



## **CVR Energy Reports Second Quarter 2019 Results and Announces Cash Dividend of 75 Cents**

**SUGAR LAND, Texas (July 24, 2019)** – CVR Energy, Inc. (NYSE: CVI) today announced net income of \$116 million, or \$1.16 per diluted share, on net sales of \$1,687 million for the second quarter of 2019, compared to net income of \$43 million, or 50 cents per diluted share, on net sales of \$1,914 million for the second quarter of 2018. Second quarter 2019 EBITDA was \$273 million, compared to second quarter 2018 EBITDA of \$180 million.

“CVR Energy delivered strong results for the second quarter 2019, primarily attributable to safe and reliable operations, lower Renewable Identification Number prices, higher crack spreads and increased fertilizer sales volumes and pricing,” said Dave Lamp, CVR Energy’s Chief Executive Officer. “In addition, in May we announced that our subsidiary had successfully sold its 1.5 million barrel Cushing, Oklahoma, crude oil terminal and related assets, resulting in an asset sale gain.

“During the 2019 second quarter, CVR Partners continued to be impacted by wet weather across the Midwest. However, it experienced solid demand for nitrogen fertilizer during the quarter and was able to deliver significant volumes of products to customers at netback prices much higher than the same period last year,” Lamp said. “CVR Partners’ plants ran well during the quarter, with ammonia utilization rates of 97 percent at Coffeyville and 98 percent at East Dubuque. CVR Partners also created positive distributable cash and declared a second quarter distribution of 14 cents per unit.”

### ***Petroleum***

The petroleum segment reported second quarter 2019 operating income of \$163 million on net sales of \$1,552 million, compared to operating income of \$113 million on net sales of \$1,824 million in the second quarter of 2018.

Refining margin per total throughput barrel was \$15.66 in the second quarter of 2019, compared to \$14.13 during the same period in 2018. Crude oil pricing during the quarter led to an inventory valuation impact of less than \$1 million, or 2 cents per total throughput barrel, compared to \$22 million, or \$1.10 per total throughput barrel, in the second quarter of 2018. The petroleum segment also recognized a second quarter 2019 derivative gain of \$4 million, or 22 cents per total throughput barrel, compared to a gain of \$10 million, or 51 cents per total throughput barrel, for the prior year period. Included in the total derivative gain for the second quarter of 2019 was an unrealized gain of \$2 million, compared to an unrealized loss of \$7 million a year earlier.

Second quarter 2019 combined total throughput was approximately 216,000 barrels per day (bpd), compared to approximately 218,000 bpd of combined total throughput for the second quarter of 2018.

## ***Fertilizer***

The nitrogen fertilizer segment reported operating income of \$35 million on net sales of \$138 million for the second quarter of 2019, compared to an operating loss of less than \$1 million on net sales of \$93 million for the second quarter of 2018.

For the second quarter of 2019, CVR Partners' consolidated average realized gate prices for urea ammonia nitrate (UAN) improved significantly over the prior year, up 14 percent to \$217 per ton, while ammonia was up 31 percent over the prior year to \$456 per ton. Average realized gate prices for UAN and ammonia were \$191 per ton and \$348 per ton, respectively, for the second quarter of 2018.

CVR Partners' fertilizer facilities produced a combined 211,000 tons of ammonia during the second quarter 2019, of which 71,000 net tons were available for sale while the rest was upgraded to other fertilizer products, including 316,000 tons of UAN. During the second quarter 2018, the fertilizer facilities produced 174,000 tons of ammonia, of which 65,000 net tons were available for sale while the remainder was upgraded to other fertilizer products, including 241,000 tons of UAN.

## ***Cash, Debt and Dividend***

Consolidated cash and cash equivalents was \$540 million at June 30, 2019. Consolidated total debt and finance lease obligations was \$1,195 million at June 30, 2019, with no debt other than the Company's segments' debt.

CVR Energy also announced a second quarter 2019 cash dividend of 75 cents per share. The dividend, as declared by CVR Energy's Board of Directors, will be paid on Aug. 12, 2019, to stockholders of record as of the close of market on Aug. 5, 2019. The annualized dividend of \$3 per share represents an industry leading dividend yield of 6 percent based on the July 23, 2019, closing stock price.

