

KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

Form N-30B-2

October 30, 2015

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Midstream/Energy Fund

KMF Quarterly Report

August 31, 2015

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CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS: This report of Kayne Anderson Midstream/Energy Fund, Inc. (the Fund) contains forward-looking statements as defined under the U.S. federal securities laws. Generally, the words believe, expect, intend, estimate, anticipate, project, will and similar expressions identify forward-looking statements, which generally are not historical in nature. Forward-looking statements are subject to certain risks and uncertainties that could cause actual results to materially differ from the Fund's historical experience and its present expectations or projections indicated in any forward-looking statement. These risks include, but are not limited to, changes in economic and political conditions; regulatory and legal changes; MLP industry risk; leverage risk; valuation risk; interest rate risk; tax risk; and other risks discussed in the Fund's filings with the Securities and Exchange Commission (SEC). You should not place undue reliance on forward-looking statements, which speak only as of the date they are made. The Fund undertakes no obligation to publicly update or revise any forward-looking statements made herein. There is no assurance that the Fund's investment objectives will be attained.

Table of Contents**KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.****MANAGEMENT DISCUSSION****(UNAUDITED)****Fund Overview**

Kayne Anderson Midstream/Energy Fund, Inc. is a non-diversified, closed-end fund. We commenced operations on November 24, 2010. Our shares of common stock are listed on the New York Stock Exchange under the symbol KMF.

Our investment objective is to provide a high level of total return with an emphasis on making quarterly cash distributions to our stockholders. We seek to achieve that investment objective by investing at least 80% of our total assets in the securities of companies in the Midstream/Energy Sector, consisting of (a) Midstream MLPs, (b) Midstream Companies, (c) Other MLPs and (d) Other Energy Companies. We anticipate that the majority of our investments will consist of investments in Midstream MLPs and Midstream Companies. Please see the Glossary of Key Terms on page 39 for a description of these investment categories and for the meaning of capitalized terms not otherwise defined herein.

As of August 31, 2015, we had total assets of \$0.9 billion, net assets applicable to our common stock of \$0.5 billion (net asset value of \$25.21 per share), and 21.7 million shares of common stock outstanding. As of August 31, 2015, we held \$744 million in equity investments and \$100 million in debt investments.

Recent Events

On July 23, 2015, KA Fund Advisors, LLC (Kafa), Kayne Anderson Capital Advisors, L.P., the managing member of Kafa (Kacalp), and Ares Management, L.P. (Ares), entered into a business combination and merger agreement (the Merger). On October 27, 2015, Kacalp and Ares announced an agreement to terminate the Merger. Kafa will continue to serve as our investment adviser, and the existing management agreement will remain in place until it expires on March 31, 2016. See Note 14 Subsequent Events.

During September 2015, we redeemed \$50 million of our Series A Notes at a price of 100.8% plus accrued interest that were scheduled to mature on March 3, 2016.

Our Top Ten Portfolio Investments

Listed below are our top ten portfolio investments by issuer as of August 31, 2015.

	Holding	Sector⁽¹⁾	Amount (\$ millions)	Percent of Long-Term Investments
1.	Kinder Morgan, Inc.	Midstream Company	\$ 99.0	11.7%
2.	Enbridge Energy Management, L.L.C.	Midstream MLP ⁽²⁾	63.1	7.5
3.	The Williams Companies, Inc. ⁽³⁾	Midstream Company	62.3	7.4
4.	Plains GP Holdings, L.P. ⁽⁴⁾	Midstream Company	48.7	5.8
5.	ONEOK, Inc. ⁽⁵⁾	Midstream Company	37.1	4.4
6.	Energy Transfer Partners, L.P.	Midstream MLP	34.6	4.1
7.	ONEOK Partners, L.P.	Midstream MLP	25.4	3.0
8.	Enterprise Products Partners L.P.	Midstream MLP	20.8	2.5
9.	Dynagas LNG Partners LP	Midstream Company	18.5	2.2
10.	Targa Resources Corp.	Midstream Company	16.5	2.0
			\$ 426.0	50.6%

(1) See Glossary of Key Terms for definitions.

(2) Includes MLP Affiliates.

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(UNAUDITED)

- (3) On September 28, 2015, Energy Transfer Equity, L.P. (ETE) announced an agreement to combine with The Williams Companies, Inc. (WMB). WMB is the general partner of Williams Partners L.P. (WPZ). In conjunction with this announcement, WPZ announced the termination of the merger agreement between WMB and WPZ. As of August 31, 2015, we owned \$3.6 million of ETE common units and \$6.1 million of WPZ common units.
- (4) We hold an interest in Plains AAP, L.P. (PAA GP), which controls the general partner of Plains All American, L.P. Our ownership of PAA GP is exchangeable into shares of Plains GP Holdings, L.P. (Plains GP which trades on the NYSE under the ticker PAGP) on a one-for-one basis at the Fund's option. The amounts shown in the table include our current holding of shares of Plains GP as well as our interest in PAA GP.
- (5) Includes \$32.6 million of ONEOK, Inc. (OKE) common shares and \$4.5 million of OKE debt.

Results of Operations For the Three Months Ended August 31, 2015

Investment Income. Investment income totaled \$10.1 million for the quarter and consisted primarily of net dividends and distributions and interest income on our investments. We received \$12.4 million of dividends and distributions, of which \$5.5 million was treated as return of capital. Interest and other income was \$3.2 million. We also received \$1.3 million of paid-in-kind dividends during the quarter, which are not included in investment income, but are reflected as an unrealized gain.

Operating Expenses. Operating expenses totaled \$7.5 million, including \$3.2 million of investment management fees, \$2.6 million of interest expense (including non-cash amortization of debt issuance costs of \$0.2 million), \$1.3 million of preferred stock distributions (including non-cash amortization of offering costs of \$0.1 million) and \$0.4 million of other operating expenses.

Net Investment Income. Our net investment income totaled \$2.6 million.

Net Realized Losses. We had net realized losses of \$2.8 million, which included \$1.2 million of net realized gains from option activity.

Net Change in Unrealized Gains. We had a net decrease in unrealized gains of \$196.8 million. The net decrease consisted of \$196.7 million decrease in our unrealized gains on from investments and \$0.1 million of net unrealized losses from option activity.

Net Decrease in Net Assets Resulting from Operations. We had a decrease in net assets resulting from operations of \$197.0 million. This decrease was comprised of net investment income of \$2.6 million, net realized losses of \$2.8 million and a net decrease in unrealized gains of \$196.8 million, as noted above.

Distributions to Common Stockholders

We pay quarterly distributions to our common stockholders, funded generally by net distributable income (NDI) generated from our portfolio investments. NDI is the amount of income received by us from our portfolio investments less operating expenses, subject to certain adjustments as described below. NDI is not a financial measure under the accounting principles generally accepted in the United States of America (GAAP). Refer to the Reconciliation of NDI to GAAP section below for a reconciliation of this measure to our results reported under GAAP.

Income from portfolio investments includes (a) cash dividends and distributions, (b) paid-in-kind dividends received (i.e., stock dividends), (c) interest income from debt securities and commitment fees from private investments in public equity (PIPE investments) and (d) net

premiums received from the sale of covered calls.

Operating expenses include (a) investment management fees paid to our investment adviser (KAFA), (b) other expenses (mostly comprised of fees paid to other service providers), (c) accrual for estimated excise taxes and (d) interest expense and preferred stock distributions.

Table of Contents**KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.****MANAGEMENT DISCUSSION****(UNAUDITED)****Net Distributable Income (NDI)**

(amounts in millions, except for per share amounts)

	Three Months Ended August 31, 2015
Distributions and Other Income from Investments	
Dividends ⁽¹⁾	\$ 12.4
Paid-In-Kind Dividends and Distributions ⁽¹⁾	1.3
Interest and Other Income	3.3
Net Premiums Received from Call Options Written	0.8
Total Distributions and Other Income from Investments	17.8
Expenses	
Investment Management Fee	(3.2)
Other Expenses	(0.4)
Interest Expense	(2.5)
Preferred Stock Distributions	(1.2)
Net Distributable Income (NDI)	\$ 10.5
Weighted Shares Outstanding	21.7
NDI per Weighted Share Outstanding	\$ 0.486
Adjusted NDI per Weighted Share Outstanding⁽²⁾	\$ 0.495
Distributions paid per Common Share⁽³⁾	\$ 0.510

(1) See Note 2 (Investment Income) to the Financial Statements for additional information regarding paid-in-kind and non-cash dividends and distributions.

(2) Adjusted NDI includes \$0.2 million of consideration received in two recent mergers that was intended to offset lower quarterly distributions as a result of such transactions (\$0.8 million of total consideration amortized over a four-quarter period). The two transactions were the mergers of Access Midstream Partners, L.P./Williams Partners L.P. and Energy Transfer Partners, L.P./Regency Energy Partners LP. This merger consideration is not included in investment income for GAAP purposes, but rather is treated as additional consideration when calculating the realized or unrealized gain (loss) that results from the merger transaction. Please see below for a discussion of recent merger activity and its impact on our NDI and Adjusted NDI.

(3) The distribution of \$0.51 per share for the third quarter of fiscal 2015 was paid on October 23, 2015.

Payment of future distributions is subject to Board of Directors approval, as well as meeting the covenants of our debt agreements and terms of our preferred stock. Because our quarterly distributions are funded primarily by NDI generated from our portfolio investments, the Board of Directors, in determining our quarterly distribution to common stockholders, gives a significant amount of consideration to the NDI and Adjusted NDI generated in the current quarter, as well as the NDI that our portfolio is expected to generate over the next twelve months. The Board of Directors also considers other factors, including but not limited to, realized and unrealized gains generated by the portfolio.

There has been an extraordinary amount of merger activity in the MLP sector over the last year, and these mergers have generally been accomplished by the acquisition of the higher-yielding entity by the lower-yielding entity. Recent examples of transactions of this kind include: Kinder Morgan, Inc.'s acquisition of its subsidiary MLPs (Kinder Morgan Energy Partners, L.P. and El Paso Pipeline Partners, L.P.) in November 2014; Access Midstream Partners, L.P.'s acquisition of Williams Partners L.P. in February 2015 (the combined entity was

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(UNAUDITED)

renamed Williams Partners L.P.); Energy Transfer Partners, L.P.'s acquisition of Regency Energy Partners LP in April 2015; and Crestwood Equity Partners LP's acquisition of Crestwood Midstream Partners LP in September 2015. In addition, there have been two other transactions that have been announced but have not closed: Energy Transfer Equity, L.P.'s acquisition of The Williams Companies, Inc. and MPLX LP's acquisition of MarkWest Energy Partners, L.P.

We expect these mergers to have an impact on our NDI over the next several quarters. In certain cases, the acquiring entity has deemed part of the merger consideration to be compensation to help offset the lower quarterly distribution that unitholders of the acquired entity would receive after closing. Given that this portion of the merger consideration was to help offset lower distributions, we believe it to be appropriate to include these amounts in Adjusted NDI, and this merger consideration was one of the factors that the Board of Directors considered in determining our quarterly distribution. Nonetheless, the resulting NDI attributable to these investments, even after giving effect to the adjustments described above, is often lower as a result of these mergers. However, we believe that the resulting merged entities will generally have higher distribution growth rates, and more stable cash flows. While our NDI is lower as a result of these transactions, we expect NDI growth over the next several quarters will help offset this decline.

As a regulated investment company (RIC), we are required to distribute all of our income to avoid paying federal income taxes. At November 30, 2014, we had a total of \$73.4 million of undistributed ordinary income and long-term capital gains (collectively, Undistributed Income) on a tax basis. During fiscal 2015, in order to avoid paying federal income taxes, we distributed all of our Undistributed Income through the payment of our regular quarterly common and preferred stock distributions, and on July 17, 2015 we paid a special distribution \$1.80 per common share (a total distribution of \$39.0 million). See Note 2 Significant Accounting Policies and Note 6 Taxes.

Reconciliation of NDI to GAAP

The difference between distributions and other income from investments in the NDI calculation and total investment income as reported in our Statement of Operations is reconciled as follows:

GAAP recognizes that a significant portion of the cash distributions received from MLPs is characterized as a return of capital and therefore excluded from investment income, whereas the NDI calculation includes the return of capital portion of such distributions.

NDI includes the value of paid-in-kind dividends and distributions whereas such amounts are not included as investment income for GAAP purposes, but rather are recorded as unrealized gains upon receipt.

NDI includes commitment fees from PIPE investments, whereas such amounts are generally not included in investment income for GAAP purposes, but rather are recorded as a reduction to the cost of the investment.

