
UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 10-Q

(Mark One)

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

For the quarterly period ended March 31, 2019

OR

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

For the transition period from _____ to _____

Commission file number 333-211719

ASHLAND GLOBAL HOLDINGS INC.

(a Delaware corporation)

I.R.S. No. 81-2587835

50 E. RiverCenter Boulevard

Covington, Kentucky 41011

Telephone Number (859) 815-3333

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

Indicate by check mark whether the Registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (232.405 of this chapter) during the preceding 12 months (or for such shorter period that the Registrant was required to submit such files). Yes No

Indicate by check mark whether the Registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act. (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 provided pursuant to Section 13(a) of the Exchange Act.

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

At March 31, 2019, there were 62,712,232 shares of Registrant's Common Stock outstanding.

PART I - FINANCIAL INFORMATION

ITEM 1. FINANCIAL STATEMENTS

**ASHLAND GLOBAL HOLDINGS INC. AND CONSOLIDATED SUBSIDIARIES
STATEMENTS OF CONSOLIDATED COMPREHENSIVE INCOME (LOSS)**

(In millions except per share data - unaudited)	Three months ended		Six months ended	
	March 31		March 31	
	2019	2018	2019	2018
Sales	\$ 667	\$ 672	\$ 1,243	\$ 1,253
Cost of sales	469	449	893	851
Gross profit	198	223	350	402
Selling, general and administrative expense	136	146	279	300
Research and development expense	17	18	34	37
Equity and other income (loss)	(1)	4	—	2
Operating income (loss)	44	63	37	67
Net interest and other expense (income)	(3)	24	52	49
Other net periodic benefit income (loss)	(1)	1	17	1
Net income (loss) on divestitures	—	—	(3)	(1)
Income (loss) from continuing operations before income taxes	46	40	(1)	18
Income tax expense (benefit)	1	(2)	25	8
Income (loss) from continuing operations	45	42	(26)	10
Income from discontinued operations (net of income taxes)	31	31	54	59
Net income (loss)	\$ 76	\$ 73	\$ 28	\$ 69

PER SHARE DATA

Basic earnings per share - Note L

Income (loss) from continuing operations	\$ 0.72	\$ 0.66	\$ (0.41)	\$ 0.15
Income from discontinued operations	0.49	0.51	0.86	0.95
Net income (loss)	\$ 1.21	\$ 1.17	\$ 0.45	\$ 1.10

Diluted earnings per share - Note L

Income (loss) from continuing operations	\$ 0.71	\$ 0.65	\$ (0.41)	\$ 0.15
Income from discontinued operations	0.48	0.50	0.86	0.93
Net income (loss)	\$ 1.19	\$ 1.15	\$ 0.45	\$ 1.08

COMPREHENSIVE INCOME (LOSS)

Net income (loss)	\$ 76	\$ 73	\$ 28	\$ 69
Other comprehensive income (loss), net of tax				
Unrealized translation gain (loss)	(9)	55	(40)	58
Pension and postretirement obligation adjustment	—	—	(6)	—
Net change in investment securities	—	(6)	—	2
Other comprehensive income (loss)	(9)	49	(46)	60
Comprehensive income (loss)	\$ 67	\$ 122	\$ (18)	\$ 129

SEE NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS.

ASHLAND GLOBAL HOLDINGS INC. AND CONSOLIDATED SUBSIDIARIES
CONDENSED CONSOLIDATED BALANCE SHEETS

(In millions - unaudited)	March 31, 2019	September 30, 2018
ASSETS		
Current assets		
Cash and cash equivalents	\$ 164	\$ 294
Accounts receivable (a)	522	522
Inventories - Note F	599	596
Other assets	63	60
Held for sale - Note B	739	240
Total current assets	2,087	1,712
Noncurrent assets		
Property, plant and equipment		
Cost	3,167	3,172
Accumulated depreciation	1,580	1,526
Net property, plant and equipment	1,587	1,646
Goodwill - Note G	2,279	2,304
Intangibles - Note G	1,135	1,185
Restricted investments - Note E	296	312
Asbestos insurance receivable - Note K	175	179
Deferred income taxes	28	28
Other assets	411	416
Held for sale - Note B	—	477
Total noncurrent assets	5,911	6,547
Total assets	\$ 7,998	\$ 8,259
LIABILITIES AND EQUITY		
Current liabilities		
Short-term debt - Note H	\$ 261	\$ 254
Trade and other payables	280	331
Accrued expenses and other liabilities	232	328
Held for sale - Note B	147	163
Total current liabilities	920	1,076
Noncurrent liabilities		
Long-term debt - Note H	2,275	2,275
Asbestos litigation reserve - Note K	587	612
Deferred income taxes	283	286
Employee benefit obligations - Note J	145	156
Other liabilities	426	422
Held for sale - Note B	—	26
Total noncurrent liabilities	3,716	3,777
Commitments and contingencies - Note K		
Stockholders' equity - Note M	3,362	3,406
Total liabilities and stockholders' equity	\$ 7,998	\$ 8,259

(a) Accounts receivable includes an allowance for doubtful accounts of \$3 million at both March 31, 2019 and September 30, 2018.

SEE NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS.

ASHLAND GLOBAL HOLDINGS INC. AND CONSOLIDATED SUBSIDIARIES
STATEMENT OF CONSOLIDATED EQUITY

(In millions - unaudited)	Common stock	Paid-in capital	Retained earnings	Accumulated other comprehensive income (loss) (a)	Total
BALANCE AT SEPTEMBER 30, 2018	\$ 1	\$ 946	\$ 2,750	\$ (291)	\$ 3,406
Adoption of new accounting pronouncements (b)			34	(34)	—
Total comprehensive income (loss)					
Net income (loss)			28		28
Other comprehensive income (loss)				(46)	(46)
Regular dividends, \$0.50 per common share			(32)		(32)
Common shares issued under stock incentive and other plans (c)		6			6
BALANCE AT MARCH 31, 2019	<u>\$ 1</u>	<u>\$ 952</u>	<u>\$ 2,780</u>	<u>\$ (371)</u>	<u>\$ 3,362</u>

(a) At March 31, 2019 and September 30, 2018, the after-tax accumulated other comprehensive loss attributable to Ashland of \$371 million and \$291 million, respectively, was each comprised of net unrealized translation losses of \$368 million and \$328 million, respectively, net unrealized gains on investment securities of zero and \$34 million, respectively, and unrecognized prior service costs as a result of certain employee benefit plan amendments of \$3 million and unrecognized prior services credits of \$3 million, respectively.

(b) Represents the cumulative-effect adjustment related to the adoption of the new guidance related to the accounting for equity securities and the tax effects of intercompany transfers during fiscal 2019. See Note A for more information.

(c) Common shares issued were 234,352 for the six months ended March 31, 2019.

SEE NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS.

ASHLAND GLOBAL HOLDINGS INC. AND CONSOLIDATED SUBSIDIARIES
STATEMENTS OF CONDENSED CONSOLIDATED CASH FLOWS

(In millions - unaudited)	Six months ended March 31	
	2019	2018
CASH FLOWS PROVIDED (USED) BY OPERATING ACTIVITIES FROM CONTINUING OPERATIONS		
Net income (loss)	\$ 28	\$ 69
Income from discontinued operations (net of income taxes)	(54)	(59)
Adjustments to reconcile income from continuing operations to cash flows from operating activities:		
Depreciation and amortization	163	142
Original issue discount and debt issuance costs amortization	4	3
Deferred income taxes	2	4
Distributions from affiliates	—	1
Stock based compensation expense	13	13
Loss (income) from restricted investments	(2)	(8)
Excess tax benefit on stock based compensation	2	2
Net (income) loss on divestitures	3	1
Impairments	5	—
Pension contributions	(3)	(7)
Gain on pension and other postretirement plan remeasurements	(18)	—
Change in operating assets and liabilities (a)	(137)	(164)
Total cash flows provided (used) by operating activities from continuing operations	<u>6</u>	<u>(3)</u>
CASH FLOWS PROVIDED (USED) BY INVESTING ACTIVITIES FROM CONTINUING OPERATIONS		
Additions to property, plant and equipment	(70)	(52)
Proceeds from disposal of property, plant and equipment	4	1
Purchase of operations	(1)	(11)
Proceeds from sales of operations	—	1
Life insurance payments	—	(37)
Net purchase of funds restricted for specific transactions	(2)	(8)
Reimbursement from restricted investments	20	17
Proceeds from sales of securities	156	17
Purchase of securities	(156)	(17)
Proceeds from the settlement of derivative instruments	2	—
Payments for the settlement of derivative instruments	(2)	(3)
Total cash flows used by investing activities from continuing operations	<u>(49)</u>	<u>(92)</u>
CASH FLOWS PROVIDED (USED) BY FINANCING ACTIVITIES FROM CONTINUING OPERATIONS		
Repayment of long-term debt	(8)	(3)
Proceeds from (repayment of) short-term debt	11	(181)
Cash dividends paid	(31)	(28)
Stock based compensation employee withholding taxes paid in cash	(8)	(8)
Total cash flows used by financing activities from continuing operations	<u>(36)</u>	<u>(220)</u>
CASH PROVIDED (USED) BY CONTINUING OPERATIONS		
Cash used by discontinued operations		
Operating cash flows	(41)	(21)
Investing cash flows	(8)	(8)
Total cash used by discontinued operations	<u>(49)</u>	<u>(29)</u>
Effect of currency exchange rate changes on cash and cash equivalents	(2)	3
INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS	<u>(130)</u>	<u>(341)</u>
CASH AND CASH EQUIVALENTS - BEGINNING OF PERIOD	<u>294</u>	<u>566</u>
CASH AND CASH EQUIVALENTS - END OF PERIOD	<u>\$ 164</u>	<u>\$ 225</u>

(a) Excludes changes resulting from operations acquired, sold or held for sale.

SEE NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS.

ASHLAND GLOBAL HOLDINGS INC. AND CONSOLIDATED SUBSIDIARIES
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS

NOTE A – SIGNIFICANT ACCOUNTING POLICIES

Basis of presentation

The accompanying unaudited Condensed Consolidated Financial Statements have been prepared in accordance with accounting principles generally accepted in the United States for interim financial reporting and Securities and Exchange Commission (SEC) regulations. In the opinion of management, all adjustments considered necessary for a fair presentation have been included. Additionally, certain prior period data, primarily related to discontinued operations, have been reclassified in the Consolidated Financial Statements and accompanying notes to conform to the current period presentation, as further described in this section. These statements omit certain information and footnote disclosures required for complete annual financial statements and, therefore, should be read in conjunction with Ashland Global Holdings Inc.'s (Ashland or the Company) Annual Report on Form 10-K for the fiscal year ended September 30, 2018. Results of operations for the period ended March 31, 2019 are not necessarily indicative of the expected results for the remaining quarters in the fiscal year.

On November 15, 2018, Ashland announced that it had signed a definitive agreement to sell substantially all of the assets and liabilities of its Composites segment and Intermediates and Solvents facility in Marl, Germany (Marl facility). This expected divestiture represents a strategic shift in Ashland's business and, in accordance with U.S. GAAP, qualified as a discontinued operation. As a result, the operating results and cash flows related to Composites and the Marl facility have been reflected as discontinued operations in the Statements of Consolidated Comprehensive Income (Loss) and Statements of Condensed Consolidated Cash Flows. The assets and liabilities that are to be sold have met the requirements to be classified within the Condensed Consolidated Balance Sheets under a held for sale designation. See Notes B and C for additional information on this expected divestiture.

As a result of classifying the Composites reporting segment as a discontinued operation, Ashland is now comprised of two reportable segments: Specialty Ingredients and Intermediates and Solvents. The financial information reported for Intermediates and Solvents excludes the activity from the Marl facility due to the expected divestiture.

Use of estimates, risks and uncertainties

The preparation of Ashland's Condensed Consolidated Financial Statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues and expenses, and the disclosures of contingent assets and liabilities. Significant items that are subject to such estimates and assumptions include, but are not limited to, long-lived assets (including goodwill and other intangible assets), income taxes and liabilities and receivables associated with asbestos litigation and environmental remediation. Although management bases its estimates on historical experience and various other assumptions that are believed to be reasonable under the circumstances, actual results could differ significantly from the estimates under different assumptions or conditions.

Ashland's results are affected by domestic and international economic, political, legislative, regulatory and legal actions. Economic conditions, such as recessionary trends, inflation, interest and monetary exchange rates, government fiscal policies and changes in the prices of certain key raw materials, can have a significant effect on operations. While Ashland maintains reserves for anticipated liabilities and carries various levels of insurance, Ashland could be affected by civil, criminal, regulatory or administrative actions, claims or proceedings relating to asbestos, environmental remediation or other matters.

New accounting pronouncements

A description of new U.S. GAAP accounting standards issued or adopted during the current year is required in interim financial reporting. A detailed listing of new accounting standards relevant to Ashland is included in the Annual Report on Form 10-K for the fiscal year ended September 30, 2018. The following standards relevant to Ashland were either issued or adopted in the current period or will become effective in a subsequent period.

Revenue recognition

In May 2014, the FASB issued accounting guidance outlining a single comprehensive five step model for entities to use in accounting for revenue arising from contracts with customers (ASC 606 Revenue from Contracts with Customers). The new guidance and subsequent amendments to it superseded most current revenue recognition guidance, in an effort to converge the revenue recognition principles within U.S. GAAP. This new guidance required entities to disclose certain quantitative and qualitative information regarding the nature, amount, timing and uncertainty of qualifying revenue and cash flows arising from contracts with customers. Entities had the option of using a full retrospective or a modified retrospective approach to adopt the new guidance. This guidance became effective for Ashland on October 1, 2018.

Ashland formed an implementation team that evaluated the impact of the new standard on the Condensed Consolidated Financial Statements and the adoption method options available as well as the overall impact the new guidance would have on the organization. The assessment process consisted of categorizing Ashland's revenue streams and reviewing the current internal accounting policies and practices to determine potential differences that could result from applying the requirements of the new standard to revenue contracts. Additional discussions and meetings with each revenue stream team occurred to solicit input, identify potential impacts and appropriate changes to Ashland's business processes, systems and controls to support the revenue recognition and disclosure requirements under the new standard.

Ashland elected to adopt this standard using the modified retrospective approach and determined that the overall impact was not material to the Condensed Consolidated Financial Statements. As a result, no cumulative-effect adjustment was made to retained earnings in the Condensed Consolidated Balance Sheets. Further, there has been no significant change to the manner and timing of recognizing revenue. However, there are significant additional disclosures within the Notes to Condensed Consolidated Financial Statements. ASC 606 requires disclosure of disaggregated revenue into categories that depict the nature of how Ashland's revenue and cash flows are affected by economic factors. Additionally, Ashland is required to disclose additional information related to its revenue recognition policy. See Note O for these additional disclosures.

Leases

In February 2016, the FASB issued new accounting guidance related to lease transactions. The main objective of this guidance is to increase transparency and comparability among organizations by requiring lessees to recognize assets and liabilities on the balance sheet for the right to use assets and obligations created by leases and to disclose key information about leasing arrangements. The presentation of the Statements of Consolidated Comprehensive Income (Loss) and the Statements of Condensed Consolidated Cash Flows is largely unchanged under this guidance. This guidance retains a distinction between finance leases and operating leases, and the classification criteria for distinguishing between finance leases and operating leases are substantially similar to the classification criteria for distinguishing between capital leases and operating leases in the current accounting literature. The guidance will become effective for Ashland on October 1, 2019 and it will have a significant effect on Ashland's Condensed Consolidated Balance Sheet and disclosures.

In July 2018, the FASB amended this guidance to give entities the option to apply the standard at the adoption date and recognize a cumulative-effect adjustment to the opening balance of retained earnings in the period of adoption. Ashland currently intends to utilize this transition method upon adopting the guidance.

Ashland has formed an implementation team and is quantifying the impact that this guidance will have within its Condensed Consolidated Financial Statements.

Other accounting pronouncements

In January 2016, the FASB issued accounting guidance related to the recognition and measurement as well as the presentation and disclosures for certain financial instruments. Most notably, the guidance requires entities to measure equity investments at fair value and to recognize any changes in fair value in net income rather than accumulated other comprehensive income (AOCI). The guidance became effective for Ashland on October 1, 2018 and resulted in Ashland recording a cumulative-effect adjustment to reclassify net after-tax unrealized gains of \$34 million on its equity securities from AOCI to retained earnings. In the current period, the adoption of this guidance resulted in a significant impact to net income as Ashland recognized investment gains of \$27 million for the three months ended March 31, 2019 and investment losses of \$3 million for the six months ended March 31, 2019 within the net interest and other expense (income) caption on the Statement of Consolidated Comprehensive Income (Loss). The impact of this new guidance could continue to have a material impact on Ashland's Statements of Consolidated Comprehensive Income (Loss) in prospective periods depending on the fluctuations of unrealized gains and losses within the investment securities portfolio. For current and future periods, the changes in fair value of the equity securities will no longer be classified within other comprehensive income under the new guidance. For further information on Ashland's equity securities, see Note E.

In October 2016, the FASB issued new accounting guidance which requires entities to recognize the income tax effects of intercompany transfers of assets other than inventory when the transfer occurs. This guidance eliminates the exception under previous U.S. GAAP that the income tax effects of all intercompany transfers of assets other than inventory be deferred until the assets are sold to a third party or otherwise recovered through use. This guidance became effective for Ashland on October 1, 2018 and was applied using a modified retrospective approach. Consequently, Ashland recorded a cumulative-effect adjustment to reclassify less than \$1 million from other current assets and deferred taxes to retained earnings.

NOTE B – DIVESTITURES

Composites and Marl facility

On November 15, 2018, Ashland announced that it had signed a definitive agreement to sell its Composites segment and Intermediates and Solvents Marl facility to INEOS Enterprises in a transaction valued at \$1.1 billion. Ashland will retain the remaining Intermediates and Solvents facility in Lima, Ohio primarily for its own internal business use. Ashland currently expects net proceeds from the sale to total approximately \$1.0 billion and anticipates that the proceeds will be primarily used to reduce outstanding debt and other corporate purposes.

The transaction is expected to close by late summer, contingent on certain customary regulatory approvals, standard closing conditions and completion of required employee information and consultation processes. Upon the closing of this transaction, Ashland currently expects to recognize a gain within the Statements of Consolidated Comprehensive Income (Loss).

Since this transaction represents a strategic shift in Ashland's business and had a major effect on Ashland's operations and financial results, the operating results and cash flows related to Composites and the Marl facility have been reflected as discontinued operations in the Statements of Consolidated Comprehensive Income (Loss) and Statements of Condensed Consolidated Cash Flows. See Note C for the results of operations for Composites and the Marl facility for all periods presented.

Certain indirect corporate costs included within the selling, general and administrative expense caption of the Statements of Consolidated Comprehensive Income (Loss) that were previously allocated to the Composites segment and Marl facility do not qualify for classification within discontinued operations and are now reported as selling, general and administrative expense within continuing operations on a consolidated basis and within the Unallocated and other segment. These costs were \$12 million during both the three months ended March 31, 2019 and 2018, and \$23 million during both the six months ended March 31, 2019 and 2018. Ashland is currently implementing plans to eliminate these costs as part of the global restructuring program.

Subsequent to the completion of the sale, Ashland expects to provide certain transition services to INEOS Enterprises for a fee. While the transition services are expected to vary in duration depending upon the type of service provided, Ashland expects to reduce costs as the transition services are completed.

Other corporate assets

Ashland is currently in the process of pursuing options to divest several corporate assets, primarily related to land and buildings, that are expected to close within the next 12 months. The net property, plant and equipment value related to these sites was \$6 million at March 31, 2019 and \$9 million at September 30, 2018. During the three months ended March 31, 2019, a \$5 million impairment charge was recorded within the selling, general and administrative expense caption of the Statement of Consolidated Comprehensive Income (Loss) for one of these corporate assets.

Held for sale classification

The assets and liabilities of Composites and the Marl facility along with other corporate asset divestitures for current and prior periods have been reflected as assets and liabilities held for sale. As a result, in accordance with U.S. GAAP standards, depreciation and amortization are no longer being recorded within the Statements of Consolidated Comprehensive Income (Loss) and the Condensed Consolidated Balance Sheets. These assets and liabilities are comprised of the following components:

(In millions)	March 31 2019	September 30 2018
Accounts receivable, net (a)	\$ 173	\$ 159
Inventories	67	67
Net property, plant and equipment	254	—
Goodwill	143	—
Intangibles	38	—
Deferred income taxes	7	—
Other assets	57	14
Current assets held for sale	<u>\$ 739</u>	<u>\$ 240</u>
Net property, plant and equipment	\$ —	\$ 254
Goodwill	—	144
Intangibles	—	40
Deferred income taxes	—	7
Other assets	—	32
Noncurrent assets held for sale	<u>\$ —</u>	<u>\$ 477</u>
Trade and other payables	\$ 112	\$ 152
Employee benefit obligations	22	—
Accrued expenses and other liabilities	10	11
Other liabilities	3	—
Current liabilities held for sale	<u>\$ 147</u>	<u>\$ 163</u>
Employee benefit obligations	—	23
Other liabilities	—	3
Noncurrent liabilities held for sale	<u>\$ —</u>	<u>\$ 26</u>

(a) Accounts receivable included an allowance for doubtful accounts of \$3 million at both March 31, 2019 and September 30, 2018.

