CVR ENERGY INC
Form 10-K
February 26, 2018
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UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

Form 10-K

(Mark One)

þ	ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934 For the fiscal year ended December 31, 2017 OR
o	TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934 For the transition period from to .

Commission file number: 001-33492

CVR Energy, Inc.
(Exact name of registrant as specified in its charter)

Delaware	61-1512186
(State or Other Jurisdiction of Incorporation or Organization)	(I.R.S. Employer Identification No.)
2277 Plaza Drive, Suite 500 Sugar Land, Texas (Address of Principal Executive Offices)	77479 (Zip Code)

Registrant's Telephone Number, including Area Code:
(281) 207-3200

Securities registered pursuant to Section 12(b) of the Act:

Title of Each Class	Name of Each Exchange on Which Registered
Common Stock, $0.01 par value per share	The New York Stock Exchange

Securities registered pursuant to Section 12(g) of the Act:

None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes o No þ

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes o No þ

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 þ No o

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

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. þ

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer o	Accelerated filer þ	Non-accelerated filer o (Do not check if a smaller reporting company)
Smaller reporting company o	Emerging growth company o	

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. o

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

The aggregate market value of the voting and non-voting common equity held by non-affiliates of the registrant computed based on the New York Stock Exchange closing price on June 30, 2017 (the last business day of the registrant's second fiscal quarter) was $340,159,523. Shares of the registrant's common stock held by each executive officer and director and by each entity or person that, to the registrant's knowledge, owned 10% or more of the registrant's outstanding common stock as of June 30, 2017 have been excluded from this number in that these persons may be deemed affiliates of the registrant. This determination of possible affiliate status is not necessarily a conclusive determination for other purposes.

Indicate the number of shares outstanding of each of the registrant's classes of common stock, as of the latest practicable date.

Class	Outstanding at February 20, 2018
Common Stock, par value $0.01 per share	86,831,050 shares

Documents Incorporated By Reference

Document	Parts Incorporated
Proxy Statement for the 2018 Annual Meeting of Stockholders	Items 10, 11, 12, 13 and 14 of Part III

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GLOSSARY OF SELECTED TERMS

The following are definitions of certain terms used in this Annual Report on Form 10-K for the year ended December 31, 2017 (this "Report").

2021 Notes — $320.0 million aggregate principal amount of 6.5% Senior Notes due 2021, which were issued by CVR Nitrogen and CVR Nitrogen Finance.

2022 Notes — $500.0 million aggregate principal amount of 6.5% Senior Notes due 2022, which were issued by Refining, LLC and Coffeyville Finance on October 23, 2012 and fully and unconditionally guaranteed by the Refining Partnership and each of Refining LLC's domestic subsidiaries other than Coffeyville Finance.

2023 Notes — $645.0 million aggregate principal amount of 9.25% Senior Secured Notes due 2023, which were issued through CVR Partners and CVR Nitrogen Finance Corporation.

2-1-1 crack spread — The approximate gross margin resulting from processing two barrels of crude oil to produce one barrel of gasoline and one barrel of distillate. The 2-1-1 crack spread is expressed in dollars per barrel.

ABL Credit Facility —The Nitrogen Fertilizer Partnership's senior secured asset based revolving credit facility with a group of lenders and UBS AG, Stamford Branch, as administrative agent and collateral agent.

Amended and Restated ABL Credit Facility — The Refining Partnership's senior secured asset based revolving credit facility with a group of lenders and Wells Fargo, as administrative agent and collateral agent.

ammonia — Ammonia is a direct application fertilizer and is primarily used as a building block for other nitrogen products for industrial applications and finished fertilizer products.

barrel — Common unit of measure in the oil industry which equates to 42 gallons.

blendstocks — Various compounds that are combined with gasoline or diesel from the crude oil refining process to make finished gasoline and diesel fuel; these may include natural gasoline, fluid catalytic cracking unit or FCCU gasoline, ethanol, reformate or butane, among others.

bpd — Abbreviation for barrels per day.

bpcd — Abbreviation for barrels per calendar day, which refers to the total number of barrels processed in a refinery within a year, divided by the total number of days in the year (365 or 366 days), thus reflecting all operational and logistical limitations.

bulk sales — Volume sales through third-party pipelines, in contrast to tanker truck quantity rack sales.

capacity — Capacity is defined as the throughput a process unit is capable of sustaining, either on a calendar or stream day basis. The throughput may be expressed in terms of maximum sustainable, nameplate or economic capacity. The maximum sustainable or nameplate capacities may not be the most economical. The economic capacity is the throughput that generally provides the greatest economic benefit based on considerations such as crude oil and other feedstock costs, product values and downstream unit constraints.

catalyst — A substance that alters, accelerates, or instigates chemical changes, but is neither produced, consumed nor altered in the process.

Coffeyville Fertilizer Facility — CVR Partners' nitrogen fertilizer manufacturing facility located in Coffeyville, Kansas.

Coffeyville Finance — Coffeyville Finance Inc., a wholly-owned subsidiary of Refining LLC and an indirect wholly-owned subsidiary of the Refining Partnership.

corn belt —The primary corn producing region of the United States, which includes Illinois, Indiana, Iowa, Minnesota, Missouri, Nebraska, Ohio and Wisconsin.

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crack spread — A simplified calculation that measures the difference between the price for light products and crude oil. For example, the 2-1-1 crack spread is often referenced and represents the approximate gross margin resulting from processing two barrels of crude oil to produce one barrel of gasoline and one barrel of distillate.

Credit Parties —CRLLC and certain subsidiaries party to the Amended and Restated ABL Credit Facility.

CRLLC— Coffeyville Resources, LLC, a wholly-owned subsidiary of the Company.

CRPLLC —Coffeyville Resources Pipeline, LLC.

CRLLC Facility —The Nitrogen Fertilizer Partnership's $300.0 million senior term loan credit facility with CRLLC, which was repaid in full and terminated on June 10, 2016.

CRNF— Coffeyville Resources Nitrogen Fertilizers, LLC a subsidiary of the Nitrogen Fertilizer Partnership.

CRRM— Coffeyville Resources Refining & Marketing, LLC, a wholly-owned subsidiary of Refining LLC and indirect wholly-owned subsidiary of the Refining Partnership.

CVR Energy or CVR or Company — CVR Energy, Inc.

CVR Nitrogen —CVR Nitrogen, LP (formerly known as East Dubuque Nitrogen Partners, L.P. and also formerly known as Rentech Nitrogen Partners L.P.).

CVR Nitrogen GP— CVR Nitrogen GP, LLC (formerly known as East Dubuque Nitrogen GP, LLC and also formerly known as Rentech Nitrogen GP, LLC).

CVR Partners or the Nitrogen Fertilizer Partnership — CVR Partners, LP and its subsidiaries.

CVR Refining or the Refining Partnership — CVR Refining, LP. and its subsidiaries.

CVR Refining GP or general partner — CVR Refining GP, LLC., an indirect wholly-owned subsidiary of CVR Energy.

distillates — Primarily diesel fuel, kerosene and jet fuel.

East Dubuque Facility — CVR Partners' nitrogen fertilizer manufacturing facility located in East Dubuque, Illinois.

East Dubuque Merger —The transactions contemplated by the Merger Agreement, whereby the Nitrogen Fertilizer Partnership acquired CVR Nitrogen and CVR Nitrogen GP on April 1, 2016.

ethanol — A clear, colorless, flammable oxygenated hydrocarbon. Ethanol is typically produced chemically from ethylene, or biologically from fermentation of various sugars from carbohydrates found in agricultural crops and cellulosic residues from crops or wood. It is used in the United States as a gasoline octane enhancer and oxygenate.

farm belt — Refers to the states of Illinois, Indiana, Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, Ohio, Oklahoma, South Dakota, Texas and Wisconsin.

FCCU — Fluid Catalytic Cracking Unit.

feedstocks — Petroleum products, such as crude oil and natural gas liquids, that are processed and blended into refined products, such as gasoline, diesel fuel and jet fuel during the refining process.

Group 3 — A geographic subset of the PADD II region comprising refineries in Oklahoma, Kansas, Missouri, Nebraska and Iowa. Current Group 3 refineries include the Refining Partnership's Coffeyville and Wynnewood refineries; the Valero Ardmore refinery in Ardmore, OK; HollyFrontier's Tulsa refinery in Tulsa, OK and El Dorado refinery in El Dorado, KS; Phillips 66's Ponca City refinery in Ponca City, OK; and CHS Inc.'s refinery in McPherson, KS.

heavy crude oil — A relatively inexpensive crude oil characterized by high relative density and viscosity. Heavy crude oils require greater levels of processing to produce high value products such as gasoline and diesel fuel.

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independent petroleum refiner — A refiner that does not have crude oil exploration or production operations. An independent refiner purchases the crude oil throughputs in its refinery operations from third parties.

LIBOR — London Interbank Offered Rate.

light crude oil — A relatively expensive crude oil characterized by low relative density and viscosity. Light crude oils require lower levels of processing to produce high value products such as gasoline and diesel fuel.

Merger Agreement —The Agreement and Plan of Merger, dated as of August 9, 2015, whereby the Nitrogen Fertilizer Partnership acquired CVR Nitrogen and CVR Nitrogen GP.

Midway — Midway Pipeline LLC

MMBtu — One million British thermal units or Btu: a measure of energy. One Btu of heat is required to raise the temperature of one pound of water one degree Fahrenheit.

MSCF — One thousand standard cubic feet, a customary gas measurement unit.

natural gas liquids — Natural gas liquids, often referred to as NGLs, are both feedstocks used in the manufacture of refined fuels, as well as products of the refining process. Common NGLs used include propane, isobutane, normal butane and natural gasoline.

Nitrogen Fertilizer Partnership credit facility — CRNF's $125.0 million term loan, $25.0 million revolving and $50.0 million uncommitted incremental credit facility, guaranteed by the Nitrogen Fertilizer Partnership, entered into with a group of lenders including Goldman Sachs Lending Partners LLC, as administrative and collateral agent, which was repaid in full and terminated on April 1, 2016.

PADD II — Midwest Petroleum Area for Defense District which includes Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, Oklahoma, South Dakota, Tennessee, and Wisconsin.

petroleum coke (pet coke) — A coal-like substance that is produced during the refining process.

product pricing at gate — Product pricing at gate represents net sales less freight revenue divided by product sales volume in tons. Product pricing at gate is also referred to as netback.

rack sales — Sales which are made at terminals into third-party tanker trucks or railcars.

refined products — Petroleum products, such as gasoline, diesel fuel and jet fuel, that are produced by a refinery.

Refining LLC — CVR Refining, LLC, a wholly-owned subsidiary of the Refining Partnership.

Refining Partnership IPO—The initial public offering of 27,600,000 common units representing limited partner interests of the Refining Partnership, which closed on January 23, 2013 (which includes the underwriters' subsequently exercised option to purchase additional common units).

RFS —Renewable Fuel Standard of the EPA.

RINs— Renewable fuel credits, known as renewable identification numbers.

sour crude oil — A crude oil that is relatively high in sulfur content, requiring additional processing to remove the sulfur. Sour crude oil is typically less expensive than sweet crude oil.

spot market — A market in which commodities are bought and sold for cash and delivered immediately.

sweet crude oil — A crude oil that is relatively low in sulfur content, requiring less processing to remove the sulfur. Sweet crude oil is typically more expensive than sour crude oil.

Tender Offer — The cash tender offer commenced on April 29, 2016 by CVR Nitrogen and CVR Nitrogen Finance Corporation to purchase any and all of the outstanding 2021 Notes at 101.5% of par value.

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throughput — The volume processed through a unit or a refinery or transported on a pipeline.

turnaround — A periodically required standard procedure to inspect, refurbish, repair and maintain the refinery or nitrogen fertilizer plant assets. This process involves the shutdown and inspection of major processing units and occurs every four to five years for the refineries and every two to three years for the nitrogen fertilizer plant.

UAN — An aqueous solution of urea and ammonium nitrate used as a fertilizer.

Velocity — Velocity Central Oklahoma Pipeline LLC.

Vitol—Vitol Inc.

Vitol Agreement —The Amended and Restated Crude Oil Supply Agreement between Vitol and CRRM.

VPP —Velocity Pipeline Partners, LLC.

WCS —Western Canadian Select crude oil, a medium to heavy, sour crude oil, characterized by an American Petroleum Institute gravity ("API gravity") of between 20 and 22 degrees and a sulfur content of approximately 3.3 weight percent.

Wells Fargo Credit Agreement— CVR Nitrogen's credit agreement with Wells Fargo, as successor-in-interest by assignment from General Electric Company, as administrative agent, which was repaid in April 2016 and terminated.

WTI — West Texas Intermediate crude oil, a light, sweet crude oil, characterized by an API gravity between 39 and 41 degrees and a sulfur content of approximately 0.4 weight percent that is used as a benchmark for other crude oils.

WTS — West Texas Sour crude oil, a relatively light, sour crude oil characterized by an API gravity of between 30 and 32 degrees and a sulfur content of approximately 2.0 weight percent.

yield — The percentage of refined products that is produced from crude oil and other feedstocks.

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PART I

Item 1. Business

Overview

CVR Energy, Inc. and, unless the context otherwise requires, its subsidiaries ("CVR Energy," the "Company," "we," "us," or "our") is a diversified holding company primarily engaged in the petroleum refining and nitrogen fertilizer manufacturing industries through its holdings in CVR Refining, LP ("CVR Refining" or the "Refining Partnership") and CVR Partners, LP ("CVR Partners" or the "Nitrogen Fertilizer Partnership"). The Refining Partnership is an independent petroleum refiner and marketer of high value transportation fuels. The Nitrogen Fertilizer Partnership produces and markets nitrogen fertilizers in the form of UAN and ammonia. We own the general partner and approximately 66% and 34% respectively, of the outstanding common units representing limited partner interests in each of the Refining Partnership and the Nitrogen Fertilizer Partnership. CVR Energy's common stock is listed on the New York Stock Exchange ("NYSE") under the symbol "CVI," the Refining Partnership's common units are listed on the NYSE under the symbol "CVRR" and the Nitrogen Fertilizer Partnership's common units are listed on the NYSE under the symbol "UAN." As of December 31, 2017, Icahn Enterprises L.P. and its affiliates owned approximately 82% of our outstanding common stock.

We operate under two business segments: petroleum (the petroleum and related businesses operated by the Refining Partnership) and nitrogen fertilizer (the nitrogen fertilizer business operated by the Nitrogen Fertilizer Partnership). Throughout the remainder of this document, our business segments are referred to as the "petroleum business" and the "nitrogen fertilizer business," respectively.

For the fiscal years ended December 31, 2017, 2016 and 2015, we generated consolidated net sales of $6.0 billion, $4.8 billion and $5.4 billion, respectively, and operating income of $177.8 million, $90.9 million and $421.6 million, respectively. The petroleum business generated $5.7 billion, $4.4 billion and $5.2 billion of net sales and the nitrogen fertilizer business generated $330.8 million, $356.3 million and $289.2 million of net sales, in each case, for the years ended December 31, 2017, 2016 and 2015, respectively. The petroleum business generated operating income of $203.8 million, $77.8 million and $361.7 million and the nitrogen fertilizer business generated operating income (loss) of $(9.2) million, $26.8 million and $68.7 million, in each case, for the years ended December 31, 2017, 2016 and 2015, respectively. Our consolidated results of operations include certain other unallocated corporate activities and the elimination of intercompany transactions and, therefore, are not a sum of the operating results of the petroleum and nitrogen fertilizer businesses.

Refer to Item 1, "Petroleum Business" and Item 1, "Nitrogen Fertilizer Business" and Item 8, Note 19 ("Business Segments") for further details on our business segments.

Our History

CVR Energy was formed in September 2006 as a subsidiary of Coffeyville Acquisition LLC ("CALLC") in order to consummate an initial public offering of its businesses previously acquired through a bankruptcy court auction. CVR Energy consummated its initial public offering on October 26, 2007.

On April 13, 2011, the Nitrogen Fertilizer Partnership completed the Nitrogen Fertilizer Partnership initial public offering ("IPO"). The Nitrogen Fertilizer Partnership sold 22,080,000 common units at a price of $16.00 per common unit, resulting in gross proceeds of $353.3 million.

On January 23, 2013, the Refining Partnership completed the Refining Partnership IPO. The Refining Partnership sold 24,000,000 common units at a price of $25.00 per unit, resulting in gross proceeds of $600.0 million. Of the common units issued, 4,000,000 units were purchased by an affiliate of Icahn Enterprises L.P. ("IEP"). Additionally, on January 30, 2013, the underwriters closed their option to purchase an additional 3,600,000 common units at a price of $25.00 per unit resulting in gross proceeds of $90.0 million.

On April 1, 2016, the Nitrogen Fertilizer Partnership completed the East Dubuque Merger as contemplated by the Agreement and Plan of Merger, dated as of August 9, 2015 (the "Merger Agreement"), whereby the Nitrogen Fertilizer Partnership acquired CVR Nitrogen and CVR Nitrogen GP. Pursuant to the East Dubuque Merger, the Nitrogen Fertilizer Partnership acquired the East Dubuque Facility.

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Immediately following the closing of the East Dubuque Merger and as of December 31, 2017, public security holders held approximately 66% of total Nitrogen Fertilizer Partnership common units, and CRLLC held approximately 34% of total Nitrogen Fertilizer Partnership common units in addition to owning 100% of the Nitrogen Fertilizer Partnership's general partner.

As of December 31, 2017, public security holders held approximately 34% of the total Refining Partnership common units (including units owned by affiliates of IEP, representing 3.9% of the total Refining Partnership common units), and CVR Refining Holdings, LLC ("CVR Refining Holdings") held approximately 66% of the total Refining Partnership common units, in addition to owning 100% of the Refining Partnership's general partner.

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Organizational Structure and Related Ownership

The following chart illustrates our organizational structure and the organizational structure of the Refining Partnership and the
Nitrogen Fertilizer Partnership as of the date of this Report.

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Petroleum Business

The petroleum business, operated by the Refining Partnership, includes a complex full coking medium-sour crude oil refinery in Coffeyville, Kansas with a rated capacity of 115,000 bpcd and a complex crude oil refinery in Wynnewood, Oklahoma with a rated capacity of 70,000 bpcd capable of processing 20,000 bpcd of light sour crude oil (within its rated capacity of 70,000 bpcd). The combined crude capacity represents approximately 23% of the region's refining capacity. The Coffeyville refinery located in southeast Kansas is approximately 100 miles from Cushing, Oklahoma ("Cushing"), a major crude oil trading and storage hub. The Wynnewood refinery is located approximately 65 miles south of Oklahoma City, Oklahoma and approximately 130 miles from Cushing.

For the year ended December 31, 2017, the Coffeyville refinery's product yield included gasoline (50%), diesel fuel (primarily ultra-low sulfur diesel ("ULSD")) (42%), and pet coke and other refined products such as natural gas liquids ("NGL") (propane and butane), slurry, sulfur and gas oil (8%). The Wynnewood refinery's product yield included gasoline (51%), diesel fuel (primarily ULSD) (37%), asphalt (5%), jet fuel (4%) and other products (3%) (slurry, sulfur and gas oil, and specialty products such as propylene and solvents).

The petroleum business also includes the following auxiliary operating assets:

Crude Oil Gathering System. The petroleum business owns and operates a crude oil gathering system serving Kansas, Nebraska, Oklahoma, Missouri, Colorado and Texas. The system has field offices in Bartlesville and Pauls Valley, Oklahoma, Plainville and Winfield, Kansas and Denver, Colorado. The gathering system includes approximately 570 miles of active owned, leased and joint venture pipelines and approximately 130 crude oil transports and associated storage facilities, which allows it to gather crude oils from independent crude oil producers. The crude oil gathering system has a gathering capacity of over 80,000 bpd currently. Gathered crude oil provides an attractive and competitive base supply of crude oil for the Coffeyville and Wynnewood refineries. During 2017, the petroleum business gathered approximately 86,000 bpd of price advantaged crudes from our gather area. The petroleum business also has 35,000 bpd of contracted capacity on the Keystone and Spearhead pipelines that allow it to supply price-advantaged Canadian crude to its refineries. It also has contracted capacity on the Pony Express and White Cliffs pipelines, which both became in-service during 2015. Both the Pony Express and White Cliffs pipelines originate in Colorado and extend to Cushing. During the fourth quarter of 2017, the Refining Partnership entered into a 50/50 joint venture, Midway Pipeline LLC ("Midway"), with a subsidiary of Plains All American Pipeline, L.P. ("Plains"), which acquired the approximately 100-mile, 16-inch pipeline that connects the Coffeyville refinery to Cushing, and the Refining Partnership separately acquired from Plains the approximately 100-mile, 8- and 10-inch pipeline system connecting the Wynnewood refinery to Cushing. Refer to Part II, Item 8, Note 7 ("Equity Method Investments") of this Report for a discussion of the joint venture transaction.

- Pipelines and Storage Tanks. The petroleum business owns a proprietary pipeline system capable of transporting approximately 170,000 bpd of crude oil from its Broome Station facility located near Caney, Kansas to its Coffeyville refinery. Crude oils sourced outside of the proprietary gathering system are delivered by common carrier pipelines into various terminals in Cushing, where they are blended and then delivered to the Broome Station tank farm via a pipeline owned by Midway. Crude oil is transported via the Cushing to Ellis crude oil pipeline system acquired from Plains and, beginning in April 2017, the petroleum business also transports crude oil via a 65,000 bpd pipeline owned and operated by the VPP joint venture, to the Wynnewood refinery from a trucking terminal at Lowrance, Oklahoma. The petroleum business owns approximately (i) 1.5 million barrels of crude oil storage capacity that supports the gathering system and the Coffeyville refinery, (ii) 0.9 million barrels of crude oil storage capacity at the Wynnewood refinery and (iii) 1.5 million barrels of crude oil storage capacity in Cushing. The petroleum business also leases additional crude oil storage capacity of approximately 2.3 million barrels in Cushing and 0.2 million barrels in Duncan,

Oklahoma. The Duncan storage supports CVR Refining's Wynnewood refinery while the Cushing storage supports both its Wynnewood and Coffeyville refineries. In addition to crude oil storage, the petroleum business owns over 4.6 million barrels of combined refined products and feedstocks storage capacity.

- Marketing and Product Supply. The petroleum business also has a rack marketing division supplying product through tanker trucks directly to customers located in geographic proximity to Coffeyville, Kansas and Wynnewood, Oklahoma and to customers at throughput terminals on Magellan Midstream Partners, L.P. ("Magellan") and NuStar Energy, LP's ("NuStar") refined products distribution systems.

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The refineries' complexity allows the petroleum business to optimize the yields (the percentage of refined product that is produced from crude oil and other feedstocks) of higher value transportation fuels (gasoline and diesel). Complexity is a measure of a refinery's ability to process lower quality crude oil and feedstocks in an economic manner. The two refineries' capacity weighted average complexity is 13.0. As a result of key investments in its refining assets and the addition of process units to comply with gasoline quality regulations, both of the refinery's complexities have increased. The Coffeyville refinery's complexity score is 13.3, and the Wynnewood refinery's complexity score is 12.6. The petroleum business' higher complexity provides it the flexibility to increase its refining margin over comparable refiners with lower complexities. The petroleum business has achieved significant increases in its refinery crude throughput rates over historical levels. As a result of the increasing complexities, the petroleum business is capable of processing a variety of crudes, including WTS, WTI, sweet and sour Canadian, and locally gathered crudes.

Crude and Feedstock Supply

The Coffeyville refinery has the capability to process blends of a variety of crude oil ranging from heavy sour to light sweet crude oil. Currently, the Coffeyville refinery crude oil slate consists of a blend of mid-continent domestic grades and various Canadian medium and heavy sours, and North Dakota Bakken and other similarly sourced crudes. While crude oil has historically constituted over 90% of the Coffeyville refinery's total throughput over the last five years, other feedstock inputs include normal butane, natural gasoline, alkylation feeds, naphtha, gas oil and vacuum tower bottoms.

The Wynnewood refinery has the capability to process blends of a variety of crude oil ranging from medium sour to light sweet crude oil, although isobutane, gasoline components, and normal butane are also typically used. Historically most of the Wynnewood refinery's crude oil has been acquired domestically, mainly from Texas and Oklahoma, but it can also access and process various light and medium Canadian grades.

Crude oil is supplied to the Coffeyville and Wynnewood refineries through the wholly-owned gathering system and by owned, leased and joint venture pipelines. The petroleum business has continued to increase the number of barrels of crude oil supplied through its crude oil gathering system in 2017 and it now has the capacity of supplying over 80,000 bpd of crude oil to the refineries. For the year ended December 31, 2017, the gathering system supplied approximately 44% and 49% of the Coffeyville and Wynnewood refineries' crude oil demand, respectively. Locally produced crude oils are delivered to the refineries at a discount to WTI, and although sometimes slightly heavier and more sour, offer good economics to the refineries. These crude oils are light and sweet enough to allow the refineries to blend higher percentages of lower cost crude oils such as heavy sour Canadian crude oil while maintaining their target medium sour blend with an API gravity of between 28 and 36 degrees and between 0.9% and 1.2% sulfur. Crude oils sourced outside of the proprietary gathering system are delivered to Cushing by various pipelines including the Keystone and Spearhead pipelines, and subsequently to the Broome Station facility via the Midway joint venture pipeline. The petroleum business' current contracted capacity includes the Pony Express and White Cliffs pipelines, respectively. From the Broome Station facility, crude oil is delivered to the Coffeyville refinery via the petroleum business' 170,000 bpd proprietary pipeline system. Crude oils are delivered to the Wynnewood refinery through third-party pipelines, the pipeline acquired from Plains and, beginning in April 2017, through the VPP joint venture pipeline, and received into storage tanks at terminals located on or near the refinery.

For the year ended December 31, 2017, the Coffeyville refinery's crude oil supply blend was comprised of approximately 92% light sweet crude oil and 8% heavy sour crude oil. For the year ended December 31, 2017, the Wynnewood refinery's crude oil supply blend was comprised of entirely of light sweet crude oil. The light sweet crude oil supply blend includes its locally gathered crude oil.

The Coffeyville refinery is connected to the mid-continent natural gas liquids commercial hub of Conway, Kansas by the inbound Enterprise Pipeline Blue Line. Natural gas liquids feedstock supplies such as butanes and natural gasoline are sourced and delivered directly into the refinery. In addition, Coffeyville's proximity to Conway provides access to the natural gas liquid and liquid petroleum gas fractionation and storage capabilities as well as the commercial markets available at Conway.

Crude Oil Supply Agreement

Refer to Part II, Item 8, Note 15 ("Commitments and Contingencies") of this Report for information on the crude oil supply agreement.

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Refining Process

Coffeyville Refinery

The Coffeyville refinery is a 115,000 bpcd rated capacity facility with operations including fractionation, catalytic cracking, hydrotreating, reforming, coking, isomerization, alkylation, sulfur recovery and propane and butane recovery. The Coffeyville refinery benefits from significant refining unit redundancies, which include two crude oil distillation and vacuum towers, three sulfur recovery units and four hydrotreating units. These redundancies allow the Refining Partnership to continue to receive and process crude oil even if one tower requires unplanned maintenance without having to shut down the entire refinery in the case of a major unit turnaround. In addition, the Coffeyville refinery has a redundant supply of hydrogen pursuant to its feedstock and shared services agreement with a subsidiary of CVR Partners. During the year ended December 31, 2017, the Coffeyville refinery processed approximately 132,000 bpd and 9,000 bpd of crude oil and feedstocks and blendstocks, respectively.

Wynnewood Refinery

The Wynnewood refinery is a 70,000 bpcd rated capacity facility with operations including fractionation, cracking, hydrotreating, hydrocracking, reforming, solvent deasphalting, alkylation, sulfur recovery and propane and butane recovery. Similar to the Coffeyville refinery, the Wynnewood refinery benefits from unit redundancies, including two crude oil distillation and vacuum towers and four hydrotreating units. During the year ended December 31, 2017, our Wynnewood refinery processed approximately 73,000 bpd and 3,000 bpd of crude oil and feedstocks and blendstocks, respectively. These throughput rates for 2017 reflect the first phase of the major scheduled turnaround completed in the fourth quarter of 2017.

Marketing and Distribution

The petroleum business focuses its Coffeyville petroleum product marketing efforts in the central mid-continent area, because of its relative proximity to the refinery and pipeline access. Coffeyville also has access to the Rocky Mountain area. Coffeyville engages in rack marketing, which is the supply of product through tanker trucks and railcars directly to customers located in close geographic proximity to the refinery and to customers at throughput terminals on the refined products distribution systems of Magellan and NuStar. Coffeyville also makes bulk sales (sales into third-party pipelines) into the mid-continent markets and other destinations utilizing the product pipeline networks owned by Magellan, Enterprise and NuStar. The outbound Enterprise Pipeline Red Line provides Coffeyville with access to the NuStar Refined Products Pipeline system. This allows gasoline and ULSD product sales from Kansas up into North Dakota.

The Wynnewood refinery ships its finished product via pipeline, railcar, and truck. It focuses its efforts in the southern portion of the Magellan system which covers all of Oklahoma, parts of Arkansas as well as eastern Missouri, and all other Magellan terminals. The pipeline system is also able to flow in the opposite direction, providing access to Texas markets as well as some adjoining states with pipeline connections. Wynnewood also sells jet fuel to the U.S. Department of Defense via its segregated truck rack and can offer asphalts, solvents and other specialty products via both truck and rail.

Customers

Customers for the refined petroleum products primarily include retailers, railroads, and farm cooperatives and other refiners/marketers in Group 3 of the PADD II region because of their relative proximity to the refineries and pipeline access. The petroleum business sells bulk products to long-standing customers at spot market prices based on a Group

3 basis differential to prices quoted on the New York Mercantile Exchange ("NYMEX"), which are reported by industry market-related indices such as Platts and Oil Price Information Service.

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The petroleum business also has a rack marketing business supplying product through tanker trucks directly to customers located in proximity to the Coffeyville and Wynnewood refineries, as well as to customers located at throughput terminals on refined products distribution systems run by Magellan and NuStar. Rack sales are at posted prices that are influenced by competitor pricing and Group 3 spot market differentials. Additionally, the Wynnewood refinery supplies jet fuel to the U.S. Department of Defense. In addition, the Coffeyville refinery sells hydrogen and by-products of its refining operations, such as petroleum coke, to an affiliate, CVR Partners, pursuant to separate multi-year agreements. For the year ended December 31, 2017, only one customer accounted for 10% or more of the petroleum business' consolidated revenues. Its largest customer accounted for approximately 19% of its net sales and approximately 52% of net sales were made to its ten largest customers. While the petroleum business does have a high concentration of customers, it does not believe that the loss of any single customer would have a material adverse impact on its results of operations, financial condition and cash flows. Refer to Part I, Item 1A, Risk Factors, Both the petroleum and nitrogen fertilizer businesses depend on significant customers and the loss of several significant customers may have a material adverse impact on our results of operations, financial condition and cash flows.

Competition

The petroleum business competes primarily on the basis of price, reliability of supply, availability of multiple grades of products and location. The principal competitive factors affecting its refining operations are cost of crude oil and other feedstock costs, refinery complexity, refinery efficiency, refinery product mix and product distribution and transportation costs. The location of the refineries provides the petroleum business with a reliable supply of crude oil and a transportation cost advantage over its competitors. The petroleum business primarily competes against five refineries operated in the mid-continent region. In addition to these refineries, the refineries compete against trading companies, as well as other refineries located outside the region that are linked to the mid-continent market through an extensive product pipeline system. These competitors include refineries located near the Gulf Coast and the Texas panhandle region. The petroleum business refinery competition also includes branded, integrated and independent oil refining companies, such as Phillips 66, HollyFrontier Corporation, CHS Inc., Valero Energy Corporation and Flint Hills Resources.

Seasonality

The petroleum business experiences seasonal effects as demand for gasoline products is generally higher during the summer months than during the winter months due to seasonal increases in highway traffic and road construction work. Demand for diesel fuel is higher during the planting and harvesting seasons. As a result, the petroleum business' results of operations for the first and fourth calendar quarters are generally lower compared to its results for the second and third calendar quarters. In addition, unseasonably cool weather in the summer months and/or unseasonably warm weather in the winter months in the markets in which the petroleum business sells its petroleum products can impact the demand for gasoline and diesel fuel. The demand for asphalt is also seasonal and is generally higher during the months of March through October.

Nitrogen Fertilizer Business

The nitrogen fertilizer business, operated by the Nitrogen Fertilizer Partnership, consists of two nitrogen fertilizer manufacturing facilities which are located in Coffeyville, Kansas and East Dubuque, Illinois. The nitrogen fertilizer business produces and distributes nitrogen fertilizer products, which are used primarily by farmers to improve the yield and quality of their crops. The principal products are UAN and ammonia, and all products are sold on a wholesale basis. The Coffeyville Fertilizer Facility includes a 1,300 ton-per-day capacity ammonia unit, a 3,000 ton-per-day capacity UAN unit and a gasifier complex having a capacity of 89 million standard cubic feet per day of

hydrogen. The Coffeyville Fertilizer Facility is the only nitrogen fertilizer plant in North America that utilizes a pet coke gasification process to produce nitrogen fertilizer. The East Dubuque Facility, which includes a 1,075 ton-per-day capacity ammonia unit and a 1,100 ton-per-day capacity UAN unit, has the flexibility to vary its product mix enabling the East Dubuque Facility to upgrade a portion of its ammonia production into varying amounts of UAN, nitric acid and liquid and granulated urea each season, depending on market demand, pricing and storage availability. The East Dubuque Facility's product sales are heavily weighted toward sales of ammonia and UAN.

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Raw Material Supply

Coffeyville Fertilizer Facility

The Coffeyville Fertilizer Facility was built in 2000 and uses a gasification process to convert pet coke to high purity hydrogen for subsequent conversion to ammonia. The Coffeyville nitrogen fertilizer facility's pet coke gasification process results in a higher percentage of fixed costs than a natural gas-based fertilizer plant. During the past five years, over 70% of the Coffeyville nitrogen fertilizer facility's pet coke requirements on average were supplied by CVR Refining's adjacent crude oil refinery pursuant to a renewable long-term agreement. Historically the Coffeyville nitrogen fertilizer plant has obtained the remainder of its pet coke requirements from third parties such as other Midwestern refineries or pet coke brokers at spot-prices. The Nitrogen Fertilizer Partnership is party to a pet coke supply agreement with HollyFrontier Corporation that ends December 2018, and has historically renewed this agreement annually. If necessary, there are other pet coke suppliers. The Nitrogen Fertilizer Partnership also purchased some of its hydrogen from CVR Refining's adjacent crude oil refinery pursuant to a long-term agreement.

The pet coke gasification process is licensed from an affiliate of General Electric Company. The license grants the Coffeyville Fertilizer Facility perpetual rights to use the pet coke gasification process on specified terms and conditions, and the license is fully paid.

Linde LLC ("Linde") owns, operates, and maintains the air separation plant that provides contract volumes of oxygen, nitrogen, and compressed dry air to the Coffeyville Fertilizer Facility gasifiers.

East Dubuque Facility

The East Dubuque Facility uses natural gas to produce nitrogen fertilizer. The East Dubuque Facility is able to purchase natural gas at competitive prices due to the plant’s connection to the Northern Natural Gas interstate pipeline system, which is within one mile of the facility, and the ANR Pipeline Company pipeline. The pipelines are connected to Nicor Inc.’s distribution system at the Chicago Citygate receipt point and at the Hampshire interconnect from which natural gas is transported to the East Dubuque Facility.

Changes in the levels of natural gas prices and market prices of nitrogen-based products can materially affect the East Dubuque Facility's financial position and results of operations. Natural gas prices in the United States have experienced significant fluctuations over the last decade, increasing substantially in 2008 and subsequently declining to the current lower levels. From time to time, the nitrogen fertilizer business enters into forward contracts with fixed delivery prices to purchase portions of its natural gas requirements. As of December 31, 2017, the nitrogen business segment had commitments to purchase approximately 1.8 million MMBtus of natural gas supply for planned use in its East Dubuque Facility in January and February 2018 at a weighted average rate per MMBtu of approximately $3.20, exclusive of transportation cost.

Distribution, Sales and Marketing

The primary geographic markets for the nitrogen fertilizer business' fertilizer products are Illinois, Iowa, Kansas, Nebraska and Texas. The nitrogen fertilizer business' primarily market the UAN products to agricultural customers and ammonia products to agricultural and industrial customers. UAN and ammonia accounted for approximately 67% and 25%, respectively, of its total net sales for the year ended December 31, 2017.

UAN and ammonia are primarily distributed by truck or by railcar. If delivered by truck, products are most commonly sold on a freight-on-board ("FOB") shipping point basis, and freight is normally arranged by the customer. The

nitrogen fertilizer business leases and owns a fleet of railcars for use in product delivery, and, if delivered by railcar, the products are most commonly sold on a FOB destination point basis and the nitrogen fertilizer business typically arranges the freight.

The nitrogen fertilizer business's fertilizer products leave the Coffeyville Fertilizer Facility either in railcars for destinations located principally on the Union Pacific Railroad or in trucks for direct shipment to customers. The East Dubuque Facility primarily sells its product to customers located within 200 miles of the facility. In most instances, customers take delivery of nitrogen products at the East Dubuque Facility and arrange and pay to transport them to their final destinations by truck.

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The nitrogen fertilizer business has the capacity to store approximately 160,000 tons of UAN and 80,000 tons of ammonia. The nitrogen fertilizer's business storage tanks are located primarily at its two production facilities. Inventories are often allowed to accumulate to allow customers to take delivery to meet the seasonal demand. While the nitrogen fertilizer business does experience higher sales volumes due to seasonality during the fall and spring application periods, product is sold to customers throughout the year.

The nitrogen fertilizer business offers agricultural products on a spot, forward or prepay basis and often uses forward sales of fertilizer products to optimize its asset utilization, planning process and production scheduling. These sales are made by offering customers the opportunity to purchase product on a forward basis at prices and delivery dates that it proposes. The nitrogen fertilizer business uses this program to varying degrees during the year and between years depending on the nitrogen fertilizer business view of market conditions. Fixing the selling prices of nitrogen fertilizer products months in advance of their ultimate delivery to customers typically causes the nitrogen fertilizer business reported selling prices and margins to differ from spot market prices and margins available at the time of shipment.

Customers

The nitrogen fertilizer business sells UAN products to retailers and distributors. In addition, it sells ammonia to agricultural and industrial customers. Given the nature of its business, and consistent with industry practice, the nitrogen fertilizer business does not have long-term minimum purchase contracts with most of its agricultural customers. Some of our industrial sales include long-term purchase contracts.

For the year ended December 31, 2017, the top five customers in the aggregate represented 31% of the nitrogen fertilizer business' net sales. The nitrogen fertilizer business' top customer on a consolidated basis accounted for approximately 11% of its net sales. While the nitrogen fertilizer business does have high concentration of customers, it does not believe that the loss of any single customer would have a material adverse effect on its results of operations, financial condition and cash flows. Refer to Part I, Item 1A, Risk Factors, Both the petroleum and nitrogen fertilizer businesses depend on significant customers and the loss of several significant customers may have a material adverse impact on our results of operations, financial condition and cash flows.

Competition

The nitrogen fertilizer business has experienced and expects to continue to meet significant levels of competition from current and potential competitors, many of whom have significantly greater financial and other resources. Refer to Part I, Item 1A, Risk Factors, Nitrogen fertilizer products are global commodities, and the nitrogen fertilizer business faces intense competition from other nitrogen fertilizer producers.

Competition in the nitrogen fertilizer industry is dominated by price considerations. However, during the spring and fall application seasons, farming activities intensify and delivery capacity is a significant competitive factor. The nitrogen fertilizer business maintains a large fleet of leased and owned railcars and seasonally adjusts inventory to enhance its manufacturing and distribution operations.

The nitrogen fertilizer business' major competitors include CF Industries Holdings, Inc., including its majority owned subsidiary Terra Nitrogen Company, L.P.; Koch Fertilizer Company, LLC; and Nutrien Ltd. (formerly known as Agrium, Inc. and Potash Corporation of Saskatchewan, Inc.). Domestic competition is intense due to customers' sophisticated buying tendencies and competitor strategies that focus on cost and service. The nitrogen fertilizer business also encounters competition from producers of fertilizer products manufactured in foreign countries. In certain cases, foreign producers of fertilizer who export to the United States may be subsidized by their respective

governments.

Seasonality

Because the nitrogen fertilizer business primarily sells agricultural commodity products, its business is exposed to seasonal fluctuations in demand for nitrogen fertilizer products in the agricultural industry. In addition, the demand for fertilizers is affected by the aggregate crop planting decisions and fertilizer application rate decisions of individual farmers who make planting decisions based largely on the prospective profitability of a harvest. The specific varieties and amounts of fertilizer they apply depend on factors like crop prices, farmers' current liquidity, soil conditions, weather patterns and the types of crops planted. The nitrogen fertilizer business typically experiences higher net sales in the first half of the calendar year, which is referred to as the planting season, and its net sales tend to be lower during the second half of each calendar year, which is referred to as the fill season.

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Environmental Matters

The petroleum and nitrogen fertilizer businesses are subject to extensive and frequently changing federal, state and local, environmental, health and safety laws and regulations governing the emission and release of hazardous substances into the environment, the treatment and discharge of waste water, and the storage, handling, use and transportation of petroleum and nitrogen products, and the characteristics and composition of gasoline and diesel fuels. These laws and regulations, their underlying regulatory requirements and the enforcement thereof impact the petroleum business and operations and the nitrogen fertilizer business and operations by imposing:

- restrictions on operations or the need to install enhanced or additional controls;
- the need to obtain and comply with permits, licenses and authorizations;
- liability for the investigation and remediation of contaminated soil and groundwater at current and former facilities (if any) and for off-site waste disposal locations; and
- specifications for the products marketed by the petroleum business and the nitrogen fertilizer business, primarily gasoline, diesel fuel, UAN and ammonia.

Our operations require numerous permits, licenses and authorizations. Failure to comply with these permits or environmental laws and regulations could result in fines, penalties or other sanctions or a revocation of our permits. In addition, the laws and regulations to which we are subject are often evolving and many of them have become more stringent or have become subject to more stringent interpretation or enforcement by federal or state agencies. These laws and regulations could result in increased capital, operating and compliance costs.