Certain of our investments in debt securities were purchased at a discount or premium to the par value of such security. When making such investments, we consider the security's yield to maturity, which factors in the impact of such discount (or premium). Interest income reported under GAAP includes the non-cash accretion of the discount (or amortization of the premium) based on the effective interest method. When we calculate interest income for purposes of determining NDI, in order to better reflect the yield to maturity, the accretion of the discount (or amortization of the premium) is calculated on a straight-line basis to the earlier of the expected call date or the maturity date of the debt security.

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We may sell covered call option contracts to generate income or to reduce our ownership of certain securities that we hold. In some cases, we are able to repurchase these call option contracts at a price less than the call premium that we received, thereby generating a profit. The premium we receive from selling call options, less (i) the amount that we pay to repurchase such call option contracts and (ii) the amount by which the market price of an underlying security is above the strike price at the time a new call option is written (if any), is included in NDI. For GAAP purposes, premiums received from call option contracts sold are not included in investment income. See Note 2 Significant Accounting Policies for a full discussion of the GAAP treatment of option contracts.

The treatment of expenses included in NDI also differs from what is reported in the Statement of Operations as follows:

The non-cash amortization or write-offs of capitalized debt issuance costs and preferred stock offering costs related to our financings is included in interest expense and distributions on preferred stock for GAAP purposes, but is excluded from our calculation of NDI.

NDI also includes recurring payments (or receipts) on interest rate swap contracts or the amortization of termination payments on interest rate swap contracts entered into in anticipation of an offering of unsecured notes (Notes) or mandatory redeemable preferred shares (MRP Shares). The termination payments on interest rate swap contracts are amortized over the term of the Notes or MRP Shares issued. For GAAP purposes, these amounts are included in the realized gains/losses section of the Statement of Operations.

Under GAAP, excise taxes are accrued when probable and estimable. For NDI, we exclude excise tax that is unrelated to the current fiscal period. See Note 6 Taxes.

Liquidity and Capital Resources

At August 31, 2015, we had total leverage outstanding of \$340 million, which represented 38% of total assets and was comprised of \$235 million of Notes and \$105 million of MRP Shares. At August 31, 2015, we did not have any borrowings outstanding under our unsecured revolving credit facility (the Credit Facility) or our unsecured revolving term loan (Term Loan). As of such date, we had \$45 million of cash that was raised through sales of securities in anticipation of debt repayment. As of October 27, 2015, we had no borrowings outstanding under either our Credit Facility or Term Loan, and we had \$13 million of cash.

Our Credit Facility has a total commitment of \$105 million and matures on November 21, 2016. The interest rate on outstanding loan balances may vary between LIBOR plus 1.50% and LIBOR plus 2.15%, depending on our asset coverage ratios. Outstanding loan balances accrue interest daily at a rate equal to LIBOR plus 1.50% based on current asset coverage ratios. We pay a fee of 0.25% per annum on any unused amounts of the Credit Facility.

Our Term Loan has a total commitment of \$50 million and matures on July 25, 2019. Borrowings under the Term Loan accrue interest at a rate of LIBOR plus 1.30%. We pay a fee of 0.25% per annum on any unused amount of the Term Loan.

At August 31, 2015, we had \$235 million of Notes outstanding that mature between 2016 and 2023, and we had \$105 million of MRP Shares outstanding, that are subject to mandatory redemption in 2018, 2020 and 2021. During September 2015, we redeemed \$50 million of our Series A Notes that were scheduled to mature on March 3, 2016.

At August 31, 2015, our asset coverage ratios under the Investment Company Act of 1940, as amended (the 1940 Act), were 377% for debt and 261% for total leverage (debt plus preferred stock). Our long-term target asset coverage ratio with respect to our debt is 400%, but at times we may be above or below our target depending on market conditions as well as certain other factors, including our total leverage asset coverage

ratio and the basic maintenance amount as stated in our rating agency guidelines.

As of August 31, 2015, our total leverage consisted of 100% fixed rate obligations. At such date, the weighted average interest/dividend rate on our total leverage was 4.16%.

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Description	No. of Shares/Units	Value
Long-Term Investments 154.5%		
Equity Investments⁽¹⁾ 136.1%		
United States 131.3%		
Midstream Company⁽²⁾ 73.0%		
Capital Product Partners L.P. ⁽³⁾	827	\$ 5,853
Capital Product Partners L.P. Class B Units ⁽³⁾⁽⁴⁾⁽⁵⁾	606	5,066
Columbia Pipeline Group, Inc.	501	12,713
Dynagas LNG Partners LP ⁽³⁾	1,296	18,487
GasLog Partners LP ⁽³⁾	607	11,665
Golar LNG Partners LP ⁽³⁾	814	16,083
Höegh LNG Partners LP ⁽³⁾	238	4,487
Kinder Morgan, Inc.	3,054	98,974
KNOT Offshore Partners LP ⁽³⁾	843	15,419
ONEOK, Inc.	907	32,647
Plains GP Holdings, L.P. ⁽³⁾⁽⁶⁾	649	12,720
Plains GP Holdings, L.P. ⁽³⁾⁽⁶⁾⁽⁷⁾	1,836	35,973
SemGroup Corporation	67	3,685
Spectra Energy Corp.	501	14,570
Tallgrass Energy GP, LP ⁽³⁾⁽⁸⁾	226	6,466
Targa Resources Corp. ⁽⁸⁾	250	16,502
Teekay Corporation	168	6,165
Teekay Offshore Partners L.P. ⁽³⁾	602	10,662
VTTI Energy Partners LP ⁽³⁾	376	8,175
The Williams Companies, Inc. ⁽⁸⁾⁽⁹⁾	1,292	62,266
		398,578
Midstream MLP⁽²⁾⁽¹⁰⁾ 51.7%		
Antero Midstream Partners LP	61	1,406
Arc Logistics Partners LP	483	7,703
Buckeye Partners, L.P. ⁽⁸⁾	156	10,989
Columbia Pipeline Partners LP	68	1,339
Crestwood Midstream Partners LP ⁽¹¹⁾	892	6,970
DCP Midstream Partners, LP	373	10,514
Enbridge Energy Management, L.L.C. ⁽¹²⁾⁽¹³⁾	2,241	63,091
Energy Transfer Equity, L.P. ⁽⁸⁾⁽⁹⁾	129	3,607
Energy Transfer Partners, L.P. ⁽⁸⁾⁽¹⁴⁾	704	34,576
EnLink Midstream Partners, LP	511	9,015
Enterprise Products Partners L.P. ⁽¹⁴⁾	739	20,773
EQT Midstream Partners, LP	21	1,610
Exterran Partners, L.P.	252	5,478
Global Partners LP	266	8,595

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Holly Energy Partners, L.P.	33	1,124
Magellan Midstream Partners, L.P. ⁽⁸⁾	25	1,764
MarkWest Energy Partners, L.P. ⁽⁶⁾⁽¹⁵⁾	203	11,433
Midcoast Energy Partners, L.P.	138	1,629
MPLX LP ⁽⁸⁾⁽¹⁵⁾	25	1,241
ONEOK Partners, L.P.	786	25,431
PennTex Midstream Partners, LP	23	413
Plains All American Pipeline, L.P. ⁽⁶⁾	405	14,619

See accompanying notes to financial statements.

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Description	No. of Shares/Units	Value
Midstream MLP⁽²⁾⁽¹⁰⁾ (continued)		
Rose Rock Midstream, L.P.	65	\$ 2,032
Shell Midstream Partners, L.P.	197	7,811
Summit Midstream Partners, LP	72	1,587
Sunoco Logistics Partners L.P.	111	3,752
Tallgrass Energy Partners, LP	59	2,794
Targa Resources Partners LP	224	6,760
USD Partners LP	119	1,332
Western Gas Partners, LP	115	6,745
Williams Partners L.P. ⁽⁹⁾	153	6,093
		282,226
Other Energy Company 4.1%		
Anadarko Petroleum Corporation 7.50% Tangible Equity Units ⁽⁶⁾	140	6,391
Enduro Royalty Trust	76	226
Marathon Petroleum Corporation ⁽⁸⁾	22	1,041
NRG Yield, Inc. Class C	26	419
Phillips 66 ⁽⁸⁾	112	8,824
Seadrill Partners LLC ⁽³⁾	356	4,237
TerraForm Power, Inc.	71	1,600
		22,738
Other 2.2%		
Macquarie Infrastructure Company LLC	154	12,147
Seaspan Corporation 7.95% Series D Preferred Shares	9	189
		12,336
Other MLP⁽¹⁰⁾ 0.3%		
Suncoke Energy Partners, L.P.	113	1,487
Total United States (Cost \$633,006)		717,365
Canada 4.8%		
Midstream Company⁽²⁾ 4.8%		
AltaGas Ltd.	404	11,107
Enbridge Inc.	159	6,576
Gibson Energy Inc.	167	2,468
Inter Pipeline Ltd.	102	2,182

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Pembina Pipeline Corporation	139	3,848
		26,181
Other Energy Company 0.0%		
ARC Resources Ltd. ⁽¹⁴⁾	1	7
Total Canada (Cost \$32,487)		26,188
Total Equity Investments (Cost \$665,493)		743,553

See accompanying notes to financial statements.

Table of Contents**KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.****SCHEDULE OF INVESTMENTS****AUGUST 31, 2015****(amounts in 000 s, except numbers of option contracts)****(UNAUDITED)**

Description	Interest Rate	Maturity Date	Principal Amount	Value
Debt Instruments 18.4%				
United States 17.6%				
Upstream 16.8%				
American Eagle Energy Corporation ⁽¹⁷⁾⁽¹⁸⁾	11.000%	9/1/19	\$ 4,800	\$ 1,080
American Energy-Woodford, LLC	12.000	12/30/20	1,050	504
BlackBrush Oil & Gas, L.P.	⁽¹⁹⁾	7/30/21	13,300	10,939
California Resources Corporation ⁽²⁰⁾	6.000	11/15/24	7,500	5,580
Canbriam Energy Inc.	9.750	11/15/19	9,640	9,592
Chief Oil & Gas LLC	⁽²¹⁾	8/8/21	9,609	8,552
Comstock Resources, Inc.	10.000	3/15/20	5,000	4,037
Eclipse Resources Corporation	8.875	7/15/23	8,000	7,380
Energy & Exploration Partners, Inc.	⁽²²⁾	1/22/19	992	769
Goodrich Petroleum Corporation	8.875	3/15/19	6,950	1,425
Halcón Resources Corporation ⁽²³⁾	9.750	7/15/20	10,500	5,323
Jonah Energy LLC	⁽²⁴⁾	5/29/21	3,000	2,550
Jones Energy, Inc.	9.250	3/15/23	5,000	4,675
Jupiter Resources Inc.	8.500	10/1/22	10,000	6,300
Magnum Hunter Resources Corporation	9.750	5/15/20	13,900	9,626
Midstates Petroleum Company, Inc.	10.750	10/1/20	3,500	1,032
Midstates Petroleum Company, Inc.	9.250	6/1/21	6,750	1,924
Resolute Energy Corporation	8.500	5/1/20	4,900	1,715
Triangle USA Petroleum Corporation	6.750	7/15/22	800	484
Vantage Energy, LLC	⁽²⁵⁾	12/31/18	8,885	8,130
				91,617
Midstream Company⁽²⁾ 0.8%				
ONEOK, Inc.	7.500	9/1/23	4,500	4,500
Total United States (Cost \$136,503)				96,117
Canada 0.8%				
Upstream 0.8%				
Athabasca Oil Corporation (Cost \$5,099)	7.500	11/19/17	⁽²⁶⁾	4,217
Total Debt Investments (Cost \$141,602)				100,334
Total Long-Term Investments (Cost \$807,095)				843,887

Strike Price	Expiration Date	No. of Contracts	Value
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Call Option Contracts Written⁽¹⁷⁾

Midstream Company

Tallgrass Energy GP, LP	\$ 30.00	9/18/15	500	\$ (36)
Targa Resources Corp.	80.00	9/18/15	300	(8)
Targa Resources Corp.	85.00	9/18/15	300	(8)
The Williams Companies, Inc.	60.00	9/18/15	1,220	(13)
The Williams Companies, Inc.	62.50	9/18/15	400	(6)
The Williams Companies, Inc.	65.00	9/18/15	350	(4)

(75)

Midstream MLP

Buckeye Partners, L.P.	70.00	9/18/15	300	(62)
Energy Transfer Equity, L.P.	32.50	9/18/15	250	(2)

See accompanying notes to financial statements.