NOTE C— DISCONTINUED OPERATIONS

In previous periods, Ashland has divested certain businesses that have qualified as discontinued operations. The operating results from these divested businesses and subsequent adjustments related to ongoing assessments of certain retained liabilities and tax items have been recorded within the discontinued

operations caption in the Statements of Consolidated Comprehensive Income (Loss) for all periods presented and are discussed further within this note.

As previously described in Note B, Ashland announced that it had signed a definitive agreement on November 15, 2018 to sell its Composites segment and Intermediates and Solvents Marl facility. Ashland determined that this expected divestiture qualified as a discontinued operation, in accordance with U.S. GAAP, since it represents a strategic shift for Ashland and had a major effect on Ashland's operations and financial results. Accordingly, the operating results and cash flows for Composites and the Marl facility have been classified as discontinued operations within the Condensed Consolidated Financial Statements for all periods presented.

Ashland completed the distribution of its remaining shares of common stock of Valvoline Inc. on May 12, 2017. Ashland determined that the Valvoline separation qualified as a discontinued operation, in accordance with U.S. GAAP, since it represented a strategic shift for Ashland and had a major effect on Ashland's operations and financial results. Ashland has made subsequent tax adjustments to the discontinued operations caption related to this transaction.

Components of amounts reflected in the Statements of Consolidated Comprehensive Income (Loss) related to discontinued operations are presented in the following table for the three and six months ended March 31, 2019 and 2018.

(In millions)	Three months ended March 31		Six months ended March 31	
	2019	2018	2019	2018
Income (loss) from discontinued operations (net of tax)				
Composites/Marl facility	\$ 28	\$ 24	\$ 53	\$ 49
Valvoline	1	4	1	7
Asbestos-related litigation	—	3	—	3
Water Technologies	2	—	1	—
Distribution	—	—	(1)	—
	<u>\$ 31</u>	<u>\$ 31</u>	<u>\$ 54</u>	<u>\$ 59</u>

The following table presents a reconciliation of the captions within Ashland's Statements of Consolidated Comprehensive Income (Loss) for the income (loss) from discontinued operations attributable to Composites and the Marl facility for the three and six months ended March 31, 2019 and 2018. Interest expense was allocated to discontinued operations based on Ashland's mandatory debt prepayments upon the disposition of Composites and the Marl facility.

(In millions)	Three months ended March 31		Six months ended March 31	
	2019	2018	2019	2018
Income (loss) from discontinued operations attributable to Composites/Marl facility				
Sales	\$ 284	\$ 302	\$ 559	\$ 563
Cost of sales	(217)	(250)	(434)	(461)
Selling, general and administrative expense	(19)	(17)	(41)	(34)
Research and development expense	(3)	(3)	(6)	(5)
Equity and other income (expense)	—	(1)	3	2
Pretax operating income of discontinued operations	45	31	81	65
Net interest and other (expense) income	(6)	(5)	(12)	(9)
Pretax income of discontinued operations	39	26	69	56
Income tax expense	(11)	(2)	(16)	(7)
Income from discontinued operations	<u>\$ 28</u>	<u>\$ 24</u>	<u>\$ 53</u>	<u>\$ 49</u>

NOTE D – RESTRUCTURING ACTIVITIES

Ashland periodically implements company-wide restructuring programs related to acquisitions, divestitures and other cost reduction programs in order to enhance profitability through streamlined operations and an improved overall cost structure.

Severance costs

During fiscal 2018, Ashland announced and initiated a company-wide cost reduction program as a result of ongoing strategic asset plans and activities. As part of this restructuring program, Ashland announced a voluntary severance offer (VSO) to certain qualifying employees that was formally approved during 2018. Additionally, during fiscal 2018, an involuntary program for employees was also initiated as part of the restructuring program. The VSO and involuntary programs resulted in a severance charge of \$36 million during the September 2018 quarter of fiscal 2018.

During the three and six months ended March 31, 2019, these programs resulted in additional severance expense of zero and \$4 million, respectively, which was primarily recorded within the selling, general and administrative expense caption of the Statement of Consolidated Comprehensive Income (Loss). As of March 31, 2019, the severance reserve for the company-wide restructuring program was \$22 million.

Facility costs

Ashland incurred \$1 million and \$8 million of lease abandonment charges during the three and six months ended March 31, 2019, respectively, due to the exit from certain office facilities in conjunction with the company-wide cost reduction program. No charges were incurred for the three or six months ended March 31, 2018. The costs related to these reserves were recorded within the selling, general and administrative expense caption of the Statements of Consolidated Comprehensive Income (Loss) and are paid over the remaining lease terms. As of March 31, 2019, the reserve for facility costs was \$10 million.

The following table details at March 31, 2019, the amount of restructuring reserves related to the programs discussed above, and the related activity in these reserves during the six months ended March 31, 2019. The severance and facility cost reserves were primarily recorded within accrued expenses and other liabilities in the Condensed Consolidated Balance Sheet as of March 31, 2019.

(In millions)	Severance costs	Facility costs	Total
Balance as of September 30, 2018	36	7	43
Restructuring reserve	4	8	12
Utilization (cash paid)	(18)	(5)	(23)
Balance as of March 31, 2019	<u>\$ 22</u>	<u>\$ 10</u>	<u>32</u>

Plant restructuring

During the three and six months ended March 31, 2019, Specialty Ingredients committed to a cost reduction plan within an existing manufacturing facility. As a result, Ashland incurred restructuring charges of \$20 million and \$47 million for the three and six months ended March 31, 2019, respectively. These charges were recorded primarily within the cost of sales caption of the Statements of Consolidated Comprehensive Income (Loss) consisting of \$38 million of accelerated depreciation and amortization, \$5 million of severance and \$4 million of plant closure costs during the six months ended March 31, 2019. As of March 31, 2019, there was a restructuring reserve of \$5 million related to the \$5 million of severance costs and \$4 million related to the \$4 million of plant closure costs. The restructuring plan is expected to be completed during fiscal 2019.

NOTE E – FAIR VALUE MEASUREMENTS

As required by U.S. GAAP, Ashland uses applicable guidance for defining fair value, the initial recording and periodic remeasurement of certain assets and liabilities measured at fair value and related disclosures for instruments measured at fair value. Fair value accounting guidance establishes a fair value hierarchy,

which prioritizes the inputs to valuation techniques used to measure fair value into three broad levels. The fair value hierarchy gives the highest priority to quoted prices in active markets for identical assets or liabilities (Level 1) and the lowest priority to unobservable inputs (Level 3). An instrument's categorization within the fair value hierarchy is based upon the lowest level of input that is significant to the instrument's fair value measurement. The three levels within the fair value hierarchy are described as follows.

Level 1 – Observable inputs such as unadjusted quoted prices in active markets for identical assets or liabilities.

Level 2 – Inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly. These include quoted prices for similar assets or liabilities in active markets and quoted prices for identical or similar assets or liabilities in markets that are not active.

Level 3 – Unobservable inputs for the asset or liability for which there is little, if any, market activity at the measurement date. Unobservable inputs reflect Ashland's own assumptions about what market participants would use to price the asset or liability. The inputs are developed based on the best information available in the circumstances, which might include Ashland's own financial data such as internally developed pricing models, discounted cash flow methodologies, as well as instruments for which the fair value determination requires significant management judgment.

For assets that are measured using quoted prices in active markets (Level 1), the total fair value is the published market price per unit multiplied by the number of units held without consideration of transaction costs. Assets and liabilities that are measured using significant other observable inputs (Level 2) are primarily valued by reference to quoted prices of similar assets or liabilities in active markets, adjusted for any terms specific to that asset or liability. For all other assets and liabilities for which unobservable inputs are used (Level 3), fair value is derived using fair value models, such as a discounted cash flow model or other standard pricing models that Ashland deems reasonable.

The following table summarizes financial instruments subject to recurring fair value measurements as of March 31, 2019.

(In millions)	Carrying value	Total fair value	Quoted prices in active markets for identical assets Level 1	Significant other observable inputs Level 2	Significant unobservable inputs Level 3
Assets					
Cash and cash equivalents	\$ 164	\$ 164	\$ 164	\$ —	\$ —
Restricted investments (a)	326	326	326	—	—
Deferred compensation investments (b)	166	166	—	166	—
Investment of captive insurance company	4	4	4	—	—
Foreign currency derivatives	3	3	—	3	—
Total assets at fair value	\$ 663	\$ 663	\$ 494	\$ 169	\$ —
Liabilities					
Foreign currency derivatives	\$ 3	\$ 3	\$ —	\$ 3	\$ —

(a) Included in restricted investments is \$30 million classified in the other current assets caption on the Condensed Consolidated Balance Sheets.

(b) Included in other noncurrent assets in the Condensed Consolidated Balance Sheets.

The following table summarizes financial asset instruments subject to recurring fair value measurements as of September 30, 2018.

(In millions)	Carrying value	Total fair value	Quoted prices in active markets for identical assets Level 1	Significant other observable inputs Level 2	Significant unobservable inputs Level 3
Assets					
Cash and cash equivalents	\$ 294	\$ 294	\$ 294	\$ —	\$ —
Restricted investments (a)	342	342	342	—	—
Deferred compensation investments (b)	165	165	—	165	—
Investment of captive insurance company	3	3	3	—	—
Foreign currency derivatives	11	11	—	11	—
Total assets at fair value	\$ 815	\$ 815	\$ 639	\$ 176	\$ —
Liabilities					
Foreign currency derivatives	\$ 3	\$ 3	\$ —	\$ 3	\$ —

(a) Included in restricted investments is \$30 million classified in the other current assets caption on the Condensed Consolidated Balance Sheets.

(b) Included in other noncurrent assets in the Condensed Consolidated Balance Sheets.

Restricted investments

Investment income and realized gains and losses on these company-restricted investments are reported within the net interest and other financing expense caption on the Statements of Consolidated Comprehensive Income (Loss). In prior periods, the unrealized gains and losses on the equity securities were reported within the stockholders' equity section of the Condensed Consolidated Balance Sheets as a component of AOCI, net of the related deferred income taxes. Due to the accounting guidance adopted in the current year, as discussed in Note A, the unrealized gains and losses are now recognized in net income and are recorded within the net interest and other expense (income) caption in the Statements of Consolidated Comprehensive Income (Loss). The following table provides a summary of the activity within the investment portfolio as of March 31, 2019 and September 30, 2018:

(In millions)		March 31 2019		September 30 2018
Original cost	\$	335	\$	335
Accumulated adjustments, net		(47)		(38)
Adjusted cost, beginning of year (a)		288		297
Investment income (b)		5		8
Net unrealized gain (c)		25		54
Realized gains (c)		26		6
Settlement funds		2		10
Disbursements		(20)		(33)
Fair value	\$	<u>326</u>	\$	<u>342</u>

(a) The accumulated adjustments include investment income, realized gains, disbursements and settlements recorded in previous periods.

(b) Investment income for the demand deposit includes interest income as well as dividend income transferred from the equity and corporate bond mutual funds.

(c) Presented under the original cost method.

The following table presents gross unrealized gains and losses for the restricted investment securities as of March 31, 2019 and September 30, 2018:

(In millions)	Adjusted Cost		Gross Unrealized Gain		Gross Unrealized Loss		Fair Value
As of March 31, 2019							
Demand deposit	\$	164	\$	—	\$	—	\$ 164
Equity mutual fund		71		25		—	96
Corporate bond mutual fund		66		—		—	66
Fair value	\$	<u>301</u>	\$	<u>25</u>	\$	<u>—</u>	<u>\$ 326</u>
As of September 30, 2018							
Demand deposit	\$	20	\$	—	\$	—	\$ 20
Equity mutual fund		148		59		—	207
Corporate bond mutual fund		120		—		(5)	115
Fair value	\$	<u>288</u>	\$	<u>59</u>	\$	<u>(5)</u>	<u>\$ 342</u>

The unrealized gains and losses of \$54 million, net of the related deferred income taxes of \$20 million, as of September 30, 2018, were reclassified from AOCI to retained earnings within the Condensed Consolidated Balance Sheets due to the new accounting guidance adopted in the first quarter of fiscal year 2019.

The following table presents the investment income, net unrealized gains and losses, realized gains and disbursements related to the investments within the portfolio for the three and six months ended March 31, 2019 and 2018.

(In millions)	Three months ended		Six months ended	
	March 31		March 31	
	2019	2018	2019	2018
Investment income	\$ 2	\$ 2	\$ 5	\$ 4
Net unrealized gains (losses) (a)	27	(8)	(3)	2
Realized gains (b)	—	3	—	4
Disbursements	(12)	(12)	(20)	(17)

(a) Ashland determined that all unrealized gains and losses were related to equity securities with readily determinable fair values. Due to the new accounting guidance adopted in the first quarter of fiscal year 2019, the net unrealized losses during the three and six months ended March 31, 2019 were recorded within the net interest and other expense (income) caption in the Statements of Consolidated Comprehensive Income (Loss). In 2018 these net unrealized gains (losses) were in AOCI.

(b) Relates only to the three and six months ended March 31, 2018 prior to the adoption of the new accounting guidance for equity securities.

Deferred compensation investments

Deferred compensation investments consist of Level 2 measurements within the fair value hierarchy which are comprised primarily of a guaranteed interest fund, a common stock index fund and an intermediate investment grade bond fund. Gains and losses related to deferred compensation investments are immediately recognized within the selling, general and administrative expense caption on the Statements of Consolidated Comprehensive Income (Loss). These investments generated gains of \$5 million and zero and \$1 million and \$4 million during the three and six months ended March 31, 2019 and 2018, respectively.

Foreign currency derivatives

Ashland conducts business in a variety of foreign currencies. Accordingly, Ashland regularly uses foreign currency derivative instruments to manage exposure on certain transactions denominated in foreign currencies to curtail potential earnings volatility effects on certain assets and liabilities, including short-term inter-company loans, denominated in currencies other than Ashland's functional currency of an entity. These derivative contracts generally require exchange of one foreign currency for another at a fixed rate at a future date and generally have maturities of less than twelve months. All contracts are valued at fair value with net changes in fair value recorded within the selling, general and administrative expense caption. The impacts of these contracts were largely offset by gains and losses resulting from the impact of changes in exchange rates on transactions denominated in non-functional currencies. The following table summarizes the net gains and losses recognized during the three and six months ended March 31, 2019 and 2018 within the Statements of Consolidated Comprehensive Income (Loss).

(In millions)	Three months ended		Six months ended	
	March 31		March 31	
	2019	2018	2019	2018
Foreign currency derivative gains (losses)	\$ 3	\$ (16)	\$ 4	\$ (27)

The following table summarizes the fair values of the outstanding foreign currency derivatives as of March 31, 2019 and September 30, 2018 included in accounts receivable and accrued expenses and other liabilities of the Condensed Consolidated Balance Sheets.

(In millions)	March 31		September 30	
	2019		2018	
Foreign currency derivative assets	\$ 3	\$ 11		
Notional contract values	319	1,209		
Foreign currency derivative liabilities	\$ 3	\$ 3		
Notional contract values	378	755		

Other financial instruments

At March 31, 2019 and September 30, 2018, Ashland's long-term debt (including the current portion and excluding debt issuance cost discounts) had a carrying value of \$2,300 million and \$2,307 million, respectively, compared to a fair value of \$2,401 million and \$2,372 million, respectively. The fair values of long-term debt are based on quoted market prices or, if market prices are not available, the present values of the underlying cash flows discounted at Ashland's incremental borrowing rates, which are deemed to be Level 2 measurements within the fair value hierarchy.

NOTE F – INVENTORIES

Inventories are carried at the lower of cost or net realizable value. Inventories are primarily stated at cost using the weighted-average cost method. In addition, certain inventories are valued at cost using the last-in, first-out (LIFO) method.

The following table summarizes Ashland's inventories as of the reported Condensed Consolidated Balance Sheet dates.

(In millions)	March 31, 2019	September 30, 2018
Finished products	\$ 378	\$ 381
Raw materials, supplies and work in process	221	215
	<u>\$ 599</u>	<u>\$ 596</u>

NOTE G – GOODWILL AND OTHER INTANGIBLES

Goodwill

Ashland reviews goodwill and indefinite-lived intangible assets for impairment annually or when events and circumstances indicate an impairment may have occurred. This annual assessment is performed as of July 1 and consists of Ashland determining each reporting unit's current fair value compared to its current carrying value. For its July 1, 2018 assessment, Ashland determined that its reporting units for the allocation of goodwill were its three reportable segments: Specialty Ingredients, Composites and Intermediates and Solvents. At that time, Ashland determined no additional impairment existed. Due to the expected divestiture of the Composites reporting unit, Ashland has two remaining reporting units as of March 31, 2019: Specialty Ingredients and Intermediates and Solvents. See Note B for more information on the expected divestiture.

The following is a progression of goodwill by reportable segment for the six months ended March 31, 2019.

(In millions)	Specialty Ingredients	Intermediates and Solvents (a)	Total
Balance at September 30, 2018	\$ 2,304	\$ —	\$ 2,304
Acquisitions	—	—	—
Currency translation	(25)	—	(25)
Balance at March 31, 2019	<u>\$ 2,279</u>	<u>\$ —</u>	<u>\$ 2,279</u>

(a) As of March 31, 2019 and September 30, 2018, there was accumulated impairment of \$90 million related to the Intermediates and Solvents reportable segment.

Intangibles

Intangible assets principally consist of trademarks and trade names, intellectual property and customer and supplier relationships. Intangible assets classified as finite are amortized on a straight-line basis over their estimated useful lives. The cost of trademarks and trade names is amortized principally over 3 to 25 years, intellectual property over 5 to 25 years, and customer and supplier relationships over 3 to 24 years.

Ashland annually reviews indefinite-lived intangible assets for possible impairment or whenever events or changes in circumstances indicate that carrying amounts may not be recoverable.

Intangible assets were comprised of the following as of March 31, 2019 and September 30, 2018.

(In millions)	March 31, 2019		
	Gross carrying amount	Accumulated amortization	Net carrying amount
Definite-lived intangibles			
Trademarks and trade names	\$ 66	\$ (27)	\$ 39
Intellectual property	715	(370)	345
Customer and supplier relationships	750	(277)	473
Total definite-lived intangibles	1,531	(674)	857
Indefinite-lived intangibles			
Trademarks and trade names	278	—	278
Total intangible assets	\$ 1,809	\$ (674)	\$ 1,135
	September 30, 2018		
(In millions)	Gross carrying amount	Accumulated amortization	Net carrying amount
Definite-lived intangibles			
Trademarks and trade names	\$ 66	\$ (25)	\$ 41
Intellectual property	721	(350)	371
Customer and supplier relationships	759	(264)	495
Total definite-lived intangibles	1,546	(639)	907
Indefinite-lived intangibles			
Trademarks and trade names	278	—	278
Total intangible assets	\$ 1,824	\$ (639)	\$ 1,185

Amortization expense recognized on intangible assets was \$21 million and \$23 million for the three months ended March 31, 2019 and 2018, respectively, and \$43 million and \$46 million for the six months ended March 31 2019 and 2018, respectively, and is included in the selling, general and administrative expense caption of the Statements of Consolidated Comprehensive Income (Loss). Estimated amortization expense for future periods is \$86 million in 2019 (includes six months actual and six months estimated), \$86 million in 2020, \$85 million in 2021, \$85 million in 2022 and \$84 million in 2023. The amortization expense for future periods is an estimate. Actual amounts may change from such estimated amounts due to fluctuations in foreign currency exchange rates, additional intangible asset acquisitions and divestitures, potential impairment, accelerated amortization, or other events.

NOTE H – DEBT

The following table summarizes Ashland's current and long-term debt as of the dates reported in the Condensed Consolidated Balance Sheets.

(In millions)	March 31, 2019	September 30, 2018
4.750% notes, due 2022	\$ 1,083	\$ 1,083
Term Loan B, due 2024	590	593
6.875% notes, due 2043	376	376
Term Loan A, due 2022	195	195
Accounts receivable securitizations	207	195
6.50% junior subordinated notes, due 2029	53	52
Revolving credit facility	25	25
Medium-term notes, due 2019, interest of 9.4%	—	5
Other (a)	7	5
Total debt	2,536	2,529
Short-term debt (includes current portion of long-term debt)	(261)	(254)
Long-term debt (less current portion)	\$ 2,275	\$ 2,275

(a) Includes \$19 million and \$21 million of debt issuance cost discounts as of March 31, 2019 and September 30, 2018, respectively, in addition to a European short-term loan facility with an outstanding balance of \$23 million at both March 31, 2019 and September 30, 2018.

