023	437.8	155.0
Construction and other loans	4.69%	2020	24.9	33.7
Senior Notes due 2025	6.00%	2025	500.0	500.0
Debt			1,057.7	688.7
Less short-term debt and current maturities of long-term debt			15.1	11.4
Less unamortized debt issuance costs			12.8	11.7
Long-term debt			\$ 1,029.8	\$ 665.6

Senior Notes due 2025

The 2025 Notes are senior obligations, are unsecured and are guaranteed by Koppers Holdings Inc. and certain of Koppers Inc.'s domestic subsidiaries. The 2025 Notes pay interest semi-annually in arrears on February 15 and August 15 beginning on August 15, 2017 and will mature on February 15, 2025 unless earlier redeemed or repurchased. On or after February 15, 2020, the Company is entitled to redeem all or a portion of the 2025 Senior Notes at a redemption price of 104.5 percent of principal value, declining to a redemption price of 101.5 percent on or after February 15, 2022 until the redemption price is equivalent to the principal value on April 15, 2023.

The indenture governing the 2025 Senior Notes includes customary covenants that restrict, among other things, the ability of Koppers Inc. and its restricted subsidiaries to incur additional debt, pay dividends or make certain other restricted payments, incur liens, merge or sell all or substantially all of the assets of Koppers Inc. or its subsidiaries or enter into various transactions with affiliates.

Revolving Credit Facility

On April 10, 2018, the Company amended its \$600 million Revolving Credit Facility to enter into a new Secured Term Loan Facility. The new Secured Term Loan Facility includes the \$600 million Revolving Credit Facility and a secured term loan of \$100 million with a quarterly amortization of \$2.5 million and a five-year maturity. In addition, the maturity date of the amended Revolving Credit Facility was extended one year to April 2023. The interest rate on the amended Revolving Credit Facility is variable and is based on LIBOR. The initial average borrowing rates under both facilities were expected to be approximately five percent. Terms under the amended Revolving Credit Facility are substantially consistent with the original Revolving Credit Facility.

Borrowings under the Revolving Credit Facility are secured by a first priority lien on substantially all of the assets of Koppers Inc., Koppers Holdings and their material domestic subsidiaries. The Revolving Credit Facility contains certain covenants for Koppers Inc. and its restricted subsidiaries that limit capital expenditures, additional indebtedness, liens, dividends, investments or acquisitions. In addition, such covenants give rise to events of default upon the failure by Koppers Inc. and its restricted subsidiaries to meet certain financial ratios.

As of September 30, 2018, the Company had \$131.3 million of unused revolving credit availability for working capital purposes after restrictions from certain letter of credit commitments and other covenants. As of September 30, 2018, \$32.0 million of commitments were utilized by outstanding letters of credit.

Loss on Extinguishment of Debt

In February 2017, all of the outstanding Koppers Inc. senior notes due 2019 were repurchased at a premium to carrying value and accordingly, the Company realized a loss on extinguishment of debt totaling \$10.0 million consisting of \$7.3 million for bond premium and bond tender expenses and \$2.7 million for the write-off of unamortized debt issuance costs.

Also in February 2017, Koppers Inc. repaid its term loan in full and entered into a new Revolving Credit Facility. Accordingly, the Company realized a loss of \$3.3 million for the write-off of unamortized debt issuance costs.

Construction Loans

The Company's 75-percent owned subsidiary, Koppers (Jiangsu) Carbon Chemical Company Limited ("KJCC") entered into committed loan facility agreements with a third-party bank and the 25-percent non-controlling shareholder in KJCC. Borrowings under the third-party bank facility, which includes a construction loan and a working capital facility, totaled \$22.2 million at September 30, 2018 and are secured by a letter of credit issued by a bank under the Revolving Credit Facility. KJCC will repay the construction loan portion of the third-party commitment in six installments every six months starting in June 2018 with a final repayment on December 21, 2020, the maturity date of the loans.

15. Asset Retirement Obligations

The Company recognizes asset retirement obligations for the removal and disposal of residues; dismantling of certain tanks required by governmental authorities; cleaning and dismantling costs for owned rail cars; cleaning costs for leased rail cars and barges; and site demolition, when required by governmental authorities or by contract. The following table reflects changes in the carrying values of asset retirement obligations:

	September 30, 2018	December 31, 2017
<i>(Dollars in millions)</i>		
Asset retirement obligation at beginning of year	\$ 37.1	\$ 36.0
Accretion expense	1.3	2.4
Revision in estimated cash flows	1.4	9.4
Cash expenditures	(10.4)	(10.9)
Currency translation	0.0	0.2
Balance at end of period	\$ 29.4	\$ 37.1

16. Deferred Revenue

In 2015, KJCC received a cash advance payment of \$30 million as part of an amendment to a soft pitch supply agreement with its customer. Also, the Company defers revenues associated with extended product warranty liabilities based on historical loss experience and sales of extended warranties on certain products. The following table reflects changes in the carrying values of deferred revenue:

	September 30, 2018	December 31, 2017
<i>(Dollars in millions)</i>		
Balance at beginning of year	\$ 28.1	\$ 27.2
Revenue earned	(0.5)	(0.7)
Currency translation	(1.6)	1.6
Balance at end of period	\$ 26.0	\$ 28.1

Deferred revenue classified in other long-term liabilities in the consolidated balance sheet totaled \$25.2 million as of September 30, 2018 and \$27.2 million as of December 31, 2017 with the remainder classified in accrued liabilities.

17. Derivative Financial Instruments

The Company utilizes derivative instruments to manage exposures to risks that have been identified and measured and are capable of being controlled. The primary risks managed by the Company by using derivative instruments are commodity price risk associated with copper and foreign currency exchange risk associated with a number of currencies, principally the U.S. dollar, the Canadian dollar, the New Zealand dollar, the Euro and British pounds. Swap contracts on copper are used to manage the price risk associated with forecasted purchases of materials used in the Company's manufacturing processes. Generally, the Company will not hedge cash flow exposures for durations longer than 36 months and the Company has hedged certain volumes of copper through December 2020. The Company enters into foreign currency forward contracts to manage foreign currency risk associated with the Company's receivable and payable balances and foreign currency denominated sales. Generally, the Company enters into master netting arrangements with the counterparties and offsets net derivative positions with the same counterparties. Currently, the Company's agreements do not require cash collateral.

ASC Topic 815-10, "Derivatives and Hedging," requires companies to recognize all derivative instruments as either assets or liabilities at fair value in the balance sheet. Derivative instruments' fair value is determined using significant other observable inputs, or Level 2 in the fair value hierarchy. In accordance with ASC Topic 815-10, the Company designates certain of its commodity swaps as cash flow hedges of forecasted purchases of commodities and certain of its foreign currency swaps as cash flow hedges of forecasted sales. For derivative instruments that are designated and qualify as cash flow hedges, the effective portion of the gain or loss on the derivative is reported as a component of other comprehensive income and is reclassified into earnings in the same period or periods during which the hedged transaction affects earnings. Gains and losses on the derivative instruments representing either hedge ineffectiveness or hedge components excluded from the assessment of effectiveness are recognized in current earnings. The amount of hedge ineffectiveness charged to profit and loss is reported in the table below.

For those commodity and foreign currency swaps which are not designated as cash flow hedges, the fair value of the swap is recognized as an asset or liability in the consolidated balance sheet and the related gain or loss on the derivative is reported in current earnings.

As of September 30, 2018 and December 31, 2017, the Company had outstanding copper swap contracts of the following amounts:

	Units Outstanding (in Pounds)		Net Fair Value - (Liability) Asset	
	September 30, 2018	December 31, 2017	September 30, 2018	December 31, 2017
<i>(Amounts in millions)</i>				
Cash flow hedges	39.6	37.8	\$ (0.2)	\$ 25.5
Not designated as hedges	16.9	11.3	(1.0)	4.5
Total	56.5	49.1	\$ (1.2)	\$ 30.0

As of September 30, 2018 and December 31, 2017, the fair value of the outstanding copper swap contracts is recorded in the balance sheet as follows:

	September 30, 2018	December 31, 2017
<i>(Dollars in millions)</i>		
Other current assets	\$ 1.2	\$ 21.8
Other assets	0.5	8.2
Accrued liabilities	(2.6)	0.0
Other long-term liabilities	(0.3)	0.0
Net (liability) asset on balance sheet	\$ (1.2)	\$ 30.0
Accumulated other comprehensive gain (loss), net of tax	\$ (0.3)	\$ 15.8

Based upon contracts outstanding at September 30, 2018, in the next twelve months the Company estimates that \$0.1 million of unrealized losses, net of tax benefit, related to commodity price hedging will be reclassified from other comprehensive loss into earnings.

See Note 6 – Comprehensive Income (Loss) and Equity, for amounts recorded in other comprehensive income and for amounts reclassified from accumulated other comprehensive loss to net income for the periods specified below. For the three and nine months ended September 30, 2018 and 2017, the following amounts were recognized in earnings related to copper swap contracts:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
<i>(Dollars in millions)</i>				
(Loss) gain from ineffectiveness of cash flow hedges	\$ 0.0	\$ (2.5)	\$ 0.0	\$ 0.5
(Loss) gain from contracts not designated as hedges	(1.0)	1.0	(5.5)	2.0
Net	\$ (1.0)	\$ (1.5)	\$ (5.5)	\$ 2.5

The fair value associated with forward contracts related to foreign currency that are not designated as hedges are immediately charged to earnings. These amounts are classified in cost of sales in the Condensed Consolidated Statement of Operations and Comprehensive (Loss) Income.

As of September 30, 2018 and December 31, 2017, the fair value of outstanding foreign currency forward contracts is recorded in the balance sheet as follows:

	September 30, 2018	December 31, 2017
<i>(Dollars in millions)</i>		
Other current assets	\$ 0.7	\$ 0.3
Accrued liabilities	(1.1)	(0.2)
Net (liability) asset on balance sheet	\$ (0.4)	\$ 0.1

As of September 30, 2018 and December 31, 2017, the net currency units outstanding for these contracts were:

	September 30, 2018	December 31, 2017
<i>(In millions)</i>		
British Pounds	GBP 5.7	GBP 7.0
New Zealand Dollars	NZD 16.0	NZD 15.5
United States Dollars	USD 4.6	USD 12.5
Canadian Dollars	CAD 2.5	CAD 2.5
Euro	EUR 1.3	EUR 0.0

18. Commitments and Contingent Liabilities

The Company and its subsidiaries are involved in litigation and various proceedings relating to environmental laws and regulations, product liability and other matters. Certain of these matters are discussed below. The ultimate resolution of these contingencies is subject to significant uncertainty and should the Company or its subsidiaries fail to prevail in any of these legal matters or should several of these legal matters be resolved against the Company or its subsidiaries in the same reporting period, these legal matters could, individually or in the aggregate, be material to the consolidated financial statements.

Legal Proceedings

Coal Tar Pitch Cases. Koppers Inc. is one of several defendants in lawsuits filed in two states in which the plaintiffs claim they suffered a variety of illnesses (including cancer) as a result of exposure to coal tar pitch sold by the defendants. There are 87 plaintiffs in 48 cases pending as of September 30, 2018, which is unchanged from December 31, 2017. As of September 30, 2018, there are 47 cases pending in state court in Pennsylvania, and 1 case pending in state court in Tennessee.