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Description	Strike Price	Expiration Date	No. of Contracts	Value
Midstream MLP (continued)				
Energy Transfer Equity, L.P.	\$ 33.75	9/18/15	100	\$ (1)
Energy Transfer Partners, L.P.	52.50	9/18/15	200	(7)
Energy Transfer Partners, L.P.	55.00	9/18/15	200	(3)
Magellan Midstream Partners, L.P.	82.50	9/18/15	100	(20)
MPLX LP	55.00	9/18/15	250	(19)
				(114)
Other Energy Company				
Marathon Petroleum Corporation	60.00	9/18/15	170	(1)
Marathon Petroleum Corporation	62.50	9/18/15	50	(1)
Phillips 66	82.50	9/18/15	400	(40)
Phillips 66	85.00	9/18/15	260	(12)
Phillips 66	87.50	9/18/15	350	(9)
Phillips 66	90.00	9/18/15	100	(2)
				(65)
Total Call Option Contracts Written (Premiums Received \$604)				(254)
Debt				(235,000)
Mandatory Redeemable Preferred Stock at Liquidation Value				(105,000)
Other Assets in Excess of Other Liabilities				42,534
Net Assets Applicable to Common Stockholders				\$ 546,167

- (1) Unless otherwise noted, equity investments are common units/common shares.
- (2) Refer to the Glossary of Key Terms (page 39) for the definitions of Midstream Companies and Midstream MLPs.
- (3) This company is structured like an MLP, but is not treated as a publicly-traded partnership for regulated investment company (RIC) qualification purposes.
- (4) Fair valued security, restricted from public sale. See Notes 2, 3 and 7 in Notes to Financial Statements.

- (5) Class B Units are convertible on a one-for-one basis into common units of Capital Product Partners L.P. (CPLP) and are senior to the common units in terms of liquidation preference and priority of distributions. The Class B Units pay quarterly cash distributions and are convertible at any time at the option of the holder. The Class B Units paid a distribution of \$0.21775 per unit for the third quarter of fiscal 2015.
- (6) The Fund believes that it is an affiliate of MarkWest Energy Partners, L.P., Plains All American Pipeline, L.P. and Plains GP Holdings, L.P. (Plains GP). See Note 5 Agreements and Affiliations.
- (7) The Fund holds an interest in Plains AAP, L.P. (PAA GP), which controls the general partner of Plains All American, L.P. The Fund s ownership of PAA GP is exchangeable into shares of Plains GP (which trades on the NYSE under the ticker PAGP) on a one-for-one basis at the Fund s option. See Notes 3 and 7 in Notes to Financial Statements.
- (8) Security or a portion thereof is segregated as collateral on option contracts written.
- (9) On September 28, 2015, Energy Transfer Equity, L.P. (ETE) announced an agreement to combine with The Williams Companies, Inc. (WMB). WMB is the general partner of Williams Partners L.P. (WPZ). In conjunction with this announcement, WPZ announced the termination of the merger agreement between WMB and WPZ.

See accompanying notes to financial statements.

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KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

SCHEDULE OF INVESTMENTS

AUGUST 31, 2015

(amounts in 000 s, except numbers of option contracts)

(UNAUDITED)

- (10) Unless otherwise noted, securities are treated as a publicly-traded partnership for RIC qualification purposes. To qualify as a RIC for tax purposes, the Fund may directly invest up to 25% of its total assets in equity and debt securities of entities treated as publicly-traded partnerships. The Fund had 24.5% of its total assets invested in publicly-traded partnerships at August 31, 2015. It is the Fund's intention to be treated as a RIC for tax purposes.
- (11) On September 30, 2015, Crestwood Equity Partners LP (CEQP) and Crestwood Midstream Partners LP (CMLP) completed their merger. CMLP unitholders received 2.75 units of CEQP for each CMLP unit that they owned.
- (12) Dividends are paid-in-kind.
- (13) Security is not treated as a publicly-traded partnership for RIC qualification purposes.
- (14) In lieu of cash distributions, the Fund has elected to receive distributions in additional units/stock through the issuer's dividend reinvestment program.
- (15) On July 13, 2015, MPLX LP (MPLX) and MarkWest Energy Partners, L.P. (MWE) announced the signing of a definitive merger agreement whereby MWE would become a wholly owned subsidiary of MPLX. Under the terms of the agreement, common unitholders of MWE will receive 1.09 MPLX common units and a cash payment of \$3.37 for each MWE common unit they own.
- (16) Security is comprised of a prepaid equity purchase contract and a senior amortizing note. Unless settled earlier, each prepaid equity purchase contract will settle on June 7, 2018 for between 0.7159 and 0.8591 Western Gas Equity Partners, LP (WGP) common units (subject to Anadarko Petroleum Corporation's (APC) right to deliver APC common stock in lieu of WGP common units). The Fund receives a quarterly payment of 7.50% per annum on the \$50 per unit stated amount of the security.
- (17) Security is non-income producing.
- (18) On May 8, 2015, American Eagle Corporation (American Eagle) filed voluntary petitions in the United States Bankruptcy Court for the District of Colorado seeking relief under Chapter 11 of the bankruptcy code. On April 2, 2015, American Eagle made a partial interest payment to its noteholders, and the Fund received \$110 as its share of the partial interest payment. As of February 28, 2015, the Fund had \$270 of accrued interest income, and accordingly, the Fund established a \$160 reserve during the second quarter against the portion of the accrued interest income that exceeded the partial interest payment. The Fund is no longer accruing interest income related to its

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investment in American Eagle.

- (19) Floating rate second lien secured term loan. Security pays interest at a rate of LIBOR + 650 basis points with a 1.00% LIBOR floor (7.50% as of August 31, 2015).
- (20) Robert V. Sinnott, the Chief Executive Officer of Kayne Anderson Capital Advisors, L.P., serves as a director of California Resources Corporation (CRC). The Fund does not believe that it is an affiliate of CRC.
- (21) Floating rate second lien secured term loan. Security pays interest at a rate of LIBOR + 650 basis points with a 1.00% LIBOR floor (7.50% as of August 31, 2015).
- (22) Floating rate second lien secured term loan. Security pays interest at a rate of LIBOR + 675 basis points with a 1.00% LIBOR floor (7.75% as of August 31, 2015).
- (23) On August 27, 2015, the Fund entered in to an agreement with Halcón Resources Corporation (Halcón) to exchange \$10,500 principal amount of Halcón s outstanding 9.75% unsecured notes due 2020 for \$6,825 principal amount of new 13.00% third lien senior secured notes due 2022 (the New Notes). The Halcón notes held at August 31, 2015 were valued on an as-exchanged basis with the New Notes. The exchange was completed on September 10, 2015. The New Notes are restricted from sale pursuant to Rule 144A of the Securities Act of 1933, as amended.

See accompanying notes to financial statements.

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KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

SCHEDULE OF INVESTMENTS

AUGUST 31, 2015

(amounts in 000 s, except numbers of option contracts)

(UNAUDITED)

- (24) Floating rate second lien secured term loan. Security pays interest at a rate of LIBOR + 650 basis points with a 1.00% LIBOR floor (7.50% as of August 31, 2015).

- (25) Floating rate second lien secured term loan. Security pays interest at a rate of LIBOR + 750 basis points with a 1.00% LIBOR floor (8.50% as of August 31, 2015).

- (26) Principal amount is 6,850 Canadian dollars.

See accompanying notes to financial statements.

Table of Contents**KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.****STATEMENT OF ASSETS AND LIABILITIES****AUGUST 31, 2015****(amounts in 000 s, except share and per share amounts)****(UNAUDITED)****ASSETS**

Investments, at fair value:	
Non-affiliated (Cost \$766,151)	\$ 769,142
Affiliated (Cost \$40,944)	74,745
Total investments (Cost \$807,095)	843,887
Cash	44,643
Deposits with brokers	250
Receivable for securities sold	3,444
Interest, dividends and distributions receivable (Cost \$3,722)	3,718
Deferred debt and preferred stock offering costs and other assets	2,944
Total Assets	898,886

LIABILITIES

Payable for securities purchased	5,022
Investment management fee payable	981
Call option contracts written (Premiums received \$604)	254
Accrued directors' fees and expenses	94
Accrued excise taxes	124
Accrued expenses and other liabilities	6,244
Notes	235,000
Mandatory redeemable preferred stock, \$25.00 liquidation value per share (4,200,000 shares issued and outstanding)	105,000
Total Liabilities	352,719

NET ASSETS APPLICABLE TO COMMON STOCKHOLDERS \$ 546,167**NET ASSETS APPLICABLE TO COMMON STOCKHOLDERS CONSIST OF**

Common stock, \$0.001 par value (22,141,297 shares issued, 21,663,136 shares outstanding and 195,800,000 shares authorized)	\$ 22
Paid-in capital	508,856
Accumulated net investment income less distributions not treated as tax return of capital	(83,190)
Accumulated net realized gains less distributions not treated as tax return of capital	83,360
Net unrealized gains	37,119

NET ASSETS APPLICABLE TO COMMON STOCKHOLDERS \$ 546,167**NET ASSET VALUE PER COMMON SHARE** \$ 25.21

See accompanying notes to financial statements.

Table of Contents**KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.****STATEMENT OF OPERATIONS**

(amounts in 000 s)

(UNAUDITED)

	For the Three Months Ended August 31, 2015	For the Nine Months Ended August 31, 2015
INVESTMENT INCOME		
Income		
Dividends and distributions:		
Non-affiliated investments	\$ 11,360	\$ 35,105
Affiliated investments	1,024	3,167
Total dividends and distributions (after foreign taxes withheld of \$42 and \$199, respectively)	12,384	38,272
Return of capital	(5,516)	(16,725)
Net dividends and distributions	6,868	21,547
Interest and other income	3,216	9,146
Total Investment Income	10,084	30,693
Expenses		
Investment management fees	3,204	10,435
Professional fees	119	357
Directors' fees and expenses	87	283
Administration fees	76	222
Insurance	36	117
Reports to stockholders	31	75
Custodian fees	17	54
Other expenses	17	105
Total Expenses before interest expense, preferred distributions and excise taxes	3,587	11,648
Interest expense and amortization of offering costs	2,613	7,990
Distributions on mandatory redeemable preferred stock and amortization of offering costs	1,262	3,783
Excise taxes		2,404
Total Expenses	7,462	25,825
Net Investment Income	2,622	4,868
REALIZED AND UNREALIZED GAINS (LOSSES)		
Net Realized Gains (Losses)		
Investments non-affiliated	(4,282)	10,322
Investments affiliated	292	1,175
Foreign currency transactions	(31)	(48)
Options	1,174	4,058
Net Realized Gains (Losses)	(2,847)	15,507

Net Change in Unrealized Gains		
Investments non-affiliated	(170,704)	(234,864)
Investments affiliated	(26,019)	(23,086)
Foreign currency translations	(11)	(16)
Options	(75)	(73)
Net Change in Unrealized Gains	(196,809)	(258,039)
Net Realized and Unrealized Losses	(199,656)	(242,532)
NET DECREASE IN NET ASSETS APPLICABLE TO COMMON STOCKHOLDERS RESULTING FROM OPERATIONS	\$ (197,034)	\$ (237,664)

See accompanying notes to financial statements.

Table of Contents**KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.****STATEMENT OF CHANGES IN NET ASSETS APPLICABLE TO COMMON STOCKHOLDERS**

(amounts in 000 s, except share amounts)

	For the Nine Months Ended August 31, 2015 (Unaudited)	For the Fiscal Year Ended November 30, 2014
OPERATIONS		
Net investment income (loss) ⁽¹⁾	\$ 4,868	\$ (231)
Net realized gains	15,507	76,869
Net change in unrealized gains	(258,039)	48,057
Net Increase (Decrease) in Net Assets Resulting from Operations	(237,664)	124,695
DIVIDENDS AND DISTRIBUTIONS TO COMMON STOCKHOLDERS⁽¹⁾		
Dividends	(71,630) ⁽²⁾	(34,315) ⁽³⁾
Distributions net long-term capital gains	(2)	(7,401) ⁽³⁾
Dividends and Distributions to Common Stockholders	(71,630)	(41,716)
CAPITAL STOCK TRANSACTIONS		
Issuance of 41,203 and 97,252 shares of common stock from reinvestment of dividends and distributions, respectively	1,204	3,220
Common stock purchased under the share repurchase program (519,364 shares)		(19,999)
Net Increase (Decrease) in Net Assets Applicable to Common Stockholders from Capital Stock Transactions	1,204	(16,779)
Total Increase (Decrease) in Net Assets Applicable to Common Stockholders	(308,090)	66,200
NET ASSETS APPLICABLE TO COMMON STOCKHOLDERS		
Beginning of period	854,257	788,057
End of period	\$ 546,167	\$ 854,257

(1) Distributions on the Fund's mandatory redeemable preferred stock (MRP Shares) are treated as an operating expense under GAAP and are included in the calculation of net investment loss. See Note 2 Significant Accounting Policies. The distributions in the amount of \$3,627 paid to MRP Shares during the nine months ended August 31, 2015 are characterized as dividend income (a portion of which may be eligible to be treated as qualified dividend income) until after the end of the fiscal year when the Fund can determine its earnings and profits for the full fiscal year, which include gains and losses on the sale of securities for the remainder of the fiscal year. The final tax character may differ substantially from this preliminary information. Distributions in the amount of \$4,168 paid to holders of MRP Shares for the fiscal year ended November 30, 2014 were characterized as dividends (\$3,228) and as long-term capital gains (\$940). A portion of the distributions characterized as dividends, for the fiscal year ended November 30, 2014, was eligible to be treated as qualified dividend income. This characterization is based on the Fund's earnings and profits.