The scheduled aggregate maturities of long-term debt by year (including the current portion and excluding debt issuance costs) are as follows: \$3 million remaining in 2019, \$6 million in 2020, \$14 million in 2021, \$1,279 million in 2022 and \$6 million in 2023.

Available borrowing capacity

The borrowing capacity remaining under the 2017 Revolving Credit Facility was \$727 million due to an outstanding balance of \$25 million, as well as a reduction of \$48 million for letters of credit outstanding at March 31, 2019. Ashland's total borrowing capacity at March 31, 2019 was \$741 million, which included \$14 million of available capacity from the two accounts receivable securitization facilities.

Covenants related to current Ashland debt agreements

Ashland's debt contains usual and customary representations, warranties and affirmative and negative covenants, including financial covenants for leverage and interest coverage ratios, limitations on liens, additional subsidiary indebtedness, restrictions on subsidiary distributions, investments, mergers, sale of assets and restricted payments and other customary limitations. As of March 31, 2019, Ashland is in compliance with all debt agreement covenant restrictions.

The maximum consolidated net leverage ratio permitted under Ashland's most recent credit agreement (the 2017 Credit Agreement) is 4.5. At March 31, 2019, Ashland's calculation of the consolidated net leverage ratio was 3.5.

The minimum required consolidated interest coverage ratio under the 2017 Credit Agreement during its entire duration is 3.0. At March 31, 2019, Ashland's calculation of the interest coverage ratio was 5.6.

NOTE I – INCOME TAXES

Tax Law Changes

The Tax Cuts and Jobs Act (Tax Act) was enacted on December 22, 2017. The Tax Act reduced the U.S. federal corporate tax rate from 35% to 21%, required companies to pay a one-time transition tax on earnings of certain foreign subsidiaries that were previously tax deferred and created new taxes on certain foreign sourced earnings. Through September 30, 2018 we recorded provisional amounts for certain enactment date effects of the Tax Act by applying the guidance in SAB 118 because we had not yet completed our enactment date accounting for these effects. During 2019, Ashland completed its internal accounting assessment for the tax effects of enactment of the Tax Act and recorded adjustments to provisional amounts previously recorded. Ashland's final assessment resulted in net unfavorable tax adjustments of \$24 million during the three months ended December 31, 2018 primarily related to the one-time transition tax assessed on foreign cash and unremitted earnings. There could be additional guidance issued subsequent to December 31, 2018 that could impact our interpretation of the Tax Act and such changes could affect the amounts recorded. The impact, if any, of further transitional tax guidance that may be issued by the U.S. Treasury would be reflected in the Company's provision for income tax in the period such guidance is effective.

Deferred tax assets and liabilities

Ashland remeasured certain deferred tax assets and liabilities based on the rates at which they are expected to reverse in the future, which is 21%. Ashland finalized its assessment of the provisional amount previously recorded for the remeasurement of the deferred tax balance which resulted in an unfavorable tax adjustment of \$2 million during the three months ended December 31, 2018.

Foreign tax effects

The one-time transition tax is based on Ashland's total post-1986 earnings and profits of foreign subsidiaries that were previously deferred from U.S. income taxes. Ashland finalized its assessment of the provisional amount previously recorded for this one-time transition tax liability which resulted in an unfavorable tax adjustment of \$22 million during the three months ended December 31, 2018. After this final adjustment, the obligation for the one-time transition tax was \$51 million as of December 31, 2018. No additional income taxes have been provided for any remaining undistributed foreign earnings not subject to the transition tax, or any additional outside basis difference inherent in these entities, as these amounts continue to be indefinitely reinvested in foreign operations. Ashland determined that the amount of unrecognized deferred tax liability related to any remaining undistributed foreign earnings not subject to the transition tax and additional outside basis difference in these entities (i.e., basis difference in excess of that subject to the one-time transition tax) is not practicable at this time.

Global Intangible Low-Taxed Income

Regarding new Global Intangible Low-Taxed Income (GILTI) tax rules, Ashland made an election to treat taxes due on future GILTI exclusions as a current period expense when incurred.

Current fiscal year

Ashland's effective tax rate in any interim period is subject to adjustments related to discrete items and the mix of domestic and foreign operating results. The overall effective tax rate was 2% for the three months ended March 31, 2019 and a negative 2500% for the six months ended March 31, 2019. The current quarter tax rate was primarily impacted by income mix, certain nondeductible restructuring costs, as well as \$11 million in favorable tax discrete items including nontaxable earnings in deferred compensation related investments and other items. The current six month period was primarily impacted by the items referenced in the three-month period, as well as a net \$30 million from unfavorable tax discrete items including the final assessment of the Tax Act and other items.

Prior fiscal year

The overall effective tax rate was negative 5% for the three months ended March 31, 2018 and 44% for the six months ended March 31, 2018. The quarter rate was primarily impacted by income mix and net favorable tax discrete adjustments of \$5 million related to a tax rate change in a foreign country and other items. The six-month period was primarily impacted by the items referenced in the quarter, as well as a net \$16 million from unfavorable tax discrete items including the assessment of the Tax Act and other items.

Unrecognized tax benefits

Changes in unrecognized tax benefits are summarized as follows for the six months ended March 31, 2019.

(In millions)	
Balance at October 1, 2018	\$ 164
Decreases related to positions taken on items from prior years	(3)
Increases related to positions taken in the current year	3
Lapse of statute of limitations	(2)
Balance at March 31, 2019	<u>\$ 162</u>

From a combination of statute expirations and audit settlements in the next twelve months, Ashland expects a decrease in the amount accrued for uncertain tax positions of between \$2 million and \$4 million for continuing operations. It is reasonably possible that there could be other material changes to the amount of uncertain tax positions due to activities of the taxing authorities, settlement of audit issues or the reassessment of existing uncertain tax positions; however, Ashland is not able to estimate the impact of these items at this time.

NOTE J - EMPLOYEE BENEFIT PLANS

Plan contributions

For the six months ended March 31, 2019, Ashland contributed \$3 million to its non-U.S. pension plans and zero to its U.S. pension plans. Ashland expects to make additional contributions of approximately \$3 million to its non-U.S. plans during the remainder of 2019.

Plan remeasurement

Ashland settled a non-U.S. pension plan during the first quarter of fiscal 2019, which required the plan to be remeasured. This remeasurement resulted in a curtailment gain of \$18 million.

Components of net periodic benefit costs (income)

The following table details the components of pension and other postretirement benefit costs for continuing operations.

(In millions)	Pension benefits		Other postretirement benefits	
	2019	2018	2019	2018
Three months ended March 31				
Service cost	\$ 1	\$ 2	\$ —	\$ —
Interest cost	2	2	1	—
Expected return on plan assets	(2)	(3)	—	—
Curtailment	—	—	—	—
Actuarial (gain) loss	—	—	—	—
Total net periodic benefit costs	<u>\$ 1</u>	<u>\$ 1</u>	<u>\$ 1</u>	<u>\$ —</u>
Six months ended March 31				
Service cost	\$ 3	\$ 4	\$ —	\$ 1
Interest cost	5	5	1	—
Expected return on plan assets	(5)	(6)	—	—
Curtailment	(18)	—	—	—
Actuarial gain	—	—	—	—
Total net periodic benefit costs (income)	<u>\$ (15)</u>	<u>\$ 3</u>	<u>\$ 1</u>	<u>\$ 1</u>

For segment reporting purposes, service cost is proportionately allocated to each segment, excluding the Unallocated and other segment, and is recorded within the selling, general and administrative expense and cost of sales captions on the Statements of Consolidated Comprehensive Loss (Income). All other components are recorded within the other net periodic benefit income caption on the Statements of Consolidated Comprehensive Loss (Income).

NOTE K – LITIGATION, CLAIMS AND CONTINGENCIES

Asbestos litigation

Ashland and Hercules have liabilities from claims alleging personal injury caused by exposure to asbestos. To assist in developing and annually updating independent reserve estimates for future asbestos claims and related costs given various assumptions, Ashland retained Nathan Associates Inc. (Nathan). The methodology used by Nathan to project future asbestos costs is based largely on recent experience, including claim-filing and settlement rates, disease mix, enacted legislation, open claims and litigation defense. The claim experience of Ashland and Hercules are separately compared to the results of previously conducted third party epidemiological studies estimating the number of people likely to develop asbestos-related diseases. Those studies were undertaken in connection with national analyses of the population expected to have been exposed to asbestos. Using that information, Nathan estimates a range of the number of future claims that may be filed, as well as the related costs that may be incurred in resolving those claims. Changes in asbestos-related liabilities and receivables are recorded on an after-tax basis within the discontinued operations caption in the Statements of Consolidated Comprehensive Income (Loss).

Ashland asbestos-related litigation

The claims alleging personal injury caused by exposure to asbestos asserted against Ashland result primarily from indemnification obligations undertaken in 1990 in connection with the sale of Riley Stoker Corporation (Riley). The amount and timing of settlements and number of open claims can fluctuate from period to period. A summary of Ashland asbestos claims activity, excluding Hercules claims, follows.

(In thousands)	Six months ended March 31		Years ended September 30		
	2019	2018	2018	2017	2016
Open claims - beginning of year	53	54	54	57	60
New claims filed	1	1	2	2	2
Claims settled	—	—	(1)	(1)	—
Claims dismissed	(1)	(2)	(2)	(4)	(5)
Open claims - end of period	<u>53</u>	<u>53</u>	<u>53</u>	<u>54</u>	<u>57</u>

Ashland asbestos-related liability

From the range of estimates, Ashland records the amount it believes to be the best estimate of future payments for litigation defense and claim settlement costs, which generally approximates the mid-point of the estimated range of exposure from model results. Ashland reviews this estimate and related assumptions quarterly and annually updates the results of a non-inflated, non-discounted approximate 50-year model developed with the assistance of Nathan.

During the most recent annual update of this estimate completed during the June 2018 quarter, it was determined that the liability for Ashland asbestos-related claims should be decreased by \$8 million. Total reserves for asbestos claims were \$366 million at March 31, 2019 compared to \$380 million at September 30, 2018.

A progression of activity in the asbestos reserve is presented in the following table.

(In millions)	Six months ended		Years ended September 30		
	March 31		2018	2017	2016
	2019	2018	2018	2017	2016
Asbestos reserve - beginning of year	\$ 380	\$ 419	\$ 419	\$ 415	\$ 409
Reserve adjustment	—	—	(8)	36	37
Amounts paid	(14)	(17)	(31)	(32)	(31)
Asbestos reserve - end of period (a)	<u>\$ 366</u>	<u>\$ 402</u>	<u>\$ 380</u>	<u>\$ 419</u>	<u>\$ 415</u>

(a) Includes \$31 million and \$30 million classified in accrued expenses and other liabilities on the Condensed Consolidated Balance Sheets as of March 31, 2019 and September 30, 2018, respectively.

Ashland asbestos-related receivables

Ashland has insurance coverage for certain litigation defense and claim settlement costs incurred in connection with its asbestos claims, and coverage-in-place agreements exist with the insurance companies that provide substantially all of the coverage that will be accessed.

For the Ashland asbestos-related obligations, Ashland has estimated the value of probable insurance recoveries associated with its asbestos reserve based on management's interpretations and estimates surrounding the available or applicable insurance coverage, including an assumption that all solvent insurance carriers remain solvent. A substantial portion of the estimated receivables from insurance companies are expected to be due from domestic insurers.

At March 31, 2019, Ashland's receivable for recoveries of litigation defense and claim settlement costs from insurers amounted to \$136 million (excluding the Hercules receivable for asbestos claims) compared to \$140 million at September 30, 2018. During the June 2018 quarter, the annual update of the model used for purposes of valuing the asbestos reserve and its impact on valuation of future recoveries from insurers was completed. This model update resulted in a \$5 million decrease in the receivable for probable insurance recoveries.

A progression of activity in the Ashland insurance receivable is presented in the following table.

(In millions)	Six months ended		Years ended September 30		
	March 31		2018	2017	2016
	2019	2018	2018	2017	2016
Insurance receivable - beginning of year	\$ 140	\$ 155	\$ 155	\$ 151	\$ 150
Receivable adjustment	—	—	(5)	15	16
Insurance settlement	—	—	—	(5)	(4)
Amounts collected	(4)	(6)	(10)	(6)	(11)
Insurance receivable - end of period (a)	<u>\$ 136</u>	<u>\$ 149</u>	<u>\$ 140</u>	<u>\$ 155</u>	<u>\$ 151</u>

(a) Includes \$15 million classified in accounts receivable on the Condensed Consolidated Balance Sheets as of both March 31, 2019 and September 30, 2018.

Hercules asbestos-related litigation

Hercules has liabilities from claims alleging personal injury caused by exposure to asbestos. Such claims typically arise from alleged exposure to asbestos fibers from resin encapsulated pipe and tank products which were sold by one of Hercules' former subsidiaries to a limited industrial market. The amount and timing of settlements and number of open claims can fluctuate from period to period. A summary of Hercules' asbestos claims activity follows.

(In thousands)	Six months ended		Years ended September 30		
	March 31		2018	2017	2016
	2019	2018	2018	2017	2016
Open claims - beginning of year	13	12	12	15	20
New claims filed	—	1	2	1	1
Claims dismissed	(1)	(1)	(1)	(4)	(6)
Open claims - end of period	<u>12</u>	<u>12</u>	<u>13</u>	<u>12</u>	<u>15</u>

Hercules asbestos-related liability

From the range of estimates, Ashland records the amount it believes to be the best estimate of future payments for litigation defense and claim settlement costs, which generally approximates the mid-point of the estimated range of exposure from model results. Ashland reviews this estimate and related assumptions quarterly and annually updates the results of a non-inflated, non-discounted approximate 50-year model developed with the assistance of Nathan. As a result of the most recent annual update of this estimate, completed during the June 2018 quarter, it was determined that the liability for Hercules asbestos-related claims should be decreased by \$19 million. Total reserves for asbestos claims were \$272 million at March 31, 2019 compared to \$282 million at September 30, 2018.

A progression of activity in the asbestos reserve is presented in the following table.

(In millions)	Six months ended		Years ended September 30		
	March 31		2018	2017	2016
	2019	2018	2018	2017	2016
Asbestos reserve - beginning of year	\$ 282	\$ 323	\$ 323	\$ 321	\$ 311
Reserve adjustments	—	—	(19)	16	25
Amounts paid	(10)	(12)	(22)	(14)	(15)
Asbestos reserve - end of period (a)	<u>\$ 272</u>	<u>\$ 311</u>	<u>\$ 282</u>	<u>\$ 323</u>	<u>\$ 321</u>

(a) Included \$20 million classified in accrued expenses and other liabilities on the Condensed Consolidated Balance Sheets as of both March 31, 2019 and September 30, 2018.

Hercules asbestos-related receivables

For the Hercules asbestos-related obligations, certain reimbursement obligations pursuant to coverage-in-place agreements with insurance carriers exist. As a result, any increases in the asbestos reserve have been partially offset by probable insurance recoveries. Ashland has estimated the value of probable insurance recoveries associated with its asbestos reserve based on management's interpretations and estimates surrounding the available or applicable insurance coverage, including an assumption that all solvent insurance carriers remain solvent. The estimated receivable consists exclusively of solvent domestic insurers.

As of March 31, 2019, Ashland's receivable for recoveries of litigation defense and claims costs from insurers with respect to Hercules amounted to \$54 million. During the June 2018 quarter, the annual update of the model used for purposes of valuing the asbestos reserve and its impact on valuation of future recoveries from insurers was completed. This model update resulted in a decrease of \$14 million in the receivable for probable insurance recoveries.

A progression of activity in the Hercules insurance receivable is presented in the following table.

(In millions)	Six months ended March 31		Years ended September 30		
	2019	2018	2018	2017	2016
Insurance receivable - beginning of year	\$ 54	\$ 68	\$ 68	\$ 63	\$ 56
Receivable adjustment	—	—	(14)	5	7
Insurance receivable - end of period	<u>\$ 54</u>	<u>\$ 68</u>	<u>\$ 54</u>	<u>\$ 68</u>	<u>\$ 63</u>

Asbestos litigation cost projection

Projecting future asbestos costs is subject to numerous variables that are extremely difficult to predict. In addition to the significant uncertainties surrounding the number of claims that might be received, other variables include the type and severity of the disease alleged by each claimant, the long latency period associated with asbestos exposure, mortality rates, dismissal rates, costs of medical treatment, the impact of bankruptcies of other companies that are co-defendants in claims, uncertainties surrounding the litigation process from jurisdiction to jurisdiction and from case to case, and the impact of potential changes in legislative or judicial standards. Furthermore, any predictions with respect to these variables are subject to even greater uncertainty as the projection period lengthens. Considering these inherent uncertainties, Ashland believes that the asbestos reserves for Ashland and Hercules represent the best estimate within a range of possible outcomes. As a part of the process to develop these estimates of future asbestos costs, a range of long-term cost models was developed. These models are based on national studies that predict the number of people likely to develop asbestos-related diseases and are heavily influenced by assumptions regarding long-term inflation rates for indemnity payments and legal defense costs, as well as other variables mentioned previously. Ashland has currently estimated in various models ranging from approximately 40 to 50 year periods that it is reasonably possible that total future litigation defense and claim settlement costs on an inflated and undiscounted basis could range as high as approximately \$600 million for the Ashland asbestos-related litigation (current reserve of \$366 million) and approximately \$450 million for the Hercules asbestos-related litigation (current reserve of \$272 million), depending on the combination of assumptions selected in the various models. If actual experience is worse than projected, relative to the number of claims filed, the severity of alleged disease associated with those claims or costs incurred to resolve those claims, or actuarial refinement or improvements to the assumptions used within these models are initiated, Ashland may need to further increase the estimates of the costs associated with asbestos claims and these increases could be material over time.

Environmental remediation and asset retirement obligations

Ashland is subject to various federal, state and local environmental laws and regulations that require environmental assessment or remediation efforts (collectively, environmental remediation) at multiple locations. At March 31, 2019, such locations included 81 waste treatment or disposal sites where Ashland has been identified as a potentially responsible party under Superfund or similar state laws, 116 current and former operating facilities and about 1,225 service station properties, of which 31 are being actively remediated.

Ashland's reserves for environmental remediation and related environmental litigation amounted to \$179 million at March 31, 2019 compared to \$187 million at September 30, 2018, of which \$139 million at March 31, 2019 and \$147 million at September 30, 2018 were classified in other noncurrent liabilities on the Condensed Consolidated Balance Sheets. The remaining reserves were classified in accrued expenses and other liabilities on the Condensed Consolidated Balance Sheets.

The following table provides a reconciliation of the changes in the environmental remediation reserves during the six months ended March 31, 2019 and 2018.

(In millions)	Six months ended March 31	
	2019	2018
Reserve - beginning of period	\$ 187	\$ 163
Disbursements	(15)	(16)
Revised obligation estimates and accretion	7	17
Reserve - end of period	<u>\$ 179</u>	<u>\$ 164</u>

The total reserves for environmental remediation reflect Ashland's estimates of the most likely costs that will be incurred over an extended period to remediate identified conditions for which the costs are reasonably estimable, without regard to any third-party recoveries. Engineering studies, probability techniques, historical experience and other factors are used to identify and evaluate remediation alternatives and their related costs in determining the estimated reserves for environmental remediation. Ashland continues to discount certain environmental sites and regularly adjusts its reserves as environmental remediation continues. Ashland has estimated the value of its probable insurance recoveries associated with its environmental reserve based on management's interpretations and estimates surrounding the available or applicable insurance coverage. At March 31, 2019 and September 30, 2018, Ashland's recorded receivable for these probable insurance recoveries was \$12 million, of which \$11 million at March 31, 2019 and September 30, 2018 were classified in other noncurrent assets on the Condensed Consolidated Balance Sheets.

Components of environmental remediation expense included within the selling, general and administrative expense caption of the Statements of Consolidated Comprehensive Income (Loss) are presented in the following table for the three months ended March 31, 2019 and 2018.

(In millions)	Three months ended		Six months ended	
	March 31		March 31	
	2019	2018	2019	2018
Environmental expense	\$ 3	\$ 4	\$ 6	\$ 16
Accretion	1	—	1	1
Legal expense	2	2	3	3
Total expense	6	6	10	20
Insurance receivable (a)	—	(1)	(1)	(1)
Total expense, net of receivable activity (b)	\$ 6	\$ 5	\$ 9	\$ 19

(a) Activity of \$0 denotes value less than \$1 million.

(b) Net expense of \$1 million and \$2 million for the three and six months ended March 31, 2019, and \$1 million for both the three and six months ended March 31, 2018, relates to divested businesses which qualified for treatment as discontinued operations for which certain environmental liabilities were retained by Ashland. These amounts are classified within the income from discontinued operations caption of the Statements of Consolidated Comprehensive Income (loss).

Environmental remediation reserves are subject to numerous inherent uncertainties that affect Ashland's ability to estimate its share of the costs. Such uncertainties involve the nature and extent of contamination at each site, the extent of required cleanup efforts under existing environmental regulations, widely varying costs of alternate cleanup methods, changes in environmental regulations, the potential effect of continuing improvements in remediation technology, and the number and financial strength of other potentially responsible parties at multiparty sites. Although it is not possible to predict with certainty the ultimate costs of environmental remediation, Ashland currently estimates that the upper end of the reasonably possible range of future costs for identified sites could be as high as approximately \$421 million. The largest reserve for any site is 15% of the remediation reserve.