The plaintiffs in all 48 pending cases seek to recover compensatory damages. Plaintiffs in 43 of those cases also seek to recover punitive damages. The plaintiffs in the 47 cases filed in Pennsylvania seek unspecified damages in excess of the court's minimum jurisdictional limit. The plaintiff in the Tennessee state court case seeks damages of \$15.0 million. The other defendants in these lawsuits vary from case to case and include companies such as Beazer East, Inc. ("Beazer East"), Honeywell International Inc., Graftech International Holdings, Dow Chemical Company, UCAR Carbon Company, Inc., and SGL Carbon Corporation. Discovery is proceeding in these cases. No trial dates have been set in any of these cases.

The Company has not provided a reserve for these lawsuits because, at this time, the Company cannot reasonably determine the probability of a loss, and the amount of loss, if any, cannot be reasonably estimated. The timing of

resolution of these cases cannot be reasonably determined. Although Koppers Inc. is vigorously defending these cases, an unfavorable resolution of these matters may have a material adverse effect on the Company's business, financial condition, cash flows and results of operations.

Environmental and Other Litigation Matters

The Company and its subsidiaries are subject to federal, state, local and foreign laws and regulations and potential liabilities relating to the protection of the environment and human health and safety including, among other things, the cleanup of contaminated sites, the treatment, storage and disposal of wastes, the discharge of effluent into waterways, the emission of substances into the air and various health and safety matters. The Company's subsidiaries expect to incur substantial costs for ongoing compliance with such laws and regulations. The Company's subsidiaries may also face governmental or third-party claims, or otherwise incur costs, relating to cleanup of, or for injuries resulting from, contamination at sites associated with past and present operations. The Company accrues for environmental liabilities when a determination can be made that a liability is probable and reasonably estimable.

Environmental and Other Liabilities Retained or Assumed by Others. The Company's subsidiaries have agreements with former owners of certain of their operating locations under which the former owners retained, assumed and/or agreed to indemnify such subsidiaries against certain environmental and other liabilities. The most significant of these agreements was entered into at Koppers Inc.'s formation on December 29, 1988 (the "Acquisition"). Under the related asset purchase agreement between Koppers Inc. and Beazer East, subject to certain limitations, Beazer East retained the responsibility for and agreed to indemnify Koppers Inc. against certain liabilities, damages, losses and costs, including, with certain limited exceptions, liabilities under and costs to comply with environmental laws to the extent attributable to acts or omissions occurring prior to the Acquisition and liabilities related to products sold by Beazer East prior to the Acquisition (the "Indemnity"). Beazer Limited, the parent company of Beazer East, unconditionally guaranteed Beazer East's performance of the Indemnity pursuant to a guarantee (the "Guarantee").

The Indemnity provides different mechanisms, subject to certain limitations, by which Beazer East is obligated to indemnify Koppers Inc. with regard to certain environmental, product and other liabilities and imposes certain conditions on Koppers Inc. before receiving such indemnification, including, in some cases, certain limitations regarding the time period as to which claims for indemnification can be brought. In July 2004, Koppers Inc. and Beazer East agreed to amend the environmental indemnification provisions of the December 29, 1988 asset purchase agreement to extend the indemnification period for pre-closing environmental liabilities through July 2019. As consideration for the amendment, Koppers Inc. paid Beazer East a total of \$7.0 million and agreed to share toxic tort litigation defense costs arising from any sites acquired from Beazer East. The July 2004 amendment did not change the provisions of the Indemnity with respect to indemnification for non-environmental claims, such as product liability claims, which claims may continue to be asserted after July 2019.

Qualified expenditures under the Indemnity are not subject to a monetary limit. Qualified expenditures under the Indemnity include (i) environmental cleanup liabilities required by third parties, such as investigation, remediation and closure costs, relating to pre-December 29, 1988 ("Pre-Closing") acts or omissions of Beazer East or its predecessors; (ii) environmental claims by third parties for personal injuries, property damages and natural resources damages relating to Pre-Closing acts or omissions of Beazer East or its predecessors; (iii) punitive damages for the acts or omissions of Beazer East and its predecessors without regard to the date of the alleged conduct and (iv) product liability claims for products sold by Beazer East or its predecessors without regard to the date of the alleged conduct. If the third-party claims described in sections (i) and (ii) above are not made by July 2019, Beazer East will not be required to pay the costs arising from such claims under the Indemnity. However, with respect to any such claims which are made by July 2019, Beazer East will continue to be responsible for such claims under the Indemnity beyond July 2019. The Indemnity provides for the resolution of issues between Koppers Inc. and Beazer East by an arbitrator on an expedited basis upon the request of either party. The arbitrator could be asked, among other things, to make a determination regarding the allocation of environmental responsibilities between Koppers Inc. and Beazer East. Arbitration decisions under the Indemnity are final and binding on the parties.

Contamination has been identified at most manufacturing and other sites of the Company's subsidiaries. One site currently owned and operated by Koppers Inc. in the United States is listed on the National Priorities List promulgated under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended ("CERCLA"). Currently, at the properties acquired from Beazer East (which includes the National Priorities List site and all but one of the sites permitted under the Resource Conservation and Recovery Act ("RCRA")), a significant portion of all investigative, cleanup and closure activities are being conducted and paid for by Beazer East pursuant to the terms of the Indemnity. In addition, other of Koppers Inc.'s sites are or have been operated under RCRA and various other environmental permits, and remedial and closure activities are being conducted at some of these sites.

To date, the parties that retained, assumed and/or agreed to indemnify the Company against the liabilities referred to above, including Beazer East, have performed their obligations in all material respects. The Company believes that, for

the last three years ended December 31, 2017, amounts paid by Beazer East as a result of its environmental remediation obligations under the Indemnity have averaged, in total, approximately \$10 million per year. Periodically, issues have arisen between Koppers Inc. and Beazer East and/or other indemnitors that have been resolved without arbitration. Koppers Inc. and Beazer East engage in discussions from time to time that involve, among other things, the allocation of environmental costs related to certain operating and closed facilities.

If for any reason (including disputed coverage or financial incapability) one or more of such parties fail to perform their obligations and the Company or its subsidiaries are held liable for or otherwise required to pay all or part of such liabilities without reimbursement, the imposition of such liabilities on the Company or its subsidiaries could have a material adverse effect on its business, financial condition, cash flows and results of operations. Furthermore, the Company could be required to record a contingent liability on its balance sheet with respect to such matters, which could result in a negative impact to the Company's business, financial condition, cash flows and results of operations.

Domestic Environmental Matters. On June 4, 2018, Koppers Inc. received a letter from the U.S. Environmental Protection Agency ("EPA") concerning potential violations of the Clean Water Act observed during inspections and review of Spill Prevention, Control and Countermeasure Plans and Facility Response Plans at the Company's facilities in Follansbee, WV; Green Spring, WV; and Clairton, PA. In addition, the EPA reviewed one facility's compliance with an earlier consent order regarding above ground storage tank integrity testing. The Company continues to meet and correspond with the EPA to discuss and present relevant information related to the allegations. The Company currently cannot estimate the potential penalties, fines or other expenditures, if any, that may result from any EPA actions relating to the alleged potential violations and, therefore, the Company cannot determine if the ultimate outcome of this matter will have a material impact on the Company's financial position, results of operations or cash flows.

Koppers Inc. has been named as one of the potentially responsible parties ("PRPs") at the Portland Harbor CERCLA site located on the Willamette River in Oregon. Koppers Inc. operated a coal tar pitch terminal near the site. Koppers Inc. has responded to an Environmental Protection Agency ("EPA") information request and has executed a PRP agreement which outlines a private process to develop an allocation of past and future costs among more than 80 parties to the site. Koppers Inc. believes it is a *de minimis* contributor at the site.

The EPA issued its Record of Decision ("ROD") in January 2017 for the Portland Harbor CERCLA site. The selected remedy includes a combination of sediment removal, capping, enhanced and monitored natural recovery and riverbank improvements. The ROD does not determine who is responsible for remediation costs. The net present value and undiscounted costs of the selected remedy as estimated in the ROD are approximately \$1.1 billion and \$1.7 billion, respectively. Responsibility for implementing and funding that work will be decided in the separate private allocation process, which is ongoing.

Additionally, the Company is involved in two separate natural resource damages assessments at the Portland Harbor site. An assessment is intended to identify damages to natural resources caused by the releases of hazardous substances to the Willamette River and to serve as the foundation to estimate liabilities for settlements of natural resource damages claims or litigation to recover from those who do not settle with the trustee groups. One of the natural resource damage assessments was filed in January 2017 by the Yakama Nation in Oregon federal court. Yakama Nation seeks recovery for future response costs and the costs of assessing injury to natural resources and recovery for past costs of overseeing investigations conducted on the site. Motions to dismiss the case are pending.

In September 2009, Koppers Inc. received a general notice letter notifying it that it may be a PRP at the Newark Bay CERCLA site. In January 2010, Koppers Inc. submitted a response to the general notice letter asserting that Koppers Inc. is a *de minimis* party at this site.

The Company has accrued the estimated costs of participating in the PRP group at the Portland Harbor and Newark Bay CERCLA sites and estimated *de minimis* settlement amounts at the sites totaling \$2.1 million at September 30, 2018. The actual cost could be materially higher as there has not been a determination of how those costs will be allocated among the PRPs at the sites. Accordingly, an unfavorable resolution of these matters may have a material adverse effect on the Company's business, financial condition, cash flows and results of operations.

There are two plant sites in the United States related to the Performance Chemicals business where the Company has recorded an environmental remediation liability for soil and groundwater contamination which occurred prior to the Company's acquisition of the business. As of September 30, 2018, the Company's estimated environmental remediation liability for these acquired sites totals \$4.9 million.

There is one plant site in the United States related to the Utility and Industrial Products business where the Company has recorded an environmental remediation liability for soil and groundwater contamination which occurred prior to the Company's acquisition of the business. As of September 30, 2018, the Company's estimated environmental remediation liability for the acquired site totals \$1.9 million.

Foreign Environmental Matters. There are two plant sites related to the Performance Chemicals business located in the United Kingdom and Australia where the Company has recorded an environmental remediation liability for soil and groundwater contamination which occurred prior to the acquisition of the business. As of September 30, 2018, the Company's estimated environmental remediation liability for these acquired sites totals \$2.5 million.

In December 2011, the Company ceased manufacturing operations at its Continental Carbon facility located in Kurnell, Australia. As of September 30, 2018, the Company believes it has fully satisfied all site remediation responsibilities resulting from the closure.