(2)

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The distributions paid to common stockholders for the nine months ended August 31, 2015 are characterized as dividend income (a portion of which may be eligible to be treated as qualified dividend income) until after the end of the fiscal year when the Fund can determine its earnings and profits for the full fiscal year, which include gains and losses on the sale of securities for the remainder of the fiscal year. The final tax character may differ substantially from this preliminary information.

- (3) Distributions paid to common stockholders for the fiscal year ended November 30, 2014, were characterized as either dividends (a portion of which was eligible to be treated as qualified dividend income) or distributions (long-term capital gains or return of capital). This characterization is based on the Fund's earnings and profits.

See accompanying notes to financial statements.

Table of Contents**KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.****STATEMENT OF CASH FLOWS****FOR THE NINE MONTHS ENDED AUGUST 31, 2015****(amounts in 000 s)****(UNAUDITED)**

CASH FLOWS FROM OPERATING ACTIVITIES	
Net decrease in net assets resulting from operations	\$ (237,664)
Adjustments to reconcile net decrease in net assets resulting from operations to net cash provided by operating activities:	
Return of capital distributions	16,725
Net realized gains (excluding foreign currency transactions)	(15,555)
Net change in unrealized gains (excluding foreign currency translations)	258,023
Accretion of bond discounts, net	(217)
Purchase of long-term investments	(400,689)
Proceeds from sale of long-term investments	532,360
Increase in deposits with brokers	(6)
Increase in receivable for securities sold	(1,104)
Increase in interest, dividends and distributions receivable	(381)
Amortization of deferred debt offering costs	516
Amortization of mandatory redeemable preferred stock offering costs	156
Decrease in other assets	854
Increase in payable for securities purchased	5,022
Decrease in investment management fee payable	(336)
Decrease in premiums received on call option contracts written	(442)
Increase in accrued directors' fees and expenses	42
Increase in accrued excise taxes	124
Increase in accrued expenses and other liabilities	2,175
Net Cash Provided by Operating Activities	159,603
CASH FLOWS FROM FINANCING ACTIVITIES	
Decrease in borrowings under term loan	(46,000)
Cash distributions paid to common stockholders	(70,426)
Net Cash Used in Financing Activities	(116,426)
NET INCREASE IN CASH	43,177
CASH BEGINNING OF PERIOD	1,466
CASH END OF PERIOD	\$ 44,643

Supplemental disclosure of cash flow information:

Non-cash financing activities not included herein consisted of reinvestment of distributions of \$1,204 pursuant to the Fund's dividend reinvestment plan.

During the nine months ended August 31, 2015, interest paid related to debt obligations was \$5,177, and federal excise tax paid was \$2,300.

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During the nine months ended August 31, 2015, the Fund received \$8,008 of paid-in-kind and non-cash dividends and distributions. See Note 2 Significant Accounting Policies.

See accompanying notes to financial statements.

Table of Contents**KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.****FINANCIAL HIGHLIGHTS**

(amounts in 000 s, except share and per share amounts)

	For the Nine Months Ended August 31, 2015 (Unaudited)	For the Fiscal Year Ended November 30,				For the Period November 24, 2010 ⁽¹⁾ through November 30, 2010
		2014	2013	2012	2011	
Per Share of Common Stock⁽²⁾						
Net asset value, beginning of period	\$ 39.51	\$ 35.75	\$ 29.01	\$ 25.94	\$ 23.80	\$ 23.83 ⁽³⁾
Net investment income (loss) ⁽⁴⁾	0.22	(0.01)	(0.06)	0.17	0.29	(0.02)
Net realized and unrealized gains (losses)	(11.20)	5.61	8.61	4.64	3.12	(0.01)
Total income (loss) from operations	(10.98)	5.60	8.55	4.81	3.41	(0.03)
Common dividends dividend income ⁽⁵⁾	(3.31)	(1.57)	(1.15)	(1.30)	(1.20)	
Common distributions long-term capital gain ⁽⁵⁾		(0.34)	(0.66)	(0.41)		
Common distributions return of capital ⁽⁵⁾						
Total dividends and distributions common	(3.31)	(1.91)	(1.81)	(1.71)	(1.20)	
Effect of shares issued in reinvestment of distributions	(0.01)	(0.02)		(0.03)	(0.04)	
Effect of issuance of common stock					(0.03)	
Effect of common stock repurchased		0.09				
Net asset value, end of period	\$ 25.21	\$ 39.51	\$ 35.75	\$ 29.01	\$ 25.94	\$ 23.80
Market value per share of common stock, end of period	\$ 22.61	\$ 35.82	\$ 32.71	\$ 28.04	\$ 22.46	\$ 25.00
Total investment return based on common stock market value ⁽⁶⁾	(29.0)% ⁽⁷⁾	15.3%	23.5%	33.3%	(5.5)%	0.0% ⁽⁷⁾
Total investment return based on net asset value ⁽⁸⁾	(28.2)% ⁽⁷⁾	16.4%	30.5%	19.4%	14.7%	(0.1)% ⁽⁷⁾

See accompanying notes to financial statements.

Table of Contents**KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.****FINANCIAL HIGHLIGHTS**

(amounts in 000 s, except share and per share amounts)

	For the Nine Months Ended August 31, 2015 (Unaudited)	For the Fiscal Year Ended November 30,				For the Period November 24, 2010 ⁽¹⁾ through November 30, 2010
		2014	2013	2012	2011	
Supplemental Data and Ratios⁽⁹⁾						
Net assets applicable to common stockholders, end of period	\$ 546,167	\$ 854,257	\$ 788,057	\$ 635,226	\$ 562,044	\$ 452,283
Ratio of expenses to average net assets						
Management fees ⁽¹⁰⁾	1.9%	1.7%	1.8%	1.7%	1.6%	1.3%
Other expenses	0.2	0.2	0.2	0.3	0.3	0.3 ⁽¹¹⁾
Subtotal	2.1	1.9	2.0	2.0	1.9	1.6
Interest expense and distributions on mandatory redeemable preferred stock ⁽⁴⁾	2.1%	1.7	1.8	1.8	1.3	
Management fee waiver					(0.3)	(0.3)
Excise taxes	0.3 ⁽⁷⁾		0.1			
Total expenses	4.5%	3.6%	3.9%	3.8%	2.9%	1.3%
Ratio of net investment income (loss) to average net assets ⁽⁴⁾	1.0% ⁽¹²⁾	(0.0)%	(0.2)%	0.6%	1.1%	(1.3)% ⁽¹¹⁾
Net increase (decrease) in net assets applicable to common stockholders resulting from operations to average net assets	(31.7)% ⁽⁷⁾	14.0%	25.9%	16.8%	13.4%	(0.1)% ⁽⁷⁾
Portfolio turnover rate	36.4% ⁽⁷⁾	45.3%	49.1%	67.6%	74.1%	0.0% ⁽⁷⁾
Average net assets	\$ 748,904	\$ 887,585	\$ 726,248	\$ 620,902	\$ 537,044	\$ 452,775
Notes outstanding, end of period	235,000	235,000	205,000	165,000	115,000	
Credit facility outstanding, end of period			50,000	48,000	45,000	
Term loan outstanding, end of period		46,000				
Mandatory redeemable preferred stock, end of period	105,000	105,000	65,000	65,000	35,000	
Average shares of common stock outstanding	21,656,219	21,897,671	21,969,288	21,794,596	21,273,512	19,004,000
Asset coverage of total debt ⁽¹³⁾	377.1%	441.4%	434.5%	428.7%	473.2%	
Asset coverage of total leverage (debt and preferred stock) ⁽¹⁴⁾	260.6%	321.3%	346.3%	328.5%	388.2%	
Average amount of borrowings per share of common stock during the period ⁽²⁾	\$ 11.82	\$ 12.84	\$ 10.51	\$ 8.85	\$ 6.50	

See accompanying notes to financial statements.

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KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

FINANCIAL HIGHLIGHTS

(amounts in 000 s, except share and per share amounts)

- (1) Commencement of operations.
- (2) Based on average shares of common stock outstanding.
- (3) Initial public offering price of \$25.00 per share less underwriting discounts of \$1.125 per share and offering costs of \$0.05 per share.
- (4) Distributions on the Fund's MRP Shares are treated as an operating expense under GAAP and are included in the calculation of net investment income (loss). See Note 2 Significant Accounting Policies.
- (5) The actual characterization of the distributions made during the nine months ended August 31, 2015 will not be determinable until after the end of the fiscal year when the Fund can determine its actual earnings and profits for the full fiscal year (which include gains and losses on the sale of securities for the remainder of the fiscal year) and may differ substantially from this preliminary information. The information presented for each of the other periods is a characterization of the total distributions paid to the common stockholders as either dividend income (a portion of which was eligible to be treated as qualified dividend income) or distributions (long-term capital gains or return of capital) and is based on the Fund's earnings and profits.
- (6) Total investment return based on market value is calculated assuming a purchase of common stock at the market price on the first day and a sale at the current market price on the last day of the period reported. The calculation also assumes reinvestment of distributions at actual prices pursuant to the Fund's dividend reinvestment plan.
- (7) Not annualized.
- (8) Not audited. Total investment return based on net asset value is calculated assuming a purchase of common stock at the net asset value on the first day and a sale at the net asset value on the last day of the period reported. The calculation also assumes reinvestment of distributions at actual prices pursuant to the Fund's dividend reinvestment plan.
- (9) Unless otherwise noted, ratios are annualized.
- (10) Ratio reflects total management fee before waiver.

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- (11) For purposes of annualizing other expenses of the Fund, professional fees and reports to stockholders are fees associated with the annual audit and annual report and therefore have not been annualized.
- (12) For purposes of annualizing the ratio of net investment income (loss) to average net assets, excise taxes have not been annualized.
- (13) Calculated pursuant to section 18(a)(1)(A) of the 1940 Act. Represents the value of total assets less all liabilities not represented by unsecured notes (Notes) or any other senior securities representing indebtedness and MRP Shares divided by the aggregate amount of Notes and any other senior securities representing indebtedness. Under the 1940 Act, the Fund may not declare or make any distribution on its common stock nor can it incur additional indebtedness if at the time of such declaration or incurrence its asset coverage with respect to senior securities representing indebtedness would be less than 300%. For purposes of this test, the Credit Facility and the Term Loan are considered senior securities representing indebtedness.
- (14) Calculated pursuant to section 18(a)(2)(A) of the 1940 Act. Represents the value of total assets less all liabilities not represented by Notes, any other senior securities representing indebtedness and MRP Shares divided by the aggregate amount of Notes, any other senior securities representing indebtedness and MRP Shares. Under the 1940 Act, the Fund may not declare or make any distribution on its common stock nor can it issue additional preferred stock if at the time of such declaration or issuance, its asset coverage with respect to all senior securities would be less than 200%. In addition to the limitations under the 1940 Act, the Fund, under the terms of its MRP Shares, would not be able to declare or pay any distributions on its common stock if such declaration would cause its asset coverage with respect to all senior securities to be less than 225%. For purposes of these asset coverage ratio tests, the Credit Facility and the Term Loan are considered senior securities representing indebtedness.

See accompanying notes to financial statements.

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KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

NOTES TO FINANCIAL STATEMENTS

(amount in 000 s, except number of option contracts, share and per share)

(UNAUDITED)

1. Organization

Kayne Anderson Midstream/Energy Fund, Inc. (the Fund) was organized as a Maryland corporation on August 26, 2010 and commenced operations on November 24, 2010. The Fund is registered under the Investment Company Act of 1940, as amended (the 1940 Act), as a non-diversified, closed-end investment management company. The Fund's investment objective is to provide a high level of return with an emphasis on making quarterly cash distributions to its stockholders. The Fund seeks to achieve that investment objective by investing at least 80% of its total assets in the securities of companies in the Midstream/Energy Sector, consisting of (a) Midstream MLPs, (b) Midstream Companies, (c) Other MLPs and (d) Other Energy Companies. The Fund's shares of common stock are listed on the New York Stock Exchange, Inc. (NYSE) under the symbol KMF.