The principal environmental risks associated with our businesses are outlined below, with additional details included in Part I, Item 1A, Risk Factors and Part II, Item 8, Note 15 ("Commitments and Contingencies") of this Report.

The Federal Clean Air Act

The federal Clean Air Act and its implementing regulations, as well as the corresponding state laws and regulations that regulate emissions of pollutants into the air, affect the petroleum business and the nitrogen fertilizer business both directly and indirectly. Direct impacts may occur through the federal Clean Air Act's permitting requirements and/or emission control requirements relating to specific air pollutants, as well as the requirement to maintain a risk management program to help prevent accidental releases of certain regulated substances. The federal Clean Air Act indirectly affects the petroleum business and the nitrogen fertilizer business by extensively regulating the air emissions of sulfur dioxide ("SO_2"), volatile organic compounds, nitrogen oxides and other substances, including those emitted by mobile sources, which are direct or indirect users of our products.

Some or all of the standards promulgated pursuant to the federal Clean Air Act, or any future promulgations of standards, may require the installation of controls or changes to the petroleum business or the nitrogen fertilizer facilities in order to comply. If new controls or changes to operations are needed, the costs could be material. These new requirements, other requirements of the federal Clean Air Act, or other presently existing or future environmental regulations, could cause us to expend substantial resources to comply and/or permit our facilities to produce products that meet applicable requirements.

The regulation of air emissions under the federal Clean Air Act requires that we obtain various construction and operating permits and incur capital expenditures for the installation of certain air pollution control devices at the

petroleum and nitrogen fertilizer operations when regulations change or we add new equipment or modify existing equipment. Various regulations specific to our operations have been implemented, such as National Emission Standard for Hazardous Air Pollutants ("NESHAP"), New Source Performance Standards ("NSPS") and New Source Review/Prevention of Significant Deterioration ("PSD").

On September 12, 2012, the U.S. Environmental Protection Agency (the "EPA") published in the Federal Register final revisions to its NSPS for process heaters and flares at petroleum refineries. The EPA originally issued final standards in June 2008, but the portions of the rule relating to process heaters and flares were stayed pending reconsideration of certain provisions. The final standards regulate emissions of nitrogen oxide from process heaters and emissions of SO_2 from flares, as well as require certain work practice and monitoring standards for flares. We do not believe that the costs of complying with the rule are material.

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On December 1, 2015, the EPA published in the Federal Register the petroleum refining sector risk rule. The rule places additional emission control requirements and work practice standards on FCCUs, storage tanks, flares, coking units and other equipment at petroleum refineries. CVR Refining Partnership does not believe that the costs of complying with the rule are material.

Refer to Part II, Item 8, Note 15 ("Commitments and Contingencies") of this Report for further discussion of recent environmental matters related to the Clean Air Act including the "Flood, Crude Oil Discharge and Insurance" and certain "Environmental, Health and Safety ("EHS") Matters."

The Federal Clean Water Act

The federal Clean Water Act ("CWA") and its implementing regulations, as well as the corresponding state laws and regulations that regulate the discharge of pollutants into the water, affect the petroleum business and the nitrogen fertilizer business. Direct impacts occur through the CWA's permitting requirements, which establish discharge limitations based on technology standards, water quality standards, and restrictions on the total maximum daily load of pollutants that may be released to a particular water body based on its use. In addition, water resources are becoming and in the future may become scarcer, and many refiners, including CRRM and Wynnewood Refining Company, LLC ("WRC"), are subject to restrictions on their ability to use water in the event of low availability conditions. Both CRRM and WRC have contracts in place to receive water during certain water shortage conditions, but these conditions could change over time if water becomes scarce.

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Release Reporting

The release of hazardous substances or extremely hazardous substances into the environment is subject to release reporting requirements under federal and state environmental laws. Our facilities periodically experience releases of hazardous and extremely hazardous substances from its equipment. Our facilities periodically have excess emission events from flaring and other planned and unplanned start-up, shutdown and malfunction events. From time to time, the EPA has conducted inspections and issued information requests to us with respect to our compliance with reporting requirements under the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA") and the Emergency Planning and Community Right-to-Know Act. If we fail to timely or properly report a release, or if the release violates the law or our permits, it could cause us to become the subject of a governmental enforcement action or third-party claims. Government enforcement or third-party claims relating to releases of hazardous or extremely hazardous substances could result in significant expenditures and liability.

Fuel Regulations

Tier 2, Low Sulfur Fuels. In February 2000, the EPA promulgated the Tier 2 Motor Vehicle Emission Standards Final Rule for all passenger vehicles, establishing standards for sulfur content in gasoline that were required to be met by 2006. In addition, in January 2001, the EPA promulgated its on-road diesel regulations, which required a 97% reduction in the sulfur content of diesel fuel sold for highway use by June 1, 2006, with full compliance by January 1, 2010. The refineries are in compliance with the EPA's low sulfur gasoline and diesel fuel standards.

Tier 3. In April 2014, the EPA promulgated the Tier 3 Motor Vehicle Emission and Fuel Standards, which will require that gasoline contain no more than ten parts per million of sulfur on an annual average basis. Refineries were required to be in compliance with the more stringent emission standards as of January 1, 2017; however, compliance with the rule has been extended until January 1, 2020 for approved small volume refineries and small refiners. In June 2016, because it exceeded the EPA’s specified throughput limit for a “small volume refinery,” the Wynnewood refinery became disqualified as a “small volume refinery.” Therefore, the Wynnewood refinery’s compliance deadline was accelerated to December 21, 2018. It is not anticipated that the refineries will require additional controls or capital expenditures to meet the anticipated new standard.

Mobile Source Air Toxic II Emissions

In 2007, the EPA promulgated the Mobile Source Air Toxic II ("MSAT II") rule that required the reduction of benzene in gasoline by 2011. The MSAT II projects for CRRM and WRC were completed within the compliance deadline of November 1, 2014. The refineries are in compliance with the EPA's MSAT II rule.

Renewable Fuel Standards

Refer to Part I, Item 1A, Risk Factors, If sufficient RINs are unavailable for purchase, if the petroleum business has to pay a significantly higher price for RINs or if the petroleum business is otherwise unable to meet the EPA's RFS mandates, the petroleum business' financial condition and results of operations could be materially adversely affected, and Part II, Item 8, Note 15 ("Commitments and Contingencies"), "Environmental, Health and Safety ("EHS") Matters" of this Report for further discussion of the "Renewable Fuel Standards."

Greenhouse Gas Emissions

Refer to Part I, Item 1A, Risk Factors, Climate change laws and regulations could have a material adverse effect on our results of operations, financial condition and cash flows, of this Report for further discussion of the Greenhouse

Gas ("GHG") Emissions regulations.

Resource Conservation and Recovery Act ("RCRA")

Our operations are subject to the RCRA requirements for the generation, transportation, treatment, storage and disposal of solid and hazardous wastes. When feasible, RCRA-regulated materials are recycled instead of being disposed of on-site or off-site. RCRA establishes standards for the management of solid and hazardous wastes. Besides governing current waste disposal practices, RCRA also addresses the environmental effects of certain past waste disposal practices, the recycling of wastes and the regulation of underground storage tanks containing regulated substances. Refer to Part II, Item 8, Note 15 ("Commitments and Contingencies"), "Environmental, Health and Safety ("EHS") Matters" for further discussion of "RCRA Compliance Matters."

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Waste Management. There are two closed hazardous waste units at the Coffeyville refinery and fourteen other solid waste management units in the process of being closed pending state agency approval. There is one closed hazardous waste unit and one active hazardous waste storage tank at the Wynnewood refinery. In addition, one closed interim status hazardous waste land farm located at the now-closed Phillipsburg terminal is under long-term post closure care.

Impacts of Past Manufacturing. In March 2004, CRRM and Coffeyville Resources Terminal, LLC ("CRT") entered into a Consent Decree ("2004 Consent Decree") with the EPA and the Kansas Department of Health and Environment (the "KDHE") which required us to assume two RCRA corrective action orders issued to Farmland, the prior owner of the Coffeyville refinery. We are subject to a 1994 EPA administrative order related to investigation of possible past releases of hazardous materials to the environment at the Coffeyville refinery. In accordance with the order, we have documented existing soil and groundwater conditions, which required investigation and interim remediation projects. In June 2017, the Coffeyville refinery submitted an amended post-closure permit application to KDHE to complete closure of former hazardous waste management units at the Coffeyville refinery and to perform corrective action at the site. The now-closed Phillipsburg terminal is subject to a 1996 EPA administrative order related to investigation of releases of hazardous materials to the environment at the Phillipsburg terminal, which operated as a refinery until 1991. The Phillipsburg terminal continues to implement interim measures to address the investigation's findings. Further remediation, if ordered necessary by the EPA or the state, will be based on the results of the investigation. The Wynnewood refinery operates under a RCRA permit. A RCRA facility investigation has been completed in accordance with the terms of the permit. Based on the facility investigation and other available information, the Oklahoma Department of Environmental Quality ("ODEQ") and WRC have entered into a consent order requiring further investigations of groundwater conditions and enhancements of existing remediation systems. The Wynnewood refinery has completed the groundwater investigation and ODEQ has approved our corrective action recommendations.

The anticipated investigation and remediation costs through 2021 were estimated, as of December 31, 2017, to be as follows:

Facility	Site Investigation Costs	Capital Costs	Total Operation & Maintenance Costs Through 2021	Total Estimated Costs Through 2021
	(in millions)			
Coffeyville Refinery	$0.1	$ —	$ —	$ 0.1
Phillipsburg Terminal	0.3	—	—	0.3
Wynnewood Refinery	—	2.7	0.9	3.6
Total Estimated Costs	$0.4	$ 2.7	$ 0.9	$ 4.0

These estimates are based on current information and could increase or decrease as additional information becomes available through our ongoing remediation and investigation activities. At this point, we have estimated that, over ten years starting in 2018, we will spend approximately $7.2 million to remedy impacts from past manufacturing activity at the Coffeyville refinery and to address existing soil and groundwater contamination at the now-closed Phillipsburg terminal and at the Wynnewood refinery. It is possible that additional costs will be required after this ten year period. We spent approximately $2.0 million in 2017 associated with related remediation.

Financial Assurance. We are required under the 2004 Consent Decree to establish financial assurance to secure the projected clean-up costs posed by the Coffeyville and the now-closed Phillipsburg facilities in the event we fail to fulfill our clean-up obligations. In accordance with the 2004 Consent Decree as modified by a 2010 agreement

between CRRM, CRT, the EPA and the KDHE, this financial assurance is currently provided by a bond in the amount of $3.0 million for clean-up obligations at the Phillipsburg terminal and a letter of credit in the amount of $0.3 million for estimated costs to close regulated hazardous waste management units at the Coffeyville refinery. Additional self-funded financial assurance of approximately $5.6 million and $2.5 million is required by our post-closure care obligations and the 2004 Consent Decree for clean-up costs at the Coffeyville refinery and Phillipsburg terminal, respectively. The $3.0 million bond amount is reduced each year based on actual expenditures for corrective actions and the letter of credit and the self-funded mechanisms are re-evaluated and adjusted on an annual basis. Current RCRA financial assurance requirements for the Wynnewood refinery total $0.2 million for hazardous waste storage tank closure and post-closure monitoring of a closed storm water retention pond.

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Environmental Remediation

As is the case with all companies engaged in similar industries, we face potential exposure from future claims and lawsuits involving environmental matters, including soil and water contamination, personal injury or property damage allegedly caused by crude oil or hazardous substances that we manufactured, handled, used, stored, transported, spilled, disposed of or released. There is no assurance that we will not become involved in future proceedings related to our release of hazardous or extremely hazardous substances or crude oil or that, if we were held responsible for damages in any existing or future proceedings, such costs would be covered by insurance or would not be material. Refer to Part II, Item 8, Note 15 ("Commitments and Contingencies"), "Flood, Crude Oil Discharge and Insurance" of this Report for discussion of the environmental remediation associated with the discharge of crude oil on July 1, 2007 at the Coffeyville refinery.

Environmental Insurance

We are covered by a site pollution legal liability insurance policy. The policy includes business interruption coverage. The policy insures any location owned, leased or rented or operated by the Company, including the Coffeyville and Wynnewood refineries and the nitrogen fertilizer facility. The policy insures certain pollution conditions at or migrating from a covered location, certain waste transportation and disposal activities and business interruption.

In addition to the site pollution legal liability insurance policy, we maintain umbrella and excess casualty insurance policies which include sudden and accidental pollution coverage. This insurance provides coverage due to named perils for claims involving pollutants where the discharge is sudden and accidental and first commences at a specific day and time during the policy period.

The site pollution legal liability policy and the pollution coverage provided in the casualty insurance policies are subject to retentions and deductibles and contain discovery requirements, reporting requirements, exclusions, definitions, conditions and limitations that could apply to a particular pollution claim, and there can be no assurance such claim will be adequately insured for all potential damages.

Safety, Health and Security Matters

We are subject to a number of federal and state laws and regulations related to safety, including the Occupational Safety and Health Act ("OSHA") and comparable state statutes, the purpose of which are to protect the health and safety of workers. We also are subject to OSHA Process Safety Management regulations, which are designed to prevent or minimize the consequences of catastrophic releases of toxic, reactive, flammable or explosive chemicals.

We operate a comprehensive safety, health and security program, with participation by employees at all levels of the organization. We have developed comprehensive safety programs aimed at preventing OSHA recordable incidents. Despite our efforts to achieve excellence in our safety and health performance, there can be no assurances that there will not be accidents resulting in injuries or even fatalities. We routinely audit our programs and consider improvements in our management systems.

Refer to Part II, Item 8, Note 15 ("Commitments and Contingencies"), "Wynnewood Refinery Incident" of this Report for further discussion of OSHA matters related to the Wynnewood refinery boiler explosion.

Employees

As of December 31, 2017, 959 employees were employed by the petroleum business, 308 employees were employed by the nitrogen fertilizer business and 173 employees were employed by the Company at our offices in Sugar Land, Texas and Kansas City, Kansas. The Nitrogen Fertilizer Partnership and the Refining Partnership each relies on the services of employees of CVR Energy and its subsidiaries pursuant to services agreements between each partnership, its general partner and CVR Energy. As of December 31, 2017, all these employees are covered by health insurance, disability and retirement plans established by the Company. We believe that our relationship with our employees is good.

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As of December 31, 2017, (i) the Coffeyville refinery employed 353 of the petroleum business' employees, about 66% of whom are covered by a collective bargaining agreement with five unions of the Metal Trades Department of the AFL-CIO ("Metal Trade Unions"), which expires in March 2019, (ii) the petroleum business had 259 employees who work in crude transportation, about 32% of whom are covered by a collective bargaining agreement with the United Steel, Paper and Forestry, Rubber, Manufacturing, Energy, Allied Industrial and Service Workers International Union, AFL-CIO-CLC ("United Steelworkers"), which expires in March 2019 and automatically renews on an annual basis thereafter unless a written notice is received sixty days in advance of the relevant expiration date, and (iii) the Wynnewood refinery employed 300 of the petroleum business' employees, about 59% of whom are covered by a collective bargaining agreement with the International Union of Operating Engineers, which expires in June 2021.

As of December 31, 2017, the Coffeyville Fertilizer Facility employed 151 of our employees, of whom none were unionized.

As of December 31, 2017, the East Dubuque Facility employed 148 of our employees, about 64% of whom were represented by the International Union of United Automobile, Aerospace, and Agricultural Implement Workers under a three-year collective bargaining agreement that expires in October 2019.

Available Information

Our website address is www.cvrenergy.com. Our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and all amendments to those reports, filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), are available free of charge through our website under "Investor Relations," as soon as reasonably practicable after the electronic filing or furnishing of these reports is made with the Securities and Exchange Commission (the "SEC"). In addition, our Corporate Governance Guidelines, Codes of Ethics and Business Conduct and Charters of the Audit Committee, the Nominating and Corporate Governance Committee and the Compensation Committee of the Board of Directors are available on our website. These guidelines, policies and charters are also available in print without charge to any stockholder requesting them. We do not intend for information contained in our website to be part of this Report.

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Item 1A. Risk Factors

You should carefully consider each of the following risks together with the other information contained in this Report and all of the information set forth in our filings with the SEC. If any of the following risks and uncertainties develops into actual events, our business, financial condition or results of operations could be materially adversely affected.

Risks Related to the Petroleum Business

The price volatility of crude oil and other feedstocks, refined products and utility services may have a material adverse effect on the petroleum business' earnings, profitability and cash flows.

The petroleum business' financial results are primarily affected by the relationship, or margin, between refined product prices and the prices for crude oil and other feedstocks. When the margin between refined product prices and crude oil and other feedstock prices tightens, the petroleum business' earnings, profitability and cash flows are negatively affected. Refining margins historically have been volatile and are likely to continue to be volatile, as a result of a variety of factors including fluctuations in prices of crude oil, other feedstocks and refined products. Continued future volatility in refining industry margins may cause a decline in the petroleum business' results of operations, since the margin between refined product prices and crude oil and other feedstock prices may decrease below the amount needed for the petroleum business to generate net cash flow sufficient for its needs. The effect of changes in crude oil prices on the petroleum business' results of operations therefore depends in part on how quickly and how fully refined product prices adjust to reflect these changes. A substantial or prolonged increase in crude oil prices without a corresponding increase in refined product prices, or a substantial or prolonged decrease in refined product prices without a corresponding decrease in crude oil prices, could have a significant negative impact on the petroleum business' earnings, results of operations and cash flows.

Profitability is also impacted by the ability to purchase crude oil at a discount to benchmark crude oils, such as WTI, as the petroleum business does not produce any crude oil and must purchase all of the crude oil it refines. Crude oil differentials can fluctuate significantly based upon overall economic and crude oil market conditions. Adverse changes in crude oil differentials can adversely impact refining margins, earnings and cash flows. In addition, the petroleum business' purchases of crude oil, although based on WTI prices, have historically been at a discount to WTI because of the proximity of the refineries to the sources, existing logistics infrastructure and quality differences. Any change in the sources of crude oil, infrastructure or logistical improvements or quality differences could result in a reduction of the petroleum business' historical discount to WTI and may result in a reduction of the petroleum business' cost advantage.

Refining margins are also impacted by domestic and global refining capacity. Downturns in the economy reduce the demand for refined fuels and, in turn, generate excess capacity. In addition, the expansion and construction of refineries domestically and globally can increase refined fuel production capacity. Excess capacity can adversely impact refining margins, earnings and cash flows. The Arabian Gulf and Far East regions added refining capacity in 2015 and 2016.

The petroleum business is significantly affected by developments in the markets in which it operates. For example, numerous pipeline projects in 2014 expanded the connectivity of the Cushing and Permian Basin markets to the gulf coast, resulting in a decrease in the domestic crude advantage.

Volatile prices for natural gas and electricity also affect the petroleum business' manufacturing and operating costs. Natural gas and electricity prices have been, and will continue to be, affected by supply and demand for fuel and utility services in both local and regional markets.

If the petroleum business is required to obtain its crude oil supply without the benefit of a crude oil supply agreement, its exposure to the risks associated with volatile crude oil prices may increase and its liquidity may be reduced.

Since December 31, 2009, the petroleum business has obtained substantially all of its crude oil supply for the Coffeyville refinery, other than the crude oil it gathers, through the Vitol Agreement. The Vitol Agreement was amended and restated on August 31, 2012 to include the provision of crude oil intermediation services to the Wynnewood refinery. The agreement, which currently extends through December 31, 2018, minimizes the amount of in-transit inventory and mitigates crude oil pricing risk by ensuring pricing takes place close to the time the crude oil is refined and the yielded products are sold. If the petroleum business were required to obtain its crude oil supply without the benefit of a supply intermediation agreement, its exposure to crude oil pricing risk may increase, despite any hedging activity in which it may engage, and its liquidity could be negatively impacted due to increased inventory, potential need to post letters of credit and negative impacts of market volatility. There is no assurance that the petroleum business will be able to renew or extend the Vitol Agreement beyond December 31, 2018.

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Disruption of the petroleum business' ability to obtain an adequate supply of crude oil could reduce its liquidity and increase its costs.

In addition to the crude oil the petroleum business gathers locally in Kansas, Nebraska, Oklahoma, Missouri, Colorado and Texas, it also purchased additional crude oil to be refined into liquid fuels in 2017. In 2017, the Coffeyville refinery purchased approximately 75,000 to 80,000 bpd of crude oil while the Wynnewood refinery purchased approximately 35,000 to 40,000 bpd of crude oil. The Wynnewood refinery has historically acquired most of its crude oil from Texas and Oklahoma with smaller amounts purchased from other regions. In 2017, the Coffeyville refinery obtained a portion of its non-gathered crude oil, approximately 12%, from Canada. The actual amount of Canadian crude oil the petroleum business purchases is dependent on market conditions and will vary from year to year. The petroleum business is subject to the political, geographic, and economic risks attendant to doing business with Canada. Disruption of production for any reason could have a material impact on the petroleum business. In the event that one or more of its traditional suppliers becomes unavailable, the petroleum business may be unable to obtain an adequate supply of crude oil, or it may only be able to obtain crude oil at unfavorable prices. As a result, the petroleum business may experience a reduction in its liquidity and its results of operations could be materially adversely affected.

If our access to the pipelines on which the petroleum business relies for the supply of its crude oil and the distribution of its products is interrupted, its inventory and costs may increase and it may be unable to efficiently distribute its products.

If one of the pipelines on which either of the Coffeyville or Wynnewood refineries relies for supply of crude oil becomes inoperative, the petroleum business would be required to obtain crude oil through alternative pipelines or from additional tanker trucks, which could increase its costs and result in lower production levels and profitability. Similarly, if a major refined fuels pipeline becomes inoperative, the petroleum business would be required to keep refined fuels in inventory or supply refined fuels to its customers through an alternative pipeline or by additional tanker trucks, which could increase the petroleum business' costs and result in a decline in profitability.

The geographic concentration of the petroleum business' refineries and related assets creates an exposure to the risks of the local economy in which we operate and other local adverse conditions. The location of its refineries also creates the risk of increased transportation costs should the supply/demand balance change in its region such that regional supply exceeds regional demand for refined products.

As the petroleum business' refineries are both located in the southern portion of Group 3 of the PADD II region, the petroleum business primarily markets its refined products in a relatively limited geographic area. As a result, it is more susceptible to regional economic conditions than the operations of more geographically diversified competitors, and any unforeseen events or circumstances that affect its operating area could also materially adversely affect its revenues and cash flows. These factors include, among other things, changes in the economy, weather conditions, demographics and population, increased supply of refined products from competitors and reductions in the supply of crude oil.

Should the supply/demand balance shift in its region as a result of changes in the local economy, an increase in refining capacity or other reasons, resulting in supply in the region exceeding demand, the petroleum business may have to deliver refined products to customers outside of the region and thus incur considerably higher transportation costs, resulting in lower refining margins, if any.

If sufficient RINs are unavailable for purchase or if the petroleum business has to pay a significantly higher price for RINs, or if the petroleum business is otherwise unable to meet the EPA's RFS mandates, the petroleum business'

financial condition and results of operations could be materially adversely affected.

The EPA has promulgated the Renewable Fuel Standard ("RFS"), which requires refiners to either blend "renewable fuels," such as ethanol and biodiesel, into their transportation fuels or purchase renewable fuel credits, known as RINs, in lieu of blending. Under the RFS, the volume of renewable fuels that refineries like Coffeyville and Wynnewood are obligated to blend into their finished petroleum products is adjusted annually by the EPA. The petroleum business is not able to blend the substantial majority of its transportation fuels, so it has to purchase RINs on the open market as well as waiver credits for cellulosic biofuels from the EPA, in order to comply with the RFS. The price of RINs has been extremely volatile as the EPA's proposed renewable fuel volume mandates approached and exceeded the "blend wall." The blend wall refers to the point at which the amount of ethanol blended into the transportation fuel supply exceeds the demand for transportation fuel containing such levels of ethanol. The blend wall is generally considered to be reached when more than 10% ethanol by volume ("E10 gasoline") is blended into transportation fuel.

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In December 2015, 2016, and 2017, the EPA published in the Federal Register final rules establishing the renewable fuel volume mandates for 2016, 2017, and 2018, and the biomass-based diesel volume mandates for 2017, 2018, and 2019, respectively. The volumes included in the EPA's final rules increased each year, but were lower, with the exception of the volumes for biomass-based diesel, than the volumes required by the Clean Air Act. The EPA used its waiver authorities to lower the volumes, but its decision to do so for the 2014-2016 compliance years was challenged in the U.S. Court of Appeals for the District of Columbia Circuit ("D.C. Circuit"). In July 2017, the D.C. Circuit vacated the EPA’s decision to reduce the renewable volume obligation for 2016 under one of its waiver authorities, and remanded the rule to the EPA for further reconsideration. The EPA has not yet re-proposed the 2016 renewable volume obligations. The EPA also has articulated a policy that high RINs prices incentivize additional investments in renewable fuel blending and distribution infrastructure.

The petroleum business cannot predict the future prices of RINs or waiver credits. The price of RINs has been extremely volatile over the last year. Additionally, the cost of RINs is dependent upon a variety of factors, which include the availability of RINs for purchase, the price at which RINs can be purchased, transportation fuel production levels, the mix of the petroleum business' petroleum products, as well as the fuel blending performed at the refineries and downstream terminals, all of which can vary significantly from period to period. However, the costs to obtain the necessary number of RINs and waiver credits could be material, if the price for RINs increases. Additionally, because the petroleum business does not produce renewable fuels, increasing the volume of renewable fuels that must be blended into its products displaces an increasing volume of the refineries' product pool, potentially resulting in lower earnings and materially adversely affecting the petroleum business' cash flows. If the demand for the petroleum business' transportation fuel decreases as a result of the use of increasing volumes of renewable fuels, increased fuel economy as a result of new EPA fuel economy standards, or other factors, the impact on its business could be material. If sufficient RINs are unavailable for purchase, if the petroleum business has to pay a significantly higher price for RINs or if the petroleum business is otherwise unable to meet the EPA's RFS mandates, its business, financial condition and results of operations could be materially adversely affected.

The petroleum business faces significant competition, both within and outside of its industry. Competitors who produce their own supply of crude oil or other feedstocks, have extensive retail outlets, make alternative fuels or have greater financial resources than it does may have a competitive advantage.

The refining industry is highly competitive with respect to both crude oil and other feedstock supply and refined product markets. The petroleum business may be unable to compete effectively with competitors within and outside of the industry, which could result in reduced profitability. The petroleum business competes with numerous other companies for available supplies of crude oil and other feedstocks and for outlets for its refined products. The petroleum business is not engaged in the petroleum exploration and production business and therefore it does not produce any of its crude oil feedstocks. It does not have a retail business and therefore is dependent upon others for outlets for its refined products. It does not have long-term arrangements (those exceeding more than a twelve-month period) for much of its output. Many of its competitors obtain significant portions of their crude oil and other feedstocks from company-owned production and have extensive retail outlets. Competitors that have their own production or extensive retail outlets with brand-name recognition are at times able to offset losses from refining operations with profits from producing or retailing operations, and may be better positioned to withstand periods of depressed refining margins or feedstock shortages.

A number of the petroleum business' competitors also have materially greater financial and other resources than it does. These competitors may have a greater ability to bear the economic risks inherent in all aspects of the refining industry. An expansion or upgrade of its competitors' facilities, price volatility, international political and economic developments and other factors are likely to continue to play an important role in refining industry economics and may add additional competitive pressure on the petroleum business.

In addition, the petroleum business competes with other industries that provide alternative means to satisfy the energy and fuel requirements of its industrial, commercial and individual customers. There are presently significant governmental incentives and consumer pressures to increase the use of alternative fuels in the United States. The more successful these alternatives become as a result of governmental incentives or regulations, technological advances, consumer demand, improved pricing or otherwise, the greater the negative impact on pricing and demand for the petroleum business' products and profitability.

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Changes in the petroleum business' credit profile may affect its relationship with its suppliers, which could have a material adverse effect on its liquidity and its ability to operate the refineries at full capacity.

Changes in the petroleum business' credit profile may affect the way crude oil suppliers view its ability to make payments and may induce them to shorten the payment terms for purchases or require it to post security prior to payment. Given the large dollar amounts and volume of the petroleum business' crude oil and other feedstock purchases, a burdensome change in payment terms may have a material adverse effect on the petroleum business' liquidity and its ability to make payments to its suppliers. This, in turn, could cause it to be unable to operate the refineries at full capacity. A failure to operate the refineries at full capacity could adversely affect the petroleum business' profitability and cash flows.

The petroleum business' commodity derivative contracts may limit its potential gains, exacerbate potential losses and involve other risks.

The petroleum business may enter into commodity derivatives contracts to mitigate crack spread risk with respect to a portion of its expected refined products production. However, its hedging arrangements may fail to fully achieve this objective for a variety of reasons, including its failure to have adequate hedging contracts, if any, in effect at any particular time and the failure of its hedging arrangements to produce the anticipated results. The petroleum business may not be able to procure adequate hedging arrangements due to a variety of factors. Moreover, such transactions may limit its ability to benefit from favorable changes in margins. In addition, the petroleum business' hedging activities may expose it to the risk of financial loss in certain circumstances, including instances in which:

- the volumes of its actual use of crude oil or production of the applicable refined products is less than the volumes subject to the hedging arrangement;
- accidents, interruptions in transportation, inclement weather or other events cause unscheduled shutdowns or otherwise adversely affect its refinery or suppliers or customers;
- the counterparties to its futures contracts fail to perform under the contracts; or
- a sudden, unexpected event materially impacts the commodity or crack spread subject to the hedging arrangement.

As a result, the effectiveness of the petroleum business' risk mitigation strategy could have a material adverse impact on the petroleum business' financial results and cash flows.

The adoption of derivatives legislation by the U.S. Congress could have an adverse effect on the petroleum business' ability to hedge risks associated with its business.

The U.S. Congress has adopted the Dodd-Frank Act, comprehensive financial reform legislation that establishes federal oversight and regulation of the over-the-counter derivatives market and entities, such as the petroleum business, that participate in that market, and requires the Commodities Futures Trading Commission ("CFTC") to, among other things, institute broad new position limits for futures and options traded on regulated exchanges. The Dodd-Frank Act requires the CFTC, the SEC and other regulators to promulgate rules and regulations implementing the new legislation. The Dodd-Frank Act and implementing rules and regulations also require certain swap participants to comply with, among other things, certain margin requirements and clearing and trade-execution requirements in connection with certain derivative activities. The rulemaking process is still ongoing, and the petroleum business cannot predict the ultimate outcome of the rulemakings. New regulations in this area may result in increased costs and cash collateral requirements for derivative instruments the petroleum business may use to hedge

and otherwise manage its financial risks related to volatility in oil and gas commodity prices.

If the petroleum business reduces its use of derivatives as a result of the Dodd-Frank Act and any new rules and regulations, its results of operations may become more volatile and its cash flows may be less predictable, which could adversely affect its ability to satisfy its debt obligations or plan for and fund capital expenditures. Increased volatility may make the petroleum business less attractive to certain types of investors. Finally, the Dodd-Frank Act was intended, in part, to reduce the volatility of oil and natural gas prices. If the Dodd-Frank Act and any new regulations result in lower commodity prices, the petroleum business' revenues could be adversely affected. Any of these consequences could adversely affect the petroleum business' financial condition and results of operations and therefore could have an adverse effect on its ability to satisfy its debt obligations.

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The petroleum business' commodity derivative activities could result in period-to-period volatility.

The petroleum business does not apply hedge accounting to its commodity derivative contracts and, as a result, unrealized gains and losses are charged to its earnings based on the increase or decrease in the market value of the unsettled position. Such gains and losses are reflected in its income statement in periods that differ from when the underlying hedged items (i.e., gross margins) are reflected in its income statement. Such derivative gains or losses in earnings may produce significant period-to-period earnings volatility that is not necessarily reflective of the petroleum business' operational performance.

Existing design, operational, and maintenance issues associated with acquisitions may not be identified immediately and may require unanticipated capital expenditures that could adversely impact our financial condition, results of operations or cash flows.

Our due diligence associated with acquisitions or joint ventures may result in our assuming liabilities associated with unknown conditions or deficiencies, as well as known but undisclosed conditions and deficiencies, where we may have limited, if any, recourse for cost recovery. Such conditions and deficiencies may not become evident until sometime after cost recovery provisions, if any, have expired.

The petroleum business must make substantial capital expenditures on its refineries and other facilities to maintain their reliability and efficiency. If the petroleum business is unable to complete capital projects at their expected costs and/or in a timely manner, or if the market conditions assumed in project economics deteriorate, the petroleum business' financial condition, results of operations or cash flows could be adversely affected.

Delays or cost increases related to the engineering, procurement and construction of new facilities, or improvements and repairs to the petroleum business' existing facilities and equipment, could have a material adverse effect on the petroleum business' financial condition, results of operations or cash flows. Such delays or cost increases may arise as a result of unpredictable factors in the marketplace, many of which are beyond its control, including:

- denial or delay in obtaining regulatory approvals and/or permits;
- unplanned increases in the cost of equipment, materials or labor;
- disruptions in transportation of equipment and materials;
- severe adverse weather conditions, natural disasters or other events (such as equipment malfunctions, explosions, fires or spills) affecting the petroleum business' facilities, or those of its vendors and suppliers;
- shortages of sufficiently skilled labor, or labor disagreements resulting in unplanned work stoppages;
- market-related increases in a project's debt or equity financing costs; and/or
- non-performance or force majeure by, or disputes with, the petroleum business' vendors, suppliers, contractors or sub-contractors.

The Coffeyville and Wynnewood refineries have been in operation for many years. Equipment, even if properly maintained, may require significant capital expenditures and expenses to keep it operating at optimum efficiency. These refineries generally require facility turnaround every four to five years. The length of the turnaround is contingent upon the scope of work to be completed. The first phase of the Coffeyville refinery's most recent

turnaround was completed in November 2015 at a total cost of approximately $102.2 million. The second phase of the Coffeyville turnaround was completed during the first quarter of 2016 at a total cost of approximately $31.5 million. The next turnaround scheduled for the Wynnewood refinery is being performed as a two phase turnaround. The first phase of its current turnaround was completed in November 2017 at a total cost of approximately $67.4 million. The second phase of the Wynnewood turnaround is expected to occur in 2019. In addition to the two phase turnaround, the petroleum business accelerated certain planned turnaround activities in the first quarter of 2017 on the hydrocracker unit for a catalyst change-out. The petroleum business incurred approximately $13.0 million of major scheduled turnaround expenses for the hydrocracker.

Any one or more of these occurrences noted above could have a significant impact on the petroleum business. If the petroleum business was unable to make up for the delays or to recover the related costs, or if market conditions change, it could materially and adversely affect the petroleum business' financial position, results of operations or cash flows.

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The petroleum business' plans to expand its gathering and logistics assets, which assist it in reducing costs and increasing processing margins, may expose it to significant additional risks, compliance costs and liabilities.

The petroleum business plans to continue to make investments to enhance the operating flexibility of its refineries and to improve its crude oil sourcing advantage through additional investments in gathering and logistics assets. If it is able to successfully increase the effectiveness of the supporting gathering and logistics assets, including the crude oil gathering operations, the petroleum business believes it will be able to enhance crude oil sourcing flexibility and reduce related crude oil purchasing and delivery costs. However, the acquisition of infrastructure assets to expand crude oil gathering may expose the petroleum business to risks in the future that are different than or incremental to the risks it faces with respect to its refineries and existing gathering and logistics assets. The storage and transportation of liquid hydrocarbons, including crude oil and refined products, are subject to stringent federal, state, and local laws and regulations governing the discharge of materials into the environment, operational safety and related matters. Compliance with these laws and regulations could adversely affect the petroleum business' operating results, financial condition and cash flows. Moreover, failure to comply with these laws and regulations may result in the assessment of administrative, civil, and criminal penalties, the imposition of investigatory and remedial liabilities, the issuance of injunctions that may restrict or prohibit the petroleum business' operations, or claims of damages to property or persons resulting from its operations.

Any businesses or assets that the petroleum business may acquire in connection with an expansion of its crude oil gathering could expose it to the risk of releasing hazardous materials into the environment. These releases would expose the petroleum business to potentially substantial expenses, including clean-up and remediation costs, fines and penalties, and third-party claims for personal injury or property damage related to past or future releases. Accordingly, if the petroleum business does acquire any such businesses or assets, it could also incur additional expenses not covered by insurance which could be material.

More stringent trucking regulations may increase the petroleum business' costs and negatively impact its results of operations.

In connection with the trucking operations conducted by its crude gathering division, the petroleum business operates as a motor carrier and therefore is subject to regulation by federal and various state agencies. These regulatory authorities exercise broad powers, governing activities such as the authorization to engage in motor carrier operations and regulatory safety, and hazardous materials labeling, placarding and marking. There are additional regulations specifically relating to the trucking industry, including testing and specification of equipment and product handling requirements. The trucking industry is subject to possible regulatory and legislative changes that may affect the economics of the industry by requiring changes in operating practices or by changing the demand for common or contract carrier services or the cost of providing truckload services. Some of these possible changes include increasingly stringent fuel-economy environmental regulations, changes in the hours of service regulations that govern the amount of time a driver may drive in any specific period, onboard black box recorder or electronic logging devices or limits on vehicle weight and size.

To a large degree, intrastate motor carrier operations are subject to state safety regulations that mirror federal regulations. Such matters as weight and dimension of equipment are also subject to federal and state regulations. Furthermore, from time to time, various legislative proposals are introduced, such as proposals to increase federal, state or local taxes, including taxes on motor fuels, which may increase the petroleum business' costs or adversely impact the recruitment of drivers. The petroleum business cannot predict whether, or in what form, any increase in such taxes will be enacted or the extent to which they will apply to the petroleum business and its operations.

Risks Related to the Nitrogen Fertilizer Business

The nitrogen fertilizer business is, and nitrogen fertilizer prices are, cyclical and highly volatile, and the nitrogen fertilizer business has experienced substantial downturns in the past. Cycles in demand and pricing could potentially expose the nitrogen fertilizer business to significant fluctuations in its operating and financial results and have a material adverse effect on the nitrogen fertilizer business' results of operations, financial condition and cash flows.

The nitrogen fertilizer business is exposed to fluctuations in nitrogen fertilizer demand in the agricultural industry. These fluctuations historically have had and could in the future have significant effects on prices across all nitrogen fertilizer products and, in turn, our results of operations, financial condition and cash flows.

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Nitrogen fertilizer products are commodities, the price of which can be highly volatile. The prices of nitrogen fertilizer products depend on a number of factors, including general economic conditions, cyclical trends in end-user markets, supply and demand imbalances, governmental policies and weather conditions, which have a greater relevance because of the seasonal nature of fertilizer application. If seasonal demand exceeds the projections on which the nitrogen fertilizer business bases production, customers may acquire nitrogen fertilizer products from competitors, and the profitability of the nitrogen fertilizer business will be negatively impacted. If seasonal demand is less than expected, the nitrogen fertilizer business will be left with excess inventory that will have to be stored or liquidated.

The costs associated with operating the nitrogen fertilizer plants include significant fixed costs. If nitrogen fertilizer prices fall below a certain level, the nitrogen fertilizer business may not generate sufficient revenue to operate profitably or cover its costs and ability to make distributions will be adversely impacted.

Unlike our competitors, whose primary costs are related to the purchase of natural gas and whose costs are therefore largely variable, the Coffeyville Fertilizer Facility has largely fixed costs. In addition, while less than the Coffeyville Fertilizer Facility, the East Dubuque Facility has a significant amount of fixed costs. As a result of the fixed cost nature of its operations, downtime, interruptions or low productivity due to reduced demand, adverse weather conditions, equipment failure, a decrease in nitrogen fertilizer prices or other causes can result in significant operating losses, which would have a material adverse effect on the nitrogen fertilizer business' results of operations, financial condition and ability to make cash distributions.

Continued low natural gas prices could impact the Coffeyville Fertilizer Facility's relative competitive position when compared to other nitrogen fertilizer producers.

Most nitrogen fertilizer manufacturers rely on natural gas as their primary feedstock, and the cost of natural gas is a large component of the total production cost for natural gas-based nitrogen fertilizer manufacturers. Low natural gas prices benefit the nitrogen fertilizer business' competitors and disproportionately impact our operations by making the nitrogen fertilizer business less competitive with natural gas-based nitrogen fertilizer manufacturers. Although our nitrogen fertilizer business diversified its operations in connection with the acquisition of the East Dubuque Facility, which primarily relies on natural gas feedstock, continued low natural gas prices could impair the ability of the Coffeyville Fertilizer Facility to compete with other nitrogen fertilizer producers who utilize natural gas as their primary feedstock if nitrogen fertilizer pricing drops as a result of low natural gas prices, and therefore have a material adverse impact on the nitrogen fertilizer business' results of operations, financial condition and ability to make cash distributions.

The market for natural gas has been volatile. Natural gas prices are currently at a relative low point. An increase in natural gas prices could impact the East Dubuque Facility's relative competitive position when compared to other foreign and domestic nitrogen fertilizer producers, and if prices for natural gas increase significantly, our nitrogen fertilizer business may not be able to economically operate the East Dubuque Facility.

The operation of the East Dubuque Facility with natural gas as the primary feedstock exposes the nitrogen fertilizer business to market risk due to increases in natural gas prices, particularly if the price of natural gas in the United States were to become higher than the price of natural gas outside the United States. An increase in natural gas prices would impact the East Dubuque Facility's operations by making it less competitive with competitors who do not use natural gas as their primary feedstock, and could therefore have a material adverse impact on the nitrogen fertilizer business' results of operations, financial condition and cash flows. In addition, if natural gas prices in the United States were to increase relative to prices of natural gas paid by foreign nitrogen fertilizer producers, this may negatively affect the nitrogen fertilizer business' competitive position in the corn belt and thus have a material adverse effect on the nitrogen fertilizer business' results of operations, financial condition and cash flows.

