PART II

Item 5. ***Market for Registrant's Common Units, Related Unitholder Matters and Issuer Purchases of Equity Securities***

Market Information, Holders and Distributions

Our common units are listed and traded on The Nasdaq Global Select Market under the symbol "PAA." As of February 14, 2023, there were 698,390,006 common units outstanding and approximately 103,000 record holders and beneficial owners (held in street name).

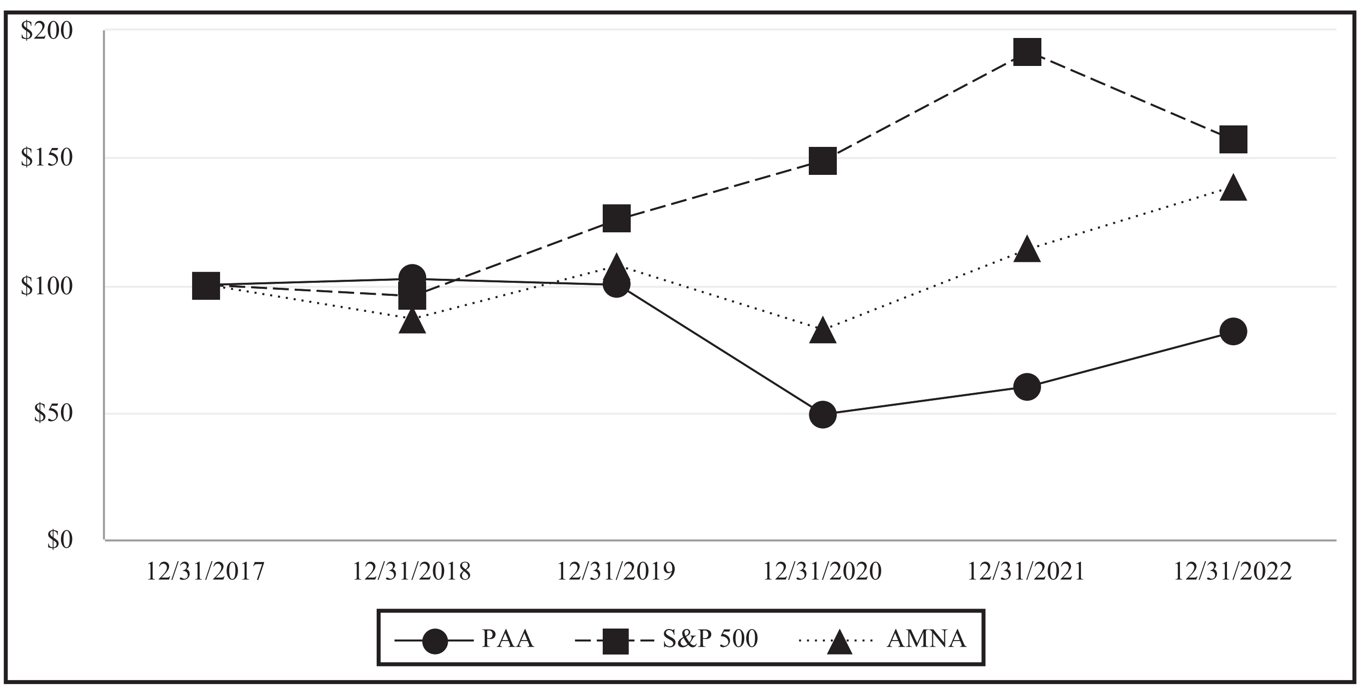
The following table presents cash distributions per common unit pertaining to the quarter presented, which were declared and paid in the following calendar quarter (see the "Cash Distribution Policy" section below for a discussion of our policy regarding distribution payments):

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
2022	$ 0.2175	$ 0.2175	$ 0.2175	$ 0.2675
2021	$ 0.1800	$ 0.1800	$ 0.1800	$ 0.1800

Our common units are also used as a form of compensation to our employees. See Note 18 to our Consolidated Financial Statements for additional information regarding our equity-indexed compensation plans.

Performance Graph

The following graph compares the total unitholder return performance of our common units with the performance of: (i) the Standard & Poor's 500 Stock Index ("S&P 500") and (ii) the Alerian Midstream Energy Index ("AMNA"). The AMNA is a broad-based composite of North American energy infrastructure companies that provides investors with a comprehensive benchmark for this asset class. The graph assumes that $100 was invested in our common units and each comparison index beginning on December 31, 2017 and that all distributions were reinvested on a quarterly basis.



	12/31/2017	12/31/2018	12/31/2019	12/31/2020	12/31/2021	12/31/2022
PAA	$ 100.00	$ 102.34	$ 100.01	$ 49.18	$ 60.09	$ 81.52
S&P 500	$ 100.00	$ 95.62	$ 125.72	$ 148.85	$ 191.58	$ 156.89
AMNA	$ 100.00	$ 86.71	$ 107.56	$ 82.43	$ 114.10	$ 138.67

This information shall not be deemed to be "soliciting material" or to be "filed" with the Commission or subject to Regulation 14A or 14C under the Exchange Act, other than as provided in Item 201(e) of Regulation S-K, or to the liabilities of Section 18 of the Exchange Act, and shall not be deemed to be incorporated by reference into any filing under the Securities Act of 1933, as amended, or the Exchange Act, except to the extent that we specifically request that such information be treated as soliciting material or specifically incorporate it by reference into a filing under the Securities Act or the Exchange Act.

Recent Sales of Unregistered Securities

None.

Issuer Purchases of Equity Securities

None.

Cash Distribution Policy

In accordance with our partnership agreement, after making distributions to holders of our outstanding preferred units, we distribute the remainder of our available cash to our common unitholders of record within 45 days following the end of each quarter. Available cash is generally defined as, for any quarter ending prior to liquidation, all of our cash and cash equivalents on hand at the end of each quarter less reserves established in the reasonable discretion of our general partner to:

- provide for the proper conduct of our business and the business of our operating partnerships (including reserves for future capital expenditures and for our anticipated future credit needs);
- comply with applicable law or any loan agreement, security agreement, mortgage, debt instrument or other agreement or obligation; or
- provide funds for future distributions to our Series A and Series B preferred unitholders or distributions to our common unitholders for any one or more of the next four calendar quarters.

Our available cash also includes cash on hand resulting from borrowings made after the end of the quarter.

Under the terms of the agreements governing our debt, we are prohibited from declaring or paying any distribution to unitholders if a default or event of default (as defined in such agreements) exists. No such default has occurred. See Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations—Liquidity and Capital Resources—Credit Agreements, Commercial Paper Program and Indentures."

Under the terms of our partnership agreement, our Series A preferred units and our Series B preferred units rank senior to all classes or series of equity securities in us with respect to distribution rights.

Item 6. Reserved

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

Introduction

The following discussion is intended to provide investors with an understanding of our financial condition and results of our operations and should be read in conjunction with our historical Consolidated Financial Statements and accompanying notes.

Our discussion and analysis includes the following:

- Executive Summary
- Results of Operations
- Liquidity and Capital Resources
- Critical Accounting Policies and Estimates
- Recent Accounting Pronouncements

A comparative discussion of our 2021 to 2020 operating results and performance measures can be found in Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations—Results of Operations" included in our Annual Report on Form 10-K for the year ended December 31, 2021 filed with the SEC on March 1, 2022.

Executive Summary

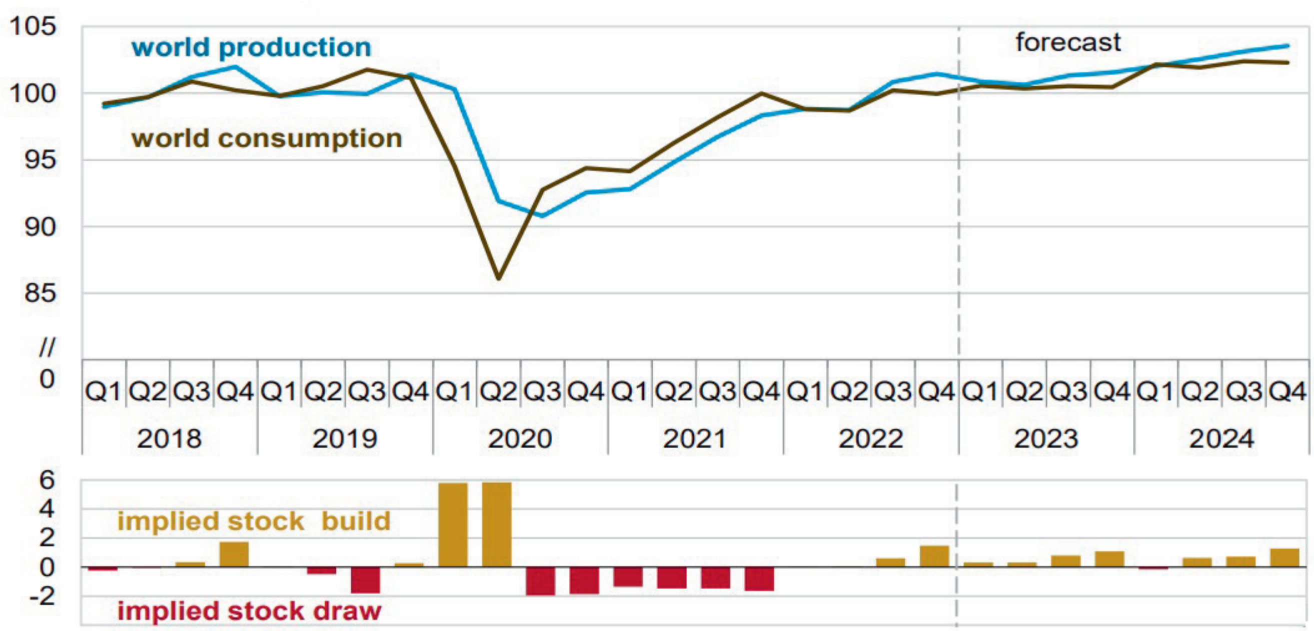
Company Overview

Our business model integrates large-scale supply aggregation capabilities with the ownership and operation of critical midstream infrastructure systems that connect major producing regions to key demand centers and export terminals. As one of the largest midstream service providers in North America, we own an extensive network of pipeline transportation, terminalling, storage and gathering assets in key crude oil and NGL producing basins (including the Permian Basin) and transportation corridors and at major market hubs in the United States and Canada. Our assets and the services we provide are primarily focused on crude oil and NGL.

Market Overview and Outlook

Crude oil and other petroleum liquids are supplied to the global market by producers around the world, with the majority coming from the Organization of Petroleum Exporting Countries ("OPEC"), the Russian Federation and North American producers, among others. The chart below depicts the relationship between global supply of crude oil and other petroleum liquids and demand since the beginning of 2018 and the U.S. Energy Information Administration's ("EIA") Short-Term Energy Outlook as of January 2023:

World Liquid Fuels Production and Consumption Balance [(1)]
(in millions of barrels per day)



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(1) Barrels produced and consumed per quarter.