2. Significant Accounting Policies

The following is a summary of the significant accounting policies that the Fund uses to prepare its financial statements in accordance with accounting principles generally accepted in the United States of America (GAAP). The Fund is an investment company and follows accounting and reporting guidance of the Financial Accounting Standards Board (FASB) Accounting Standards Codification (ASC) Topic 946 Financial Services Investment Companies.

A. Use of Estimates The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amount of assets and liabilities and disclosure of contingent assets and liabilities as of the date of the financial statements and the reported amounts of income and expenses during the period. Actual results could differ materially from those estimates.

B. Cash and Cash Equivalents Cash and cash equivalents include short-term, liquid investments with an original maturity of three months or less and include money market fund accounts.

C. Calculation of Net Asset Value The Fund determines its net asset value on a daily basis and reports its net asset value on its website. Prior to March 9, 2015, the Fund reported its net asset value on its website on a weekly basis. Net asset value is computed by dividing the value of the Fund's assets (including accrued interest and distributions), less all of its liabilities (including accrued expenses, distributions payable and any indebtedness) and the liquidated value of any outstanding preferred stock, by the total number of common shares outstanding.

D. Investment Valuation Readily marketable portfolio securities listed on any exchange other than the NASDAQ Stock Market, Inc. (NASDAQ) are valued, except as indicated below, at the last sale price on the business day as of which such value is being determined. If there has been no sale on such day, the securities are valued at the mean of the most recent bid and ask prices on such day. Securities admitted to trade on the NASDAQ are valued at the NASDAQ official closing price. Portfolio securities traded on more than one securities exchange are valued at the last sale price on the business day as of which such value is being determined at the close of the exchange representing the principal market for such securities.

Equity securities traded in the over-the-counter market, but excluding securities admitted to trading on the NASDAQ, are valued at the closing bid prices. Debt securities that are considered bonds are valued by using the mean of the bid and ask prices provided by an independent pricing service or, if such prices are not available or in the judgment of KA Fund Advisors, LLC (KAFA) such prices are stale or do not represent fair value, by an independent broker. For debt securities that are considered bank loans, the fair market value is determined by using the mean of the bid and ask prices provided by the agent or syndicate bank or principal market maker. When price quotes for securities are not available, or such prices are stale or do not represent fair value in the judgment of KAFA, fair market value will be determined using the Fund's valuation process for securities that are privately issued or otherwise restricted as to resale.

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KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

NOTES TO FINANCIAL STATEMENTS

(amount in 000 s, except number of option contracts, share and per share)

(UNAUDITED)

Exchange-traded options and futures contracts are valued at the last sales price at the close of trading in the market where such contracts are principally traded or, if there was no sale on the applicable exchange on such day, at the mean between the quoted bid and ask price as of the close of such exchange.

The Fund holds securities that are privately issued or otherwise restricted as to resale. For these securities, as well as any security for which (a) reliable market quotations are not available in the judgment of KAFA, or (b) the independent pricing service or independent broker does not provide prices or provides a price that in the judgment of KAFA is stale or does not represent fair value, shall each be valued in a manner that most fairly reflects fair value of the security on the valuation date. Unless otherwise determined by the Board of Directors, the following valuation process is used for such securities:

Investment Team Valuation. The applicable investments are valued by senior professionals of KAFA who are responsible for the portfolio investments. The investments will be valued monthly, with new investments valued at the time such investment was made.

Investment Team Valuation Documentation. Preliminary valuation conclusions will be determined by senior management of KAFA. Such valuations and supporting documentation are submitted to the Valuation Committee (a committee of the Fund's Board of Directors) and the Board of Directors on a quarterly basis.

Valuation Committee. The Valuation Committee meets to consider the valuations submitted by KAFA at the end of each quarter. Between meetings of the Valuation Committee, a senior officer of KAFA is authorized to make valuation determinations. All valuation determinations of the Valuation Committee are subject to ratification by the Board of Directors at its next regular meeting.

Valuation Firm. Quarterly, a third-party valuation firm engaged by the Board of Directors reviews the valuation methodologies and calculations employed for these securities, unless the aggregate fair value of such security is less than 0.1% of total assets.

Board of Directors Determination. The Board of Directors meets quarterly to consider the valuations provided by KAFA and the Valuation Committee and ratify valuations for the applicable securities. The Board of Directors considers the report provided by the third-party valuation firm in reviewing and determining in good faith the fair value of the applicable portfolio securities.

As of August 31, 2015, the Fund held 0.9% of its net assets applicable to common stockholders (0.6% of total assets) in securities that were fair valued pursuant to the procedures adopted by the Board of Directors. The aggregate fair value of these securities at August 31, 2015 was \$5,066. See Note 3 Fair Value and Note 7 Restricted Securities.

E. Repurchase Agreements From time to time, the Fund has agreed to purchase securities from financial institutions subject to the seller's agreement to repurchase them at an agreed-upon time and price (repurchase agreements). The financial institutions with whom the Fund enters into repurchase agreements are banks and broker/dealers which KAFA considers creditworthy. The seller under a repurchase agreement is required to maintain the value of the securities as collateral, subject to the agreement, at not less than the repurchase price plus accrued interest. KAFA monitors daily the mark-to-market of the value of the collateral, and, if necessary, requires the seller to maintain additional securities, so that the value of the collateral is not less than the repurchase price. Default by or bankruptcy of the seller would, however, expose the Fund to possible loss because of adverse market action or delays in connection with the disposition of the underlying securities. As of August 31, 2015, the Fund did not have any repurchase agreements.

F. *Short Sales* A short sale is a transaction in which the Fund sells securities it does not own (but has borrowed) in anticipation of or to hedge against a decline in the market price of the securities. To complete a short sale, the Fund may arrange through a broker to borrow the securities to be delivered to the buyer. The

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proceeds received by the Fund for the short sale are retained by the broker until the Fund replaces the borrowed securities. In borrowing the securities to be delivered to the buyer, the Fund becomes obligated to replace the securities borrowed at their market price at the time of replacement, whatever the price may be.

The Fund's short sales, if any, are fully collateralized. The Fund is required to maintain assets consisting of cash or liquid securities equal in amount to the liability created by the short sale. These assets are adjusted daily to reflect changes in the value of the securities sold short. The Fund is liable for any dividends or distributions paid on securities sold short.

The Fund may also sell short against the box (*i.e.*, the Fund enters into a short sale as described above while holding an offsetting long position in the security which it sold short). If the Fund enters into a short sale against the box, the Fund would segregate an equivalent amount of securities owned as collateral while the short sale is outstanding. During the three and nine months ended August 31, 2015, the Fund did not engage in any short sales.

G. Derivative Financial Instruments The Fund may utilize derivative financial instruments in its operations.

Interest rate swap contracts. The Fund may use hedging techniques such as interest rate swaps to mitigate potential interest rate risk on a portion of the Fund's leverage. Such interest rate swaps would principally be used to protect the Fund against higher costs on its leverage resulting from increases in interest rates. The Fund does not hedge any interest rate risk associated with portfolio holdings. Interest rate transactions the Fund uses for hedging purposes expose it to certain risks that differ from the risks associated with its portfolio holdings. A decline in interest rates may result in a decline in the value of the swap contracts, which, everything else being held constant, would result in a decline in the net assets of the Fund. In addition, if the counterparty to an interest rate swap defaults, the Fund would not be able to use the anticipated net receipts under the interest rate swap to offset its cost of financial leverage.

Interest rate swap contracts are recorded at fair value with changes in value during the reporting period, and amounts accrued under the agreements, included as unrealized gains or losses in the Statement of Operations. Monthly cash settlements under the terms of the interest rate swap agreements or termination payments are recorded as realized gains or losses in the Statement of Operations. The Fund generally values its interest rate swap contracts based on dealer quotations, if available, or by discounting the future cash flows from the stated terms of the interest rate swap agreement by using interest rates currently available in the market. See Note 8 Derivative Financial Instruments.

Option contracts. The Fund is also exposed to financial market risks including changes in the valuations of its investment portfolio. The Fund may purchase or write (sell) call options. A call option on a security is a contract that gives the holder of the option, in return for a premium, the right to buy from the writer of the option the security underlying the option at a specified exercise price at any time during the term of the option.

The Fund would realize a gain on a purchased call option if, during the option period, the value of such securities exceeded the sum of the exercise price, the premium paid and transaction costs; otherwise the Fund would realize either no gain or a loss on the purchased call option. The Fund may also purchase put option contracts. If a purchased put option is exercised, the premium paid increases the cost basis of the securities sold by the Fund.

The Fund may also write (sell) call options with the purpose of generating realized gains or reducing its ownership of certain securities. If the Fund writes a call option on a security, the Fund has the obligation upon exercise of the option to deliver the underlying security upon payment of the exercise price. The Fund will only write call options on securities that the Fund holds in its portfolio (*i.e.*, covered calls).

When the Fund writes a call option, an amount equal to the premium received by the Fund is recorded as a liability and is subsequently adjusted to the current fair value of the option written. Premiums received from writing options that expire unexercised are treated by the Fund on the expiration date as realized gains from

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investments. If the Fund repurchases a written call option prior to its exercise, the difference between the premium received and the amount paid to repurchase the option is treated as a realized gain or loss. If a call option is exercised, the premium is added to the proceeds from the sale of the underlying security in determining whether the Fund has realized a gain or loss. The Fund, as the writer of an option, bears the market risk of an unfavorable change in the price of the security underlying the written option. See Note 8 Derivative Financial Instruments.

H. Security Transactions Security transactions are accounted for on the date the securities are purchased or sold (trade date). Realized gains and losses are calculated using the specific identification cost basis method for GAAP purposes. Since the Fund's inception, it has also utilized the specific identification cost basis method for tax purposes. On July 13, 2015, the Fund filed a request with the Internal Revenue Service to change the tax accounting method used to compute the adjusted tax cost basis of its MLP securities to the average cost method. The Fund believes that the IRS will grant the tax accounting method change and the effective date for the change will be December 1, 2014. The tax accounting method change does not change the accounting method utilized for GAAP purposes. See Note 6 Taxes.

I. Return of Capital Estimates Dividends and distributions received from the Fund's investments are comprised of income and return of capital. Payments made by MLPs (and other entities treated as partnerships for federal income tax purposes) are categorized as distributions and payments made by corporations are categorized as dividends. At the time such dividends and distributions are received, the Fund estimates the amount of such payments that is considered investment income and the amount that is considered a return of capital. The Fund estimates that 90% of the MLP distributions received will be treated as a return of capital. Such estimates for MLPs and other investments are based on historical information available from each investment and other industry sources. These estimates may subsequently be revised based on information received from investments after their tax reporting periods are concluded.

The return of capital portion of the distributions is a reduction to investment income, an equivalent reduction in the cost basis of the associated investments and an increase to net realized gains (losses) and net change in unrealized gains (losses). If the cash distributions received by the Fund exceed its cost basis (*i.e.* its cost basis has been reduced to zero), the distributions are treated as realized gains.

The Fund includes all cash distributions received on its Statement of Operations and reduces its investment income by (i) the estimated return of capital and (ii) the distributions in excess of cost basis (if any). For the nine months ended August 31, 2015, the Fund had \$16,725 of return of capital and there were no cash distributions that were in excess of cost basis.

In accordance with GAAP, the return of capital cost basis reductions for the Fund's MLP investments are limited to the total amount of the cash distributions received from such investments. For income tax purposes, the cost basis reductions for the Fund's MLP investments typically exceed cash distributions received from such investments due to allocated losses from these investments.

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The following tables set forth the Fund's estimated return of capital portion of the distributions received from its investments.

	For the Three Months Ended August 31, 2015	For the Nine Months Ended August 31, 2015
Dividends from investments	\$ 7,466	\$ 23,227
Distributions from investments	4,960	15,244
Total dividends and distributions from investments (before foreign taxes withheld of \$42 and \$199, respectively)	\$ 12,426	\$ 38,471
Dividends % return of capital	16%	15%
Distributions % return of capital	87%	87%
Total dividends and distributions % return of capital	44%	43%
Return of capital attributable to net realized gains (losses)	\$ 5,457	\$ 11,024
Return of capital attributable to net change in unrealized gains (losses)	59	5,701
Total return of capital	\$ 5,516	\$ 16,725

J. Investment Income The Fund records dividends and distributions on the ex-dividend date. Interest income is recognized on the accrual basis, including amortization of premiums and accretion of discounts. When investing in securities with payment in-kind interest, the Fund will accrue interest income during the life of the security even though it will not be receiving cash as the interest is accrued. To the extent that interest income to be received is not expected to be realized, a reserve against income is established. During the first quarter of fiscal 2015, the Fund recorded \$270 of accrued interest income related to its investment in American Eagle Corporation (American Eagle). During the second quarter of fiscal 2015, the Fund received a partial interest payment of \$110 and established a \$160 reserve against the portion of the accrued interest income that exceeded this partial payment. Since the end of the first quarter of fiscal 2015, the Fund has not accrued interest income on its investment in American Eagle. For the nine months ended August 31, 2015, the Fund did not have any other reserve against interest income, as all interest income accrued is expected to be received.