Environmental Reserves Rollforward. The following table reflects changes in the accrued liability for environmental matters, of which \$3.7 million and \$5.1 million are classified as current liabilities at September 30, 2018 and December 31, 2017, respectively:

	<u>September 30,</u>		<u>Period ended</u>	
	<u>2018</u>		<u>December 31,</u>	
			<u>2017</u>	
<i>(Dollars in millions)</i>				
Balance at beginning of year	\$	13.9	\$	12.9
Expense		1.0		3.2
Reversal of reserves		(0.1)		(0.7)
Cash expenditures		(3.8)		(1.8)
Acquisition		1.9		0.0
Currency translation		(0.2)		0.3
Balance at end of period	\$	12.7	\$	13.9

19. Subsidiary Guarantor Information for Koppers Inc. Shelf Registration

Under a registration statement on Form S-3, Koppers Holdings may sell a combination of securities, including common stock, debt securities, preferred stock, depository shares, warrants, purchase contracts and units, from time to time in one or more offerings. In addition, Koppers Inc. may sell debt securities from time to time under the registration statement. Debt securities may be fully and unconditionally guaranteed, on a joint and several basis, by Koppers Holdings, Koppers Inc., Koppers Asia LLC, Koppers World-Wide Ventures Corporation, Koppers Concrete Products, Inc., Concrete Partners, Inc., Koppers Delaware, Inc., Koppers Ventures, Inc., Koppers Performance Chemicals Inc., Koppers-Nevada Limited Liability Company, Koppers NZ LLC, Koppers Railroad Structures Inc., Wood Protection LP and Wood Management LLC. Non-guarantor subsidiaries are owned directly or indirectly by Koppers Inc. or are owned directly or indirectly by Koppers World-Wide Ventures Corporation. The guarantor subsidiaries that issue guarantees, if any, will be determined when a debt offering actually occurs under the registration statement and accordingly, the condensed consolidating financial information for subsidiary guarantors will be revised to identify the subsidiaries that actually provided guarantees. These guarantees will be governed pursuant to a supplemental indenture which the trustee and the issuing company would enter into concurrent with the debt offering.

Reliance of Koppers Holdings on Earnings of Koppers Inc. and its Subsidiaries

Koppers Holdings depends on the dividends from the earnings of Koppers Inc. and its subsidiaries to generate the funds necessary to meet its financial obligations, including the payment of any declared dividend of Koppers Holdings. The Revolving Credit Facility prohibits Koppers Inc. from making dividend payments to Koppers Holdings unless (1) such dividend payments are permitted by the indenture governing Koppers Inc.'s 2025 Notes, (2) no event of default or potential default has occurred or is continuing under the credit agreement, and (3) the Company is in pro forma compliance with the Company's fixed charge coverage ratio covenant after giving effect to such dividend. The indenture governing the 2025 Notes restricts Koppers Inc.'s ability to finance the Company's payment of dividends if (1) a default has occurred or would result from such financing, (2) Koppers Inc., or a restricted subsidiary of Koppers Inc. which is not a guarantor under the applicable indenture is not able to incur additional indebtedness (as defined in the applicable indenture), and (3) the sum of all restricted payments (as defined in the applicable indenture) have exceeded the permitted amount (which the Company refers to as the "basket") at such point in time.

The Koppers Inc. Revolving Credit Facility agreement provides for a revolving credit facility at variable rates. Borrowings under the Revolving Credit Facility are secured by a first priority lien on substantially all of the assets of Koppers Inc. and its material domestic subsidiaries. The revolving credit facility agreement contains certain covenants for Koppers Inc. and its restricted subsidiaries that limit capital expenditures, additional indebtedness, liens, dividends, investments or acquisitions. In addition, such covenants give rise to events of default upon the failure by Koppers Inc. and its restricted subsidiaries to meet certain financial ratios.

As of September 30, 2018, Koppers Inc.'s assets exceeded its liabilities by \$93.0 million. The amount of restricted net assets unavailable for distribution to Koppers Holdings Inc. by Koppers Inc. totals \$38.5 million as of September 30, 2018.

Cash dividends paid to Koppers Holdings Inc. by its subsidiaries totaled \$8.2 million and \$3.7 million for the nine months ended September 30, 2018 and 2017, respectively.

Condensed Consolidating Statement of Operations
For the Three Months Ended September 30, 2018

	Parent	Koppers Inc.	Domestic Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Consolidating Adjustments	Consolidated
<i>(Dollars in millions)</i>						
Net sales	\$ 0.0	\$ 158.3	\$ 92.1	\$ 216.9	\$ (24.6)	\$ 442.7
Cost of sales including depreciation and amortization	0.0	145.3	71.5	181.1	(24.3)	373.6
Selling, general and administrative	0.5	12.0	9.9	15.5	0.0	37.9
Operating profit (loss)	(0.5)	1.0	10.7	20.3	(0.3)	31.2
Other (loss) income	0.0	(0.4)	0.5	(0.7)	0.0	(0.6)
Equity income (loss) of subsidiaries	8.0	15.6	14.8	0.1	(38.5)	0.0
Interest expense	0.0	14.4	0.1	0.6	0.0	15.1
Income taxes	(0.1)	(6.2)	10.6	4.3	0.0	8.6
Income from continuing operations	7.6	8.0	15.3	14.8	(38.8)	6.9
Noncontrolling interests	0.0	0.0	0.0	(0.7)	0.0	(0.7)
Net income attributable to Koppers	\$ 7.6	\$ 8.0	\$ 15.3	\$ 15.5	\$ (38.8)	\$ 7.6
Comprehensive income attributable to Koppers	\$ (0.9)	\$ (0.3)	\$ 6.5	\$ 13.0	\$ (19.2)	\$ (0.9)

Condensed Consolidating Statement of Operations
For the Three Months Ended September 30, 2017

	Parent	Koppers Inc.	Domestic Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Consolidating Adjustments	Consolidated
<i>(Dollars in millions)</i>						
Net sales	\$ 0.0	\$ 151.1	\$ 92.0	\$ 162.9	\$ (21.2)	\$ 384.8
Cost of sales including depreciation and amortization	0.0	136.2	64.6	128.2	(21.2)	307.8
Loss on pension settlement	0.0	8.8	0.0	0.0	0.0	8.8
Selling, general and administrative	0.5	12.1	10.2	10.4	0.0	33.2
Operating profit (loss)	(0.5)	(6.0)	17.2	24.3	0.0	35.0
Other income (loss)	0.0	(0.1)	0.6	0.1	(0.3)	0.3
Equity income (loss) of subsidiaries	19.9	29.4	17.0	0.1	(66.4)	0.0
Interest expense	(0.1)	9.8	0.1	1.1	(0.4)	10.5
Income taxes	(0.3)	(6.4)	6.5	5.0	0.0	4.8
Income (loss) from continuing operations	19.8	19.9	28.2	18.4	(66.3)	20.0
Discontinued operations	0.0	0.0	0.0	(0.1)	0.0	(0.1)
Noncontrolling interests	0.0	0.0	0.0	0.1	0.0	0.1
Net income (loss) attributable to Koppers	\$ 19.8	\$ 19.9	\$ 28.2	\$ 18.2	\$ (66.3)	\$ 19.8
Comprehensive income (loss) attributable to Koppers	\$ 36.6	\$ 36.8	\$ 38.7	\$ 24.4	\$ (99.9)	\$ 36.6

Condensed Consolidating Statement of Operations
For the Nine Months Ended September 30, 2018

	Parent	Koppers Inc.	Domestic Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Consolidating Adjustments	Consolidated
<i>(Dollars in millions)</i>						
Net sales	\$ 0.0	\$ 429.6	\$ 265.5	\$ 651.4	\$ (61.7)	\$ 1,284.8
Cost of sales including depreciation and amortization	0.0	397.5	205.9	525.4	(62.6)	1,066.2
Selling, general and administrative	1.9	39.3	33.8	46.8	0.0	121.8
Operating profit (loss)	(1.9)	(7.2)	25.8	79.2	0.9	96.8
Other (loss) income	0.0	(3.2)	1.3	0.8	0.0	(1.1)
Equity income (loss) of subsidiaries	27.5	74.0	64.7	0.0	(166.2)	0.0
Interest expense	0.0	38.2	0.1	1.8	0.0	40.1
Income taxes	(0.4)	(2.1)	14.2	12.7	0.0	24.4
Income from continuing operations	26.0	27.5	77.5	65.5	(165.3)	31.2
Discontinued operations	0.0	0.0	0.0	0.4	0.0	0.4
Noncontrolling interests	0.0	0.0	0.0	5.6	0.0	5.6
Net income attributable to Koppers	\$ 26.0	\$ 27.5	\$ 77.5	\$ 60.3	\$ (165.3)	\$ 26.0
Comprehensive income attributable to Koppers	\$ (11.2)	\$ (9.7)	\$ 39.2	\$ 41.7	\$ (71.2)	\$ (11.2)

Condensed Consolidating Statement of Operations
For the Nine Months Ended September 30, 2017

	Parent	Koppers Inc.	Domestic Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Consolidating Adjustments	Consolidated
<i>(Dollars in millions)</i>						
Net sales	\$ 0.0	\$ 455.2	\$ 267.4	\$ 451.1	\$ (64.3)	\$ 1,109.4
Cost of sales including depreciation and amortization	0.0	425.7	183.7	357.0	(62.6)	903.8
Loss on pension settlement	0.0	8.8	0.0	0.0	0.0	8.8
Selling, general and administrative	1.5	33.8	30.5	29.8	0.0	95.6
Operating profit (loss)	(1.5)	(13.1)	53.2	64.3	(1.7)	101.2
Other income	0.0	(0.9)	1.8	1.9	(0.8)	2.0
Equity income of subsidiaries	44.8	81.2	47.3	0.0	(173.3)	0.0
Interest expense	(0.1)	29.5	0.1	3.2	(0.8)	31.9
Loss on extinguishment of debt	0.0	13.3	0.0	0.0	0.0	13.3
Income taxes	(0.5)	(20.4)	20.2	13.1	0.0	12.4
Income (loss) from continuing operations	43.9	44.8	82.0	49.9	(175.0)	45.6
Discontinued operations	0.0	0.0	0.0	(1.3)	0.0	(1.3)
Noncontrolling interests	0.0	0.0	0.0	0.4	0.0	0.4
Net income (loss) attributable to Koppers	\$ 43.9	\$ 44.8	\$ 82.0	\$ 48.2	\$ (175.0)	\$ 43.9
Comprehensive income (loss) attributable to Koppers	\$ 73.1	\$ 74.2	\$ 104.5	\$ 66.4	\$ (245.1)	\$ 73.1