Global crude oil demand at the end of 2022 was near pre-COVID levels, with the EIA and other third parties forecasting demand to exceed 2019 levels by the second half of 2023 and continue to grow for the foreseeable future. We believe this demand growth combined with the multi-year backdrop of reduced upstream investment and a continuation of OPEC discipline and Western sanctions on Russian petroleum could further exacerbate many of the supply concerns that emerged in 2022. This includes tight global markets and continued commodity price volatility. As a result, we expect North American energy supply to play a critical long-term role in meeting global demand and the Permian Basin to drive the vast majority of U.S. production growth in the coming years.

It is against this macro backdrop that we expect to generate significant positive free cash flow on a multi-year basis, supported by our existing asset base and integrated business model. Our financial strategy and long-term capital allocation framework is focused on generating meaningful multi-year free cash flow and improving shareholder returns by (i) increasing returns of capital to equity holders, primarily through increased distributions, (ii) making disciplined accretive investments and (iii) maintaining an investment grade credit profile and ensuring balance sheet flexibility.

Overview of Operating Results

During 2022, we continued to build momentum and reinforce our long-term positioning by taking actions to further optimize our asset base and streamline our operations. We recognized net income attributable to PAA of $1.037 billion for the year ended December 31, 2022 compared to net income attributable to PAA of $593 million for the year ended December 31, 2021. Results from our operations increased for 2022 over the comparable 2021 period driven primarily by more favorable margins in our NGL segment, as well as increased earnings from our crude oil pipelines due to higher tariff volumes and higher loss allowance revenue attributable to higher volumes and commodity prices. However, these items were partially offset by the impact of the monetization of contango hedges that benefited the 2021 period, the sale of our natural gas storage facilities in the third quarter of 2021 and higher field operating costs in the 2022 period primarily from (i) an increase in estimated costs associated with the Line 901 incident and (ii) gains related to hedged power costs resulting from the extreme winter weather event that occurred in February 2021 (“Winter Storm Uri”) recognized in the first quarter of 2021.

Additionally, results for 2022 included a net loss on asset sales and asset impairments of $269 million, primarily related to the impairment of certain of our California crude oil assets, compared to a net loss on asset sales and asset impairments of $592 million included in results for 2021, a majority of which was related to the write-down of our natural gas storage facilities, which were classified as held for sale in the second quarter and sold in the third quarter. The 2022 period also includes net gains of approximately $346 million, primarily associated with the remeasurement of our previously held 65% interest in Cactus II to fair value in connection with our acquisition of an additional 5% interest in Cactus II in November 2022.

See the “—Results of Operations” section below for further discussion.

Results of Operations

Consolidated Results

The following table sets forth an overview of our consolidated financial results calculated in accordance with GAAP (in millions, except per unit data):

	Year Ended December 31,		Variance	
	2022	2021	$	%
Product sales revenues	$ 55,948	$ 40,883	$ 15,065	37 %
Services revenues	1,394	1,195	199	17 %
Purchases and related costs	(53,176)	(38,504)	(14,672)	(38)%
Field operating costs	(1,315)	(1,065)	(250)	(23)%
General and administrative expenses	(325)	(292)	(33)	(11)%
Depreciation and amortization	(965)	(774)	(191)	(25)%
Gains/(losses) on asset sales and asset impairments, net	(269)	(592)	323	55 %
Equity earnings in unconsolidated entities	403	274	129	47 %
Gains/(losses) on investments in unconsolidated entities, net	346	2	344	**
Interest expense, net	(405)	(425)	20	5 %
Other income/(expense), net	(219)	19	(238)	**
Income tax expense	(189)	(73)	(116)	(159)%
Net income	1,228	648	580	90 %
Net income attributable to noncontrolling interests	(191)	(55)	(136)	(247)%
Net income attributable to PAA	$ 1,037	$ 593	$ 444	75 %
Basic and diluted net income per common unit	$ 1.19	$ 0.55	$ 0.64	**
Basic and diluted weighted average common units outstanding	701	716	(15)	**

** Indicates that variance as a percentage is not meaningful.

Revenues and Purchases

Fluctuations in our consolidated revenues and purchases and related costs are primarily associated with our merchant activities and generally explained in large part by changes in commodity prices. Our crude oil and NGL merchant activities are not directly affected by the absolute level of prices because the commodities that we buy and sell are generally indexed to the same pricing indices. Both product sales revenues and purchases and related costs will fluctuate with market prices; however, the absolute margins related to those sales and purchases will not necessarily have a corresponding increase or decrease. Additionally, product sales revenues include the impact of gains and losses related to derivative instruments used to manage our exposure to commodity price risk associated with such sales and purchases.

A majority of our sales and purchases are indexed to West Texas Intermediate ("WTI"). The following table presents the range of the NYMEX WTI benchmark price of crude oil over the last two years (in dollars per barrel):

	NYMEX WTI Crude Oil Price		
During the Year Ended December 31,	Low	High	Average
2022	$ 71	$ 124	$ 94
2021	$ 48	$ 85	$ 68

Product sales revenues and purchases increased for the year ended December 31, 2022 compared to the year ended December 31, 2021 primarily due to higher prices in 2022.

Revenues from services increased for the year ended December 31, 2022 compared to the year ended December 31, 2021 primarily due to higher prices and volumes in 2022 (a portion of which was related to contributions from recently completed acquisitions and joint venture transactions), partially offset by the impact of the sale of our natural gas storage facilities in the third quarter of 2021.

See further discussion of net revenues (revenues less purchases and related costs) in the "—Analysis of Operating Segments" section below.

Field Operating Costs

See discussion of field operating costs in the "—Analysis of Operating Segments" section below.

General and Administrative Expenses

The increase in general and administrative expenses for the year ended December 31, 2022 compared to the year ended December 31, 2021 was primarily due to (i) employee-related costs, including an increase in equity-indexed compensation expense due to changes in plan assumptions and a higher common unit price (a portion of which is excluded in the calculation of Adjusted EBITDA and Segment Adjusted EBITDA), (ii) higher information systems costs due to ongoing systems integration work and (iii) higher office rent due to an operating cost abatement in the prior year, partially offset by (iv) costs associated with the formation of the Permian JV in the prior year.

Depreciation and Amortization

Depreciation and amortization expense increased for the year ended December 31, 2022 compared to the year ended December 31, 2021 largely driven by depreciation and amortization expense on assets (i) contributed by Oryx Midstream Holdings LLC ("Oryx Midstream") upon formation of the Permian JV and (ii) consolidated in connection with our acquisition of an additional interest in Cactus II. See Note 7 to our Consolidated Financial Statements for additional information.

Gains/(Losses) on Asset Sales and Asset Impairments, Net

The net losses on asset sales and asset impairments for 2022 primarily included (i) a $330 million non-cash impairment charge recognized in the fourth quarter of 2022 related to certain crude oil assets in California and (ii) gains recognized from the sale of land and related assets in Long Beach, California, as well as Line 901 and the Sisquoc to Pentland portion of Line 903, a portion of which relates to the transfer of an asset retirement obligation to the purchaser. See Note 6 and Note 7 to our Consolidated Financial Statements for additional information.

The net losses on asset sales and asset impairments for 2021 primarily included (i) an approximate $220 million non-cash impairment charge recognized in the third quarter related to the write-down of certain crude oil storage terminal assets as a result of decreased demand for our services due to changing market conditions, (ii) an approximate $475 million non-cash impairment charge related to the write-down of our Pine Prairie and Southern Pines natural gas storage facilities upon classification as held for sale (these assets were sold in August 2021), and (iii) a gain of $106 million related to the asset exchange agreement (the "Asset Exchange") involving the sale of one of our crude oil pipelines in Canada in exchange for additional interests in certain of the Empress natural gas processing plants.

See Note 6 and Note 7 to our Consolidated Financial Statements for additional information regarding these asset sales and asset impairments.

Equity Earnings in Unconsolidated Entities

See discussion of equity earnings in unconsolidated entities in the "—Analysis of Operating Segments" section below.

Gains/(Losses) on Investments in Unconsolidated Entities, Net

During the fourth quarter of 2022, we recognized (i) a gain of $370 million associated with the remeasurement of our previously held 65% interest in Cactus II to fair value in connection with our acquisition of an additional 5% interest in Cactus II in November 2022 and (ii) a loss of $25 million associated with the difference between the fair value and historical book value of assets contributed by the Permian JV in exchange for an additional interest in OMOG. See Note 7 and Note 9 to our Consolidated Financial Statements for additional information regarding these transactions.

Interest Expense, Net

Interest expense is primarily impacted by:

- our weighted average debt balances;
- the level and maturity of fixed rate debt and interest rates associated therewith;
- market interest rates and our interest rate hedging activities; and
- interest capitalized on capital projects.

The following table summarizes the components impacting the interest expense variance (in millions, except percentages):

		Average LIBOR/SOFR	Weighted Average Interest Rate [(1)]
Interest expense for the year ended December 31, 2021	$ 425	0.1 %	4.2 %
Impact of retirement of senior notes	(22)		
Impact of lower capitalized interest	13		
Impact of interest rate swap	(7)		
Other	(4)		
Interest expense for the year ended December 31, 2022	$ 405	1.9 %	4.3 %

(1) Excludes commitment and other fees.

See Note 11 to our Consolidated Financial Statements for additional information regarding our debt and related activities during the periods presented.

Other Income/(Expense), Net

The following table summarizes the components impacting Other income/(expense), net (in millions):

	Year Ended December 31, 2022	Year Ended December 31, 2021
Gain/(loss) on mark-to-market adjustment of Preferred Distribution Rate Reset Option embedded derivative [(1)]	$ (189)	$ 14
Net gain/(loss) on foreign currency revaluation [(2)]	(36)	3
Other	6	2
	$ (219)	$ 19

(1) See Note 13 to our Consolidated Financial Statements for additional information.

(2) The activity during the periods presented was primarily related to the impact from the change in the United States Dollar to Canadian dollar exchange rate on the portion of our intercompany net investment that is not long-term in nature.

Income Tax (Expense)/Benefit

The net unfavorable income tax variance for the year ended December 31, 2022 compared to the year ended December 31, 2021 was primarily a result of higher year-over-year income as impacted by fluctuations of the derivative mark-to-market valuations in our Canadian operations.

Noncontrolling Interests

The increase in amounts attributable to noncontrolling interests for the year ended December 31, 2022 compared to the year ended December 31, 2021 was due to (i) the formation of the Permian JV in October 2021 and (ii) the consolidation of Cactus II in November 2022. See Note 7 to our Consolidated Financial Statements for additional information.

Non-GAAP Financial Measures

To supplement our financial information presented in accordance with GAAP, management uses additional measures known as “non-GAAP financial measures” in its evaluation of past performance and prospects for the future and to assess the amount of cash that is available for distributions, debt repayments, common equity repurchases and other general partnership purposes. The primary additional measures used by management are Adjusted EBITDA, Adjusted EBITDA attributable to PAA, Implied distributable cash flow (“DCF”), Free Cash Flow and Free Cash Flow after Distributions.

Adjusted EBITDA is defined as earnings before interest, taxes, depreciation and amortization (including our proportionate share of depreciation and amortization, including write-downs related to cancelled projects and impairments, of unconsolidated entities), gains and losses on asset sales and asset impairments, goodwill impairment losses and gains or losses on and impairments of investments in unconsolidated entities, adjusted for certain selected items impacting comparability.