Other legal proceedings and claims

In addition to the matters described above, there are other various claims, lawsuits and administrative proceedings pending or threatened against Ashland and its current and former subsidiaries. Such actions are with respect to commercial matters, product liability, toxic tort liability, and other environmental matters, which seek remedies or damages, some of which are for substantial amounts. While Ashland cannot predict with certainty the outcome of such actions, it believes that adequate reserves have been recorded and losses already recognized with respect to such actions were immaterial as of March 31, 2019 and September 30, 2018. There is a reasonable possibility that a loss exceeding amounts already recognized may be incurred related to these actions; however, Ashland believes that such potential losses were immaterial as of March 31, 2019 and September 30, 2018.

NOTE L – EARNINGS PER SHARE

The following is the computation of basic and diluted earnings per share (EPS) from continuing operations attributable to Ashland. Stock appreciation rights (SARs), stock options and warrants available to purchase shares outstanding for each reporting period whose grant price was greater than the average market price of Ashland Common Stock for each applicable period were not included in the computation of income from continuing operations per diluted share because the effect of these instruments would be antidilutive. The total number of these shares outstanding was approximately 1.0 million and 0.7 million at March 31, 2019 and 2018, respectively. Earnings per share is reported under the treasury stock method.

(In millions, except per share data)	Three months ended		Six months ended	
	March 31		March 31	
	2019	2018	2019	2018
Numerator				
Numerator for basic and diluted EPS -				
Income (loss) from continuing operations	\$ 45	\$ 42	\$ (26)	\$ 10
Denominator				
Denominator for basic EPS - Weighted-average common shares outstanding				
	63	63	63	63
Share based awards convertible to common shares (a)	1	1	—	1
Denominator for diluted EPS - Adjusted weighted-average shares and assumed conversions				
	64	64	63	64
EPS from continuing operations				
Basic	\$ 0.72	\$ 0.66	\$ (0.41)	\$ 0.15
Diluted	0.71	0.65	(0.41)	0.15

(a) As a result of the loss from continuing operations attributable to Ashland during the six months ended March 31, 2019, the effect of the share-based awards convertible to common shares would be antidilutive. In accordance with U.S. GAAP, these shares have been excluded from the diluted EPS calculation.

NOTE M – EQUITY ITEMS

Stock repurchase programs

During March 2018, Ashland's Board of Directors approved a new \$1 billion stock repurchase program, which replaced the 2015 stock repurchase program. Under the new program, Ashland's common shares may be repurchased in open market transactions, privately negotiated transactions or pursuant to one or more accelerated stock repurchase programs or Rule 10b5-1 plans. As of March 31, 2019, \$1 billion remained available for repurchase under this authorization.

Stockholder dividends

In January 2019, the Board of Directors of Ashland announced a quarterly cash dividend of 25 cents per share or \$16 million, to eligible stockholders at record, which was paid in the second quarter of fiscal 2019. Similarly dividends of 25 cents per share were paid in the first quarter of fiscal 2019 and the third and fourth quarters of fiscal 2018. These dividends represented an 11% increase over the previous quarterly cash dividend of 22.5 cents per share paid in the first and second quarters of fiscal 2018.

Accumulated other comprehensive income (loss)

Components of other comprehensive income (loss) recorded in the Statements of Consolidated Comprehensive Income (Loss) are presented below, before tax and net of tax effects.

(In millions)	2019			2018		
	Before tax	Tax (expense) benefit	Net of tax	Before tax	Tax (expense) benefit	Net of tax
Three months ended March 31						
Other comprehensive income (loss)						
Unrealized translation gain (loss)	\$ (9)	\$ —	\$ (9)	\$ 55	\$ —	\$ 55
Pension and postretirement obligation adjustment:						
Adjustment of unrecognized prior service costs	—	—	—	—	—	—
Net change in investment securities:						
Unrealized gains during periods (a)	—	—	—	(5)	1	(4)
Reclassification adjustment for gains included in net income	—	—	—	(3)	1	(2)
Total other comprehensive income (loss)	<u>\$ (9)</u>	<u>\$ —</u>	<u>\$ (9)</u>	<u>\$ 47</u>	<u>\$ 2</u>	<u>\$ 49</u>
Six months ended March 31						
Other comprehensive income (loss)						
Unrealized translation gain (loss)	\$ (40)	\$ —	\$ (40)	\$ 58	\$ —	\$ 58
Pension and postretirement obligation adjustment:						
Adjustment of unrecognized prior service costs	(7)	1	(6)	—	—	—
Net change in investment securities:						
Unrealized gains during periods (a)	—	—	—	6	(1)	5
Reclassification adjustment for gains included in net income	—	—	—	(4)	1	(3)
Total other comprehensive income (loss)	<u>\$ (47)</u>	<u>\$ 1</u>	<u>\$ (46)</u>	<u>\$ 60</u>	<u>\$ —</u>	<u>\$ 60</u>

(a) Due to the adoption of new accounting guidance in fiscal 2019, unrealized gains and losses on Ashland's equity securities are now recognized in net income rather than AOCI. See Notes A and E for more information.

Summary of stockholders' equity

A reconciliation of changes in stockholders' equity are as follows:

(In millions)	Three months ended March 31		Six months ended March 31	
	2019	2018	2019	2018
Common stock and paid in capital				
Balance, beginning of period	\$ 948	\$ 932	\$ 947	\$ 932
Common shares issued under stock incentive and other plans (a)	5	4	6	4
Balance, end of period	953	936	953	936
Retained earnings				
Balance, beginning of period	2,719	2,678	2,750	2,696
Adoption of new accounting pronouncements (b)	1	—	34	—
Net income (loss)	76	73	28	69
Regular dividends	(16)	(14)	(32)	(28)
Balance, end of period	2,780	2,737	2,780	2,737
Accumulated other comprehensive income (loss)				
Balance, beginning of period	(362)	(211)	(291)	(222)
Adoption of new accounting pronouncements (b)	—	—	(34)	—
Unrealized translation gain (loss)	(9)	55	(40)	58
Pension and postretirement obligation adjustment	—	—	(6)	—
Net change in investment securities	—	(6)	—	2
Balance, end of period	(371)	(162)	(371)	(162)
Total stockholders' equity	\$ 3,362	\$ 3,511	\$ 3,362	\$ 3,511
Cash dividends declared per common share	\$ 0.25	\$ 0.225	\$ 0.50	\$ 0.45

(a) Common share issued were 93,738 and 154,421 for the three months ended March 31, 2019 and 2018 and 234,352 and 265,821 for the six months ended March 31, 2019 and 2018.

(b) Represents the cumulative-effect adjustment related to the adoption of the new guidance related to the accounting for equity securities and tax effects of intercompany transfers during fiscal 2019. See Note A for more information.

NOTE N – STOCK INCENTIVE PLANS

Ashland has stock incentive plans under which key employees or directors are granted stock appreciation rights (SARs), performance awards or nonvested stock awards. Each program is typically a long-term incentive plan designed to link employee compensation with increased shareholder value or reward superior performance and encourage continued employment with Ashland. Ashland recognizes compensation expense for the grant date fair value of stock-based awards over the applicable vesting period.

The components of Ashland's pre-tax stock-based compensation expense included in continuing operations are as follows:

(In millions)	Three months ended March 31		Six months ended March 31	
	2019 (a)	2018 (b)	2019 (a)	2018 (b)
SARs	\$ 2	\$ 2	\$ 4	\$ 3
Nonvested stock awards	6	5	10	11
Performance share awards	2	2	2	6
	\$ 10	\$ 9	\$ 16	\$ 20

(a) Included \$2 million and \$3 million of expense related to cash-settled nonvested restricted stock awards during the three and six months ended March 31, 2019 and \$2 million of expense related to cash-settled performance units during the three ended March 31, 2019.

(b) Included \$2 million and \$4 million of expense related to cash-settled nonvested restricted stock awards and \$1 million and \$3 million of expense related to cash-settled performance units during the three and six months ended March 31, 2018, respectively.

SARs

SARs are granted to employees or directors at a price equal to the fair market value of the stock on the date of grant and typically become exercisable over periods of one to three years. Unexercised SARs generally lapse ten years after the date of grant. SARs granted for six months ended March 31, 2019 and 2018 were

300 thousand and 470 thousand, respectively. As of March 31, 2019, there was \$10 million of total unrecognized compensation costs related to SARs. That cost is expected to be recognized over a weighted-average period of 2.1 years. Ashland estimates the fair value of SARs granted using the Black-Scholes option-pricing model. This model requires several assumptions which Ashland has developed and updates based on historical trends and current market observations. The accuracy of these assumptions is critical to the estimate of fair value for these equity instruments.

Nonvested stock awards

Nonvested stock awards are granted to employees or directors at a price equal to the fair market value of the stock on the date of grant and generally vest over a one-to-five-year period. However, such shares or units are subject to forfeiture upon termination of service before the vesting period ends. Only nonvested stock awards granted in the form of shares entitle employees or directors to vote the shares. Dividends on nonvested stock awards granted are in the form of additional units or shares of nonvested stock awards, which are subject to vesting and forfeiture provisions.

Stock-settled nonvested stock awards

Nonvested stock awards granted in the form of shares or units were 13 thousand and 2 thousand for the three months ended March 31, 2019 and 2018, respectively, and 94 thousand and 144 thousand for the six months ended March 31, 2019 and 2018, respectively. As of March 31, 2019, there was \$11 million of total unrecognized compensation costs related to these nonvested stock awards. That cost is expected to be recognized over a weighted-average period of 1.9 years.

Cash-settled nonvested stock awards

Certain nonvested stock awards are granted to employees and are settled in cash upon vesting. As of March 31, 2019, 200 thousand cash-settled nonvested stock awards were outstanding. The value of these cash-settled nonvested stock awards changes in connection with changes in the fair market value of the Ashland Common Stock. These awards generally vest over a period of three years. The expense recognized related to cash-settled nonvested stock awards was \$2 million during the three months ended March 31, 2019 and 2018, and \$3 million and \$4 million during the six months ended March 31, 2019 and 2018, respectively.

Executive performance incentive and retention program

During 2016, certain executives were granted performance-based restricted shares of Ashland in order to provide an incentive to remain employed in the period after the full separation of Ashland and Valvoline. At March 31, 2019, there were 30 thousand shares outstanding in connection with these awards, which includes forfeitures and the cumulative value of forfeitable dividends. The expense recognition for these awards commenced upon completing the full separation of Valvoline which occurred on May 12, 2017 and resulted in \$1 million and \$1 million and \$2 million and \$3 million of expense for the three and six months ended March 31, 2019 and 2018, respectively. As of March 31, 2019, there was \$1 million of total unrecognized compensation costs related to these awards.

Performance awards

Ashland sponsors a long-term incentive plan that awards performance shares/units to certain key employees that are primarily tied to Ashland's overall financial performance relative to internal targets. Additionally, certain outstanding performance awards are tied to Ashland's overall financial performance relative to the financial performance of selected industry peer groups. Awards are granted annually, with each award covering a three-year vesting period. Awards settled in shares are recorded as a component of stockholders' equity while awards settled in cash are recorded as a liability within the Condensed Consolidated Balance Sheets.

The performance measure used to determine the actual number of performance shares/units issuable upon vesting is the financial performance of Ashland compared to award targets. The financial performance award metric is considered a performance condition under applicable U.S. GAAP. Additionally, the actual number of performance shares/units issuable upon vesting can be potentially increased or decreased based on a total shareholder return (TSR) performance modifier relative to peers of Ashland. For awards granted in fiscal 2017, each performance unit will be settled in cash based on the fair value of Ashland common stock. For awards granted in fiscal 2018 and 2019, each performance share/unit is convertible to one share of Ashland Common Stock.

Nonvested performance shares/units do not entitle employees to vote the shares or to receive any dividends thereon. No performance shares/units were granted for the three months ended March 31, 2019 and 2018. Performance shares/units granted for the six months ended March 31, 2019 and 2018 were 78 thousand and 101 thousand, respectively. As of March 31, 2019, there was \$13 million of total unrecognized compensation costs related to performance shares/units. That cost is expected to be recognized over a weighted-average period of 2.0 years.

NOTE O – REVENUE

Effective October 1, 2018, Ashland adopted accounting guidance outlining a single comprehensive five step model for entities to use in accounting for revenue arising from contracts with customers (ASC 606 Revenue from Contracts with Customers). As a result of the adoption, there was no material impact to Ashland's Condensed Consolidated Financial Statements. The additional disclosures that Ashland is required to disclose on an interim and annual basis are contained within this Note O.

Revenue recognition

Ashland's revenue is measured as the amount of consideration it expects to receive in exchange for transferring goods or providing services and is recognized when performance obligations are satisfied under the terms of contracts with customers. Ashland generally utilizes standardized language for the terms of contracts within each purchase order, unless a separate agreement has been entered into with a customer that supersedes the standard language within the purchase order.

A performance obligation is deemed to be satisfied by Ashland when control of the product or service is transferred to the customer. The transaction price of a contract, or the amount Ashland expects to receive upon satisfaction of all performance obligations, is determined by reference to the contract's terms and includes adjustments, if applicable, for any variable consideration, such as volume discounts, rebates, refunds and rights to return. Where a contract contains more than one distinct performance obligation, the transaction price is allocated to each performance obligation based on the standalone selling price of each performance obligation, although these situations do not occur frequently and are generally not included within Ashland's contracts. Any unsatisfied performance obligations were not material. Standalone selling prices are based on prices Ashland charges to customers, which in some cases are based on established market prices. Ashland generally collects the cash from its customers within 60 days of the product delivery date. Sales and other similar taxes collected from customers on behalf of third parties are excluded from the contract price.

All of Ashland's revenue is derived from contracts with customers, and nearly all contracts with customers contain one performance obligation for the transfer of goods where such performance obligation is satisfied at a point in time. Control of a product is deemed to be transferred to the customer generally upon shipment or delivery. Costs for shipping and handling activities, whether performed before or after the customer obtains control of the goods, are accounted for as fulfillment costs when not reimbursed.

Costs incurred to obtain contracts with customers have historically not been significant and are expensed immediately as the period of performance is generally one year or less. Ashland records bad debt expense in specific situations when it is determined that the customer is unable to meet its financial obligation.

Practical expedients

Upon adoption, Ashland utilized the following applicable practical expedients, as permitted by ASC 606, Revenue from Contracts with Customers:

- Sales and other similar taxes collected from customers on behalf of third parties are excluded from the contract price;
- Costs for shipping and handling activities, whether performed before or after the customer obtains control of the goods, are accounted for as fulfillment costs when not reimbursed; and
- Costs incurred to obtain contracts with customers are expensed immediately when the amortization period is one year or less.

Trade receivables

Trade receivables are defined as receivables arising from contracts with customers and are recorded within the accounts receivable caption within the Condensed Consolidated Balance Sheets. Ashland's trade receivables were \$491 million and \$482 million as of March 31, 2019 and September 30, 2018, respectively.

Disaggregation of revenue

Ashland disaggregates its revenue from contracts with customers by segment, geographical region and product category, as Ashland believes these categories best depict how management reviews the financial performance of its operations for the three and six months ended March 31, 2018 and 2019. See the following tables for details:

Sales by geography					
(In millions)	Specialty Ingredients		Intermediates and Solvents		
Geography	2019	2018	2019	2018	
Three months ended March 31					
North America	\$ 247	\$ 258	\$ 15	\$ 13	
Europe	220	222	6	6	
Asia Pacific	115	111	7	6	
Latin America & other	55	55	2	1	
	<u>\$ 637</u>	<u>\$ 646</u>	<u>\$ 30</u>	<u>\$ 26</u>	
Six months ended March 31					
North America	\$ 466	\$ 481	\$ 26	\$ 27	
Europe	390	389	11	13	
Asia Pacific	231	218	13	14	
Latin America & other	103	108	3	3	
	<u>\$ 1,190</u>	<u>\$ 1,196</u>	<u>\$ 53</u>	<u>\$ 57</u>	

Sales by product category		
(In millions)	2019	2018
Three months ended March 31		
Ashland Specialty Ingredients		
Cellulosics	\$ 224	\$ 215
Poly-vinyl pyrrolidones	110	115
Adhesives	89	90
Actives	43	42
Vinyl ethers	31	38
Pharmachem	64	63
Other	76	83
	<u>\$ 637</u>	<u>\$ 646</u>
Intermediates and Solvents		
Derivatives	\$ 25	\$ 21
Butanediol	5	5
	<u>\$ 30</u>	<u>\$ 26</u>
Total	<u>\$ 667</u>	<u>\$ 672</u>

Sales by product category		
(In millions)	2019	2018
Six months ended March 31		
Ashland Specialty Ingredients		
Cellulosics	\$ 413	\$ 393
Poly-vinyl pyrrolidones	205	210
Adhesives	171	169
Actives	80	80
Vinyl ethers	55	66
Pharmachem	123	121
Other	143	157
	<u>\$ 1,190</u>	<u>\$ 1,196</u>
Intermediates and Solvents		
Derivatives	\$ 45	\$ 48
Butanediol	8	9
	<u>\$ 53</u>	<u>\$ 57</u>
Total	<u>\$ 1,243</u>	<u>\$ 1,253</u>

NOTE P – REPORTABLE SEGMENT INFORMATION

Ashland determines its reportable segments based on how operations are managed internally for the products and services sold to customers, including how the results are reviewed by the chief operating decision maker, which includes determining resource allocation methodologies used for reportable segments. Operating income is the primary measure on the Statements of Consolidated Comprehensive Income (Loss) that is reviewed by the chief operating decision maker in assessing each reportable segment's financial performance. Ashland does not aggregate operating segments to arrive at these reportable segments.

Change in Reportable Segments

Ashland's reportable segments were impacted in the current year due to the expected divestiture of the Composites reportable segment and Intermediates and Solvents Marl facility and reclassification to discontinued operations. As a result, Ashland's operations are managed by the chief operating decision maker within the following two reportable segments: Specialty Ingredients and Intermediates and Solvents. The financial information for Intermediates and Solvents excludes the activity from the Marl facility due to the expected divestiture and has therefore been restated in prior periods.

Reportable segment business descriptions

Specialty Ingredients offers industry-leading products, technologies and resources for solving formulation and product-performance challenges. Using natural, synthetic and semisynthetic polymers derived from cellulose ethers, vinyl pyrrolidones, acrylic polymers, polyester and polyurethane-based adhesives, and plant and seed extract, Specialty Ingredients offers comprehensive and innovative solutions for consumer and industrial applications. Key customers include pharmaceutical companies; makers of personal care products, food and beverages; makers of nutraceuticals and supplements; manufacturers of paint, coatings and construction materials; packaging and converting; and oilfield service companies.

Intermediates and Solvents is a leading producer of 1,4 butanediol and related derivatives, including tetrahydrofuran and n-methylpyrrolidone. These products are used as chemical intermediates in the production of engineering polymers and polyurethanes, and as specialty process solvents in a wide array of applications including electronics, pharmaceuticals, water filtration membranes and more. Butanediol is also supplied to Ashland's Specialty Ingredients business for use as a raw material. On November 15, 2018, Ashland announced that it had signed a definitive agreement to sell its Composites segment and Intermediates and Solvents Marl facility. As a result, the financial information for Intermediates and Solvents excludes the activity from the Marl facility due to the expected divestiture and has been restated in prior periods.

Unallocated and Other generally includes items such as certain significant company-wide restructuring activities, including internal separation costs, and legacy costs or adjustments that relate to divested businesses that are no longer operated by Ashland.

Reportable segment results

Results of Ashland's reportable segments are presented based on its management and internal accounting structure. The structure is specific to Ashland; therefore, the financial results of Ashland's reportable segments are not necessarily comparable with similar information for other comparable companies. Ashland allocates all significant costs to its reportable segments except for certain significant company-wide restructuring activities, including stranded costs, and other costs or adjustments that relate to former businesses that Ashland no longer operates. The service cost component of pension and other postretirement benefits costs is allocated to each reportable segment on a ratable basis; while the remaining components of pension and other postretirement benefits costs are recorded within the other net periodic benefit income caption on the Statements of Consolidated Comprehensive Income (Loss). Ashland refines its expense allocation methodologies to the reportable segments from time to time as internal accounting practices are improved, more refined information becomes available and the industry or market changes. Significant revisions to Ashland's methodologies are adjusted for all segments on a retrospective basis.

The following table presents various financial information for each reportable segment for the three and six months ended March 31, 2019 and 2018.