Many of the debt securities that the Fund holds were purchased at a discount or premium to the par value of the security. The non-cash accretion of a discount to par value increases interest income while the non-cash amortization of a premium to par value decreases interest income. The accretion of a discount and amortization of a premium are based on the effective interest method. The amount of these non-cash adjustments can be found in the Fund's Statement of Cash Flows. The non-cash accretion of a discount increases the cost basis of the debt security, which results in an offsetting unrealized loss. The non-cash amortization of a premium decreases the cost basis of the debt security, which results in an offsetting unrealized gain. To the extent that par value is not expected to be realized, the Fund discontinues accruing the non-cash accretion of the discount to par value of the debt security.

The Fund receives paid-in-kind and non-cash dividends and distributions in the form of additional units or shares from the investments listed in the table below. In connection with the purchase of units directly from Arc Logistics Partners LP (ARCX) in a private investment in public equity (PIPE investment) transaction, the Fund was entitled to the distribution paid to unitholders of record on May 11, 2015, even though such investment had not closed at such date. Pursuant to the purchase agreement, the purchase price for the ARCX units was reduced by the amount of such dividend, which had the effect of paying such distribution in additional units. For paid-in-kind dividends, the additional units are not

reflected in investment income during the period received, but

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are recorded as unrealized gains upon receipt. Non-cash distributions are reflected in investment income because the Fund has the option to receive its distribution in cash or in additional shares or units of the security. During the three and nine months ended August 31, 2015, the Fund received the following paid-in-kind and non-cash dividends and distributions.

	For the Three Months Ended August 31, 2015	For the Nine Months Ended August 31, 2015
<u>Paid-in-kind dividends</u>		
Arc Logistics Partners LP	\$	\$ 161
Enbridge Energy Management, L.L.C.	1,322	4,340
	1,322	4,501
<u>Non-cash dividends and distributions</u>		
ARC Resources Ltd.	22	83
Baytex Energy Corp.		10
Crescent Point Energy Corp.	15	166
Energy Transfer Partners, L.P.	1,001	2,457
Enterprise Products Partners L.P.	277	690
Gibson Energy Inc.	43	101
	1,358	3,507
Total paid-in-kind and non-cash dividends and distributions	\$ 2,680	\$ 8,008

K. Distributions to Stockholders Distributions to common stockholders are recorded on the ex-dividend date. Distributions to holders of MRP Shares are accrued on a daily basis as described in Note 12 Preferred Stock. As required by the Distinguishing Liabilities from Equity topic of the FASB Accounting Standards Codification (ASC 480), the Fund includes the accrued distributions on its MRP Shares as an operating expense due to the fixed term of this obligation. For tax purposes the payments made to the holders of the Fund's MRP Shares are treated as dividends or distributions.

The characterization of the distributions paid to holders of MRP Shares and common stock for the nine months ended August 31, 2015 as either dividend income (eligible to be treated as qualified dividend income) or distributions (long-term capital gains or return of capital) will be determined after the end of the fiscal year based on the Fund's actual earnings and profits and, therefore, the characterization may differ from the preliminary estimates.

L. Partnership Accounting Policy The Fund records its pro-rata share of the income (loss) and capital gains (losses), to the extent of distributions it has received, allocated from the underlying partnerships and adjusts the cost basis of the underlying partnerships accordingly. These amounts are included in the Fund's Statement of Operations.

M. Taxes It is the Fund's intention to continue to be treated as and to qualify each year for special tax treatment afforded a regulated investment company (RIC) under Subchapter M of the Internal Revenue Code of 1986, as amended (the Code). As long as the Fund meets certain

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requirements that govern its sources of income, diversification of assets and timely distribution of earnings to stockholders, the Fund will not be subject to U.S. federal income tax.

The Fund must pay distributions equal to 90% of its investment company taxable income (ordinary income and short-term capital gains) to qualify as a RIC and it must distribute all of its taxable income (ordinary income, short-term capital gains and long-term capital gains) to avoid federal income taxes. The Fund will be subject to federal income tax on any undistributed portion of income. For purposes of the distribution test, the Fund may

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elect to treat as paid on the last day of its taxable year all or part of any distributions that are declared after the end of its taxable year if such distributions are declared before the due date of its tax return, including any extensions (August 15th). See Note 6 Taxes.

All RICs are subject to a non-deductible 4% excise tax on income that is not distributed on a timely basis in accordance with the calendar year distribution requirements. To avoid the tax, the Fund must distribute during each calendar year an amount at least equal to the sum of (i) 98% of its ordinary income for the calendar year, (ii) 98.2% of its net capital gains for the one-year period ending on November 30, the last day of our taxable year, and (iii) undistributed amounts from previous years on which the Fund paid no U.S. federal income tax. A distribution will be treated as paid during the calendar year if it is paid during the calendar year or declared by the Fund in October, November or December, payable to stockholders of record on a date during such months and paid by the Fund during January of the following year. Any such distributions paid during January of the following year will be deemed to be received by stockholders on December 31 of the year the distributions are declared, rather than when the distributions are actually received.

The Fund will be liable for the excise tax on the amount by which it does not meet the distribution requirement and will accrue an excise tax liability at the time that the liability is estimable and probable. During the nine months ended August 31, 2015, the Fund incurred \$2,404 of excise tax expense. See Note 6 Taxes.

Dividend income received by the Fund from sources within Canada is subject to a 15% foreign withholding tax. For non-cash dividends received from ARC Resources Ltd., Crescent Point Energy Corp. and Gibson Energy Inc. during the three and nine months ended August 31, 2015, there was no foreign withholding tax. Effective August 2015, Crescent Point Energy Corp. and Gibson Energy Inc. have each suspended their dividend reinvestment plan. Interest income on Canadian corporate debt obligations should generally be exempt from withholding tax on interest, with a few exceptions (e.g., a profit participating debt interest).

The Accounting for Uncertainty in Income Taxes Topic of the FASB Accounting Standards Codification (ASC 740) defines the threshold for recognizing the benefits of tax-return positions in the financial statements as more-likely-than-not to be sustained by the taxing authority and requires measurement of a tax position meeting the more-likely-than-not criterion, based on the largest benefit that is more than 50% likely to be realized.

Since the Fund's inception, it has utilized the specific identification tax accounting method to compute the adjusted tax cost basis of its MLP securities and for selection of lots to be sold. On July 13, 2015, the Fund filed a request with the Internal Revenue Service to change the tax accounting method used to compute the adjusted tax cost basis of its MLP securities to the average cost method. See Note 6 Taxes.

The Fund's policy is to classify interest and penalties associated with underpayment of federal and state income taxes, if any, as income tax expense on its Statement of Operations. For the three and nine months ended August 31, 2015, the Fund did not have any interest or penalties associated with the underpayment of any income taxes. All tax years since inception remain open and subject to examination by federal and state tax authorities.

N. Foreign Currency Translations The books and records of the Fund are maintained in U.S. dollars. Foreign currency amounts are translated into U.S. dollars on the following basis: (i) market value of investment securities, assets and liabilities at the rate of exchange as of the valuation date; and (ii) purchases and sales of investment securities, income and expenses at the relevant rates of exchange prevailing on the respective dates of such transactions.

The Fund does not isolate that portion of gains and losses on investments in equity and debt securities which is due to changes in the foreign exchange rates from that which is due to changes in market prices of equity and debt securities. Accordingly, realized and unrealized foreign currency gains and losses with respect to such securities are included in the reported net realized and unrealized gains and losses on investment transactions balances.

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Net realized foreign exchange gains or losses represent gains and losses from transactions in foreign currencies and foreign currency contracts, foreign exchange gains or losses realized between the trade date and settlement date on security transactions, and the difference between the amounts of interest and dividends recorded on the Fund's books and the U.S. dollar equivalent of such amounts on the payment date.

Net unrealized foreign exchange gains or losses represent the difference between the cost of assets and liabilities (other than investments) recorded on the Fund's books from the value of the assets and liabilities (other than investments) on the valuation date.

O. Indemnifications Under the Fund's organizational documents, its officers and directors are indemnified against certain liabilities arising out of the performance of their duties to the Fund. In addition, in the normal course of business, the Fund enters into contracts that provide general indemnification to other parties. The Fund's maximum exposure under these arrangements is unknown, as this would involve future claims that may be made against the Fund that have not yet occurred, and may not occur. However, the Fund has not had prior claims or losses pursuant to these contracts and expects the risk of loss to be remote.

P. Offering and Debt Issuance Costs Offering costs incurred by the Fund related to the issuance of its common stock reduce additional paid-in-capital when the stock is issued. Costs incurred by the Fund related to the issuance of its debt (revolving credit facility, term loan or senior notes) or its preferred stock are capitalized and amortized over the period the debt or preferred stock is outstanding.

3. Fair Value

The Fair Value Measurement Topic of the FASB Accounting Standards Codification (ASC 820) defines fair value as the price at which an orderly transaction to sell an asset or to transfer a liability would take place between market participants under current market conditions at the measurement date. As required by ASC 820, the Fund has performed an analysis of all assets and liabilities measured at fair value to determine the significance and character of all inputs to their fair value determination. Inputs are the assumptions, along with considerations of risk, that a market participant would use to value an asset or a liability. In general, observable inputs are based on market data that is readily available, regularly distributed and verifiable that the Fund obtains from independent, third-party sources. Unobservable inputs are developed by the Fund based on its own assumptions of how market participants would value an asset or a liability.

Accounting Standards Update (ASU) No. 2011-04 Amendments to Achieve Common Fair Value Measurement and Disclosure Requirements in U.S. GAAP and IFRSs amends ASC 820. The amended guidance clarifies the wording used to describe many requirements in accounting literature for fair value measurement and disclosure to establish consistency between U.S. GAAP and International Financial Reporting Standards (IFRSs).

ASU No. 2011-04 requires the inclusion of additional disclosures on assumptions used by the Fund to determine fair value. Specifically, for assets measured at fair value using significant unobservable inputs (Level 3), ASU No. 2011-04 requires that the Fund (i) describe the valuation process, (ii) disclose quantitative information about unobservable inputs and (iii) provide a qualitative discussion about the sensitivity of the fair value measurement to changes in the unobservable inputs and inter-relationships between the inputs.

The fair value hierarchy prioritizes the inputs to valuation techniques used to measure fair value into the following three broad categories.

Level 1 Valuations based on quoted unadjusted prices for identical instruments in active markets traded on a national exchange to which the Fund has access at the date of measurement.

Level 2 Valuations based on quoted prices for similar instruments in active markets; quoted prices for identical or similar instruments in markets that are not active; and model-derived valuations in which all

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significant inputs and significant value drivers are observable in active markets. Level 2 inputs are those in markets for which there are few transactions, the prices are not current, little public information exists or instances where prices vary substantially over time or among brokered market makers.

Level 3 Model derived valuations in which one or more significant inputs or significant value drivers are unobservable. Unobservable inputs are those inputs that reflect the Fund's own assumptions that market participants would use to price the asset or liability based on the best available information.

The following table presents the Fund's assets and liabilities measured at fair value on a recurring basis at August 31, 2015, and the Fund presents these assets and liabilities by security type and description on its Schedule of Investments or on its Statement of Assets and Liabilities. Note that the valuation levels below are not necessarily an indication of the risk or liquidity associated with the underlying investment.

	Total	Quoted Prices in Active Markets (Level 1)	Prices with Other Observable Inputs (Level 2)	Unobservable Inputs (Level 3)
Assets at Fair Value				
Equity investments	\$ 743,553	\$ 702,514	\$ 35,973 ⁽¹⁾	\$ 5,066
Debt investments	100,334		100,334	
Total assets at fair value	\$ 843,887	\$ 702,514	\$ 136,307	\$ 5,066
Liabilities at Fair Value				
Call option contracts written	\$ 254		\$ 254	\$

(1) The Fund's investment in PAA GP is exchangeable into shares of Plains GP Holdings, L.P. (Plains GP) on a one-for-one basis at the Fund's option. Plains GP trades on the NYSE under the ticker PAGP. The Fund values its investment in PAA GP on an as-exchanged basis based on the public market value of Plains GP and categorizes its investment as a Level 2 security for fair value reporting purposes.