Condensed Consolidating Balance Sheet
September 30, 2018

	Parent	Koppers Inc.	Domestic Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Consolidating Adjustments	Consolidated
<i>(Dollars in millions)</i>						
ASSETS						
Cash and cash equivalents	\$ 0.0	\$ 0.0	\$ 0.1	\$ 62.4	\$ 0.0	\$ 62.5
Receivables, net	0.0	70.7	31.7	119.9	0.0	222.3
Affiliated receivables	(22.7)	39.4	17.3	4.8	(38.8)	0.0
Inventories, net	0.0	98.3	39.0	153.0	(1.0)	289.3
Other current assets	0.0	7.0	5.3	18.9	0.3	31.5
Total current assets	(22.7)	215.4	93.4	359.0	(39.5)	605.6
Equity investments	91.5	1,020.8	322.9	0.1	(1,435.3)	0.0
Property, plant and equipment, net	0.0	203.6	47.6	147.2	0.0	398.4
Goodwill	0.0	0.8	153.1	142.6	0.0	296.5
Intangible assets, net	0.0	6.7	89.1	97.7	0.0	193.5
Deferred tax assets	0.0	23.6	(7.1)	1.9	0.0	18.4
Affiliated loan receivables	0.0	45.5	159.1	9.5	(214.1)	0.0
Other assets	0.0	4.6	6.4	12.2	0.0	23.2
Total assets	\$ 68.8	\$ 1,521.0	\$ 864.5	\$ 770.2	\$ (1,688.9)	\$ 1,535.6
LIABILITIES AND EQUITY						
Accounts payable	0.0	75.8	35.2	55.2	0.0	166.2
Affiliated payables	0.0	23.7	3.4	11.8	(38.9)	0.0
Accrued liabilities	0.0	50.1	14.8	36.8	0.0	101.7
Current maturities of long-term debt	0.0	10.0	0.1	5.0	0.0	15.1
Total current liabilities	0.0	159.6	53.5	108.8	(38.9)	283.0
Long-term debt	0.0	1,010.0	0.1	19.7	0.0	1,029.8
Affiliated debt	0.0	168.6	37.7	7.8	(214.1)	0.0
Other long-term liabilities	0.0	89.8	14.1	39.5	0.0	143.4
Total liabilities	0.0	1,428.0	105.4	175.8	(253.0)	1,456.2
Koppers shareholders' equity	68.8	93.0	759.1	583.8	(1,435.9)	68.8
Noncontrolling interests	0.0	0.0	0.0	10.6	0.0	10.6
Total liabilities and equity	\$ 68.8	\$ 1,521.0	\$ 864.5	\$ 770.2	\$ (1,688.9)	\$ 1,535.6

Condensed Consolidating Balance Sheet
December 31, 2017

	Parent	Koppers Inc.	Domestic Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Consolidating Adjustments	Consolidated
<i>(Dollars in millions)</i>						
ASSETS						
Cash and cash equivalents	\$ 0.0	\$ 0.7	\$ 0.0	\$ 59.6	\$ 0.0	\$ 60.3
Receivables, net	0.0	48.6	27.7	84.6	0.0	160.9
Affiliated receivables	0.6	19.4	(83.0)	(12.1)	75.1	0.0
Inventories, net	0.0	80.4	40.5	117.9	(1.9)	236.9
Deferred tax assets	0.0	0.0	0.0	(0.1)	0.1	0.0
Other current assets	0.0	6.6	23.0	18.8	0.2	48.6
Total current assets	0.6	155.7	8.2	268.7	73.5	506.7
Equity investments	99.3	716.3	276.8	(0.1)	(1,092.3)	0.0
Property, plant and equipment, net	0.0	155.2	47.3	125.5	0.0	328.0
Goodwill	0.0	0.8	153.1	34.3	0.0	188.2
Intangible assets, net	0.0	7.2	96.7	25.7	0.0	129.6
Deferred tax assets	0.0	29.4	(13.2)	2.2	0.0	18.4
Affiliated loan receivables	0.0	34.9	224.3	21.4	(280.6)	0.0
Other assets	0.0	4.4	15.3	9.6	0.0	29.3
Total assets	\$ 99.9	\$ 1,103.9	\$ 808.5	\$ 487.3	\$ (1,299.4)	\$ 1,200.2
LIABILITIES AND EQUITY						
Accounts payable	\$ 0.0	\$ 65.1	\$ 32.4	\$ 44.4	\$ 0.0	\$ 141.9
Affiliated payables	0.0	(90.3)	13.8	2.2	74.3	0.0
Accrued liabilities	0.0	59.9	16.4	51.6	0.0	127.9
Current maturities of long-term debt	0.0	0.1	0.0	11.3	0.0	11.4
Total current liabilities	0.0	34.8	62.6	109.5	74.3	281.2
Long-term debt	0.0	643.3	0.0	22.3	0.0	665.6
Affiliated debt	0.0	233.7	19.3	27.6	(280.6)	0.0
Other long-term liabilities	0.0	92.0	14.4	41.2	0.0	147.6
Total liabilities	0.0	1,003.8	96.3	200.6	(206.3)	1,094.4
Koppers shareholders' equity	99.9	100.1	712.2	280.8	(1,093.1)	99.9
Noncontrolling interests	0.0	0.0	0.0	5.9	0.0	5.9
Total liabilities and equity	\$ 99.9	\$ 1,103.9	\$ 808.5	\$ 487.3	\$ (1,299.4)	\$ 1,200.2

Condensed Consolidating Statement of Cash Flows
For the Nine Months Ended September 30, 2018

	<i>Parent</i>	<i>Koppers Inc.</i>	<i>Domestic Guarantor Subsidiaries</i>	<i>Non-Guarantor Subsidiaries</i>	<i>Consolidating Adjustments</i>	<i>Consolidated</i>
<i>(Dollars in millions)</i>						
Cash provided by (used in) operating activities	\$ 29.2	\$ (68.3)	\$ 17.1	\$ 38.2	\$ (8.2)	\$ 8.0
Cash provided by (used in) investing activities:						
Capital expenditures and acquisitions	0.0	(326.8)	(3.9)	(14.7)	0.0	(345.4)
Repayments (loans to) from affiliates	0.0	(4.5)	(18.1)	(5.5)	28.1	0.0
Insurance proceeds received	0.0	0.0	0.0	1.5	0.0	1.5
Net cash provided by divestitures and asset sales	0.0	(2.0)	0.0	4.3	0.0	2.3
Net cash (used in) provided by investing activities	0.0	(333.3)	(22.0)	(14.4)	28.1	(341.6)
Cash provided by (used in) financing activities:						
Borrowings (repayments) of long-term debt	0.0	377.7	(0.1)	(7.7)	0.0	369.9
Borrowings (repayments) of affiliated debt	0.0	34.3	5.1	(11.3)	(28.1)	0.0
Debt issuance costs	0.0	(2.9)	0.0	0.0	0.0	(2.9)
Dividends paid	0.0	(8.2)	0.0	0.0	8.2	0.0
Stock repurchased	(29.2)	0.0	0.0	0.0	0.0	(29.2)
Net cash provided by (used in) financing activities	(29.2)	400.9	5.0	(19.0)	(19.9)	337.8
Effect of exchange rates on cash	0.0	0.0	0.0	(2.0)	0.0	(2.0)
Net increase in cash and cash equivalents	0.0	(0.7)	0.1	2.8	0.0	2.2
Cash and cash equivalents at beginning of year	0.0	0.7	0.0	59.6	0.0	60.3
Cash and cash equivalents at end of period	\$ 0.0	\$ 0.0	\$ 0.1	\$ 62.4	\$ 0.0	\$ 62.5

Condensed Consolidating Statement of Cash Flows
For the Nine Months Ended September 30, 2017

	Parent	Koppers Inc.	Domestic Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Consolidating Adjustments	Consolidated
<i>(Dollars in millions)</i>						
Cash provided by (used in) operating activities	\$ 3.2	\$ (15.9)	\$ 33.9	\$ 31.0	\$ (3.7)	\$ 48.5
Cash provided by (used in) investing activities:						
Capital expenditures and acquisitions	0.0	(32.0)	(11.3)	(5.3)	0.0	(48.6)
Repayments (loans to) from affiliates	0.0	2.0	(19.1)	0.6	16.5	0.0
Repayment of loan	0.0	0.0	0.0	9.5	0.0	9.5
Net cash proceeds from divestitures and asset sales	0.0	0.0	0.7	0.4	0.0	1.1
Net cash (used in) provided by investing activities	0.0	(30.0)	(29.7)	5.2	16.5	(38.0)
Cash provided by (used in) financing activities:						
Repayments of long-term debt	0.0	36.7	0.0	(4.0)	0.0	32.7
Borrowings (repayments) of affiliated debt	0.0	23.9	(4.2)	(3.2)	(16.5)	0.0
Deferred financing cost	0.0	(11.0)	0.0	0.0	0.0	(11.0)
Dividends paid	0.0	(3.7)	0.0	0.0	3.7	0.0
Stock repurchased	(3.2)	0.0	0.0	0.0	0.0	(3.2)
Net cash provided by (used in) financing activities	(3.2)	45.9	(4.2)	(7.2)	(12.8)	18.5
Effect of exchange rates on cash	0.0	0.0	0.0	0.4	0.0	0.4
Net increase in cash and cash equivalents	0.0	0.0	0.0	29.4	0.0	29.4
Cash and cash equivalents at beginning of year	0.0	0.0	0.0	20.8	0.0	20.8
Cash and cash equivalents at end of period	\$ 0.0	\$ 0.0	\$ 0.0	\$ 50.2	\$ 0.0	\$ 50.2

20. Related Party Transactions

During 2016, the Company sold its 30 percent interest in TKK. The Company had loaned \$10.0 million, gross of accumulated equity losses of \$1.1 million, to TKK, including interest. The loan and interest was fully repaid and the Company recorded a gain of \$1.3 million in 2017.

As disclosed in "Note 14 – Debt", KJCC has an outstanding loan from its 25-percent non-controlling shareholder. The loan totals \$2.5 million and matures in November 2018.

21. Fair Value Measurements

Carrying amounts and the related estimated fair values of the Company's financial instruments as of September 30, 2018 and December 31, 2017 are as follows:

	September 30, 2018		December 31, 2017	
	Fair Value	Carrying Value	Fair Value	Carrying Value
<i>(Dollars in millions)</i>				
Financial assets:				
Cash and cash equivalents, including restricted cash	\$ 62.5	\$ 62.5	\$ 60.3	\$ 60.3
Investments and other assets ^(a)	1.1	1.1	1.1	1.1
Financial liabilities:				
Total debt (including current portion)	\$ 1,049.1	\$ 1,057.7	\$ 706.9	\$ 688.7

(a) Excludes equity method investments.

Cash and cash equivalents – The carrying value approximates fair value because of the short maturity of those instruments.

Investments and other assets – Represents the broker-quoted cash surrender value on universal life insurance policies. This asset is classified as Level 2 in the valuation hierarchy and is measured from values received from financial institutions.

Debt – The fair value of the Company's long-term debt is estimated based on the market prices for the same or similar issues or on the current rates offered to the Company for debt of the same remaining maturities (Level 2). The fair value of the Company's revolving credit facility approximates carrying value due to the variable rate nature of this instrument.

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

This report and any documents incorporated herein by reference contain "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995 and may include, but are not limited to, statements about sales levels, acquisitions, restructuring, declines in the value of Koppers assets and the effect of any related impairment charges, profitability and anticipated expenses and cash outflows. All forward-looking statements involve risks and uncertainties. All statements contained herein that are not clearly historical in nature are forward-looking, and words such as "believe," "anticipate," "expect," "estimate," "may," "will," "should," "continue," "plans," "potential," "intends," "likely," or other similar words or phrases are generally intended to identify forward-looking statements. Any forward-looking statement contained herein, in press releases, written statements or documents filed with the Securities and Exchange Commission, or in Koppers communications and discussions with investors and analysts in the normal course of business through meetings, phone calls and conference calls, regarding expectations with respect to sales, earnings, cash flows, operating efficiencies, restructurings, product introduction or expansion, the benefits of acquisitions and divestitures, joint ventures or other matters as well as financings and debt reduction, are subject to known and unknown risks, uncertainties and contingencies. Many of these risks, uncertainties and contingencies are beyond our control, and may cause actual results, performance or achievements to differ materially from anticipated results, performance or achievements. Factors that might affect such forward-looking statements, include, among other things, the impact of changes in commodity prices, such as oil and copper, on product margins; general economic and business conditions; potential difficulties in protecting our intellectual property; the ratings on our debt and our ability to repay or refinance our outstanding indebtedness as it matures; our ability to operate within the limits of our debt covenants; potential impairment of our goodwill and/or long-lived assets; demand for Koppers goods and services; competitive conditions; interest rate and foreign currency rate fluctuations; availability and costs of key raw materials and unfavorable resolution of claims against us, as well as those discussed more fully elsewhere in this report and in documents filed with the Securities and Exchange Commission by Koppers, particularly our latest annual report on Form 10-K and subsequent filings. We caution you that the foregoing list of important factors may not contain all of the material factors that are important to you. In addition, in light of these risks and uncertainties, the matters referred to in the forward-looking statements contained in this report and the documents incorporated by reference herein may not in fact occur. Any forward-looking statements in this report speak only as of the date of this report, and we undertake no obligation to update any forward-looking statement to reflect events or circumstances after that date or to reflect the occurrence of unanticipated events.