(In millions - unaudited)	Three months ended		Six months ended	
	March 31		March 31	
	2019	2018	2019	2018
SALES				
Specialty Ingredients	\$ 637	\$ 646	\$ 1,190	\$ 1,196
Intermediates and Solvents	30	26	53	57
	<u>\$ 667</u>	<u>\$ 672</u>	<u>\$ 1,243</u>	<u>\$ 1,253</u>
OPERATING INCOME (LOSS)				
Specialty Ingredients	\$ 70	\$ 89	\$ 96	\$ 131
Intermediates and Solvents	5	3	5	6
Unallocated and other	(31)	(29)	(64)	(70)
	<u>\$ 44</u>	<u>\$ 63</u>	<u>\$ 37</u>	<u>\$ 67</u>

NOTE Q – SUBSEQUENT EVENTS

On April 30, 2019, Ashland announced an intention to commence a \$200 million share repurchase program under Ashland's Board of Directors approved \$1 billion stock repurchase program in fiscal 2018. Under the program, shares may be repurchased in privately negotiated and/or open market transactions, including under plans complying with Rule 10b5-1 of the Exchange Act. The \$200 million repurchase will be the first repurchases made under the \$1 billion program.

FORWARD-LOOKING STATEMENTS

This Form 10-Q contains forward-looking statements including, without limitation, statements made under the caption “Management’s Discussion and Analysis of Financial Condition and Results of Operation” (MD&A), within the meaning of Section 27A of the Securities Act of 1933, as amended and Section 21E of the Securities Exchange Act of 1934, as amended. Ashland has identified some of these forward-looking statements with words such as “anticipates,” “believes,” “expects,” “estimates,” “is likely,” “predicts,” “projects,” “forecasts,” “objectives,” “may,” “will,” “should,” “plans” and “intends” and the negative of these words or other comparable terminology. In addition, Ashland may from time to time make forward-looking statements in its annual reports, quarterly reports and other filings with the Securities and Exchange Commission (SEC), news releases and other written and oral communications. These forward-looking statements are based on Ashland’s expectations and assumptions, as of the date such statements are made, regarding Ashland’s future operating performance and financial condition, as well as the economy and other future events or circumstances. Ashland’s expectations and assumptions include, without limitation, those mentioned within the MD&A, internal forecasts and analyses of current and future market conditions and trends, management plans and strategies, operating efficiencies and economic conditions (such as prices, supply and demand, cost of raw materials, and the ability to recover raw-material cost increases through price increases), and risks and uncertainties associated with the following: the program to eliminate certain existing corporate and Specialty Ingredients expenses (including the possibility that such cost eliminations may not occur or may take longer to implement than anticipated), the expected divestiture of its Composites segment and the butanediol (BDO) manufacturing facility in Marl, Germany, and related merchant Intermediates and Solvents (I&S) products (including, in each case, the possibility that a transaction may not occur or that, if a transaction does occur, Ashland may not realize the anticipated benefits from such transaction), the impact of acquisitions and/or divestitures Ashland has made or may make (including the possibility that Ashland may not realize the anticipated benefits from such transactions); Ashland’s substantial indebtedness (including the possibility that such indebtedness and related restrictive covenants may adversely affect Ashland’s future cash flows, results of operations, financial condition and its ability to repay debt); Ashland’s ability to generate sufficient cash to finance its stock repurchase plans; and severe weather, natural disasters, cyber events and legal proceedings and claims (including product recalls, environmental and asbestos matters). Various risks and uncertainties may cause actual results to differ materially from those stated, projected or implied by any forward-looking statements, including, without limitation, risks and uncertainties affecting Ashland that are contained in “Use of estimates, risks and uncertainties” in Note A of Notes to Consolidated Financial Statements and in Item 1A in its most recent Form 10-K filed with the SEC, which is available on Ashland’s website at <http://investor.ashland.com> or on the SEC’s website at <http://www.sec.gov>. Ashland believes its expectations and assumptions are reasonable, but there can be no assurance that the expectations reflected herein will be achieved. Unless legally required, Ashland undertakes no obligation to update any forward-looking statements made in this Form 10-Q whether as a result of new information, future events or otherwise. Information on Ashland’s website is not incorporated into or a part of this Form 10-Q.

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

ASHLAND GLOBAL HOLDINGS INC. AND CONSOLIDATED SUBSIDIARIES MANAGEMENT'S DISCUSSION AND ANALYSIS

The following discussion should be read in conjunction with the Condensed Consolidated Financial Statements and the accompanying Notes to Condensed Consolidated Financial Statements herein.

BUSINESS OVERVIEW

Ashland profile

Ashland is a premier global leader in providing specialty chemical solutions to customers in a wide range of consumer and industrial markets, including adhesives, architectural coatings, construction, energy, food and beverage, personal care and pharmaceutical. With approximately 6,000 employees worldwide, Ashland serves customers in more than 100 countries.

Ashland's sales generated outside of North America were 61% and 60% for the three and six months ended March 31, 2019 and 2018, respectively. Sales by region expressed as a percentage of total consolidated sales for the three and six months ended March 31 were as follows:

Sales by Geography	Three months ended March 31		Six months ended March 31	
	2019	2018	2019	2018
North America (a)	39%	40%	39%	40%
Europe	35%	34%	33%	32%
Asia Pacific	18%	18%	20%	19%
Latin America & other	8%	8%	8%	9%
	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>

(a) Ashland includes only U.S. and Canada in its North America designation.

Reportable segments

Ashland's businesses are managed within the following two reportable segments: Specialty Ingredients and Intermediates and Solvents. For further descriptions of each reportable segment, see "Results of Operations – Reportable Segment Review" beginning on page 48.

The contribution to sales by each reportable segment expressed as a percentage of total consolidated sales for the three and six months ended March 31 were as follows:

Sales by Reportable Segment	Three months ended March 31		Six months ended March 31	
	2019	2018	2019	2018
Specialty Ingredients	96%	96%	96%	95%
Intermediates and Solvents	4%	4%	4%	5%
	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>

KEY DEVELOPMENTS

Business results

Ashland recorded net income of \$76 million, or an increase of 4%, in the current quarter (\$45 million in continuing operations and \$31 million in discontinued operations) compared to net income of \$73 million (\$42 million in continuing operations and \$31 million in discontinued operations) in the prior year quarter. Results for Ashland's continuing operations were primarily driven by the performance of Specialty Ingredients and the Intermediates and Solvents operating results, as well as Corporate costs, between periods. Discontinued operations were primarily driven by the results of the Composites segment and Marl facility. Ashland's Adjusted EBITDA increased by 3% to \$142 million (see U.S. GAAP reconciliation on page 40).

Composites segment and Marl facility

On November 15, 2018, Ashland announced that it had signed a definitive agreement to sell its Composites segment and Intermediates and Solvents Marl facility to INEOS Enterprises in a transaction valued at \$1.1 billion. Ashland will retain the remaining Intermediates and Solvents facility in Lima, Ohio primarily for its own internal business use. Ashland currently expects net proceeds from the sale to total approximately \$1.0 billion and anticipates that the proceeds will be primarily used to reduce outstanding debt and other corporate purposes.

The transaction is expected to close by late summer, contingent on certain customary regulatory approvals, standard closing conditions and completion of required employee information and consultation processes. Upon the closing of this transaction, Ashland currently expects to recognize a gain within the Statements of Consolidated Comprehensive Income (Loss).

Since this transaction signifies a strategic shift in Ashland's business and had a major effect on Ashland's operations and financial results, the operating results and cash flows related to Composites and the Marl facility have been reflected as discontinued operations in the Statements of Consolidated Comprehensive Income (Loss) and Statements of Condensed Consolidated Cash Flows. See Note C of the Notes to Condensed Consolidated Financial Statements for the results of operations for Composites and the Marl facility for all periods presented.

Certain indirect corporate costs included within the selling, general and administrative expense caption of the Statements of Consolidated Comprehensive Income (Loss) that were previously allocated to the Composites segment and Marl facility do not qualify for classification within discontinued operations and are now reported as selling, general and administrative expense within continuing operations on a consolidated basis and within the Unallocated and other segment. These costs were \$12 million during both the three months ended March 31, 2019 and 2018, and \$23 million during both the six months ended March 31, 2019 and 2018, respectively. Ashland is currently implementing plans to eliminate these costs as part of the global restructuring program.

Subsequent to the completion of the sale, Ashland expects to provide certain transition services to INEOS Enterprises for a fee. While the transition services are expected to vary in duration depending upon the type of service provided, Ashland expects to reduce costs as the transition services are completed.

Cost Reduction Program

In early May 2018, Ashland announced a cost reduction program to accelerate EBITDA margin growth by creating a leaner, more cost competitive company with improved operating efficiency, faster decision making and a stronger customer focus. Under this program, Ashland intends to eliminate a total of \$120 million of existing allocated costs, direct expenses within Specialty Ingredients SG&A, and facility-related costs as follows:

- Approximately \$70 million of costs allocated to the Composites business and to the butanediol manufacturing facility in Marl, Germany, are expected to be offset or eliminated through transfers and reductions. This reduction is intended to eliminate stranded costs.

- Approximately \$50 million of additional costs are expected to be eliminated to drive improved profitability in Specialty Ingredients and accelerate achievement of its adjusted EBITDA margin target of 25-27 percent.

Ashland continues to expect to achieve the full \$120 million in run-rate savings by the end of calendar year 2019. Ashland met its expectation for capturing the targeted \$20 million in annualized run-rate savings under this program by the end of the September 2018 quarter. An additional \$30 million and \$20 million in run-rate savings were captured in the December 2018 and March 2019 quarters, respectively, bringing the total annualized run-rate savings to \$70 million as of March 31, 2019.

RESULTS OF OPERATIONS – CONSOLIDATED REVIEW

Use of non-GAAP measures

Ashland has included within this document the following non-GAAP measures, on both a consolidated and reportable segment basis, which are not defined within U.S. GAAP and do not purport to be alternatives to net income or cash flows from operating activities as a measure of operating performance or cash flows:

- EBITDA – net income (loss), plus income tax expense (benefit), net interest and other financing expenses, and depreciation and amortization.
- Adjusted EBITDA – EBITDA adjusted for noncontrolling interests, discontinued operations, net gain (loss) on acquisitions and divestitures, other income and (expense) and key items (including the remeasurement gains and losses related to pension and other postretirement plans).
- Adjusted EBITDA margin – Adjusted EBITDA divided by sales.
- Adjusted diluted earnings per share (EPS) – income (loss) from continuing operations, adjusted for key items, net of tax, divided by the average outstanding diluted shares for the applicable period.
- Free cash flow – operating cash flows less capital expenditures and certain other adjustments as applicable.

Management believes the use of EBITDA and Adjusted EBITDA measures on a consolidated and reportable segment basis assists investors in understanding the ongoing operating performance by presenting comparable financial results between periods. Ashland believes that by removing the impact of depreciation and amortization and excluding certain non-cash charges, amounts spent on interest and taxes and certain other charges that are highly variable from year to year, EBITDA and Adjusted EBITDA provide Ashland's investors with performance measures that reflect the impact to operations from trends in changes in sales, margin and operating expenses, providing a perspective not immediately apparent from net income and operating income. The adjustments Ashland makes to derive the non-GAAP measures of EBITDA and Adjusted EBITDA exclude items which may cause short-term fluctuations in net income and operating income and which Ashland does not consider to be the fundamental attributes or primary drivers of its business. EBITDA and Adjusted EBITDA provide disclosure on the same basis as that used by Ashland's management to evaluate financial performance on a consolidated and reportable segment basis and provide consistency in our financial reporting, facilitate internal and external comparisons of Ashland's historical operating performance and its business units and provide continuity to investors for comparability purposes.

The Adjusted diluted EPS measure enables Ashland to demonstrate what effect key items have on an earnings per diluted share basis by taking income (loss) from continuing operations, adjusted for key items after tax that have been identified in the Adjusted EBITDA table, and dividing by the average outstanding diluted shares for the applicable period. Ashland's management believes this presentation is helpful to illustrate how the key items have impacted this metric during the applicable period.

The free cash flow measure enables Ashland to provide a better indication of the ongoing cash being generated that is ultimately available for both debt and equity holders as well as other investment opportunities. Unlike cash flow provided by operating activities, free cash flow includes the impact of capital expenditures from continuing operations, providing a more complete picture of cash generation. Free cash flow has certain limitations, including that it does not reflect adjustment for certain non-discretionary cash flows such as mandatory debt repayments. The amount of mandatory versus discretionary expenditures can vary significantly between periods.

Although Ashland provides forward-looking guidance for Adjusted EBITDA, Adjusted diluted EPS and free cash flow, Ashland is not reaffirming or providing forward-looking guidance for U.S. GAAP-reported financial measures or a reconciliation of forward-looking non-GAAP financial measures to the most directly comparable U.S. GAAP measure because it is unable to predict with reasonable certainty the ultimate outcome of certain significant items that affect these metrics such as domestic and international economic, political, legislative, regulatory and legal actions. In addition, certain economic conditions, such as recessionary trends, inflation, interest and monetary exchange rates, government fiscal policies and changes in the prices of certain key raw materials, can have a significant effect on operations and are difficult to predict with certainty.

These non-GAAP measures should be considered supplemental in nature and should not be construed as more significant than comparable measures defined by U.S. GAAP. Limitations associated with the use of these non-GAAP measures include that these measures do not present all of the amounts associated with our results as determined in accordance with U.S. GAAP. The non-GAAP measures provided are used by Ashland management and may not be determined in a manner consistent with the methodologies used by other companies. EBITDA and Adjusted EBITDA provide a supplemental presentation of Ashland's operating performance on a consolidated and reportable segment basis. Adjusted EBITDA generally includes adjustments for items that impact comparability between periods. In addition, certain financial covenants related to Ashland's 2017 Credit Agreement are based on similar non-GAAP measures and are defined further in the sections that reference this metric.

Consolidated review

Net income

Ashland's net income is primarily affected by results within operating income, net interest and other financing expense, income taxes, discontinued operations and other significant events or transactions that are unusual or nonrecurring.

Current Quarter - Key financial results for the three months ended March 31, 2019 and 2018 included the following:

- Ashland's net income amounted to \$76 million and \$73 million for the three months ended March 31, 2019 and 2018, respectively, or \$1.19 and \$1.15 diluted earnings per share, respectively.
- Discontinued operations, which are reported net of taxes, resulted in income of \$31 million during both the three months ended March 31, 2019 and 2018.
- Income from continuing operations, which excludes results from discontinued operations, amounted to \$45 million and \$42 million for the three months ended March 31, 2019 and 2018, respectively.
- The effective income tax rates were 2% and negative 5% for the three months ended March 31, 2019 and 2018, respectively, and were significantly impacted by certain tax discrete items in both the current and prior year quarters.
- Ashland incurred pretax net interest and other financing income of \$3 million and expense of \$24 million for the three months ended March 31, 2019 and 2018, respectively. Due to the adoption of new accounting guidance, the current quarter included \$27 million of unrealized gains on restricted investments.
- Operating income was \$44 million and \$63 million for the three months ended March 31, 2019 and 2018, respectively.

Year-to-date - Key financial results for the six months ended March 31, 2019 and 2018 included the following:

- Ashland recorded net income of \$28 million and \$69 million for the six months ended March 31, 2019 and 2018, respectively, or \$0.45 and \$1.08 diluted earnings per share, respectively.
- Discontinued operations, which are reported net of taxes, resulted in income of \$54 million and \$59 million during the six months ended March 31, 2019 and 2018, respectively.

- Ashland's results from continuing operations, which excludes results from discontinued operations, amounted to a loss of \$26 million and income of \$10 million for the six months ended March 31, 2019 and 2018, respectively.
- The effective income tax rates were negative 2500% and 44% for the six months ended March 31, 2019 and 2018, respectively, and were significantly impacted by certain tax discrete items in both the current and prior periods.
- Ashland incurred pretax net interest and other financing expense of \$52 million and \$49 million for the six months ended March 31, 2019 and 2018, respectively.
- Other net periodic benefit income totaled \$17 million and \$1 million for the six months ended March 31, 2019 and 2018, respectively.
- Net loss on divestitures totaled \$3 million and \$1 million for the six months ended March 31, 2019 and 2018, respectively.
- Operating income amounted to \$37 million and \$67 million for the six months ended March 31, 2019 and 2018, respectively.

For further information on the items reported above, see the discussion in the comparative Statements of Consolidated Comprehensive Income (Loss) caption review analysis.

Operating income

Current Quarter – Operating income was \$44 million and \$63 million for the three months ended March 31, 2019 and 2018, respectively. The current and prior year quarters' operating income included certain key items that were excluded to arrive at Adjusted EBITDA and are quantified in the table on page 40. These operating key items for the applicable periods are summarized as follows:

- Restructuring, separation and other costs – Ashland periodically implements company-wide cost reduction programs related to acquisitions, divestitures and other cost reduction programs in order to enhance profitability through streamlined operations and an improved overall cost structure. Ashland often incurs severance, facility and integration costs associated with these programs. See Note D in the Notes to Condensed Consolidated Financial Statements for further information on the company-wide cost reduction program.
- Accelerated depreciation – As a result of various restructuring activities at certain office facilities and manufacturing facilities during both the current and prior year quarters, Ashland recorded accelerated depreciation due to changes in the expected useful life of certain property, plant and equipment.
- Proxy costs – Ashland incurred significant consulting and other costs associated with the 2019 Annual Meeting of Stockholders and agreement with Cruiser Capital.
- Legal settlement – Ashland received one-time proceeds from a legal settlement during the prior year quarter.

Operating income for the three months ended March 31, 2019 and 2018 included depreciation and amortization of \$62 million and \$67 million, respectively (which excluded accelerated depreciation and amortization of \$20 million and \$5 million for the three months ended March 31, 2019 and 2018, respectively).

Year-to-date - Operating income was \$37 million and \$67 million for the six months ended March 31, 2019 and 2018, respectively. The current and prior year quarters' operating income included certain key items that were excluded to arrive at Adjusted EBITDA and are quantified in the table on page 40. These operating key items for the applicable periods are summarized as follows:

- Restructuring, separation and other costs – Ashland periodically implements company-wide cost reduction programs related to acquisitions, divestitures and other cost reduction programs in order to enhance profitability through streamlined operations and an improved overall cost structure. Ashland often incurs severance, facility and integration costs associated with these programs. See Note D in the

Notes to Condensed Consolidated Financial Statements for further information on the company-wide cost reduction program.

- Accelerated depreciation – As a result of various restructuring activities at certain office facilities and manufacturing facilities during both the current and prior year quarters, Ashland recorded accelerated depreciation due to changes in the expected useful life of certain property, plant and equipment.
- Proxy costs – Ashland incurred significant consulting and other costs associated with the 2019 Annual Meeting of Stockholders and agreement with Cruiser Capital.
- Environmental reserve adjustments – Ashland is subject to various federal, state and local environmental laws and regulations that require environmental assessment or remediation efforts (collectively environmental remediation) at multiple locations. As a result of these activities, Ashland recorded non-cash adjustments during the prior year quarter to its environmental liabilities and receivables related to previously divested businesses or non-operational sites. See Note K of the Notes to Condensed Consolidated Financial Statements for more information.
- Legal settlement – Ashland received one-time proceeds from a legal settlement during the prior year period.

Operating income for the six months ended March 31, 2019 and 2018 included depreciation and amortization of \$124 million and \$131 million, respectively (which excluded accelerated depreciation and amortization of \$39 million and \$11 million for the six months ended March 31, 2019 and 2018, respectively).

Non-operating key items affecting EBITDA

Current Year-to-Date

- Gain on pension and other postretirement plan remeasurements – Ashland recognized a remeasurement gain due to the settlement of a non-U.S. pension plan during the first quarter of fiscal 2019. See Note J of the Notes to Condensed Consolidated Financial Statements for more information.
- Net loss on divestitures – Ashland recorded a loss during the first quarter of fiscal 2019 related to the impairment of an investment.

EBITDA and Adjusted EBITDA

EBITDA totaled \$136 million and \$162 million for the three months ended March 31, 2019 and 2018, respectively, and \$229 million and \$257 million for the six months ended March 31, 2019 and 2018, respectively. EBITDA and Adjusted EBITDA results in the table below have been prepared to illustrate the ongoing effects of Ashland's operations, which exclude certain key items previously described. Management believes the use of such non-GAAP measures on a consolidated and reportable segment basis assists investors in understanding the ongoing operating performance by presenting the financial results between periods on a more comparable basis.

(In millions)	Three months ended March 31		Six months ended March 31	
	2019	2018	2019	2018
Net income	\$ 76	\$ 73	\$ 28	\$ 69
Income tax expense	1	(2)	25	8
Net interest and other expense (income)	(3)	24	52	49
Depreciation and amortization (a)	62	67	124	131
EBITDA	136	162	229	257
Loss (income) from discontinued operations (net of tax)	(31)	(31)	(54)	(59)
Key items included in EBITDA:				
Restructuring, separation and other costs	12	7	38	16
Proxy costs	5	—	5	—
Accelerated depreciation	20	5	39	11
Legal settlement	—	(5)	—	(5)
Environmental reserve adjustments	—	—	—	11
Gain on pension and other postretirement plan remeasurements	—	—	(18)	—
Net loss on divestitures	—	—	3	—
Total key items included in EBITDA	37	7	67	33
Adjusted EBITDA	\$ 142	\$ 138	\$ 242	\$ 231
Total key items included in EBITDA	\$ 37	\$ 7	\$ 67	\$ 33
Unrealized (gain) loss on securities (b)	(27)	—	3	—
Total key items, before tax	\$ 10	\$ 7	\$ 70	\$ 33

(a) Excludes \$20 million and \$5 million of accelerated depreciation for the three months ended March 31, 2019 and 2018, respectively, and \$39 million and \$11 million for the six months ended March 31, 2019 and 2018, respectively.