Today, CVR Partners announced that the Board of Directors of its general partner declared a second quarter 2019 cash distribution of 14 cents per common unit, which will be paid on Aug. 12, 2019, to common unitholders of record as of the close of market on Aug. 5, 2019.

## ***Second Quarter 2019 Earnings Conference Call***

CVR Energy previously announced that it will host its second quarter 2019 Earnings Conference Call on Thursday, July 25, at 1 p.m. Eastern. The Earnings Conference Call may also include discussion of Company developments, forward-looking information and other material information about business and financial matters.

The second quarter 2019 Earnings Conference Call will be webcast live and can be accessed on the Investor Relations section of CVR Energy's website at [www.CVREnergy.com](http://www.CVREnergy.com). For investors or analysts who want to participate during the call, the dial-in number is (877) 407-8291. The webcast will be archived and available for 14 days at <https://edge.media-server.com/mmc/p/u8jjdt8s>. A repeat of the call also can be accessed for 14 days by dialing (877) 660-6853, conference ID 13692311.

## **Forward-Looking Statements**

This news release may contain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. Statements concerning current estimates, expectations and projections about future results, performance, prospects, opportunities, plans, actions and events and other statements, concerns, or matters that are not historical facts are “forward-looking statements,” as that term is defined under the federal securities laws. These forward-looking statements include, but are not limited to, statements regarding future: dividends and distributions including the amount and timing thereof; refinery throughput, direct operating expenses, capital spending, depreciation and amortization and turnaround expense; continued safe and reliable operations; and other matters. You can generally identify forward-looking statements by our use of forward-looking terminology such as “anticipate,” “believe,” “continue,” “could,” “estimate,” “expect,” “explore,” “evaluate,” “intend,” “may,” “might,” “plan,” “potential,” “predict,” “seek,” “should,” or “will,” or the negative thereof or other variations thereon or comparable terminology. These forward-looking statements are only predictions and involve known and unknown risks and uncertainties, many of which are beyond our control. Investors are cautioned that various factors may affect these forward-looking statements, including (among others) price volatility of crude oil, other feedstocks and refined products; the ability of CVR Refining and CVR Partners to make cash distributions; potential operating hazards; costs of compliance with existing, or compliance with new, laws and regulations and potential liabilities arising therefrom; impacts of planting season on CVR Partners; general economic and business conditions; and other risks. For additional discussion of risk factors which may affect our results, please see the risk factors and other disclosures included in our most recent Annual Report on Form 10-K, any subsequently filed Quarterly Reports on Form 10-Q and our other SEC filings. These and other risks may cause our actual results, performance or achievements to differ materially from any future results, performance or achievements expressed or implied by these forward-looking statements. Given these risks and uncertainties, you are cautioned not to place undue reliance on such forward-looking statements. The forward-looking statements included in this news release are made only as of the date hereof. CVR Energy disclaims any intention or obligation to update publicly or revise any forward-looking statements, whether as a result of new information, future events or otherwise, except to the extent required by law.

## **About CVR Energy, Inc.**

Headquartered in Sugar Land, Texas, CVR Energy is a diversified holding company primarily engaged in the petroleum refining and marketing business through its interest in CVR Refining and the nitrogen fertilizer manufacturing business through its interest in CVR Partners, LP. CVR Energy subsidiaries serve as the general partner and own 34 percent of the common units of CVR Partners.

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## Non-GAAP Measures

Our management uses certain non-GAAP performance measures to evaluate current and past performance and prospects for the future to supplement our GAAP financial information presented in accordance with U.S. GAAP. These non-GAAP financial measures are important factors in assessing our operating results and profitability and include the performance and liquidity measures defined below.

Effective January 1, 2019, the Company revised its accounting policy method for the costs of planned major maintenance activities (turnarounds) specific to the Petroleum Segment from being expensed as incurred (the direct expensing method) to the deferral method. See Note 3 (“Recent Accounting Pronouncements and Accounting Changes”) in the notes to our condensed consolidated quarterly financial statements for a further discussion of the impacts of this change in accounting policy. As a result of this change in accounting policy, the non-GAAP measures of Adjusted EBITDA, Petroleum Adjusted EBITDA, Nitrogen Fertilizer Adjusted EBITDA, Adjusted Net Income (Loss) and Direct Operating Expenses per Total Throughput Barrel net of Turnaround Expense are no longer being presented.