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with the unaudited financial statements and related notes included in Item 1 of this Part I as well as the audited consolidated financial statements and the related notes included in our Annual Report on Form 10-K for the year ended December 31, 2017.

Overview

We are a leading integrated global provider of treated wood products, wood preservation chemicals, and carbon compounds. Our products and services are used in a variety of niche applications in a diverse range of end-markets, including the railroad, specialty chemical, utility, residential lumber, agriculture, aluminum, steel, rubber, and construction industries. We serve our customers through a comprehensive global manufacturing and distribution network, with manufacturing facilities located in North America, South America, Australasia, China and Europe.

We operate three principal businesses: Railroad and Utility Products and Services ("RUPS"), Performance Chemicals ("PC") and Carbon Materials and Chemicals ("CMC").

Through our RUPS business, we believe that we are the largest supplier of railroad crossties to the North American railroads. Our other treated wood products include utility poles for the electric and telephone utility industries in the United States and Australia. We also provide rail joint bar products as well as various services to the railroad industry. In April 2018, we re-entered the North American utility pole market with the acquisition of Cox Industries, Inc., which has been renamed Koppers Utility and Industrial Products Inc. ("UIP"). UIP manufactures and sells utility poles and construction and marine pilings through a network of eight manufacturing facilities and 19 distribution yards located throughout the United States. Through our PC business, we believe that we are the global leader in developing, manufacturing and marketing wood preservation chemicals and wood treatment technologies for use in the pressure treating of lumber for residential, industrial and agricultural applications. Our CMC business processes coal tar into a variety of products, including creosote, carbon pitch, carbon black feedstock, naphthalene and phthalic anhydride, which are intermediate materials necessary in the pressure treatment of wood, the production of aluminum, the production of carbon black, the production of high-strength concrete, and the production of plasticizers and specialty chemicals, respectively.

Trend Overview

Our businesses and results of operations are affected by various competitive and other factors including (i) the impact of global economic conditions on demand for our products, including the impact of imported products from competitors in certain regions where we operate; (ii) raw material pricing and availability, in particular the cost and availability of hardwood lumber for railroad crossties and softwood lumber for utility poles, scrap copper prices, and the cost and amount of coal tar available in global markets, which is negatively affected by reductions in blast furnace steel production; (iii) volatility in oil prices, which impacts the cost of coal tar and certain other raw materials, as well as selling prices and margins for certain of our products including carbon black feedstock, phthalic anhydride, and naphthalene; (iv) competitive conditions in global carbon pitch markets; and (v) changes in foreign exchange rates.

Railroad and Utility Products and Services

We provide our customers with treated and untreated wood products, rail joint bars and services primarily for the railroad markets in the United States and Canada. In addition, we supply utility poles for the utility sector in the United States and Australia. The primary end-markets for RUPS is the North American railroad industry, which has an installed base of approximately 700 million wood crossties, and the investor-owned utility industry which utilizes wooden distribution and transmission poles. Both crossties and utility poles require periodic replacement. Historically, North American demand for crossties had been in the range of 22-25 million annually. We also operate a railroad services business that conducts engineering, design, repair and inspection services primarily for railroad bridges in the U.S. and Canada. However, the crosstie replacement market has been significantly lower in recent years. According to the Railway Tie Association ("RTA"), Class I railroads are estimating crosstie installations of approximately 16 million in 2018 followed by a similar amount in 2019. For distribution poles, the demand has historically been in the range of 2 to 3 million annually.

The supply of untreated crossties can vary at times based upon weather conditions in addition to other factors. We have a nationwide wood procurement team that maintains close working relationships with a network of sawmills. We procure untreated crossties, either on behalf of our customers, or for future treating. We also procure switch ties and various other types of lumber used for railroad bridges and crossings. Untreated crossties go through a six- to nine-month air seasoning process before they are ready to be pressure treated. After the air seasoning process is complete, the crossties are pressure treated using creosote-only treatment or a combined creosote and borate treatment. During any given year, there is a seasonal effect in the winter months on our crosstie business depending on weather conditions for harvesting lumber and installation.

In 2018, the major companies in the rail industry have again substantially reduced both operating and capital spending from peak spending levels, which has had a negative impact on sales of various products and services that we provide to that industry. Current year revenues and profitability have reflected a decline year-over-year due to the effects of lower demand caused by continued reductions in capital budgets for most North American Class I railroads. We currently supply all seven of the North American Class I railroads and have long-standing relationships with these customers. Approximately 70 percent of our North American sales are under long-term contracts and we believe that we are positioned to maintain or grow our current market position.

According to the Association of American Railroads, the level of business activity for the railroad industry is dependent on, to a large extent, trends occurring in other sectors of the economy. In the recent past, the Class I railroads were highly dependent on the oil and gas and coal mining industries. Currently, the railroads are more correlated to trade relations, commodity prices and interest rates. Rail traffic has continued to be relatively positive, with intermodal especially strong due to its close relation to consumer spending. However, there has been weakness in some commodity categories. For the nine months ending September 30, 2018, total U.S. carload traffic was up a modest two percent from the same period last year; meanwhile, intermodal units were up six percent from the prior year period. For the year-to-date period through September 30, 2018, combined U.S. traffic for carloads and intermodal units was four percent higher than prior year.

Over an economic cycle, the long-term prognosis for the railroad industry and the products and services that we provide to it are generally favorable. However, in the near-term, railroad customers have scaled back and are focusing on reducing their operating costs and working capital. As a result, the demand for crossties for the current year has been relatively flat to lower than the prior year.

In terms of raw material, there has been less available inventory of untreated crossties from the saw mills during 2018 and lumber prices have increased dramatically due to a wet spring and summer affecting production. Currently, the RTA reports that the hardwood lumber demand has been softening with sharp declines in hardwood lumber sales volumes due to changing economic conditions in China. In addition, the potential effects from impending tariffs on trade between China and the U.S. may negatively impact the hardwood industry and the availability of lumber. Earlier in the year, we experienced a tightness in the supply of untreated crosstie supply which challenged our ability to procure needed

inventory. However, that seems to be alleviated as demand from China has softened which has opened up supply. As our untreated tie inventory builds, we expect to have more dry crosstie inventory to ready for treatment.

In addition, certain Class I railroads are shifting from a treatment-service only model to having suppliers hold untreated inventory until the crossties have been treated. Going forward, we estimate that the remaining potential impact of this transition could be a further increase of working capital by approximately \$50 million primarily due to higher inventory, and the associated revenue cycle could be temporarily extended for approximately six to nine months, for approximately \$50 million in total. The actual timing of this impact will be dependent on the date, if at all, the remaining customers make the transition.

From a long-term perspective, there remains a need for sustained investment in infrastructure and capacity expansion. We believe that with our vertical integration capabilities in wood treatment and strong customer relationships, we will ultimately benefit from increased demand.

Performance Chemicals

The largest geographic market for wood treating chemicals sold by our PC business is in North America, and the largest application for our products is the residential remodeling market. We also have a market presence in Europe, South America, Australia and New Zealand. We believe that PC is the largest global manufacturer and supplier of water-based wood preservatives and wood specialty additives to treaters who supply pressure treated wood products to large retailers and independent lumber dealers. These retailers and dealers, in turn, serve the residential, agricultural and industrial pressure-treated wood market. Our primary products are copper-based wood preservatives, including micronized copper azole ("MicroPro®") and micronized pigments ("MicroShades®").

In North America, we are vertically integrated due to our manufacturing capabilities for copper compounds for our copper-based wood preservatives. We believe our vertical integration is part of our proprietary processes and reflects an important competitive advantage. Applications for these products include decking, fencing, utility poles, construction lumber and other outdoor structures. We continue to invest in research and development activities at various locations around the world, particularly in areas that have high fungal decay and termite activity, in order to assess the performance and efficacy of various wood preservation systems.

As most of the products sold by PC are copper-based products, changes in the price and availability of copper can have a significant impact on product pricing and margins. We attempt to moderate the variability in copper pricing over time by entering into hedging transactions for the majority of our copper needs, which primarily range from six months up to 36 months. These hedges typically match expected customer purchases and receive hedge accounting treatment. From time to time, we enter into forward transactions based upon long-term forecasted needs of copper. These forward positions are typically marked to market on a quarterly basis.

Product demand for our PC business has historically been influenced by existing home sales, which is a leading indicator of consumer spending on remodeling projects. Overall, the market for existing homes continues to show mixed signals. According to the National Association of Realtors®, existing home sales decreased for the month of September, down by 4.1 percent from prior year after showing relatively flat year-over-year sales in August. Rising interest rates have led to a decline in sales across all regions of the country as higher mortgage rates are impacting consumers when making home purchases. At the same time, affordable home listings remain low and continue to spur underperforming sales activity across the country.

According to the Leading Indicator of Remodeling Activity ("LIRA") reported by the Joint Center for Housing Studies of Harvard University, the annual growth in national home improvement and repair spending is expected to moderate in 2019 after several years of acceleration. The LIRA projects that year-over-year increases in residential remodeling expenditures will reach a decade high of 7.7 percent in 2018. In 2019, annual expenditures for residential improvements and repairs are expected to soften to 6.6 percent, yet still expected to grow to more than \$350 billion nationally.

The Conference Board Consumer Confidence Index® increased in September to an 18-year high, standing at 138.4, up from 134.7 in August. The assessment of current conditions by consumers remains extremely favorable, bolstered by a strong economy and robust job growth.

From a margin perspective, our profitability has been unfavorably impacted by rising raw material costs, primarily due to copper prices which began to trend higher in 2017 and continuing into 2018 but has pulled back from highs reached in the first half of the year. Our strategy is to hedge a majority of our requirements over a two-to-three year time frame in order to provide short-term certainty and visibility of our cost structure by lessening the impact that may arise in commodity markets. In a rising copper price environment such as in the past eighteen months, our average hedged prices have increased from prior year and expect that to continue in 2019.

The primary products produced by CMC are creosote, which is a registered pesticide in the U.S. and used primarily in the pressure treatment of railroad crossties, and carbon pitch, which is sold primarily to the aluminum industry for the production of carbon anodes used in the smelting of aluminum. We have reduced capacity in our CMC plants in North America and Europe over the past several years to levels required to meet creosote demand in North America for the treatment of railroad crossties. We currently supply our North American RUPS business with 100 percent of its creosote requirements. As discussed in the RUPS outlook, there has been a decrease starting in 2017 with respect to spending for railroad infrastructure. This results in a shift in excess distillate production to the commodity carbon black feedstock market until demand for creosote returns to historical levels.