(b) Due to the adoption of new accounting guidance in the current year, the unrealized losses on certain investment securities directly impact earnings and are recorded within the net interest and other expense (income) caption on the Statements of Consolidated Comprehensive Income (Loss). See Notes A and E of the Notes to Condensed Consolidated Financial Statements for more information.

Diluted EPS and Adjusted Diluted EPS

The following table reflects the U.S. GAAP calculation for the income (loss) from continuing operations adjusted for the cumulative diluted EPS effect for key items after tax that have been identified in the Adjusted EBITDA table in the previous section. Key items are defined as the financial effects from significant transactions that may have caused short-term fluctuations in net income and/or operating income which Ashland believes do not accurately reflect Ashland's underlying business performance and trends. The Adjusted diluted EPS for the income (loss) from continuing operations in the following table has been prepared to illustrate the ongoing effects of Ashland's operations. Management believes investors and analysts use this financial measure in assessing Ashland's business performance and that presenting this non-GAAP measure on a consolidated basis assists investors in better understanding Ashland's ongoing business performance and enhances their ability to compare period-to-period financial results.

	Three months ended		Six months ended	
	March 31		March 31	
	2019	2018	2019	2018
Diluted EPS from continuing operations (as reported)	\$ 0.71	\$ 0.65	\$ (0.41)	\$ 0.15
Key items, before tax:				
Restructuring, separation and other costs	0.50	0.19	1.21	0.42
Proxy costs	0.08	—	0.08	—
Gain on pension and other postretirement plan remeasurements	—	—	(0.29)	—
Legal settlement	—	(0.07)	—	(0.07)
Environmental reserve adjustments	—	—	—	0.18
Unrealized (gain) loss on securities	(0.42)	—	0.05	—
Net loss on divestitures	—	—	0.05	—
Key items, before tax	0.16	0.12	1.10	0.53
Tax effect of key items (a)	0.04	(0.03)	(0.08)	(0.14)
Key items, after tax	0.20	0.09	1.02	0.39
Tax specific key items:				
Deferred tax rate changes	—	(0.07)	0.03	(2.06)
One-time transition tax	—	—	0.35	2.22
Restructuring and separation activity	(0.03)	—	(0.02)	—
Other tax reform	(0.05)	—	—	—
Tax specific key items (b)	(0.08)	(0.07)	0.36	0.16
Total key items	0.12	0.02	1.38	0.55
Adjusted diluted EPS from continuing operations (non-GAAP)	\$ 0.83	\$ 0.67	\$ 0.97	\$ 0.70

(a) Represents the diluted EPS impact from the tax effect of the key items that are previously identified above.

(b) Represents the diluted EPS impact from tax specific financial transactions, tax law changes or other matters that fall within the definition of key items. For additional explanation of these tax specific key items, see the income tax expense (benefit) discussion within the following caption review section.

Statements of Consolidated Comprehensive Income (Loss) – caption review

A comparative analysis of the Statements of Consolidated Comprehensive Income (Loss) by caption is provided as follows for the three and six months ended March 31, 2019 and 2018.

(In millions)	Three months ended March 31			Six months ended March 31		
	2019	2018	Change	2019	2018	Change
Sales	\$ 667	\$ 672	\$ (5)	\$ 1,243	\$ 1,253	\$ (10)

The following table provides a reconciliation of the change in sales between the three and six months ended March 31, 2019 and 2018.

(In millions)	Three months ended March 31, 2019		Six months ended March 31, 2019	
Currency exchange	\$	(18)	\$	(26)
Volume/product mix		5		(2)
Pricing		8		18
Change in sales	\$	<u>(5)</u>	\$	<u>(10)</u>

Current Quarter - Sales for the current quarter decreased \$5 million compared to the prior year quarter. Unfavorable foreign currency exchange decreased sales by \$18 million. These decreases were partially offset by volume/product mix and product pricing which increased sales by \$5 million and \$8 million, respectively.

Year-to-Date - Sales for the current year decreased \$10 million compared to the prior year period. Unfavorable foreign currency exchange and volume/product mix each decreased sales by \$26 million and \$2 million, respectively. These decreases were partially offset by improvements to product pricing and product mix which increased sales by \$18 million.

(In millions)	Three months ended March 31			Six months ended March 31		
	2019	2018	Change	2019	2018	Change
Cost of sales	\$ 469	\$ 449	\$ 20	\$ 893	\$ 851	\$ 42
Gross profit as a percent of sales	29.7%	33.2%		28.2%	32.1%	

Fluctuations in cost of sales are driven primarily by raw material prices, volume and changes in product mix, currency exchange, acquisitions and divestitures and other certain charges incurred as a result of changes or events within the businesses or restructuring activities. The following table provides a quantified reconciliation of the changes in cost of sales between the three and six months ended March 31, 2019 and 2018.

(In millions)	Three months ended March 31, 2019		Six months ended March 31, 2019	
Changes in:				
Accelerated depreciation	\$	19		38
Severance and other restructuring costs		1		8
Production and raw material costs		2		9
Volume/product mix		7		1
Currency exchange		(9)		(14)
Change in cost of sales	\$	<u>20</u>	\$	<u>42</u>

Current Quarter - Cost of sales for the current quarter increased \$20 million compared to the prior year quarter. Due to the planned closure of a manufacturing facility during the prior quarter, accelerated depreciation increased cost of sales by \$19 million while severance and other restructuring costs increased cost of sales by \$1 million. Unfavorable production costs and volume/product mix increased cost of sales by \$2 million and \$7 million, respectively. These increases were partially offset by favorable foreign currency exchange, which decreased cost of sales by \$9 million.

Year-to-Date - Cost of sales for the current year increased \$42 million compared to the prior year period. Due to the planned closure of a manufacturing facility during the current period, accelerated depreciation increased cost of sales by \$38 million while severance and other restructuring costs increased cost of sales by \$8 million. Unfavorable production costs and volume/product mix increased cost of sales by \$9 million and \$1 million, respectively. These increases were partially offset by favorable foreign currency exchange, which decreased cost of sales by \$14 million.

(In millions)	Three months ended March 31			Six months ended March 31		
	2019	2018	Change	2019	2018	Change
Selling, general and administrative expense	\$ 136	\$ 146	\$ (10)	\$ 279	\$ 300	\$ (21)
As a percent of sales	20.4%	21.7%		22.4%	23.9%	

Current Quarter - Selling, general and administrative expense for the current quarter decreased \$10 million compared to the prior year quarter with expenses as a percent of sales decreasing 1.3 percentage points. Key drivers of the fluctuation in selling, general and administrative expense compared to the prior year quarter were:

- \$12 million and \$10 million of key items for restructuring, separation and other costs during the current and prior year quarters, respectively, comprised of the following:
 - o \$12 million of severance, lease abandonment and other restructuring costs related to company-wide cost-savings initiatives during the current quarter;
 - o \$2 million of costs related to the separation of Valvoline during the prior year quarter;
 - o \$4 million of accelerated depreciation related to the planned closure of an office building during the prior year quarter; and
 - o \$4 million of Pharmachem integration costs during the prior year quarter.
- \$5 million of consulting and other costs associated with the 2019 proxy during the current quarter.
- Favorable currency exchange of \$3 million as well as achieved cost savings during the current quarter.

Year-to-Date - Selling, general and administrative expense for the current quarter decreased \$21 million compared to the prior year quarter with expenses as a percent of sales decreasing 1.5 percentage points. Key drivers of the fluctuation in selling, general and administrative expense compared to the prior year quarter were:

- \$7 million and \$18 million in net environmental-related expenses during the current and prior year quarters, respectively (see Note K for more information);
- \$30 million and \$21 million of key items for restructuring, separation and other costs during the current and prior year quarters, respectively, comprised of the following:
 - o \$30 million of severance, lease abandonment and other restructuring costs related to company-wide cost-savings initiatives during the current year period;
 - o \$8 million of costs related to the separation of Valvoline during the prior year period;
 - o \$8 million of accelerated depreciation related to the planned closure of an office building during the prior year quarter; and
 - o \$5 million of Pharmachem integration costs during the prior year quarter.
- \$5 million of consulting and other costs associated with the 2019 proxy during the current year period.
- Favorable currency exchange of \$4 million as well as achieved cost savings during the current year period.

(In millions)	Three months ended March 31			Six months ended March 31		
	2019	2018	Change	2019	2018	Change
Research and development expense	\$ 17	\$ 18	\$ (1)	\$ 34	\$ 37	\$ (3)

Current Quarter - Research and development expense declined compared to the prior year quarter, primarily due to the overall company-wide cost reduction program.

Year-to-Date - Research and development expense declined compared to the prior year period, primarily due to the overall company-wide cost reduction program.

(In millions)	Three months ended March 31			Six months ended March 31		
	2019	2018	Change	2019	2018	Change
Equity and other income (loss)						
Equity income (a)	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —
Other income	(1)	4	(5)	—	2	(2)
	<u>\$ (1)</u>	<u>\$ 4</u>	<u>\$ (5)</u>	<u>\$ —</u>	<u>\$ 2</u>	<u>\$ (2)</u>

(a) Activity of \$0 denotes value less than \$1 million.

Current Quarter - Other income decreased compared to the prior year primarily due to \$5 million of proceeds from a legal settlement in the prior year.

Year-to-Date - Other income in the prior year period includes the previously discussed legal settlement, partially offset by accelerated depreciation for the termination of a contract at a manufacturing facility.

(In millions)	Three months ended March 31			Six months ended March 31		
	2019	2018	Change	2019	2018	Change
Net interest and other expense (income)						
Interest expense	\$ 26	\$ 29	\$ (3)	\$ 53	\$ 58	\$ (5)
Interest income	—	(1)	1	(1)	(3)	2
Loss (income) from restricted investments	(29)	(5)	(24)	(2)	(8)	6
Other financing costs	—	1	(1)	2	2	—
	<u>\$ (3)</u>	<u>\$ 24</u>	<u>\$ (27)</u>	<u>\$ 52</u>	<u>\$ 49</u>	<u>\$ 3</u>

Current Quarter - Net interest and other expense decreased by \$27 million during the current quarter compared to the prior year quarter. Interest expense decreased slightly due to lower debt levels during the current quarter compared to the prior year quarter. In the current quarter, restricted investments included gains on equity securities of \$27 million due to new accounting standard that was effective as of October 1, 2018. See Note E of the Notes to Condensed Consolidated Financial Statements for more information on the restricted investments.

Year-to-Date - Net interest and other expense increased by \$3 million during the current year compared to the prior year period. Interest expense decreased \$5 million due to lower debt levels during the current year compared to the prior year period. In the current year, restricted investments included losses on equity securities of \$3 million due to new accounting standard that was effective as of October 1, 2018. See Note E of the Notes to Condensed Consolidated Financial Statements for more information on the restricted investments.

(In millions)	Three months ended March 31			Six months ended March 31		
	2019	2018	Change	2019	2018	Change
Other net periodic benefit income	\$ (1)	\$ 1	\$ (2)	\$ 17	\$ 1	\$ 16

Current Quarter - Other net periodic benefit remained relatively consistent for the current quarter compared to the prior quarter.

Year-to-Date - Other net periodic benefit income during the current year period primarily related to the curtailment gain from the settlement of a non-U.S. pension plan in the first quarter of fiscal 2019.

(In millions)	Three months ended March 31			Six months ended March 31		
	2019	2018	Change	2019	2018	Change
Net income (loss) on divestitures	\$ —	\$ —	\$ —	\$ (3)	\$ (1)	\$ (2)

Year-to-Date - The activity in the current period related to the impairment of an investment during the first quarter of fiscal 2019, while activity in the prior year period primarily related to post-closing adjustments for certain divestitures.

(In millions)	Three months ended March 31			Six months ended March 31		
	2019	2018	Change	2019	2018	Change
Income tax expense (benefit)	\$ 1	\$ (2)	\$ 3	\$ 25	\$ 8	\$ 17
Effective tax rate	2%	(5)%		(2500)%	44%	

Current Quarter - Ashland's effective tax rate in any interim period is subject to adjustments related to discrete items and the mix of domestic and foreign operating results. The overall effective tax rate was 2% for the three months ended March 31, 2019 and was primarily impacted by income mix, certain nondeductible restructuring costs as well as \$11 million in favorable tax discrete items including nontaxable earnings in deferred compensation related investments and other items.

The overall effective tax rate was negative 5% for the three months ended March 31, 2018 and was primarily impacted by the current quarter income mix and net unfavorable tax discrete adjustments of \$5 million related to a tax rate change in a foreign country and other items.

Year-to-Date - Ashland's effective tax rate in any interim period is subject to adjustments related to discrete items and the mix of domestic and foreign operating results. The overall effective tax rate was negative 2500% for the six months ended March 31, 2019 and was primarily impacted by the items referenced in the three month period as well as a net \$30 million from unfavorable tax discrete items including the final assessment of the Tax Act and other items.

The overall effective tax rate was 44% for the six months ended March 31, 2018 and was primarily impacted by the items referenced in the quarter, as well as a net \$16 million from unfavorable tax discrete items including the final assessment of the Tax Act and other items.

Adjusted income tax expense (benefit)

Key items are defined as the financial effects from significant transactions that may have caused short-term fluctuations in net income and/or operating income which Ashland believes do not accurately reflect Ashland's underlying business performance and trends. Tax specific key items are defined as the financial effects from tax specific financial transactions, tax law changes or other matters that fall within the definition of key items as previously described. The effective tax rate, excluding key items, which is a non-GAAP measure, has been prepared to illustrate the ongoing tax effects of Ashland's operations. Management believes investors and analysts use this financial measure in assessing Ashland's business performance and that presenting this non-GAAP measure on a consolidated basis assists investors in better understanding Ashland's ongoing business performance and enhancing their ability to compare period-to-period financial results.

The effective tax rate during the three and six months ended March 31, 2019 and 2018 was significantly impacted by the following tax specific key items:

- Deferred tax rate changes – Includes the impact from the remeasurement of Ashland's domestic deferred tax balances resulting from the enactment of the Tax Act as well as the impact from deferred rate changes for other jurisdictions;

- One-time transition tax – Includes the impact from the one-time transition tax resulting from the enactment of the Tax Act;
- Restructuring and separation activity – Includes the impact from company-wide cost reduction programs; and
- Other tax reform – Includes the impact from other items related to the Tax Act and other tax law changes. These adjustments include the impact from the deductibility of compensation items and miscellaneous state tax items.

The following table is a calculation of the effective tax rate, excluding these key items.

(In millions)	Three months ended March 31		Six months ended March 31	
	2019	2018	2019	2018
Income (Loss) from continuing operations before income taxes	\$ 46	\$ 40	\$ (1)	\$ 18
Key items (pre-tax) (a)	10	7	70	33
Adjusted income from continuing operations before income taxes	\$ 56	\$ 47	\$ 69	\$ 51
Income tax expense (benefit)	\$ 1	\$ (2)	\$ 25	\$ 8
Income tax rate adjustments:				
Tax effect of key items	(2)	2	5	10
Tax specific key items: (b)				
Deferred tax rate changes	—	4	(2)	130
One-time transition tax	—	—	(22)	(142)
Restructuring and separation activity	2	—	1	—
Other tax reform	3	—	—	—
Total income tax rate adjustments	3	6	(18)	(2)
Adjusted income tax expense	\$ 4	\$ 4	\$ 7	\$ 6
Effective tax rate, excluding key items (Non-GAAP) (c)	6%	10%	10%	12%

(a) See Adjusted EBITDA reconciliation table previously disclosed in this Management, Discussion and Analysis for a summary of the key items, before tax.

(b) For additional information on the effect that these tax specific key items had on EPS, see the Adjusted Diluted EPS table previously disclosed in this Management Discussion and Analysis.

(c) Due to rounding conventions, the effective tax rate presented may not recalculate precisely based on the numbers disclosed within this table.

(In millions)	Three months ended March 31			Six months ended March 31		
	2019	2018	Change	2019	2018	Change
Income (loss) from discontinued operation (net of taxes)						
Composites/Marl facility	\$ 28	\$ 24	\$ 4	\$ 53	\$ 49	\$ 4
Valvoline	1	4	(3)	1	7	(6)
Asbestos-related litigation	—	3	(3)	—	3	(3)
Water Technologies	2	—	2	1	—	1
Distribution	—	—	—	(1)	—	(1)
	\$ 31	\$ 31	\$ —	\$ 54	\$ 59	\$ (5)

Current Quarter - As a result of the expected divestiture of the Composites segment and Marl facility, the related operating results have been reflected as discontinued operations (net of tax) within the Statements of Consolidated Comprehensive Income (Loss). See Note B for more information on this expected divestiture. In the current quarter, the sales and pre-tax operating income included in discontinued operations were \$284 million and \$45 million, respectively. In the prior year quarter, the sales and pre-tax operating income included in discontinued operations were \$302 million and \$31 million, respectively.

The activity within discontinued operations for Valvoline during the prior year quarter was primarily related to adjustments in conjunction with a Tax Matters Agreement established at the time of Valvoline's separation from Ashland.

The activity for Water Technologies and Distribution during the current quarter was related to post-closing adjustments.

Year-to-Date - As a result of the expected divestiture of the Composites segment and Marl facility, the related operating results have been reflected as discontinued operations (net of tax) within the Statements of Consolidated Comprehensive Income (Loss). See Note B for more information on this expected divestiture. In the current year period, the sales and pre-tax operating income included in discontinued operations were \$559 million and \$80 million, respectively. In the prior year period, the sales and pre-tax operating income included in discontinued operations were \$562 million and \$66 million, respectively.

The activity within discontinued operations for Valvoline during the prior year was primarily related to adjustments in conjunction with a Tax Matters Agreement established at the time of Valvoline's separation from Ashland.

The activity related to Water Technologies and Distribution during the current quarter was related to post-closing adjustments.

Other comprehensive income (loss)

A comparative analysis of the components of other comprehensive income (loss) is provided below for the three and six months ended March 31, 2019 and 2018.

(In millions)	Three months ended March 31			Six months ended March 31		
	2019	2018	Change	2019	2018	Change
Other comprehensive income (loss) (net of taxes)						
Unrealized translation gain (loss)	\$ (9)	\$ 55	\$ (64)	\$ (40)	\$ 58	\$ (98)
Pension and postretirement obligation adjustment	—	—	—	(6)	—	—
Net change in investment securities	—	(6)	6	—	2	(2)
	<u>\$ (9)</u>	<u>\$ 49</u>	<u>\$ (58)</u>	<u>\$ (46)</u>	<u>\$ 60</u>	<u>\$ (100)</u>

Current Quarter - Total other comprehensive income, net of tax, for the current quarter decreased \$58 million compared to the prior year quarter as a result of the following components:

- For the three months ended March 31, 2019, the change in unrealized gain (loss) from foreign currency translation adjustments resulted in a loss of \$9 million compared to a gain of \$55 million for the three months ended March 31, 2018. The fluctuations in unrealized translation gains and losses are primarily due to translating foreign subsidiary financial statements from local currencies to U.S. Dollars.
- For the three months ended March 31, 2018, the net change in investment securities related to restricted investments amounted to a loss of \$6 million. Due to the adoption of new accounting guidance in the current year, unrealized gains and losses on Ashland's equity securities are now recognized in net income rather than AOCI. See Notes A and E of the Notes to Condensed Consolidated Financial Statements for more information.

Year-to-Date - Total other comprehensive income, net of tax, for the current period decreased \$100 million compared to the prior year period as a result of the following components:

- For the six months ended March 31, 2019, the change in unrealized gain (loss) from foreign currency translation adjustments resulted in a loss of \$40 million compared to a gain of \$58 million for the three months ended March 31, 2018. The fluctuations in unrealized translation gains and losses are primarily due to translating foreign subsidiary financial statements from local currencies to U.S. Dollars.

- For the six months ended March 31, 2019, the pension and postretirement obligation adjustment included \$6 million of prior service costs recognized within other comprehensive income (loss) due to pension plan remeasurements.
- The net change in investment securities related to restricted investments amounted to gains of \$2 million during the six months ended March 31, 2018. Due to the adoption of new accounting guidance in the current year, unrealized gains and losses on Ashland's equity securities are now recognized in net income rather than AOCI. See Notes A and E of the Notes to Condensed Consolidated Financial Statements for more information.

RESULTS OF OPERATIONS – REPORTABLE SEGMENT REVIEW

Ashland's operations are managed within the following two reportable segments: Specialty Ingredients and Intermediates and Solvents.