The following are non-GAAP measures that continue to be presented for the period ended June 30, 2019:

*EBITDA* - Consolidated net income (loss) before (i) interest expense, net, (ii) income tax expense (benefit) and (iii) depreciation and amortization expense.

*Petroleum EBITDA and Nitrogen Fertilizer EBITDA* - Segment net income (loss) before segment (i) interest expense, net, (ii) income tax expense (benefit), and (iii) depreciation and amortization.

*Refining Margin* - The difference between our Petroleum Segment net sales and cost of materials and other.

*Refining Margin adjusted for Inventory Valuation Impact* - Refining Margin adjusted to exclude the impact of current period market price and volume fluctuations on crude oil and refined product inventories recognized in prior periods. We record our commodity inventories on the first-in-first-out basis. As a result, significant current period fluctuations in market prices and the volumes we hold in inventory can have favorable or unfavorable impacts on our refining margins as compared to similar metrics used by other publicly-traded companies in the refining industry. The inventory valuation impact is calculated based upon inventory values at the beginning of the accounting period and at the end of the accounting period.

*Refining Margin and Refining Margin adjusted for Inventory Valuation Impact, per Throughput Barrel* - Refining Margin adjusted to exclude the impact of current period market price and volume fluctuations on crude oil and refined product inventories recognized in prior periods, divided by the total throughput barrels during the period, which is calculated as total throughput barrels per day times the number of days in the period.

*Direct Operating Expenses per Throughput Barrel* - Direct operating expenses for our Petroleum Segment divided by total throughput barrels for the period, which is calculated as total throughput barrels per day times the number of days in the period.

We present these measures because we believe they may help investors, analysts, lenders and ratings agencies analyze our results of operations and liquidity in conjunction with our U.S. GAAP results, including but not limited to our operating performance as compared to other publicly-traded companies in the refining industry, without regard to historical cost basis or financing methods and our ability to incur and service debt and fund capital expenditures. Non-GAAP measures have important limitations as analytical tools, because they exclude some, but not all, items that affect net earnings and operating income. These measures should not be considered substitutes for their most directly comparable U.S. GAAP financial measures. See “Non-GAAP Reconciliations” section included herein for reconciliation of these amounts. Due to rounding, numbers presented within this section may not add or equal to numbers or totals presented elsewhere within this document.

## CVR Energy, Inc.

(all information in this release is unaudited)

### Financial and Operational Data

	Three Months Ended June 30,		Six Months Ended June 30,	
	2019	2018	2019	2018
(in millions, except share data)				
<b>Consolidated Statement of Operations Data</b>				
Net sales	\$ 1,687	\$ 1,914	\$ 3,173	\$ 3,451
Operating costs and expenses:				
Cost of materials and other	1,267	1,560	2,368	2,739
Direct operating expenses (exclusive of depreciation and amortization as reflected below)	132	140	258	271
Depreciation and amortization	76	68	141	131
Cost of sales	<u>1,475</u>	<u>1,768</u>	<u>2,767</u>	<u>3,141</u>
Selling, general and administrative expenses (exclusive of depreciation and amortization as reflected below)	27	31	57	55
Depreciation and amortization	2	3	4	6
(Gain) loss on asset disposals	(9)	5	(7)	5
Operating income	<u>192</u>	<u>107</u>	<u>352</u>	<u>244</u>
Other (expense) income:				
Interest expense, net	(26)	(26)	(52)	(53)
Other income, net	<u>3</u>	<u>2</u>	<u>6</u>	<u>3</u>
Income before income tax expense	169	83	306	194
Income tax expense	<u>41</u>	<u>15</u>	<u>76</u>	<u>33</u>
Net income	<u>128</u>	<u>68</u>	<u>230</u>	<u>161</u>
Less: Net income attributable to noncontrolling interest	12	25	13	58
Net income attributable to CVR Energy stockholders	<u>\$ 116</u>	<u>\$ 43</u>	<u>\$ 217</u>	<u>\$ 103</u>
Basic and diluted earnings per share	\$ 1.16	\$ 0.50	\$ 2.16	\$ 1.19
Dividends declared per share	\$ 0.75	\$ 0.75	\$ 1.50	\$ 1.25
EBITDA*	\$ 273	\$ 180	\$ 503	\$ 384
Weighted-average common shares outstanding - basic and diluted	100.5	86.8	100.5	86.8

\* See "Non-GAAP Reconciliations" section below.