Our definition and calculation of certain non-GAAP financial measures may not be comparable to similarly-titled measures of other companies. Adjusted EBITDA, Adjusted EBITDA attributable to PAA and Implied DCF are reconciled to Net Income/(Loss), and Free Cash Flow and Free Cash Flow after Distributions are reconciled to Net Cash Provided by Operating Activities, the most directly comparable measures as reported in accordance with GAAP, and should be viewed in addition to, and not in lieu of, our Consolidated Financial Statements and accompanying notes. See “—Liquidity and Capital Resources—Liquidity Measures” for additional information regarding Free Cash Flow and Free Cash Flow after Distributions.

Performance Measures

Management believes that the presentation of Adjusted EBITDA, Adjusted EBITDA attributable to PAA and Implied DCF provides useful information to investors regarding our performance and results of operations because these measures, when used to supplement related GAAP financial measures, (i) provide additional information about our core operating performance and ability to fund distributions to our unitholders through cash generated by our operations, (ii) provide investors with the same financial analytical framework upon which management bases financial, operational, compensation and planning/ budgeting decisions and (iii) present measures that investors, rating agencies and debt holders have indicated are useful in assessing us and our results of operations. These non-GAAP measures may exclude, for example, (i) charges for obligations that are expected to be settled with the issuance of equity instruments, (ii) gains and losses on derivative instruments that are related to underlying activities in another period (or the reversal of such adjustments from a prior period), gains and losses on derivatives that are either related to investing activities (such as the purchase of linefill) or purchases of long-term inventory, and inventory valuation adjustments, as applicable, (iii) long-term inventory costing adjustments, (iv) items that are not indicative of our core operating results and/or (v) other items that we believe should be excluded in understanding our core operating performance. These measures may further be adjusted to include amounts related to deficiencies associated with minimum volume commitments whereby we have billed the counterparties for their deficiency obligation and such amounts are recognized as deferred revenue in “Other current liabilities” in our Consolidated Financial Statements. We also adjust for amounts billed by our equity method investees related to deficiencies under minimum volume commitments. Such amounts are presented net of applicable amounts subsequently recognized into revenue. We have defined all such items as “selected items impacting comparability.” We do not necessarily consider all of our selected items impacting comparability to be non-recurring, infrequent or unusual, but we believe that an understanding of these selected items impacting comparability is material to the evaluation of our operating results and prospects.

Although we present selected items impacting comparability that management considers in evaluating our performance, you should also be aware that the items presented do not represent all items that affect comparability between the periods presented. Variations in our operating results are also caused by changes in volumes, prices, exchange rates, mechanical interruptions, acquisitions, divestitures, investment capital projects and numerous other factors as discussed, as applicable, in “—Analysis of Operating Segments.”

The following tables set forth the reconciliation of the non-GAAP financial performance measures Adjusted EBITDA, Adjusted EBITDA attributable to PAA and Implied DCF from Net Income (in millions):

	Year Ended December 31, 2022	Year Ended December 31, 2021	Variance $	Variance %
Net income	$ 1,228	$ 648	$ 580	90 %
Interest expense, net	405	425	(20)	(5)%
Income tax expense	189	73	116	159 %
Depreciation and amortization	965	774	191	25 %
(Gains)/losses on asset sales and asset impairments, net	269	592	(323)	(55)%
(Gains)/losses on investments in unconsolidated entities, net	(346)	(2)	(344)	**
Depreciation and amortization of unconsolidated entities [(1)]	85	123	(38)	(31)%
Selected Items Impacting Comparability:				
Derivative activities and inventory valuation adjustments	(280)	(271)	(9)	**
Long-term inventory costing adjustments	(4)	(94)	90	**
Deficiencies under minimum volume commitments, net	7	(7)	14	**
Equity-indexed compensation expense	32	19	13	**
Foreign currency revaluation	4	(4)	8	**
Line 901 incident	95	15	80	**
Significant transaction-related expenses	—	16	(16)	**
Selected Items Impacting Comparability - Segment Adjusted EBITDA [(2)]	(146)	(326)	180	**
Mark-to-market adjustment of Preferred Distribution Rate Reset Option embedded derivative [(3)]	189	(14)	203	**
Foreign currency revaluation [(4)]	37	(3)	40	**
Selected Items Impacting Comparability - Adjusted EBITDA [(5)]	80	(343)	423	**
Adjusted EBITDA [(5)]	$ 2,875	$ 2,290	$ 585	26 %
Adjusted EBITDA attributable to noncontrolling interests [(6)]	(365)	(94)	(271)	(288)%
Adjusted EBITDA attributable to PAA	$ 2,510	$ 2,196	$ 314	14 %

	Year Ended December 31, 2022	Year Ended December 31, 2021	Variance $	Variance %
Adjusted EBITDA [(5)]	$ 2,875	$ 2,290	$ 585	26 %
Interest expense, net of certain non-cash items [(7)]	(391)	(401)	10	2 %
Maintenance capital [(8)]	(211)	(168)	(43)	(26)%
Investment capital of noncontrolling interests [(9)]	(69)	(9)	(60)	**
Current income tax expense	(84)	(50)	(34)	(68)%
Distributions from unconsolidated entities in excess of/(less than) adjusted equity earnings [(10)]	(28)	16	(44)	**
Distributions to noncontrolling interests [(11)]	(298)	(14)	(284)	**
Implied DCF	$ 1,794	$ 1,664	$ 130	8 %
Preferred unit cash distributions [(11)]	(198)	(198)		
Implied DCF Available to Common Unitholders	$ 1,596	$ 1,466		
Common unit cash distributions [(11)]	(584)	(517)		
Implied DCF Excess [(12)]	$ 1,012	$ 949		

** Indicates that variance as a percentage is not meaningful.

(1) We exclude our proportionate share of the depreciation and amortization expense (including write-downs related to cancelled projects and impairments) of unconsolidated entities when reviewing Adjusted EBITDA, similar to our consolidated assets.

(2) For a more detailed discussion of these selected items impacting comparability, see the footnotes to the Segment Adjusted EBITDA Reconciliation table in Note 20 to our Consolidated Financial Statements.

(3) The Preferred Distribution Rate Reset Option of our Series A preferred units is accounted for as an embedded derivative and recorded at fair value in our Consolidated Financial Statements. The associated gains and losses are not integral to our results and were thus classified as a selected item impacting comparability. See Note 13 to our Consolidated Financial Statements for additional information regarding the Preferred Distribution Rate Reset Option.

(4) During the periods presented, there were fluctuations in the value of CAD to USD, resulting in the realization of foreign exchange gains and losses on the settlement of foreign currency transactions as well as the revaluation of monetary assets and liabilities denominated in a foreign currency. The associated gains and losses are not integral to our results and were thus classified as a selected item impacting comparability.

(5) Other income/(expense), net on our Consolidated Statements of Operations, adjusted for selected items impacting comparability ("Adjusted other income/(expense), net") is included in Adjusted EBITDA and excluded from Segment Adjusted EBITDA.

(6) Reflects amounts attributable to noncontrolling interests in the Permian JV, Cactus II and Red River.

(7) Excludes certain non-cash items impacting interest expense such as amortization of debt issuance costs and terminated interest rate swaps.

(8) Maintenance capital expenditures are defined as capital expenditures for the replacement and/or refurbishment of partially or fully depreciated assets in order to maintain the operating and/or earnings capacity of our existing assets.

(9) Investment capital expenditures attributable to noncontrolling interests that reduce Implied DCF available to PAA common unitholders.

(10) Comprised of cash distributions received from unconsolidated entities less equity earnings in unconsolidated entities (adjusted for our proportionate share of depreciation and amortization, including write-downs related to cancelled projects, and selected items impacting comparability of unconsolidated entities).

(11) Cash distributions paid during the period presented.

(12) Excess DCF is retained to establish reserves for debt repayment, future distributions, common equity repurchases, capital expenditures and other partnership purposes.

Analysis of Operating Segments

We manage our operations through two operating segments: Crude Oil and NGL. Our CODM (our Chief Executive Officer) evaluates segment performance based on a variety of measures including Segment Adjusted EBITDA, segment volumes and maintenance capital investment.

We define Segment Adjusted EBITDA as revenues and equity earnings in unconsolidated entities less (a) purchases and related costs, (b) field operating costs and (c) segment general and administrative expenses, plus (d) our proportionate share of the depreciation and amortization expense (including write-downs related to cancelled projects and impairments) of unconsolidated entities, further adjusted (e) for certain selected items including (i) gains and losses on derivative instruments that are related to underlying activities in another period (or the reversal of such adjustments from a prior period), gains and losses on derivatives that are either related to investing activities (such as the purchase of linefill) or purchases of long-term inventory, and inventory valuation adjustments, as applicable, (ii) long-term inventory costing adjustments, (iii) charges for obligations that are expected to be settled with the issuance of equity instruments, (iv) amounts related to deficiencies associated with minimum volume commitments, net of applicable amounts subsequently recognized into revenue and (v) other items that our CODM believes are integral to understanding our core segment operating performance and (f) to exclude the portion of all preceding items that is attributable to noncontrolling interests ("Adjusted EBITDA attributable to noncontrolling interests"). See Note 20 to our Consolidated Financial Statements for a reconciliation of Segment Adjusted EBITDA to Net income/(loss) attributable to PAA.

In connection with our merchant activities, our Crude Oil and NGL segments may enter into intersegment transactions for the purchase or sale of products, along with services such as the transportation, terminalling or storage of products. Intersegment transactions are conducted at rates similar to those charged to third parties or rates that we believe approximate market. Intersegment activities are eliminated in consolidation and we believe that the estimates with respect to these rates are reasonable. Also, our segment operating and general and administrative expenses reflect direct costs attributable to each segment; however, we also allocate certain operating expenses and general and administrative overhead expenses between segments based on management's assessment of the business activities for the period. The proportional allocations by segment require judgment by management and may be adjusted in the future based on the business activities that exist during each period. We believe that the estimates with respect to these allocations are reasonable.

Revenues and expenses from our Canadian based subsidiaries, which use CAD as their functional currency, are translated at the prevailing average exchange rates for the month.

Crude Oil Segment

Our Crude Oil segment operations generally consist of gathering and transporting crude oil using pipelines, gathering systems, trucks and at times on barges or railcars, in addition to providing terminalling, storage and other facilities-related services utilizing our integrated assets across the United States and Canada. Our assets serve third parties and are also supported by our merchant activities. Our merchant activities include the purchase of crude oil supply and the movement of this supply on our assets or third-party assets to sales locations, including our terminals, third-party connecting carriers, regional hubs or to refineries. Our merchant activities are subject to our risk management policies and may include the use of derivative instruments to hedge our exposure.