Results of Ashland's reportable segments are presented based on its management and internal accounting structure. The structure is specific to Ashland; therefore, the financial results of Ashland's reportable segments are not necessarily comparable with similar information for other companies. Ashland allocates all significant costs to its reportable segments except for certain significant company-wide restructuring activities, including stranded costs, and other costs or adjustments that relate to former businesses that Ashland no longer operates. The service cost component of pension and other postretirement benefits costs is allocated to each reportable segment on a ratable basis; while the remaining components of pension and other postretirement benefits costs are recorded within the other net periodic benefit income caption on the Statements of Consolidated Comprehensive Income (Loss). Ashland refines its expense allocation methodologies to the reportable segments from time to time as internal accounting practices are improved, more refined information becomes available and the industry or market changes. Significant revisions to Ashland's methodologies are adjusted for all segments on a retrospective basis.

The EBITDA and Adjusted EBITDA amounts presented within this business section are provided as a means to enhance the understanding of financial measurements that Ashland has internally determined to be relevant measures of comparison for each segment. Each of these non-GAAP measures is defined as follows: EBITDA (operating income (loss) plus depreciation and amortization), Adjusted EBITDA (EBITDA adjusted for key items, which may include pro forma effects for significant acquisitions or divestitures, as applicable), and Adjusted EBITDA margin (Adjusted EBITDA, which may include pro forma adjustments, divided by sales or sales adjusted for pro forma results). Ashland does not allocate items to each reportable segment below operating income, such as interest expense and income taxes. As a result, reportable segment EBITDA and Adjusted EBITDA are reconciled directly to operating income since it is the most directly comparable caption to the Statements of Consolidated Comprehensive Income (Loss).

The following table discloses sales, operating income, depreciation and amortization and statistical operating information by reportable segment for the three months ended March 31, 2019 and 2018.

(In millions)	Three months ended March 31		Six months ended March 31	
	2019	2018	2019	2018
Sales				
Specialty Ingredients	\$ 637	\$ 646	\$ 1,190	\$ 1,196
Intermediates and Solvents	30	26	53	57
	<u>\$ 667</u>	<u>\$ 672</u>	<u>\$ 1,243</u>	<u>\$ 1,253</u>
Operating income (loss)				
Specialty Ingredients	\$ 70	\$ 89	\$ 96	\$ 131
Intermediates and Solvents	5	3	5	6
Unallocated and other	(31)	(29)	(64)	(70)
	<u>\$ 44</u>	<u>\$ 63</u>	<u>\$ 37</u>	<u>\$ 67</u>
Depreciation and amortization				
Specialty Ingredients	\$ 77	\$ 64	\$ 154	\$ 126
Intermediates and Solvents	3	3	6	7
Unallocated and other	2	5	3	9
	<u>\$ 82</u>	<u>\$ 72</u>	<u>\$ 163</u>	<u>\$ 142</u>
Operating information				
Specialty Ingredients				
Sales per shipping day	\$ 10.1	\$ 10.1	\$ 9.5	\$ 9.6
Metric tons sold (thousands)	82.6	84.0	155.4	157.0
Gross profit as a percent of sales (a)	29.8%	33.6%	28.5%	32.6%
Intermediates and Solvents				
Sales per shipping day	\$ 0.5	\$ 0.4	\$ 0.4	\$ 0.5
Metric tons sold (thousands)	9.5	8.4	16.3	18.9
Gross profit as a percent of sales (a)	26.1%	22.8%	19.2%	20.4%

(a) Gross profit is defined as sales, less cost of sales divided by sales.

Sales by region expressed as a percentage of reportable segment sales for the three and six months ended March 31, 2019 and 2018 were as follows. Ashland includes only U.S. and Canada in its North American designation.

Sales by Geography	Three months ended March 31, 2019		Six months ended March 31, 2019	
	Specialty Ingredients	Intermediates and Solvents	Specialty Ingredients	Intermediates and Solvents
North America	39%	51%	39%	51%
Europe	34%	19%	33%	21%
Asia Pacific	18%	26%	19%	24%
Latin America & other	9%	4%	9%	4%
	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>
Sales by Geography	Three months ended March 31, 2018		Six months ended March 31, 2018	
	Specialty Ingredients	Intermediates and Solvents	Specialty Ingredients	Intermediates and Solvents
North America	40%	51%	40%	47%
Europe	34%	23%	33%	23%
Asia Pacific	17%	23%	18%	25%
Latin America & other	9%	3%	9%	5%
	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>

Specialty Ingredients

Specialty Ingredients offers industry-leading products, technologies and resources for solving formulation and product-performance challenges. Using natural, synthetic and semisynthetic polymers derived from cellulose ethers, vinyl pyrrolidones, acrylic polymers, polyester and polyurethane-based adhesives, and plant and seed extract, Specialty Ingredients offers comprehensive and innovative solutions for consumer and industrial applications. Key customers include pharmaceutical companies; makers of personal care products, food and beverages; makers of nutraceuticals and supplements; manufacturers of paint, coatings and construction materials; packaging and converting; and oilfield service companies.

March 2019 quarter compared to March 2018 quarter

Specialty Ingredients' sales decreased \$9 million to \$637 million in the current quarter. Unfavorable foreign currency exchange reduced sales by \$18 million. This decrease was partially offset by improved product pricing of \$7 million, and volume/product mix of \$2 million, which includes a negative impact associated with Colgate-Gantrez product reformulation of 1%.

Gross profit during the current quarter decreased \$27 million compared to the prior year quarter. Foreign currency exchange decreased gross profit by \$9 million with volume/product mix adding an additional \$3 million decline. The unfavorable impact of pricing and cost, which was \$15 million, included a \$20 million impact from the following key item during the current quarter:

- \$20 million of restructuring costs related to the planned closure of a manufacturing facility during the current quarter (which included \$19 million of accelerated depreciation and amortization).

In total, gross profit margin during the current quarter decreased 3.8 percentage points as compared to the prior year quarter to 29.8%.

Selling, general and administrative expenses (which include research and development expenses throughout the reportable segment discussion and analysis) decreased \$7 million compared to the prior year quarter, primarily related to the company-wide cost reduction program as well as a favorable foreign currency exchange. Equity and other income increased \$1 million compared to the prior year quarter.

Operating income totaled \$70 million for the current quarter compared to \$89 million in the prior year quarter. Current quarter EBITDA decreased \$23 million to \$128 million, while Adjusted EBITDA decreased \$5 million to \$148 million. Adjusted EBITDA margin decreased 0.5 percentage points in the current quarter to 23.2%.

Fiscal 2019 year-to-date compared to fiscal 2018 year-to-date

Specialty Ingredients' sales decreased \$6 million to \$1,190 million in the current period. Unfavorable foreign currency exchange decreased sales by \$25 million. This decrease was partially offset by product pricing and volume/product mix which increased sales by \$14 million and \$5 million, respectively. Volume/product mix includes a negative impact associated with Colgate-Gantrez product reformulation of 1%.

Gross profit during the current year decreased \$51 million compared to the prior year period. The net impact of pricing and costs decreased gross profit by \$36 million, which included a \$44 million net impact from the following key items during the current and prior year period:

- \$45 million of restructuring costs related to the planned closure of a manufacturing facility during the prior quarter (which included \$38 million of accelerated depreciation and amortization); and
- \$1 million of severance and the restructuring costs related to the closure of a manufacturing facility during the prior year period.

Additionally, unfavorable foreign currency exchange and volume decreased gross profit by \$13 million and \$2 million, respectively. In total, gross profit margin during the current period decreased 4.1 percentage points as compared to the prior year period to 28.5%.

Selling, general and administrative expenses decreased \$14 million compared to the prior year period, primarily related to the company-wide cost reduction program as well as a favorable foreign currency exchange. Equity and other income increased \$2 million compared to the prior year period.

Operating income totaled \$96 million for the current year compared to \$131 million in the prior. Current quarter EBITDA decreased \$41 million to \$212 million, while Adjusted EBITDA increased \$2 million to \$260 million. Adjusted EBITDA margin increased 0.2 percentage points in the current year period to 21.8%.

EBITDA and adjusted EBITDA reconciliation

The following EBITDA and Adjusted EBITDA presentation for the three and six months ended March 31, 2019 and 2018 below is provided as a means to enhance the understanding of financial measurements that Ashland has internally determined to be relevant measures of comparison for the results of Specialty Ingredients. Adjusted EBITDA results have been prepared to illustrate the ongoing effects of Ashland's operations, which exclude certain key items. The key items during the current year period related to \$20 million and \$48 million of restructuring costs associated with the planned closure of a manufacturing facility (which included \$19 million and \$38 million of accelerated depreciation) for the three and six months ended March 31, 2019, respectively. The key items within the prior year period related to \$2 million and \$4 million of accelerated depreciation for the termination of a contract at a manufacturing facility and zero and \$1 million of severance and other restructuring costs for the closure of a manufacturing plant for the three and six months ended 2018, respectively.

(In millions)	Three months ended		Six months ended	
	March 31		March 31	
	2019	2018	2019	2018
Operating income	\$ 70	\$ 89	\$ 96	\$ 131
Depreciation and amortization (a)	58	62	116	122
EBITDA	128	151	212	253
Accelerated depreciation	19	2	38	4
Severance and other restructuring costs	1	—	10	1
Adjusted EBITDA	<u>\$ 148</u>	<u>\$ 153</u>	<u>\$ 260</u>	<u>\$ 258</u>

(a) Excludes \$19 million and \$2 million of accelerated depreciation for the three months ended March 31, 2019 and 2018, respectively, and \$38 million and \$4 million of accelerated depreciation for the six months ended March 31, 2019 and 2018, respectively..

Intermediates and Solvents

Intermediates and Solvents is a leading producer of 1,4 butanediol and related derivatives, including tetrahydrofuran and N-methylpyrrolidone. These products are used as chemical intermediates in the production of engineering polymers and polyurethanes, and as specialty process solvents in a wide array of applications including electronics, pharmaceuticals, water filtration membranes and more. Butanediol is also supplied to Ashland's Specialty Ingredients business for use as a raw material.

On November 15, 2018, Ashland announced that it had signed a definitive agreement to sell its Composites segment and Marl facility. As a result, the financial information for Intermediates and Solvents excludes the activity from the Marl facility due to the expected divestiture and has been restated in prior periods.

March 2019 quarter compared to March 2018 quarter

Intermediates and Solvents' sales increased \$4 million to \$30 million in the current quarter primarily due to increased volumes.

Gross profit increased \$2 million during the current quarter compared to the prior year quarter, primarily due to increased volumes. Gross profit margin increased 3.3 percentage points as compared to the prior year quarter to 26.1%.

Selling, general and administrative expenses remained consistent with the prior year quarter.

Operating income was \$5 million in the current quarter compared to \$3 million in the prior year quarter. EBITDA increased \$2 million to \$8 million in the current quarter, while EBITDA margin increased 3.6 percentage points in the current quarter to 26.7%.

Fiscal 2019 year-to-date compared to fiscal 2018 year-to-date

Intermediates and Solvents' sales decreased \$4 million to \$53 million in the current period. Lower volume/product mix and unfavorable foreign currency exchange decreased sales by \$7 million and \$1 million, respectively. These decreases were partially offset by improved product pricing which increased sales by \$4 million.

Gross profit decreased \$1 million during the current period compared to the prior year period. Volume declines and unfavorable foreign currency exchange decreased gross profit by \$2 million and \$1 million, respectively. The net impact of pricing and costs offset those decreases by \$2 million. In total, gross profit margin decreased 1.2 percentage points as compared to the prior year period to 19.2%.

Selling, general and administrative expenses remained consistent with the prior year period.

Operating income totaled \$5 million in the current period as compared to \$6 million in the prior year period. EBITDA decreased \$2 million to \$11 million in the current period, while EBITDA margin increased 2.0 percentage points in the current period to 20.8%.

EBITDA reconciliation

The following EBITDA presentation for the three and six months ended March 31, 2019 and 2018 is provided as a means to enhance the understanding of financial measurements that Ashland has internally determined to be relevant measures of comparison for the results of Intermediates and Solvents. There were no unusual or key items that affected comparability for EBITDA during the current and prior year quarters or periods.

(In millions)	Three months ended March 31		Six months ended March 31	
	2019	2018	2019	2018
Operating income	\$ 5	\$ 3	\$ 5	\$ 6
Depreciation and amortization	3	3	6	7
EBITDA	<u>\$ 8</u>	<u>\$ 6</u>	<u>\$ 11</u>	<u>\$ 13</u>

Unallocated and other

The following table summarizes the key components of the Unallocated and other segment's operating income (loss) for the three and six months ended March 31, 2019 and 2018.

(In millions)	Three months ended March 31		Six months ended March 31	
	2019	2018	2019	2018
Restructuring activities	\$ (24)	\$ (24)	\$ (53)	\$ (49)
Environmental expenses	(4)	(4)	(6)	(18)
Proxy costs	(5)	—	(5)	—
Legal settlement	—	5	—	5
Other income (expense)	2	(6)	—	(8)
Total expense	<u>\$ (31)</u>	<u>\$ (29)</u>	<u>\$ (64)</u>	<u>\$ (70)</u>

March 2019 quarter compared to March 2018 quarter

Unallocated and other recorded expense of \$31 million and \$29 million for the three months ended March 31, 2019 and 2018, respectively. The current and prior year quarters included charges for restructuring activities of \$24 million, which were comprised of the following items:

- \$12 million and \$14 million of stranded divestiture costs during the current and prior year quarters, respectively, primarily related to the planned divestiture of the Composites segment and Marl facility;
- \$8 million and \$4 million of severance, lease abandonment and other restructuring costs related to company-wide cost reduction programs during the current and prior quarters, respectively;
- \$4 million of impairment related to the planned sale of an office building during the current year quarter;
- \$2 million of costs related to the separation of Valvoline during the prior year quarter; and
- \$4 million of integration costs related to the acquisition of Pharmachem during the prior year quarter.

Fiscal 2019 year-to-date compared to fiscal 2018 year-to-date

Unallocated and other recorded expense of \$64 million and \$70 million for the six months ended March 31, 2019 and 2018, respectively. The current and prior year periods included charges for restructuring activities of \$53 million and \$49 million, respectively, which were comprised of the following items:

- \$24 million and \$28 million of stranded divestiture costs during the current and prior year periods, respectively;
- \$25 million and \$4 million of severance, lease abandonment and other restructuring costs related to company-wide cost reduction programs during the current and prior year periods, respectively;
- \$4 million of impairment related to the planned sale of an office building during the current year period;
- \$4 million of accelerated depreciation related to the planned closure of an office building during the prior period;
- \$5 million of integration costs related to the acquisition of Pharmachem during the prior period; and
- \$8 million of costs related to the separation of Valvoline during the current year period.

The remaining unallocated items during the current period primarily included \$6 million for environmental expenses and \$5 million in proxy defense costs. The remaining items during the prior year period primarily included \$18 million for environmental expenses and \$5 million of income related to proceeds from a legal settlement.

FINANCIAL POSITION

Liquidity

Ashland had \$164 million in cash and cash equivalents as of March 31, 2019, of which \$156 million was held by foreign subsidiaries and had no significant limitations that would prohibit remitting the funds to satisfy corporate obligations. In certain circumstances, if such amounts were repatriated to the United States, additional taxes might need to be accrued and paid depending on the source of the earnings remitted. Ashland currently has no plans to repatriate any amounts for which additional taxes would need to be accrued.

Ashland's cash flows from operating, investing and financing activities, as reflected in the Statements of Condensed Consolidated Cash Flows, are summarized as follows for the six months ended March 31, 2019 and 2018.

(In millions)	Six months ended	
	March 31	
	2019	2018
Cash provided (used) by:		
Operating activities from continuing operations	\$ 6	\$ (3)
Investing activities from continuing operations	(49)	(92)
Financing activities from continuing operations	(36)	(220)
Discontinued operations	(49)	(29)
Effect of currency exchange rate changes on cash and cash equivalents	(2)	3
Net decrease in cash and cash equivalents	<u>\$ (130)</u>	<u>\$ (341)</u>

Operating activities

The following discloses the cash flows associated with Ashland's operating activities for the six months ended March 31, 2019 and 2018.

(In millions)	Six months ended	
	March 31	
	2019	2018
Cash flows provided (used) by operating activities from continuing operations		
Net income	\$ 28	\$ 69
Income from discontinued operations (net of income taxes)	(54)	(59)
Adjustments to reconcile income from continuing operations to cash flows from operating activities:		
Depreciation and amortization	163	142
Original issue discount and debt issuance costs amortization	4	3
Distribution from affiliates	—	1
Deferred income taxes	2	4
Stock based compensation expense	13	13
Loss (income) from restricted investments	(2)	(8)
Excess tax benefit on stock based compensation	2	2
Net loss on divestitures	3	1
Impairments	5	—
Pension contributions	(3)	(7)
Gain on pension and other postretirement plan remeasurements	(18)	—
Change in operating assets and liabilities (a)	(137)	(164)
Total cash flows provided (used) by operating activities from continuing operations	<u>\$ 6</u>	<u>\$ (3)</u>

(a) Excludes changes resulting from operations acquired or sold.

Cash flows provided from operating activities from continuing operations, a major source of Ashland's liquidity, amounted to a cash inflow of \$6 million and outflow of \$3 million during the current and prior year quarters, respectively.

Operating Activities – Operating Assets and Liabilities

The cash results during each quarter are primarily driven by net income (loss), excluding discontinued operation results, adjusted for certain non-cash items including depreciation and amortization (including original issue discount and debt issuance cost amortization), as well as changes in working capital, which are fluctuations within accounts receivable, inventory, trade payables and accrued expenses. Ashland continues to emphasize working capital management as a high priority and focus.

Changes in net working capital accounted for outflows of \$137 and \$164 million for the six months ended March 31, 2019 and 2018, respectively, and were driven by the following:

- Accounts receivable – There was a cash inflow of \$2 million and an outflow \$51 million during the current and prior year periods, respectively, which were primarily due to the net of collections and sales during the first six months of each fiscal year.
- Inventory – There were cash outflows of \$1 million and \$11 million during the current and prior year periods, respectively, which were primarily driven by sales volumes and inventory management strategies.
- Trade and other payables – There were cash outflows of \$116 million and \$66 million during the current and prior year periods, respectively, and primarily related to the timing of certain payments.

The remaining changes to operating assets and liabilities resulted in outflows of \$22 million and \$36 million in the current and prior year periods, respectively, and were primarily due to income taxes paid or income tax refunds, interest paid, and adjustments to certain accruals and other long-term assets and liabilities.

Operating Activities – Summary

Operating cash flows for the current year period included a loss from continuing operations of \$26 million. Additionally, the current period included non-cash adjustments of \$163 million for depreciation and amortization, \$3 million for a loss on restricted investments, \$5 million for an impairment of a held for sale facility and \$18 million for the gain on pension and other postretirement plan remeasurements.

Operating cash flows for the prior year period included an income from continuing operations of \$10 million. Additionally, the prior year period included a non-cash adjustment of \$142 million for depreciation and amortization.

Investing activities

The following discloses the cash flows associated with Ashland’s investing activities for the six months ended March 31, 2019 and 2018.

(In millions)	Six months ended	
	March 31	
	2019	2018
Cash flows provided (used) by investing activities from continuing operations		
Additions to property, plant and equipment	\$ (70)	\$ (52)
Proceeds from disposal of property, plant and equipment	4	1
Purchase of operations	(1)	(11)
Proceeds from sales of operations	—	1
Life insurance payments	—	(37)
Net purchase of funds restricted for specific transactions	(2)	(8)
Reimbursement from restricted investments	20	17
Proceeds from sales of securities	156	17
Purchase of securities	(156)	(17)
Proceeds from the settlement of derivative instruments	2	—
Payments for the settlement of derivative instruments	(2)	(3)
Total cash flows used by investing activities from continuing operations	\$ (49)	\$ (92)

Cash used by investing activities was \$49 million and \$92 million for the current and prior periods, respectively. The significant cash investing activities for the current period primarily related to cash outflows of \$70 million for property additions compared to \$52 million in the prior year period. The prior period also included cash outflows of \$37 million related to payments for a corporate-owned life insurance policy loan and \$11 million for the purchase of Vornia Limited. Additionally, there were reimbursements from the restricted renewable annual asbestos trust of \$20 million during the current period compared to \$17 million in the prior year period.

Financing activities

The following discloses the cash flows associated with Ashland's financing activities for the six months ended March 31, 2019 and 2018.

(In millions)	Six months ended March 31	
	2019	2018
Cash flows provided (used) by financing activities from continuing operations		
Repayment of long-term debt	(8)	(3)
Proceeds from (repayment of) short-term debt	11	(181)
Cash dividends paid	(31)	(28)
Stock based compensation employee withholding taxes paid in cash	(8)	(8)
Total cash flows used by financing activities from continuing operations	<u>\$ (36)</u>	<u>\$ (220)</u>

Cash flows used by financing activities resulted in outflows \$36 million and \$220 million for the current and prior year periods, respectively.