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The profitability of operating the East Dubuque Facility is significantly dependent on the cost of natural gas, and the East Dubuque Facility operated at certain times, and could operate in the future, at a net loss. Local factors may affect the price of natural gas available to the nitrogen fertilizer business, in addition to factors that determine the benchmark prices of natural gas. Since the nitrogen fertilizer business expects to purchase natural gas on the spot market and to enter into forward purchase contracts. Since we expect to purchase a portion of our natural gas for use in the East Dubuque Facility on the spot market, the Nitrogen Fertilizer business remains susceptible to fluctuations in the price of natural gas in general and in local markets in particular. The nitrogen fertilizer business also expect to use short-term, fixed supply, fixed price forward purchase contracts to lock in pricing for a portion of our natural gas requirements. The nitrogen fertilizer business' ability to enter into forward purchase contracts is dependent upon creditworthiness and, in the event of a deterioration in the nitrogen fertilizer business' credit, counterparties could refuse to enter into forward purchase contracts on acceptable terms. If the nitrogen fertilizer business is unable to enter into forward purchase contracts for the supply of natural gas, the nitrogen fertilizer business would need to purchase natural gas on the spot market, which would impair its ability to hedge exposure to risk from fluctuations in natural gas prices. If the nitrogen fertilizer business enters into forward purchase contracts for natural gas, and natural gas prices decrease, then its cost of sales could be higher than it would have been in the absence of the forward purchase contracts.

Any interruption in the supply of natural gas to the nitrogen fertilizer business' East Dubuque Facility through Nicor Inc. ("Nicor") could have a material adverse effect on the nitrogen fertilizer business' results of operations and financial condition.

Our nitrogen fertilizer business' East Dubuque operations depend on the availability of natural gas. East Dubuque has an agreement with Nicor pursuant to which it accesses natural gas from the ANR Pipeline Company and Northern Natural Gas pipelines. East Dubuque's access to satisfactory supplies of natural gas through Nicor could be disrupted due to a number of causes, including volume limitations under the agreement, pipeline malfunctions, service interruptions, mechanical failures or other reasons. The agreement extends through October 31, 2019. Upon expiration of the agreement, East Dubuque may be unable to extend the service under the terms of the existing agreement or renew the agreement on satisfactory terms, or at all. Any disruption in the supply of natural gas to our East Dubuque Facility could restrict our ability to continue to make products at the facility. In the event it need to obtain natural gas from another source, it would need to build a new connection from that source to the East Dubuque Facility and negotiate related easement rights, which would be costly, disruptive and/or may be unfeasible. As a result, any interruption in the supply of natural gas through Nicor could have a material adverse effect on our nitrogen fertilizer business' results of operations and financial condition.

Any decline in U.S. agricultural production or limitations on the use of nitrogen fertilizer for agricultural purposes could have a material adverse effect on the sales of nitrogen fertilizer, and on the nitrogen fertilizer business' results of operations, financial condition and cash flows.

Conditions in the U.S. agricultural industry significantly impact the operating results of the nitrogen fertilizer business. The U.S. agricultural industry can be affected by a number of factors, including weather patterns and field conditions, current and projected grain inventories and prices, domestic and international population changes, demand for U.S. agricultural products and U.S. and foreign policies regarding trade in agricultural products.

State and federal governmental policies, including farm and biofuel subsidies and commodity support programs, as well as the prices of fertilizer products, may also directly or indirectly influence the number of acres planted, the mix of crops planted and the use of fertilizers for particular agricultural applications. Developments in crop technology, such as nitrogen fixation (the conversion of atmospheric nitrogen into compounds that plants can assimilate), could also reduce the use of chemical fertilizers and adversely affect the demand for nitrogen fertilizer. In addition,s from

time to time various state legislatures have considered limitations on the use and application of chemical fertilizers due to concerns about the impact of these products on the environment. Unfavorable state and federal governmental policies could negatively affect nitrogen fertilizer prices and therefore have a material adverse effect on the nitrogen fertilizer business' results of operations, financial condition and cash flows.

A major factor underlying the current high level of demand for nitrogen-based fertilizer products is the production of ethanol. A decrease in ethanol production, an increase in ethanol imports or a shift away from corn as a principal raw material used to produce ethanol could have a material adverse effect on the nitrogen fertilizer business' results of operations, financial condition and cash flows.

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A major factor underlying the solid level of demand for nitrogen-based fertilizer products produced by the nitrogen fertilizer business is the production of ethanol in the United States and the use of corn in ethanol production. Ethanol production in the United States is highly dependent upon a myriad of federal statutes and regulations, and is made significantly more competitive by various federal and state incentives and mandated usage of renewable fuels pursuant to the RFS. To date, the RFS has been satisfied primarily with fuel ethanol blended into gasoline. However, a number of factors, including the continuing "food versus fuel" debate and studies showing that expanded ethanol usage may increase the level of greenhouse gases in the environment as well as be unsuitable for small engine use, have resulted in calls to reduce subsidies for ethanol, allow increased ethanol imports and to repeal or waive (in whole or in part) the current RFS, any of which could have an adverse effect on corn-based ethanol production, planted corn acreage and fertilizer demand. Therefore, ethanol incentive programs may not be renewed, or if renewed, they may be renewed on terms significantly less favorable to ethanol producers than current incentive programs.

In late 2013, the EPA recognized that the transportation fuels market had reached the “blend wall” for ethanol. The blend wall refers to the aggregate limit to which ethanol can be blended into gasoline, and is generally considered to be reached when a gallon of transportation fuel contains 10% ethanol by volume. As a result, since 2013, the EPA has used its waiver authorities to set lower renewable volume obligations than those mandated by the RFS, though those volumes still generally increase year-over-year as demand for transportation fuel also increases. Even so, the most recent volume mandates have resulted in or are expected to result in renewable fuel being blended in volumes that exceed the ethanol blend wall, forcing the use of higher ethanol fuel blends or non-ethanol renewable fuel. The EPA continues to articulate a policy to incentivize additional investments in renewable fuel blending and distribution infrastructure. Any substantial decrease in future renewable volume obligations under the RFS could have a material adverse effect on ethanol production in the United States, which could have a material adverse effect on our results of operations, financial condition and ability to make cash distributions.

Further, while most ethanol is currently produced from corn and other raw grains, such as milo or sorghum, the RFS requires that a portion of the overall RFS renewable fuel mandate comes from advanced biofuels, including cellulose-based biomass, such as agricultural waste, forest residue, municipal solid waste, energy crops (plants grown for use to make biofuels or directly exploited for their energy content) and biomass-based diesel. In addition, there is a continuing trend to encourage the use of products other than corn and raw grains for ethanol production. If this trend is successful, the demand for corn may decrease significantly, which could reduce demand for nitrogen fertilizer products and have an adverse effect on the nitrogen fertilizer business' results of operations, financial condition and cash flows. This potential impact on the demand for nitrogen fertilizer products, however, could be slightly offset by the potential market for nitrogen fertilizer product usage in connection with the production of cellulosic biofuels.

Nitrogen fertilizer products are global commodities, and the nitrogen fertilizer business faces intense competition from other nitrogen fertilizer producers.

The nitrogen fertilizer business is subject to intense price competition from both U.S. and foreign sources, including competitors operating in the Middle East, the Asia-Pacific region, the Caribbean, Russia and the Ukraine. Fertilizers are global commodities, with little or no product differentiation, and customers make their purchasing decisions principally on the basis of delivered price and availability of the product. Increased global supply may put downward pressure on fertilizer prices. Furthermore, in recent years the price of nitrogen fertilizer in the United States has been substantially driven by pricing in the global fertilizer market. The nitrogen fertilizer business competes with a number of U.S. producers and producers in other countries, including state-owned and government-subsidized entities. Some competitors have greater total resources and are less dependent on earnings from fertilizer sales, which make them less vulnerable to industry downturns and better positioned to pursue new expansion and development opportunities. Increased domestic supply may put downward pressure on fertilizer prices. Additionally, the nitrogen fertilizer business' competitors utilizing different corporate structures may be better able to withstand lower cash flows than the

nitrogen fertilizer business can as a limited partnership. The nitrogen fertilizer business' competitive position could suffer to the extent it is not able to expand its resources either through investments in new or existing operations or through acquisitions, joint ventures or partnerships. An inability to compete successfully could result in a loss of customers, which could adversely affect the sales, profitability and the cash flows of the nitrogen fertilizer business and therefore have a material adverse effect on the nitrogen fertilizer business' results of operations, financial condition and cash flows.

Adverse weather conditions during peak fertilizer application periods may have a material adverse effect on the nitrogen fertilizer business' results of operations, financial condition and cash flows, because the agricultural customers of the nitrogen fertilizer business are geographically concentrated.

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The nitrogen fertilizer business' sales to agricultural customers are concentrated in the Great Plains and Midwest states and are seasonal in nature. The nitrogen fertilizer business' quarterly results may vary significantly from one year to the next due largely to weather-related shifts in planting schedules and purchase patterns. Accordingly, an adverse weather pattern affecting agriculture in these regions or during the planting season could have a negative effect on fertilizer demand, which could, in turn, result in a material decline in the nitrogen fertilizer business' net sales and margins and otherwise have a material adverse effect on the nitrogen fertilizer business' results of operations, financial condition and cash flows. The nitrogen fertilizer business' quarterly results may vary significantly from one year to the next due largely to weather-related shifts in planting schedules and purchase patterns. As a result, it is expected that the nitrogen fertilizer business' distributions to holders of its common units (including us) will be volatile and will vary quarterly and annually.

The nitrogen fertilizer business is seasonal, which may result in it carrying significant amounts of inventory and seasonal variations in working capital. Our inability to predict future seasonal nitrogen fertilizer demand accurately may result in excess inventory or product shortages.

Our nitrogen fertilizer business is seasonal. Farmers tend to apply nitrogen fertilizer during two short application periods, one in the spring and the other in the fall. In contrast, the nitrogen fertilizer business and other nitrogen fertilizer producers generally produce products throughout the year. As a result, our nitrogen fertilizer business and our customers generally build inventories during the low demand periods of the year in order to ensure timely product availability during the peak sales seasons. Variations in the proportion of product sold through prepaid sales contracts and variations in the terms of such contracts can increase the seasonal volatility of our nitrogen fertilizer business' cash flows and cause changes in the patterns of seasonal volatility from year-to-year.

In most instances, our nitrogen fertilizer business’ East Dubuque customers take delivery of nitrogen products at the East Dubuque Facility. Customers arrange and pay to transport our nitrogen products to their final destinations. At our nitrogen fertilizer business’ East Dubuque Facility, inventories are accumulated to allow for customer to take delivery to meet the seasonal demand, which require significant storage capacity. The accumulation of inventory to be available for seasonal sales creates significant seasonal working capital requirements.

Most of our nitrogen fertilizer business’ Coffeyville Fertilizer Facility nitrogen products are delivered by railcar to its customer’s storage facilities. Therefore, our nitrogen fertilizer business is less dependent on storage capacity at the Coffeyville Fertilizer Facility and, as a result, experiences lower seasonal fluctuations as compared to the East Dubuque Facility. The seasonality of nitrogen fertilizer demand results in our nitrogen fertilizer business’ sales volumes and net sales being highest during the North American spring season and its working capital requirements typically being highest just prior to the start of the spring season.

The degree of seasonality of our nitrogen fertilizer business can change significantly from year to year due to conditions in the agricultural industry and other factors. As a consequence of this seasonality, it is expected that distributions we receive from our nitrogen fertilizer business will be volatile and will vary quarterly and annually.

The nitrogen fertilizer business' operations are dependent on third-party suppliers, including the following: Linde, which owns an air separation plant that provides oxygen, nitrogen and compressed dry air to the Coffeyville Fertilizer Facility; the City of Coffeyville, which supplies the Coffeyville Fertilizer Facility with electricity; and Jo-Carroll Energy, Inc. ("Jo-Carroll Energy") which supplies the East Dubuque Facility with electricity. A deterioration in the financial condition of a third- party supplier, a mechanical problem with the air separation plant supplying the Coffeyville Fertilizer Facility, or the inability of a third-party supplier to perform in accordance with its contractual obligations could have a material adverse effect on the nitrogen fertilizer business' results of operations, financial condition and cash flows.

Operations of the nitrogen fertilizer business' Coffeyville Fertilizer Facility depend in large part on the performance of third-party suppliers, including Linde for the supply of oxygen, nitrogen and compressed dry air, and the City of Coffeyville for the supply of electricity. With respect to Linde, the operations of the Coffeyville Fertilizer Facility could be adversely affected if there were a deterioration in Linde's financial condition such that the operation of the air separation plant located adjacent to the Coffeyville Fertilizer Facility was disrupted. Additionally, this air separation plant in the past has experienced numerous short-term interruptions, causing interruptions in our gasifier operations. With respect to electricity, our nitrogen fertilizer business is party to an electric services agreement with the City of Coffeyville, Kansas, which allows for an option to extend the term of such agreement through June 30, 2024.

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Our nitrogen fertilizer business' East Dubuque Facility operations also depend in large part on the performance of third-party suppliers, including, Jo-Carroll Energy for the purchase of electricity. We entered into a utility service agreement with Jo-Carroll Energy, which terminates on May 31, 2019 and will continue year-to-year thereafter unless either party provides 12-month advance written notice of termination.

Should Linde, the City of Coffeyville, Jo-Carroll Energy or any of our other third-party suppliers fail to perform in accordance with existing contractual arrangements, or should our nitrogen fertilizer business otherwise lose the service of any third-party suppliers, our nitrogen fertilizer business' operations (or a portion of our operations) could be forced to halt. Alternative sources of supply could be difficult to obtain. Any shutdown of our nitrogen fertilizer business' operations (or a portion of our operations), even for a limited period, could have a material adverse effect on our nitrogen fertilizer business' results of operations, financial condition and ability to make cash distributions.

The nitrogen fertilizer business' results of operations, financial condition and ability to make cash distributions may be adversely affected by the supply and price levels of pet coke. Failure by the Refining Business to continue to supply the Coffeyville Fertilizer Facility with pet coke (to the extent third-party pet coke is unavailable only at higher prices), or the Refining Business imposition of an obligation to provide it with security for the Nitrogen Fertilizer business' payment obligations, could negatively impact results of operations

The profitability of the nitrogen fertilizer business' Coffeyville Fertilizer Facility is directly affected by the price and availability of pet coke obtained from the Refining Business' Coffeyville, Kansas crude oil refinery pursuant to a long-term agreement and pet coke purchased from third parties, both of which vary based on market prices. Pet coke is a key raw material used by the Coffeyville Fertilizer Facility in the manufacture of nitrogen fertilizer products. If pet coke costs increase, the nitrogen fertilizer business may not be able to increase its prices to recover these increased costs, because market prices for nitrogen fertilizer products are not correlated with pet coke prices.
Based on nitrogen fertilizer business current output, it obtains most (over 70% on average during the last five years) of the pet coke needed for the Coffeyville Fertilizer Facility from the Refining Business' adjacent crude oil refinery, and procure the remainder on the open market. The price that is paid to the Refining Business for pet coke is based on the lesser of a pet coke price derived from the price received for UAN (subject to a UAN-based price ceiling and floor) and a pet coke index price. In most cases, the price paid to the Refining Business will be lower than the price which would be otherwise paid to third parties. Pet coke prices could significantly increase in the future. Should the Refining Business fail to perform in accordance with the existing agreement, the fertilizer business would need to purchase pet coke from third parties on the open market, which could negatively impact its results of operations to the extent third-party pet coke is unavailable or available only at higher prices.
The Coffeyville Fertilizer Facility may not be able to maintain an adequate supply of pet coke. In addition, it could experience production delays or cost increases if alternative sources of supply prove to be more expensive or difficult to obtain. The nitrogen fertilizer business currently purchases 100% of the pet coke the Coffeyville refinery produces. Accordingly, if the nitrogen fertilizer business increases production, it will be more dependent on pet coke purchases from third-party suppliers at open market prices. The nitrogen fertilizer business is party to a pet coke supply agreement with HollyFrontier Corporation. The term of this agreement ends in December 2018. There is no assurance that the nitrogen fertilizer business would be able to purchase pet coke on comparable terms from third parties or at all.

The nitrogen fertilizer business relies on third-party providers of transportation services and equipment, which subjects it to risks and uncertainties beyond its control that may have a material adverse effect on the nitrogen fertilizer business' results of operations, financial condition and ability to make distributions.

The nitrogen fertilizer business relies on railroad and trucking companies to ship finished products to customers of the Coffeyville Fertilizer Facility. The nitrogen fertilizer business also leases railcars from railcar owners in order to ship

its finished products. Additionally, although customers of the East Dubuque Facility generally pick up products at the facility, the facility occasionally rely on barge, truck and railroad companies to ship products to customers. These transportation operations, equipment and services are subject to various hazards, including extreme weather conditions, work stoppages, delays, spills, derailments and other accidents and other operating hazards. For example, barge transport can be impacted by lock closures resulting from inclement weather or surface conditions, including fog, rain, snow, wind, ice, strong currents, floods, droughts and other unplanned natural phenomena, lock malfunction, tow conditions and other conditions. Further, the limited number of towing companies and barges available for ammonia transport may also impact the availability of transportation for our nitrogen fertilizer business' products.

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These transportation operations, equipment and services are also subject to environmental, safety and other regulatory oversight. Due to concerns related to terrorism or accidents, local, state and federal governments could implement new regulations affecting the transportation of the nitrogen fertilizer business' finished products. In addition, new regulations could be implemented affecting the equipment used to ship its finished products.

Any delay in the nitrogen fertilizer business' ability to ship its finished products as a result of these transportation companies' failure to operate properly, the implementation of new and more stringent regulatory requirements affecting transportation operations or equipment, or significant increases in the cost of these services or equipment could have a material adverse effect on the nitrogen fertilizer business' results of operations, financial condition and ability to make cash distributions.

Ammonia can be very volatile and extremely hazardous. Any liability for accidents involving ammonia or other products the nitrogen fertilizer business produces or transports that cause severe damage to property or injury to the environment and human health could have a material adverse effect on the nitrogen fertilizer business' results of operations, financial condition and ability to make cash distributions. In addition, the costs of transporting ammonia could increase significantly in the future.

The nitrogen fertilizer business manufactures, processes, stores, handles, distributes and transports ammonia, which can be very volatile and extremely hazardous. Major accidents or releases involving ammonia could cause severe damage or injury to property, the environment and human health, as well as a possible disruption of supplies and markets. Such an event could result in civil lawsuits, fines, penalties and regulatory enforcement proceedings, all of which could lead to significant liabilities. Any damage or injury to persons, equipment or property or other disruption of the ability of the nitrogen fertilizer business to produce or distribute its products could result in a significant decrease in operating revenues and significant additional cost to replace or repair and insure its assets, which could have a material adverse effect on the nitrogen fertilizer business' results of operations, financial condition and ability to make cash distributions. The Coffeyville Fertilizer Facility and East Dubuque Facility periodically experiences minor releases of ammonia related to leaks from its equipment. Similar events may occur in the future.

In addition, the nitrogen fertilizer business may incur significant losses or costs relating to the operation of railcars used for the purpose of carrying various products, including ammonia. Due to the dangerous and potentially hazardous nature of the cargo, in particular ammonia, on board railcars, a railcar accident may result in fires, explosions and pollution. These circumstances may result in sudden, severe damage or injury to property, the environment and human health. In the event of pollution, the nitrogen fertilizer business may be held responsible even if it is not at fault and it complied with the laws and regulations in effect at the time of the accident. Litigation arising from accidents involving ammonia and other products the nitrogen fertilizer business produces or transports may result in the nitrogen fertilizer business or us being named as a defendant in lawsuits asserting claims for large amounts of damages, which could have a material adverse effect on the nitrogen fertilizer business' results of operations, financial condition and ability to make cash distributions.

Given the risks inherent in transporting ammonia, the costs of transporting ammonia could increase significantly in the future. Ammonia is most typically transported by pipeline and railcar. A number of initiatives are underway in the railroad and chemical industries that may result in changes to railcar design in order to minimize railway accidents involving hazardous materials. In addition, in the future, laws may more severely restrict or eliminate the ability of the nitrogen fertilizer business to transport ammonia via railcar. If any railcar design changes are implemented, or if accidents involving hazardous freight increase the insurance and other costs of railcars, freight costs of the nitrogen fertilizer business could significantly increase.

Environmental laws and regulations on fertilizer end-use and application and numeric nutrient water quality criteria could have a material adverse impact on fertilizer demand in the future.

Future environmental laws and regulations on the end-use and application of fertilizers could cause changes in demand for the nitrogen fertilizer business' products. In addition, future environmental laws and regulations, or new interpretations of existing laws or regulations, could limit the ability of the nitrogen fertilizer business to market and sell its products to end users. From time to time, various state legislatures have proposed bans or other limitations on fertilizer products. The EPA is encouraging states to adopt state-wide numeric water quality criteria for total nitrogen and total phosphorus, which are present in the nitrogen fertilizer business' fertilizer products. A number of states have adopted or proposed numeric nutrient water quality criteria for nitrogen and phosphorus. The adoption of stringent state criteria for nitrogen and phosphorus could reduce the demand for nitrogen fertilizer products in those states. If such laws, rules, regulations or interpretations to significantly curb the end-use or application of fertilizers were promulgated in the nitrogen fertilizer business' marketing areas, it could result in decreased demand for its products and have a material adverse effect on the nitrogen fertilizer business' results of operations, financial condition and cash flows.

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New regulations concerning the transportation, storage and handling of hazardous chemicals, risks of terrorism and the security of chemical manufacturing facilities could result in higher operating costs.

The costs of complying with future regulations relating to the transportation, storage and handling of hazardous chemicals and security associated with our operations may have a material adverse effect on our results of operations, financial condition and ability to make cash distributions. Targets such as chemical manufacturing facilities may be at greater risk of future terrorist attacks than other targets in the United States. The chemical industry has responded to the issues that arose in response to the terrorist attacks on September 11, 2001 by starting new initiatives relating to the security of chemical industry facilities and the transportation of hazardous chemicals in the United States. For example, in May 2015, the U.S. Department of Transportation promulgated a regulation setting standings for rail tanks carrying transporting flammable liquids. Future terrorist attacks could lead to even stronger, more costly initiatives that could result in a material adverse effect on our results of operations, financial condition and ability to make cash distributions. The 2013 fertilizer plant explosion in West, Texas has generated consideration of more restrictive measures in the storage, handling and transportation of crop production materials.

If licensed technology were no longer available, the nitrogen fertilizer business may be adversely affected.

The nitrogen fertilizer business has licensed, and may in the future license, a combination of patent, trade secret and other intellectual property rights of third parties for use in its business. In particular, the gasification process used at the Coffeyville Fertilizer Facility to convert pet coke to high purity hydrogen for subsequent conversion to ammonia is licensed from an affiliate of General Electric Company. The license, which is fully paid, grants the nitrogen fertilizer business perpetual rights to use the pet coke gasification process on specified terms and conditions and is integral to the operations of the Coffeyville Fertilizer Facility. If this license or any other license agreement on which the nitrogen fertilizer business' operations rely, were to be terminated, licenses to alternative technology may not be available, or may only be available on terms that are not commercially reasonable or acceptable. In addition, any substitution of new technology for currently-licensed technology may require substantial changes to manufacturing processes or equipment and may have a material adverse effect on the nitrogen fertilizer business' results of operations, financial condition and cash flows.

The nitrogen fertilizer business may face third-party claims of intellectual property infringement, which if successful could result in significant costs.

The nitrogen fertilizer business may face claims of infringement that could interfere with its ability to use technology that is material to its business operations. Any litigation of this type related to third-party intellectual property rights could result in substantial costs and diversions of resources, either of which could have a material adverse effect on the nitrogen fertilizer business' results of operations, financial condition and cash flows. In the event a claim of infringement against the nitrogen fertilizer business is successful, it may be required to pay royalties or license fees for past or continued use of the infringing technology, or it may be prohibited from using the infringing technology altogether. If it is prohibited from using any technology as a result of such a claim, it may not be able to obtain licenses to alternative technology adequate to substitute for the technology it can no longer use, or licenses for such alternative technology may only be available on terms that are not commercially reasonable or acceptable. In addition, any substitution of new technology for currently licensed technology may require the nitrogen fertilizer business to make substantial changes to its manufacturing processes or equipment or to its products, and could have a material adverse effect on the nitrogen fertilizer business' results of operations, financial condition and cash flows.

There can be no assurance that the transportation costs of the nitrogen fertilizer business' competitors will not decline.

Our nitrogen fertilizer business' nitrogen fertilizer plants are located within the U.S. farm belt, where the majority of the end users of its nitrogen fertilizer products grow their crops. Many of our nitrogen fertilizer business' competitors produce fertilizer outside of this region and incur greater costs in transporting their products over longer distances via rail, ships and pipelines. There can be no assurance that competitors' transportation costs will not decline or that additional pipelines will not be built, lowering the price at which competitors can sell their products, which would have a material adverse effect on the nitrogen fertilizer business' results of operations, financial condition and cash flows.

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Risks Related to Our Entire Business

Instability and volatility in the capital, credit and commodity markets in the global economy could negatively impact our business, financial condition, results of operations and cash flows.

Our business, financial condition and results of operations could be negatively impacted by difficult conditions and volatility in the capital, credit and commodities markets and in the global economy. For example:

- Although we believe the petroleum business has sufficient liquidity under its Amended and Restated ABL credit facility and the intercompany credit facility to operate both the Coffeyville and Wynnewood refineries, and that the nitrogen fertilizer business has sufficient liquidity under its ABL credit facility to run the nitrogen fertilizer business, under extreme market conditions there can be no assurance that such funds would be available or sufficient, and in such a case, we may not be able to successfully obtain additional financing on favorable terms, or at all.

- Market volatility could exert downward pressure on the price of the Refining Partnership's or the Nitrogen Fertilizer Partnership's common units, which may make it more difficult for either or both of them to raise additional capital and thereby limit their ability to grow, which could in turn cause our stock price to drop.

- The petroleum business' and nitrogen fertilizer business' credit facilities contain various covenants that must be complied with, and if either business is not in compliance, there can be no assurance that either business would be able to successfully amend the agreement in the future. Further, any such amendment may be expensive. In addition, any new credit facility the petroleum business or nitrogen fertilizer business may enter into may require them to agree to additional covenants.

- Market conditions could result in significant customers experiencing financial difficulties. We are exposed to the credit risk of our customers, and their failure to meet their financial obligations when due because of bankruptcy, lack of liquidity, operational failure or other reasons could result in decreased sales and earnings for us.

The refineries and nitrogen fertilizer facilities face significant risks due to physical damage hazards, environmental liability risk exposure, and unplanned or emergency partial or total plant shutdowns resulting in business interruptions. We could incur potentially significant costs to the extent there are unforeseen events which cause property damage and a material decline in production which are not fully insured. The commercial insurance industry engaged in underwriting energy industry risk is specialized and there is finite capacity; therefore, the industry may limit or curtail coverage, may modify the coverage provided or may substantially increase premiums in the future.

If any of our production plants, logistics assets, key pipeline operations serving our plants, or key suppliers sustains a catastrophic loss and operations are shutdown or significantly impaired, it would have a material adverse impact on our operations, financial condition and cash flows. In addition, the risk exposures we have at the Coffeyville, Kansas plant complex are greater due to production facilities for refinery and fertilizer production, distribution and storage being in relatively close proximity and potentially exposed to damage from one incident, such as resulting damages from the perils of explosion, windstorm, fire, or flood. Operations at either or both of the refineries and the nitrogen fertilizer plant could be curtailed, limited or completely shut down for an extended period of time as the result of one or more unforeseen events and circumstances, which may not be within our control, including:

- major unplanned maintenance requirements

- catastrophic events caused by mechanical breakdown, electrical injury, pressure vessel rupture, explosion, contamination, fire, or natural disasters, including, floods, windstorms and other similar events;

- labor supply shortages, or labor difficulties that result in a work stoppage or slowdown;

- cessation or suspension of a plant or specific operations dictated by environmental authorities; and

- an event or incident involving a large clean-up, decontamination, or the imposition of laws and ordinances regulating the cost and schedule of demolition or reconstruction, which can cause significant delays in restoring property to its pre-loss condition.

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We have sustained losses over the past ten-year period at our facilities, which are illustrative of the types of risks and hazards that exist. These losses or events resulted in costs assumed by us that were not fully insured due to policy retentions or applicable exclusions.

We are insured under casualty, environmental, property and business interruption insurance policies. The property and business interruption policies insure real and personal property, including property located at our Coffeyville and Wynnewood refineries and our related crude gathering and logistics assets. There is potential for a common occurrence to impact both the CVR Partners' nitrogen fertilizer plant in Coffeyville, Kansas and the Coffeyville refinery in which case the insurance limitations limits and applicable sub-limits would apply to all damages combined. These policies are subject to limits, sub-limits, retention (financial and time-based) and deductibles. The application of these and other policy conditions could materially impact insurance recoveries and potentially cause us to assume losses which could impair earnings.

There is finite capacity in the commercial insurance industry engaged in underwriting energy industry risk, and there are risks associated with the commercial insurance industry reducing capacity, changing the scope of insurance coverage offered, and substantially increasing premiums resulting from highly adverse loss experience or other financial circumstances. Factors that impact insurance cost and availability include, but are not limited to: industry wide losses, natural disasters, specific losses incurred by us and low or inadequate investment returns earned by the insurance industry. If the supply of commercial insurance is curtailed due to highly adverse financial results, we may not be able to continue our present limits of insurance coverage or obtain sufficient insurance capacity to adequately insure our risks for property damage or business interruption.

Environmental laws and regulations could require us to make substantial capital expenditures to remain in compliance or to remediate current or future contamination that could give rise to material liabilities.

Our operations are subject to a variety of federal, state and local environmental laws and regulations relating to the protection of the environment, including those governing the emission or discharge of pollutants into the environment, product specifications and the generation, treatment, storage, transportation, disposal and remediation of solid and hazardous wastes. Violations of these laws and regulations or permit conditions can result in substantial penalties, injunctive orders compelling installation of additional controls, civil and criminal sanctions, permit revocations and/or facility shutdowns.

In addition, new environmental laws and regulations, new interpretations of existing laws and regulations, increased governmental enforcement of laws and regulations or other developments could require us to make additional unforeseen expenditures. Many of these laws and regulations are becoming increasingly stringent, and the cost of compliance with these requirements can be expected to increase over time. The requirements to be met, as well as the technology and length of time available to meet those requirements, continue to develop and change. These expenditures or costs for environmental compliance could have a material adverse effect on our business' results of operations, financial condition and profitability.

Our facilities operate under a number of federal and state permits, licenses and approvals with terms and conditions containing a significant number of prescriptive limits and performance standards in order to operate. All of these permits, licenses, approvals, limits and standards require a significant amount of monitoring, record keeping and reporting in order to demonstrate compliance with the underlying permit, license, approval, limit or standard. Non-compliance or incomplete documentation of our compliance status may result in the imposition of fines, penalties and injunctive relief. Additionally, due to the nature of our manufacturing and refining process, there may be times when we are unable to meet the standards and terms and conditions of our permits, licenses and approvals due to operational upsets or malfunctions, which may lead to the imposition of fines and penalties or operating restrictions

that may have a material adverse effect on our ability to operate our facilities and accordingly our financial performance. For a discussion of environmental laws and regulations and their impact on our business and operations, please see "Business — Environmental Matters."

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We could incur significant cost in cleaning up contamination at our refineries, terminals, fertilizer plants and off-site locations.

Our businesses are subject to the occurrence of accidental spills, discharges or other releases of petroleum or hazardous substances into the environment. Past or future spills related to any of our current or former operations, including the refineries, pipelines, product terminals, fertilizer plants or transportation of products or hazardous substances from those facilities, may give rise to liability (including strict liability, or liability without fault, and potential cleanup responsibility) to governmental entities or private parties under federal, state or local environmental laws, as well as under common law. For example, we could be held strictly liable under CERCLA, and similar state statutes for past or future spills without regard to fault or whether our actions were in compliance with the law at the time of the spills. Pursuant to CERCLA and similar state statutes, we could be held liable for contamination associated with facilities we currently own or operate (whether or not such contamination occurred prior to our acquisition thereof), facilities we formerly owned or operated (if any) and facilities to which we transported or arranged for the transportation of wastes or byproducts containing hazardous substances for treatment, storage, or disposal.

The potential penalties and cleanup costs for past or future releases or spills, liability to third parties for damage to their property or exposure to hazardous substances, or the need to address newly discovered information or conditions that may require response actions could be significant and could have a material adverse effect on our results of operations, financial condition and cash flows. In addition, we may incur liability for alleged personal injury or property damage due to exposure to chemicals or other hazardous substances located at or released from our facilities. We may also face liability for personal injury, property damage, natural resource damage or for cleanup costs for the alleged migration of contamination or other hazardous substances from our facilities to adjacent and other nearby properties.

Four of our facilities, including the Coffeyville refinery, the now-closed Phillipsburg terminal (which operated as a refinery until 1991), the Wynnewood refinery and the Coffeyville nitrogen fertilizer plant, have environmental contamination. We have assumed Farmland's responsibilities under certain administrative orders under the RCRA related to contamination at or that originated from the Coffeyville refinery and the Phillipsburg terminal. The Coffeyville refinery has agreed to assume liability for contamination that migrated from the refinery onto the nitrogen fertilizer plant property while Farmland owned and operated the properties. At the Wynnewood refinery, known areas of contamination have been partially addressed but corrective action has not been completed (refer to "RCRA Compliance Matters" in Part II, Item 8, Note 15 ("Commitments and Contingencies") of this Report). If significant unknown liabilities are identified at or migrating from any of our facilities, that liability could have a material adverse effect on our results of operations, financial condition and cash flows and may not be covered by insurance.

We may incur future liability relating to the off-site disposal of hazardous wastes. Companies that dispose of, or arrange for the treatment, transportation or disposal of, hazardous substances at off-site locations may be held jointly and severally liable for the costs of investigation and remediation of contamination at those off-site locations, regardless of fault. We could become involved in litigation or other proceedings involving off-site waste disposal and the damages or costs in any such proceedings could be material.

We may be unable to obtain or renew permits necessary for our operations, which could inhibit our ability to do business.

Our businesses hold numerous environmental and other governmental permits and approvals authorizing operations at our facilities. Future expansion of our operations is predicated upon securing the necessary environmental or other permits or approvals. A decision by a government agency to deny or delay issuing a new or renewed material permit or approval, or to revoke or substantially modify an existing permit or approval, could have a material adverse effect

on our ability to continue operations and on our financial condition, results of operations and cash flows.

Climate change laws and regulations could have a material adverse effect on our results of operations, financial condition and cash flows.

The EPA regulates GHG emissions under the Clean Air Act. In October 2009, the EPA finalized a rule requiring certain large emitters of GHGs to inventory and report their GHG emissions to the EPA. In accordance with the rule, we have begun monitoring and reporting our GHG emissions to the EPA. In May 2010, the EPA finalized the "Greenhouse Gas Tailoring Rule," which established new GHG emissions thresholds that determine when stationary sources, such as the refineries and the nitrogen fertilizer plant, must obtain permits under PSD and Title V programs of the federal Clean Air Act. Under the rule, facilities already subject to the PSD and Title V programs that increase their emissions of GHGs by a significant amount are required to undergo PSD review and to evaluate and implement air pollution control technology, known as "best available control technology," to reduce GHG emissions.

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In the meantime, in December 2010, the EPA reached a settlement agreement with numerous parties under which it agreed to promulgate NSPS to regulate GHG emissions from petroleum refineries and electric utilities by November 2012. In September 2014, the EPA indicated that the petroleum refining sector risk rule, proposed in June 2014 to address air toxics and volatile organic compounds from refineries, may make it unnecessary for the EPA to regulate GHG emissions from petroleum refineries at this time. The final rule, which was published in the Federal Register on December 1, 2015, places additional emission control requirements and work practice standards on FCCUs, storage tanks, flares, coking units and other equipment at petroleum refineries. In 2015, the EPA promulgated NSPS for carbon dioxide emissions from electric utilities, although the EPA announced in April 2017 that those NSPS were under review and may be suspended, revised or rescinded. Therefore, we expect that the EPA will not be issuing NSPS to regulate GHG from petroleum refineries at this time but that it may do so in the future.

The current administration has sought to implement a new or modified policy with respect to climate change. For example, the administration announced its intention to withdraw the United States from the Paris Climate Agreement, though the earliest possible effective date of withdrawal for the United States is November 2020. If efforts to address climate change resume, at the federal legislative level, this could mean Congressional passage of legislation adopting some form of federal mandatory GHG emission reduction, such as a nationwide cap-and-trade program. It is also possible that Congress may pass alternative climate change bills that do not mandate a nationwide cap-and-trade program and instead focus on promoting renewable energy and energy efficiency.

In addition to potential federal legislation, a number of states have adopted regional GHG initiatives to reduce carbon dioxide and other GHG emissions. In 2007, a group of Midwest states, including Kansas (where the Coffeyville refinery and the nitrogen fertilizer facility are located), formed the Midwestern Greenhouse Gas Reduction Accord, which calls for the development of a cap-and-trade system to control GHG emissions and for the inventory of such emissions. However, the individual states that have signed on to the accord must adopt laws or regulations that implement the trading scheme before it becomes effective. To date, Kansas has taken no meaningful action to implement the accord, and it is unclear whether Kansas intends to do so in the future.

Alternatively, the EPA may take further steps to regulate GHG emissions, although at this time it is unclear to what extent the EPA will pursue climate change regulation. The implementation of EPA regulations and/or the passage of federal or state climate change legislation may result in increased costs to (i) operate and maintain our facilities, (ii) install new emission controls on our facilities and (iii) administer and manage any GHG emissions program. Increased costs associated with compliance with any current or future legislation or regulation of GHG emissions, if it occurs, may have a material adverse effect on our results of operations, financial condition and cash flows.

In addition, climate change legislation and regulations may result in increased costs not only for our business but also users of our refined and fertilizer products, thereby potentially decreasing demand for our products. Decreased demand for our products may have a material adverse effect on our results of operations, financial condition and cash flows.

We are subject to strict laws and regulations regarding employee and process safety, and failure to comply with these laws and regulations could have a material adverse effect on our results of operations, financial condition and profitability.

We are subject to the requirements of OSHA and comparable state statutes that regulate the protection of the health and safety of workers, and the proper design, operation and maintenance of our equipment. In addition, OSHA and certain environmental regulations require that we maintain information about hazardous materials used or produced in our operations and that we provide this information to employees and state and local governmental authorities. Failure

to comply with these requirements, including general industry standards, record keeping requirements and monitoring and control of occupational exposure to regulated substances, may result in significant fines or compliance costs, which could have a material adverse effect on our results of operations, financial condition and cash flows.

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We are subject to cybersecurity risks and other cyber incidents resulting in disruption.

Threats to information technology systems associated with cybersecurity risks and cyber incidents or attacks continue to grow. We depend on information technology systems. In addition, we collect, process, and retain sensitive and confidential customer information in the normal course of business. Despite the security measures we have in place and any additional measures we may implement in the future, our facilities and systems, and those of our third-party service providers, could be vulnerable to security breaches, computer viruses, lost or misplaced data, programming errors, human errors, acts of vandalism or other events. Any disruption of our systems or security breach or event resulting in the misappropriation, loss or other unauthorized disclosure of confidential information, whether by us directly or our third-party service providers, could damage our reputation, expose us to the risks of litigation and liability, disrupt our business or otherwise affect our results of operations.

Deliberate, malicious acts, including terrorism, could damage our facilities, disrupt our operations or injure employees, contractors, customers or the public and result in liability to us.

Intentional acts of destruction could hinder our sales or production and disrupt our supply chain. Our facilities could be damaged or destroyed, reducing our operational production capacity and requiring us to repair or replace our facilities at substantial cost. Employees, contractors and the public could suffer substantial physical injury for which we could be liable. Governmental authorities may impose security or other requirements that could make our operations more difficult or costly. The consequences of any such actions could adversely affect our operating results, financial condition and cash flows.

Both the petroleum and nitrogen fertilizer businesses depend on significant customers and the loss of several significant customers may have a material adverse impact on our results of operations, financial condition and cash flows.

The petroleum and nitrogen fertilizer businesses both have a significant concentration of customers. The five largest customers of the petroleum business represented 39% of its petroleum net sales for the year ended December 31, 2017. The five largest customers of the nitrogen fertilizer business also represented approximately 31% of its net sales for the year ended December 31, 2017. The top petroleum customer accounts for approximately 19% of petroleum net sales and the top nitrogen fertilizer customer accounts for approximately 11% of nitrogen fertilizer net sales for this same period. Given the nature of our businesses, and consistent with industry practice, we do not have long-term minimum purchase contracts with our customers. The loss of several of these significant customers, or a significant reduction in purchase volume by several of them, could have a material adverse effect on our results of operations, financial condition and cash flows.

The acquisition and expansion strategy of the petroleum business and the nitrogen fertilizer business involves significant risks.

Both the petroleum business and the nitrogen fertilizer business will consider pursuing acquisitions and expansion projects in order to continue to grow and increase profitability. However, we may not be able to consummate such acquisitions or expansions, due to intense competition for suitable acquisition targets, the potential unavailability of financial resources necessary to consummate acquisitions and expansions, difficulties in identifying suitable acquisition targets and expansion projects or in completing any transactions identified on sufficiently favorable terms and the failure to obtain requisite regulatory or other governmental approvals. In addition, any future acquisitions and expansions may entail significant transaction costs and risks associated with entry into new markets and lines of business.

In addition to the risks involved in identifying and completing acquisitions described above, even when acquisitions are completed, integration of acquired entities can involve significant difficulties, such as: unforeseen difficulties in the integration of the acquired operations and disruption of the ongoing operations of our business; failure to achieve cost savings or other financial or operating objectives contributing to the accretive nature of an acquisition; strain on the operational and managerial controls and procedures of the petroleum business and the nitrogen fertilizer business, and the need to modify systems or to add management resources; difficulties in the integration and retention of customers or personnel and the integration and effective deployment of operations or technologies; assumption of unknown material liabilities or regulatory non-compliance issues; amortization of acquired assets, which would reduce future reported earnings; possible adverse short-term effects on our cash flows or operating results; and diversion of management's attention from the ongoing operations of our business.