Our Crude Oil segment generates revenue through a combination of tariffs, pipeline capacity agreements and other transportation fees, month-to-month and multi-year storage and terminalling agreements and the sale of gathered and bulk-purchased crude oil. Tariffs and other fees on our pipeline systems are typically based on volumes transported and vary by receipt point and delivery point. Fees for our terminalling and storage services are based on capacity leases and throughput volumes. Generally, results from our merchant activities are impacted by (i) increases or decreases in our lease gathering crude oil purchases volumes and (ii) the overall strength, weakness and volatility of market conditions, including regional differentials and time spreads. In addition, the execution of our risk management strategies in conjunction with our assets can provide upside in certain markets. The segment results also include the direct fixed and variable field costs of operating the crude oil assets, as well as an allocation of indirect operating costs.

The following tables set forth our operating results from our Crude Oil segment:

Operating Results [(1)] (in millions)	Year Ended December 31, 2022	2021	Variance $	%
Revenues	$ 55,080	$ 40,470	$ 14,610	36 %
Purchases and related costs	(52,088)	(37,540)	(14,548)	(39)%
Field operating costs	(1,003)	(824)	(179)	(22)%
Segment general and administrative expenses [(2)]	(250)	(221)	(29)	(13)%
Equity earnings in unconsolidated entities	403	274	129	47 %
Adjustments [(3)]:				
Depreciation and amortization of unconsolidated entities	85	123	(38)	(31)%
Derivative activities and inventory valuation adjustments	(11)	(252)	241	**
Long-term inventory costing adjustments	(3)	(67)	64	**
Deficiencies under minimum volume commitments, net	7	(7)	14	**
Equity-indexed compensation expense	32	19	13	**
Foreign currency revaluation	3	(3)	6	**
Line 901 incident	95	15	80	**
Significant transaction-related expenses	—	16	(16)	**
Adjusted EBITDA attributable to noncontrolling interests	(364)	(94)	(270)	**
Segment Adjusted EBITDA	$ 1,986	$ 1,909	$ 77	4 %
Maintenance capital	$ 112	$ 100	$ 12	12 %

Average Volumes	Year Ended December 31, 2022	2021	Variance Volumes	%
Crude oil pipeline tariff (by region) [(4)]				
Permian Basin [(5)]	5,638	4,412	1,226	28 %
Other [(5)]	1,927	1,793	134	7 %
Total crude oil pipeline tariff	7,565	6,205	1,360	22 %
Commercial crude oil storage capacity [(5) (6)]	72	73	(1)	(1)%
Crude oil lease gathering purchases [(4) (7)]	1,382	1,330	52	4 %

** Indicates that variance as a percentage is not meaningful.

(1) Revenues and costs and expenses include intersegment amounts.

(2) Segment general and administrative expenses reflect direct costs attributable to each segment and an allocation of other expenses to the segments. The proportional allocations by segment require judgment by management and are based on the business activities that exist during each period.

(3) Represents adjustments included in the performance measure utilized by our CODM in the evaluation of segment results. See Note 20 to our Consolidated Financial Statements for additional discussion of such adjustments.

(4) Average daily volumes in thousands of barrels per day calculated as the total volumes (attributable to our interest for assets owned by unconsolidated entities or through undivided joint interests) for the year divided by the number of days in the year. Volumes associated with acquisitions represent total volumes for the number of days we actually owned the assets divided by the number of days in the period.

(5) Includes volumes (attributable to our interest) from assets owned by unconsolidated entities.

(6) Average monthly capacity in millions of barrels per day calculated as total volumes for the year divided by the number of months in the year.

(7) Of this amount, approximately 1,073 and 1,038 thousand barrels per day were purchased in the Permian Basin for the years ended December 31, 2022 and 2021, respectively.

Segment Adjusted EBITDA

Crude Oil Segment Adjusted EBITDA was favorably impacted for the year ended December 31, 2022 compared to the year ended December 31, 2021 by higher volumes on our pipelines, favorable Canadian crude oil differentials and higher loss allowance revenue. These favorable impacts were partially offset by (i) the monetization of contango hedges that benefited the 2021 period, (ii) the sale of our natural gas storage facilities in August 2021 (which were reported in our Crude Oil Segment) and (iii) gains related to hedged power costs resulting from Winter Storm Uri recognized in the first quarter of 2021.

The following is a more detailed discussion of the significant factors impacting Segment Adjusted EBITDA for the year ended December 31, 2022 compared to the year ended December 31, 2021.

- *Permian JV.* In October 2021, we closed on the transaction with Oryx Midstream to merge our respective Permian Basin assets, with the exception of our long-haul pipeline systems and certain of our intra-basin assets, into the Permian JV. The significant year-over-year growth in our tariff volumes in the Permian Basin region was primarily from the Permian JV assets, largely due to additional volumes from the pipelines contributed by Oryx Midstream as well as increased production and new connections. We deduct the portion of the financial results attributable to Oryx Midstream's 35% interest in the Permian JV in determining Segment Adjusted EBITDA, which partially offset the favorable impact of the volume growth when comparing Segment Adjusted EBITDA for 2022 compared to 2021.

- *Pipeline Projects.* The Capline pipeline reversal project and phase two of the Wink to Webster pipeline project were placed in service in the first quarter of 2022, which favorably impacted equity earnings in unconsolidated entities and our tariff volumes in 2022.

  The variance in equity earnings in unconsolidated entities for the year ended December 31, 2022 compared to the year ended December 31, 2021 was also driven by the unfavorable impact to the prior period of the recognition of our proportionate share of the write-off of costs associated with a capital project canceled during the second quarter of 2021 (which impacted equity earnings in unconsolidated entities but is excluded from Segment Adjusted EBITDA and thus is reflected as an "Adjustment" as "Depreciation and amortization of unconsolidated entities" in the table above).

- *Pipeline Loss Allowance Revenue.* Pipeline loss allowance revenues increased for the year ended December 31, 2022 compared to the year ended December 31, 2021 due to a combination of higher prices and higher volumes during 2022.

- *Market Opportunities.* Our results for the year ended December 31, 2022 benefited from favorable Canadian crude oil differentials and the sale of excess linefill and inventory in a higher crude oil price environment; however, in comparison to the year ended December 31, 2021, these favorable variances were offset by the benefit of the monetization of contango hedges during the year ended December 31, 2021.

- *Natural Gas Storage Assets.* We sold our natural gas storage facilities in August 2021, impacting the comparison of our results for the year ended December 31, 2022 compared to the year ended December 31, 2021. Net revenues from our natural gas storage facilities were approximately $76 million for the year ended December 31, 2021, which included the benefit of favorable margins from hub activities related to Winter Storm Uri, as mentioned below.

- *Winter Storm Uri.* During the first quarter of 2021, Winter Storm Uri had a negative impact on our volumes; however, this impact was more than offset during the 2021 period by gains related to hedged power costs, which are reflected in equity earnings and field operating costs, and favorable margins from hub activities at our natural gas storage facilities resulting from Winter Storm Uri.

- *Line 2000 Pipeline.* In the third quarter of 2022, we temporarily ceased service on Line 2000 in California as a precautionary measure following a routine inspection, which unfavorably impacted our results for the year ended December 31, 2022 compared to the year ended December 31, 2021. Line 2000 was returned to service in the first quarter of 2023.

- *Field Operating Costs.* The increase in field operating costs for the year ended December 31, 2022 compared to the year ended December 31, 2021 was primarily due to (i) an increase in estimated costs associated with the Line 901 incident (which impact field operating costs but are excluded from Segment Adjusted EBITDA and thus are reflected as an "Adjustment" in the table above), (ii) the impact of gains related to hedged power costs resulting from Winter Storm Uri recognized in the first quarter of 2021, (iii) incremental operating costs from the Permian JV, (iv) increased utilities as a result of higher volumes, (v) increased costs resulting from higher third-party trucked volumes and (vi) higher fuel prices, partially offset by (vii) the sale of our natural gas storage facilities in August 2021.

Segment General and Administrative Expenses. See the "—Consolidated Results" section above for a discussion of general and administrative expenses.

Maintenance Capital. Maintenance capital consists of capital expenditures for the replacement and/or refurbishment of partially or fully depreciated assets in order to maintain the operating and/or earnings capacity of our existing assets. The increase in maintenance capital spending for the year ended December 31, 2022 compared to the year ended December 31, 2021 was primarily due to ongoing station upgrades, integrity projects and tank maintenance, partially offset by lower costs due to the completion of certain projects.

NGL Segment

Our NGL segment operations involve natural gas processing and NGL fractionation, storage, transportation and terminalling. Our NGL revenues are primarily derived from a combination of (i) providing gathering, fractionation, storage, and/or terminalling services to third-party customers for a fee, and (ii) extracting NGL mix from the gas stream processed at our Empress straddle plant facility as well as acquiring NGL mix, which is then transported, stored and fractionated into finished products and sold to customers.

Generally, our segment results are impacted by (i) increases or decreases in our NGL sales volumes, (ii) the overall strength, weakness and volatility of market conditions, including the differential between the price of natural gas and the extracted NGL, as well as location differentials and time spreads, and (iii) the effects of competition on our NGL margins. In addition, we utilize various risk management strategies to manage our commodity exposure.

Our NGL operations are sensitive to weather-related demand, particularly during the approximate five-month peak heating season of November through March, and temperature differences from period-to-period may have a significant effect on NGL demand and thus our financial performance as well as the impact of comparative performance between financial reporting periods that bisect the five-month peak heating season.

The following tables set forth our operating results from our NGL segment:

Operating Results (1) (in millions)	Year Ended December 31,		Variance	
	2022	2021	$	%
Revenues	$ 2,761	$ 1,968	$ 793	40 %
Purchases and related costs	(1,587)	(1,324)	(263)	(20)%
Field operating costs	(312)	(241)	(71)	(29)%
Segment general and administrative expenses (2)	(75)	(71)	(4)	(6)%
Adjustments (3):				
Derivative activities	(269)	(19)	(250)	**
Long-term inventory costing adjustments	(1)	(27)	26	**
Foreign currency revaluation	1	(1)	2	**
Segment Adjusted EBITDA	$ 518	$ 285	$ 233	82 %
Maintenance capital	$ 99	$ 68	$ 31	46 %

Average Volumes (in thousands of barrels per day) (4)	Year Ended December 31,		Variance	
	2022	2021	Volumes	%
NGL fractionation	137	129	8	6 %
NGL pipeline tariff	192	179	13	7 %
Propane and butane sales (5)	94	110	(16)	(15)%

** Indicates that variance as a percentage is not meaningful.

(1) Revenues and costs and expenses include intersegment amounts.

(2) Segment general and administrative expenses reflect direct costs attributable to each segment and an allocation of other expenses to the segments. The proportional allocations by segment require judgment by management and are based on the business activities that exist during each period.

(3) Represents adjustments included in the performance measure utilized by our CODM in the evaluation of segment results. See Note 20 to our Consolidated Financial Statements for additional discussion of such adjustments.

(4) Average daily volumes calculated as the total volumes (attributable to our interest for assets owned through undivided joint interests) for the year divided by the number of days in the year.

(5) During the fourth quarter of 2022, we modified our sales volumes reported to include only propane and butane sales. Prior to the fourth quarter of 2022, our reported sales volumes included other NGL products, primarily ethane, that represented a significant portion of our total NGL sales volumes but did not contribute significantly to Segment Adjusted EBITDA. Sales volumes for earlier periods presented herein have been recast to include only propane and butane.