While the sale of carbon pitch remains a significant portion of our sales volume, the reduction of aluminum smelting capacity in the United States, Australia and Western Europe has led to sharply lower demand for carbon pitch over the past several years. Accordingly, we have experienced significantly lower sales volumes due to the reduction in aluminum production in parts of the world where the majority of our production facilities are located. However, beginning in 2018, aluminum production in the U.S. has increased to some extent as tariffs are being imposed on certain imported steel and aluminum products. This development may result in additional demand for carbon pitch in the United States.

The availability of coal tar, the primary raw material for our CMC business, is linked to levels of metallurgical coke production. As the global steel industry, excluding Asia, has reduced the production of steel using metallurgical coke, the volumes of coal tar have also been reduced. For the past decade, the coal tar distillation industry has operated in an excess capacity mode, which further increased the competition for a limited amount of coal tar in North America. Over the past three years we have consolidated our operating footprint and significantly lowered production levels at the same time that we added distribution assets to move finished products from Europe to the U.S. more efficiently. As a result, our raw material needs in North America have been significantly less than historically required. In early 2017, we entered into several new long-term supply agreements to further lower our overall input costs and redistribute our finished product pricing risk.

In recent quarters, there has been an overall tightening market supply of coal tar and carbon pitch in China and it has put upward pressure on both raw materials and finished product pricing. This is due to an ongoing shutdown of older steel and coking capacity that does not meet environmental and emissions requirements. In turn, the shutdowns have resulted in increased demand for products requiring coal tar pitch, including needle coke used for producing electrodes that go into electric arc steel production, which is the primary market that we serve in China. As a result, our recently constructed coal-tar distillation facility serving those markets has a competitive advantage. Thus far in 2018, pricing for coal tar products in the region has moderated but remains relatively strong compared to prior year and is expected to stay at current levels in the near term. For the external markets served by our CMC business, we anticipate that Europe, North America and Australia will keep benefiting from favorable market and pricing conditions for the remainder of this year; however, raw material costs are expected to increase in 2019.

With respect to our largest customer in China, we believe that the pricing we have received has been understated for a number of quarterly periods. While we continue to engage in discussions with this customer and hope to resolve the disagreement in accordance with certain provisions in our contractual relationship, we have not recognized any incremental revenue associated with the higher price that we believe is accurate. Therefore, we estimate that our sales and margin in China will be negatively impacted in the fourth quarter of 2018 due to lower volume requirements from this customer.

Going forward, another relevant consideration for this business segment relates to aluminum prices, which have been trending significantly higher globally. The stronger demand has had a positive effect on pricing for the key raw material that we provide to this industry.

CMC Restructuring Initiatives

We embarked on a plan to restructure our CMC operating footprint that reduced our global number of coal tar distillation facilities from the eleven that existed as of January 1, 2014 to four in total. The remaining facilities are located in regions where we believe we hold key competitive advantages that allow us to better serve our global customers: Stickney, Illinois; Nyborg, Denmark; Mayfield, Australia; and Jiangsu Province, China.

As a result of the reduction in operating capacity at the seven closed or sold coal tar distillation facilities, we have incurred substantial restructuring and impairment costs over the last four years. As a result of these initiatives, we expect additional restructuring and related charges to earnings of \$9.5 million to \$11.5 million through 2020. The overall expected future cash requirements for the CMC plant closures are estimated to be approximately \$30 million through 2020. There may be additional curtailments or closures at our other CMC facilities as part of our efforts to reduce our cost structure and improve capacity utilization in our business. In October 2018, we completed the sale of our Clairton, Pennsylvania facility

and, in doing so, transferred \$6.2 million of cash along with substantially all assets at the facility to the purchaser in exchange for the purchaser assuming certain historical and future obligations, including full responsibility for facility decommissioning, demolition and site restoration.

Through these restructuring initiatives, we are significantly transforming our CMC business model by streamlining the operating footprint and reducing our primary reliance on and exposure to the carbon pitch markets. In addition, the construction of a new naphthalene unit at our Stickney, Illinois, facility, which we completed commissioning in the third quarter of 2018, will result in additional production efficiencies and cost savings going forward. All new intermediate feedstocks are now being processed in Stickney as the new unit is now fully online. We believe that the extensive and ongoing efforts to reduce our fixed cost structure will result in a sustainable improvement in earnings in addition to lower volatility in cash flow.

Seasonality and Effects of Weather on Operations

Our quarterly operating results fluctuate due to a variety of factors that are outside of our control, including inclement weather conditions, which in the past have affected operating results. Operations at some of our facilities have at times been reduced during the winter months. Moreover, demand for some of our products declines during periods of inclement weather. As a result of the foregoing, we anticipate that we may experience material fluctuations in quarterly operating results. Historically, our operating results have been significantly lower in the first and fourth calendar quarters as compared to the second and third calendar quarters.

Results of Operations – Comparison of Three Months Ended September 30, 2018 and 2017

Consolidated Results

Net sales for the three months ended September 30, 2018 and 2017 are summarized by segment in the following table:

	<i>Three Months Ended September 30,</i>		<i>Net Change</i>
	<i>2018</i>	<i>2017</i>	
<i>(Dollars in millions)</i>			
Railroad and Utility Products and Services	\$ 185.0	\$ 131.7	40%
Performance Chemicals	108.2	109.7	-1%
Carbon Materials and Chemicals	149.5	143.4	4%
	\$ 442.7	\$ 384.8	15%

RUPS net sales increased by \$53.3 million or 40 percent compared to the prior year period. The sales increase was primarily due to the acquisitions of UIP and MAER in the current year as well as volume and pricing increases in the commercial tie market. These increases were offset by lower treating volumes of crossties in the Class I market. Sales of crossties in the Class I market declined by \$10.1 million primarily due to lower treating volumes resulting from a lack of dry crosstie inventory.

PC net sales decreased by \$1.5 million or one percent compared to the prior year period. The slightly lower sales were due primarily to key raw material shortages impacting industrial sales and unfavorable residential market trends resulting in lower volumes in North America for copper-based wood preservatives. In addition, price volatility in the lumber market limited customer inventory and reduced customer demand.

CMC net sales increased by \$6.1 million or four percent compared to the prior year period due mainly to higher sales prices for all product categories, partially offset by lower volumes of soft pitch in China and certain products in North America. In Australasia and Europe, higher sales prices for carbon pitch and carbon black feedstock were driven primarily by reduced supply. In the past several quarters, the overall market has tightened for coal tar and carbon pitch in China due to an ongoing shutdown of steel and coking capacity that does not meet environmental and emissions requirements.

Cost of sales as a percentage of net sales was 81 percent for the quarter ended September 30, 2018 compared to 76 percent in the prior year quarter due mainly to lower gross margins for PC driven by higher raw material costs along with lower sales volumes and gross margins from RUPS due to reduced volumes of crossties in the Class I market.

Depreciation and amortization for the quarter ended September 30, 2018 was \$0.9 million higher when compared to the prior year period due mainly to assets placed in service over the past year related to our new naphthalene unit construction at our CMC plant in Stickney, Illinois along with depreciation and amortization from our new acquisitions.

Impairment and restructuring expenses for the quarter ended September 30, 2018 were \$1.3 million lower when compared to the prior year period. Charges consisted of restructuring-related storage tank decommissioning costs and accelerated depreciation for the remaining fixed assets at our coal tar distillation facilities in Clairton, Pennsylvania, primarily in the prior year period, and Follansbee, West Virginia, primarily in the current year period.

Selling, general and administrative expenses for the quarter ended September 30, 2018 were \$4.7 million higher when compared to the prior year period due primarily to \$6.3 million of incremental costs within MAER and UIP and \$0.8 million of acquisition-related expenses, partially offset by a reduction in incentive compensation expense.

Other loss for the quarter ended September 30, 2018 was \$0.6 million due primarily to a loss on the sale of our specialty chemicals business in the United Kingdom within our CMC segment of \$0.9 million.

Interest expense for the quarter ended September 30, 2018 was \$4.6 million higher when compared to the prior year period primarily due to the higher average debt level to fund our acquisitions of MAER and UIP.

Income taxes for the quarter ended September 30, 2018 were \$8.6 million, an increase of \$3.8 million when compared to the prior period. The increase in income tax expense is primarily due to an increase in the effective income tax rate when compared to the prior year period and the prior quarter of 2018. Taxes as a percentage of pre-tax profit for the three months ended September 30, 2018 and September 30, 2017 were 55.5 percent and 19.4 percent, respectively. The increase in this percentage is due to the previously-described effects of recording additional income tax expense in the current period and due to a new provision of the Tax Act that requires an income inclusion of foreign corporations' global intangible low-tax income ("GILTI"). See "Note 10 – Income Taxes" for additional information on our tax rate.

Segment Results

Segment operating profit for the three months ended September 30, 2018 and 2017 is summarized by segment in the following table:

	<i>Three Months Ended September 30,</i>		<i>% Change</i>
	<i>2018</i>	<i>2017</i>	
<i>(Dollars in millions)</i>			
Operating profit (loss):			
Railroad and Utility Products and Services	\$ 5.8	\$ 9.5	-39%
Performance Chemicals	11.0	18.4	-40%
Carbon Materials and Chemicals	14.9	16.3	-9%
Corporate	(0.5)	(9.2)	95%
	\$ 31.2	\$ 35.0	-11%
Operating profit as a percentage of net sales:			
Railroad and Utility Products and Services	3.1%	7.2%	-4.1%
Performance Chemicals	10.2%	16.8%	-6.6%
Carbon Materials and Chemicals	10.0%	11.4%	-1.4%
	7.0%	9.1%	-2.1%

RUPS operating profit decreased by \$3.7 million or 39 percent compared to the prior year period. Operating profit as a percentage of net sales decreased to 3.1 percent from 7.2 percent in the prior year period. Operating profit as a percentage of net sales for the three months ended September 30, 2018 was impacted by reduced treating volumes of crossties to Class I customers due to a lack of dry crosstie inventory. Additionally, we have experienced margin pressure from higher costs of raw materials from saw mills due to increased demand coupled with inclement weather resulting in reduced supply.

PC operating profit decreased by \$7.4 million or 40 percent compared to the prior year period. Operating profit as a percentage of net sales decreased to 10.2 percent from 16.8 percent in the prior year quarter. Higher raw material prices and transportation costs along with short-term supply disruptions have combined with certain raw material shortages, which resulted in a slight decrease in sales for the three months ended September 30, 2018.

CMC operating profit decreased by \$1.4 million or nine percent compared to the prior year period. Operating profit as a percentage of net sales decreased to 10.0 percent from 11.4 percent in the prior year quarter. Operating profit for the three months ended September 30, 2018 was negatively impacted by reduced margins in China due to the impact of a temporary plant curtailment of our largest customer. These negative impacts were partially offset by higher sales prices in Europe, North America and Australia, particularly related to carbon pitch, as well as a benefit from a more streamlined and efficient cost structure.

Corporate operating loss in the prior year period consisted primarily of the pension settlement loss of \$8.8 million.