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In addition, in connection with any potential acquisition or expansion project, each of the Refining Partnership and the Nitrogen Fertilizer Partnership (as applicable) will need to consider whether a business it intends to acquire or expansion project it intends to pursue could affect its tax treatment as a partnership for federal income tax purposes. If the petroleum business or the nitrogen fertilizer business is otherwise unable to conclude that the activities of the business being acquired or the expansion project would not affect its treatment as a partnership for federal income tax purposes, it may elect to seek a ruling from the Internal Revenue Service ("IRS"). Seeking such a ruling could be costly or, in the case of competitive acquisitions, place the business in a competitive disadvantage compared to other potential acquirers who do not seek such a ruling. If the petroleum business or the nitrogen fertilizer business is unable to conclude that an activity would not affect its treatment as a partnership for federal income tax purposes, and is unable or unwilling to obtain an IRS ruling, the petroleum business or the nitrogen fertilizer business may choose to acquire such business or develop such expansion project in a corporate subsidiary, which would subject the income related to such activity to entity-level taxation, which would reduce the amount of cash available for distribution to its common unitholders and could likely cause a substantial reduction in the value of its common units.

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Failure to manage these acquisition and expansion growth risks could have a material adverse effect on our results of operations, financial condition and cash flows. Our joint ventures involve similar risks. There can be no assurance that we will be able to consummate any acquisitions or expansions, successfully integrate acquired entities, or generate positive cash flow at any acquired company or expansion project.

We are a holding company and depend upon our subsidiaries for our cash flow.

Our two principal subsidiaries are publicly traded partnerships, and a portion of their common units trade on the NYSE. We are a holding company, and these subsidiaries conduct all of our operations and own substantially all of our assets. Consequently, our cash flow and our ability to meet our obligations or to pay dividends or make other distributions in the future will depend upon the cash flow of our subsidiaries and the payment of funds by our subsidiaries to us in the form of distributions on their common units. The ability of the Refining Partnership and the Nitrogen Fertilizer Partnership to make any payments to us will depend on, among other things, their earnings, the terms of their indebtedness (including the terms of any debt facilities and instruments), tax considerations and legal restrictions. In particular, future debt facilities and instruments incurred at our subsidiaries may impose significant limitations on the ability of our subsidiaries to make distributions to us and consequently our ability to issue dividends to our stockholders.

Internally generated cash flows and other sources of liquidity may not be adequate for the capital needs of our businesses.

Our businesses are capital intensive, and working capital needs may vary significantly over relatively short periods of time. For instance, crude oil price volatility can significantly impact working capital on a week-to-week and month-to-month basis. If we cannot generate adequate cash flow or otherwise secure sufficient liquidity to meet our working capital needs or support our short-term and long-term capital requirements, we may be unable to meet our debt obligations, pursue our business strategies or comply with certain environmental standards, which would have a material adverse effect on our business and results of operations.

A substantial portion of our workforce is unionized and we are subject to the risk of labor disputes and adverse employee relations, which may disrupt our business and increase our costs.

As of December 31, 2017, approximately 66% of the employees at the Coffeyville refinery, 59% of the employees at the Wynnewood refinery and 32% of the employees who work in crude transportation were represented by labor unions under collective bargaining agreements. At Coffeyville, the collective bargaining agreement with five Metal Trades Unions (which covers union represented employees who work directly at the Coffeyville refinery) expires in March 2019. The collective bargaining agreement with the United Steelworkers (which covers unionized employees who work in crude transportation) expires in March 2019 and automatically renews on an annual basis thereafter unless a written notice is received sixty days in advance of the relevant expiration date. The collective bargaining agreement with the International Union of Operating Engineers with respect to the Wynnewood refinery expires in June 2021. Approximately 64% of the employees at the East Dubuque Facility were represented by the International Union of United Automobile, Aerospace, and Agricultural Implement Workers under a collective bargaining agreement that expires in October 2019. We may not be able to renegotiate our collective bargaining agreements when they expire on satisfactory terms or at all. A failure to do so may increase our costs. In addition, our existing labor agreements may not prevent a strike or work stoppage at any of our facilities in the future, and any work stoppage could negatively affect our results of operations, financial condition and cash flows.

Our business may suffer if any of our key senior executives or other key employees unexpectedly discontinues employment with us. Furthermore, a shortage of skilled labor or disruptions in our labor force may make it difficult

for us to maintain labor productivity.

Our future success depends to a large extent on the services of our key senior executives and key senior employees. Our business depends on our continuing ability to recruit, train and retain highly qualified employees in all areas of our operations, including accounting, business operations, finance and other key back-office and mid-office personnel. Furthermore, our operations require skilled and experienced employees with proficiency in multiple tasks. In particular, the nitrogen fertilizer facility relies on gasification technology that requires special expertise to operate efficiently and effectively. The competition for these employees is intense, and the loss of these executives or employees could harm our business. If any of these executives or other key personnel resign unexpectedly or become unable to continue in their present roles and are not adequately replaced, our business operations could be materially adversely affected. We do not maintain any "key man" life insurance for any executives.

New regulations concerning the transportation, storage and handling of hazardous chemicals, risks of terrorism and the security of chemical manufacturing facilities could result in higher operating costs.

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The costs of complying with future regulations relating to the transportation, storage and handling of hazardous chemicals and security associated with the refining and nitrogen fertilizer facilities may have a material adverse effect on our results of operations, financial condition and cash flows. Targets such as refining and chemical manufacturing facilities may be at greater risk of future terrorist attacks than other targets in the United States. As a result, the petroleum and chemical industries have responded to the issues that arose due to the terrorist attacks on September 11, 2001 by starting new initiatives relating to the security of petroleum and chemical industry facilities and the transportation of hazardous chemicals in the United States. Future terrorist attacks could lead to even stronger, more costly initiatives that could result in a material adverse effect on our results of operations, financial condition and cash flows. The 2013 fertilizer plant explosion in West, Texas has generated consideration of more restrictive measures in storage, handling and transportation of crop production materials, including fertilizers.

Compliance with and changes in the tax laws could adversely affect our performance.

We are subject to extensive tax liabilities, including United States and state income taxes and transactional taxes such as excise, sales/use, payroll, franchise and withholding taxes. New tax laws and regulations are continuously being enacted or proposed that could result in increased expenditures for tax liabilities in the future.

The Refining Partnership's and the Nitrogen Fertilizer Partnership's level of indebtedness may affect their ability to operate their businesses, and may have a material adverse effect on their financial condition and results of operations.

The Refining Partnership and the Nitrogen Fertilizer Partnership have incurred indebtedness and they may be able to incur significant additional indebtedness in the future. If new indebtedness is added to their current indebtedness, the risks described below could increase. Their level of indebtedness could have important consequences, such as:

- limiting their ability to obtain additional financing to fund their working capital needs, capital expenditures, debt service requirements, acquisitions or other purposes;
- requiring them to utilize a significant portion of their cash flows to service their indebtedness, thereby reducing available cash and their ability to make distributions on their common units (including distributions to us);
- limiting their ability to use operating cash flow in other areas of their business because they must dedicate a substantial portion of these funds to service debt;
- limiting their ability to compete with other companies who are not as highly leveraged, as they may be less capable of responding to adverse economic and industry conditions;
- restricting them from making strategic acquisitions or investments, introducing new technologies or exploiting business opportunities;
- restricting the way in which they conduct their business because of financial and operating covenants in the agreements governing their and their respective subsidiaries' existing and future indebtedness, including, in the case of certain indebtedness of subsidiaries, certain covenants that restrict the ability of subsidiaries to pay dividends or make other distributions to them;
- exposing them to potential events of default (if not cured or waived) under financial and operating covenants contained in their or their respective subsidiaries' debt instruments that could have a material adverse effect on their business, financial condition and operating results;

- increasing their vulnerability to a downturn in general economic conditions or in pricing of their products; and

- limiting their ability to react to changing market conditions in their respective industries and in their respective customers' industries.

In addition to their debt service obligations, the operations of the Refining Partnership and the Nitrogen Fertilizer Partnership require substantial investments on a continuing basis. Their ability to make scheduled debt payments, to refinance their obligations with respect to their indebtedness and to fund capital and non-capital expenditures necessary to maintain the condition of their operating assets, properties and systems software, as well as to provide capacity for the growth of their business, depends on their financial and operating performance, which, in turn, is subject to prevailing economic conditions and financial, business, competitive, legal and other factors.

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In addition, the Refining Partnership and the Nitrogen Fertilizer Partnership are and will be subject to covenants contained in agreements governing their present and future indebtedness. These covenants include, and will likely include, restrictions on certain payments (including restrictions on distributions to their unitholders), the granting of liens, the incurrence of additional indebtedness, dividend restrictions affecting subsidiaries, asset sales, transactions with affiliates and mergers and consolidations. Any failure to comply with these covenants could result in a default under their current credit agreements or debt instruments or future credit agreements.

The Refining Partnership and the Nitrogen Fertilizer Partnership may not be able to generate sufficient cash to service all of their indebtedness and may be forced to take other actions to satisfy their debt obligations that may not be successful.

The Refining Partnership's and the Nitrogen Fertilizer Partnership's ability to satisfy their debt obligations will depend upon, among other things:

- their future financial and operating performance, which will be affected by prevailing economic conditions and financial, business, regulatory and other factors, many of which are beyond their control; and
- their future ability to obtain other financing.

We cannot offer any assurance that our businesses will generate sufficient cash flow from operations, that the Refining Partnership will be able to draw under its Amended and Restated ABL Credit Facility, the intercompany credit facility or otherwise, or that the Nitrogen Fertilizer Partnership will be able to draw under its ABL credit facility or otherwise, or from other sources of financing, in an amount sufficient to fund their respective liquidity needs.

If cash flows and capital resources are insufficient to service their indebtedness, the Refining Partnership or the Nitrogen Fertilizer Partnership may be forced to reduce or delay capital expenditures, sell assets, seek additional capital or restructure or refinance their indebtedness or seek bankruptcy protection. These alternative measures may not be successful and may not permit them to meet their scheduled debt service obligations. Their ability to restructure or refinance debt will depend on the condition of the capital markets and their financial condition at such time. Any refinancing of their debt could be at higher interest rates and may require them to comply with more onerous covenants, which could further restrict their business operations, and the terms of existing or future debt agreements may restrict us from adopting some of these alternatives. In addition, in the absence of adequate cash flows or capital resources, they could face substantial liquidity problems and might be required to dispose of material assets or operations, or sell equity, and/or negotiate with lenders to restructure the applicable debt in order to meet their debt service and other obligations. They may not be able to consummate those dispositions for fair market value or at all. Market or business conditions may limit their ability to avail themselves of some or all of these options. Furthermore, any proceeds that they realize from any such dispositions may not be adequate to meet their debt service obligations when due. None of the Company's stockholders or any of their respective affiliates has any continuing obligation to provide us with debt or equity financing.

The borrowings under the Refining Partnership's Amended and Restated ABL Credit Facility and intercompany credit facility and the Nitrogen Fertilizer Partnership's ABL credit facility bear interest at variable rates and other debt we or they incur could likewise be variable-rate debt. If market interest rates increase, variable-rate debt will create higher debt service requirements, which could adversely affect their respective distributions to us. The Refining Partnership or the Nitrogen Fertilizer Partnership may enter into agreements limiting their exposure to higher interest rates, but any such agreements may not offer complete protection from this risk.

The debt agreements of the Refining Partnership and the Nitrogen Fertilizer Partnership contain restrictions that limit their flexibility in operating their respective businesses and their ability to make distributions to their unitholders.

The debt facilities and instruments of the Refining Partnership and the Nitrogen Fertilizer Partnership contain, and any instruments governing their future indebtedness would likely contain, a number of covenants that impose significant operating and financial restrictions on them, including restrictions on their and their respective subsidiaries' ability to, among other things:

- incur additional indebtedness or issue certain preferred units;
- pay distributions in respect of our units or make other restricted payments;
- make certain payments on debt that is subordinated or secured on a junior basis;

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- make certain investments;
- sell certain assets;
- create liens on certain assets;
- consolidate, merge, sell or otherwise dispose of all or substantially all of our assets;
- enter into certain transactions with our affiliates; and
- designate our subsidiaries as unrestricted subsidiaries.

Any of these restrictions could limit their ability to plan for or react to market conditions and could otherwise restrict partnership activities. Any failure to comply with these covenants could result in a default under their debt facilities and instruments. Upon a default, unless waived, the lenders under such debt facilities and instruments would have all remedies available to a secured lender, and could elect to terminate their commitments, cease making further loans, institute foreclosure proceedings against their assets, and force them into bankruptcy or liquidation, subject to any applicable intercreditor agreements. In addition, a default under their debt facilities and instruments would trigger a cross default under their other agreements and could trigger a cross default under the agreements governing their future indebtedness. The Refining Partnership's or Nitrogen Fertilizer Partnership's operating results may not be sufficient to service their indebtedness or to fund their other expenditures and they may not be able to obtain financing to meet these requirements.

Despite their indebtedness, the Refining Partnership and the Nitrogen Fertilizer Partnership may still be able to incur significantly more debt, including secured indebtedness. This could intensify the risks described above.

The Refining Partnership and the Nitrogen Fertilizer Partnership may be able to incur substantially more debt in the future, including secured indebtedness. Although the Refining Partnership's Amended and Restated ABL Credit Facility and the Nitrogen Fertilizer Partnership's ABL credit facility contain restrictions on the incurrence of additional indebtedness, these restrictions are subject to a number of qualifications and exceptions and, under certain circumstances, indebtedness incurred in compliance with these restrictions could be substantial. Also, these restrictions may not prevent them from incurring obligations that do not constitute indebtedness. To the extent such new debt or new obligations are added to their existing indebtedness, the risks described above could substantially increase.

Mr. Carl C. Icahn exerts significant influence over the Company and his interests may conflict with the interest of the Company's other stockholders.

Mr. Carl C. Icahn indirectly controls approximately 82% of the voting power of the Company's capital stock and, by virtue of such stock ownership, is able to control or exert substantial influence over the Company, including:

- the election and appointment of directors;

- business strategy and policies;

- mergers or other business combinations;

- acquisition or disposition of assets;

- future issuances of common stock, common units or other securities;

- incurrence of debt or obtaining other sources of financing; and

- the payment of dividends on the Company's common stock and distributions on the common units of the Refining Partnership and the Nitrogen Fertilizer Partnership.

The existence of a controlling stockholder may have the effect of making it difficult for, or may discourage or delay, a third party from seeking to acquire a majority of the Company's outstanding common stock, which may adversely affect the market price of the Company's common stock.

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Mr. Icahn's interests may not always be consistent with the Company's interests or with the interests of the Company's other stockholders. Mr. Icahn and entities controlled by him may also pursue acquisitions or business opportunities in industries in which we compete, and there is no requirement that any additional business opportunities be presented to us. We also have and may in the future enter into transactions to purchase goods or services with affiliates of Mr. Icahn. To the extent that conflicts of interest may arise between the Company and Mr. Icahn and his affiliates, those conflicts may be resolved in a manner adverse to the Company or its other stockholders.

In addition, if Mr. Icahn were to sell, or otherwise transfer, some or all of his interests in us to an unrelated party or group, a change of control could be deemed to have occurred under the terms of the indentures governing the Refining Partnership's 6.5% senior notes, which would require it to offer to repurchase all outstanding notes at 101% of their principal amount plus accrued interest to the date of repurchase, and an event of default could be deemed to have occurred under the Refining Partnership's Amended and Restated ABL Credit Facility, which would allow lenders to accelerate indebtedness owed to them. However, it is possible that the Refining Partnership will not have sufficient funds at the time of the change of control to make the required repurchase of notes or repay amounts outstanding under the Refining Partnership's Amended and Restated ABL Credit Facility, if any.

The Company's common stock price may decline due to sales of shares by Mr. Carl C. Icahn.

Sales of substantial amounts of the Company's common stock, or the perception that these sales may occur, may adversely affect the price of the Company's common stock and impede its ability to raise capital through the issuance of equity securities in the future. Mr. Icahn could elect in the future to request that the Company file a registration statement to enable him to sell shares of the Company's common stock. If Mr. Icahn were to sell a large number of shares into the public markets, Mr. Icahn could cause the price of the Company's common stock to decline.

We are a "controlled company" within the meaning of the NYSE rules and, as a result, qualify for, and are relying on, exemptions from certain corporate governance requirements.

A company of which more than 50% of the voting power is held by an individual, a group or another company is a "controlled company" within the meaning of the NYSE rules and may elect not to comply with certain corporate governance requirements of the NYSE, including:

- the requirement that a majority of our board of directors consist of independent directors;
- the requirement that we have a nominating/corporate governance committee that is composed entirely of independent directors; and
- the requirement that we have a compensation committee that is composed entirely of independent directors.

We are relying on all of these exemptions as a controlled company. Accordingly, you may not have the same protections afforded to stockholders of companies that are subject to all of the corporate governance requirements of the NYSE. In addition, both the Refining Partnership and the Nitrogen Fertilizer Partnership are relying on exemptions from the same NYSE corporate governance requirements described above.

We may be subject to the pension liabilities of our affiliates.

Mr. Icahn, through certain affiliates, owns approximately 82% of the Company's capital stock. Applicable pension and tax laws make each member of a “controlled group” of entities, generally defined as entities in which there is at least an 80% common ownership interest, jointly and severally liable for certain pension plan obligations of any member of

the controlled group. These pension obligations include ongoing contributions to fund the plan, as well as liability for any unfunded liabilities that may exist at the time the plan is terminated. In addition, the failure to pay these pension obligations when due may result in the creation of liens in favor of the pension plan or the Pension Benefit Guaranty Corporation ("PBGC") against the assets of each member of the controlled group.

As a result of the more than 80% ownership interest in us by Mr. Icahn's affiliates, we are subject to the pension liabilities of all entities in which Mr. Icahn has a direct or indirect ownership interest of at least 80%. Two such entities, ACF Industries LLC ("ACF") and Federal-Mogul, are the sponsors of several pension plans. All the minimum funding requirements of the Code and the Employee Retirement Income Security Act of 1974, as amended by the Pension Protection Act of 2006, for these plans have been met as of December 31, 2017. If the ACF and Federal-Mogul plans were voluntarily terminated, they would be collectively underfunded by approximately $423.7 million and $613.4 million as of December 31, 2017 and 2016, respectively.

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These results are based on the most recent information provided to us by Mr. Icahn's affiliates based on information from the plans' actuaries. These liabilities could increase or decrease, depending on a number of factors, including future changes in benefits, investment returns, and the assumptions used to calculate the liability. As members of the controlled group, we would be liable for any failure of ACF and Federal-Mogul to make ongoing pension contributions or to pay the unfunded liabilities upon a termination of their respective pension plans. In addition, other entities now or in the future within the controlled group that includes us may have pension plan obligations that are, or may become, underfunded, and we would be liable for any failure of such entities to make ongoing pension contributions or to pay the unfunded liabilities upon a termination of such plans. The current underfunded status of the ACF and Federal-Mogul pension plans requires such entities to notify the PBGC of certain "reportable events," such as if we cease to be a member of the controlled group, or if we make certain extraordinary dividends or stock redemptions. The obligation to report could cause us to seek to delay or reconsider the occurrence of such reportable events.

Risks Related to Our Common Stock

We have various mechanisms in place to discourage takeover attempts, which may reduce or eliminate our stockholders' ability to sell their shares for a premium in a change of control transaction.

Various provisions of our certificate of incorporation and bylaws and of Delaware corporate law may discourage, delay or prevent a change in control or takeover attempt of our Company by a third party that our management and board of directors determines is not in the best interest of our Company and its stockholders. Public stockholders who might desire to participate in such a transaction may not have the opportunity to do so. These anti-takeover provisions could substantially impede the ability of public stockholders to benefit from a change of control or change in our management and board of directors. These provisions include:

- preferred stock that could be issued by our board of directors to make it more difficult for a third party to acquire, or to discourage a third party from acquiring, a majority of our outstanding voting stock;
- limitations on the ability of stockholders to call special meetings of stockholders;
- limitations on the ability of stockholders to act by written consent in lieu of a stockholders' meeting; and
- advance notice requirements for nominations of candidates for election to our board of directors or for proposing matters that can be acted upon by our stockholders at stockholder meetings.

We are authorized to issue up to a total of 350 million shares of common stock and 50 million shares of preferred stock, potentially diluting equity ownership of current holders and the share price of our common stock.

We believe that it is necessary to maintain a sufficient number of available authorized shares of our common stock and preferred stock in order to provide us with the flexibility to issue common stock or preferred stock for business purposes that may arise as deemed advisable by our board of directors. These purposes could include, among other things, (i) future stock dividends or stock splits, which may increase the liquidity of our shares; (ii) the sale of stock to obtain additional capital or to acquire other companies or businesses, which could enhance our growth strategy or allow us to reduce debt if needed; (iii) for use in additional stock incentive programs and (iv) for other bona fide purposes. Our board of directors may authorize the Company to issue the available authorized shares of common stock or preferred stock without notice to, or further action by, our stockholders, unless stockholder approval is required by law or the rules of the NYSE. The issuance of additional shares of common stock or preferred stock may significantly dilute the equity ownership of the current holders of our common stock.

Our ability to pay dividends on our common stock is subject to market conditions and numerous other factors.

In January 2013, our board of directors adopted a quarterly dividend policy. We began paying regular quarterly dividends in the second quarter of 2013. Dividends are subject to change at the discretion of the board of directors and may change from quarter to quarter. Our ability to continue paying dividends is subject to our ability to continue to generate sufficient cash flow, and the amount of dividends we are able to pay each year may vary, possibly substantially, based on market conditions, crack spreads, our capital expenditure and other business needs, covenants contained in any debt agreements we may enter into in the future, covenants contained in the debt agreements of CVR Partners and CVR Refining, and the amount of distributions we receive from CVR Partners and CVR Refining. We may not be able to continue paying dividends at the rate we currently pay dividends, or at all. If the amount of our dividends decreases, the trading price of our common stock could be materially adversely affected as a result.

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Risks Inherent In the Limited Partnership Structures Through Which
We Currently Hold Our Interests in the Refinery Business and the Nitrogen Fertilizer Business

Both the Refining Partnership and the Nitrogen Fertilizer Partnership have in place policies to distribute an amount equal to the "available cash" each generates each quarter, which could limit their ability to grow and make acquisitions.

The current policies of both the board of directors of the Refining Partnership's general partner and the Nitrogen Fertilizer Partnership's general partner is to distribute an amount equal to the available cash generated by each partnership each quarter to their respective unitholders. As a result of their respective cash distribution policies, the Refining Partnership and the Nitrogen Fertilizer Partnership will rely primarily upon external financing sources, including commercial bank borrowings and the issuance of debt and equity securities, to fund acquisitions and expansion capital expenditures. As such, to the extent they are unable to finance growth externally, their respective cash distribution policies will significantly impair their ability to grow. The board of directors of the general partner of either the Refining Partnership or the Nitrogen Fertilizer Partnership may modify or revoke its cash distribution policy at any time at its discretion, including in such a manner that would result in an elimination of cash distributions regardless of the amount of available cash they generate. Each board of directors will determine the cash distribution policy it deems advisable for them on an independent basis.

In addition, because of their respective distribution policies, their growth, if any, may not be as robust as that of businesses that reinvest their available cash to expand ongoing operations. To the extent either issues additional units in connection with any acquisitions or expansion capital expenditures or as in-kind distributions, current unitholders will experience dilution and the payment of distributions on those additional units will decrease the amount each distributes in respect of each of its outstanding units. There are no limitations in their respective partnership agreements on either the Refining Partnership's or the Nitrogen Fertilizer Partnership's ability to issue additional units, including units ranking senior to the outstanding common units. The incurrence of additional commercial borrowings or other debt to finance their growth strategy would result in increased interest expense, which, in turn, would reduce the available cash they have to distribute to unitholders (including us).

Each of the Refining Partnership and the Nitrogen Fertilizer Partnership may not have sufficient available cash to pay any quarterly distribution on their respective common units. Furthermore, neither is required to make distributions to holders of its common units on a quarterly basis or otherwise, and both may elect to distribute less than all of their respective available cash.

Either or both of the Refining Partnership or the Nitrogen Fertilizer Partnership may not have sufficient available cash each quarter to enable the payment of distributions to common unitholders. The Refining Partnership and the Nitrogen Fertilizer Partnership are separate public companies, and available cash generated by one of them will not be used to make distributions to common unitholders of the other. Furthermore, their respective partnership agreements do not require either to pay distributions on a quarterly basis or otherwise. The board of directors of the general partner of either the Refining Partnership or the Nitrogen Fertilizer Partnership may at any time, for any reason, change its cash distribution policy or decide not to make any distribution. The amount of cash they will be able to distribute in respect of their common units principally depends on the amount of cash they generate from operations, which is directly dependent upon the margins each business generates. Please see "— Risks Related to the Petroleum Business — The price volatility of crude oil and other feedstocks, refined products and utility services may have a material adverse effect on our profitability and our ability to pay distributions to unitholders" and "— Risks Related to the Nitrogen Fertilizer Business — The nitrogen fertilizer business is, and nitrogen fertilizer prices are, cyclical and highly volatile, and the nitrogen fertilizer business has experienced substantial downturns in the past. Cycles in demand and pricing could potentially expose the nitrogen fertilizer business to significant fluctuations in its operating and financial results and

have a material adverse effect on our results of operations, financial condition and cash flows."

If either the Refining Partnership or the Nitrogen Fertilizer Partnership were to be treated as a corporation for U.S. federal income tax purposes or if they become subject to entity-level taxation for state tax purposes, such entity's cash available for distribution to its common unitholders, including to us, would be substantially reduced, likely causing a substantial reduction in the value of such entity's common units, including the common units held by us.
The anticipated after-tax economic benefit of an investment in common units of the Refining Partnership or the Nitrogen Fertilizer Partnership depends largely on each being treated as a partnership for U.S. federal income tax purposes. Despite the fact that the Refining Partnership or the Nitrogen Fertilizer Partnership are each organized as a limited partnership under Delaware law, each would be treated as a corporation for U.S. federal income tax purposes unless it satisfies a “qualifying income” requirement. One or both of them may not find it possible to meet this qualifying income requirement, or may inadvertently fail to meet this qualifying income requirement.

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In addition, on January 24, 2017, final regulations regarding which activities give rise to qualifying income within the meaning of Section 7704 of the Code (the "Final Regulations") were published in the Federal Register. The Final Regulations are effective as of January 19, 2017, and apply to taxable years beginning on or after January 19, 2017. We do not believe the Final Regulations affect the Refining Partnership and the Nitrogen Fertilizer Partnership's ability to be treated as a partnership for U.S. federal income tax purposes. However, there are no assurances that the Final Regulations will not be revised to take a position that is contrary to our interpretation of the current law.

If either the Refining Partnership or the Nitrogen Fertilizer Partnership were to be treated as a corporation for U.S. federal income tax purposes, they would pay U.S. federal income tax on all of their taxable income at the corporate tax rate. Distributions to their common unitholders (including us) would generally be taxed again as corporate distributions, and no income, gains, losses or deductions would flow through to such common unitholders. Because a tax would be imposed upon them as a corporation, their cash available for distribution to common unitholders would be substantially reduced. Therefore, treatment of the Refining Partnership or the Nitrogen Fertilizer Partnership as a corporation would result in a material reduction in the anticipated cash flow and after-tax return to their common unitholders (including us), likely causing a substantial reduction in the value of such common units.

Increases in interest rates could adversely impact the price of the Refining Partnership's or the Nitrogen Fertilizer Partnership's common units and the Refining Partnership's or the Nitrogen Fertilizer Partnership's ability to issue additional equity to make acquisitions, incur debt or for other purposes.

We expect that the price of the Refining Partnership's or the Nitrogen Fertilizer Partnership's common units will be impacted by the level of the Refining Partnership's or the Nitrogen Fertilizer Partnership's quarterly cash distributions and implied distribution yield. The distribution yield is often used by investors to compare and rank related yield-oriented securities for investment decision-making purposes. Therefore, changes in interest rates may affect the yield requirements of investors who invest in the Refining Partnership's or the Nitrogen Fertilizer Partnership's common units, and a rising interest rate environment could have a material adverse impact on the price of the Refining Partnership's or the Nitrogen Fertilizer Partnership's common units (and therefore the value of our investment in the Refining Partnership and/or the Nitrogen Fertilizer Partnership) as well as the Refining Partnership's or the Nitrogen Fertilizer Partnership's ability to issue additional equity to make acquisitions or to incur debt.

We may have liability to repay distributions that are wrongfully distributed to us.

Under certain circumstances, we may, as a holder of common units in the Refining Partnership and the Nitrogen Fertilizer Partnership, have to repay amounts wrongfully returned or distributed to us. Under the Delaware Revised Uniform Limited Partnership Act, a partnership may not make distributions to its unitholders if the distribution would cause its liabilities to exceed the fair value of its assets. Delaware law provides that for a period of three years from the date of an impermissible distribution, limited partners who received the distribution and who knew at the time of the distribution that it violated Delaware law will be liable to the company for the distribution amount.

Public investors own approximately 66% of the nitrogen fertilizer business through the Nitrogen Fertilizer Partnership and approximately 34% of the petroleum business through the Refining Partnership. Although we own the general partner of both the Refining Partnership and the Nitrogen Fertilizer Partnership, the general partners owe a duty of good faith to public unitholders, which could cause them to manage their respective businesses differently than if there were no public unitholders.

Public investors own approximately 66% of the Nitrogen Fertilizer Partnership's common units and approximately 34% of the Refining Partnership's common units. We are not entitled to receive all of the cash generated by the nitrogen fertilizer business or the petroleum business or freely transfer money from the nitrogen fertilizer business to

finance operations at the petroleum business or vice versa. Furthermore, although we own the general partner of both the Refining Partnership and the Nitrogen Fertilizer Partnership, the general partners are subject to certain fiduciary duties, which may require the general partners to manage their respective businesses in a way that may differ from our best interests.

The general partners of the Refining Partnership and the Nitrogen Fertilizer Partnership have limited their liability, replaced default fiduciary duties and restricted the remedies available to common unitholders, including us, for actions that, without these limitations and reductions might otherwise constitute breaches of fiduciary duty.

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The respective partnership agreements of the Refining Partnership and the Nitrogen Fertilizer Partnership limit the liability and replace the fiduciary duties of their respective general partner, while also restricting the remedies available to each partnership's common unitholders, including us, for actions that, without these limitations and reductions, might constitute breaches of fiduciary duty. Delaware partnership law permits such contractual reductions of fiduciary duty. The partnership agreements contain provisions that replace the standards to which each general partner would otherwise be held by state fiduciary duty law. For example:

- The partnership agreements permit each partnership's general partner to make a number of decisions in its individual capacity, as opposed to its capacity as general partner. This entitles its general partner to consider only the interests and factors that it desires, and means that it has no duty or obligation to give any consideration to any interest of, or factors affecting, any limited partner.

- The partnership agreements provide that each partnership's general partner will not have any liability to unitholders for decisions made in its capacity as general partner so long as (i) in the case of the Nitrogen Fertilizer Partnership, it acted in good faith, meaning it believed that the decision was in the best interest of the Nitrogen Fertilizer Partnership and (ii) in the case of the Refining Partnership, it did not make such decisions in bad faith, meaning it believed that the decisions were adverse to the Refining Partnership's interests.

- The partnership agreements provide that each partnership's general partner and the officers and directors of its general partner will not be liable for monetary damages to common unitholders, including us, for any acts or omissions unless there has been a final and non-appealable judgment entered by a court of competent jurisdiction determining that (i) in the case of the Nitrogen Fertilizer Partnership, the general partner or its officers or directors acted in bad faith or engaged in fraud or willful misconduct, or in, the case of a criminal matter, acted with knowledge that the conduct was criminal and (ii) in the case of the Refining Partnership, such losses or liabilities were the result of the conduct of our general partner or such officer or director engaged in by it in bad faith or with respect to any criminal conduct, with the knowledge that its conduct was unlawful.

In addition, the Refining Partnership's partnership agreement provides that its general partner will not be in breach of its obligations thereunder or its duties to the Refining Partnership or its limited partners if a transaction with an affiliate or the resolution of a conflict of interest is either (i) approved by the conflicts committee of its board of directors of the general partner, although the general partner is not obligated to seek such approval; or (ii) approved by the vote of a majority of the outstanding units, excluding any units owned by the general partner and its affiliates. In addition, the Nitrogen Fertilizer Partnership's partnership agreement (i) generally provides that affiliated transactions and resolutions of conflicts of interest not approved by the conflicts committee of the board of directors of its general partner and not involving a vote of unitholders must be on terms no less favorable to the Nitrogen Fertilizer Partnership than those generally being provided to or available from unrelated third parties or be "fair and reasonable" to the Nitrogen Fertilizer Partnership, as determined by its general partner in good faith, and that, in determining whether a transaction or resolution is "fair and reasonable," the general partner may consider the totality of the relationships between the parties involved, including other transactions that may be particularly advantageous or beneficial to affiliated parties, including us and (ii) provides that in resolving conflicts of interest, it will be presumed that in making its decision, the general partner or its conflicts committee acted in good faith, and in any proceeding brought by or on behalf of any holder of common units, the person bringing or prosecuting such proceeding will have the burden of overcoming such presumption.

With respect to the common units that we own, we have agreed to be bound by the provisions set forth in each partnership agreement, including the provisions described above.

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The Refining Partnership and the Nitrogen Fertilizer Partnership are managed by the executive officers of their general partners, some of whom are employed by and serve as part of the senior management team of the Company. Conflicts of interest could arise as a result of this arrangement.

The Refining Partnership and the Nitrogen Fertilizer Partnership is each managed by the executive officers of their general partners, some of whom are employed by and serve as part of the senior management team of the Company. Furthermore, although both the Refining Partnership and the Nitrogen Fertilizer Partnership have entered into services agreements with the Company under which they compensate the Company for the services of its management, the Company's management is not required to devote any specific amount of time to the petroleum business or the nitrogen fertilizer business and may devote a substantial majority of their time to the business of the Company. Moreover the Company may terminate the services agreement with the Refining Partnership and/or the Nitrogen Fertilizer Partnership at any time, in each case subject to a 180-day notice period. In addition, key executive officers of the Company, including its president and chief executive officer, chief financial officer and general counsel, will face conflicts of interest if decisions arise in which the Refining Partnership or the Nitrogen Fertilizer Partnership and the Company have conflicting points of view or interests.

Item 1B. Unresolved Staff Comments

There are no material unresolved written comments that were received from the SEC staff 180 days or more before the end of our fiscal year relating to our periodic or current reports under the Exchange Act.

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Item 2. Properties

The following table contains certain information regarding our principal properties:

Location	Acres	Own/Lease	Use
Coffeyville, KS	440	Own	Refining Partnership: oil refinery and office buildings Nitrogen Fertilizer Partnership: fertilizer plant
Wynnewood, OK	400	Own	Refining Partnership: oil refinery, office buildings, refined oil storage
East Dubuque, IL	210	Own	Nitrogen Fertilizer Partnership: fertilizer plant and fertilizer storage
Montgomery County, KS (Coffeyville Station)	30	Own	Refining Partnership: crude oil storage
Montgomery County, KS (Broome Station)	20	Own	Refining Partnership: crude oil storage
Cowley County, KS (Hooser Station)	70	Own	Refining Partnership: crude oil storage
Cushing, OK	138	Own	Refining Partnership: crude oil storage

We also lease property for our executive office which is located at 2277 Plaza Drive in Sugar Land, Texas. Additionally, other administrative office space is leased in Kansas City, Kansas.

As of December 31, 2017, the petroleum business owns crude oil storage capacity of approximately (i) 1.5 million barrels that supports the gathering system and the Coffeyville refinery, (ii) 0.9 million barrels at the Wynnewood refinery and (iii) 1.5 million barrels in Cushing. The petroleum business leases additional crude oil storage capacity of approximately 2.3 million barrels in Cushing, and 0.2 million barrels in Duncan, Oklahoma. In addition to crude oil storage, the petroleum business owns over 4.6 million barrels of combined refined products and feedstocks storage capacity. The nitrogen fertilizer business has the capacity to store approximately 160,000 tons of UAN and 80,000 tons of ammonia. We believe that our owned and leased facilities are sufficient for our operating needs.

Item 3. Legal Proceedings

We are, and will continue to be, subject to litigation from time to time in the ordinary course of our business, including matters such as those described under "Business — Environmental Matters." We also incorporate by reference into this Part I, Item 3 of this Report, the information regarding the lawsuits and proceedings described and referenced in Note 15 ("Commitments and Contingencies") to our Consolidated Financial Statements as set forth in Part II, Item 8 of this Report. In accordance with accounting principles generally accepted in the United States of America ("GAAP"), we record a liability when it is both probable that a liability has been incurred and the amount of the loss can be reasonably estimated. These provisions are reviewed at least quarterly and adjusted to reflect the impacts of negotiations, settlements, rulings, advice of legal counsel, and other information and events pertaining to a particular case. Although we cannot predict with certainty the ultimate resolution of lawsuits, investigations or claims asserted against us, we do not believe that any currently pending legal proceeding or proceedings to which we are a party will have a material adverse effect on our business, financial condition or results of operations.

Item 4. Mine Safety Disclosures

Not applicable.

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PART II

Item 5. Market For Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Market Information

Our common stock, which is listed on the NYSE under the symbol "CVI" commenced trading on October 23, 2007. The table below sets forth, for the quarter indicated, the high and low sales prices per share of our common stock for our most recent fiscal years:

2017	High	Low
First Quarter	$25.91	$18.88
Second Quarter	23.20	17.53
Third Quarter	26.35	16.75
Fourth Quarter	38.25	25.35

2016	High	Low
First Quarter	$38.98	$22.05
Second Quarter	26.57	14.87
Third Quarter	16.39	13.01
Fourth Quarter	25.41	12.03

Holders of Record

As of February 20, 2018, there were 124 holders of record of our common stock. Because many of our shares of common stock are held by brokers and other institutions on behalf of stockholders, we are unable to estimate the total number of beneficial owners represented by these record holders.

CVR Energy, Inc. Dividend Policy

On January 24, 2013, the board of directors of the Company adopted a quarterly cash dividend policy. Dividends are subject to change at the discretion of the board of directors.

The following is a summary of the quarterly and special dividends paid to stockholders during the years ended December 31, 2017 and 2016:

	December 31, 2016	March 31, 2017	June 30, 2017	September 30, 2017	Total Dividends Paid in 2017
	(in millions, except per share data)				
Dividend type	Quarterly	Quarterly	Quarterly	Quarterly	
Amount paid to IEP	$35.6	$ 35.6	$ 35.6	$ 35.6	$ 142.4
Amounts paid to public stockholders	7.8	7.8	7.8	7.8	31.3
Total amount paid	$43.4	$ 43.4	$ 43.4	$ 43.4	$ 173.7
Per common share	$0.50	$ 0.50	$ 0.50	$ 0.50	$ 2.00
Shares outstanding	86.8	86.8	86.8	86.8	

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	December 31, 2015	March 31, 2016	June 30, 2016	September 30, 2016	Total Dividends Paid in 2016
	(in millions, except per share data)				
Dividend type	Quarterly	Quarterly	Quarterly	Quarterly	
Amount paid to IEP	$35.6	$ 35.6	$ 35.6	$ 35.6	$ 142.4
Amounts paid to public stockholders	7.8	7.8	7.8	7.8	31.2
Total amount paid	$43.4	$ 43.4	$ 43.4	$ 43.4	$ 173.6
Per common share	$0.50	$ 0.50	$ 0.50	$ 0.50	$ 2.00
Shares outstanding	86.8	86.8	86.8	86.8	

On February 21, 2018, the board of directors of the Company declared a cash dividend for the fourth quarter of 2017 to the Company's stockholders of $0.50 per share, or $43.4 million in aggregate. The dividend will be paid on March 12, 2018 to stockholders of record at the close of business on March 5, 2018.

Our ability to pay cash dividends is dependent on the ability of our subsidiaries to make distributions to us. The cash distribution policies of the Nitrogen Fertilizer Partnership and the Refining Partnership are described below. Furthermore, the ability of the Nitrogen Fertilizer Partnership and the Refining Partnership to make distributions to us is limited by the Refining Partnership's Amended and Restated ABL Credit Facility and the indenture governing the 2022 Notes and the Nitrogen Fertilizer Partnership's indenture governing the 2023 Notes and the ABL Credit Facility. See Part II, Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations — Liquidity and Capital Resources" for a discussion of those limitations.

CVR Partners, LP Cash Distribution Policy

The current policy of the board of directors of the Nitrogen Fertilizer Partnership's general partner is to distribute all available cash the Nitrogen Fertilizer Partnership generated on a quarterly basis. Cash distributions will be made to the common unitholders of record on the applicable record date, generally within 60 days after the end of each quarter. Available cash for each quarter will be determined by the board of directors of the Nitrogen Fertilizer Partnership's general partner following the end of such quarter. Available cash for each quarter is calculated as Adjusted Nitrogen Fertilizer EBITDA reduced for cash needed for (i) net cash interest expense (excluding capitalized interest) and debt service and other contractual obligations, (ii) maintenance capital expenditures, and (iii) to the extent applicable, major scheduled turnaround expenses, reserves for future operating or capital needs that the board of directors of the Nitrogen Fertilizer Partnership's general partner deems necessary or appropriate, and expenses associated with the East Dubuque Merger, if any. Available cash for distribution may be increased by the release of previously established cash reserves, if any, at the discretion of the board of directors of the Nitrogen Fertilizer Partnership's general partner and available cash is increased by the business interruption insurance proceeds and the impact of purchase accounting. Actual distributions are set by the Nitrogen Fertilizer Partnership's general partner. The board of directors of the Nitrogen Fertilizer Partnership may modify the cash distribution policy at any time, and the partnership agreement does not require the Nitrogen Fertilizer Partnership to make distributions at all. Adjusted EBITDA is defined as EBITDA (net income before interest expense, net, income tax expense, depreciation and amortization) further adjusted for the impact of non-cash share-based compensation, and, where applicable, major scheduled turnaround expenses, gain or loss on extinguishment of debt, loss on disposition of assets, expenses associated with the East Dubuque Merger and business interruption insurance recovery.