### Selected Balance Sheet Data

(in millions)	June 30, 2019	December 31, 2018
Cash and cash equivalents	\$ 540	\$ 668
Working capital	675	797
Total assets	3,830	4,000
Total debt and finance lease obligations	1,195	1,170
Total liabilities	2,124	2,057
Total CVR stockholders' equity	1,384	1,286

## Selected Cash Flow Data

(in millions)	Three Months Ended June 30,		Six Months Ended June 30,	
	2019	2018	2019	2018
Net cash flow provided by (used in):				
Operating activities	\$ 156	\$ 212	\$ 384	\$ 238
Investing activities	(1)	(29)	(43)	(50)
Financing activities	(82)	(69)	(469)	(136)
Net increase (decrease) in cash and cash equivalents	\$ 73	\$ 114	\$ (128)	\$ 52

## Selected Segment Data

(in millions)	Petroleum	Nitrogen Fertilizer	Consolidated
<b>Three Months Ended June 30, 2019</b>			
Net sales	\$ 1,552	\$ 138	\$ 1,687
Operating income	163	35	192
Net income	158	19	128
EBITDA*	216	60	273
<b>Capital expenditures (1)</b>			
Maintenance capital expenditures	\$ 15	\$ 2	\$ 20
Growth capital expenditures	2	—	2
Total capital expenditures	\$ 17	\$ 2	\$ 22
<b>Six Months Ended June 30, 2019</b>			
Net sales	\$ 2,949	\$ 230	\$ 3,173
Operating income	319	44	352
Net income	307	13	230
EBITDA*	425	86	503
<b>Capital expenditures (1)</b>			
Maintenance capital expenditures	\$ 34	\$ 5	\$ 42
Growth capital expenditures	4	—	4
Total capital expenditures	\$ 38	\$ 5	\$ 46

(in millions)

**Three Months Ended June 30, 2018**

	<u>Petroleum</u>	<u>Nitrogen Fertilizer</u>	<u>Consolidated</u>
Net sales	\$ 1,824	\$ 93	\$ 1,914
Operating income	113	—	107
Net income (loss)	104	(16)	68
EBITDA*	164	20	180

**Capital expenditures (1)**

Maintenance capital expenditures	\$ 11	\$ 5	\$ 17
Growth capital expenditures	4	2	6
Total capital expenditures	<u>\$ 15</u>	<u>\$ 7</u>	<u>\$ 23</u>

**Six months ended June 30, 2018**

Net sales	\$ 3,282	\$ 173	\$ 3,451
Operating income (loss)	256	(4)	244
Net income (loss)	237	(36)	161
EBITDA*	356	33	384

**Capital expenditures (1)**

Maintenance capital expenditures	\$ 21	\$ 9	\$ 32
Growth capital expenditures	8	2	10
Total capital expenditures	<u>\$ 29</u>	<u>\$ 11</u>	<u>\$ 42</u>

\* See "Non-GAAP Reconciliations" section below.

(1) Capital expenditures are shown exclusive of turnaround costs.

**Selected Balance Sheet Data**

(in millions)

**June 30, 2019**

	<u>Petroleum</u>	<u>Nitrogen Fertilizer</u>	<u>Consolidated</u>
Cash and cash equivalents	\$ 419	\$ 69	\$ 540
Total assets	2,833	1,190	3,830
Total debt and finance lease obligations	564	631	1,195

**December 31, 2018**

Cash and cash equivalents	\$ 353	\$ 62	\$ 668
Total assets	2,453	1,254	4,000
Total debt and finance lease obligations	541	629	1,170

## Petroleum Segment

### Key Operating Metrics per Total Throughput Barrel

	Three Months Ended June 30,		Six Months Ended June 30,	
	2019	2018	2019	2018
Refining margin*	\$ 15.66	\$ 14.13	\$ 16.10	\$ 15.72
Refining margin adjusted for inventory valuation impact *	15.68	13.03	15.28	14.58
Direct operating expenses *	4.40	4.68	4.57	5.00

\* See “Non-GAAP Reconciliations” section below.