Results of Operations – Comparison of Nine Months Ended September 30, 2018 and 2017

Consolidated Results

Net sales for the nine months ended September 30, 2018 and 2017 are summarized by segment in the following table:

	<u>Nine Months Ended September 30,</u>		<i>Net Change</i>
	2018	2017	
<i>(Dollars in millions)</i>			
Railroad and Utility Products and Services	\$ 470.6	\$ 403.1	17%
Performance Chemicals	320.7	318.2	1%
Carbon Materials and Chemicals	493.5	388.1	27%
	\$ 1,284.8	\$ 1,109.4	16%

RUPS net sales increased by \$67.5 million or 17 percent compared to the prior year period. The sales increase was primarily due to the acquisitions of UIP and MAER in the current year as well as volume increases in the commercial tie and rail joint markets in the current year period. These increases were offset by lower treating volumes of Class I crossties. Sales of Class I crossties declined by \$62.8 million. This was primarily due to decreased spending in the rail industry, particularly the Class I market as certain Class I railroads have shifted from a treatment-service only model to having suppliers hold untreated inventory until the crossties have been treated. More recently, a lack of dry crosstie inventory has also contributed to reduced treating volumes.

PC net sales increased by \$2.5 million or one percent compared to the prior year period. The slightly higher sales were due primarily to higher volumes in North America for copper-based wood preservatives. However, the market demand was partially offset by higher customer development costs which are reflected as a reduction of sales. In addition, price volatility in the lumber market limited customer inventory and reduced customer demand for copper-based wood preservatives.

CMC net sales increased by \$105.4 million or 27 percent compared to the prior year period due mainly to higher sales prices for carbon pitch, carbon black feedstock and naphthalene partially offset by reduced volumes in North America, Australasia and Europe. In Australasia and Europe, higher sales prices for carbon pitch and carbon black feedstock were driven primarily by reduced supply in those regions. In the past several quarters, the overall market has tightened for coal tar and carbon pitch in China due to an ongoing shutdown of steel and coking capacity that does not meet environmental and emissions requirements.

Cost of sales as a percentage of net sales was 80 and 78 percent for the nine months ended September 30, 2018 and 2017, respectively. Higher gross margins for CMC were driven by higher sales prices for carbon pitch, carbon black feedstock and naphthalene. These were offset by lower gross margins for PC driven by higher raw material costs and gross margins from RUPS due to reduced sales volumes of crossties in the Class I market combined with reduced margins as a result of higher raw material supply costs.

Depreciation and amortization for the nine months ended September 30, 2018 was \$3.5 million higher when compared to the prior year period due mainly to assets placed in service over the past year related to our new naphthalene unit construction at our CMC plant in Stickney, Illinois along with depreciation and amortization from our acquisitions in the current year period.

Impairment and restructuring expenses for the nine months ended September 30, 2018 were \$2.0 million lower when compared to the prior year period. Charges consisted of restructuring-related storage tank decommissioning costs and accelerated depreciation for the remaining fixed assets at our coal tar distillation facilities in Clairton, Pennsylvania primarily in the prior year period and Follansbee, West Virginia primarily in the current year period.

Selling, general and administrative expenses for the nine months ended September 30, 2018 were \$26.2 million higher when compared to the prior year period due primarily to \$13.5 million of incremental costs within MAER and UIP, \$7.6 million of acquisition-related expenses and \$3.1 million from higher compensation expense.

Other loss for the nine months ended September 30, 2018 was \$1.1 million compared to other income of \$2.0 million in the prior year period. The other loss in the current year period is due primarily to losses on sales in the United Kingdom within our PC and CMC segment of \$1.1 million and \$0.9 million, respectively, while the prior year period included a gain on our sale of a joint venture interest in China within our CMC segment of \$1.3 million.

Interest expense for the nine months ended September 30, 2018 was \$8.2 million higher than the prior year period primarily due to the higher average debt level to fund our acquisitions of MAER and UIP.

Loss on extinguishment of debt for the nine months ended September 30, 2018 was \$13.3 million lower when compared to the prior year period. In the prior year period, all of our senior notes due 2019 were repurchased at a premium to carrying value and accordingly, we realized a loss on extinguishment of debt totaling \$10.0 million consisting of \$7.3 million for bond premium and bond tender expenses and \$2.7 million for the writeoff of unamortized debt issuance costs. In addition, we repaid our term loan in full and entered into a new revolving credit facility and realized a loss of \$3.3 million for the writeoff of unamortized debt issuance costs related to the term loan.

Income taxes for the nine months ended September 30, 2018 were \$24.4 million, an increase of \$12.0 million when compared to the prior period even though pre-tax income was similar to the prior period. The increase in income tax expense is primarily due to an increase in the effective income tax rate when compared to the prior year period. Also, income tax expense is higher due to an additional \$4.3 million of tax expense as a result of completing the analysis of the final impact of the Tax Act. Income taxes as a percentage of pre-tax income for the nine months ended September 30, 2018 and September 30, 2017 were 43.9 percent and 21.4 percent, respectively. The increase in this percentage is due to the previously-described tax expense for the final impact of the Tax Act and due to a new provision of the Tax Act that requires an income inclusion of foreign corporations' GILTI. See "Note 10 – Income Taxes" for additional information on our tax rate.

Segment Results

Segment operating profit for the nine months ended September 30, 2018 and 2017 is summarized by segment in the following table:

	<i>Nine Months Ended September 30,</i>		<i>% Change</i>
	<i>2018</i>	<i>2017</i>	
<i>(Dollars in millions)</i>			
Operating profit (loss):			
Railroad and Utility Products and Services	\$ 5.9	\$ 30.1	-80%
Performance Chemicals	28.2	56.6	-50%
Carbon Materials and Chemicals	64.6	24.9	159%
Corporate	(1.9)	(10.4)	82%
	\$ 96.8	\$ 101.2	-4%
Operating profit as a percentage of net sales:			
Railroad and Utility Products and Services	1.3%	7.5%	-6.2%
Performance Chemicals	8.8%	17.8%	-9.0%
Carbon Materials and Chemicals	13.1%	6.4%	6.7%
	7.5%	9.1%	-1.6%

RUPS operating profit decreased by \$24.2 million or 80 percent compared to the prior year period. Operating profit as a percentage of net sales decreased to 1.3 percent from 7.5 percent in the prior year period. Operating profit for the nine months ended September 30, 2018 was impacted by reduced treating volumes of crossties to Class I customers. Additionally, we have experienced margin pressure from higher costs of raw materials from saw mills due to increased demand. The segment was also negatively impacted by \$6.0 million in the current year period due to inventory purchase price fair value adjustments from the UIP acquisition.

PC operating profit decreased by \$28.4 million or 50 percent compared to the prior year period. Operating profit as a percentage of net sales decreased to 8.8 percent from 17.8 percent in the prior year period. Higher copper prices and transportation costs along with short-term supply disruptions more than offset our slight increase in sales for the nine months ended September 30, 2018. In addition, the current year period was unfavorably impacted by a net amount of \$8.0 million due to changes in unrealized gains and losses from our copper swap contracts as compared to the prior year period. Sales volumes slightly improved due to favorable market trends within Australasia in the agricultural, repair and remodeling markets; however, a change in sales mix contributed to an overall reduced margin.

CMC operating profit increased by \$39.7 million or 159 percent compared to the prior year period. Operating profit as a percentage of net sales increased to 13.1 percent from 6.4 percent in the prior year period. Operating profit for the nine months ended September 30, 2018 was positively affected by higher sales prices for most products and regions within the segment, primarily attributed to carbon pitch, and a more streamlined and efficient cost structure. These positive results were partially offset by reduced margins in China due to the impact of a temporary plant curtailment of our largest customer, lower sales volumes in North America, Australasia and Europe and higher raw material costs in Australasia and Europe.

Corporate operating loss in the prior year period consisted primarily of the pension settlement loss of \$8.8 million.

Cash Flow

Net cash provided by operating activities for the nine months ended September 30, 2018 was \$8.0 million compared to net cash provided by operating activities of \$48.5 million in the prior year period. The net decrease of \$40.5 million in cash provided by operations was due primarily to higher working capital usage of \$34.2 million compared to the prior year period principally as a result of an increase in inventory of \$20.3 million as one of our Class I railroad customers within

RUPS has shifted from a treatment-service only model to having suppliers hold untreated inventory until the crossties have been treated. An additional increase in inventory from CMC is due to higher raw material prices.

Net cash used in investing activities amounted to \$341.6 million for the nine months ended September 30, 2018 compared to net cash used in investing activities of \$38.0 million in the prior year period. The increase in cash used for investing activities of \$303.6 million is primarily due to \$264.0 million of net cash used for acquisitions as well as current year capital expenditures to expand production capacity at PC in the United States and continued spending on the new naphthalene unit construction at our CMC plant in Stickney, Illinois.

Net cash provided by financing activities was \$337.8 million for the nine months ended September 30, 2018 compared to \$18.5 million of net cash provided by financing activities in the prior year period. The cash provided by financing activities in the nine months ended September 30, 2018, reflected net borrowings of \$369.9 million to primarily fund acquisitions and capital expenditures and repurchases of common stock of \$31.7 million. The cash provided by financing activities in the prior year period reflected net borrowings of revolving credit of \$74.1 million and net repayments of long-term debt of \$41.4 million, payment of debt issuance costs of \$11.0 million from the issuance of new debt and repurchases of common stock of \$5.1 million.

Liquidity and Capital Resources

The Company has a \$600.0 million senior secured revolving credit facility and a \$100.0 million secured term loan (the "Revolving Credit Facility") with a maturity date of April 2023. The interest rate on the Revolving Credit Facility is variable and is based on LIBOR.

Restrictions on Dividends to Koppers Holdings

Koppers Holdings depends on the dividends from the earnings of Koppers Inc. and its subsidiaries to generate the funds necessary to meet its financial obligations, including the payment of any declared dividend of Koppers Holdings. The Revolving Credit Facility prohibits Koppers Inc. from making dividend payments to Koppers Holdings unless (1) such dividend payments are permitted by the indenture governing Koppers Inc.'s \$500 million Senior Notes due 2025 (the "2025 Notes"), (2) no event of default or potential default has occurred or is continuing under our Revolving Credit Facility, and (3) we are in pro forma compliance with our fixed charge coverage ratio covenant after giving effect to such dividend. The indenture governing the 2025 Notes restricts Koppers Inc.'s ability to finance our payment of dividends if (1) a default has occurred or would result from such financing, (2) Koppers Inc., or a restricted subsidiary of Koppers Inc. which is not a guarantor under the applicable indenture, is not able to incur additional indebtedness (as defined in the applicable indenture), and (3) the sum of all restricted payments (as defined in the applicable indenture) have exceeded the permitted amount (which we refer to as the "basket") at such point in time.

The basket is governed by a formula based on the sum of a beginning amount, plus or minus a percentage of Koppers Inc.'s consolidated net income (as defined in the applicable indenture), plus the net proceeds of Koppers Inc.'s qualified stock issuance or conversions of debt to qualified stock, plus the net proceeds from the sale of or a reduction in an investment (as defined in the applicable indenture) or the value of the assets of an unrestricted subsidiary which is designated a restricted subsidiary. At September 30, 2018, the basket totaled \$132.6 million. Notwithstanding such restrictions, the indenture governing the 2025 Notes permits an additional aggregate amount of \$0.30 per share each fiscal quarter to finance dividends on the capital stock of Koppers Holdings, whether or not there is any basket availability, provided that at the time of such payment, no default in the indenture has occurred or would result from financing the dividends.