The following is a summary of cash distributions paid by the Nitrogen Fertilizer Partnership to unitholders during the years ended December 31, 2017 and 2016 for the respective quarters to which the distributions relate:

	December 31, 2016	March 31, 2017	June 30, 2017	September 30, 2017	Total Dividends Paid in 2017
	(in millions, except per common unit data)				
Amount paid to CRLLC	$—	$0.8	$—	$—	$ 0.8
Amounts paid to public unitholders	—	1.5	—	—	1.5
Total amount paid	$—	$2.3	$—	$—	$ 2.3
Per common unit	$—	$0.02	$—	$—	$ 0.02
Common units outstanding	113.3	113.3	113.3	113.3	

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	December 31, 2015	March 31, 2016	June 30, 2016	September 30, 2016	Total Cash Distributions Paid in 2016
	(in millions, except per common unit data)				
Amount paid to CRLLC	$10.5	$10.5	$6.6	$—	$ 27.6
Amounts paid to public unitholders	9.2	20.1	12.6	—	41.9
Total amount paid	$19.7	$30.6	$19.2	$—	$ 69.5
Per common unit	$0.27	$0.27	$0.17	$—	$ 0.71
Common units outstanding	73.1	113.3	113.3	113.3	

CVR Refining, LP Cash Distribution Policy

The current policy of the board of directors of the Refining Partnership's general partner is to distribute all of the available cash the Refining Partnership generates each quarter. Available cash for distribution for each quarter will be determined by the board of directors of the Refining Partnership's general partner following the end of such quarter and will generally equal Adjusted Petroleum EBITDA reduced for (i) cash needed for debt service, (ii) reserves for environmental and maintenance capital expenditures, (iii) reserves for future major scheduled turnaround expenses and, (iv) to the extent applicable, reserves for future operating or capital needs that the board of directors of the Refining Partnership's general partner deems necessary or appropriate, if any. Available cash for distributions may be increased by the release of previously established cash reserves, if any, and other excess cash, at the discretion of the board of directors of the Refining Partnership's general partner. The board of directors of the Refining Partnership does not intend to maintain excess distribution coverage for the purpose of maintaining stability or growth in the Refining Partnership's quarterly distribution or to otherwise reserve cash for distributions, nor do they intend to incur debt to pay quarterly distributions. Further, it is the intent of the board of directors of the Refining Partnership, subject to market conditions, to finance growth capital externally, and not to reserve cash for unspecified potential future needs. As of the date of this Report, we own approximately 66% of the Refining Partnership's common units, and are entitled to a pro rata percentage of the Refining Partnership's distributions in respect of its common units. The board of directors of the Refining Partnership's general partner may modify the cash distribution policy at any time, and the partnership agreement does not require the Refining Partnership to make distributions at all.

On October 31, 2017, the board of directors of the Refining Partnership's general partner declared a cash distribution to the Refining Partnership's unitholders of $0.94 per common unit. The distribution included amounts paid to CVR Refining Holdings, LLC and affiliates of $96.9 million and amounts paid to non-affiliates of $41.8 million, respectively, or $138.7 million in aggregate. The distributions were paid on November 17, 2017. No cash distributions were paid during 2016.

Stock Performance Graph

The following graph sets forth the cumulative return on our common stock between January 1, 2011 and December 31, 2017, as compared to the cumulative return of the Russell 2000 Index and an industry peer group consisting of CHS Inc., Delek US Holdings, Inc., HollyFrontier Corporation, Phillips 66, and Valero Energy Corporation. The graph assumes an investment of $100 on December 30, 2011 in our common stock, the Russell 2000 Index and the industry peer group, and assumes the reinvestment of dividends where applicable. The closing market price for our common stock on the last trading day of the year ended December 31, 2017 was $37.24. The stock price performance shown on the graph is not intended to forecast and does not necessarily indicate future price performance.

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COMPARISON OF CUMULATIVE TOTAL RETURN
BETWEEN JANUARY 1, 2012 AND DECEMBER 31, 2017
among CVR Energy, Inc., Russell 2000 Index and a peer group

This performance graph shall not be deemed "filed" for purposes of Section 18 of the Exchange Act, or otherwise subject to the liabilities under that Section, and shall not be deemed to be incorporated by reference into any filing under the Securities Act of 1933, as amended (the "Securities Act"), or the Exchange Act.

	Dec '12	Dec '13	Dec '14	Dec '15	Dec '16	Dec '17
CVR Energy, Inc.	314.57	358.04	354.60	378.31	244.10	439.48
Russell 2000 Index	106.36	145.72	150.86	142.24	169.95	192.28
Peer Group	264.52	346.24	324.45	378.74	343.43	390.83

Purchases of Equity Securities by the Issuer

We did not repurchase any of our common stock during the fiscal quarter ended December 31, 2017.

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Item 6. Selected Financial Data

You should read the selected historical consolidated financial data presented below in conjunction with, and the selected historical consolidated and combined financial data presented below is qualified in its entirety by reference to, Item 7 "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our consolidated financial statements and the related notes included elsewhere in this Report.

The selected consolidated financial information presented below under the captions "Statements of Operations Data" and "Cash Flow Data" for the years ended December 31, 2017, 2016 and 2015 and the selected consolidated financial information presented below under the caption "Balance Sheet Data" as of December 31, 2017 and 2016 has been derived from our audited consolidated financial statements included elsewhere in this Report, which financial statements have been audited by Grant Thornton LLP, our independent registered public accounting firm. The selected consolidated financial information presented below under the captions "Statements of Operations Data" and "Cash Flow Data" for the years ended December 31, 2014 and 2013 and the selected consolidated financial information presented below under the caption "Balance Sheet Data" at December 31, 2015, 2014 and 2013 is derived from our audited consolidated financial statements that are not included in this Report.

	Year Ended December 31,				
	2017	2016	2015	2014	2013
	(in millions, except per share data)				
Statements of Operations Data					
Net sales	$5,988.4	$4,782.4	$5,432.5	$9,109.5	$8,985.8
Operating costs and expenses:					
Cost of materials and other	4,882.9	3,847.5	4,190.4	8,066.0	7,563.2
Direct operating expenses(1)	599.5	541.8	584.7	515.1	455.8
Depreciation and amortization	203.3	184.5	156.4	148.1	139.5
Cost of sales	5,685.7	4,573.8	4,931.5	8,729.2	8,158.5
Flood insurance recovery	—	—	(27.3)	—	—
Selling, general and administrative expenses(1)	114.2	109.1	99.0	109.7	113.5
Depreciation and amortization	10.7	8.6	7.7	6.3	3.3
Operating income	177.8	90.9	421.6	264.3	710.5
Interest expense and other financing costs	(110.1)	(83.9)	(48.4)	(40.0)	(50.5)
Interest income	1.1	0.7	1.0	0.9	1.2
Gain (loss) on derivatives, net	(69.8)	(19.4)	(28.6)	185.6	57.1
Loss on extinguishment of debt	—	(4.9)	—	—	(26.1)
Other income (expense), net	1.0	5.7	36.7	(3.7)	13.5
Income (loss) before income tax expense	—	(10.9)	382.3	407.1	705.7
Income tax expense (benefit)	(216.9)	(19.8)	84.5	97.7	183.7
Net income	216.9	8.9	297.8	309.4	522.0
Less: Net income (loss) attributable to noncontrolling interest	(17.5)	(15.8)	128.2	135.5	151.3
Net income attributable to CVR Energy stockholders	$234.4	$24.7	$169.6	$173.9	$370.7
Basic and Diluted earnings per share	$2.70	$0.28	$1.95	$2.00	$4.27
Dividends declared per share	$2.00	$2.00	$2.00	$5.00	$14.25
Weighted-average common shares outstanding:					
Basic and Diluted	86.8	86.8	86.8	86.8	86.8

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	Year Ended December 31,				
	2017	2016	2015	2014	2013
	(in millions)				
Balance Sheet Data					
Cash and cash equivalents	$481.8	$735.8	$765.1	$753.7	$842.1
Working capital	550.5	749.6	789.0	1,031.3	1,228.5
Total assets	3,806.7	4,050.2	3,299.4	3,454.3	3,655.9
Total debt, including current portion	1,166.5	1,164.6	667.1	666.7	666.3
Total CVR stockholders' equity	918.8	858.1	984.1	988.1	1,188.6
Cash Flow Data					
Net cash flow provided by (used in):					
Operating activities	$166.9	$267.5	$536.8	$640.3	$440.1
Investing activities	(195.0)	(201.4)	(150.6)	(296.6)	(250.3)
Financing activities	(225.9)	(95.4)	(374.8)	(432.1)	(243.7)
Net increase (decrease) in cash and cash equivalents	$(254.0)	$(29.3)	$11.4	$(88.4)	$(53.9)
Capital expenditures for property, plant and equipment	$118.6	$132.7	$218.7	$218.4	$256.5

(1) Amounts are shown exclusive of depreciation and amortization.

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Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

You should read the following discussion and analysis of our financial condition and results of operations in conjunction with our consolidated financial statements and related notes included elsewhere in this Report.

Forward-Looking Statements

This Report, including, without limitation, the sections captioned "Business" and "Management's Discussion and Analysis of Financial Condition and Results of Operations," contains "forward-looking statements" as defined by the Securities and Exchange Commission ("SEC"), including statements concerning contemplated transactions and strategic plans, expectations and objectives for future operations. Forward-looking statements include, without limitation:

- statements, other than statements of historical fact, that address activities, events or developments that we expect, believe or anticipate will or may occur in the future;
- statements relating to future financial or operational performance, future dividends, future capital sources and capital expenditures; and
- any other statements preceded by, followed by or that include the words "anticipates," "believes," "expects," "plans," "intends," "estimates," "projects," "could," "should," "may," or similar expressions.

Although we believe that our plans, intentions and expectations reflected in or suggested by the forward-looking statements we make in this Report, including this Management's Discussion and Analysis of Financial Condition and Results of Operations, are reasonable, we can give no assurance that such plans, intentions or expectations will be achieved. These statements are based on assumptions made by us based on our experience and perception of historical trends, current conditions, expected future developments and other factors that we believe are appropriate in the circumstances. Such statements are subject to a number of risks and uncertainties, many of which are beyond our control. You are cautioned that any such statements are not guarantees of future performance and that actual results or developments may differ materially from those projected in the forward-looking statements as a result of various factors, including but not limited to those set forth under the section captioned "Risk Factors" and contained elsewhere in this Report. Such factors include, among others:

- volatile margins in the refining industry and exposure to the risks associated with volatile crude oil prices;
- the availability of adequate cash and other sources of liquidity for the capital needs of our businesses;
- the ability to forecast future financial condition or results of operations and future revenues and expenses of our businesses;
- the effects of transactions involving forward and derivative instruments;
- disruption of the petroleum business' ability to obtain an adequate supply of crude oil;
- changes in laws, regulations and policies with respect to the export of crude oil or other hydrocarbons;
- interruption of the pipelines supplying feedstock and in the distribution of the petroleum business' products;

- competition in the petroleum and nitrogen fertilizer businesses;
- capital expenditures and potential liabilities arising from environmental laws and regulations;
- changes in ours or the Refining Partnership's or Nitrogen Fertilizer Partnership's credit profile;
- the cyclical nature of the nitrogen fertilizer business;
- the seasonal nature of the petroleum business;
- the supply and price levels of essential raw materials of our businesses;
- the risk of a material decline in production at our refineries and nitrogen fertilizer plants;

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- potential operating hazards from accidents, fire, severe weather, floods or other natural disasters;
- the risk associated with governmental policies affecting the agricultural industry;
- the volatile nature of ammonia, potential liability for accidents involving ammonia that cause interruption to the nitrogen fertilizer business, severe damage to property and/or injury to the environment and human health and potential increased costs relating to the transport of ammonia;
- the dependence of the nitrogen fertilizer business on a few third-party suppliers, including providers of transportation services and equipment;
- new regulations concerning the transportation of hazardous chemicals, risks of terrorism and the security of chemical manufacturing facilities;
- the risk of security breaches;
- the petroleum business' and the nitrogen fertilizer business' dependence on significant customers;
- the potential loss of the nitrogen fertilizer business' transportation cost advantage over its competitors;
- the potential inability to successfully implement our business strategies, including the completion of significant capital programs;
- our ability to continue to license the technology used in the petroleum business and nitrogen fertilizer business operations;
- our petroleum business' ability to purchase RINs on a timely and cost effective basis;
- our petroleum business' continued ability to secure environmental and other governmental permits necessary for the operation of its business;
- existing and proposed environmental laws and regulations, including those relating to climate change, alternative energy or fuel sources, and existing and future regulations related to the end-use and application of fertilizers;
- refinery and nitrogen fertilizer facilities' operating hazards and interruptions, including unscheduled maintenance or downtime, and the availability of adequate insurance coverage;
- instability and volatility in the capital and credit markets; and
- potential exposure to underfunded pension obligations of affiliates as a member of the controlled group of Mr. Icahn.

All forward-looking statements contained in this Report only speak as of the date of this Report. We undertake no obligation to publicly update or revise any forward-looking statements to reflect events or circumstances that occur after the date of this Report, or to reflect the occurrence of unanticipated events, except to the extent required by law.

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Overview and Executive Summary

We are a diversified holding company primarily engaged in the petroleum refining and nitrogen fertilizer manufacturing industries through our holdings in the Refining Partnership and the Nitrogen Fertilizer Partnership. The Refining Partnership is an independent petroleum refiner and marketer of high value transportation fuels. The Nitrogen Fertilizer Partnership produces nitrogen fertilizers in the form of UAN and ammonia. We own the general partner and approximately 66% and 34%, respectively, of the outstanding common units representing limited partner interests in each of the Refining Partnership and the Nitrogen Fertilizer Partnership.

We operate under two business segments: petroleum and nitrogen fertilizer. For the fiscal years ended December 31, 2017, 2016 and 2015, we generated consolidated net sales of $6.0 billion, $4.8 billion and $5.4 billion, respectively, and operating income of $177.8 million, $90.9 million and $421.6 million, respectively. The petroleum business generated net sales of $5.7 billion, $4.4 billion and $5.2 billion, and the nitrogen fertilizer business generated net sales of $330.8 million, $356.3 million and $289.2 million, in each case, for the years ended December 31, 2017, 2016 and 2015, respectively. The petroleum business generated operating income of $203.8 million, $77.8 million and $361.7 million for the years ended December 31, 2017, 2016 and 2015, respectively. The nitrogen fertilizer business generated operating (loss) income of $(9.2) million, $26.8 million and $68.7 million for the years ended December 31, 2017, 2016 and 2015, respectively.

Refer to Part I, Item 1, Business, of this Report for a detailed discussion of our business and the petroleum and nitrogen fertilizer segments.

East Dubuque Merger

On April 1, 2016, the Nitrogen Fertilizer Partnership completed the East Dubuque Merger as contemplated by the Merger Agreement, whereby the Nitrogen Fertilizer Partnership acquired CVR Nitrogen and CVR Nitrogen GP. Pursuant to the East Dubuque Merger, the Nitrogen Fertilizer Partnership acquired the East Dubuque Facility. The primary reasons for the East Dubuque Merger were to expand the Nitrogen Fertilizer Partnership's geographical footprint, diversify its raw material feedstocks, widen its customer reach and increase its potential for cash-flow generation. In accordance with accounting principles generally accepted in the United States of America ("GAAP") and in accordance with the Financial Accounting Standards Board's Accounting Standards Codification Topic 805 - Business Combinations, the Nitrogen Fertilizer Partnership accounted for the East Dubuque Merger as an acquisition of a business with the Nitrogen Fertilizer Partnership as the acquirer.

Immediately following the closing of the East Dubuque Merger and as of December 31, 2017, public security holders held approximately 66% of total Nitrogen Fertilizer Partnership common units, and CRLLC held approximately 34% of total Nitrogen Fertilizer Partnership common units in addition to owning 100% of the Nitrogen Fertilizer Partnership's general partner.

Refer to Part II, Item 8, Note 3 ("Acquisition") of this Report for further discussion of the East Dubuque Merger.

Refining Partnership Initial Public Offering

On January 23, 2013, the Refining Partnership completed the Refining Partnership IPO. The Refining Partnership sold 24,000,000 common units at a price of $25.00 per unit. Of the common units issued, 4,000,000 units were purchased by an affiliate of Icahn Enterprises L.P. ("IEP"). Additionally, on January 30, 2013, the underwriters closed their option to purchase an additional 3,600,000 common units at a price of $25.00 per unit. The common units, which are listed on the NYSE, began trading on January 17, 2013 under the symbol "CVRR." Immediately following the

Refining Partnership IPO and through May 19, 2013, CVR Energy indirectly owned approximately 81% of the Refining Partnership's outstanding common units and 100% of the Refining Partnership's general partner, which holds a non-economic general partner interest.

As of December 31, 2017, public security holders held approximately 34% of all outstanding limited partner interests of the Refining Partnership (including common units owned by affiliates of IEP, representing approximately 3.9% of all outstanding limited partner interests), and CVR Refining Holdings held approximately 66% of all outstanding limited partner interests of the Refining Partnership. In addition, CVR Refining Holdings owns 100% of the Refining Partnership's general partner, CVR Refining GP, which holds a non-economic general partner interest.

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Major Influences on Results of Operations

Petroleum Business

The earnings and cash flows of the petroleum business are primarily affected by the relationship between refined product prices and the prices for crude oil and other feedstocks that are processed and blended into refined products. The cost to acquire crude oil and other feedstocks and the price for which refined products are ultimately sold depend on factors beyond the petroleum business' control, including the supply of and demand for crude oil, as well as gasoline and other refined products which, in turn, depend on, among other factors, changes in domestic and foreign economies, weather conditions, domestic and foreign political affairs, production levels, the availability of imports, the marketing of competitive fuels and the extent of government regulation. Because the petroleum business applies first-in first-out ("FIFO") accounting to value its inventory, crude oil price movements may impact net income in the short term because of changes in the value of its unhedged on-hand inventory. The effect of changes in crude oil prices on the petroleum business results of operations is influenced by the rate at which the prices of refined products adjust to reflect these changes.

The prices of crude oil and other feedstocks and refined products are also affected by other factors, such as product pipeline capacity, local market conditions and the operating levels of competing refineries. Crude oil costs and the prices of refined products have historically been subject to wide fluctuations. Widespread expansion or upgrades of competitors' facilities, price volatility, international political and economic developments and other factors are likely to continue to play an important role in refining industry economics. These factors can impact, among other things, the level of inventories in the market, resulting in price volatility and a reduction in product margins. Moreover, the refining industry typically experiences seasonal fluctuations in demand for refined products, such as increases in the demand for gasoline during the summer driving season and for volatile seasonal exports of diesel from the United States Gulf Coast markets. In addition to current market conditions, there are long-term factors that may impact the demand for refined products. These factors include mandated renewable fuels standards, proposed climate change laws and regulations, and increased mileage standards for vehicles. The petroleum business is also subject to the RFS, which requires it to either blend "renewable fuels" in with its transportation fuels or purchase RINs, in lieu of blending, by March 31, 2018 or otherwise be subject to penalties.

Refer to Part I, Item 1A, Risk Factors, If sufficient RINs are unavailable for purchase, if the petroleum business has to pay a significantly higher price for RINs or if the petroleum business is otherwise unable to meet RFS mandates, the petroleum business' financial condition and results of operations could be materially adversely affected, and Part II, Item 8, Note 15 ("Commitments and Contingencies"), "Environmental, Health and Safety ("EHS") Matters" of this Report for further discussion of the RFS.

The cost of RINs is dependent upon a variety of factors, which include the availability of RINs for purchase, the price at which RINs can be purchased, transportation fuel production levels, the mix of the petroleum business' petroleum products, as well as the fuel blending performed at its refineries and downstream terminals, all of which can vary significantly from period to period. Based upon recent market prices of RINs and current estimates related to the other variable factors, the petroleum business currently estimates that the total cost of RINs will be approximately $200.0 million for the year ending December 31, 2018.

In order to assess its operating performance, the petroleum business compares net sales, less cost of materials and other, or the refining margin, against an industry refining margin benchmark. The industry refining margin benchmark is calculated by assuming that two barrels of benchmark light sweet crude oil are converted into one barrel of conventional gasoline and one barrel of distillate. This benchmark is referred to as the 2-1-1 crack spread. Because we calculate the benchmark margin using the market value of NYMEX gasoline and heating oil against the market value

of NYMEX WTI, we refer to the benchmark as the NYMEX 2-1-1 crack spread, or simply, the 2-1-1 crack spread. The 2-1-1 crack spread is expressed in dollars per barrel and is a proxy for the per barrel margin that a sweet crude oil refinery would earn assuming it produced and sold the benchmark production of gasoline and distillate.

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Although the 2-1-1 crack spread is a benchmark for the refining margin, because the refineries have certain feedstock costs and logistical advantages as compared to a benchmark refinery and their product yield is less than total refinery throughput, the crack spread does not account for all the factors that affect refining margin. The Coffeyville refinery is able to process a blend of crude oil that includes quantities of heavy and medium sour crude oil that has historically cost less than WTI. The Wynnewood refinery has the capability to process blends of a variety of crude oil ranging from medium sour to light sweet crude oil, although isobutane, gasoline components, and normal butane are also typically used. We measure the cost advantage of the crude oil slate by calculating the spread between the price of the delivered crude oil and the price of WTI. The spread is referred to as the consumed crude oil differential. The refining margin can be impacted significantly by the consumed crude oil differential. The consumed crude oil differential will move directionally with changes in the WTS price differential to WTI and the WCS price differential to WTI as both these differentials indicate the relative price of heavier, more sour, crude oil slate to WTI. The correlation between the consumed crude oil differential and published differentials will vary depending on the volume of light medium sour crude oil and heavy sour crude oil the petroleum business purchases as a percent of its total crude oil volume and will correlate more closely with such published differentials the heavier and more sour the crude oil slate. The consumed crude oil cost discount to WTI for 2017 was $0.29 per barrel compared to consumed crude oil cost discounts of $1.58 per barrel in 2016 and $1.12 per barrel in 2015.

The petroleum business produces a high volume of high value products, such as gasoline and distillates. The fact that the actual product specifications used to determine the NYMEX 2-1-1 crack spread are different from the actual production in its refineries is because the prices the petroleum business realizes are different than those used in determining the 2-1-1 crack spread. The difference between its price and the price used to calculate the 2-1-1 crack spread is referred to as gasoline PADD II, Group 3 vs. NYMEX basis, or gasoline basis, and Ultra-Low Sulfur Diesel PADD II, Group 3 vs. NYMEX basis, or Ultra-Low Sulfur Diesel basis. If both gasoline and Ultra-Low Sulfur Diesel basis are greater than zero, this means that prices in its marketing area exceed those used in the 2-1-1 crack spread.

The petroleum business is significantly affected by developments in the markets in which it operates. For example, numerous pipeline expansions in recent years expanding the connectivity of Cushing and Permian Basin markets to the gulf coast, along with lifting the crude oil export ban has resulted in a decrease in the domestic crude advantage. The refining industry is directly impacted by these events and has seen a downward movement in refining margins as a result. The stabilization of oil prices led by Organization of the Petroleum Exporting Countries ("OPEC") decision to lower production volumes and the resurgent shale drilling in the Permian and other tight oil plays are expected to cause price spread volatility as the industry attempts to match infrastructure to supply.

The direct operating expense structure is also important to the petroleum business' profitability. Major direct operating expenses include energy, employee labor, maintenance, contract labor, and environmental compliance. The predominant variable cost is energy, which is comprised primarily of electrical cost and natural gas. The petroleum business is therefore sensitive to the movements of natural gas prices. Assuming the same rate of consumption of natural gas for the year ended December 31, 2017, a $1.00 change in natural gas prices would have increased or decreased the petroleum business' natural gas costs by approximately $12.3 million.

Because crude oil and other feedstocks and refined products are commodities, the petroleum business has no control over the changing market. Therefore, the lower target inventory it is able to maintain significantly reduces the impact of commodity price volatility on its petroleum product inventory position relative to other refiners. This target inventory position is generally not hedged. To the extent its inventory position deviates from the target level, the petroleum business considers risk mitigation activities usually through the purchase or sale of futures contracts on the NYMEX. Its hedging activities carry customary time, location and product grade basis risks generally associated with hedging activities. Because most of its titled inventory is valued under the FIFO costing method, price fluctuations on its target level of titled inventory have a major effect on the petroleum business' financial results from period to

period.

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Safe and reliable operations at the refineries are key to the petroleum business' financial performance and results of operations. Unscheduled downtime at the refineries may result in lost margin opportunity, increased maintenance expense and a temporary increase in working capital investment and related inventory position. The petroleum business seeks to mitigate the financial impact of scheduled downtime, such as major turnaround maintenance, through a diligent planning process that takes into account the margin environment, the availability of resources to perform the needed maintenance, feedstock logistics and other factors. The refineries generally require a facility turnaround every four to five years. The length of the turnaround is contingent upon the scope of work to be completed. The first phase of the Coffeyville refinery's most recent turnaround was completed in November 2015 at a total cost of approximately $102.2 million. The second phase of the Coffeyville turnaround was completed during the first quarter of 2016 at a total cost of approximately $31.5 million. The next turnaround scheduled for the Wynnewood refinery is being performed as a two phase turnaround. The first phase of its current turnaround was completed in November 2017 at a total cost of approximately $67.4 million. The second phase of the Wynnewood turnaround is expected to occur in 2019. Turnaround expenses associated with the second phase of the Wynnewood turnaround are estimated to be approximately $25.0 million. In addition to the two phase turnaround, the petroleum business accelerated certain planned turnaround activities in the first quarter of 2017 on the hydrocracker unit for a catalyst change-out. The petroleum business incurred approximately $13.0 million of major scheduled turnaround expenses for the hydrocracker.

Nitrogen Fertilizer Business

In the nitrogen fertilizer business, earnings and cash flows from operations are primarily affected by the relationship between nitrogen fertilizer product prices, on-stream factors and operating costs and expenses.

The price at which nitrogen fertilizer products are ultimately sold depends on numerous factors, including the global supply and demand for nitrogen fertilizer products which, in turn, depends on, among other factors, world grain demand and production levels, changes in world population, the cost and availability of fertilizer transportation infrastructure, weather conditions, the availability of imports, and the extent of government intervention in agriculture markets.

Nitrogen fertilizer prices are also affected by local factors, including local market conditions and the operating levels of competing facilities. An expansion or upgrade of competitors' facilities, new facility development, political and economic developments and other factors are likely to continue to play an important role in nitrogen fertilizer industry economics. These factors can impact, among other things, the level of inventories in the market, resulting in price volatility and a reduction in product margins. Moreover, the industry typically experiences seasonal fluctuations in demand for nitrogen fertilizer products.

As a result of a favorable global demand environment for grains, nitrogen fertilizer prices rose to near historic levels beginning in 2011. In addition, North American producers began to benefit from lower natural gas prices due to the significant increase in shale basin and other non-conventional production in the region. The combination of higher nitrogen fertilizer prices globally and a feedstock cost advantage led to high margins for North American nitrogen fertilizer producers. This resulted in numerous announcements for expansion plans for existing plants as well as new facility development in the corn belt and the gulf coast. The substantial majority of the additional supply from this expansion phase in North America came online in 2017. The nitrogen fertilizer business expects product pricing may experience volatility as the new supply displaces imports into the U.S.. However, over the longer-term the U.S. is expected to remain a net importer of nitrogen fertilizer with domestic prices influenced by the higher cost of imported tons into the U.S.

Since mid-2013, global nitrogen fertilizer prices have trended down as global grain supply increased and growth in grain demand slowed due to more challenging worldwide economic considerations.

While there is risk of shorter-term volatility given the inherent nature of the commodity cycle, the longer-term fundamentals for the U.S. nitrogen fertilizer industry remain intact. The nitrogen fertilizer business views the anticipated combination of (i) increasing global population, (ii) decreasing arable land per capita, (iii) continued evolution to more protein-based diets in developing countries, (iv) sustained use of corn as feedstock for the domestic production of ethanol and (v) positioning at the lower end of the global cost curve will continue to provide a solid foundation for nitrogen fertilizer producers in the U.S.

In order to assess its operating performance, the nitrogen fertilizer business calculates the product pricing at gate as an input to determine its operating margin. Product pricing at gate represents net sales less freight revenue divided by product sales volume in tons. The nitrogen fertilizer business believes product pricing at gate is a meaningful measure because it sells products at its plant gate and terminal locations' gates ("sold gate") and delivered to the customer's designated delivery site ("sold delivered"). The relative percentage of sold gate versus sold delivered can change period to period. The product pricing at gate provides a measure that is consistently comparable period to period.

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The nitrogen fertilizer business and other competitors in the U.S. farm belt share a significant transportation cost advantage when compared to its out-of-region competitors in serving the U.S. farm belt agricultural market. The nitrogen fertilizer business' products leave the Coffeyville Fertilizer Facility either in railcars for destinations located principally on the Union Pacific Railroad or in trucks for direct shipment to customers. The nitrogen fertilizer business does not currently incur significant intermediate transfer, storage, barge freight or pipeline freight charges; however, it does incur costs to maintain and repair its railcar fleet, including expenses related to regulatory inspections and repairs. For example, many of its railcars require specific regulatory inspections and repairs due on ten-year intervals. The extent and frequency of railcar fleet maintenance and repair costs are generally expected to change based partially on when regulatory inspections and repairs are due for our railcars under the relevant regulations.

The East Dubuque Facility is located in northwest Illinois, in the corn belt. The East Dubuque Facility primarily sells its product to customers located within 200 miles of the facility. In most instances, customers take delivery of nitrogen products at the plant and arrange and pay to transport them to their final destinations by truck. The East Dubuque Facility has direct access to a barge dock on the Mississippi River as well as a nearby rail spur serviced by the Canadian National Railway Company.

The nitrogen fertilizer business upgrades substantially all of its ammonia production at the Coffeyville Fertilizer Facility into UAN and will continue to do so for as long as it makes economic sense. For the years ended December 31, 2017, 2016 and 2015, the nitrogen fertilizer business upgraded approximately 88%, 93% and 96%, respectively, of its ammonia production into UAN, a product that presently generates greater profit than ammonia. The East Dubuque Facility has the flexibility to significantly vary its product mix. This enables the nitrogen fertilizer business to upgrade its ammonia production into varying amounts of UAN, nitric acid and liquid and granulated urea each season, depending on market demand, pricing and storage availability. Product sales at the East Dubuque Facility are heavily weighted toward sales of ammonia and UAN. For both the year ended December 31, 2017 and post-acquisition period ended December 31, 2016, approximately 44%, of the East Dubuque Facility ammonia production tons were upgraded to other products.

The high fixed cost of the Coffeyville Fertilizer Facility's direct operating expense structure also directly affects its profitability. Using a pet coke gasification process, the Coffeyville Fertilizer Facility results in a significantly higher percentage of fixed costs than a natural gas-based fertilizer plant, such as the East Dubuque Facility. In addition, while less than the Coffeyville Fertilizer Facility, the East Dubuque Facility has a significant amount of fixed costs. Major fixed operating expenses include a large portion of electrical energy, employee labor, and maintenance, including contract labor, and outside services.

The nitrogen fertilizer business' largest raw material expense used in the production of ammonia at its Coffeyville Fertilizer Facility is pet coke, which it purchases from the petroleum business and third parties. For the years ended December 31, 2017, 2016 and 2015, the nitrogen fertilizer business incurred approximately $8.1 million, $7.8 million and $11.9 million, respectively, for pet coke, which equaled an average cost per ton of $17, $15 and $25, respectively.

The nitrogen fertilizer business' largest raw material expense used in the production of ammonia at its East Dubuque Facility is natural gas, which it purchases from third parties. The East Dubuque Facility's natural gas process results in a higher percentage of variable costs as compared to the Coffeyville Fertilizer Facility. For the year ended December 31, 2017, and 2016 the East Dubuque Facility incurred approximately $26.3 million and $13.3 million for feedstock natural gas, which equaled an average cost of $3.26 and $2.87 per MMBtu.

Consistent, safe and reliable operations at the nitrogen fertilizer plants are critical to its financial performance and results of operations. In addition, consistent, safe and reliable operations at the Linde air separation unit, which supplies oxygen, nitrogen and compressed dry air to the Coffeyville Facility, is critical to the nitrogen fertilizer

business financial performance and results of operations. Unplanned downtime at either of the facilities or at the Linde air separation unit may result in lost margin opportunity, increased maintenance expense and a temporary increase in working capital investment and related inventory position. The financial impact of planned downtime, such as major turnaround maintenance, is mitigated through a diligent planning process that takes into account margin environment, the availability of resources to perform the needed maintenance, feedstock logistics and other factors.

Historically, the Coffeyville Fertilizer Facility has undergone a full facility turnaround approximately every two to three years. The Coffeyville Fertilizer Facility underwent a full facility turnaround in the third quarter of 2015 and the gasifier, ammonia and UAN units were down for between 17 to 20 days each at a cost of approximately $7.0 million, exclusive of the impacts due to the lost production during the downtime. The Coffeyville Facility is planning to undergo the next scheduled full facility turnaround in the second quarter of 2018, which is expected to last approximately 15 days at an estimated cost of $7.0 million, exclusive of the impact of the lost production during the downtime.

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Historically, the East Dubuque Facility has also undergone a full facility turnaround approximately every two to three years. The East Dubuque Facility underwent a full facility turnaround in the second quarter of 2016 and the ammonia and UAN units were down for approximately 28 days at a cost of approximately $6.6 million, exclusive of the impacts due to the lost production during the downtime. The nitrogen fertilizer business determined that there were more pressing preventative maintenance issues at the East Dubuque Facility, so it completed a scheduled turnaround at the East Dubuque Facility in the third quarter of 2017 and the ammonia and UAN units were down for approximately 14 days at a cost of approximately $2.6 million, exclusive of the impacts of the lost production during the downtime.

Subsequent to the fourth quarter of 2017, the East Dubuque Facility experienced an additional outage caused by a boiler feed water leak resulting in 12 days of downtime, and the associated repair costs were not material.

Agreements With the Refining Partnership and the Nitrogen Fertilizer Partnership

We are party to several agreements with the Nitrogen Fertilizer Partnership that govern the business relations among the Nitrogen Fertilizer Partnership and its affiliates on the one hand and us and our other affiliates on the other hand. In connection with the Refining Partnership IPO in January 2013, some of our subsidiaries party to these agreements became subsidiaries of the Refining Partnership.

These intercompany agreements include (i) the pet coke supply agreement mentioned above, under which the petroleum business sells pet coke to the nitrogen fertilizer business; (ii) a services agreement, pursuant to which we provide certain services to the nitrogen fertilizer business; (iii) a feedstock and shared services agreement, which governs the provision of feedstocks, including, but not limited to, hydrogen, high-pressure steam, nitrogen, instrument air, oxygen and natural gas; (iv) a hydrogen purchase and sale agreement, which governs the purchase of hydrogen for the Coffeyville Fertilizer Facility; (v) a raw water and facilities sharing agreement, which allocates raw water resources between the two businesses; (vi) an easement agreement; (vii) an environmental agreement; and (viii) a lease agreement pursuant to which the petroleum business leases office space and laboratory space to the Nitrogen Fertilizer Partnership. These agreements were not the result of arm's-length negotiations and the terms of these agreements are not necessarily at least as favorable to the parties to these agreements as terms which could have been obtained from unaffiliated third parties.

In connection with the Refining Partnership IPO, we entered into a number of agreements with the Refining Partnership, including (i) a $150.0 million intercompany credit facility between CRLLC and the Refining Partnership and (ii) a services agreement, pursuant to which we provide certain services to the petroleum business. The intercompany credit facility matures in January 2019.

On February 9, 2016, CRLLC and the Nitrogen Fertilizer Partnership entered into a guaranty, pursuant to which CRLLC agreed to guaranty the indebtedness outstanding under the Nitrogen Fertilizer Partnership's credit facility. Simultaneously with the execution of the Merger Agreement, the Nitrogen Fertilizer Partnership entered into a commitment letter (the "commitment letter") with CRLLC and a $300.0 million senior term loan credit facility (the "CRLLC Facility") with CRLLC. Refer to Part II, Item 8, Note 18 ("Related Party Transactions") of this Report for further discussion of the CRLLC Facility.

Crude Oil Supply Agreement

Refer to Part II, Item 8, Note 15 ("Commitments and Contingencies") of this Report for information on the crude oil supply agreement.

Joint Ventures

Refer to Part II, Item 8, Note 7 ("Equity Method Investments") of this Report for information on the joint ventures.

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Factors Affecting Comparability

Our historical results of operations for the periods presented may not be comparable with prior periods or to our results of operations in the future for the reasons presented and discussed below.

	Year Ended December 31,		
	2017	2016	2015
	(in millions)		
Loss on extinguishment of debt(1)	$—	$4.9	$ —
Loss on derivatives, net	69.8	9.4	28.6
Major scheduled turnaround expenses(2)	83.3	38.1	109.2
Flood insurance recovery(3)	—	—	(27.3)

(1) Represents a loss on extinguishment of debt incurred by CVR Partners in June 2016 in connection with the repurchase of senior notes assumed in the East Dubuque Merger, which includes a prepayment premium and write-off of the unamortized purchase accounting adjustment.

(2) Represents expense associated with major scheduled turnaround activities performed at the Coffeyville and Wynnewood refineries, the East Dubuque Facility and the Coffeyville Facility.

(3) Represents an insurance recovery from environmental insurance carriers as a result of the flood and crude oil discharge at the Coffeyville refinery in June/July 2007. Refer to Part II, Item 8, Note 15 ("Commitments and Contingencies") of this Report for further details.

East Dubuque Merger

On April 1, 2016, the Nitrogen Fertilizer Partnership completed the East Dubuque Merger, whereby it acquired the East Dubuque Facility. The consolidated financial statements and key operating metrics of the nitrogen fertilizer business include the results of the East Dubuque Facility beginning on April 1, 2016, the date of the closing of the acquisition. Refer to Part II, Item 8, Note 3 ("Acquisition") of this Report for further discussion.

Noncontrolling Interest

The non-controlling interest related to the Refining Partnership reflected in our consolidated financial statements is approximately 34%.

Immediately following the closing of the East Dubuque Merger and as of December 31, 2017, the noncontrolling interest related to the Nitrogen Fertilizer Partnership reflected in our consolidated financial statements is approximately 66%. Prior to April 1, 2016, the noncontrolling interest related to the Nitrogen Fertilizer Partnership reflected in our consolidated financial statements was approximately 47%.

The revenue and expenses from the Refining Partnership and Nitrogen Fertilizer Partnership are consolidated with CVR Energy's Consolidated Statements of Operations because each of the general partners is owned by CVR Refining Holdings and CRLLC, respectively, wholly-owned subsidiaries of CVR Energy. Therefore, CVR Energy has the

ability to control the activities of the Refining Partnership and Nitrogen Fertilizer Partnership. However, the percentage of ownership held by the public unitholders for the Refining Partnership and the Nitrogen Fertilizer Partnership is reflected as net income attributable to noncontrolling interest in our Consolidated Statements of Operations and reduces consolidated net income to derive net income attributable to CVR Energy.

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Distributions to CVR Partners Unitholders

Refer to Part II, Item 5, "CVR Partners, LP Cash Distribution Policy," of this Report for a summary of CVR Partners' distribution policy and the cash distributions paid to the Nitrogen Fertilizer Partnership unitholders during the years ended December 31, 2017 and 2016.

Distributions to CVR Refining Unitholders

Refer to Part II, Item 5, "CVR Refining, LP Cash Distribution Policy," of this Report for a summary of CVR Refining's distribution policy and the cash distributions paid to the Refining Partnership unitholders during the years ended December 31, 2017 and 2016.

CVR Energy Dividends

Refer to Part II, Item 5, "CVR Energy, Inc. Dividend Policy," of this Report for a summary of our dividend policy and the cash dividends paid to our stockholders during the years ended December 31, 2017 and 2016.

Industry Factors

Petroleum Business

Earnings for the petroleum business depend largely on its refining margins, which have been and continue to be volatile. Refining margins are impacted primarily by the relationship or spread between crude oil and refined product prices. The petroleum business' refineries reside in the Group 3 marketing region and are supplied with advantaged domestic and Canadian crudes.

Crude oil discounts are a major contributor to the petroleum business earnings. Canadian heavy sour crude oil production continues to grow and with limited export capacity provides advantaged crude to the mid-continent refiners. As a result of an expansion project, the petroleum business increased its ability to process higher volumes of heavy sour crude oil and take advantage of this opportunity.

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Additionally, the relationship between current spot prices and future prices can impact profitability. As such, the petroleum business believes that its approximately 6.4 million barrels of crude oil storage in Cushing, Oklahoma and other locations allows it to take advantage of the contango market when such conditions exist. Contango markets are generally characterized by prices for future delivery that are higher than the current, or spot, price of a commodity. This condition provides economic incentive to hold or carry a commodity in inventory.

Nitrogen Fertilizer Business

Commodities

The nitrogen fertilizer business' products are globally traded commodities and are subject to price competition. The customers for its products make their purchasing decisions principally on the basis of delivered price and, to a lesser extent, on customer service and product quality. The selling prices of its products fluctuate in response to global market conditions and changes in supply and demand.

Agricultural

The three primary forms of nitrogen fertilizer used in the United States of America are ammonia, urea and UAN. Unlike ammonia and urea, UAN can be applied throughout the growing season and can be applied in tandem with pesticides and herbicides, providing farmers with flexibility and cost savings. As a result of these factors, UAN typically commands a premium price to urea and ammonia, on a nitrogen equivalent basis.

Nutrients are depleted in soil over time and therefore must be replenished through fertilizer use. Nitrogen is the most quickly depleted nutrient and must be replenished every year, whereas phosphate and potassium can be retained in soil for up to three years. Plants require nitrogen in the largest amounts and it accounts for approximately 57% of primary fertilizer consumption on a nutrient ton basis, per the International Fertilizer Industry Association.

Supply and Demand Factors

Global demand for fertilizers is driven primarily by grain demand and prices, which, in turn, are driven by population growth, farmland per capita, dietary changes in the developing world and increased consumption of bio-fuels. According to the International Fertilizer Industry Association, from 1974 to 2015, global fertilizer demand grew 2.0% annually. Global fertilizer use, consisting of nitrogen, phosphate and potassium, is projected to increase by 34% between 2010 and 2030 to meet global food demand according to a study funded by the Food and Agricultural Organization of the United Nations. Currently, the developed world uses fertilizer more intensively than the developing world, but sustained economic growth in emerging markets is increasing food demand and fertilizer use. In addition, populations in developing countries are shifting to more protein-rich diets as their incomes increase, with such consumption requiring more grain for animal feed. As an example, China's wheat and coarse grains production is estimated to have increased 33% between 2007 and 2017, but still failed to keep pace with increases in demand, prompting China to grow its wheat and coarse grain imports by more than 1,200% over the same period, according to the United States Department of Agriculture ("USDA").