Segment Adjusted EBITDA

NGL Segment Adjusted EBITDA increased for the year ended December 31, 2022 compared to the year ended December 31, 2021 primarily due to the favorable impact of higher realized fractionation spreads between the price of natural gas and the extracted NGL ("frac spreads") and increased NGL mix produced at our straddle plants.

Significant variances in the components of Segment Adjusted EBITDA are discussed in more detail below:

Net Revenues. Net revenues from our NGL activities, excluding the impact of derivative activities and inventory valuation and long-term inventory costing adjustments, increased for the year ended December 31, 2022 compared to the year ended December 31, 2021 primarily due to higher realized frac spreads, increased NGL mix produced at our straddle plants and higher field operating cost recoveries at our Empress straddle plants as part of our commercial agreements, primarily related to higher utilities-related costs. This was partially offset by lower NGL sales volumes due to a reduction in lower margin hub activity. Additionally, net revenues for the year ended December 31, 2022 include the benefit of a full year of increased ownership in the Empress straddle plants and higher product gains at certain of our NGL facilities.

Field Operating Costs. The increase in field operating costs for the year ended December 31, 2022 compared to the year ended December 31, 2021 was primarily due to increased utilities-related costs from (i) increased production at certain of our Empress straddle plants, (ii) our increased ownership in the Empress straddle plants and (iii) higher utility-related prices in the 2022 period. The increase in utilities-related costs was largely offset by the benefit to net revenues from operating cost recoveries realized through commercial agreements.

Segment General and Administrative Expenses. See the "—Consolidated Results" section above for a discussion of general and administrative expenses.

Maintenance Capital. The increase in maintenance capital spending for the year ended December 31, 2022 compared to the year ended December 31, 2021 was primarily due to (i) a turnaround at one of our Empress facilities during 2022 and (ii) various maintenance capital projects on our Co-Ed pipeline system. This increase was partially offset by the absence of certain costs in 2022 that were incurred in 2021, including repair costs at the Fort Saskatchewan facility.

Liquidity and Capital Resources

General

Our primary sources of liquidity are (i) cash flow from operating activities and (ii) borrowings under our credit facilities or commercial paper program. In addition, we may supplement these primary sources of liquidity with proceeds from asset sales, and in the past have utilized funds received from sales of equity and debt securities. Our primary cash requirements include, but are not limited to, (i) ordinary course of business uses, such as the payment of amounts related to the purchase of crude oil, NGL and other products, other expenses and interest payments on outstanding debt, (ii) investment and maintenance capital activities, (iii) acquisitions of assets or businesses, (iv) repayment of principal on our long-term debt and (v) distributions to our unitholders and noncontrolling interests. In addition, we may use cash for repurchases of common equity. We generally expect to fund our short-term cash requirements through cash flow generated from operating activities and/or borrowings under our commercial paper program or credit facilities. In addition, we generally expect to fund our long-term needs, such as those resulting from investment capital activities or acquisitions and refinancing our long-term debt, through a variety of sources (either separately or in combination), which may include the sources mentioned above as funding for short-term needs and/or the issuance of additional equity or debt securities and the sale of assets.

As of December 31, 2022, although we had a working capital deficit of $536 million, we had approximately $3.0 billion of liquidity available to meet our ongoing operating, investing and financing needs, subject to continued covenant compliance, as noted below (in millions):

	As of December 31, 2022
Availability under senior unsecured revolving credit facility [1] [2]	$ 1,317
Availability under senior secured hedged inventory facility [1] [2]	1,281
Amounts outstanding under commercial paper program	—
Subtotal	2,598
Cash and cash equivalents [3]	378
Total	$ 2,976

(1) Represents availability prior to giving effect to borrowings outstanding under our commercial paper program, which reduce available capacity under the facilities.

(2) Available capacity under our senior unsecured revolving credit facility and senior secured hedged inventory facility was reduced by outstanding letters of credit of $33 million and $69 million, respectively.

(3) Excludes restricted cash of $23 million.

Usage of our credit facilities, which provide the financial backstop for our commercial paper program, is subject to ongoing compliance with covenants, as discussed further below. Our borrowing capacity and borrowing costs are also impacted by our credit rating. See Item 1A. “Risk Factors—Risks Related to Our Business—Loss of our investment grade credit rating or the ability to receive open credit could negatively affect our borrowing costs, ability to purchase crude oil, NGL and natural gas supplies or to capitalize on market opportunities.”

We believe that we have, and will continue to have, the ability to access our commercial paper program and credit facilities, which we use to meet our short-term cash needs. We believe that our financial position remains strong and we have sufficient liquid assets, cash flow from operating activities and borrowing capacity under our credit agreements to meet our financial commitments, debt service obligations, contingencies and anticipated capital expenditures. We are, however, subject to business and operational risks that could adversely affect our cash flow, including extended disruptions in the financial markets and/or energy price volatility resulting from current macroeconomic and geopolitical conditions associated with the COVID-19 pandemic and/or actions by OPEC. A prolonged material decrease in our cash flows would likely produce an adverse effect on our borrowing capacity and cost of borrowing. See Item 1A. “Risk Factors” for further discussion regarding risks that may impact our liquidity and capital resources.

Credit Agreements, Commercial Paper Program and Indentures

We have three primary credit arrangements, which we use to meet our short-term cash needs. These include our $1.35 billion senior unsecured revolving credit facility maturing in 2027, $1.35 billion senior secured hedged inventory facility maturing in 2025 and $2.7 billion unsecured commercial paper program that is backstopped by our revolving credit facility and our hedged inventory facility. The credit agreements for our revolving credit facilities (which impact our ability to access our commercial paper program because they provide the financial backstop that supports our short-term credit ratings) and the indentures governing our senior notes contain cross-default provisions. A default under our credit agreements or indentures would permit the lenders to accelerate the maturity of the outstanding debt. As long as we are in compliance with the provisions in our credit agreements, our ability to make distributions of available cash is not restricted. We were in compliance with the covenants contained in our credit agreements and indentures as of December 31, 2022.

Liquidity Measures

Management uses the non-GAAP financial measures Free Cash Flow and Free Cash Flow after Distributions to assess the amount of cash that is available for distributions, debt repayments, common equity repurchases and other general partnership purposes. Free Cash Flow is defined as Net cash provided by operating activities, less Net cash provided by/(used in) investing activities, which primarily includes acquisition, investment and maintenance capital expenditures, investments in unconsolidated entities and the impact from the purchase and sale of linefill, net of proceeds from the sales of assets and further impacted by distributions to, contributions from and proceeds from the sale of noncontrolling interests. Free Cash Flow is further reduced by cash distributions paid to our preferred and common unitholders to arrive at Free Cash Flow after Distributions.

The following table sets forth the reconciliation of the non-GAAP financial liquidity measures Free Cash Flow and Free Cash Flow after Distributions from Net Cash Provided by Operating Activities (in millions):

	Year Ended December 31,	
	2022	2021
Net cash provided by operating activities	$ 2,408	$ 1,996
Adjustments to reconcile net cash provided by operating activities to free cash flow:		
Net cash provided by/(used in) investing activities	(526)	386
Cash contributions from noncontrolling interests	26	1
Cash distributions paid to noncontrolling interests [1]	(298)	(14)
Free Cash Flow	$ 1,610	$ 2,369
Cash distributions [2]	(782)	(715)
Free Cash Flow after Distributions	$ 828	$ 1,654

(1) Cash distributions paid during the period presented.

(2) Cash distributions paid to our preferred and common unitholders during the period presented.

Cash Flow from Operating Activities

The primary drivers of cash flow from operating activities are (i) the collection of amounts related to the sale of crude oil, NGL and other products, the transportation of crude oil and other products for a fee, and the provision of storage and terminalling services for a fee and (ii) the payment of amounts related to the purchase of crude oil, NGL and other products and other expenses, principally field operating costs, general and administrative expenses and interest expense.

Cash flow from operating activities can be materially impacted by the storage of crude oil in periods of a contango market, when the price of crude oil for future deliveries is higher than current prices. In the month we pay for the stored crude oil, we borrow under our credit facilities or commercial paper program (or use cash on hand) to pay for the crude oil, which negatively impacts operating cash flow. Conversely, cash flow from operating activities increases during the period in which we collect the cash from the sale of the stored crude oil. Similarly, the level of NGL and other product inventory stored and held for resale at period end affects our cash flow from operating activities.

In periods when the market is not in contango, we typically sell our crude oil during the same month in which we purchase it and we do not rely on borrowings under our credit facilities or commercial paper program to pay for the crude oil. During such market conditions, our accounts payable and accounts receivable generally move in tandem as we make payments and receive payments for the purchase and sale of crude oil in the same month, which is the month following such activity. In periods during which we build inventory, regardless of market structure, we may rely on our credit facilities or commercial paper program to pay for the inventory. In addition, we use derivative instruments to manage the risks associated with the purchase and sale of our commodities. Therefore, our cash flow from operating activities may be impacted by the margin deposit requirements related to our derivative activities. See Note 13 to our Consolidated Financial Statements for a discussion regarding our derivatives and risk management activities.

Net cash provided by operating activities for the years ended December 31, 2022 and 2021 was approximately $2.4 billion and $2.0 billion, respectively, and primarily resulted from earnings from our operations. Additionally, as discussed further below, changes during these periods in our inventory levels and associated margin balances required as part of our hedging activities impacted our cash flow from operating activities.

During 2022, we decreased the volume of our crude oil inventory due to opportunities for inventory liquidation during the year, and we also had lower margin balances required as part of our hedging activities, both of which reduced required funding by short-term debt. These decreases were partially offset by higher NGL volumes at the end of 2022 due to inventory builds as part of the winter heating season.

During 2021, we decreased the volume of both our crude oil inventory due to fewer storage opportunities in the contango market and our NGL inventory as well as the margin balances required as part of our hedging activities, all of which reduced required funding by short-term debt. The cash inflows associated with these activities were partially offset by higher prices for inventory purchased and stored at the end of the current period compared to the end of 2020.

Investing Activities

Capital Expenditures

In addition to our operating needs, we also use cash for our investment capital projects, maintenance capital activities and acquisition activities. We fund these expenditures with cash generated by operating activities, financing activities and/or proceeds from asset sales. In the near term, we do not plan to issue common equity to fund such expenditures. The following table summarizes our investment, maintenance and acquisition capital expenditures (in millions):

	Year Ended December 31,	
	2022	2021
Investment capital (1) (2) (3)	$ 334	$ 237
Maintenance capital (1) (3)	211	168
Acquisition capital (2) (4)	284	32
	$ 829	$ 437

(1) Capital expenditures made to expand the existing operating and/or earnings capacity of our assets are classified as "Investment capital." Capital expenditures for the replacement and/or refurbishment of partially or fully depreciated assets in order to maintain the operating and/or earnings capacity of our existing assets are classified as "Maintenance capital."