For the nine months ended August 31, 2015, there were no transfers between Level 1 and Level 2.

As of August 31, 2015, the Fund had Notes outstanding with aggregate principal amount of \$235,000 and 4,200,000 shares of MRP Shares outstanding with a total liquidation value of \$105,000. The Notes and MRP Shares were issued in private placements to institutional investors and are not listed on any exchange or automated quotation system. See Note 11 Notes and Note 12 Preferred Stock. As a result, the Fund categorizes the Notes and MRP Shares as Level 3 securities and determines the fair value of these instruments based on estimated market yields and credit spreads for comparable instruments with similar maturity, terms and structure.

The Fund records the Notes and MRP Shares on its Statement of Assets and Liabilities at principal amount or liquidation value. As of August 31, 2015, the estimated fair values of these leverage instruments are as follows.

Security

	Principal Amount/ Liquidation Value	Fair Value
Notes	\$ 235,000	\$ 245,600
MRP Shares	\$ 105,000	\$ 108,900

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The following tables present the Fund's assets measured at fair value on a recurring basis using significant unobservable inputs (Level 3) for the three and nine months ended August 31, 2015.

Three Months Ended August 31, 2015		Equity Investments
Balance	May 31, 2015	\$ 18,427
Purchases		
Issuances		
Transfers out to Level 1 and 2		(12,421)
Realized gains (losses)		
Unrealized gains (losses), net		(940)
Balance	August 31, 2015	\$ 5,066

Nine Months Ended August 31, 2015		Equity Investments
Balance	November 30, 2014	\$ 52,527
Purchases		11,667
Issuances		161
Transfers out to Level 1 and 2		(58,997)
Realized gains (losses)		
Unrealized gains (losses), net		(292)
Balance	August 31, 2015	\$ 5,066

The \$940 and \$292 of net unrealized losses for the three and nine months ended August 31, 2015 relate to investments that were still held at August 31, 2015, and the Fund includes these unrealized losses on the Statement of Operations - Net Change in Unrealized Gains.

The purchases of \$11,667 for the nine months ended August 31, 2015 relate to the Fund's investment in Arc Logistics Partners LP (ARCX) and Shell Midstream Partners, L.P. (SHLX) that were both made in May 2015. The issuance of \$161 for the nine months ended August 31, 2015 relates to additional units received from ARCX.

The \$12,421 of transfers out for the three months ended August 31, 2015 relates to the Fund's investments in ARCX and SHLX. The \$58,997 of transfers out for the nine months ended August 31, 2015 relates to the Fund's investments in ARCX, SHLX, and Plains AAP, L.P. (PAA GP).

ARCX and SHLX became marketable during the third quarter of fiscal 2015 when the respective companies filed effective shelf registrations. PAA GP became marketable during the first quarter of fiscal 2015 when its 15-month lock-up expired.

Valuation Techniques and Unobservable Inputs

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Unless otherwise determined by the Board of Directors, the Fund values its private investments in public equity (PIPE) investments that are convertible into or otherwise will become publicly-tradeable (e.g., through subsequent registration or expiration of a restriction on trading) based on the market value of the publicly-traded security less a discount. This discount is initially equal to the discount negotiated at the time the Fund agrees to a purchase price. To the extent that such securities are convertible or otherwise become publicly traded within a time frame that may be reasonably determined, this discount will be amortized on a straight line basis over such estimated time frame.

The Fund owns Class B Units of Capital Product Partners L.P. (CPLP) that were issued in a private placement. The Class B Units are convertible on a one-for-one basis into common units and are senior to CPLP s

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common units in terms of liquidation preference and priority of distributions. The Fund's Board of Directors has determined that it is appropriate to value the Class B Units using a convertible pricing model. This model takes into account the attributes of the Class B Units, including the preferred dividend, conversion ratio and call features, to determine the estimated value of such units. In using this model, the Fund estimates (i) the credit spread for CPLP's Class B Units, which is based on credit spreads for companies in a similar line of business as CPLP and (ii) the expected volatility for CPLP's common units, which is based on CPLP's historical volatility. The Fund applies a discount to the value derived from the convertible pricing model to account for an expected discount in market prices for convertible securities relative to the values calculated using pricing models. If this resulting price per Class B Unit is less than the public market price for CPLP's common units at such time, the public market price for CPLP's common unit will be used for the Class B Units.

Due to the inherent uncertainty of determining the fair value of investments that do not have a readily available market value, the fair value of the Fund's investments may fluctuate from period to period. Additionally, the fair value of the Fund's investments may differ from the values that would have been used had a ready market existed for such investments and may differ materially from the values that the Fund may ultimately realize.

The following table summarizes the significant unobservable inputs that the Fund used to value its portfolio investments categorized as Level 3 as of August 31, 2015:

Quantitative Table for Valuation Techniques

Assets at Fair Value	Fair Value	Valuation Technique	Unobservable Inputs	Range		
				Low	High	Average
Equity securities of public companies	5,066	- Convertible pricing model	- Credit spread	8.8%	9.3%	9.0%
			- Volatility	35.0%	40.0%	37.5%
valued based on pricing model			- Discount for marketability	7.0%	7.0%	7.0%

4. Concentration of Risk

The Fund's investments are concentrated in the energy sector. The focus of the Fund's portfolio within the energy sector may present more risks than if the Fund's portfolio were broadly diversified across numerous sectors of the economy. A downturn in the energy sector would have a larger impact on the Fund than on an investment company that does not focus on the energy sector. The performance of securities in the energy sector may lag the performance of other industries or the broader market as a whole. Additionally, to the extent that the Fund invests a relatively high percentage of its assets in the securities of a limited number of issuers, the Fund may be more susceptible than a more widely diversified investment company to any single economic, political or regulatory occurrence. At August 31, 2015, the Fund had the following investment concentrations:

Category	Percent of Long-Term Investments
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Securities of Energy Companies ⁽¹⁾	98.5%
Equity securities	88.1%
Debt securities	11.9%
Securities of MLPs ⁽¹⁾	33.6%
Largest single issuer	11.7%
Restricted securities	13.1%

(1) Refer to the Glossary of Key Terms (page 39) for the definitions of Energy Companies and MLPs.

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KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

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5. Agreements and Affiliations

A. Administration Agreement The Fund has an administration and accounting agreement with Ultimus Fund Solutions, LLC (Ultimus) that may be amended from time to time. Pursuant to the agreement, Ultimus will provide certain administrative and accounting services for the Fund. The agreement has an initial term of two years (expiring on November 14, 2015) and has automatic one-year renewals unless earlier terminated by either party as provided under the terms of the agreement.

B. Investment Management Agreement The Fund has entered into an investment management agreement with KA Fund Advisors, LLC (KAFAs) under which KAFAs, subject to the overall supervision of the Fund's Board of Directors, manages the day-to-day operations of, and provides investment advisory services to, the Fund. The investment management agreement expires on March 31, 2016 (the term was recently extended from October 19, 2015 by the Fund's Board of Directors). For providing these services, KAFAs receives an investment management fee from the Fund. For the nine months ended August 31, 2015, the Fund paid management fees at an annual rate of 1.25% of the average monthly total assets of the Fund.

On July 23, 2015, KAFAs, Kayne Anderson Capital Advisors, L.P., the managing member of KAFAs (KACALP), and Ares Management, L.P. (Ares), entered into a business combination and merger agreement (the Merger). Under the terms of the Fund's investment management agreement, the Merger would have caused a technical change of control at KAFAs, resulting in a termination of the current investment management agreement.

On July 8, 2015, the Board of Directors approved a new investment management agreement between the Fund and KAFAs (the New Agreement), subject to the approval of the Fund's stockholders that would take effect upon closing of the Merger. In September, the Fund sent proxy materials (the Proxy Materials) to stockholders calling for a special meeting of stockholders (the Special Meeting) for the purpose of considering and voting on the New Agreement.

On October 27, 2015, KACALP and Ares announced an agreement to terminate the Merger. As a result of the Merger being terminated, the Fund announced that its Board of Directors has withdrawn the proposal for stockholders to approve the New Agreement and cancelled the Special Meeting. KAFAs will continue to serve as the investment adviser for the Fund, and the current management agreement will remain in place. See Note 14 Subsequent Events.

For purposes of calculating the management fee, the average total assets for each monthly period are determined by averaging the total assets at the last business day of that month with the total assets at the last business day of the prior month. The total assets of the Fund shall be equal to its average monthly gross asset value (which includes assets attributable to the Fund's use of debt and preferred stock), minus the sum of the Fund's accrued and unpaid dividends and distributions on any outstanding common stock and accrued and unpaid dividends and distributions on any outstanding preferred stock and accrued liabilities (other than liabilities associated with borrowing or leverage by the Fund). Liabilities associated with borrowing or leverage include the principal amount of any debt issued by the Fund, the liquidation preference of any outstanding preferred stock, and other liabilities from other forms of borrowing or leverage such as short positions and put or call options held or written by the Fund.

C. Portfolio Companies From time to time, the Fund may control or may be an affiliate of one or more of its portfolio companies, as each of these terms is defined in the 1940 Act. In general, under the 1940 Act, the Fund would be presumed to control a portfolio company if the Fund and its affiliates owned 25% or more of its outstanding voting securities and would be an affiliate of a portfolio company if the Fund and its affiliates owned 5% or more of its outstanding voting securities. The 1940 Act contains prohibitions and restrictions relating to transactions between investment companies and their affiliates (including the Fund's investment adviser), principal underwriters and affiliates of those affiliates or underwriters.

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The Fund believes that there are several factors that determine whether or not a security should be considered a voting security in complex structures such as limited partnerships of the kind in which the Fund invests. The Fund also notes that the Securities and Exchange Commission (the SEC) staff has issued guidance on the circumstances under which it would consider a limited partnership interest to constitute a voting security. Under most partnership agreements, the management of the partnership is vested in the general partner, and the limited partners, individually or collectively, have no rights to manage or influence management of the partnership through such activities as participating in the selection of the managers or the board of the limited partnership or the general partner. As a result, the Fund believes that many of the limited partnership interests in which it invests should not be considered voting securities. However, it is possible that the SEC staff may consider the limited partner interests the Fund holds in certain limited partnerships to be voting securities. If such a determination were made, the Fund may be regarded as a person affiliated with and controlling the issuer(s) of those securities for purposes of Section 17 of the 1940 Act.

In making such a determination as to whether to treat any class of limited partnership interests the Fund holds as a voting security, the Fund considers, among other factors, whether or not the holders of such limited partnership interests have the right to elect the board of directors of the limited partnership or the general partner. If the holders of such limited partnership interests do not have the right to elect the board of directors, the Fund generally has not treated such security as a voting security. In other circumstances, based on the facts and circumstances of those partnership agreements, including the right to elect the directors of the general partner, the Fund has treated those securities as voting securities. If the Fund does not consider the security to be a voting security, it will not consider such partnership to be an affiliate unless the Fund and its affiliates own more than 25% of the outstanding securities of such partnership. Additionally, certain partnership agreements give common unitholders the right to elect the partnership's board of directors, but limit the amount of voting securities any limited partner can hold to no more than 4.9% of the partnership's outstanding voting securities (*i.e.*, any amounts held in excess of such limit by a limited partner do not have voting rights). In such instances, the Fund does not consider itself to be an affiliate if it owns more than 5% of such partnership's common units.

There is no assurance that the SEC staff will not consider that other limited partnership securities that the Fund owns and does not treat as voting securities are, in fact, voting securities for the purposes of Section 17 of the 1940 Act. If such determination were made, the Fund will be required to abide by the restrictions on control or affiliate transactions as proscribed in the 1940 Act. The Fund or any portfolio company that it controls, and its affiliates, may from time to time engage in certain of such joint transactions, purchases, sales and loans in reliance upon and in compliance with the conditions of certain exemptive rules promulgated by the SEC. The Fund cannot make assurances, however, that it would be able to satisfy the conditions of these rules with respect to any particular eligible transaction, or even if the Fund were allowed to engage in such a transaction, that the terms would be more or as favorable to the Fund or any company that it controls as those that could be obtained in arm's length transaction. As a result of these prohibitions, restrictions may be imposed on the size of positions that may be taken for the Fund or on the type of investments that it could make.

As of August 31, 2015, the Fund believes that MarkWest Energy Partners, L.P. meets the criteria described above and is therefore considered an affiliate of the Fund.