The United States is the world's largest exporter of coarse grains, accounting for 34% of world exports and 30% of world production for the fiscal year ended September 30, 2017, according to the USDA. A substantial amount of nitrogen is consumed in production of these crops to increase yield. Based on Fertecon's 2017 estimates, the United States is the world's third largest consumer of nitrogen fertilizer and the world's largest importer of nitrogen fertilizer. Fertecon estimates indicate that the United States represented 11% of total global nitrogen fertilizer consumption for 2017, with China and India as the top consumers representing 27% and 14% of total global nitrogen fertilizer consumption, respectively.

North American nitrogen fertilizer producers predominantly use natural gas as their primary feedstocks. Over the last five years, U.S. oil and natural gas reserves have increased significantly due to, among other factors, advances in extracting shale oil and gas as well as relatively high oil and gas prices. More recently, global demand has slowed

with production staying steady even as oil and gas prices have declined substantially over the past two years. This has led to significantly reduced natural gas and oil prices as compared to historical prices. As a result, North America has become a low-cost region for nitrogen fertilizer production.

The decline of natural gas prices have led to existing and new producers considering construction of new or expanding existing nitrogen fertilizer production facilities in the United States. The substantial majority of the incremental nitrogen fertilizer supply associated with the construction of confirmed new production facilities is expected to be online in 2018. Once the increased production comes on-stream, Blue, Johnson & Associates, Inc. expects the United States will still require net imports into the United States to meet domestic demand for nitrogen fertilizers.

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2017 Market Conditions

The nitrogen fertilizer business' 2017 results were impacted by new U.S. domestic nitrogen production and the resulting low nitrogen fertilizer selling prices. Through most of 2017, pricing for U.S. nitrogen fertilizer often traded below parity with international pricing due to the new U.S. supply. Seasonal decreases in agricultural demand combined with delayed customer purchasing activity resulted in multi-year lows in nitrogen fertilizer selling prices during the second half of the year. The average selling price for UAN in 2017 was $152 per ton compared to $177 per ton in 2016, a decrease of 14% and the average selling price for ammonia in 2017 was $280 per ton compared to $376 per ton in 2016. In addition, during periods of declining prices, customers tend to delay purchasing fertilizer in anticipation of a continued price decline, which has also negatively impacted nitrogen fertilizer's sales volume.

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Results of Operations

In this "Results of Operations" section, we first review our business on a consolidated basis, and then separately review the results of operations of each of our petroleum and nitrogen fertilizer businesses on a standalone basis.

Consolidated Results of Operations

The period to period comparisons of our results of operations have been prepared using the historical periods included in our consolidated financial statements. This "Results of Operations" section compares the year ended December 31, 2017 with the year ended December 31, 2016 and the year ended December 31, 2016 with the year ended December 31, 2015.

Net sales consist principally of sales of refined fuel and nitrogen fertilizer products. For the petroleum business, net sales are mainly affected by crude oil and refined product prices, changes to the input mix and volume changes caused by operations. Product mix refers to the percentage of production represented by higher value light products, such as gasoline, rather than lower value finished products, such as pet coke. In the nitrogen fertilizer business, net sales are primarily impacted by manufactured tons and nitrogen fertilizer prices.

Industry-wide petroleum results are driven and measured by the relationship, or margin, between refined products and the prices for crude oil referred to as crack spreads. See " — Major Influences on Results of Operations." We discuss the results of the petroleum business in the context of per barrel consumed crack spreads and the relationship between net sales and cost of materials and other. Refining margin is a measurement calculated as the difference between net sales and cost of materials and other.

Our consolidated results of operations include certain other unallocated corporate activities and the elimination of intercompany transactions and therefore do not equal the sum of the operating results of the petroleum and nitrogen fertilizer businesses.

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The following table provides an overview of our results of operations during the past three fiscal years:

	Year Ended December 31,		
	2017	2016	2015
	(in millions, except per share data)		
Consolidated Statements of Operations Data			
Net sales	$5,988.4	$4,782.4	$5,432.5
Operating costs and expenses:			
Cost of materials and other	4,882.9	3,847.5	4,190.4
Direct operating expenses(1)	599.5	541.8	584.7
Depreciation and amortization	203.3	184.5	156.4
Cost of sales	5,685.7	4,573.8	4,931.5
Flood insurance recovery	—	—	(27.3)
Selling, general and administrative expenses(1)	114.2	109.1	99.0
Depreciation and amortization	10.7	8.6	7.7
Operating income	177.8	90.9	421.6
Interest expense and other financing costs	(110.1)	(83.9)	(48.4)
Interest income	1.1	0.7	1.0
Loss on derivatives, net	(69.8)	(19.4)	(28.6)
Loss on extinguishment of debt	—	(4.9)	—
Other income, net	1.0	5.7	36.7
Income (loss) before income tax expense	—	(10.9)	382.3
Income tax expense (benefit)	(216.9)	(19.8)	84.5
Net income	216.9	8.9	297.8
Less: Net income (loss) attributable to noncontrolling interest	(17.5)	(15.8)	128.2
Net income attributable to CVR Energy stockholders	$234.4	$24.7	$169.6
Basic and diluted earnings per share	$2.70	$0.28	$1.95
Dividends declared per share	$2.00	$2.00	$2.00
Adjusted EBITDA(2)	$258.4	$181.6	$498.8
Weighted-average common shares outstanding:			
Basic and diluted	86.8	86.8	86.8

(1) Amounts are shown exclusive of depreciation and amortization.

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(2) EBITDA and Adjusted EBITDA. EBITDA represents net income attributable to CVR Energy stockholders before consolidated (i) interest expense and other financing costs, net of interest income; (ii) income tax expense (benefit); and (iii) depreciation and amortization, less the portion of these adjustments attributable to non-controlling interest. Adjusted EBITDA represents EBITDA adjusted for consolidated (i) FIFO impact (favorable) unfavorable; (ii) loss on extinguishment of debt; (iii) major scheduled turnaround expenses (that many of our competitors capitalize and thereby exclude from their measures of EBITDA and Adjusted EBITDA); (iv) (gain) loss on derivatives, net; (v) current period settlements on derivative contracts; (vi) flood insurance recovery; (vii) expenses associated with the East Dubuque Merger; and (viii) business interruption insurance recovery, less the portion of these adjustments attributable to non-controlling interest. EBITDA and Adjusted EBITDA are not recognized terms under GAAP and should not be substituted for net income or cash flow from operations. We believe that EBITDA and Adjusted EBITDA enable investors to better understand and evaluate our ongoing operating results and allows for greater transparency in reviewing our overall financial, operational and economic performance. EBITDA and Adjusted EBITDA presented by other companies may not be comparable to our presentation, since each company may define these terms differently. EBITDA and Adjusted EBITDA represent EBITDA and Adjusted EBITDA that is attributable to CVR Energy stockholders.

EBITDA for the years ended December 31, 2015 was also adjusted for share-based compensation expense in calculating Adjusted EBITDA. Beginning in 2016, share-based compensation expense is no longer utilized as an adjustment to derive Adjusted EBITDA as no equity-settled awards remain outstanding for CVR Energy or any of its subsidiaries, and CVR Partners and CVR Refining are responsible for reimbursing CVR Energy for their allocated portion of all outstanding awards. We believe, based on the nature, classification and cash settlement feature of the currently outstanding awards, that it is no longer necessary to adjust EBITDA for share-based compensation expense to derive Adjusted EBITDA. For comparison purposes we have also provided Adjusted EBITDA for the year ended December 31, 2015 without adjusting for share-based compensation expense in order to provide a comparison to Adjusted EBITDA for the years ended December 31, 2017 and 2016.

Below is a reconciliation of net income to EBITDA and EBITDA to Adjusted EBITDA for the years ended December 31, 2017, 2016 and 2015:

	Year Ended December 31,		
	2017	2016	2015
	(in millions)		
	(unaudited)		
Net income attributable to CVR Energy stockholders	$234.4	$24.7	$169.6
Add:			
Interest expense and other financing costs, net of interest income	109.0	83.2	47.4
Income tax expense (benefit)	(216.9)	(19.8)	84.5
Depreciation and amortization	214.0	193.1	164.1
Adjustments attributable to noncontrolling interest	(151.2)	(127.3)	(75.2)
EBITDA	189.3	153.9	390.4
Add:			
FIFO impact, (favorable) unfavorable	(29.6)	(52.1)	60.3
Share-based compensation(a)	—	—	12.8
Loss on extinguishment of debt(b)	—	4.9	—
Major scheduled turnaround expenses	83.0	38.1	109.2
Loss on derivatives, net	69.8	19.4	28.6
Current period settlement on derivative contracts(c)	(16.6)	36.4	(26.0)
Flood insurance recovery(d)	—	—	(27.3)

Expenses associated with the East Dubuque Merger(e)	—	3.1	2.3
Insurance recovery - business interruption(f)	(1.1)	(2.1)	—
Adjustments attributable to noncontrolling interest	(36.4)	(20.0)	(51.5)
Adjusted EBITDA	$258.4	$181.6	$498.8

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(a) Adjusted EBITDA for the year ended December 31, 2015 would have been $486.0 million without adjusting for share-based compensation expense of $12.8 million.

(b) Represents a loss on extinguishment of debt incurred by CVR Partners in June 2016 in connection with the repurchase of senior notes assumed in the East Dubuque Merger, which includes a prepayment premium and write-off of the unamortized purchase accounting adjustment.

(c) Represents the portion of (gain) loss on derivatives, net related to contracts that matured during the respective periods and settled with counterparties. There are no premiums paid or received at inception of the derivative contracts and upon settlement, there is no cost recovery associated with these contracts.

(d) Represents an insurance recovery from environmental insurance carriers as a result of the flood and crude oil discharge at the Coffeyville refinery in June/July 2007. Refer to Part II, Item 8, Note 15 ("Commitments and Contingencies") of this Report for further details.

(e) Represents legal and other professional fees and other merger related expenses that are referred to herein as transaction expenses associated with the East Dubuque Merger, which are included in selling, general and administrative expenses.

(f) Represents business interruption insurance recovery of $1.1 million and $2.1 million received by CVR Partners during 2017 and 2016, respectively.

Year Ended December 31, 2017 Compared to the Year Ended December 31, 2016 (Consolidated)

Net Sales. Consolidated net sales were $5,988.4 million for the year ended December 31, 2017, compared to $4,782.4 million for the year ended December 31, 2016. The increase of $1,206.0 million was largely the result of an increase in our petroleum segment's net sales of $1,232.9 million due to higher sales prices of its transportation fuels and by-products offset by a decrease in net sales in our nitrogen fertilizer segment. The petroleum segment's average sales price per gallon for the year ended December 31, 2017 was $1.59 for gasoline and $1.66 for distillate which increased by 18.7% and 22.1%, respectively, as compared to the year ended December 31, 2016. The nitrogen fertilizer segment's net sales decreased by $25.5 million primarily attributable to lower UAN and ammonia sales prices and lower UAN sales volumes, partially offset by higher ammonia sales volumes.

Cost of Materials and Other. Consolidated cost of materials and other was $4,882.9 million for the year ended December 31, 2017, as compared to $3,847.5 million for the year ended December 31, 2016. The increase of $1,035.4 million primarily resulted from a increase of $1,045.5 million in cost of materials and other at the petroleum segment, partially offset by a decrease of $8.8 million in cost of materials and other at the nitrogen fertilizer segment. The increase at the petroleum segment was due to an increase in the cost of consumed crude and purchased products for resale. The increase in consumed crude oil costs was due to a 17% increase in WTI crude oil prices. The decrease of $8.8 million at the nitrogen fertilizer segment was primarily due to higher costs in 2016 from inventory and deferred revenue fair value adjustments and decreased current year distribution costs due to the timing of regulatory railcar repairs and maintenance.

Direct Operating Expenses (Exclusive of Depreciation and Amortization). Consolidated direct operating expenses (exclusive of depreciation and amortization) were $599.5 million for the year ended December 31, 2017, as compared to $541.8 million for the year ended December 31, 2016. The increase of $57.7 million was primarily due to an increase of $50.4 million at the petroleum segment and an increase of $7.2 million at the nitrogen fertilizer segment. The petroleum segment increased as a result of higher costs for the first phase of major scheduled turnaround

activities performed at its Wynnewood refinery in 2017 as compared to the second phase of the major scheduled turnaround activities completed in 2016, coupled with higher utilities costs. The nitrogen fertilizer segment's increase was primarily attributable to higher utility costs from increased electrical rates, partially offset by turnaround costs.

Selling, General and Administrative Expenses (Exclusive of Depreciation and Amortization). Consolidated selling, general and administrative expenses (exclusive of depreciation and amortization) were $114.2 million for the year ended December 31, 2017, as compared to $109.1 million for the year ended December 31, 2016. The increase of $5.1 million was primarily attributable to the increase in share-based compensation which resulted from an increase in the petroleum segment's unit price in 2017, partially offset by higher expenses in 2016 associated with the East Dubuque merger at the nitrogen fertilizer segment.

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Operating Income. Consolidated operating income was $177.8 million for the year ended December 31, 2017, as compared to operating income of $90.9 million for the year ended December 31, 2016, a increase of $86.9 million. Petroleum segment operating income increased $126.0 million primarily as a result of an increase in the refining margin due to higher sales prices for our transportation fuels and by-products which was partially offset by increases in direct operating expense, depreciation and amortization and selling, general and administrative expenses. Nitrogen fertilizer segment operating income decreased $36.0 million primarily as a result of decreases in net sales, increases in direct operating expenses, depreciation and amortization, partially offset by decreases in cost of materials and other and selling, general and administrative expenses.

Interest Expense. Consolidated interest expense for the year ended December 31, 2017 was $110.1 million as compared to $83.9 million for the year ended December 31, 2016. The increase of $26.2 million resulted primarily from the Nitrogen fertilizer segment's increased borrowings and a full year of interest payments in 2017 on the 2023 Notes. The 2023 Notes were issued in June 2016.

Loss on Derivatives, Net. For the year ended December 31, 2017, the petroleum segment recorded a $69.8 million net loss on derivatives compared to a $19.4 million net loss for the year ended December 31, 2016. This change was primarily due to an increase in open positions from 4.0 million barrels to 14.3 million barrels, which resulted in a $38.3 million net loss. The petroleum segment enters into commodity hedging instruments in order to fix the price on a portion of its future crude oil purchases and to fix the margin on a portion of future production. In addition, the Refining Partnership had open forward purchase and sale commitments of 5.8 million barrels of Canadian crude oil which resulted in a $26.0 million unrealized net loss.

Income Tax Expense (Benefit). Income tax benefit for the year ended December 31, 2017 was $216.9 million compared to income tax benefit for the year ended December 31, 2016 of $19.8 million. The income tax benefit recognized in 2017 varies significantly from the expected federal and state benefit at the statutory rate of 39.2% primarily due to the benefits recognized from the remeasurement of the Company’s net deferred tax liabilities as a result of the enactment in December 2017 of the Tax Cuts and Jobs Act (“TCJA”) legislation, certain state income tax items and the exclusion of income associated with the noncontrolling interests in CVR Refining’s and CVR Partners’ earnings (loss). The TCJA reduces the federal income tax rate from 35% to 21% beginning in 2018. As a result, our net deferred tax liabilities at December 31, 2017 were remeasured to reflect the lower tax rate that will be in effect for the years in which the deferred tax assets and liabilities will be realized. A benefit of approximately $200.5 million was recognized as a result of the remeasurement.

Year Ended December 31, 2016 Compared to the Year Ended December 31 2015 (Consolidated)

Net Sales. Consolidated net sales were $4,782.4 million for the year ended December 31, 2016, compared to $5,432.5 million for the year ended December 31, 2015. The decrease of $650.1 million was largely the result of a decrease in our petroleum segment's net sales of $730.6 million due to significantly lower sales prices, partially offset by increased net sales in our nitrogen fertilizer segment. The petroleum segment's average sales price per gallon for the year ended December 31, 2016 of $1.34 for gasoline and $1.36 for distillate decreased by 16.8% and 16.0%, respectively, as compared to the year ended December 31, 2015. The nitrogen fertilizer segment net sales increased by $67.1 million primarily attributable to increased sales volume associated with the inclusion of the nine months of the East Dubuque Facility, an increase in UAN and ammonia sales volume due to the major scheduled turn around at the Coffeyville Fertilizer Facility in 2015, partially offset by lower UAN and ammonia sales prices attributable to pricing fluctuation in the market.

Cost of Materials and Other. Consolidated cost of materials and other was $3,847.5 million for the year ended December 31, 2016, as compared to $4,190.4 million for the year ended December 31, 2015. The decrease of $342.9

million primarily resulted from a decrease of $384.4 million in cost of materials and other at the petroleum segment, partially offset by an increase of $28.5 million in cost of materials and other at the nitrogen fertilizer segment. The decrease at the petroleum segment was due to a decrease in the cost of consumed crude and purchased products for resale. The decrease in consumed crude oil costs was due to decrease in crude oil prices. The increase of $28.5 million at the nitrogen fertilizer segment was primarily due to the inclusion of the nine months of the East Dubuque Facility, partially offset by cost decreases as a result of lower freight and distribution costs as well as lower consumption and pet coke pricing.

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Direct Operating Expenses (Exclusive of Depreciation and Amortization). Consolidated direct operating expenses (exclusive of depreciation and amortization) were $541.8 million for the year ended December 31, 2016, as compared to $584.7 million for the year ended December 31, 2015. The decrease of $42.9 million was primarily due to a decrease of $85.1 million at the petroleum segment, partially offset by an increase of $42.2 million at the nitrogen fertilizer segment. The petroleum segment decreased as a result of lower costs for the second phase of major scheduled turnaround activities performed at the Coffeyville refinery in 2016 as compared to the first phase completed in 2015, lower insurance expense, environmental expense and production chemicals, partially offset by an increase in labor costs. The nitrogen fertilizer segment increased primarily attributable to the inclusion of the nine months of the East Dubuque Facility.

Selling, General and Administrative Expenses (Exclusive of Depreciation and Amortization). Consolidated selling, general and administrative expenses (exclusive of depreciation and amortization) were $109.1 million for the year ended December 31, 2016, as compared to $99.0 million for the year ended December 31, 2015. The increase of $10.1 million was primarily attributable to the inclusion of the nine months of the East Dubuque Facility.

Operating Income. Consolidated operating income was $90.9 million for the year ended December 31, 2016, as compared to operating income of $421.6 million for the year ended December 31, 2015, a decrease of $330.7 million. Petroleum segment operating income decreased $283.9 million primarily as a result of a decrease in the refining margin in 2016 and the 2015 flood insurance recovery, partially offset by decreases in direct operating expenses, depreciation and amortization and selling, general and administrative expenses. Nitrogen fertilizer segment operating income decreased $41.9 million primarily as a result of increases in direct operating expenses, depreciation and amortization, cost of materials and other and selling, general and administrative expenses, partially offset by increases in net sales.

Interest Expense. Consolidated interest expense for the year ended December 31, 2016 was $83.9 million as compared to $48.4 million for the year ended December 31, 2015. The increase of $35.5 million resulted primarily from the debt assumed by the Nitrogen fertilizer segment in the East Dubuque Merger, issuance of the 2023 Notes and increased LIBOR rates during 2016 as compared to 2015.

Gain (Loss) on Derivatives, Net. For the year ended December 31, 2016, the petroleum segment recorded a $19.4 million net loss on derivatives compared to a $28.6 million net loss on derivatives for the year ended December 31, 2015. This change was primarily due to changes in crack spreads during the period. The petroleum segment enters into over-the-counter commodity swap contracts to fix the margin on a portion of its future gasoline and distillate production.

Income Tax Expense. Income tax benefit for the year ended December 31, 2016 was $19.8 million or 181.7% of loss before income taxes, as compared to income tax expense for the year ended December 31, 2015 of $84.5 million or 22.1% of income before income taxes. This is in comparison to a combined federal and state expected statutory rate of 39.3% for 2016 and 39.5% for 2015. Our 2016 effective tax rate varies from the expected statutory rate primarily due to the reduction of income subject to tax associated with the noncontrolling ownership interests in CVR Refining's and CVR Partners' earnings (loss), the benefits related to the domestic production activities deduction (Section 199) and certain state income tax items.

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Petroleum Business Results of Operations

The petroleum business includes the operations of both the Coffeyville and Wynnewood refineries. The following tables below provide an overview of the petroleum business' results of operations, relevant market indicators and its key operating statistics for the years ended December 31, 2017, 2016 and 2015:

	Year Ended December 31,		
	2017	2016	2015
	(in millions)		
Consolidated Petroleum Business Financial Results			
Net sales	$5,664.2	$4,431.3	$5,161.9
Operating costs and expenses:			
Cost of materials and other	4,804.7	3,759.2	4,143.6
Direct operating expenses(1)(2)	363.4	361.9	376.3
Major scheduled turnaround expenses	80.4	31.5	102.2
Depreciation and amortization	129.3	126.3	128.0
Cost of sales	5,377.8	4,278.9	4,750.1
Flood insurance recovery	—	—	(27.3)
Selling, general and administrative expenses(1)	78.8	71.9	75.2
Depreciation and amortization	3.8	2.7	2.2
Operating income	203.8	77.8	361.7
Interest expense and other financing costs	(47.2)	(43.4)	(42.6)
Interest income	0.5	0.1	0.4
Loss on derivatives, net	(69.8)	(19.4)	(28.6)
Other income, net	1.5	0.2	0.3
Income before income tax expense	88.8	15.3	291.2
Income tax expense	—	—	—
Net income	$88.8	$15.3	$291.2
Gross profit(3)	$286.4	$152.4	$439.1
Refining margin(4)	$859.5	$672.1	$1,018.3
Adjusted Petroleum EBITDA(5)	$372.6	$222.8	$602.0

	Year Ended December 31,		
	2017	2016	2015
	(dollars per barrel)		
Key Operating Statistics			
Per crude oil throughput barrel:			
Gross profit(3)	$3.83	$2.10	$6.23
Refining margin(4)	11.50	9.27	14.45
FIFO impact, (favorable) unfavorable	(0.40)	(0.72)	0.86
Refining margin adjusted for FIFO impact(4)	11.10	8.55	15.31
Direct operating expenses and major scheduled turnaround expenses(1)(2)	5.94	5.43	6.79
Direct operating expenses and major scheduled turnaround expenses per barrel sold(1)(6)	$5.55	$5.08	$6.40
Barrels sold (barrels per day)(6)	218,912	211,643	204,708

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	Year Ended December 31,					
	2017	%	2016	%	2015	%
Refining Throughput and Production Data (bpd)						
Throughput:						
Sweet	194,618	89.8	177,256	84.8	176,098	86.0
Medium	—	—	2,525	1.2	2,460	1.2
Heavy sour	10,135	4.7	18,261	8.7	14,520	7.1
Total crude oil throughput	204,748	94.5	198,042	94.7	193,079	94.3
All other feedstocks and blendstocks	12,032	5.5	11,077	5.3	11,672	5.7
Total throughput	216,780	100.0	209,119	100.0	204,749	100.0
Production:						
Gasoline	110,226	50.7	108,763	51.9	99,961	48.5
Distillate	90,409	41.6	85,092	40.6	85,953	41.7
Other (excluding internally produced fuel)	16,818	7.7	15,751	7.5	20,074	9.8
Total refining production (excluding internally produced fuel)	217,453	100.0	209,605	100.0	205,988	100.0
Product price (dollars per gallon):						
Gasoline	$1.59		$1.34		$1.61	
Distillate	1.66		1.36		1.62	

	Year Ended December 31,		
	2017	2016	2015
Market Indicators (dollars per barrel)			
West Texas Intermediate (WTI) NYMEX	$50.85	$43.47	$48.76
Crude Oil Differentials:			
WTI less WTS (light/medium sour)	0.97	0.85	(0.28)
WTI less WCS (heavy sour)	12.69	13.95	13.20
NYMEX Crack Spreads:			
Gasoline	17.46	15.42	19.89
Heating Oil	18.93	13.89	20.93
NYMEX 2-1-1 Crack Spread	18.19	14.66	20.41
PADD II Group 3 Product Basis:			
Gasoline	(1.83)	(3.62)	(2.12)
Ultra-Low Sulfur Diesel	(0.50)	(0.92)	(2.02)
PADD II Group 3 Product Crack Spread:			
Gasoline	15.63	11.82	17.76
Ultra-Low Sulfur Diesel	18.42	12.96	18.91
PADD II Group 3 2-1-1	17.03	12.39	18.34

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(1) Amounts are shown exclusive of depreciation and amortization.

(2) Direct operating expense is presented on a per crude oil throughput barrel basis. In order to derive the direct operating expenses per crude oil throughput barrel, we utilize the total direct operating expenses, which do not include depreciation or amortization expense, and divide by the applicable number of crude oil throughput barrels for the period.

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(3) Gross profit, a GAAP measure, is calculated as the difference between net sales and cost of materials and other , direct operating expenses (exclusive of depreciation and amortization), major scheduled turnaround expenses, flood insurance recovery and depreciation and amortization. Each of the components used in this calculation are taken directly from the petroleum business' financial results. In order to derive the gross profit per crude oil throughput barrel, we utilize the total dollar figures for gross profit as derived above and divide by the applicable number of crude oil throughput barrels for the period.

(4) Refining margin per crude oil throughput barrel is a measurement calculated as the difference between net sales and cost of materials and other. Refining margin is a non-GAAP measure that we believe is important to investors in evaluating the refineries' performance as a general indication of the amount above their cost of materials and other at which they are able to sell refined products. Each of the components used in this calculation (net sales and cost of materials and other) are taken directly from the petroleum business' financial results. Our calculation of refining margin may differ from similar calculations of other companies in the industry, thereby limiting its usefulness as a comparative measure. In order to derive the refining margin per crude oil throughput barrel, we utilize the total dollar figures for refining margin as derived above and divide by the applicable number of crude oil throughput barrels for the period. We believe that refining margin and refining margin per crude oil throughput barrel are important to enable investors to better understand and evaluate the petroleum business' ongoing operating results and allow for greater transparency in the review of our overall financial, operational and economic performance.

Refining margin per crude oil throughput barrel adjusted for FIFO impact is a measurement calculated as the difference between net sales and cost of materials and other adjusted for FIFO impact. Refining margin adjusted for FIFO impact is a non-GAAP measure that we believe is important to investors in evaluating the refineries' performance as a general indication of the amount above the cost of materials and other (taking into account the impact of our utilization of FIFO) at which they are able to sell refined products. Our calculation of refining margin adjusted for FIFO impact may differ from calculations of other companies in the industry, thereby limiting its usefulness as a comparative measure. Under our FIFO accounting method, changes in crude oil prices can cause fluctuations in the inventory valuation of our crude oil, work in process and finished goods, thereby resulting in a favorable FIFO impact when crude oil prices increase and an unfavorable FIFO impact when crude oil prices decrease. In order to derive the refining margin per crude oil throughput barrel adjusted for FIFO impact, we utilize the total dollar figures for refining margin adjusted for FIFO impact as derived above and divide by the applicable number of crude oil throughput barrels for the period. We believe that refining margin adjusted for FIFO impact and refining margin per crude oil throughput barrel adjusted for FIFO impact are important to enable investors to better understand and evaluate the petroleum business' ongoing operating results and allow for greater transparency in the review of our overall financial, operational and economic performance.

The calculation of refining margin, refining margin adjusted for FIFO impact, refining margin per crude oil throughput barrel and refining margin adjusted for FIFO impact per crude oil throughput barrel (each a non-GAAP financial measure), including a reconciliation to the most directly comparable GAAP financial measure for the years ended December 31, 2017, 2016 and 2015 is as follows:

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	Year Ended December 31,		
	2017	2016	2015
	(in millions)		
Net sales	$5,664.2	$4,431.3	$5,161.9
Cost of materials and other	4,804.7	3,759.2	4,143.6
Direct operating expenses (exclusive of depreciation and amortization as reflected below)	363.4	361.9	376.3
Major scheduled turnaround expenses	80.4	31.5	102.2
Flood insurance recovery	—	—	(27.3)
Depreciation and amortization	129.3	126.3	128.0
Gross profit	286.4	152.4	439.1
Add:			
Direct operating expenses (exclusive of depreciation and amortization as reflected below)	363.4	361.9	376.3
Major scheduled turnaround expenses	80.4	31.5	102.2
Flood insurance recovery	—	—	(27.3)
Depreciation and amortization	129.3	126.3	128.0
Refining margin	859.5	672.1	1,018.3
FIFO impact, (favorable) unfavorable	(29.6)	(52.1)	60.3
Refining margin adjusted for FIFO impact	$829.9	$620.0	$1,078.6

	Year Ended December 31,		
	2017	2016	2015
Total crude oil throughput barrels per day	204,748	198,042	193,077
Days in the period	365	366	365
Total crude oil throughput barrels	74,733,020	72,483,372	70,473,105

	Year Ended December 31,		
	2017	2016	2015
	(in millions, except for $ per barrel data)		
Refining margin	$859.5	$672.1	$1,018.3
Divided by: crude oil throughput barrels	74.7	72.5	70.5
Refining margin per crude oil throughput barrel	$11.50	$9.27	$14.45

	Year Ended December 31,		
	2017	2016	2015
	(in millions, except for $ per barrel data)		
Refining margin adjusted for FIFO impact	$829.9	$620.0	$1,078.6
Divided by: crude oil throughput barrels	74.7	72.5	70.5
Refining margin adjusted for FIFO impact per crude oil throughput barrel	$11.10	$8.55	$15.31

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(5) Petroleum EBITDA represents net income for the petroleum segment before (i) interest expense and other financing costs, net of interest income; (ii) income tax expense; and (iii) depreciation and amortization. Adjusted Petroleum EBITDA represents Petroleum EBITDA adjusted for (i) FIFO impact (favorable) unfavorable; (ii) share-based compensation, non-cash; (iii) loss on extinguishment of debt; (iv) major scheduled turnaround expenses (that many of our competitors capitalize and thereby exclude from their measures of EBITDA and Adjusted EBITDA); (v) (gain) loss on derivatives, net; (vi) current period settlements on derivative contracts; and (vii) flood insurance recovery.

We present Adjusted Petroleum EBITDA because it is the starting point for the Refining Partnership's determination of available cash for distribution. Petroleum EBITDA and Adjusted Petroleum EBITDA are not recognized terms under GAAP and should not be substituted for net income or cash flow from operations. We believe that Petroleum EBITDA and Adjusted Petroleum EBITDA enable investors to better understand the Refining Partnership's ability to make distributions to its common unitholders, help investors evaluate the petroleum segment's ongoing operating results and allow for greater transparency in reviewing our overall financial, operational and economic performance. Petroleum EBITDA and Adjusted Petroleum EBITDA presented by other companies may not be comparable to our presentation, since each company may define these terms differently.

Below is a reconciliation of net income for the petroleum segment to Petroleum EBITDA and Petroleum EBITDA to Adjusted Petroleum EBITDA for the years ended December 31, 2017, 2016 and 2015:

	Year Ended December 31,		
	2017	2016	2015
	(in millions)		
Petroleum:			
Petroleum net income	$88.8	$15.3	$291.2
Add:			
Interest expense and other financing costs, net of interest income	46.7	43.3	42.2
Income tax expense	—	—	—
Depreciation and amortization	133.1	129.0	130.2
Petroleum EBITDA	268.6	187.6	463.6
Add:			
FIFO impact, (favorable) unfavorable(a)	(29.6)	(52.1)	60.3
Share-based compensation, non-cash	—	—	0.6
Major scheduled turnaround expenses(b)	80.4	31.5	102.2
Loss on derivatives, net	69.8	19.4	28.6
Current period settlements on derivative contracts(c)	(16.6)	36.4	(26.0)
Flood insurance recovery(d)	—	—	(27.3)
Adjusted Petroleum EBITDA	$372.6	$222.8	$602.0

(a) 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 FIFO impact when crude oil prices increase and an unfavorable FIFO impact when crude oil prices decrease. The FIFO 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 FIFO impact per crude oil throughput barrel, we utilize the total dollar figures for the FIFO impact and divide by the number of crude oil throughput barrels for the period.

(b) Represents expense associated with major scheduled turnaround activities at the Coffeyville and Wynnewood refineries.

(c) Represents the portion of gain (loss) on derivatives, net related to contracts that matured during the respective periods and settled with counterparties. There are no premiums paid or received at the inception of the derivative contracts and upon settlement, there is no cost recovery associated with these contracts.

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(d) Represents an insurance recovery from environmental insurance carriers as a result of the flood and crude oil discharge at the Coffeyville refinery in June/July 2007. Refer to Part II, Item 8, Note 15 ("Commitments and Contingencies") of this Report for further details.

(6) Direct operating expense is presented on a per barrel sold basis. Barrels sold are derived from the barrels produced and shipped from the refineries. We utilize total direct operating expenses, which does not include depreciation or amortization expense, and divide by the applicable number of barrels sold for the period to derive the metric.

	Year Ended December 31,		
	2017	2016	2015
	(in millions)		
Coffeyville Refinery Financial Results			
Net sales	$3,867.8	$2,948.9	$3,220.6
Cost of materials and other	3,285.8	2,513.9	2,626.1
Direct operating expenses (exclusive of depreciation and amortization as reflected below)	209.5	196.4	209.1
Major scheduled turnaround expenses	—	31.5	102.2
Depreciation and amortization	71.5	69.7	72.1
Flood insurance recovery	—	—	(27.3)
Gross profit	301.0	137.4	238.4
Plus:			
Direct operating expenses and major scheduled turnaround expenses (exclusive of depreciation and amortization as reflected below)	209.5	227.9	311.3
Flood insurance recovery	—	—	(27.3)
Depreciation and amortization	71.5	69.7	72.1
Refining margin	582.0	435.0	594.5
FIFO impact, (favorable) unfavorable	(20.2)	(37.8)	38.0
Refining margin adjusted for FIFO impact	$561.8	$397.2	$632.5

	Year Ended December 31,		
	2017	2016	2015
	(dollars per barrel)		
Coffeyville Refinery Key Operating Statistics			
Per crude oil throughput barrel:			
Gross profit	$6.27	$3.03	$5.77
Refining margin(1)	$12.12	$9.57	$14.37
FIFO impact, (favorable) unfavorable	$(0.42)	$(0.83)	$0.92
Refining margin adjusted for FIFO impact(1)	$11.70	$8.74	$15.29
Direct operating expenses and major scheduled turnaround expenses (exclusive of depreciation and amortization)	$4.36	$5.02	$7.53
Direct operating expenses and major scheduled turnaround expenses (exclusive of depreciation and amortization) per barrel sold	$4.00	$4.54	$6.92
Barrels sold (barrels per day)	143,598	137,047	123,279

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	Year Ended December 31,					
	2017	%	2016	%	2015	%
Coffeyville Refinery Throughput and Production Data (bpd)						
Throughput:						
Sweet	121,434	86.4	104,679	78.9	96,727	79.5
Medium	—	—	1,229	0.9	2,058	1.7
Heavy sour	10,135	7.2	18,261	13.8	14,520	11.9
Total crude oil throughput	131,569	93.6	124,169	93.6	113,305	93.1
All other feedstocks and blendstocks	9,058	6.4	8,453	6.4	8,400	6.9
Total throughput	140,627	100.0	132,622	100.0	121,705	100.0
Production:						
Gasoline	71,915	50.4	69,303	51.4	57,815	46.5
Distillate	59,593	41.7	55,790	41.4	53,136	42.7
Other (excluding internally produced fuel)	11,335	7.9	9,756	7.2	13,503	10.8
Total refining production (excluding internally produced fuel)	142,843	100.0	134,849	100.0	124,454	100.0

(1) The calculation of refining margin per crude oil throughput barrel and refining margin adjusted for FIFO impact per crude oil throughput barrel for the years ended December 31, 2017, 2016 and 2015 is as follows:

	Year Ended December 31,		
	2017	2016	2015
Total crude oil throughput barrels per day	131,569	124,169	113,305
Days in the period	365	366	365
Total crude oil throughput barrels	48,022,685	45,445,854	41,356,325

	Year Ended December 31,		
	2017	2016	2015
	(in millions, except for $ per barrel data)		
Refining margin	$582.0	$435.0	$594.5
Divided by: crude oil throughput barrels	48.0	45.4	41.4
Refining margin per crude oil throughput barrel	$12.12	$9.57	$14.37

	Year Ended December 31,		
	2017	2016	2015
	(in millions, except for $ per barrel data)		
Refining margin adjusted for FIFO impact	$561.8	$397.2	$632.5
Divided by: crude oil throughput barrels	48.0	45.4	41.4
Refining margin adjusted for FIFO impact per crude oil throughput barrel	$11.70	$8.74	$15.29

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	Year Ended December 31,		
	2017	2016	2015
	(in millions)		
Wynnewood Refinery Financial Results			
Net sales	$1,792.1	$1,478.0	$1,936.9
Cost of materials and other	1,519.7	1,245.4	1,516.3
Direct operating expenses (exclusive of depreciation and amortization as reflected below)	153.9	165.5	166.2
Major scheduled turnaround expenses	80.4	—	—
Depreciation and amortization	51.7	50.7	50.2
Gross profit (loss)	(13.6)	16.4	204.2
Plus:			
Direct operating expenses and major scheduled turnaround expenses (exclusive of depreciation and amortization as reflected below)	234.3	165.5	166.2
Depreciation and amortization	51.7	50.7	50.2
Refining margin	272.4	232.6	420.6
FIFO impact, (favorable) unfavorable	(9.4)	(14.2)	22.3
Refining margin adjusted for FIFO impact	$263.0	$218.4	$442.9

	Year Ended December 31,		
	2017	2016	2015
	(dollars per barrel)		
Wynnewood Refinery Key Operating Statistics			
Per crude oil throughput barrel:			
Gross profit (loss)	$(0.51)	$0.61	$7.01
Refining margin(1)	$10.20	$8.60	$14.44
FIFO impact, (favorable) unfavorable	$(0.35)	$(0.53)	$0.77
Refining margin adjusted for FIFO impact(1)	$9.85	$8.07	$15.21
Direct operating expenses and major scheduled turnaround expenses (exclusive of depreciation and amortization)	$8.77	$6.12	$5.71
Direct operating expenses and major scheduled turnaround expenses (exclusive of depreciation and amortization) per barrel sold	$8.52	$6.06	$5.59
Barrels sold (barrels per day)	75,314	74,596	81,429

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	Year Ended December 31,					
	2017	%	2016	%	2015	%
Wynnewood Refinery Throughput and Production Data (bpd)						
Throughput:						
Sweet	73,179	96.1	72,577	94.9	79,370	95.6
Medium	—	—	1,296	1.7	402	0.5
Heavy sour	—	—	—	—	—	—
Total crude oil throughput	73,179	96.1	73,873	96.6	79,772	96.1
All other feedstocks and blendstocks	2,974	3.9	2,624	3.4	3,272	3.9
Total throughput	76,153	100.0	76,497	100.0	83,044	100.0
Production:						
Gasoline	38,311	51.3	39,459	52.8	42,146	51.7
Distillate	30,816	41.3	29,302	39.2	32,817	40.2
Other (excluding internally produced fuel)	5,483	7.4	5,995	8.0	6,571	8.1
Total refining production (excluding internally produced fuel)	74,610	100.0	74,756	100.0	81,534	100.0

(1) The calculation of refining margin per crude oil throughput barrel and refining margin adjusted for FIFO impact per crude oil throughput barrel for the years ended December 31, 2017, 2016 and 2015 is as follows:

	Year Ended December 31,		
	2017	2016	2015
Total crude oil throughput barrels per day	73,179	73,873	79,772
Days in the period	365	366	365
Total crude oil throughput barrels	26,710,335	27,037,518	29,116,780

	Year Ended December 31,		
	2017	2016	2015
	(in millions, except for $ per barrel data)		
Refining margin	$272.4	$232.6	$420.6
Divided by: crude oil throughput barrels	26.7	27.0	29.1
Refining margin per crude oil throughput barrel	$10.20	$8.60	$14.44

	Year Ended December 31,		
	2017	2016	2015
	(in millions, except for $ per barrel data)		
Refining margin adjusted for FIFO impact	$263.0	$218.4	$442.9
Divided by: crude oil throughput barrels	26.7	27.0	29.1
Refining margin adjusted for FIFO impact per crude oil throughput barrel	$9.85	$8.07	$15.21

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Year Ended December 31, 2017 Compared to the Year Ended December 31, 2016 (Petroleum Business)

Net Sales. Petroleum net sales were $5,664.2 million for the year ended December 31, 2017, compared to $4,431.3 million for the year ended December 31, 2016. The increase of $1,232.9 million was largely the result of higher sales prices for transportation fuels and by-products. The average sales price per gallon for the year ended December 31, 2017 for gasoline of $1.59 and distillate of $1.66 increased by approximately 18.7% and 22.1%, respectively, as compared to the year ended December 31, 2016. Overall sales volume increased approximately 4.7% for the year ended December 31, 2017 compared to the year ended December 31, 2016. Sales volumes increased in 2017 as a result of 2016 volumes being significantly impacted by the second phase of major scheduled turnaround completed at our Coffeyville refinery. Also contributing to the increase in sales was an increase in products purchased for resale for the year ended December 31, 2017 as compared to the year ended December 31, 2016.