Significant cash financing activities for the current period included long-term cash outflows of \$8 million, primarily related to repayments of term loans and debentures. The current period included cash dividends paid of \$0.50 per share, for a total of \$31 million. Additionally, \$11 million of inflows were drawn out the 2017 Revolving Credit Facility.

Significant cash financing activities for the prior year period included short-term debt net repayments of \$181 million related to the 2017 Revolving Credit Facility and the accounts receivable securitization. The outstanding balance of the 2017 Revolving Credit Facility and a portion of the accounts receivable securitization were repaid using approximately \$300 million of cash that was repatriated in January 2018. The prior period included cash dividends paid of \$0.45 per share, for a total of \$28 million.

The following discloses the cash flows associated with Ashland's discontinued operations for the six months ended March 31, 2019 and 2018.

(In millions)	Six months ended March 31	
	2019	2018
Cash provided (used) by discontinued operations		
Operating cash flows	\$ (41)	\$ (21)
Investing cash flows	(8)	(8)
Total cash used by discontinued operations	<u>\$ (49)</u>	<u>\$ (29)</u>

Cash flows for discontinued operations in the current period included cash outflows of \$25 million related to the activity of Composites and the Marl facility. The remaining cash flows for discontinued operations related to other previously divested businesses, including net payments of asbestos and environmental liabilities.

Cash flows for discontinued operations in the prior year period included cash outflows of \$5 million related to the activity of Composites and the Marl facility. The remaining cash flows for discontinued operations related to other previously divested businesses, including net payments of asbestos and environmental liabilities.

Free cash flow and other liquidity resources

The following represents Ashland's calculation of free cash flow for the disclosed quarters. Free cash flow does not reflect adjustments for certain non-discretionary cash flows such as mandatory debt repayments.

(In millions)	Six months ended	
	March 31	
	2019	2018
Total cash flows used by operating activities from continuing operations	\$ 6	\$ (3)
Adjustments:		
Additions to property, plant and equipment	(70)	(52)
Free cash flows (a)	<u>\$ (64)</u>	<u>\$ (55)</u>

(a) Includes \$33 million and \$29 million of restructuring payments for the six months ended March 31 2019 and 2018, respectively.

Working capital (current assets minus current liabilities, excluding current assets and current liabilities held for sale and long-term debt due within one year) amounted to \$581 million and \$570 million as of March 31, 2019 and September 30, 2018, respectively. Liquid assets (cash, cash equivalents and accounts receivable) amounted to 89% of current liabilities (excluding current liabilities held for sale) as of March 31, 2019 and September 30, 2018.

The following summary reflects Ashland's cash and unused borrowing capacity as of March 31, 2019 and September 30, 2018.

(In millions)	March 31		September 30	
	2019		2018	
Cash and investment securities				
Cash and cash equivalents	\$	164	\$	294
Unused borrowing capacity				
Revolving credit facility	\$	727	\$	725
Accounts receivable securitizations		14		29

The borrowing capacity remaining under the \$800 million revolving credit facility was \$727 million due to an outstanding balance of \$25 million, as well as a reduction of \$48 million for letters of credit outstanding at March 31, 2019. In total, Ashland's available liquidity position, which includes cash, the revolving credit facility and the accounts receivable securitization facilities, was \$905 million at March 31, 2019, compared to \$1,048 million at September 30, 2018.

Capital resources

Debt

The following summary reflects Ashland's debt as of March 31, 2019 and September 30, 2018.

(In millions)	March 31		September 30	
	2019		2018	
Short-term debt (includes current portion of long-term debt)	\$	261	\$	254
Long-term debt (less current portion and debt issuance cost discounts) (a)		2,275		2,275
Total debt	<u>\$</u>	<u>2,536</u>	<u>\$</u>	<u>2,529</u>

(a) Includes \$19 million and \$21 million of debt issuance cost discounts as of March 31, 2019 and September 30, 2018, respectively.

The current portion of long-term debt was \$6 million at March 31, 2019. Debt as a percent of capital employed was 43% at both March 31, 2019 and September 30, 2018. At March 31, 2019, Ashland's total debt had an outstanding principal balance of \$2,603 million, discounts of \$48 million, and debt issuance costs of \$19 million. The scheduled aggregate maturities of long-term debt by year (including the current portion and excluding debt issuance costs) are as follows: \$3 million remaining in 2019, \$6 million in 2020, \$14 million in 2021, \$1,279 million in 2022 and \$6 million in 2023.

Ashland credit ratings

Ashland's corporate credit rating with Standard & Poor's is BB, while Moody's Investor Services is Ba2. Moody's Investor Services and Standard & Poor's outlooks both remained at stable. Subsequent changes to these ratings may have an effect on Ashland's borrowing rate or ability to access capital markets in the future.

Ashland debt covenant restrictions

Ashland's most recent credit agreement (the 2017 Credit Agreement) contains usual and customary representations, warranties and affirmative and negative covenants, including financial covenants for leverage and interest coverage ratios, limitations on liens, additional subsidiary indebtedness, restrictions on subsidiary distributions, investments, mergers, sale of assets and restricted payments and other customary limitations. As of March 31, 2019, Ashland is in compliance with all debt agreement covenant restrictions under the 2017 Credit Agreement.

The maximum consolidated net leverage ratio permitted under the 2017 Credit Agreement is 4.5. The 2017 Credit Agreement defines the consolidated net leverage ratio as the ratio of consolidated indebtedness minus unrestricted cash and cash equivalents to consolidated EBITDA (Covenant Adjusted EBITDA) for any measurement period. In general, the 2017 Credit Agreement defines Covenant Adjusted EBITDA as net income plus consolidated interest charges, taxes, depreciation and amortization expense, fees and expenses related to capital market transactions and proposed or actual acquisitions and divestitures, restructuring and integration charges, noncash stock and equity compensation expense, and any other nonrecurring expenses or losses that do not represent a cash item in such period or any future period; less any noncash gains or other items increasing net income. The computation of Covenant Adjusted EBITDA differs from the calculation of EBITDA and Adjusted EBITDA, which have been reconciled on page 40. In general, consolidated indebtedness includes debt plus all purchase money indebtedness, banker's acceptances and bank guaranties, deferred purchase price of property or services, attributable indebtedness and guaranties. At March 31, 2019, Ashland's calculation of the consolidated net leverage ratio was 3.5.

The minimum required consolidated interest coverage ratio under the 2017 Credit Agreement is 3.0. The 2017 Credit Agreement defines the consolidated interest coverage ratio as the ratio of Covenant Adjusted EBITDA to consolidated interest charges for any measurement period. At March 31, 2019, Ashland's calculation of the consolidated interest coverage ratio was 5.6.

Any change in Covenant Adjusted EBITDA of \$100 million would have an approximate 0.5x effect on the consolidated net leverage ratio and a 0.8x effect on the consolidated interest coverage ratio. The average change in consolidated indebtedness of \$100 million would affect the consolidated leverage ratio by approximately 0.1x.

Additional capital resources

Cash projection

Ashland projects that cash flow from operations and other available financial resources such as cash on hand and revolving credit should be sufficient to meet investing and financing requirements to enable Ashland to comply with the covenants and other terms of its financing obligations. These projections are based on various assumptions that include, but are not limited to: operational results, capital expenditures, working capital needs and tax payments and receipts.

Total equity

Total equity decreased \$44 million since September 30, 2018 to \$3,362 million at March 31, 2019. The decrease of \$44 million was due to a net income of \$28 million, common shares issued under stock incentive and other plans of \$6 million, deferred translation losses of \$40 million, cash dividends of \$32 million and \$6 million related to the pension and other postretirement obligation adjustment.

Stock repurchase program

During March 2018, Ashland's Board of Directors approved a new \$1 billion stock repurchase program. Under the new program, Ashland's common shares may be repurchased in open market transactions, privately negotiated transactions or pursuant to one or more accelerated stock repurchase programs or Rule 10b5-1 plans. As of March 31, 2019, \$1 billion remained available for repurchase under this authorization.

Stockholder dividends

In May 2018, the Board of Directors of Ashland announced a quarterly cash dividend of 25 cents per share, or \$16 million, to eligible stockholders at record, which was paid for quarterly dividends in the first and second quarter of fiscal 2019 and the third and fourth quarters of fiscal 2018. This represented an increase from the previous quarterly cash dividend of 22.5 cents per share which was paid for quarterly dividends in the first and second quarters of fiscal 2018.

Capital expenditures

Capital expenditures were \$70 million for the six months ended March 31, 2019 compared to \$52 million for the six months ended March 31, 2018.

CRITICAL ACCOUNTING POLICIES

The preparation of Ashland's Condensed Consolidated Financial Statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, sales and expenses, and the disclosures of contingent assets and liabilities. Significant items that are subject to such estimates and assumptions include, but are not limited to, long-lived assets (including goodwill and other intangible assets), income taxes, other liabilities and receivables associated with asbestos litigation and environmental remediation. These accounting policies are discussed in detail in "Management's Discussion and Analysis – Critical Accounting Policies" in Ashland's Annual Report on Form 10-K for the fiscal year ended September 30, 2018. Although management bases its estimates on historical experience and various other assumptions that are believed to be reasonable under the circumstances, actual results could differ significantly from the estimates under different assumptions or conditions. Management has reviewed the estimates affecting these items with the Audit Committee of Ashland's Board of Directors. No material changes have been made to the valuation techniques during the six months ended March 31, 2019.

OUTLOOK

Fiscal Year 2019

Ashland updated its financial outlook for fiscal 2019 as shown in the table below.

	Prior FY 2019 Outlook	Updated FY 2019 Outlook
Adjusted EBITDA		
Specialty Ingredients	\$610 - \$635 million	\$585 - \$610 million
Intermediates & Solvents	\$20 - \$30 million	Reaffirmed
Unallocated and other	(\$50 - \$60) million	(\$45 - \$55) million
Key Operating Metrics		
Adjusted diluted EPS	\$3.10 - \$3.40	\$2.90 - \$3.20
Free cash flow*	~ \$175 million	~ \$165 - \$175 million
Corporate Items		
Depreciation & amortization	~260 million	~250 million
Interest expense	\$85 - \$95 million	\$90 - \$100 million
Effective tax rate	14% - 16%	Reaffirmed
Capital expenditures	~ \$160 million	Reaffirmed
Diluted share count**	~ 64 million	~ 63 million

* These figures include approximately \$40 million of separation and restructuring-related payments.

** Includes updated diluted share count associated with the share repurchase discussed below.

For the third quarter of fiscal 2019, Ashland expects adjusted diluted earnings per share in the range of \$0.80-\$0.90. This estimate assumes an effective tax rate of 15% percent for the third quarter.

On April 30, 2019, Ashland announced an intention to commence a \$200 million share repurchase program under Ashland's Board of Directors approved \$1 billion stock repurchase program in fiscal 2018. Under the program, shares may be repurchased in privately negotiated and/or open market transactions, including under plans complying with Rule 10b5-1 of the Exchange Act. The \$200 million repurchase will be the first repurchases made under the \$1 billion program.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Ashland's market risk exposure at March 31, 2019 is generally consistent with the types of market risk exposures presented in Ashland's Annual Report on Form 10-K for the fiscal year ended September 30, 2018.

ITEM 4. CONTROLS AND PROCEDURES

Disclosure Controls and Procedures - As of the end of the period covered by this quarterly report, Ashland, under the supervision and with the participation of its management, including Ashland's Chief Executive Officer and its Chief Financial Officer, evaluated the effectiveness of Ashland's disclosure controls and procedures pursuant to Rule 13a-15(b) and 15d-15(b) promulgated under the Securities Exchange Act of 1934, as amended. Based upon that evaluation, the Chief Executive Officer and Chief Financial Officer concluded that the disclosure controls and procedures were effective as of March 31, 2019.

Changes in Internal Control over Financial Reporting - During the six months ended March 31, 2019, there were no significant changes in Ashland's internal control over financial reporting, or in other factors, that occurred during the period covered by this quarterly report that have materially affected, or are reasonably likely to materially affect, Ashland's internal control over financial reporting.

PART II – OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS

The following is a description of Ashland's material legal proceedings.

Asbestos-Related Litigation

Ashland is subject to liabilities from claims alleging personal injury caused by exposure to asbestos. Such claims result primarily from indemnification obligations undertaken in 1990 in connection with the sale of Riley Stoker Corporation (Riley), a former subsidiary. Although Riley was neither a producer nor a manufacturer of asbestos, its industrial boilers contained some asbestos-containing components provided by other companies.

Hercules LLC (formerly Hercules Incorporated), an indirect wholly-owned subsidiary of Ashland, is also subject to liabilities from asbestos-related personal injury lawsuits involving claims which typically arise from alleged exposure to asbestos fibers from resin encapsulated pipe and tank products which were sold by one of Hercules' former subsidiaries to a limited industrial market.

Ashland and Hercules are also defendants in lawsuits alleging exposure to asbestos at facilities formerly or presently owned or operated by Ashland or Hercules.

For additional detailed information regarding liabilities arising from asbestos-related litigation, see Note K of Notes to Condensed Consolidated Financial Statements in this quarterly report on Form 10-Q.

Environmental Proceedings

(a) *CERCLA and Similar State Law Sites* - Under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 and similar state laws, Ashland and its subsidiaries may be subject to joint and several liability for cleanup costs in connection with alleged releases of hazardous substances at sites where it has been identified as a "potentially responsible party" (PRP). As of March 31, 2019, Ashland and its subsidiaries have been identified as a PRP by U.S. federal and state authorities, or by private parties seeking contribution, for the cost of environmental investigation and/or cleanup at 81 waste treatment or disposal sites. These sites are currently subject to ongoing investigation and remedial activities, overseen by the United States Environmental Protection Agency (USEPA) or a state agency, in which Ashland or its subsidiaries are typically participating as a member of a PRP group. Generally, the types of relief sought include remediation of contaminated soil and/or groundwater, reimbursement for past costs of site cleanup and administrative oversight and/or long-term monitoring of environmental conditions at the sites. The ultimate costs are not predictable with assurance.

(b) *Hattiesburg, Mississippi Resource Conservation and Recovery Act Matter* - In November 2008, the Mississippi Department of Environmental Quality (MDEQ) issued a Notice of Violation to Hercules' now-closed Hattiesburg, Mississippi manufacturing facility alleging that a process water impoundment basin at the facility had been operated as a hazardous waste storage and treatment facility without a permit in violation of the Resource Conservation and Recovery Act. In May 2011, the USEPA issued an inspection report from a September 2010 inspection with allegations similar to those of the MDEQ and promulgated an information request. Ashland has been working with the MDEQ and USEPA to settle this matter in the context of the shutdown and ongoing remediation of the Hattiesburg facility. The USEPA proposed a settlement penalty in excess of \$100,000. While it is reasonable to believe that this matter will involve a penalty from the MDEQ and/or the USEPA exceeding \$100,000, the potential penalty with respect to this enforcement matter should not be material to Ashland.

(c) *Lower Passaic River, New Jersey Matters* - Ashland, through two formerly owned facilities, and ISP, through a now-closed facility, have been identified as PRPs, along with approximately 70 other companies (the Cooperating Parties Group or the CPG), in a May 2007 Administrative Order of Consent (AOC) with the USEPA. The parties are required to perform a remedial investigation and feasibility study (RI/FS) of the entire 17 miles of the Passaic River. In June 2007, the USEPA separately commenced a Focused Feasibility Study (FFS) as an interim measure. In accordance with the 2007 AOC, in June 2012 the CPG voluntarily entered into another AOC for an interim removal action focused solely at mile 10.9 of the Passaic River. The allocations for the 2007 AOC and the 2012 removal action are based on interim allocations, are immaterial and have been accrued. In April 2014, the USEPA released the FFS. The CPG submitted the Draft RI/FS Report on April 30, 2015. The USEPA has released the FFS Record of Decision for the lower 8 miles and recently reached an agreement with another chemical company to conduct and pay for the remedial design. This chemical company has sued Ashland, ISP and numerous other defendants to recover past and future costs pursuant to the CERCLA. Ashland, ISP and numerous other defendants have filed a Motion to Dismiss all of the claims. Ashland and ISP are participating in an USEPA allocation process. The release of the FFS Record of Decision, the current allocations proceedings and the lawsuit are not expected to be material to Ashland.

(d) *Freetown, MA Resource Conservation and Recovery Act (RCRA) Matter* - On September 27, 2018, the USEPA issued a Complaint, Compliance Order and Opportunity for Hearing to ISP Freetown Fine Chemicals, Inc.'s facility in Assonet, Massachusetts alleging various violations of the RCRA relating to certain distillation tanks at the facility and seeking a penalty of \$203,792. Ashland disputes USEPA's stated interpretation of the RCRA regulations and their applicability to these tanks. While this matter could result in a penalty from USEPA in excess of \$100,000, the potential penalty is not expected to be material to Ashland.

For additional information regarding environmental matters and reserves, see Note K of Notes to Condensed Consolidated Financial Statements in this quarterly report on Form 10-Q.

Other Pending Legal Proceedings

In addition to the matters described above, there are other various claims, lawsuits and administrative proceedings pending or threatened against Ashland and its current and former subsidiaries. Such actions are with respect to commercial matters, product liability, toxic tort liability and other environmental matters which seek remedies or damages, some of which are for substantial amounts. While Ashland cannot predict with certainty the outcome of such actions, it believes that adequate reserves have been recorded and losses already recognized with respect to such actions were immaterial as of March 31, 2019. There is a reasonable possibility that a loss exceeding amounts already recognized may be incurred related to these actions; however, Ashland believes that such potential losses were immaterial as of March 31, 2019.

ITEM 1A. RISK FACTORS

During the period covered by this report, there were no material changes from the risk factors previously disclosed in Ashland's Annual Report on Form 10-K for the fiscal year ended September 30, 2018.

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

There was no share repurchase activity during the three months ended March 31, 2019.

Issuer Purchases of Equity Securities

Q2 Fiscal Periods	Total Number of Shares Purchased	Average Price Paid Per Share, including commission	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Dollar Value of Shares that May Yet Be Purchased Under the Plans or Programs (in millions)(a)
January 1, 2019 to January 31, 2019	—	\$ —	—	\$ 1,000
February 1, 2019 to February 28, 2019	—	—	—	1,000
March 1, 2019 to March 31, 2019	—	—	—	1,000
Total	—	—	—	\$ 1,000

- (a) During March 2018, Ashland's Board of Directors approved a new \$1 billion stock repurchase program, which replaced the previous stock repurchase program. The Company's stock repurchase program does not obligate it to acquire any specific number of shares. Under the program, shares may be repurchased in privately negotiated and/or open market transactions, including under plans complying with Rule 10b5-1 of the Exchange Act. As of March 31, 2019, \$1 billion remains available for repurchase under this authorization.

ITEM 6. EXHIBITS

(a) Exhibits

- 31.1* [Certificate of William A. Wulfsohn, Chief Executive Officer of Ashland pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.](#)
- 31.2* [Certificate of J. Kevin Willis, Chief Financial Officer of Ashland pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.](#)
- 32* [Certificate of William A. Wulfsohn, Chief Executive Officer of Ashland, and J. Kevin Willis, Chief Financial Officer of Ashland 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.

** Attached as Exhibit 101 to this report are the following documents formatted in XBRL (Extensible Business Reporting Language): (i) Statements of Consolidated Comprehensive Income (Loss) for the three months ended March 31, 2019 and March 31, 2018; (ii) Condensed Consolidated Balance Sheets at March 31, 2019 and September 30, 2018; (iii) Statements of Consolidated Equity at March 31, 2019; (iv) Statements of Consolidated Cash Flows for the six months ended March 31, 2019 and March 31, 2018; and (v) Notes to Condensed Consolidated Financial Statements.

SM Service mark, Ashland or its subsidiaries, registered in various countries.

™ Trademark, Ashland or its subsidiaries, registered in various countries.

SIGNATURE

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.

May 1, 2019

Ashland Global Holdings Inc.

(Registrant)

/s/ J. Kevin Willis

J. Kevin Willis

Senior Vice President and Chief Financial Officer

(on behalf of the Registrant and as principal
financial officer)

CERTIFICATIONS

I, William A. Wulfsohn, certify that:

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

Date: May 01, 2019

/s/ William A. Wulfsohn

William A. Wulfsohn
Chairman and Chief Executive Officer
(Principal Executive Officer)

CERTIFICATIONS

I, J. Kevin Willis, certify that:

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

Date: May 01, 2019

/s/ J. Kevin Willis

J. Kevin Willis
Chief Financial Officer
(Principal Financial Officer)

ASHLAND GLOBAL HOLDINGS INC.

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 Ashland Global Holdings Inc. (the "Company") on Form 10-Q for the period ended March 31, 2019, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), each of the undersigned, William A. Wulfsohn, Chief Executive Officer of the Company, and J. Kevin Willis, Chief Financial Officer of the Company, certify, 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; 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/ William A. Wulfsohn

William A. Wulfsohn
Chief Executive Officer
May 01, 2019

/s/ J. Kevin Willis

J. Kevin Willis
Chief Financial Officer
May 01, 2019