In addition, certain required coverage ratios in Koppers Inc.'s Revolving Credit Facility may restrict the ability of Koppers Inc. to pay dividends. Koppers Holdings suspended its dividend in February 2015 and does not expect to declare any dividends for the foreseeable future.

Liquidity

Borrowings under the Revolving Credit Facility are secured by a first priority lien on substantially all of the assets of Koppers Inc., Koppers Holdings and their material domestic subsidiaries. The Revolving Credit Facility contains certain covenants for Koppers Inc. and its restricted subsidiaries that limit capital expenditures, additional indebtedness, liens, dividends and investments or acquisitions. In addition, such covenants give rise to events of default upon the failure by Koppers Inc. and its restricted subsidiaries to meet certain financial ratios.

As of September 30, we had \$131.3 million of unused revolving credit availability for working capital purposes after restrictions by various debt covenants and certain letter of credit commitments. As of September 30, 2018, \$32.0 million of commitments were utilized by outstanding letters of credit.

The following table summarizes our estimated liquidity as of September 30, 2018 (*dollars in millions*):

Cash and cash equivalents ⁽¹⁾	\$	62.5
Amount available under Revolving Credit Facility		131.3
Total estimated liquidity	\$	193.8

(1) Cash includes approximately \$57.7 million held by foreign subsidiaries.

Our estimated liquidity was \$263.6 million at December 31, 2017.

On April 10, 2018, we borrowed approximately \$200 million to fund the acquisition of UIP using our Revolving Credit Facility. Our remaining need for cash in the next twelve months relates primarily to contractual obligations which include debt service, purchase commitments and operating leases, as well as working capital, capital maintenance programs, liability transfers of closed facilities and the funding of plant consolidation and rationalizations. We may also use cash to pursue other potential strategic acquisitions or voluntary pension plan contributions. In October 2018, we completed the sale of our Clairton, Pennsylvania facility and, in doing so, transferred \$6.2 million of cash along with substantially all of the assets at the facility to the purchaser in exchange for the purchaser assuming certain historical and future obligations, including full responsibility for facility decommissioning, demolition and site restoration.

Capital expenditures in 2018, excluding acquisitions are expected to total approximately \$85 million to \$90 million and are expected to be primarily funded by cash from operations. We expect to utilize an additional \$30 to \$40 million of working capital during 2018, primarily due to increases in inventory and impacts on accounts receivable as we transition a customer to a revised railroad crosstie supply agreement.

Debt Covenants

The covenants that affect availability of the Revolving Credit Facility and which may restrict the ability of Koppers Inc. to pay dividends include the following financial ratios:

- The fixed charge coverage ratio, calculated as of the end of each fiscal quarter for the four fiscal quarters then ended, is not permitted to be less than 1.10. The fixed charge coverage ratio at September 30, 2018 was 1.53.
- The secured leverage ratio, calculated as of the end of each fiscal quarter for the four fiscal quarters then ended, is not permitted to exceed 3.25. The leverage ratio at September 30, 2018 was 2.63.

We are currently in compliance with all covenants governing the Revolving Credit Facility. Our continued ability to meet those financial ratios can be affected by events beyond our control, however, excluding possible acquisitions, we currently expect that our net cash flows from operating activities and funds available from our Revolving Credit Facility will be sufficient to provide for our working capital needs and capital spending requirements over the next twelve months.

Legal Matters

The information set forth in Note 18 to the Condensed Consolidated Financial Statements of Koppers Holdings Inc. included in Item 1 of this Part I is incorporated herein by reference.

Recently Issued Accounting Guidance

The information set forth in Note 2 to the Condensed Consolidated Financial Statements of Koppers Holdings Inc. included in Item 1 of this Part I is incorporated herein by reference.

Critical Accounting Policies

There have been no material changes to the Company's critical accounting policies as disclosed in the Company's Annual Report on Form 10-K for the year ended December 31, 2017.

Environmental and Other Matters

The information set forth in Note 18 to the Condensed Consolidated Financial Statements of Koppers Holdings Inc. included in Item 1 of this Part I is incorporated herein by reference.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

There are no material changes to the disclosure on this matter made in the Company's Annual Report on Form 10-K for the year ended December 31, 2017.

ITEM 4. CONTROLS AND PROCEDURES

The Company's management, with the participation of the Chief Executive Officer and Chief Financial Officer and utilizing the Committee of Sponsoring Organizations of the Treadway Commission (COSO) Internal Control – Integrated Framework (2013), have evaluated the effectiveness of the Company's disclosure controls and procedures, as defined in

Rules 13a-15(e) and 15d-15(e) of the Securities Exchange Act of 1934 as of the end of the period covered by this report. Based on that evaluation, the Chief Executive Officer and Chief Financial Officer have concluded that these controls and procedures were effective as of the end of the period covered by this report. There was no change in the Company's internal control over financial reporting (as such term is defined in Rule 13a-15(f) under the Exchange Act) that occurred during the quarter ended September 30, 2018 that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting.

Beginning January 1, 2018, we implemented ASC 606, Revenue from Contracts with Customers. Although the new revenue standard is expected to have an immaterial impact on our ongoing net income, we did implement changes to our processes related to revenue recognition and the control activities with them. These included the development of new policies based on the five-step model provided in the new revenue standard, new training, ongoing contract review requirements, and gathering of information provided for disclosures.

On April 10, 2018, the Company acquired UIP and on February 28, 2018, the Company acquired MAER. In conducting our evaluation of the effectiveness of internal controls over financial reporting, we will elect to exclude UIP and MAER when conducting our annual evaluation of internal controls as permitted by applicable regulations. The Company is implementing internal controls over significant processes specific to the acquisitions that management believes are appropriate in consideration of related integration of operations, systems, control activities, and accounting for the acquisitions and acquisition-related transactions. As of the date of this Quarterly Report on Form 10-Q, we are in the process of further integrating the acquired UIP and MAER operations into our overall internal controls over financial reporting.

PART II—OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS

The information set forth in Note 18 to the Condensed Consolidated Financial Statements of Koppers Holdings Inc. included in Item 1 of Part I of this report is incorporated herein by reference.

ITEM 1A. RISK FACTORS

There have been no material changes to the Risk Factors previously disclosed in Item 1A of the Company's Annual Report on Form 10-K for the year ended December 31, 2017.

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

The following table sets forth information regarding Koppers Holdings' repurchases of shares of its common stock during the three months ended September 30, 2018:

<i>Period</i>	<i>Total Number of Common Shares Purchased (1)</i>	<i>Average Price paid per Common Share</i>	<i>Total Number of Common Shares Purchased as Part of Publicly announced Plans or Programs</i>	<i>Approximate Dollar Value of Common Shares that May Yet be Purchased Under the Plans or Programs (Dollars in Millions)</i>
July 1 – July 31	0	\$ 0.00	0	\$ 0.0
August 1 – August 31	481,104	\$ 35.31	481,104	\$ 31.9
September 1 – September 30	203,684	\$ 34.94	203,684	\$ 24.8

(1) On November 2, 2011, the board of directors approved a common stock repurchase program to allow for the repurchase of up to \$75.0 million of common stock from time to time on the open market or in privately negotiated transactions. This column discloses the number of shares purchased on the open market pursuant to such program during the indicated time periods.

ITEM 3. DEFAULTS UPON SENIOR SECURITIES

Not applicable.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

ITEM 5. OTHER INFORMATION

Not applicable.

ITEM 6. EXHIBITS

12.1*	Computation of ratio of earnings to fixed charges
31.1*	Certification of Chief Executive Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2*	Certification of Chief Financial Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1*	Certification of Chief Executive Officer and Chief Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS*	XBRL Instance Document
101.SCH*	XBRL Taxonomy Extension Schema Document
101.CAL*	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF*	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB*	XBRL Taxonomy Extension Label Linkbase Document
101.PRE*	XBRL Taxonomy Extension Presentation Linkbase Document

* Filed herewith.

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.

Date: November 8, 2018

KOPPERS HOLDINGS INC.
(REGISTRANT)

By: /s/ MICHAEL J. ZUGAY

Michael J. Zugay
Chief Financial Officer and Treasurer
(Principal Financial Officer,
Principal Accounting Officer and Duly Authorized Officer)

KOPPERS HOLDINGS INC.
RATIO OF EARNINGS (LOSS) TO FIXED CHARGES
(Dollars in millions, except ratios)

	2013	2014	2015	2016	2017	Nine Months Ended September 30, 2018
Earnings (loss):						
Income (loss) from continuing operations before taxes	\$ 77.0	\$ (5.9)	\$ (80.1)	\$ 38.5	\$ 60.3	\$ 55.6
Deduct: Equity earnings net of dividends	0.8	(1.6)	(3.1)	(1.0)	0.0	0.0
Deduct: Pre-tax income of noncontrolling interests	0.0	0.0	0.0	0.0	1.4	5.6
Add: Fixed charges	39.4	51.8	64.6	66.4	58.1	51.3
Earnings (loss) as defined	\$ 115.6	\$ 47.5	\$ (12.4)	\$ 105.9	\$ 117.0	\$ 101.3
Fixed charges:						
Interest expensed	\$ 26.8	\$ 39.1	\$ 50.7	\$ 50.8	\$ 42.5	\$ 40.1
Other	0.4	1.3	0.0	0.0	0.0	0.0
Rents	39.4	36.7	44.7	50.3	50.4	36.2
Interest factor	31%	31%	31%	31%	31%	31%
Estimated interest component of rent	12.2	11.4	13.9	15.6	15.6	11.2
Total fixed charges	\$ 39.4	\$ 51.8	\$ 64.6	\$ 66.4	\$ 58.1	\$ 51.3
Ratio of earnings (loss) to fixed charges(1)	2.93	0.92	(0.19)	1.59	2.01	1.97

(1) In 2014 and 2015, earnings did not cover fixed charges by \$4.3 million and \$77.0 million, respectively.

CERTIFICATIONS

I, Leroy M. Ball, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Koppers Holdings Inc.;
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-5(f) and 15d-15(f)) for the registrant and have:
 - a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: November 8, 2018

/s/ LEROY M. BALL, JR.
Leroy M. Ball, Jr.
President and Chief Executive Officer

CERTIFICATIONS

I, Michael J. Zugay, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Koppers Holdings Inc.;
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-5(f) and 15d-15(f)) for the registrant and have:
 - a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: November 8, 2018

/s/ MICHAEL J. ZUGAY
Michael J. Zugay
Chief Financial Officer and Treasurer

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report of Koppers Holdings Inc. (the "Company") on Form 10-Q for the quarter ending September 30, 2018 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), each of the undersigned hereby certifies in his capacity as an officer of the Company, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

- (1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ LEROY M. BALL, JR.
Leroy M. Ball, Jr.
Chief Executive Officer
November 8, 2018

/s/ MICHAEL J. ZUGAY
Michael J. Zugay
Chief Financial Officer and Treasurer
November 8, 2018