The following table demonstrates the impact of changes in sales volumes and sales prices for gasoline and distillates for the year ended December 31, 2017 compared to the year ended December 31, 2016:

	Year Ended December 31, 2017		Year Ended December 31, 2016		Total Variance			
	Volume(1)	$ per barrel	Sales $(2)	Volume(1)	$ per barrel	Sales $(2)	Volume(1)	Sales $(2)	Price Variance	Volume Variance
									(in millions)	
Gasoline	44.3	$66.90	$2,966.8	42.6	$56.16	$2,390.8	1.7	$576.0	$476.3	$ 99.7
Distillate	34.4	$69.71	$2,399.8	32.4	$56.99	$1,844.3	2.0	$555.5	$438.0	$ 117.5

(1) Barrels in millions

(2) Sales dollars in millions

Cost of Materials and Other. Cost of materials and other includes cost of crude oil, other feedstocks, blendstocks, purchased refined products, RINs and transportation and distribution costs. Petroleum cost of materials and other was $4,804.7 million for the year ended December 31, 2017, compared to $3,759.2 million for the year ended December 31, 2016. The increase of $1,045.5 million was primarily the result of a an increase in the cost of consumed crude and purchased products for resale. The increase in consumed crude oil cost was due to an increase in crude oil prices. The WTI benchmark crude oil price increased approximately 17.0% from the year ended December 31, 2017 as compared to the year ended December 31, 2016. The petroleum business' average cost per barrel of crude oil consumed for the year ended December 31, 2017 was $50.63 compared to $41.99 for the year ended December 31, 2016, a increase of approximately 20.6%. Crude oil throughput volume increased by approximately 3.1% for the year ended December 31, 2017 as compared to the equivalent period in 2016 due primarily to the major scheduled turnaround completed at the Coffeyville refinery in the first quarter of 2016. Sales volumes of refined fuels increased by approximately 4.7% during the same period.

The impact of FIFO accounting also impacted cost of materials and other during the comparable periods. Under the FIFO accounting method, 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 FIFO inventory impact when crude oil prices increase and an unfavorable FIFO inventory impact when crude oil prices decrease. For the years ended December 31, 2017 and 2016, the petroleum business had an favorable FIFO inventory impact of $29.6 million compared to a favorable FIFO inventory impact of $52.1 million, respectively.

Refining margin per barrel of crude oil throughput increased to $11.50 for the year ended December 31, 2017 from $9.27 for the year ended December 31, 2016. Refining margin adjusted for FIFO impact was $11.10 per crude oil throughput barrel for the year ended December 31, 2017, as compared to $8.55 per crude oil throughput barrel for the year ended December 31, 2016. Gross profit per barrel increased to $3.83 for the year ended December 31, 2017, as compared to gross profit per barrel of $2.10 in the equivalent period in 2016. The increase in refining margin and gross profit per barrel was primarily due to the improvement in product margins. The benchmark 2-1-1 crack spread improved to $18.19 per barrel for the year ended December 31, 2017 from $14.66 per barrel for the year ended December 31, 2016. Also contributing to increase in refining margin and gross profit per barrel was the improvement in the Group 3 gasoline basis to NYMEX gasoline to ($1.83) per barrel for the year ended December 31, 2017 as compared to ($3.62) per barrel in the comparable period in 2016.

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Direct Operating Expenses (Exclusive of Depreciation and Amortization). Direct operating expenses (exclusive of depreciation and amortization) for the petroleum business include costs associated with the operations of the refineries, such as energy and utility costs, property taxes, catalyst and chemical costs, repairs and maintenance, labor and environmental compliance costs. Petroleum direct operating expenses and major scheduled turnaround expenses (exclusive of depreciation and amortization) were $443.8 million for the year ended December 31, 2017, compared to direct operating expenses and major scheduled turnaround expenses of $393.4 million for the year ended December 31, 2016. The increase of $50.4 million was the result of higher costs for the first phase of major scheduled turnaround activities performed at the Wynnewood refinery in 2017 as compared to the second phase of the major scheduled turnaround activities completed at the Coffeyville refinery in 2016 ($48.9 million), and higher utilities costs ($8.4 million). These increases were partially offset by a decrease in repair and maintenance costs ($7.1 million). Utilities costs increased primarily due to a 28.1% increase in the petroleum business' natural gas cost per MMBtu and a 15.3% increase in its electricity cost per Kilowatt Hour ("KWH"). Direct operating expenses per barrel of crude oil throughput for the year ended December 31, 2017 increased to $5.94 per barrel as compared to $5.43 per barrel for the year ended December 31, 2016. The increase in the direct operating expenses per barrel of crude oil throughput was primarily a function of higher overall expenses.

Loss on Derivatives, net. For the year ended December 31, 2017, the petroleum business recorded a $69.8 million net loss on derivatives compared to a $19.4 million net loss on derivatives for the year ended December 31, 2016. This change was primarily due to an increase in open positions from 4.0 million barrels as of December 31, 2016 to 14.3 million barrels as of December 31, 2017 and changes in the benchmark 2-1-1 crack spread, which resulted in a $38.3 million net loss. The petroleum business enters into commodity hedging instruments in order to fix the price on a portion of its future crude oil purchases and to fix the margin on a portion of future production. In addition, the petroleum business had open forward purchase and sale commitments of 5.8 million barrels of Canadian crude oil priced at fixed differentials, which resulted in a $26.0 million unrealized net loss as of December 31, 2017.

Operating Income. Petroleum operating income was $203.8 million for the year ended December 31, 2017, as compared to operating income of $77.8 million for the year ended December 31, 2016. The increase of $126.0 million was the result of an increase in refining margin ($187.4 million) due to higher sales prices for our transportation fuels and by-products which was, partially offset by increases in direct operating expenses ($50.4 million), depreciation and amortization ($4.1 million) and selling, general and administrative expenses ($6.9 million).

Year Ended December 31, 2016 Compared to the Year Ended December 31, 2015

Net Sales. Petroleum net sales were $4,431.3 million for the year ended December 31, 2016, compared to $5,161.9 million for the year ended December 31, 2015. The decrease of $730.6 million was largely the result of lower sales prices for transportation fuels and by-products. The average sales price per gallon for the year ended December 31, 2016 for gasoline of $1.34 and distillate of $1.36 decreased by approximately 16.8% and 16.0%, respectively, as compared to the year ended December 31, 2015. Overall sales volume decreased approximately 2.3% for the year ended December 31, 2016 compared to the year ended December 31, 2015. Sales volumes for 2015 were more significantly impacted by decreased production as a result of the first phase of major scheduled turnaround completed at the Coffeyville refinery in the fourth quarter of 2015 than the second phase of major scheduled turnaround completed at the Coffeyville refinery in the first quarter of 2016.

The following table demonstrates the impact of changes in sales volumes and sales prices for gasoline and distillates for the year ended December 31, 2016 compared to the year ended December 31, 2015:

Year Ended December 31, 2016 Volume(1)	Year Ended December 31, 2015 Volume(1)	Total Variance Volume(1)

	$ per barrel	Sales $(2)		$ per barrel	Sales $(2)		Sales $(2)	Price Variance	Volume Variance
								(in millions)	
Gasoline	42.6	$56.16	$2,390.8	40.1	$67.52	$2,708.4	2.5	$(317.6)	$(483.2)	$165.6
Distillate	32.4	$56.99	$1,844.3	33.1	$68.01	$2,248.2	(0.7)	$(403.9)	$(356.8)	$(47.1)

(1) Barrels in millions

(2) Sales dollars in millions

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Cost of Materials and Other. Petroleum cost of materials and other was $3,759.2 million for the year ended December 31, 2016, compared to $4,143.6 million for the year ended December 31, 2015. The decrease of $384.4 million was primarily the result of a decrease in the cost of consumed crude and purchased products for resale. The decrease in consumed crude oil cost was due to a decrease in crude oil prices. The WTI benchmark crude oil price decreased approximately 10.8% from the year ended December 31, 2016 as compared to the year ended December 31, 2015. The petroleum business' average cost per barrel of crude oil consumed for the year ended December 31, 2016 was $41.99 compared to $47.86 for the year ended December 31, 2015, a decrease of approximately 12.3%. Crude oil throughput volume increased by approximately 2.9% for the year ended December 31, 2016 as compared to the equivalent period in 2015 due primarily to the major scheduled turnaround completed at the Coffeyville refinery in the fourth quarter of 2015. Sales volumes of refined fuels increased by approximately 2.3% during the same period.

The impact of FIFO accounting also impacted cost of materials and other during the comparable periods. Under the FIFO accounting method, 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 FIFO inventory impact when crude oil prices increase and an unfavorable FIFO inventory impact when crude oil prices decrease. For the years ended December 31, 2016 and 2015, the petroleum business had an favorable FIFO inventory impact of $52.1 million compared to an unfavorable FIFO inventory impact of $60.3 million, respectively.

Refining margin per barrel of crude oil throughput decreased to $9.27 for the year ended December 31, 2016 from $14.45 for the year ended December 31, 2015. Refining margin adjusted for FIFO impact was $8.55 per crude oil throughput barrel for the year ended December 31, 2016, as compared to $15.31 per crude oil throughput barrel for the year ended December 31, 2015. Gross profit per barrel decreased to $2.10 for the year ended December 31, 2016, as compared to gross profit per barrel of $6.23 in the equivalent period in 2015. The decrease in refining margin and gross profit per barrel was primarily due to the decline in product margins. The benchmark 2-1-1 crack spread declined to $14.66 per barrel for the year ended December 31, 2016 from $20.41 per barrel for the year ended December 31, 2015.

Direct Operating Expenses (Exclusive of Depreciation and Amortization). Petroleum direct operating expenses and major scheduled turnaround expenses (exclusive of depreciation and amortization) were $393.4 million for the year ended December 31, 2016, compared to direct operating expenses and major scheduled turnaround expenses of $478.5 million for the year ended December 31, 2015. The decrease of $85.1 million was the result of lower costs for the second phase of major scheduled turnaround activities performed at the Coffeyville refinery in 2016 as compared to the first phase completed in 2015 ($70.7 million), lower insurance expense ($4.5 million), environmental expense ($4.3 million), production chemicals ($3.1 million), repair and maintenance costs ($2.4 million), outside services ($2.3 million) and allocated shared services expenses ($2.2 million). These decreases were partially offset by an increase in labor costs ($4.0 million). Direct operating expenses per barrel of crude oil throughput for the year ended December 31, 2016 decreased to $5.43 per barrel as compared to $6.79 per barrel for the year ended December 31, 2015. The decrease in the direct operating expenses per barrel of crude oil throughput was primarily a function of lower overall expenses.

Operating Income. Petroleum operating income was $77.8 million for the year ended December 31, 2016, as compared to operating income of $361.7 million for the year ended December 31, 2015. The decrease of $283.9 million was the result of a decrease in the refining margin ($346.2 million) and the 2015 flood insurance recovery ($27.3 million), partially offset by decreases in direct operating expenses ($85.1 million), depreciation and amortization ($1.2 million) and selling, general and administrative expenses ($3.3 million).

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Nitrogen Fertilizer Business Results of Operations

The tables below provide an overview of the nitrogen fertilizer business' results of operations, relevant market indicators and its key operating statistics for the years ended December 31, 2017, 2016 and 2015:

	Year Ended December 31,		
	2017	2016	2015
	(in millions)		
Nitrogen Fertilizer Business Financial Results			
Net sales	$330.8	$356.3	$289.2
Operating costs and expenses:			
Cost of materials and other	84.9	93.7	65.2
Direct operating expenses(1)	152.9	141.7	99.1
Major scheduled turnaround expenses	2.6	6.6	7.0
Depreciation and amortization	74.0	58.2	28.4
Cost of sales	314.4	300.2	199.7
Selling, general and administrative	25.6	29.3	20.8
Operating income (loss)	(9.2)	26.8	68.7
Interest expense and other financing costs	(62.9)	(48.6)	(7.0)
Loss on extinguishment of debt	—	(4.9)	—
Other income (loss), net	(0.5)	0.1	0.3
Income (loss) before income tax expense	(72.6)	(26.6)	62.0
Income tax expense	0.2	0.3	—
Net income (loss)	$(72.8)	$(26.9)	$62.0
Adjusted Nitrogen Fertilizer EBITDA(2)	$65.8	$92.7	$106.8

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	Year Ended December 31,		
	2017	2016	2015
Key Operating Statistics			
Sales (thousand tons):			
Ammonia	286.1	201.4	32.3
UAN	1,254.5	1,237.5	939.5
Product pricing at gate (dollars per ton)(3):			
Ammonia	$280	$376	$521
UAN	$152	$177	$247
Production volume (thousand tons):			
Ammonia (gross produced)(4)	814.7	693.5	385.4
Ammonia (net available for sale)(4)	267.8	183.6	37.3
UAN	1,268.4	1,192.6	928.6
Feedstock:			
Petroleum coke used in production (thousand tons)	487.5	513.7	469.9
Petroleum coke (dollars per ton)	$17	$15	$25
Natural gas used in production (thousands of MMBtu)(5)	7,619.5	5,596.0	—
Natural gas used in production (dollars per MMBtu)(5)(6)	$3.24	$2.96	$—
Natural gas cost of materials and other (thousands of MMBtu)(5)	8,051.5	4,618.7	—
Natural gas cost of materials and other (dollars per MMBtu)(5)(6)	$3.26	$2.87	$—
Coffeyville Facility on-stream factors(7):			
Gasification	98.5 %	96.9 %	90.2 %
Ammonia	97.4 %	94.9 %	87.5 %
UAN	91.7 %	93.1 %	87.3 %
East Dubuque Facility on-stream factors (7):			
Ammonia	90.4 %	87.7 %	— %
UAN	90.3 %	87.3 %	— %
Reconciliation to net sales (dollars in millions):			
Sales net at gate	$290.0	$309.0	$248.8
Freight in revenue	32.8	33.0	27.2
Hydrogen revenue	0.4	3.2	11.8
Other revenue	7.6	11.1	1.4
Total net sales	$330.8	$356.3	$289.2

	Year Ended December 31,		
	2017	2016	2015
Market Indicators			
Ammonia — Southern Plains (dollars per ton)	$314	$356	$510
Ammonia — Corn belt (dollars per ton)	$358	$416	$566
UAN — Corn belt (dollars per ton)	$192	$208	$284
Natural gas NYMEX (dollars per MMBtu)	$3.02	$2.55	$2.63

(1) Amounts are shown exclusive of depreciation and amortization and major scheduled turnaround expenses.

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(2) Nitrogen Fertilizer EBITDA represents nitrogen fertilizer net income (loss) adjusted for (i) interest (income) expense; (ii) income tax expense; and (iii) depreciation and amortization expense. Adjusted Nitrogen Fertilizer EBITDA represents Nitrogen Fertilizer EBITDA further adjusted for (i) major scheduled turnaround expenses, when applicable; (ii) share-based compensation, non-cash; (iii) gain or loss on extinguishment of debt; (iv) expenses associated with the East Dubuque Merger, when applicable; (v) business interruption insurance recovery, when applicable; and (vi) loss on disposition of assets, when applicable. We present Adjusted Nitrogen Fertilizer EBITDA because we have found it helpful to consider an operating measure that excludes expenses, such as major scheduled turnaround expense, gain or loss on extinguishment of debt, loss on disposition of assets, expenses associated with the East Dubuque Merger and business interruption insurance recovery, relating to transactions not reflective of the Nitrogen Fertilizer Partnership's core operations.

We also present Adjusted Nitrogen Fertilizer EBITDA because it is the starting point for calculating the Nitrogen Fertilizer Partnership's available cash for distribution. Adjusted Nitrogen Fertilizer EBITDA is not a recognized term under GAAP and should not be substituted for net income as a measure of performance. Management believes that Nitrogen Fertilizer EBITDA and Adjusted Nitrogen Fertilizer EBITDA enable investors and analysts to better understand the Nitrogen Fertilizer Partnership's ability to make distributions to its common unitholders, help investors and analysts evaluate its ongoing operating results and allow for greater transparency in reviewing our overall financial, operational and economic performance by allowing investors to evaluate the same information used by management. Nitrogen Fertilizer EBITDA and Adjusted Nitrogen Fertilizer EBITDA presented by other companies may not be comparable to our presentation, since each company may define these terms differently. Below is a reconciliation of net income for the nitrogen fertilizer segment to Nitrogen Fertilizer EBITDA and Adjusted Nitrogen Fertilizer EBITDA for the years ended December 31, 2017, 2016 and 2015:

	Year Ended December 31,		
	2017	2016	2015
	(in millions)		
Nitrogen Fertilizer:			
Nitrogen Fertilizer net income (loss)	$(72.8)	$(26.9)	$62.0
Add:			
Interest expense and other financing costs, net	62.9	48.6	7.0
Income tax expense	0.2	0.3	—
Depreciation and amortization	74.0	58.2	28.4
Nitrogen Fertilizer EBITDA	64.3	80.2	97.4
Add:			
Major scheduled turnaround expenses	2.6	6.6	7.0
Share-based compensation, non-cash	—	—	0.1
Loss on extinguishment of debt	—	4.9	—
Expenses associated with the East Dubuque Merger	—	3.1	2.3
Less:			
Insurance recovery - business interruption	(1.1)	(2.1)	—
Adjusted Nitrogen Fertilizer EBITDA	$65.8	$92.7	$106.8

(3) Product pricing at gate represents net sales less freight revenue divided by product sales volume in tons and is shown in order to provide a pricing measure that is comparable across the fertilizer industry.

(4) Gross tons produced for ammonia represent the total ammonia produced, including ammonia produced that was upgraded into other fertilizer products. Net tons available for sale represent the ammonia available for sale that was

not upgraded into other fertilizer products.

(5) 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).

(6) The cost per MMBtu excludes derivative activity, when applicable. The impact of natural gas derivative activity was not material for the periods presented.

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(7) On-stream factor is the total number of hours operated divided by the total number of hours in the reporting period and is a measure of operating efficiency.

Coffeyville Facility

The Linde air separation unit experienced a shut down during the second quarter of 2017. Following the Linde outage, the Coffeyville Facility UAN unit experienced a number of operational challenges, resulting in approximately 11 days of UAN downtime during the second quarter of 2017. Excluding the impact of the Linde air separation unit outage at the Coffeyville Facility, the UAN unit on-stream factors at the Coffeyville Facility would have been 94.7% for the year ended December 31, 2017.

Excluding the impact of the full facility turnaround and the Linde air separation unit outages at the Coffeyville Fertilizer Facility, the on-stream factors for the year ended December 31, 2015 would have been 99.9% for gasifier, 97.7% for ammonia and 97.6% for UAN.

East Dubuque Facility

Excluding the impact of the full facility turnaround at the East Dubuque Facility, the on-stream factors would have been 94.2% for ammonia and 94.0% for UAN for the year ended December 31, 2017.

Excluding the impact of the full facility turnaround at the East Dubuque Facility, the on-stream factors would have been 97.8% for ammonia and 97.1% for UAN for the post-acquisition period ended December 31, 2016.

Year Ended December 31, 2017 compared to the Year Ended December 31, 2016 (Nitrogen Fertilizer Business)

Net Sales. Nitrogen fertilizer net sales were $330.8 million for the year ended December 31, 2017, compared to $356.3 million for the year ended December 31, 2016.

Excluding the East Dubuque Facility, net sales were $195.8 million for the year ended December 31, 2017 compared to $228.3 million for the year ended December 31, 2016. The decrease of $32.5 million was primarily attributable to the lower UAN sales prices ($24.0 million), lower UAN sales volumes ($7.2 million) and lower ammonia sales prices ($4.5 million), partially offset by higher ammonia sales volumes ($6.5 million) at the Coffeyville Facility. For the year ended December 31, 2017, UAN and ammonia made up $170.5 million and $18.4 million of the nitrogen fertilizer business' net sales, respectively, including freight. This compared to UAN and ammonia net sales of $201.7 million and $16.4 million, respectively, for the year ended December 31, 2016, including freight.

The following table demonstrates the impact of changes in sales volumes and pricing for the primary components of net sales at the Coffeyville Fertilizer Facility for the year ended December 31, 2017 compared to the year ended December 31, 2016:

	Price Variance	Volume Variance
	(in millions)	
UAN	$(24.0)	$ (7.2)
Ammonia	$(4.5)	$ 6.5
Hydrogen	$(0.2)	$ (2.6)

The decrease in UAN and ammonia sales prices at the Coffeyville Fertilizer Facility for the year ended December 31, 2017 compared to the year ended December 31, 2016 was primarily attributable to pricing fluctuation in the market.

Cost of Materials and Other. Nitrogen fertilizer cost of materials and other includes cost of freight and distribution expenses, feedstock, purchased ammonia and purchased hydrogen. Cost of materials and other for the year ended December 31, 2017 was $84.9 million, compared to $93.7 million for the year ended December 31, 2016.

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Excluding the East Dubuque Facility, cost of materials and other was $55.0 million for the year ended December 31, 2017 compared to $57.0 million for the year ended December 31, 2016. The decrease of $2.0 million was attributable to lower costs from transactions with third parties of $6.9 million, partially offset by higher transactions with affiliates of $4.9 million. The decrease in transactions with third parties was primarily the result of decreased distribution costs due to the timing of regulatory railcar repairs and maintenance ($3.5 million) and a reduction of expenses due to lower UAN sales at the Coffeyville Facility. The increase in transactions with affiliates was primarily the result of increased hydrogen purchases from a subsidiary of the Petroleum business ($4.0 million).

Direct Operating Expenses (Exclusive of Depreciation and Amortization). Direct operating expenses (exclusive of depreciation and amortization) for the nitrogen fertilizer business consist primarily of energy and utility costs, direct costs of labor, property taxes, plant-related maintenance services, including turnaround, and environmental and safety compliance costs as well as catalyst and chemical costs. Nitrogen fertilizer direct operating expenses for the year ended December 31, 2017 were $155.5 million, as compared to $148.3 million for the year ended December 31, 2016. The total increase of $7.2 million for the year ended December 31, 2017, as compared to the year ended December 31, 2016.

Excluding the East Dubuque Facility, direct operating expenses were $94.4 million for the year ended December 31, 2017 compared to $92.6 million for the year ended December 31, 2016. The increase of $1.8 million was attributable to higher costs from transactions with third parties of $3.0 million, partially offset by a decrease in transactions with affiliates of $1.2 million. The increase in transactions with third parties was primarily the result of higher utilities ($4.3 million) mostly due to higher electricity prices and also the result of other less significant fluctuations, partially offset by lower repairs and maintenance ($3.2 million).

Operating Income (loss). Nitrogen fertilizer operating loss was $9.2 million for the year ended December 31, 2017, as compared to operating income of $26.8 million for the year ended December 31, 2016. The decrease of $36.0 million was the result of decrease net sales ($25.5 million), increases in direct operating expenses ($11.2 million), and depreciation and amortization ($15.8 million), partially offset by decreases in cost of materials and other ($8.8 million), turnaround expenses ($4.0 million), and selling, general and administrative expenses ($3.7 million).

Year Ended December 31, 2016 compared to the Year Ended December 31, 2015

Net Sales. Nitrogen fertilizer net sales were $356.3 million for the year ended December 31, 2016, compared to $289.2 million for the year ended December 31, 2015. The net sales increase of $67.1 million is primarily attributable to increased sales volume due to the inclusion of the nine months of the East Dubuque Facility ($128.0 million). For the year ended December 31, 2016, UAN and ammonia made up $249.1 million and $78.0 million of the nitrogen fertilizer business' net sales, respectively. This compared to UAN and ammonia net sales of $258.8 million and $17.2 million, respectively, for the year ended December 31, 2015.

Excluding the East Dubuque Merger, net sales would have decreased by $60.9 million. The following table demonstrates the impact of changes in sales volumes and pricing for the primary components of net sales at the Coffeyville Fertilizer Facility for the year ended December 31, 2016 compared to the year ended December 31, 2015:

	Price Variance	Volume Variance
	(in millions)	
UAN	$(69.8)	$ 16.8
Ammonia	$(7.6)	$ 6.8
Hydrogen	$(1.8)	$ (6.8)

The decrease in UAN and ammonia sales prices at the Coffeyville Fertilizer Facility for the year ended December 31, 2016 compared to the year ended December 31, 2015 was primarily attributable to pricing fluctuation in the market. The increase of UAN and ammonia sales volume at the Coffeyville Fertilizer Facility for the year ended December 31, 2016 compared to the year ended December 31, 2015 was primarily attributable to the lost production during the Coffeyville Fertilizer Facility major scheduled turnaround during the third quarter of 2015. Lower hydrogen needs from the Refining Partnership resulted in decreased hydrogen sales volume at the Coffeyville Fertilizer Facility for the year ended December 31, 2016 compared to the year ended December 31, 2015.

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Cost of Materials and Other. Cost of materials and other for the year ended December 31, 2016 was $93.7 million, compared to $65.2 million for the year ended December 31, 2015. The $28.5 million increase was attributable to the inclusion of the nine months of the East Dubuque Facility ($36.7 million), which is partially offset by cost decreases at the Coffeyville Fertilizer Facility.

Direct Operating Expenses (Exclusive of Depreciation and Amortization). Nitrogen fertilizer direct operating expenses (exclusive of depreciation and amortization) for the year ended December 31, 2016 were $148.3 million, as compared to $106.1 million for the year ended December 31, 2015. The total increase of $42.2 million for the year ended December 31, 2016, as compared to the year ended December 31, 2015, was primarily attributable to the inclusion of the nine months of the East Dubuque Facility ($55.7 million).

Operating Income. Nitrogen fertilizer operating income was $26.8 million for the year ended December 31, 2016, as compared to operating income of $68.7 million for the year ended December 31, 2015. The decrease of $41.9 million was the result of the increases in direct operating expenses ($42.2 million), depreciation and amortization ($29.8 million), cost of materials and other ($28.5 million) and selling, general and administrative expenses ($8.5 million), partially offset by increases in net sales ($67.1 million).

Liquidity and Capital Resources

Although results are consolidated for financial reporting, CVR Energy, CVR Refining and CVR Partners are independent business entities and operate with independent capital structures. Since the Nitrogen Fertilizer Partnership's IPO in April 2011 and the Refining Partnership's IPO in January 2013, with the exception of cash distributions paid to us by the Nitrogen Fertilizer Partnership and the Refining Partnership, the cash needs of the Nitrogen Fertilizer Partnership and the Refining Partnership have been met independently from the cash needs of CVR Energy and each other with a combination of existing cash and cash equivalent balances, cash generated from operating activities and credit facility borrowings. The Refining Partnership's and the Nitrogen Fertilizer Partnership's ability to generate sufficient cash flows from their respective operating activities and to then make distributions on their common units, including to us (which we will need to pay salaries, reporting expenses and other expenses as well as dividends on our common stock) will continue to be primarily dependent on producing or purchasing, and selling, sufficient quantities of refined and nitrogen fertilizer products at margins sufficient to cover fixed and variable expenses.

We believe that the petroleum business and the nitrogen fertilizer business' cash flows from operations and existing cash and cash equivalents, along with borrowings under their respective existing credit facilities, as necessary, will be sufficient to satisfy the anticipated cash requirements associated with their existing operations for at least the next 12 months, and that we have sufficient cash resources to fund our operations for at least the next 12 months. However, future capital expenditures and other cash requirements could be higher than we currently expect as a result of various factors. Additionally, the ability to generate sufficient cash from operating activities depends on future performance, which is subject to general economic, political, financial, competitive, and other factors beyond our control.

Depending on the needs of our businesses, contractual limitations and market conditions, we may from time to time seek to issue equity securities, incur additional debt, issue debt securities, or otherwise refinance our existing debts. There can be no assurance that we will seek to do any of the foregoing or that we will be able to do any of the foregoing on terms acceptable to us or at all.

Cash Balances and Other Liquidity

As of December 31, 2017, we had consolidated cash and cash equivalents of $481.8 million. Of that amount, $258.8 million was cash and cash equivalents of CVR Energy, $173.8 million was cash and cash equivalents of the Refining Partnership and $49.2 million was cash and cash equivalents of the Nitrogen Fertilizer Partnership. As of February 20, 2018, we had consolidated cash and cash equivalents of approximately $499.7 million.

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The Refining Partnership and the Nitrogen Fertilizer Partnership have distribution policies in which they generally distribute all of their available cash each quarter, within 60 days after the end of each quarter. The distributions are made to all common unitholders. As of December 31, 2017, we held approximately 66% and 34% of the Refining Partnership's and the Nitrogen Fertilizer Partnership's common units outstanding, respectively. The amount of each distribution will be determined pursuant to each general partner's calculation of available cash for the applicable quarter. The general partner of each partnership, as a non-economic interest holder, is not entitled to receive cash distributions. As a result of each general partner's distribution policy, funds held by the Refining Partnership and the Nitrogen Fertilizer Partnership will not be available for our use, and we as a unitholder will receive our applicable percentage of the distribution of funds within 60 days following each quarter. The Refining Partnership and the Nitrogen Fertilizer Partnership do not have a legal obligation to pay distributions and there is no guarantee that they will pay any distributions on the units in any quarter.

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Borrowing Activities

2023 Notes. The Nitrogen Fertilizer Partnership and CVR Nitrogen Finance Corporation ("CVR Nitrogen Finance") issued $645.0 million aggregate principal amount of 9.250% Senior Secured Notes due 2023 are guaranteed on a senior secured basis by all of the Nitrogen Fertilizer Partnership's existing subsidiaries.

At any time prior to June 15, 2019, the Nitrogen Fertilizer Partnership may on any of one or more occasions redeem up to 35% of the aggregate principal amount of the 2023 Notes issued under the indenture governing the 2023 Notes in an amount not greater than the net proceeds of one or more public equity offerings at a redemption price of 109.250% of the principal amount of the 2023 Notes, plus any accrued and unpaid interest to the date of redemption. Prior to June 15, 2019, the Nitrogen Fertilizer Partnership may on any one or more occasions redeem all or part of the 2023 Notes at a redemption price equal to the sum of: (i) the principal amount thereof, plus (ii) the Make Whole Premium, as defined in the indenture governing the 2023 Notes, at the redemption date, plus any accrued and unpaid interest to the applicable redemption date.

On and after June 15, 2019, the Nitrogen Fertilizer Partnership may on any one or more occasions redeem all or a part of the 2023 Notes at the redemption prices (expressed as percentages of principal amount) set forth below, plus any accrued and unpaid interest to the applicable redemption date on such Notes, if redeemed during the 12-month period beginning on June 15 of the years indicated below:

Year	Percentage
2019	104.625%
2020	102.313%
2021 and thereafter	100.000%

Upon the occurrence of certain change of control events as defined in the indenture (including the sale of all or substantially all of the properties or assets of the Nitrogen Fertilizer Partnership and its subsidiaries taken as a whole), each holder of the 2023 Notes will have the right to require that the Nitrogen Fertilizer Partnership repurchase all or a portion of such holder’s 2023 Notes in cash at a purchase price equal to 101% of the aggregate principal amount thereof plus any accrued and unpaid interest to the date of repurchase.

See Part II, Item 8, Note 11 ("Long-Term Debt") of this Report for additional information on the 2023 Notes, including a description of the covenants contained therein. The Nitrogen Fertilizer Partnership was in compliance with the covenants as of December 31, 2017. The Nitrogen Fertilizer Partnership also had a nominal principal amount of 6.50% Senior Notes due 2021 (the "2021 Notes") outstanding as of December 31, 2017, which contain substantially no restrictive covenants and are not secured. See Part II, Item 8, Note 11 ("Long-Term Debt") of this Report for additional information regarding the 2021 Notes.

2022 Notes. The Refining Partnership's $500.0 million aggregate principal amount of 6.5% Second Lien Senior Notes due 2022 are unsecured and fully and unconditionally guaranteed by CVR Refining and each of Refining LLC's existing domestic subsidiaries (other than the co-issuer, Coffeyville Finance) on a joint and several basis.

The 2022 Notes mature on November 1, 2022, unless earlier redeemed or repurchased by the issuers. Interest is payable on the 2022 Notes semi-annually on May 1 and November 1 of each year, to holders of record at the close of business on April 15 and October 15, as the case may be, immediately preceding each such interest payment date.

The issuers have the right to redeem the 2022 Notes at a redemption prices (expressed as percentages of principal amount) set forth below, plus any accrued and unpaid interest to the applicable redemption date on such 2022 Notes, if redeemed during the 12-month period beginning on November 1 of the years indicated below:

Year	Percentage
2017	103.250 %
2018	102.167 %
2019	101.083 %
2020 and thereafter	100.000 %

Prior to November 1, 2017, some or all of the 2022 Notes were able to have been redeemed at a price equal to 100% of the principal amount thereof, plus a make-whole premium and any accrued and unpaid interest.

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In the event of a "change of control," the issuers are required to offer to buy back all of the 2022 Notes at 101% of their principal amount. A change of control is generally defined as (i) the direct or indirect sale or transfer (other than by a merger) of all or substantially all of the assets of Refining LLC to any person other than qualifying owners (as defined in the indenture), (ii) liquidation or dissolution of Refining LLC, or (iii) any person, other than a qualifying owner, directly or indirectly acquiring 50% of the member interest of Refining LLC.

See Part II, Item 8, Note 11 ("Long-Term Debt") of this Report for additional information on the 2022 Notes, including a description of the covenants contained therein. The Refining Partnership was in compliance with the covenants as of December 31, 2017.

Amended and Restated Asset Based (ABL) Credit Facility. On November 14, 2017, CRLLC, CVR Refining, Refining LLC and each of the operating subsidiaries of Refining LLC (collectively, the "Credit Parties") entered into Amendment No. 1 to the Amended and Restated ABL Credit Agreement (the “Amendment”) with a group of lenders and Wells Fargo Bank, National Association (“Wells Fargo”), as administrative agent and collateral agent. The Amendment amends certain provisions of the Amended and Restated ABL Credit Agreement, dated December 20, 2012, by and among Wells Fargo, the group of lenders party thereto and the Credit Parties (the “Existing Credit Agreement” and as amended by the Amendment, the “Amended and Restated ABL Credit Facility”), which was otherwise scheduled to mature in December 2017. The Amended and Restated ABL Credit Facility is a $400.0 million asset-based revolving credit facility, with sub-limits for letters of credit and swingline loans of $60.0 million and $40.0 million, respectively. The Amended and Restated ABL Credit Facility also includes a $200.0 million uncommitted incremental facility. The proceeds of the loans may be used for capital expenditures, working capital and general corporate purposes. The Amended and Restated Credit Facility matures in November 2022.

As of February 20, 2018, the Refining Partnership had $359.1 million available under the Amended and Restated ABL Credit Facility. Availability under the Amended and Restated ABL Credit Facility was limited by borrowing base conditions.

See Part II, Item 8, Note 11 ("Long-Term Debt") of this Report for additional information on the Amended and Restated ABL Credit Facility, including a description of the covenants contained therein. The Refining Partnership was in compliance with the covenants as of December 31, 2017.

Asset Based (ABL) Credit Facility. The Nitrogen Fertilizer Partnership has an ABL Credit Facility, the proceeds of which may be used to fund working capital and other general corporate purposes. The ABL Credit Facility is a senior secured asset-based revolving credit facility with an aggregate principal amount of availability of up to $50.0 million with an incremental facility, which permits an increase in borrowings of up to $25.0 million in the aggregate subject to additional lender commitments and certain other conditions. The ABL Credit Facility matures in September 2021.

As of February 20, 2018, the Nitrogen Fertilizer Partnership and its subsidiaries had availability under the ABL Credit Facility of $46.4 million. Availability under the ABL Credit Facility was limited by borrowing base conditions.

See Part II, Item 8, Note 11 ("Long-Term Debt") of this Report for additional information on the ABL Credit Facility, including a description of the covenants contained therein. The Nitrogen Fertilizer Partnership was in compliance with the covenants as of December 31, 2017.

Capital Spending

We divide the petroleum business and the nitrogen fertilizer business' capital spending needs into two categories: maintenance and growth. Maintenance capital spending includes only non-discretionary maintenance projects and

projects required to comply with environmental, health and safety regulations. We undertake discretionary capital spending based on the expected return on incremental capital employed. Discretionary capital projects generally involve an expansion of existing capacity, improvement in product yields, and/or a reduction in direct operating expenses. Major scheduled turnaround expenses are expensed when incurred.

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The following table summarizes our total actual capital expenditures for 2017 and current estimated capital expenditures in 2018 by operating segment and major category. These estimates may change as a result of unforeseen circumstances or a change in our plans, and amounts may not be spent in the manner allocated below:

	Year Ended December 31,	
	2017 Actual	2018 Estimate
	(in millions) (unaudited)	
Petroleum Business (the Refining Partnership):		
Coffeyville refinery:		
Maintenance	$36.9	$ 75.0
Growth	3.0	10.0
Coffeyville refinery total capital spending	39.9	85.0
Wynnewood refinery:		
Maintenance	38.1	65.0
Growth	4.0	25.0
Wynnewood refinery total capital spending	42.1	90.0
Other Petroleum:		
Maintenance	2.7	15.0
Growth	15.0	10.0
Other petroleum total capital spending	17.7	25.0
Petroleum business total capital spending	99.7	200.0
Nitrogen Fertilizer Business (the Nitrogen Fertilizer Partnership):		
Maintenance	14.1	18.0
Growth	0.4	3.0
Nitrogen fertilizer business total capital spending	14.5	21.0
Corporate	4.4	10.0
Total capital spending	$118.6	$ 231.0

The petroleum business' and the nitrogen fertilizer business' estimated capital expenditures are subject to change due to unanticipated changes in the cost, scope and completion time for capital projects. For example, they may experience increases/decreases in labor or equipment costs necessary to comply with government regulations or to complete projects that sustain or improve the profitability of the refineries or nitrogen fertilizer plants. The petroleum business and nitrogen fertilizer business may also accelerate or defer some capital expenditures from time to time. Capital spending for the Nitrogen Fertilizer Partnership's nitrogen fertilizer business and the Refining Partnership's petroleum business is determined by each partnership's respective board of directors of its general partner.

On December 1, 2017, CVR Refining acquired the Cushing to Ellis crude oil pipeline system from Plains All American Pipeline, L.P. ("Plains") for $15.0 million, which amount is included in other petroleum growth capital spending in the table above. The approximately 100-mile, 8- and 10-inch pipeline system links CVR Refining’s Wynnewood, Oklahoma, refinery to Cushing.

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Cash Flows

The following table sets forth our consolidated cash flows for the periods indicated below:

	Year Ended December 31,		
	2017	2016	2015
	(in millions)		
Net cash provided by (used in):			
Operating activities	$166.9	$267.5	$536.8
Investing activities (1)	(195.0)	(201.4)	(150.6)
Financing activities	(225.9)	(95.4)	(374.8)
Net increase (decrease) in cash and cash equivalents	$(254.0)	$(29.3)	$11.4

(1) Investing activities for the year ended December 31, 2017 includes the acquisition of the Cushing to Ellis crude oil pipeline system totaling $15.0 million and equity method investments in the Midway joint venture of $76.0 million.

Cash Flows Provided by Operating Activities

For purposes of this cash flow discussion, we define trade working capital as accounts receivable, inventory and accounts payable. Other working capital is defined as all other current assets and liabilities except trade working capital.

Net cash flows provided by operating activities for the year ended December 31, 2017 were $166.9 million. The negative cash flow from operating activities generated over this period was primarily driven by $216.9 million of net income before noncontrolling interest and favorable impacts to trade working capital, partially offset by unfavorable impacts to other working capital. Trade working capital for the year ended December 31, 2017 resulted in a net cash inflow of $23.2 million, which was attributable to an increase in accounts payable ($88.1 million), offset by increases in accounts receivable ($27.3 million) and inventory ($37.6 million). The increase in accounts payable was primarily associated with an increase in the petroleum business' lease crude payables due to increased activity and crude pricing. The increase in accounts receivable was primarily attributable to increased pricing and volume for petroleum products sold and the increase in inventories was primarily related to increased pricing for gasoline, distillates and crude oil in the petroleum business. Other working capital activities resulted in a net cash outflow of $148.3 million, which was primarily related to decreases in other current liabilities ($168.0 million) and due to parent ($15.7 million), partially offset by a decrease in prepaid expenses and other current assets ($33.9 million). The large decrease in other current liabilities was primarily attributable to a decrease in the petroleum business' biofuel blending obligation as a result of RINs purchases during the year ended December 31, 2017 to fulfill the petroleum business' requirements under the RFS, partially offset by an increase in unrealized loss on open derivative positions and forward purchase commitments. The decrease in due to parent was the result of the timing and application of the tax payments to AEPC under the Tax Allocation Agreement. The decrease in prepaid expense was primarily related to a decrease in crude barrels in-transit and a decrease in prepaid pipeline capacity.

Net cash flows provided by operating activities for the year ended December 31, 2016 were $267.5 million. The positive cash flow from operating activities generated over this period was primarily driven by $8.9 million of net income before noncontrolling interest and favorable impacts to other working capital, partially offset by unfavorable impacts to trade working capital. Trade working capital for the year ended December 31, 2016 resulted in a net cash outflow of $65.2 million, which was attributable to increases in accounts receivable ($47.5 million) and inventory ($7.3 million), primarily attributable to increased pricing for petroleum products, and a decrease in accounts payable ($10.4 million). Each of the cash flow impacts in trade working capital were largely attributable to the crude oil

pricing environment and increases in sales prices for gasoline and distillates at the petroleum business in 2016 as compared to 2015. Other working capital activities resulted in a net cash inflow of $146.3 million, which was primarily related to increases in other current liabilities ($151.2 million) and due to parent ($22.2 million), partially offset by decreases in deferred revenue ($20.4 million) and accrued income taxes ($3.3 million) and an increase in prepaid expenses and other current assets ($3.4 million). The large increase in other current liabilities was primarily attributable to the increase in the biofuel blending obligation at the petroleum business to fulfill the petroleum business' requirements under the RFS, as a result of increased RINs obligation associated with increased RINs prices during the year ended December 31, 2016. The increase in due to parent was the result of the timing and application of the tax payments to AEPC under the Tax Allocation Agreement. The decrease in deferred revenue was primarily attributable to the East Dubuque Merger. Settlements on derivative contracts during 2016 also contributed to the positive cash flow from operating activities.

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Net cash flows provided by operating activities for the year ended December 31, 2015 were $536.8 million. The positive cash flow from operating activities generated over this period was primarily driven by $297.8 million of net income before noncontrolling interest and favorable impacts to trade working capital and other working capital. Trade working capital for the year ended December 31, 2015 resulted in a net cash inflow of $66.4 million, which was attributable to decreases in accounts receivable ($41.0 million) and inventory ($39.7 million), partially offset by a decrease in accounts payable ($14.3 million). Each of the cash flow impacts in trade working capital were largely attributable to the crude oil pricing environment and significant decreases in sales prices for gasoline and distillates at the petroleum business in 2015 as compared to 2014. Other working capital activities resulted in net cash inflow of $14.8 million, which was primarily related to decreases in prepaid expenses and other current assets ($40.4 million) and due from parent ($32.8 million), partially offset by decreases in other current liabilities ($52.1 million) and deferred revenue ($10.5 million). The decrease in prepaid expenses and other current assets was primarily due to the sale of trading securities, the timing of payments associated with the petroleum business' crude oil intermediation agreement and a reduction in prepaid insurance. The decrease in due from parent was the result of the timing and application of overpayments to AEPC under the Tax Allocation Agreement. The decrease in other current liabilities was primarily attributable to a decrease in the biofuel blending obligation at the petroleum business as a result of increased RINs purchases during the year ended December 31, 2015 to fulfill the petroleum business' requirements under the RFS. The decrease in deferred revenue was primarily attributable to lower market demand for prepaid contracts at the nitrogen fertilizer business for the year ended December 31, 2015 compared to the year ended December 31, 2014.