(2) Contributions to unconsolidated entities, accounted for under the equity method of accounting, that are related to investment capital projects by such entities are recognized in "Investment capital." Acquisitions of initial investments or additional interests in unconsolidated entities are included in "Acquisition capital."

(3) Investment capital and Maintenance capital, net to our interest, was approximately $265 million and $202 million, respectively, for 2022.

(4) Acquisition capital for 2022 includes (i) an additional ownership interest in certain straddle plants included in our NGL segment, (ii) the purchase of an additional 5% interest in Cactus II and (iii) the remaining 50% interest in Advantage Pipeline Holdings LLC. Acquisition capital for 2021 represents the cash consideration paid as part of the Asset Exchange transaction. See Note 7 to our Consolidated Financial Statements for additional information.

Investment Capital Projects

Our investment capital programs consist of investments in midstream infrastructure projects that build upon our core assets and operations. The majority of this investment capital consists of highly-contracted projects that complement our broader system capabilities and support the long-term needs of the upstream and downstream sectors of the industry value chain. The following table summarizes our investment in capital projects (in millions):

	Year Ended December 31,	
Projects	**2022**	**2021**
Complementary Permian Basin Projects [1]	$ 191	$ 73
Permian Basin Takeaway Pipeline Projects [2]	33	75
Selected Facilities/Downstream Projects [3]	28	41
Other Projects	82	48
Total	$ 334	$ 237

(1) Includes projects associated with assets included in the Permian JV.

(2) Represents pipeline projects with takeaway capacity out of the Permian Basin, including investments for our proportionate share of the projects of Wink to Webster Pipeline and Cactus II Pipeline.

(3) Includes projects at our St. James, Cushing and Fort Saskatchewan terminals.

Projected 2023 Capital Expenditures. Total investment capital for the year ending December 31, 2023 is currently projected to be approximately $420 million ($325 million net to our interest). Approximately half of our projected investment capital expenditures are expected to be invested in the Permian JV assets. Additionally, maintenance capital for 2023 is currently projected to be $205 million ($195 million net to our interest). We expect to fund our 2023 investment and maintenance capital expenditures primarily with retained cash flow.

Divestitures

Proceeds from the sale of assets have generally been used to fund our investment capital projects and reduce debt levels. The following table summarizes the proceeds received from divestitures during the last two years (in millions):

	Year Ended December 31,	
	2022	**2021**
Proceeds from divestitures [1]	$ 60	$ 875

(1) Represents proceeds, including working capital adjustments, net of transaction costs.

Ongoing Activities Related to Strategic Transactions

We are continuously engaged in the evaluation of potential transactions that support our current business strategy. In the past, such transactions have included the sale of non-core assets, the sale of partial interests in assets to strategic joint venture partners, acquisitions and large investment capital projects. With respect to a potential divestiture or acquisition, we may conduct an auction process or participate in an auction process conducted by a third party or we may negotiate a transaction with one or a limited number of potential buyers (in the case of a divestiture) or sellers (in the case of an acquisition). Such transactions could have a material effect on our financial condition and results of operations.

We typically do not announce a transaction until after we have executed a definitive agreement. In certain cases, in order to protect our business interests or for other reasons, we may defer public announcement of a transaction until closing or a later date. Past experience has demonstrated that discussions and negotiations regarding a potential transaction can advance or terminate in a short period of time. Moreover, the closing of any transaction for which we have entered into a definitive agreement may be subject to customary and other closing conditions, which may not ultimately be satisfied or waived. Accordingly, we can give no assurance that our current or future efforts with respect to any such transactions will be successful, and we can provide no assurance that our financial expectations with respect to such transactions will ultimately be realized. See Item 1A. "Risk Factors—Risks Related to Our Business—Acquisitions and divestitures involve risks that may adversely affect our business."

Financing Activities

Our financing activities primarily relate to funding investment capital projects, acquisitions and refinancing of our debt maturities, as well as short-term working capital (including borrowings for NYMEX and ICE margin deposits) and hedged inventory borrowings related to our NGL business and contango market activities.

Borrowings and Repayments Under Credit Arrangements

We had no net borrowings or repayments under our credit facilities or commercial paper program during the year ended December 31, 2022.

During the year ended December 31, 2021, we had net repayments under our credit facilities and commercial paper program of $712 million. The net repayments resulted primarily from cash flow from operating activities and proceeds from asset sales, which offset borrowings during the period related to funding needs for capital investments, inventory purchases and other general partnership purposes.

In connection with the sale of our Pine Prairie and Southern Pines natural gas storage facilities in August 2021, we repaid our two GO Zone term loans totaling $200 million. See Note 7 for additional information regarding the sale of our natural gas storage facilities.

Senior Notes

Repayments of Senior Notes. During 2022, we repaid the following senior unsecured notes in full (in millions):

Year	Description	Repayment Date	
2022	$750 million 3.65% Senior Notes due June 2022	March 2022	(1)

(1) We repaid these senior notes with cash on hand and borrowings under our commercial paper program.

On January 31, 2023, we redeemed our 2.85%, $400 million senior notes. We utilized a combination of cash on hand and borrowings under our commercial paper program to repay these senior notes. We also intend to utilize a combination of cash flow from operating activities, proceeds from asset sales and borrowings under our commercial paper program to repay our 3.85%, $700 million notes due October 2023.

Registration Statements

We periodically access the capital markets for both equity and debt financing. We have filed with the SEC a universal shelf registration statement that, subject to effectiveness at the time of use, allows us to issue up to a specified amount of debt or equity securities ("Traditional Shelf"), under which we had approximately $1.1 billion of unsold securities available at December 31, 2022. We also have access to a universal shelf registration statement ("WKSI Shelf"), which provides us with the ability to offer and sell an unlimited amount of debt and equity securities, subject to market conditions and our capital needs.

Common Equity Repurchase Program

In November 2020, the board of directors of PAGP GP approved a $500 million common equity repurchase program (the "Program") to be utilized as an additional method of returning capital to investors. The Program authorizes the repurchase from time to time of up to $500 million of our common units and/or PAGP Class A shares via open market purchases or negotiated transactions conducted in accordance with applicable regulatory requirements. Ultimately, the amount, timing and pace of potential repurchase activity will be determined by a number of factors, including market conditions, our financial performance and flexibility, actual and expected Free Cash Flow after distributions, the absolute and relative equity prices of our common units and PAGP Class A shares, and the extent to which we are positioned to achieve and maintain our targeted leverage ratio. No time limit has been set for completion of the Program, and the Program may be suspended or discontinued at any time. The Program does not obligate us or PAGP to acquire a particular number of common units or PAGP Class A shares. Any common units or PAGP Class A shares that are repurchased will be canceled.

We repurchased common units under the Program during the years ended December 31, 2022 and 2021 for a total purchase price of $74 million and $178 million, respectively, including commissions and fees. The remaining available capacity under the Program as of December 31, 2022 was $198 million.

Distributions to Our Unitholders

In accordance with our partnership agreement, after making distributions to holders of our outstanding preferred units, we distribute the remainder of our available cash to our common unitholders of record within 45 days following the end of each quarter. Available cash is generally defined as all of our cash and cash equivalents on hand at the end of each quarter less reserves established in the discretion of our general partner for future requirements. Our levels of financial reserves are established by our general partner and include reserves for the proper conduct of our business (including future capital expenditures and anticipated credit needs), compliance with legal or contractual obligations and funding of future distributions to our Series A and Series B preferred unitholders. Our available cash also includes cash on hand resulting from borrowings made after the end of the quarter. See Item 5. "Market for Registrant's Common Units, Related Unitholder Matters and Issuer Purchases of Equity Securities—Cash Distribution Policy" for additional discussion regarding distributions.

Distributions to our Series A preferred unitholders. Holders of our Series A preferred units are entitled to receive quarterly distributions, subject to customary anti-dilution adjustments, of $0.525 per unit ($2.10 per unit annualized). Subject to certain limitations, following January 28, 2021, the holders of our Series A preferred units have the right to make a one-time election to reset the distribution rate. In January 2023, we received notice that the Series A preferred unitholders elected the Preferred Distribution Rate Reset Option. Effective January 31, 2023, the new Series A preferred unit distribution rate is equal to 9.375% per annum on the original issue price (approximately $2.46 per unit annualized). The quarterly distribution to be paid in May 2023 will reflect a pro-rated amount of $0.58516 per unit. See Note 12 to our Consolidated Financial Statements for additional information.

Distributions to our Series B preferred unitholders. Holders of our Series B preferred units are entitled to receive, when, as and if declared by our general partner out of legally available funds for such purpose, cumulative cash distributions, as applicable. Through and including November 15, 2022, holders were entitled to a distribution equal to $61.25 per unit per year, payable semiannually in arrears on the 15th day of May and November. On and after November 15, 2022, distributions on the Series B units accumulate based on a floating rate equal to the applicable three-month LIBOR (or, if discontinued, a substitute or successor rate determined by the calculation agent) plus a spread of 4.11% and is payable quarterly on the 15th day of February, May, August and November. The distribution rate for the quarterly distribution paid on February 15, 2023 was 8.71614% ($22.27 per Series B preferred unit). See Note 12 to our Consolidated Financial Statements for further discussion of our Series B preferred units.

Distributions to our common unitholders. On February 14, 2023, we paid a quarterly distribution of $0.2675 per common unit ($1.07 per common unit on an annualized basis). The total distribution of $187 million was paid to common unitholders of record as of January 31, 2023, with respect to the quarter ended December 31, 2022. See Note 12 to our Consolidated Financial Statements for details of distributions paid during the three years ended December 31, 2022.

Distributions to Noncontrolling Interests

Distributions to noncontrolling interests represent amounts paid on interests in consolidated entities that are not owned by us. As of December 31, 2022, noncontrolling interests in our subsidiaries consisted of (i) a 35% interest in the Permian JV, (ii) a 30% interest in Cactus II and (iii) a 33% interest in Red River. See Note 12 to our Consolidated Financial Statements for details of distributions paid to noncontrolling interests during the three years ended December 31, 2022.

Contingencies

For a discussion of contingencies that may impact us, see Note 19 to our Consolidated Financial Statements.

Commitments

See Note 11 to our Consolidated Financial Statements for information regarding our debt obligations and Note 19 for information regarding our leases and other commitments.

Purchase Obligations

In the ordinary course of doing business, we purchase crude oil and NGL from third parties under contracts, the majority of which range in term from thirty-day evergreen to five years, with a limited number of contracts with remaining terms extending up to 12 years. We establish a margin for these purchases by entering into various types of physical and financial sale and exchange transactions through which we seek to maintain a position that is substantially balanced between purchases on the one hand and sales and future delivery obligations on the other. We do not expect to use a significant amount of internal capital to meet these obligations, as the obligations will be funded by corresponding sales to entities that we deem creditworthy or who have provided credit support we consider adequate.

The following table includes our best estimate and the timing of these payments as of December 31, 2022 (in millions):

	2023	2024	2025	2026	2027	2028 and Thereafter	Total
Crude oil, NGL and other purchases [1]	$ 22,660	$ 19,940	$ 18,528	$ 17,568	$ 15,582	$ 41,216	$135,494

(1) Amounts are primarily based on estimated volumes and market prices based on average activity during December 2022. The actual physical volume purchased and actual settlement prices will vary from the assumptions used in the table. Uncertainties involved in these estimates include levels of production at the wellhead, weather conditions, changes in market prices and other conditions beyond our control.