### Throughput Data by Refinery

(in bpd)	Three Months Ended June 30,		Six Months Ended June 30,	
	2019	2018	2019	2018
<b>Coffeyville</b>				
Regional crude	49,979	28,538	45,808	29,116
WTI	75,090	75,595	71,075	63,280
Midland WTI	863	16,842	6,750	8,467
Condensate	3,125	1,547	4,203	9,586
Heavy Canadian	3,511	6,249	5,526	3,385
Other feedstocks and blendstocks	8,083	7,543	8,685	6,843
<b>Wynnewood</b>				
Regional crude	52,359	56,773	48,383	52,669
WTI	—	2,108	—	4,514
Midland WTI	13,410	10,739	12,961	14,922
Condensate	7,038	7,580	7,394	5,974
Other feedstocks and blendstocks	2,825	4,591	3,770	5,174
<b>Total throughput</b>	<b>216,283</b>	<b>218,105</b>	<b>214,555</b>	<b>203,930</b>

### Production Data by Refinery

(in bpd)	Three Months Ended June 30,		Six Months Ended June 30,	
	2019	2018	2019	2018
<b>Coffeyville</b>				
Gasoline	70,506	67,390	72,170	58,357
Distillate	59,049	59,855	59,288	52,093
Other liquid products	6,786	5,231	6,631	6,900
Solids	5,113	5,267	5,042	4,758
<b>Wynnewood</b>				
Gasoline	39,153	39,853	36,746	41,714
Distillate	31,997	34,985	29,689	34,804
Other liquid products	1,360	5,060	3,728	4,787
Solids	33	49	31	51
<b>Total production</b>	<b>213,997</b>	<b>217,690</b>	<b>213,325</b>	<b>203,464</b>

Liquid volume yield (as % of total throughput)	96.6%	97.4%	97.1%	97.4%
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	Three Months Ended June 30,		Six Months Ended June 30,	
	2019	2018	2019	2018
<b>Market Indicators (dollars per barrel)</b>				
West Texas Intermediate (WTI) NYMEX	\$ 59.91	\$ 67.91	\$ 57.44	\$ 65.46
Crude Oil Differentials:				
WTI less WTS (light/medium sour)	—	8.50	—	5.05
WTI less WCS (heavy sour)	12.63	18.02	11.59	21.81
WTI less condensate	—	0.46	—	0.42
Midland Cushing Differential	2.27	8.12	1.74	4.34
NYMEX Crack Spreads:				
Gasoline	21.37	20.63	16.64	18.06
Heating Oil	23.46	22.22	24.90	21.36
NYMEX 2-1-1 Crack Spread	22.41	21.43	20.77	19.71
PADD II Group 3 Basis:				
Gasoline	(2.56)	(4.44)	(2.31)	(3.19)
Ultra Low Sulfur Diesel	(0.93)	(0.05)	(1.24)	(0.33)
PADD II Group 3 Product Crack Spread:				
Gasoline	18.81	16.19	14.33	14.87
Ultra Low Sulfur Diesel	22.52	22.17	23.65	21.03
PADD II Group 3 2-1-1	20.67	19.18	18.99	17.95

### Q3 2019 Petroleum Segment Outlook

The table below summarizes our outlook for certain refining statistics and financial information for the third quarter of 2019. See “forward looking statements.”

	Q3 2019	
	Low	High
<b>Refinery Statistics:</b>		
Total throughput (bpd)	215,000	225,000
Direct operating expenses (1) (in millions)	\$ 90	\$ 100
Total capital spending (in millions)	\$ 40	\$ 60

(1) Direct operating expenses are shown exclusive of depreciation and amortization and turnaround expenses.