Cash Flows Used In Investing Activities

Net cash used in investing activities for the year ended December 31, 2017 was $195.0 million compared to $201.4 million for the year ended December 31, 2016. The decrease of $6.4 million of cash used in investing activities was primarily due to the net cash paid by the nitrogen fertilizer business in 2016 for the acquisition of CVR Nitrogen ($63.8 million) and lower capital expenditures in 2017 compared to 2016 ($14.1 million), offset by an increase in cash investments in affiliates in 2017 compared to 2016 ($70.9 million) primarily associated with the petroleum business' investment in the Midway joint venture.

Net cash used in investing activities for the year ended December 31, 2016 was $201.4 million compared to $150.6 million for the year ended December 31, 2015. The increase of $50.8 million of cash used in investing activities was primarily due to the net cash paid for the acquisition of CVR Nitrogen ($63.8 million), security purchases ($18.6 million), investment in VPP ($5.6 million) and a decrease in proceeds from available-for-sale securities ($48.7 million), partially offset by a decrease in capital expenditures during 2016 ($86.0 million).

Cash Flows Used In Financing Activities

Net cash used in financing activities for the year ended December 31, 2017 was $225.9 million compared to $95.4 million for the year ended December 31, 2016. The net cash used in financing activities for the year ended December 31, 2017 was primarily attributable to dividend payments of $173.7 million to our common stockholders and distributions of $47.3 million and $1.5 million to the Refining Partnership's and Nitrogen Fertilizer Partnership's common unitholders, respectively. The increase in net cash used in financing activities of $130.5 million for the year ended December 31, 2017 compared to 2016 was primarily due to the $132.5 million net proceeds received in 2016 from the Nitrogen Fertilizer Partnerships' issuance of 2023 Notes net of debt repayments.

Net cash used in financing activities for the year ended December 31, 2016 was $95.4 million. The net cash used in financing activities for the year ended December 31, 2016 was primarily attributable to debt repayments totaling $496.3 million, dividend payments of $173.6 million to common stockholders and distributions of $41.9 million to the

Nitrogen Fertilizer Partnership common unitholders, offset by net proceeds of $628.8 million from the Nitrogen Fertilizer Partnerships' issuance of 2023 Notes.

Net cash used in financing activities for the year ended December 31, 2015 was approximately $374.8 million. The net cash used in financing activities for the year ended December 31, 2015 was primarily attributable to dividend payments to common stockholders of $173.7 million and distributions to the Refining Partnership and Nitrogen Fertilizer Partnership common unitholders of $199.7 million.

As of and for the year ended December 31, 2017, there were no borrowings or repayments under the Amended and Restated ABL Credit Facility or the ABL Credit Facility.

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Capital and Commercial Commitments

In addition to long-term debt, we are required to make payments relating to various types of obligations. The following table summarizes our minimum payments as of December 31, 2017 relating to contractual obligations and other commercial commitments for the five-year period following December 31, 2017 and thereafter.

	Payments Due by Period						
	Total	2018	2019	2020	2021	2022	Thereafter
	(in millions)						
Contractual Obligations							
Long-term debt(1)	$1,147.2	$—	$—	$—	$2.2	$500.0	$645.0
Operating leases(2)	32.3	7.4	6.5	5.9	5.3	4.8	2.4
Capital lease obligations(3)	45.0	2.1	2.3	2.6	2.9	3.1	32.0
Unconditional purchase obligations(4)	1,107.1	165.0	124.3	100.6	89.8	84.7	542.7
Environmental liabilities(5)	4.0	2.9	1.1	—	—	—	—
Interest payments(6)	518.3	96.9	96.7	96.4	96.1	90.2	42.0
Total	$2,853.9	$274.3	$230.9	$205.5	$196.3	$682.8	$1,264.1
Other Commercial Commitments							
Standby letters of credit(7)	$28.4	$—	$—	$—	$—	$—	$—

(1) Consists of the 2021 Notes, the 2022 Notes and the 2023 Notes as of December 31, 2017.

(2) The Refining Partnership and the Nitrogen Fertilizer Partnership lease various facilities and equipment, including railcars and real property, under operating leases for various periods. See Note 18 ("Related Party Transactions") to Part II, Item 8 of this Report for a discussion of our railcar leases with affiliates.

(3) The amount includes commitments under capital lease arrangements for two leases associated with pipelines and storage and terminal equipment at the Wynnewood refinery.

(4) The amount includes (a) commitments under several agreements for the petroleum operations related to pipeline usage, petroleum products storage and petroleum transportation, (b) commitments under an electricity supply agreement with the city of Coffeyville and electricity supply agreements associated with our East Dubuque Facility in Illinois, (c) a product supply agreement with Linde, (d) a pet coke supply agreement with HollyFrontier Corporation with a term ending in December 2018, (e) commitments related to our biofuels blending obligation, (f) various agreements associated with our East Dubuque Facility in Illinois for gas and gas transportation and (g) approximately $698.6 million payable ratably over 13 years pursuant to petroleum transportation service agreements between CRRM and each of TransCanada Keystone Pipeline Limited Partnership and TransCanada Keystone Pipeline, LP (together, "TransCanada"). The purchase obligation reflects the exchange rate between the Canadian dollar and the U.S. dollar as of December 31, 2017, where applicable. Under the agreements, CRRM receives transportation of at least 25,000 barrels per day of crude oil with a delivery point at Cushing, Oklahoma for a term of 20 years on TransCanada's Keystone pipeline system.

(5) Environmental liabilities represents our estimated payments required by federal and/or state environmental agencies related to closure of hazardous waste management units at our sites in Coffeyville and Phillipsburg, Kansas and Wynnewood, Oklahoma. We also are required to make payments with respect to other environmental liabilities which are not contractual obligations but which would be necessary for our continued operations. See Item 1."Business — Environmental Matters."

(6) Interest payments are based on stated interest rates for our long-term debt outstanding and interest payments for the capital lease obligation as of December 31, 2017 and also includes commitment fees on the unutilized commitments of the ABL Credit Facility.

(7) Standby letters of credit issued against our Amended and Restated ABL Credit Facility include $0.3 million of letters of credit issued in connection with environmental liabilities, $26.5 million in letters of credit to secure transportation services for crude oil and a $1.6 million letter of credit issued to guarantee a portion of our insurance policy.

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The Refining Partnership's and the Nitrogen Fertilizer Partnership's ability to make payments on and to refinance their indebtedness, to fund budgeted capital expenditures and to satisfy their other capital and commercial commitments will depend on their respective independent abilities to generate cash flow in the future. Their ability to refinance their respective indebtedness is also subject to the availability of the credit markets, which in recent periods have been volatile. This, to a certain extent, is subject to refining spreads (for the Refining Partnership), fertilizer margins (for the Nitrogen Fertilizer Partnership) and general economic, financial, competitive, legislative, regulatory and other factors they are unable to control. Our businesses may not generate sufficient cash flow from operations, and future borrowings may not be available to the Nitrogen Fertilizer Partnership under its revolving credit facility or the 2021 and 2023 senior notes or to the Refining Partnership under the Amended and Restated ABL Credit Facility or the 2022 senior notes (or other credit facilities our businesses may enter into in the future) in an amount sufficient to enable them to pay indebtedness or to fund other liquidity needs. They may seek to sell assets to fund liquidity needs but may not be able to do so. They may also need to refinance all or a portion of their indebtedness on or before maturity, and may not be able to refinance such indebtedness on commercially reasonable terms or at all.

Off-Balance Sheet Arrangements

We do not have any "off-balance sheet arrangements" as such term is defined within the rules and regulations of the SEC.

Recent Accounting Pronouncements

Refer to Part II, Item 8, Note 2 ("Summary of Significant Accounting Policies"), of this Report for a discussion of recent accounting pronouncements applicable to us.

Critical Accounting Policies

We prepare our consolidated financial statements in accordance with GAAP. In order to apply these principles, management must make judgments, assumptions and estimates based on the best available information at the time. Actual results may differ based on the accuracy of the information utilized and subsequent events. Our accounting policies are described in the notes to our audited consolidated financial statements included elsewhere in this Report. Our critical accounting policies, which are listed below, could materially affect the amounts recorded in our consolidated financial statements.

•Estimated lives used in computing depreciation for property, plant and equipment
•Goodwill impairment
•Income taxes
•Impairment of long-lived assets
•Derivative instruments and fair value of financial instruments
•Share-based compensation

Refer to Note 2 ("Summary of Significant Accounting Policies") to Part II, Item 8 of this Report for a discussion of these accounting policies.

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Item 7A. Quantitative and Qualitative Disclosures About Market Risk

The risk inherent in our market risk sensitive instruments and positions is the potential loss from adverse changes in commodity prices, RINs prices, and interest rates. None of our market risk sensitive instruments are held for trading purposes.

Commodity Price Risk

The petroleum business, as a manufacturer of refined petroleum products, and the nitrogen fertilizer business, as a manufacturer of nitrogen fertilizer products, all of which are commodities, have exposure to market pricing for products sold in the future. In order to realize value from our processing capacity, a positive spread between the cost of raw materials and the value of finished products must be achieved (i.e., gross margin or crack spread). The physical commodities that comprise our raw materials and finished goods are typically bought and sold at a spot or index price that can be highly variable.

The petroleum business uses a crude oil purchasing intermediary, Vitol, to purchase the majority of its non-gathered crude oil inventory for the refineries, which allows it to take title to and price its crude oil at locations in close proximity to the refineries, as opposed to the crude oil origination point, reducing its risk associated with volatile commodity prices by shortening the commodity conversion cycle time. The commodity conversion cycle time refers to the time elapsed between raw material acquisition and the sale of finished goods. In addition, the petroleum business seeks to reduce the variability of commodity price exposure by engaging in hedging strategies and transactions that will serve to protect gross margins as forecasted in the annual operating plan. Accordingly, the petroleum business uses commodity derivative contracts to economically hedge future cash flows (i.e., gross margin or crack spreads) and product inventories. With regard to its hedging activities, the petroleum business may enter into, or has entered into, derivative instruments which serve to: lock in or fix a percentage of the anticipated or planned gross margin in future periods when the derivative market offers commodity spreads that generate positive cash flows; hedge the value of inventories in excess of minimum required inventories; and manage existing derivative positions related to a change in anticipated operations and market conditions.

Further, the petroleum business intends to engage only in risk mitigating activities directly related to its business. The nitrogen fertilizer business has not historically hedged for commodity prices.

Basis Risk.

The effectiveness of the petroleum business' derivative strategies is dependent upon the correlation of the price index utilized for the hedging activity and the cash or spot price of the physical commodity for which price risk is being mitigated. Basis risk is a term we use to define that relationship. Basis risk can exist due to several factors including time or location differences between the derivative instrument and the underlying physical commodity. The selection of the appropriate index to utilize in a hedging strategy is a prime consideration in the petroleum business' basis risk exposure.

Examples of our basis risk exposure are as follows:

- Time Basis — In entering over-the-counter swap agreements, the settlement price of the swap is typically the average price of the underlying commodity for a designated calendar period. This settlement price is based on the assumption that the underlying physical commodity will price ratably over the swap period. If the commodity does not move ratably over the periods, then weighted-average physical prices will be weighted differently than the swap price as the result of timing.

- Location Basis — In hedging NYMEX crack spreads, the petroleum business experiences location basis as the settlement of NYMEX refined products (related more to New York Harbor cash markets) which may be different than the prices of refined products in its' Group 3 pricing area.

Price and Basis Risk Management Activities.

In the event inventories exceed the petroleum business' target base level of inventories, it may enter into commodity derivative contracts to manage price exposure to inventory positions that are in excess of its base level. Excess inventories are typically the result of plant operations, such as a turnaround or other plant maintenance.

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To reduce the basis risk between the price of products for Group 3 and that of the NYMEX associated with selling forward derivative contracts for NYMEX crack spreads, the petroleum business may enter into basis swap positions to lock the price difference. If the difference between the price of products on the NYMEX and Group 3 (or some other price benchmark as specified in the swap) is different than the value contracted in the swap, then it will receive from or owe to the counterparty the difference on each unit of product contracted in the swap, thereby completing the locking of its margin. An example of the petroleum business' use of a basis swap is in the winter heating oil season. The risk associated with not hedging the basis when using NYMEX forward contracts to fix future margins is if the crack spread increases based on prices traded on NYMEX while Group 3 pricing remains flat or decreases then the petroleum business would be in a position to lose money on the derivative position while not earning an offsetting additional margin on the physical position based on the Group 3 pricing.

From time to time, the petroleum business also holds various NYMEX positions through a third-party clearing house. At December 31, 2017, the Refining Partnership had no open commodity positions. At December 31, 2017, the Refining Partnership's account balance maintained at the third-party clearing house totaled approximately $1.4 million, which is reflected on the Consolidated Balance Sheets in cash and cash equivalents. NYMEX transactions conducted for the year ended December 31, 2017 resulted in loss on derivatives, net of approximately $0.5 million.

The Refining Partnership enters into commodity swap contracts in order to fix the margin on a portion of future production. Additionally, the Refining Partnership may enter into price and basis swaps in order to fix the price on a portion of its commodity purchases and product sales. The physical volumes are not exchanged and these contracts are net settled with cash. The contract fair value of the commodity swaps is reflected on the Consolidated Balance Sheets with changes in fair value currently recognized in the Consolidated Statements of Operations. At December 31, 2017, the Refining Partnership had open commodity swap instruments consisting of 7.1 million barrels of 2-1-1crack spreads, 3.6 million barrels of distillate crack spreads and 3.6 million barrels of gasoline crack spreads. Additionally, as of December 31, 2017, we had open forward purchase and sale commitments for 5.8 million barrels of Canadian crude oil priced at fixed differentials that are not considered probable of physical settlement and are accounted for as derivatives at December 31, 2017. A change of $1.00 per barrel in the fair value of the benchmark would result in an increase or decrease in the related fair values of commodity instruments of $17.7 million. The fair value of the outstanding contracts at December 31, 2017 was a net unrealized loss of $64.3 million, comprised of short-term unrealized losses.

Interest Rate Risk

Subsequent to the expiration of the interest rate swaps on February 12, 2016, the Nitrogen Fertilizer Partnership has exposure to interest rate risk on 100% of its $125.0 million floating rate debt. A 1.0% increase over the Eurodollar floor spread of 3.5%, as specified in the credit agreement, would increase interest cost to the Nitrogen Fertilizer Partnership by approximately $1.3 million on an annualized basis, thus decreasing net income by the same amount.

Compliance Program Price Risk

As a producer of transportation fuels from petroleum, the Refining Partnership is required to blend biofuels into the product it produces or to purchase RINs in the open market in lieu of blending to meet the mandates established by the EPA. The Refining Partnership is exposed to market risk related to volatility in the price of RINs needed to comply with the RFS. To mitigate the impact of this risk on the Refining Partnership's results of operations and cash flows, the Refining Partnership purchased RINs when prices are deemed favorable. See Note 14 ("Commitments and Contingencies") to Part II, Item 8 of this Report and "Major Influences on Results of Operations" in Part II, Item 7 of this Report for further discussion about compliance with the RFS.

Foreign Currency Exchange

Given that ours, the petroleum business' and the nitrogen fertilizer business' operations are based entirely in the United States, we are not significantly exposed to foreign currency exchange rate risk. A portion of the petroleum business' pipeline transportation costs are transacted in Canadian dollars. Commitments for future periods under this agreement reflect the exchange rate between the Canadian Dollar and the U.S. Dollar as of the end of the reporting period. Based on the short period of time between the billing and settlement of these transportation costs in Canadian dollars, the exposure to foreign currency exchange rate risk and the resulting foreign currency gain (loss) is not material.

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Item 8. Financial Statements and Supplementary Data

CVR Energy, Inc. and Subsidiaries

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

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Report of Independent Registered Public Accounting Firm

The Board of Directors and Stockholders of CVR Energy, Inc.

Opinion on the financial statements

We have audited the accompanying consolidated balance sheets of CVR Energy, Inc. (a Delaware corporation) and subsidiaries (the "Company") as of December 31, 2017 and 2016, the related consolidated statements of operations, comprehensive income, changes in equity, and cash flows for each of the three years in the period ended December 31, 2017, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2017 and 2016, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2017, in conformity with accounting principles generally accepted in the United States of America.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) ("PCAOB"), the Company's internal control over financial reporting as of December 31, 2017, based on criteria established in the 2013 Internal Control - Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO"), and our report dated February 26, 2018 expressed an unqualified opinion.

Basis for opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures include examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ GRANT THORNTON LLP

We have served as the Company's auditor since 2013.

Kansas City, Missouri
February 26, 2018

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Report of Independent Registered Public Accounting Firm

The Board of Directors and Stockholders of CVR Energy, Inc.

Opinion on internal control over financial reporting

We have audited the internal control over financial reporting of CVR Energy, Inc. (a Delaware corporation) and subsidiaries (the "Company") as of December 31, 2017, based on criteria established in the 2013 Internal Control — Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO"). In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2017, based on criteria established in the 2013 Internal Control - Integrated Framework issued by COSO.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) ("PCAOB"), the consolidated financial statements of the Company as of and for the year ended December 31, 2017, and our report dated February 26, 2018 expressed an unqualified opinion on those financial statements.

Basis for opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit.

We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and limitations of internal control over financial reporting

A company's internal control over financial reporting is a process designed 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. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ GRANT THORNTON LLP

Kansas City, Missouri
February 26, 2018

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CVR Energy, Inc. and Subsidiaries

CONSOLIDATED BALANCE SHEETS

	December 31,	
	2017	2016
	(in millions, except share data)	
ASSETS		
Current assets:		
Cash and cash equivalents (including $223.0 and $369.7, respectively, of consolidated variable interest entities ("VIEs"))	$481.8	$735.8
Accounts receivable of VIEs, net of allowance for doubtful accounts of $1.1 and $0.5, respectively	178.7	151.9
Inventories of VIEs	385.2	349.2
Prepaid expenses and other current assets (including $30.0 and $65.0, respectively, of VIEs)	33.7	68.4
Income tax receivable (including $0.0 and $0.2, respectively, of VIEs)	9.7	10.2
Due from parent	5.1	—
Total current assets	1,094.2	1,315.5
Property, plant and equipment, net of accumulated depreciation (including $2,548.3 and $2,645.1, respectively, of VIEs)	2,571.8	2,672.1
Intangible assets of VIEs, net	0.2	0.2
Goodwill of VIEs	41.0	41.0
Equity method investments in affiliates of VIEs	82.8	5.6
Other long-term assets (including $13.3 and $19.1, respectively, of VIEs)	16.7	15.8
Total assets	$3,806.7	$4,050.2
LIABILITIES AND EQUITY		
Current liabilities:		
Note payable and capital lease obligations of VIEs	$2.1	$1.8
Accounts payable (including $329.0 and $247.7, respectively, of VIEs)	333.9	251.0
Personnel accruals (including $29.9 and $23.6, respectively, of VIEs)	55.9	45.7
Accrued taxes other than income taxes of VIEs	26.5	27.0
Deferred revenue of VIEs	12.9	12.6
Due to parent	—	10.6
Other current liabilities (including $111.8 and $216.8, respectively, of VIEs)	112.4	217.2
Total current liabilities	543.7	565.9
Long-term liabilities:		
Long-term debt and capital lease obligations of VIEs, net of current portion	1,164.4	1,162.8
Deferred income taxes (including $1.0 and $0.8, respectively, of VIEs)	385.9	579.9
Other long-term liabilities (including $3.7 and $5.4, respectively, of VIEs)	8.7	32.0
Total long-term liabilities	1,559.0	1,774.7
Commitments and contingencies		
Equity:		

CVR stockholders' equity:		
Common stock $0.01 par value per share, 350,000,000 shares authorized, 86,929,660 shares issued	0.9	0.9
Additional paid-in-capital	1,197.6	1,197.6
Retained deficit	(277.4)	(338.1)
Treasury stock, 98,610 shares at cost	(2.3)	(2.3)
Accumulated other comprehensive loss, net of tax	—	—
Total CVR stockholders' equity	918.8	858.1
Noncontrolling interest	785.2	851.5
Total equity	1,704.0	1,709.6
Total liabilities and equity	$3,806.7	$4,050.2

See accompanying notes to consolidated financial statements.

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CVR Energy, Inc. and Subsidiaries

CONSOLIDATED STATEMENTS OF OPERATIONS

	Year Ended December 31,		
	2017	2016	2015
	(in millions, except per share data)		
Net sales	$5,988.4	$4,782.4	$5,432.5
Operating costs and expenses:			
Cost of materials and other	4,882.9	3,847.5	4,190.4
Direct operating expenses (exclusive of depreciation and amortization as reflected below)	599.5	541.8	584.7
Depreciation and amortization	203.3	184.5	156.4
Cost of sales	5,685.7	4,573.8	4,931.5
Flood insurance recovery	—	—	(27.3)
Selling, general and administrative expenses (exclusive of depreciation and amortization as reflected below)	114.2	109.1	99.0
Depreciation and amortization	10.7	8.6	7.7
Total operating costs and expenses	5,810.6	4,691.5	5,010.9
Operating income	177.8	90.9	421.6
Other income (expense):			
Interest expense and other financing costs	(110.1)	(83.9)	(48.4)
Interest income	1.1	0.7	1.0
Loss on derivatives, net	(69.8)	(19.4)	(28.6)
Loss on extinguishment of debt	—	(4.9)	—
Other income, net	1.0	5.7	36.7
Total other expense	(177.8)	(101.8)	(39.3)
Income (loss) before income taxes	0.0	(10.9)	382.3
Income tax expense (benefit)	(216.9)	(19.8)	84.5
Net income	216.9	8.9	297.8
Less: Net income (loss) attributable to noncontrolling interest	(17.5)	(15.8)	128.2
Net income attributable to CVR Energy stockholders	$234.4	$24.7	$169.6
Basic and diluted earnings per share	$2.70	$0.28	$1.95
Dividends declared per share	$2.00	$2.00	$2.00
Weighted-average common shares outstanding:			
Basic and Diluted	86.8	86.8	86.8

See accompanying notes to consolidated financial statements.

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CVR Energy, Inc. and Subsidiaries

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

	Year Ended December 31,		
	2017	2016	2015
	(in millions)		
Net income	$216.9	$8.9	$297.8
Other comprehensive income (loss):			
Unrealized gain on available-for-sale securities, net of tax of $0.0, $0.2 and $12.6, respectively	—	0.3	19.2
Net gain reclassified into income on sale of available-for-sale-securities, net of tax of $0.0, $(0.2), and $(8.0), respectively (Note 15)	—	(0.3)	(12.1)
Net gain reclassified into income on reclassification of available-for-sale securities to trading securities, net of tax of $0.0, $0.0, and $(4.6), respectively (Note 15)	—	—	(7.1)
Change in fair value of interest rate swaps, net of tax of $0.0, $0.0 and $0.0, respectively	—	—	(0.1)
Net loss reclassified into income on settlement of interest rate swaps, net of tax of $0.0, $0.0, and $0.2, respectively (Note 16)	—	—	0.8
Total other comprehensive income	—	—	0.7
Comprehensive income	216.9	8.9	298.5
Less: Comprehensive income (loss) attributable to noncontrolling interest	(17.5)	(15.8)	128.6
Comprehensive income attributable to CVR Energy stockholders	$234.4	$24.7	$169.9

See accompanying notes to consolidated financial statements.

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CVR Energy, Inc. and Subsidiaries

CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY

	Common Stockholders								
	Shares Issued	$0.01 Par Value Common Stock	Additional Paid-In Capital	Retained Earnings (Deficit)	Treasury Stock	Accumulated Other Comprehensive Income (Loss)	Total CVR Stockholders' Equity	Noncontrolling Interest	Total Equity
	(in millions, except share data)								
Balance at December 31, 2014	86,929,660	$ 0.9	$1,174.7	$(184.9)	$(2.3)	$ (0.3)	$ 988.1	$ 687.2	$1,675.3
Dividends paid to CVR Energy stockholders	—	—	—	(173.7)	—	—	(173.7)	—	(173.7)
Distributions from CVR Partners to public unitholders	—	—	—	—	—	—	—	(42.8)	(42.8)
Distributions from CVR Refining to public unitholders	—	—	—	—	—	—	—	(156.9)	(156.9)
Share-based compensation	—	—	0.1	(0.2)	—	—	(0.1)	0.3	0.2
Excess tax deficiency from share-based compensation	—	—	(0.1)	—	—	—	(0.1)	—	(0.1)
Net income	—	—	—	169.6	—	—	169.6	128.2	297.8
Other comprehensive income, net of tax	—	—	—	—	—	0.3	0.3	0.4	0.7
Balance at December 31, 2015	86,929,660	0.9	1,174.7	(189.2)	(2.3)	—	984.1	616.4	1,600.5
Dividends paid to CVR Energy stockholders	—	—	—	(173.6)	—	—	(173.6)	—	(173.6)
Distributions from CVR Partners to public unitholders	—	—	—	—	—	—	—	(41.9)	(41.9)
Impact of CVR Partners' common units issuance for the East Dubuque Merger, net of tax of $20.0	—	—	22.9	—	—	—	22.9	292.8	315.7
Net income (loss)	—	—	—	24.7	—	—	24.7	(15.8)	8.9
Balance at December 31, 2016	86,929,660	0.9	1,197.6	(338.1)	(2.3)	—	858.1	851.5	1,709.6
Dividends paid to CVR Energy stockholders	—	—	—	(173.7)	—	—	(173.7)	—	(173.7)
Distributions from CVR Partners to public	—	—	—	—	—	—	—	(1.5)	(1.5)

unitholders									
Distributions from CVR Refining to public unitholders	—	—	—	—	—	—	—	(47.3)	(47.3)
Net income (loss)	—	—	—	234.4	—	—	234.4	(17.5)	216.9
Balance at December 31, 2017	86,929,660	$ 0.9	$1,197.6	$(277.4)	$(2.3)	$ —	$ 918.8	$ 785.2	$1,704.0

See accompanying notes to consolidated financial statements.

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CVR Energy, Inc. and Subsidiaries

CONSOLIDATED STATEMENTS OF CASH FLOWS

	Year Ended December 31,		
	2017	2016	2015
	(in millions)		
Cash flows from operating activities:			
Net income	$216.9	$8.9	$297.8
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	214.0	193.1	164.1
Allowance for doubtful accounts	0.6	0.2	(0.1)
Amortization of deferred financing costs and original issue discount	4.8	3.6	2.8
Amortization of debt fair value adjustment	—	1.2	—
Deferred income taxes	(216.5)	(84.4)	(10.4)
Excess income tax deficiency of share-based compensation	—	—	0.1
Loss on disposition of assets	2.4	0.5	1.8
Loss on extinguishment of debt	—	4.9	—
Share-based compensation	18.8	9.3	12.8
Gain on sale of available-for-sale securities	—	(4.9)	(20.1)
Unrealized gain on securities	—	(0.3)	—
Loss on derivatives, net	69.8	19.4	28.6
Current period settlements on derivative contracts	(16.6)	36.4	(26.0)
Income from equity method investments, net of distributions	(0.7)	—	—
Changes in assets and liabilities:			
Accounts receivable	(27.3)	(47.5)	41.0
Inventories	(37.6)	(7.3)	39.7
Prepaid expenses and other current assets	33.9	(3.4)	40.4
Due to (from) parent	(15.7)	22.2	32.8
Other long-term assets	1.0	(0.6)	3.8
Accounts payable	88.1	(10.4)	(14.3)
Accrued income taxes	0.6	(3.3)	4.2
Deferred revenue	0.9	(20.4)	(10.5)
Other current liabilities	(168.0)	151.2	(52.1)
Other long-term liabilities	(2.5)	(0.9)	0.4
Net cash provided by operating activities	166.9	267.5	536.8
Cash flows from investing activities:			
Capital expenditures	(118.6)	(132.7)	(218.7)
Proceeds from sale of assets	0.1	—	0.1
Acquisition of CVR Nitrogen, net of cash acquired	—	(63.8)	—
Purchase of securities	—	(4.2)	—
Investment in affiliates, net of return of investment	(76.5)	(5.6)	—
Purchase of available-for-sale securities	—	(14.4)	—
Proceeds from sale of available-for-sale securities	—	19.3	68.0
Net cash used in investing activities	(195.0)	(201.4)	(150.6)
Cash flows from financing activities:			

Proceeds on issuance of 2023 Notes, net of original issue discount	—	628.8	—
Principal and premium payments on 2021 Notes	—	(322.2)	—
Payments of revolving debt	—	(49.1)	—
Principal payments on CRNF credit facility	—	(125.0)	—
Payment of capital lease obligations	(1.8)	(1.7)	(1.3)
Payment of deferred financing costs	(1.6)	(10.7)	—
Dividends to CVR Energy's stockholders	(173.7)	(173.6)	(173.7)
Distributions to CVR Refining's noncontrolling interest holders	$(47.3)	$—	$(156.9)
Distributions to CVR Partners' noncontrolling interest holders	$(1.5)	$(41.9)	$(42.8)
Excess income tax deficiency of share-based compensation	—	—	(0.1)
Net cash used in financing activities	(225.9)	(95.4)	(374.8)
Net increase (decrease) in cash and cash equivalents	(254.0)	(29.3)	11.4
Cash and cash equivalents, beginning of period	735.8	765.1	753.7
Cash and cash equivalents, end of period	$481.8	$735.8	$765.1
Supplemental disclosures:			
Cash paid for income taxes, net of refunds	$14.9	$45.5	$57.9
Cash paid for interest net of capitalized interest of $1.1, $5.4, and $3.7 for the years ended December 31, 2017, 2016 and 2015, respectively	$105.0	$76.8	$45.4
Non-cash investing and financing activities:			
Construction in progress additions included in accounts payable	$8.2	$15.8	$22.3
Change in accounts payable related to construction in progress additions	$(5.2)	$6.0	$0.7
Landlord incentives for leasehold improvements	$1.2	$—	$—
Fair value of common units issued in a business combination	$—	$335.7	$—
Fair value of debt assumed in a business combination	$—	$367.5	$—
Reduction of proceeds from 2023 Notes from underwriting discount	$—	$16.1	$—

See accompanying notes to consolidated financial statements.

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CVR Energy, Inc. and Subsidiaries

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(1) Organization and Nature of Business

Organization

The "Company," "CVR Energy," or "CVR" may be used to refer to CVR Energy, Inc. and, unless the context otherwise requires, its subsidiaries.

CVR is a diversified holding company primarily engaged in the petroleum refining and nitrogen fertilizer manufacturing industries through its holdings in CVR Refining, LP ("CVR Refining" or the "Refining Partnership") and CVR Partners, LP ("CVR Partners" or the "Nitrogen Fertilizer Partnership"). The Refining Partnership is an independent petroleum refiner and marketer of high value transportation fuels. The Nitrogen Fertilizer Partnership produces and markets nitrogen fertilizers in the form of UAN and ammonia. The Company's operations include two business segments: the petroleum segment and the nitrogen fertilizer segment. CVR's common stock is listed on the New York Stock Exchange ("NYSE") under the symbol "CVI."

As of December 31, 2017, Icahn Enterprises L.P. ("IEP") and its affiliates owned approximately 82% of the Company's outstanding shares.

CVR Partners, LP

On April 13, 2011, the Nitrogen Fertilizer Partnership completed its initial public offering of 22,080,000 common units (the "Nitrogen Fertilizer Partnership IPO") priced at $16.00 per unit. The common units, which are listed on the NYSE, began trading on April 8, 2011 under the symbol "UAN."

On April 1, 2016, the Nitrogen Fertilizer Partnership completed the merger (the "East Dubuque Merger") with CVR Nitrogen, LP (“CVR Nitrogen”) (formerly known as East Dubuque Nitrogen Partners, L.P. and also formerly known as Rentech Nitrogen Partners L.P.) and CVR Nitrogen GP, LLC ("CVR Nitrogen GP") (formerly known as East Dubuque Nitrogen GP, LLC and also formerly known as Rentech Nitrogen GP, LLC), whereby the Nitrogen Fertilizer Partnership acquired a nitrogen fertilizer manufacturing facility located in East Dubuque, Illinois (the "East Dubuque Facility"). See Note 3 ("Acquisition").

As a result of the Nitrogen Fertilizer Partnership's acquisition of CVR Nitrogen, LP and issuance of the unit consideration, the noncontrolling interest related to the Nitrogen Fertilizer Partnership reflected in our Consolidated Financial Statements on April 1, 2016 and from such date and as of December 31, 2017 was approximately 66%. In addition, CRLLC owns 100% of the Nitrogen Fertilizer Partnership's general partner, CVR GP, LLC, which only holds a non-economic general partner interest. The noncontrolling interest reflected on the Consolidated Balance Sheets of CVR is impacted by the net income of, and distributions from, the Nitrogen Fertilizer Partnership.

CVR Refining, LP

On January 23, 2013, the Refining Partnership completed the initial public offering of its common units representing limited partner interests (the "Refining Partnership IPO"). The Refining Partnership sold 24,000,000 common units to the public at a price of $25.00 per unit, resulting in gross proceeds of $600.0 million, before giving effect to underwriting discounts and other offering expenses. The common units, which are listed on the NYSE, began trading

on January 17, 2013 under the symbol "CVRR."

As of December 31, 2017, public security holders held approximately 34% of the total Refining Partnership common units (including units owned by affiliates of IEP representing 3.9% of the total Refining Partnership common units), and CVR Refining Holdings, LLC ("CVR Refining Holdings") held approximately 66% of the total Refining Partnership common units. In addition, CVR Refining Holdings owns 100% of the Refining Partnership's general partner, CVR Refining GP, LLC, which holds a non-economic general partner interest. The noncontrolling interest reflected on the Consolidated Balance Sheets of CVR is impacted by the net income of, and distributions from, the Refining Partnership.

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CVR Energy, Inc. and Subsidiaries

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

(2) Summary of Significant Accounting Policies

Principles of Consolidation

The accompanying CVR consolidated financial statements include the accounts of CVR Energy, Inc. and its majority-owned direct and indirect subsidiaries. All intercompany accounts and transactions have been eliminated in consolidation. The ownership interests of noncontrolling investors in its subsidiaries are recorded as noncontrolling interests.

The Financial Accounting Standards Board ("FASB") issued Accounting Standards Update (“ASU”) 2015-02, "Consolidations (Topic 810) - Amendments to the Consolidation Analysis" (“ASU 2015-02”), which amended previous consolidation guidance, including introducing a separate consolidation analysis specific to limited partnerships and other similar entities, became effective for the Company as of January 1, 2016. Under this analysis, limited partnerships and other similar entities are considered a variable interest entity (“VIE”) unless the limited partners hold substantive kick-out rights or participating rights. Management has determined that the Refining Partnership and the Nitrogen Fertilizer Partnership are VIEs because the limited partners of CVR Refining and CVR Partners lack both substantive kick-out rights and participating rights. As such, management evaluated the qualitative criteria under FASB Accounting Standard Codification ("ASC") Topic 810 - Consolidation in conjunction with ASU 2015-02 to make a determination whether the Refining Partnership and the Nitrogen Fertilizer Partnership should be consolidated in the Company's financial statements. ASC Topic 810-10 requires the primary beneficiary of a variable interest entity's activities to consolidate the VIE. The primary beneficiary is identified as the enterprise that has a) the power to direct the activities of the VIE that most significantly impact the entity's economic performance and b) the obligation to absorb losses of the entity that could potentially be significant to the VIE or the right to receive benefits from the entity that could potentially be significant to the VIE. The standard requires an ongoing analysis to determine whether the variable interest gives rise to a controlling financial interest in the VIE. Based upon the general partner’s roles and rights as afforded by the partnership agreements and its exposure to losses and benefits of each of the partnerships through its significant limited partner interests, intercompany credit facilities, and services agreements, CVR determined that it is the primary beneficiary of both the Refining Partnership and the Nitrogen Fertilizer Partnership. Based upon that determination, CVR continues to consolidate both the Refining and Nitrogen Fertilizer Partnerships in its consolidated financial statements.

Use of Estimates

The consolidated financial statements have been prepared in conformity with accounting principles generally accepted in the United States of America ("GAAP"), using management's best estimates and judgments where appropriate. These estimates and judgments affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenses during the reporting period. Actual results could differ materially from these estimates and judgments.

Cash and Cash Equivalents

For purposes of the Consolidated Statements of Cash Flows, CVR considers all highly liquid money market accounts and debt instruments with original maturities of three months or less to be cash equivalents. Under the Company's cash management system, checks issued but not presented to banks frequently result in book overdraft balances for accounting purposes and are classified within accounts payable in the Consolidated Balance Sheets. The change in book overdrafts are reported in the Consolidated Statements of Cash Flows as a component of operating cash flows

for accounts payable as they do not represent bank overdrafts. The amount of these checks included in accounts payable as of December 31, 2017 and 2016 was $22.8 million and $18.1 million, respectively.

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CVR Energy, Inc. and Subsidiaries

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

Accounts Receivable, net

CVR grants credit to its customers. Credit is extended based on an evaluation of a customer's financial condition; generally, collateral is not required. Accounts receivable are due on negotiated terms and are stated at amounts due from customers, net of an allowance for doubtful accounts. Accounts outstanding longer than their contractual payment terms are considered past due. CVR determines its allowance for doubtful accounts by considering a number of factors, including the length of time trade accounts are past due, the customer's ability to pay its obligations to CVR, and the condition of the general economy and the industry as a whole. CVR writes off accounts receivable when they become uncollectible, and payments subsequently received on such receivables are credited to the allowance for doubtful accounts. Amounts collected on accounts receivable are included in net cash provided by operating activities in the Consolidated Statements of Cash Flows. As of December 31, 2017, one customer individually represented greater than 10% of the total net accounts receivable balance. The largest concentration of credit for any one customer at December 31, 2017 and 2016 was approximately 11% and 10%, respectively, of the net accounts receivable balance.

Inventories

Inventories consist primarily of domestic and foreign crude oil, blending stock and components, work-in-progress, fertilizer products, and refined fuels and by-products. Inventories are valued at the lower of the first-in, first-out ("FIFO") cost, or net realizable value for fertilizer products, refined fuels and by-products for all periods presented. Refinery unfinished and finished products inventory values were determined using the ability-to-bear process, whereby raw materials and production costs are allocated to work-in-process and finished products based on their relative fair values. Other inventories, including other raw materials, spare parts, and supplies, are valued at the lower of moving-average cost, which approximates FIFO, or net realizable value. The cost of inventories includes inbound freight costs.

Prepaid Expenses and Other Current Assets

Prepaid expenses and other current assets consist of prepayments for crude oil deliveries to the Refining Partnership's refineries for which title had not transferred, non-trade accounts receivable, current portions of prepaid insurance, deferred financing costs, derivative agreements and other general current assets.

Property, Plant and Equipment

Additions to property, plant and equipment, including capitalized interest and certain costs allocable to construction and property purchases, are recorded at cost. Capitalized interest is added to any capital project over $1.0 million in cost which is expected to take more than six months to complete. When assets are placed in service, reasonable useful lives for those assets are estimated. Depreciation is computed using principally the straight-line method over the estimated useful lives of the various classes of depreciable assets. The lives used in computing depreciation for such assets are as follows:

Asset	Range of Useful Lives, in Years
Improvements to land	15 to 30
Buildings	20 to 30
Machinery and equipment	5 to 30
Automotive equipment	5 to 15

Furniture and fixtures	3 to 10
Aircraft	20
Railcars	25 to 30

Leasehold improvements and assets held under capital leases are depreciated or amortized on the straight-line method over the shorter of the contractual lease term or the estimated useful life of the asset. Expenditures for routine maintenance and repair costs are expensed when incurred. Such expenses are reported in direct operating expenses (exclusive of depreciation and amortization) in the Company's Consolidated Statements of Operations.

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CVR Energy, Inc. and Subsidiaries

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - (Continued)

Goodwill and Intangible Assets

Goodwill represents the excess of the cost of an acquired entity over the fair value of the assets acquired less liabilities assumed. Intangible assets are assets that lack physical substance (excluding financial assets). Goodwill acquired in a business combination and intangible assets with indefinite useful lives are not amortized, and intangible assets with finite useful lives are amortized. Goodwill and intangible assets not subject to amortization are tested for impairment annually or more frequently if events or changes in circumstances indicate the asset might be impaired. CVR uses November 1 of each year as its annual valuation date for its goodwill impairment test. The Company performed its annual impairment review of goodwill for 2017, 2016 and 2015, which is attributable entirely to the nitrogen fertilizer segment and concluded there were no impairments. See Note 8 ("Goodwill") for further discussion.

Deferred Financing Costs

Deferred financing costs associated with debt issuances are amortized to interest expense and other financing costs using the effective-interest method over the life of the debt. Additionally, any underwriting and original issue discount and premium related to debt issuances are amortized to interest expense and other financing costs using the effective-interest method over the life of the debt. Deferred financing costs related to line-of-credit arrangements are amortized to interest expense and other financing costs using the straight-line method through the termination date of the facility.

Planned Major Maintenance Costs

The direct-expense method of accounting is used for planned major maintenance activities. Maintenance costs are recognized as expense when maintenance services are performed. Planned major maintenance activities for the nitrogen plant generally occur every two to three years. The required frequency of planned major maintenance activities varies by unit for the refineries, but generally is every four to five years. Costs associated with these turnaround activities were included in direct operating expenses (exclusive of depreciation and amortization) in the Consolidated Statements of Operations.

For the years ended December 31, 2017, 2016 and 2015, the Company's petroleum and nitrogen fertilizer segments incurred the following major scheduled turnaround expenses.

For the Year Ended December 31,		
2017	2016	2015