Letters of Credit. In connection with our merchant activities, we provide certain suppliers with irrevocable standby letters of credit to secure our obligation for the purchase and transportation of crude oil, NGL and natural gas. Our liabilities with respect to these purchase obligations are recorded in accounts payable on our balance sheet in the month the product is purchased. Generally, these letters of credit are issued for periods of up to seventy days and are terminated upon completion of each transaction. Additionally, we issue letters of credit to support insurance programs, derivative transactions, including hedging-related margin obligations, and construction activities. At December 31, 2022 and 2021, we had outstanding letters of credit of approximately $102 million and $98 million, respectively.

Off-Balance Sheet Arrangements

We have no off-balance sheet arrangements as defined by Item 303 of Regulation S-K.

Investments in Unconsolidated Entities

We have invested in entities that are not consolidated in our financial statements. None of these entities had debt outstanding as of December 31, 2022. We may elect at any time to make additional capital contributions to any of these entities. The following table sets forth selected information regarding these entities as of December 31, 2022 (unaudited, dollars in millions):

Entity	Type of Operation	Our Ownership Interest	Total Entity Assets	Total Cash and Restricted Cash
BridgeTex Pipeline Company, LLC	Crude Oil Pipeline	20%	$ 792	$ 26
Capline Pipeline Company LLC	Crude Oil Pipeline	54%	$ 1,268	$ 33
Diamond Pipeline LLC	Crude Oil Pipeline (1)	50%	$ 896	$ 1
Eagle Ford Pipeline LLC	Crude Oil Pipeline (1)	50%	$ 779	$ 25
Eagle Ford Terminals Corpus Christi LLC	Crude Oil Terminal and Dock (1)	50%	$ 214	$ 5
OMOG JV LLC	Crude Oil Pipeline (1)	57%	$ 434	$ 13
Saddlehorn Pipeline Company, LLC	Crude Oil Pipeline	30%	$ 612	$ 19
White Cliffs Pipeline, LLC	Crude Oil Pipeline	36%	$ 407	$ 7
Wink to Webster Pipeline LLC	Crude Oil Pipeline	16%	$ 2,129	$ 83
Other investments			$ 519	$ 24

(1) We serve as operator of the asset.

Critical Accounting Policies and Estimates

The preparation of financial statements in conformity with GAAP and rules and regulations of the SEC requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities, as well as the disclosure of contingent assets and liabilities, at the date of the financial statements. Such estimates and assumptions also affect the reported amounts of revenues and expenses during the reporting period. Although we believe these estimates are reasonable, actual results could differ from these estimates. On a regular basis, we evaluate our assumptions, judgments and estimates. We also discuss our critical accounting policies and estimates with the Audit Committee of the Board of Directors.

We believe that the assumptions, judgments and estimates involved in the accounting for our (i) estimated fair value of assets and liabilities acquired and identification of associated goodwill and intangible assets, (ii) fair value of derivatives, (iii) accruals and contingent liabilities, (iv) property and equipment, depreciation and amortization expense and asset retirement obligations, (v) impairment assessments of property and equipment, investments in unconsolidated entities and intangible assets and (vi) inventory valuations have the greatest potential impact on our Consolidated Financial Statements. These areas are key components of our results of operations and are based on complex rules which require us to make judgments and estimates. Therefore, we consider these to be our critical accounting policies and estimates, which are discussed below. For further information on all of our significant accounting policies, see Note 2 to our Consolidated Financial Statements.

Fair Value of Assets and Liabilities Acquired and Identification of Associated Goodwill and Intangible Assets. In accordance with Financial Accounting Standards Board ("FASB") guidance regarding business combinations, with each acquisition, we allocate the cost of the acquired entity to the assets acquired and liabilities assumed based on their estimated fair values at the date of acquisition. If the initial accounting for the business combination is incomplete when the combination occurs, an estimate will be recorded. We also expense the transaction costs as incurred in connection with each acquisition, except for acquisitions of equity method investments. In addition, we are required to recognize intangible assets separately from goodwill.

Determining the fair value of assets and liabilities acquired, as well as intangible assets that relate to such items as customer relationships, acreage dedications and other contracts, involves professional judgment and is ultimately based on acquisition models and management's assessment of the value of the assets acquired and, to the extent available, third-party assessments.

In November 2022, we and Enbridge Inc. ("Enbridge") purchased Western Midstream Partners, LP ("WES")'s 15% interest in Cactus II Pipeline, LLC ("Cactus II") for an aggregate amount of $265 million. Enbridge acquired 10% and we acquired 5% of Cactus II, with each paying a proportionate share of the purchase price. We and Enbridge are now the sole owners of Cactus II, with 70% and 30% respective ownership interests. We previously accounted for our 65% interest in Cactus II as an equity method investment. In addition to the change in ownership, there were changes in governance which led to a change in control. We now control Cactus II and reflect Cactus II as a consolidated subsidiary in our Consolidated Financial Statements, with Enbridge's 30% interest reflected as a noncontrolling interest. See Note 7 to our Consolidated Financial Statements for discussion of the methods, assumptions and estimates used in the determination of the fair value of the assets and liabilities acquired and identification of associated intangible assets.

In October 2021, we and Oryx Midstream completed the formation of the Permian JV. See Note 7 to our Consolidated Financial Statements for discussion of the methods, assumptions and estimates used in the determination of the fair value of the assets and liabilities acquired and identification of associated intangible assets.

Fair Value of Derivatives. The fair value of a derivative at a particular period end does not reflect the end results of a particular transaction, and will most likely not reflect the gain or loss at the conclusion of a transaction. We reflect estimates for these items based on our internal records and information from third parties. We have commodity derivatives and interest rate derivatives that are accounted for as assets and liabilities at fair value on our Consolidated Balance Sheets. The valuations of our derivatives that are exchange traded are based on market prices on the applicable exchange on the last day of the period. For our derivatives that are not exchange traded, the estimates we use are based on indicative broker quotations or an internal valuation model. Our valuation models utilize market observable inputs such as price, volatility, correlation and other factors and may not be reflective of the price at which they can be settled due to the lack of a liquid market. Less than 1% of total annual revenues are based on estimates derived from internal valuation models.

The Preferred Distribution Rate Reset Option of our Series A preferred units is an embedded derivative that is recorded at fair value in our Consolidated Balance Sheets. The valuation model utilized for this embedded derivative contains multiple inputs, some of which involve management judgment, including our common unit price, ten-year United States treasury rates, default probabilities and timing estimates to ultimately calculate the fair value of our Series A preferred units with and without the Preferred Distribution Rate Reset Option.

Although the resolution of the uncertainties involved in these estimates has not historically had a material impact on our results of operations or financial condition, we cannot provide assurance that actual amounts will not vary significantly from estimated amounts. See Item 7A. Quantitative and Qualitative Disclosures About Market Risk and Note 13 to our Consolidated Financial Statements for a discussion regarding our derivatives and risk management activities.

Accruals and Contingent Liabilities. We record accruals or liabilities for, among other things, environmental remediation, potential legal claims or settlements and fees for legal services associated with loss contingencies, and bonuses. Accruals are made when our assessment indicates that it is probable that a liability has occurred and the amount of liability can be reasonably estimated. Our estimates are based on all known facts at the time and our assessment of the ultimate outcome. Among the many uncertainties that impact our estimates are the necessary regulatory approvals for, and potential modification of, our environmental remediation plans, the limited amount of data available upon initial assessment of the impact of soil or water contamination, changes in costs associated with environmental remediation services and equipment, the duration of the natural resource damage assessment and the ultimate amount of damages determined, the determination and calculation of fines and penalties, the possibility of existing legal claims giving rise to additional claims and the nature, extent and cost of legal services that will be required in connection with lawsuits, claims and other matters. Our estimates for contingent liability accruals are increased or decreased as additional information is obtained or resolution is achieved. A hypothetical variance of 5% in our aggregate estimate for the accruals and contingent liabilities discussed above would have an impact on earnings of up to approximately $16 million. Although the resolution of these uncertainties has not historically had a material impact on our results of operations or financial condition, we cannot provide assurance that actual amounts will not vary significantly from estimated amounts.

Property and Equipment, Depreciation and Amortization Expense and Asset Retirement Obligations. We compute depreciation and amortization based on estimated useful lives. These estimates are based on various factors including condition, manufacturing specifications, technological advances and historical data concerning useful lives of similar assets. Uncertainties that impact these estimates include changes in laws and regulations relating to restoration and abandonment requirements, economic conditions and supply and demand in the area. When assets are put into service, we make estimates with respect to useful lives and salvage values that we believe are reasonable. However, subsequent events could cause us to change our estimates, thus impacting the future calculation of depreciation and amortization.

We record retirement obligations associated with tangible long-lived assets based on estimates related to the costs associated with cleaning, purging and, in some cases, completely removing the assets and returning the land to its original state. In addition, our estimates include a determination of the settlement date or dates for the potential obligation, which may or may not be determinable. Uncertainties that impact these estimates include the costs associated with these activities and the timing of incurring such costs. A hypothetical variance of 5% in our aggregate estimate for the retirement obligations discussed above would have an impact on earnings of up to approximately $6 million. Although the resolution of these uncertainties has not historically had a material impact on our results of operations or financial condition, we cannot provide assurance that actual amounts will not vary significantly from estimated amounts.

See Note 6 and Note 10 to our Consolidated Financial Statements for additional information on our property and equipment, intangible assets and depreciation and amortization expense. See Note 2 to our Consolidated Financial Statements for additional information on our asset retirement obligations.

Impairment Assessments of Property and Equipment, Investments in Unconsolidated Entities and Intangible Assets. We periodically evaluate property and equipment for impairment when events or circumstances indicate that the carrying value of these assets may not be recoverable. Any evaluation is highly dependent on the underlying assumptions of related cash flows. We consider the fair value estimate used to calculate impairment of property and equipment a critical accounting estimate. In determining the existence of an impairment of carrying value, we make a number of subjective assumptions as to:

- whether there is an event or circumstance that may be indicative of an impairment;
- the grouping of assets;
- the intention of “holding”, “abandoning” or “selling” an asset;
- the forecast of undiscounted expected future cash flow over the asset’s estimated useful life; and
- if an impairment exists, the fair value of the asset or asset group.

In addition, when we evaluate property and equipment and other long-lived assets for recoverability, it may also be necessary to review related depreciation estimates and methods.

Investments in unconsolidated entities accounted for under the equity method of accounting are assessed for impairment when events or circumstances suggest that a decline in value may be other than temporary. Examples of such events or circumstances include continuing operating losses of the entity and/or long-term negative changes in the entity’s core business. When it is determined that an indicated impairment is other than temporary, a charge is recognized for the difference between the investment’s carrying amount and its estimated fair value. We consider the fair value estimate used to calculate the impairment of investments in unconsolidated entities a critical accounting estimate. In determining the existence of an other-than-temporary impairment of carrying value, we make a number of subjective assumptions as to:

- whether there is an event or circumstance that may be indicative of a decline in value of the investment;
- whether the decline in value is other than temporary; and
- the fair value of the investment.