## Nitrogen Fertilizer Segment:

### Key Operating Data:

#### *Ammonia Utilization Rates (1)*

(percent of capacity utilization)	Two Years Ended June 30,	
	2019	2018
Consolidated	<b>92%</b>	94%
Coffeyville	<b>94%</b>	93%
East Dubuque	<b>90%</b>	95%

- (1) Reflects ammonia utilization rates on a consolidated basis and at each of the Nitrogen Fertilizer facilities. Utilization is an important measure used by management to assess operational output at each of the facilities. Utilization is calculated as actual tons produced divided by capacity. The Nitrogen Fertilizer Segment presents utilization on a two-year rolling average to take into account the impact of current turnaround cycles on any specific period. The two-year rolling average is a more useful presentation of the long-term utilization performance of our plants. Additionally, we present utilization solely on ammonia production rather than each nitrogen product as it provides a comparative baseline against industry peers and eliminates the disparity of plant configurations for upgrade of ammonia into other nitrogen products. With the Nitrogen Fertilizer Segments' efforts being primarily focused on ammonia upgrade capabilities, this measure provides a meaningful view of how well the facilities operate.

#### *Sales and Production Data*

	Three Months Ended June 30,		Six Months Ended June 30,	
	2019	2018	2019	2018
Consolidated sales (thousand tons):				
Ammonia	<b>110</b>	82	<b>146</b>	118
UAN	<b>340</b>	270	<b>628</b>	615
Consolidated product pricing at gate (dollars per ton):				
Ammonia	<b>\$ 456</b>	\$ 348	<b>\$ 434</b>	\$ 340
UAN	<b>\$ 217</b>	\$ 191	<b>\$ 219</b>	\$ 169
Consolidated production volume (thousand tons):				
Ammonia (gross produced)	<b>211</b>	174	<b>390</b>	373
Ammonia (net available for sale)	<b>71</b>	65	<b>112</b>	124
UAN	<b>316</b>	241	<b>651</b>	580
Feedstock:				
Petroleum coke used in production (thousand tons)	<b>134</b>	90	<b>266</b>	208
Petroleum coke (dollars per ton)	<b>\$ 34.60</b>	\$ 25.33	<b>\$ 36.14</b>	\$ 21.34
Natural gas used in production (thousands of MMBtu) (2)	<b>2,070</b>	1,964	<b>3,510</b>	3,814
Natural gas used in production (dollars per MMBtu) (2)	<b>\$ 2.61</b>	\$ 2.78	<b>\$ 3.11</b>	\$ 3.00
Natural gas in cost of materials and other (thousands of MMBtus) (2)	<b>3,185</b>	2,571	<b>4,193</b>	3,829
Natural gas in cost of materials and other (dollars per MMBtu) (2)	<b>\$ 3.32</b>	\$ 2.84	<b>\$ 3.45</b>	\$ 3.05

- (2) The feedstock natural gas shown above does not include natural gas used for fuel. The cost of fuel natural gas is included in direct operating expense (exclusive of depreciation and amortization).

### *Key Market Indicators*

	<u>Three Months Ended June 30,</u>		<u>Six Months Ended June 30,</u>	
	<u>2019</u>	<u>2018</u>	<u>2019</u>	<u>2018</u>
Ammonia — Southern Plains (dollars per ton)	\$ 382	\$ 343	\$ 404	\$ 362
Ammonia — Corn belt (dollars per ton)	495	396	496	412
UAN — Corn belt (dollars per ton)	226	211	228	211
Natural gas NYMEX (dollars per MMBtu)	\$ 2.51	\$ 2.83	\$ 2.69	\$ 2.84

### **Non-GAAP Reconciliations:**

#### *Reconciliation of Net Income to EBITDA*

(in millions)	<u>Three Months Ended June 30,</u>		<u>Six Months Ended June 30,</u>	
	<u>2019</u>	<u>2018</u>	<u>2019</u>	<u>2018</u>
Net income	\$ 128	\$ 68	\$ 230	\$ 161
Add:				
Interest expense, net	26	26	52	53
Income tax expense	41	15	76	33
Depreciation and amortization	78	71	145	137
EBITDA	\$ 273	\$ 180	\$ 503	\$ 384

#### *Reconciliation of Petroleum Segment Net Income to EBITDA*

(in millions)	<u>Three Months Ended June 30,</u>		<u>Six Months Ended June 30,</u>	
	<u>2019</u>	<u>2018</u>	<u>2019</u>	<u>2018</u>
Petroleum net income	\$ 158	\$ 104	\$ 307	\$ 237
Add:				
Interest expense, net	6	11	17	22
Depreciation and amortization	52	49	101	97
Petroleum EBITDA	\$ 216	\$ 164	\$ 425	\$ 356