Intangible assets with indefinite lives are not amortized but are instead periodically assessed for impairment. Intangible assets with finite lives are amortized over their estimated useful life as determined by management. Impairment testing entails estimating future net cash flows relating to the business, based on the grouping of assets and management’s estimate of future revenues, future cash flows and market conditions including pricing, demand, competition, operating costs and other factors. Uncertainties associated with these estimates include changes in production decline rates, production interruptions, fluctuations in refinery capacity or product slates, economic obsolescence factors in the area and potential future sources of cash flow. In addition, changes in our weighted average cost of capital from our estimates could have a significant impact on fair value. We cannot provide assurance that actual amounts will not vary significantly from estimated amounts. Resolutions of these uncertainties have resulted, and in the future may result, in impairments that impact our results of operations and financial condition.

A change in our outlook or use could result in impairments that may be material to our results of operations or financial condition. See “—Executive Summary— Market Overview and Outlook” and Note 6, Note 9 and Note 10 to our Consolidated Financial Statements for additional information.

Inventory Valuations. Inventory, including long-term inventory, primarily consists of crude oil and NGL and is valued at the lower of cost or net realizable value, with cost determined using an average cost method within specific inventory pools. At the end of each reporting period, we assess the carrying value of our inventory and use estimates and judgment when making any adjustments necessary to reduce the carrying value to net realizable value. Among the uncertainties that impact our estimates are the applicable quality and location differentials to include in our net realizable value analysis. Additionally, we estimate the upcoming liquidation timing of the inventory. Changes in assumptions made as to the timing of a sale can materially impact net realizable value. During the years ended December 31, 2022 and 2021, we did not record any charges related to the valuation adjustment of our inventory. During the year ended December 31, 2020, we recorded charges of $233 million related to the valuation adjustment of our crude oil inventory due to declines in prices. See Note 5 to our Consolidated Financial Statements for further discussion regarding inventory.

Line 901 Incident Insurance Receivable. In May 2015, we experienced a crude oil release from our Las Flores to Gaviota Pipeline (Line 901) in Santa Barbara County, California. We have estimated that the aggregate total costs we have incurred or will incur with respect to the Line 901 incident will be approximately $740 million, which includes actual and projected emergency response and clean-up costs, natural resource damage assessments, fines and penalties payable pursuant to the Consent Decree, certain third-party claims settlements, and estimated costs associated with our remaining Line 901 lawsuits and claims, as well as estimates for certain legal fees and statutory interest where applicable. As of December 31, 2022, we have recognized a long-term receivable of approximately $225 million for the portion of the release costs that we believe is probable of recovery from insurance, net of deductibles and amounts already collected. In the fourth quarter of 2022, insurers responsible for the majority of our remaining insurance coverage formally communicated a denial of coverage. We intend to vigorously pursue recovery from our insurers of all amounts for which we have claimed reimbursement. We believe that our claim for reimbursement from our insurers is strong and that our ultimate recovery of such amounts is probable. Various factors could impact the timing and amount of recovery of our insurance receivable, including future developments that adversely impact our assessment of the strength of our coverage claims, the outcome of any dispute resolution proceedings with respect to our coverage claims and the extent to which insurers may become insolvent in the future. We cannot provide assurance that actual receivable amounts will not vary significantly from our estimated amounts. See Note 19 to our Consolidated Financial Statements for further discussion regarding the Line 901 incident and our related insurance receivable.

Recent Accounting Pronouncements

See Note 2 to our Consolidated Financial Statements for information regarding the effect of recent accounting pronouncements on our Consolidated Financial Statements.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

We are exposed to various market risks, including commodity price risk and interest rate risk. We use various derivative instruments to manage such risks and, in certain circumstances, to realize incremental margin during volatile market conditions. Our risk management policies and procedures are designed to help ensure that our hedging activities address our risks by monitoring our exchange-cleared and over-the-counter positions, as well as physical volumes, grades, locations, delivery schedules and storage capacity. We have a risk management function that has direct responsibility and authority for our risk policies, related controls around commercial activities and certain aspects of corporate risk management. Our risk management function also approves all new risk management strategies through a formal process. The following discussion addresses each category of risk.

Commodity Price Risk

We use derivative instruments to hedge price risk associated with the following commodities:

- <u>Crude oil</u>

  We utilize crude oil derivatives to hedge commodity price risk inherent in our pipeline, terminalling and merchant activities. Our objectives for these derivatives include hedging anticipated purchases and sales, stored inventory and basis differentials. We manage these exposures with various instruments including futures, forwards, swaps and options.

- *Natural gas*

  We utilize natural gas derivatives to hedge commodity price risk inherent in our natural gas processing assets (natural gas purchase component of the frac spread). Additionally, we utilize natural gas derivatives to hedge anticipated operational fuel gas requirements related to our natural gas processing and NGL fractionation plants. We manage these exposures with various instruments including futures, swaps and options.

- *NGL and other*

  We utilize NGL derivatives, primarily propane and butane derivatives, to hedge commodity price risk inherent in our commercial activities, including the sale of the individual specification products extracted in our natural gas processing assets (sale of specification NGL products component of the frac spread), as well as other net sales of NGL inventory, held mainly at our owned NGL storage terminals. Our objectives for these derivatives include hedging anticipated purchases and sales and stored inventory. We manage these exposures with various instruments including futures, forwards, swaps and options.

See Note 13 to our Consolidated Financial Statements for further discussion regarding our hedging strategies and objectives.

The fair value of our commodity derivatives and the change in fair value as of December 31, 2022 that would be expected from a 10% price increase or decrease is shown in the table below (in millions):

	Fair Value	Effect of 10% Price Increase	Effect of 10% Price Decrease
Crude oil	$ (2)	$ (54)	$ 55
Natural gas	(1)	$ 13	$ (13)
NGL and other	225	$ (47)	$ 47
Total fair value	$ 222		

The fair values presented in the table above reflect the sensitivity of the derivative instruments only and do not include the effect of the underlying hedged commodity. Price-risk sensitivities were calculated by assuming an across-the-board 10% increase or decrease in price regardless of term or historical relationships between the contractual price of the instruments and the underlying commodity price. In the event of an actual 10% change in near-term commodity prices, the fair value of our derivative portfolio would typically change less than that shown in the table as changes in near-term prices are not typically mirrored in delivery months further out.

Interest Rate Risk

Our use of variable rate debt and any forecasted issuances of fixed rate debt expose us to interest rate risk. Therefore, from time to time, we use interest rate derivatives to hedge interest rate risk associated with anticipated interest payments and, in certain cases, outstanding debt instruments. All of our senior notes are fixed rate notes and thus are not subject to interest rate risk. We did not have any variable rate debt outstanding at December 31, 2022. The average interest rate on variable rate debt that was outstanding during the year ended December 31, 2022 was 1.9%, based upon rates in effect during the year. The fair value of our interest rate derivatives was an asset of $120 million as of December 31, 2022. A 10% increase in the forward LIBOR curve as of December 31, 2022 would have resulted in an increase of $18 million to the fair value of our interest rate derivatives. A 10% decrease in the forward LIBOR curve as of December 31, 2022 would have resulted in a decrease of $18 million to the fair value of our interest rate derivatives. See Note 13 to our Consolidated Financial Statements for a discussion of our interest rate risk hedging activities.

Preferred Distribution Rate Reset Option

The Preferred Distribution Rate Reset Option of our Series A preferred units is an embedded derivative that must be bifurcated from the related host contract, our partnership agreement, and recorded at fair value in our Consolidated Balance Sheets. The valuation model utilized for this embedded derivative contains multiple inputs, including our common unit price, ten-year United States treasury rates, default probabilities and timing estimates to ultimately calculate the fair value of our Series A preferred units with and without the Preferred Distribution Rate Reset Option. The fair value of this embedded derivative was a liability of $189 million as of December 31, 2022. The ten-year U.S. Treasury rate as of December 31, 2022 was 3.88%. An increase in the ten-year U.S. Treasury rate curve of 10%, holding other inputs constant, would result in an increase in both expense and our liability of $33 million. A decrease in the ten-year U.S. Treasury rate curve of 10%, holding other inputs constant, would result in a decrease in both expense and our liability of $39 million. See Note 13 to our Consolidated Financial Statements for a discussion of embedded derivatives. In January 2023, we received notice that the Series A preferred unitholders elected the Preferred Distribution Rate Reset Option, which will be effective for the distribution paid in May 2023. See Note 12 to our Consolidated Financial Statements for additional information.

Item 8. ***Financial Statements and Supplementary Data***

See "Index to the Consolidated Financial Statements" on page F-1.

Item 9. ***Changes In and Disagreements With Accountants on Accounting and Financial Disclosure***

None.

Item 9A. ***Controls and Procedures***

Disclosure Controls and Procedures

We maintain written disclosure controls and procedures, which we refer to as our "DCP." Our DCP is designed to ensure that information required to be disclosed by us in reports that we file under the Securities Exchange Act of 1934 (the "Exchange Act") is (i) recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and (ii) accumulated and communicated to management, including our Chief Executive Officer and Chief Financial Officer, to allow for timely decisions regarding required disclosure.

Applicable SEC rules require an evaluation of the effectiveness of our DCP. Management, under the supervision and with the participation of our Chief Executive Officer and Chief Financial Officer, has evaluated the effectiveness of our DCP as of December 31, 2022, the end of the period covered by this report, and, based on such evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that our DCP is effective.

Internal Control over Financial Reporting

Management is responsible for establishing and maintaining adequate internal control over financial reporting. "Internal control over financial reporting" is a process designed by, or under the supervision of, our Chief Executive Officer and our Chief Financial Officer, and effected by our Board of Directors, management and other personnel, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with GAAP. Our management, including our Chief Executive Officer and our Chief Financial Officer, has evaluated the effectiveness of our internal control over financial reporting as of December 31, 2022. See "Management's Report on Internal Control Over Financial Reporting" on page F-2 of our Consolidated Financial Statements.

Our independent registered public accounting firm, PricewaterhouseCoopers LLP, assessed the effectiveness of our internal control over financial reporting, as stated in the firm's report. See "Report of Independent Registered Public Accounting Firm" on page F-3 of our Consolidated Financial Statements.

Changes in Internal Control over Financial Reporting

There have been no changes in our internal control over financial reporting during the fourth quarter of 2022 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Certifications

The certifications of our Chief Executive Officer and Chief Financial Officer pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a) are filed with this report as Exhibits 31.1 and 31.2. The certifications of our Chief Executive Officer and Chief Financial Officer pursuant to 18 U.S.C. 1350 are furnished with this report as Exhibits 32.1 and 32.2.

Item 9B. ***Other Information***

There was no information that was required to be disclosed in a report on Form 8-K during the fourth quarter of 2022 that has not previously been reported.

Item 9C. ***Disclosure Regarding Foreign Jurisdictions that Prevent Inspections***

Not applicable.