***Reconciliation of Petroleum Segment gross profit to Refining Margin and Refining Margin adjusted for inventory valuation impact (in millions and on per total throughput barrel basis) and Direct operating expenses per total throughput barrel***

(in millions)	Three Months Ended June 30,		Six Months Ended June 30,	
	2019	2018	2019	2018
Net sales	\$ 1,552	\$ 1,824	\$ 2,949	\$ 3,282
Cost of materials and other	1,244	1,543	2,324	2,701
Direct operating expenses (exclusive of depreciation and amortization as reflected below)	86	93	177	185
Depreciation and amortization	52	49	101	97
Gross profit	170	139	347	299
Add:				
Direct operating expenses (exclusive of depreciation and amortization as reflected below)	86	93	177	185
Depreciation and amortization	52	49	101	97
Refining margin	308	281	625	581
Inventory valuation impact, (favorable) unfavorable (1)	—	(22)	(32)	(42)
Refining margin adjusted for inventory valuation impact	\$ 308	\$ 259	\$ 593	\$ 539

- (1) FIFO is the petroleum business' basis for determining inventory value under GAAP. Changes in crude oil prices can cause fluctuations in the inventory valuation of crude oil, work in process and finished goods, thereby resulting in a favorable inventory valuation impact when crude oil prices increase and an unfavorable inventory valuation impact when crude oil prices decrease. The inventory valuation impact is calculated based upon inventory values at the beginning of the accounting period and at the end of the accounting period. In order to derive the inventory valuation impact per total throughput barrel, we utilize the total dollar figures for the inventory valuation impact and divide by the number of total throughput barrels for the period.

***Reconciliation of Petroleum Segment total throughput barrels***

	Three Months Ended June 30,		Six Months Ended June 30,	
	2019	2018	2019	2018
Total throughput barrels per day	216,283	218,105	214,555	203,930
Days in the period	91	91	181	181
Total throughput barrels	19,681,753	19,847,555	38,834,455	36,911,330

***Reconciliation of Petroleum Segment Refining Margin (in millions and on per total throughput barrel basis)***

(in millions, except for per throughput barrel data)	Three Months Ended June 30,		Six Months Ended June 30,	
	2019	2018	2019	2018
Refining margin	\$ 308	\$ 281	\$ 625	\$ 581
Divided by: total throughput barrels	20	20	39	37
Refining margin per total throughput barrel	\$ 15.66	\$ 14.13	\$ 16.10	\$ 15.72

***Reconciliation of Petroleum Segment Refining Margin adjusted for inventory valuation impact (in millions and on per total throughput barrel basis)***

(in millions, except for throughput barrel data)	Three Months Ended June 30,		Six Months Ended June 30,	
	2019	2018	2019	2018
Refining margin adjusted for inventory valuation impact	\$ 308	\$ 259	\$ 593	\$ 539
Divided by: total throughput barrels	20	20	39	37
Refining margin adjusted for inventory valuation impact per total throughput barrel	\$ 15.68	\$ 13.03	\$ 15.28	\$ 14.58

**Reconciliation of Petroleum Segment Direct operating expenses (in millions and on per total throughput barrel basis)**

(in millions, except for throughput barrel data)	Three Months Ended June 30,		Six Months Ended June 30,	
	2019	2018	2019	2018
Direct operating expenses (exclusive of depreciation and amortization)	\$ 86	\$ 93	\$ 177	\$ 185
Divided by: total throughput barrels	20	20	39	37
Direct operating expenses per total throughput barrel	\$ 4.40	\$ 4.68	\$ 4.57	\$ 5.00

**Reconciliation of Nitrogen Fertilizer Segment Net Income (Loss) to EBITDA**

(in millions)	Three Months Ended June 30,		Six Months Ended June 30,	
	2019	2018	2019	2018
Nitrogen fertilizer net income (loss)	\$ 19	\$ (16)	\$ 13	\$ (36)
Add:				
Interest expense, net	16	16	31	32
Depreciation and amortization	25	20	42	37
Nitrogen Fertilizer EBITDA	\$ 60	\$ 20	\$ 86	\$ 33