Plains GP Holdings, L.P., Plains AAP, L.P. and Plains All American Pipeline, L.P. Robert V. Sinnott is Chief Executive Officer of KACALP, the managing member of KAFA. Mr. Sinnott also serves as a director of (i) PAA GP Holdings LLC, which is the general partner of Plains GP Holdings, L.P. (Plains GP) and (ii) Plains All American GP LLC (Plains All American GP), which controls the general partner of Plains All American Pipeline, L.P. (PAA). Members of senior management of KACALP and KAFA and various affiliated funds managed by KACALP, including the Fund, own shares of Plains GP as well as interests in Plains AAP, L.P. (PAA GP) (which are exchangeable into shares of Plains GP as described in Note 3 Fair Value). The Fund believes that it is an affiliate of Plains GP and PAA under the 1940 Act by virtue of (i) the Fund's and other affiliated Kayne Anderson funds' ownership interest in Plains GP and PAA GP and (ii) Mr. Sinnott's participation on the boards of Plains GP and Plains All American GP.

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KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

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6. Taxes

It is the Fund's intention to continue to be treated as and to qualify as a RIC under Subchapter M of the Code and distribute all of its taxable income. Accordingly, no provision for federal income taxes is required in the financial statements. See Note 2 Significant Accounting Policies.

Income and capital gain distributions made by RICs often differ from GAAP basis net investment income (loss) and net realized gains (losses). For the Fund, the principal reason for these differences is the return of capital treatment of dividends and distributions from MLPs and certain other of its investments. Net investment income and net realized gains for GAAP purposes may differ from taxable income for federal income tax purposes.

As of August 31, 2015, the principal temporary differences between income for GAAP purposes and taxable income were (a) realized losses that were recognized for GAAP purposes, but disallowed for tax purposes due to wash sale rules; (b) disallowed partnership losses related to the Fund's MLP investments; and (c) other basis adjustments in the Fund's MLPs and other investments.

At November 30, 2014, the Fund had \$73,379 of undistributed ordinary income and long-term capital gains (collectively, Undistributed Income). During fiscal 2015, in order to avoid paying federal income taxes, the Fund distributed all of its Undistributed Income through the payment of its regular quarterly common and preferred stock distributions, and on July 17, 2015 the Fund paid a special distribution of \$38,994 or \$1.80 per common share.

For the fiscal year ended November 30, 2014, the tax character of the total \$41,716 distributions paid to common stockholders was \$34,315 of dividend income and \$7,401 of long-term capital gains, and the tax character of the total \$4,168 distributions paid to holders of MRP Shares was \$3,228 of dividend income and \$940 of long-term capital gains.

For purposes of determining the tax character of the dividends/distributions to investors, the amounts in excess of the Fund's earnings and profits for federal income tax purposes are treated as a return of capital. Earnings and profits differ from taxable income due principally to adjustments related to the Fund's investments in MLPs.

The Fund is subject to a non-deductible 4% excise tax on income that is not distributed in accordance with the calendar year distribution requirements. As of November 30, 2014, the Fund intended to declare a special distribution prior to the end of calendar 2014 to avoid the excise tax and, as a result, it did not accrue any excise tax for fiscal 2014 as the liability was not probable and estimable. Due to unfavorable market conditions after the Fund's fiscal year end, it determined in early December 2014 not to make a special distribution of income in order to avoid excise tax. As a result, during the nine months ended August 31, 2015, the Fund incurred estimated excise taxes of \$2,404. See Note 2 Significant Accounting Policies.

Under the Regulated Investment Company Modernization Act of 2010, any net capital losses recognized after December 31, 2010 may be carried forward indefinitely, and their character is retained as short-term and/or long-term losses.

On July 13, 2015, the Fund filed a request with the Internal Revenue Service (the IRS) to change the tax accounting method used to compute the adjusted tax cost basis of its MLP securities to the average cost method. The two tax accounting methods that are generally used by owners of MLP securities are the average cost method and specific identification method. Since the Fund's inception, based on the advice of its tax adviser, it has utilized the specific identification tax accounting method to compute the adjusted tax cost basis of its MLP securities and for selection of lots to be sold. Although there is varied industry practice and no direct, clear guidance regarding the correct tax accounting method, the Fund has recently come to the conclusion that the average cost method is a more certain tax position.

The Fund believes that the IRS will grant the tax accounting method change and the effective date for the change will be December 1, 2014. Had the Fund utilized the average cost method since its inception, the Fund

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would have reported approximately \$20,100 less taxable income than was recognized under the specific identification method. The IRS is expected to allow the Fund to reduce its fiscal 2015 taxable income by this amount. The tax accounting method change does not change the Fund's net asset value. See Note 2 Significant Accounting Policies.

At August 31, 2015, the cost basis of investments for federal income tax purposes was \$808,235, and the premiums received on outstanding option contracts written were \$604. At August 31, 2015, gross unrealized appreciation and depreciation of investments and options for federal income tax purposes were as follows:

Gross unrealized appreciation of investments (including options)	\$ 159,063
Gross unrealized depreciation of investments (including options)	(123,060)
Net unrealized appreciation of investments before foreign currency related translations	36,003
Unrealized depreciation on foreign currency related translations	(29)
Net unrealized appreciation of investments	\$ 35,974

7. Restricted Securities

From time to time, certain of the Fund's investments may be restricted as to resale. For instance, private investments that are not registered under the Securities Act of 1933, as amended (the Securities Act), cannot be offered for public sale in a non-exempt transaction without first being registered. In other cases, certain of the Fund's investments have restrictions such as lock-up agreements that preclude the Fund from offering these securities for public sale.

At August 31, 2015, the Fund held the following restricted investments:

Investment	Acquisition Date	Type of Restriction	Number of Units, Principal (\$) (in 000s)	Cost Basis (GAAP)	Fair Value	Fair Value Per Unit	Percent of Net Assets	Percent of Total Assets
Level 2 Investments								
Equity Investments								
Plains GP Holdings, L.P. ⁽¹⁾								
Partnership Interests	(2)	(3)	1,836	\$ 5,679	\$ 35,973	\$ 19.59	6.6%	4.0%
Senior Notes and Secured Term Loans ⁽⁴⁾								
American Eagle Energy Corporation	8/13/14	(5)	\$ 4,800	4,759	1,080	n/a	0.2	0.1
American Energy-Woodford, LLC	9/11/14	(6)	1,050	1,389	504	n/a	0.1	0.1
Athabasca Oil Corporation	(2)	(5)	(7)	5,099	4,217	n/a	0.8	0.5
BlackBrush Oil & Gas, L.P.	(2)	(6)	13,300	13,178	10,939	n/a	2.0	1.2
Canbriam Energy Inc.	(2)	(6)	9,640	9,713	9,592	n/a	1.8	1.1
Chief Oil & Gas LLC	(2)	(6)	9,609	9,224	8,552	n/a	1.6	0.9

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Comstock Resources, Inc.	(2)	(5)	5,000	5,004	4,037	n/a	0.7	0.4
Eclipse Resources Corporation	(2)	(5)	8,000	7,813	7,380	n/a	1.3	0.8
Energy & Exploration Partners, Inc.	12/22/14	(6)	992	748	769	n/a	0.1	0.1
Jonah Energy LLC	5/8/14	(6)	3,000	2,963	2,550	n/a	0.5	0.3
Jones Energy, Inc.	4/29/15	(5)	5,000	5,359	4,675	n/a	0.9	0.5
Jupiter Resources Inc.	9/11/14	(6)	10,000	9,615	6,300	n/a	1.1	0.7
Triangle USA Petroleum Corporation	7/15/14	(5)	800	800	484	n/a	0.1	0.1
Vantage Energy, LLC	(2)	(6)	8,885	8,839	8,130	n/a	1.5	0.9

Total				\$ 90,182	\$ 105,182		19.3%	11.7%
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Level 3 Investments⁽⁸⁾

Capital Product Partners L.P. Class B Units	(2)	(5)	606	\$ 4,227	\$ 5,066	\$ 8.36	0.9%	0.6%
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Total of all restricted investments				\$ 94,409	\$ 110,248		20.2%	12.3%
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(1) The Fund values its investment in Plains AAP, L.P. (PAA GP) on an as exchanged basis based on the public market value of Plains GP Holdings, L.P. (Plains GP). See Note 3 Fair Value.

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- (2) Security was acquired at various dates during the nine months ended August 31, 2015 and/or in prior fiscal years.
- (3) The Fund's investment in PAA GP is exchangeable into shares of Plains GP on a one-for-one basis at the Fund's option. Upon exchange, the shares of Plains GP will be free of any restriction.
- (4) These securities have a fair market value determined by the mean of the bid and ask prices provided by an agent or a syndicate bank, a principal market maker, an independent pricing service or an independent broker as more fully described in Note 2 Significant Accounting Policies. These securities have limited trading volume and are not listed on a national exchange.
- (5) Unregistered or restricted security of a publicly-traded company.
- (6) Unregistered security of a private company.
- (7) Principal amount is 6,850 Canadian dollars.
- (8) Securities are valued using inputs reflecting the Fund's own assumptions as more fully described in Note 2 Significant Accounting Policies and Note 3 Fair Value.

8. Derivative Financial Instruments

As required by the Derivatives and Hedging Topic of the FASB Accounting Standards Codification (ASC 815), the following are the derivative instruments and hedging activities of the Fund. See Note 2 Significant Accounting Policies.

Option Contracts Transactions in option contracts for the three and nine months ended August 31, 2015 were as follows:

Three Months Ended August 31, 2015	Number of Contracts	Premium
Call Options Written		
Options outstanding at May 31, 2015	10,013	\$ 1,106
Options written	9,143	1,064
Options subsequently repurchased ⁽¹⁾	(3,935)	(634)
Options exercised	(1,346)	(122)
Options expired	(8,075)	(810)

Options outstanding at August 31, 2015 ⁽²⁾	5,800	\$ 604
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(1) The price at which the Fund subsequently repurchased the options was \$269, which resulted in a net realized gains of \$365.

(2) The percentage of total investments subject to call options written was 3.8% at August 31, 2015.

Nine Months Ended August 31, 2015	Number of Contracts	Premium
Call Options Written		
Options outstanding at November 30, 2014	11,400	\$ 1,046
Options written	50,940	5,609
Options subsequently repurchased ⁽¹⁾	(17,030)	(2,015)
Options exercised	(12,293)	(1,434)
Options expired	(27,217)	(2,602)
Options outstanding at August 31, 2015	5,800	\$ 604

(1) The price at which the Fund subsequently repurchased the options was \$556, which resulted in net realized gains of \$1,459.

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Interest Rate Swap Contracts The Fund may enter into interest rate swap contracts to partially hedge itself from increasing expense on its leverage resulting from increasing interest rates. At the time the interest rate swap contracts reach their scheduled termination, there is a risk that the Fund would not be able to obtain a replacement transaction or that the terms of the replacement transaction would not be as favorable as on the expiring transaction. In addition, if the Fund is required to terminate any swap contract early, then the Fund could be required to make a termination payment. As of August 31, 2015, the Fund did not have any interest rate swap contracts outstanding.

The following table sets forth the fair value of the Fund's derivative instruments on the Statement of Assets and Liabilities:

Derivatives Not Accounted for as Hedging Instruments	Statement of Assets and Liabilities Location	Fair Value as of August 31, 2015
Call options written	Call option contracts written	\$ (254)

The following tables set forth the effect of the Fund's derivative instruments on the Statement of Operations:

Derivatives Not Accounted for as Hedging Instruments	Location of Gains/(Losses) on Derivatives Recognized in Income	For the Three Months Ended August 31, 2015	
		Net Realized Gains/(Losses) on Derivatives Recognized in Income	Change in Unrealized Gains/(Losses) on Derivatives Recognized in Income
Call options	Options	\$ 1,174	\$ (75)

Derivatives Not Accounted for as Hedging Instruments	Location of Gains/(Losses) on Derivatives Recognized in Income	For the Nine Months Ended August 31, 2015	
		Net Realized Gains/(Losses) on Derivatives Recognized in Income	Change in Unrealized Gains/(Losses) on Derivatives Recognized in Income
Call options written	Options	\$ 4,058	\$ (73)

9. Investment Transactions

For the nine months ended August 31, 2015, the Fund purchased and sold securities in the amounts of \$400,689 and \$532,360 (excluding short-term investments and options).

10. Credit Facility and Term Loan

At August 31, 2015, the Fund had a \$105,000 unsecured revolving credit facility (the Credit Facility) with a syndicate of lenders. The Credit Facility has a three-year commitment, maturing on November 21, 2016. The interest rate on outstanding loan balances may vary between LIBOR plus 1.50% and LIBOR plus 2.15%, depending on the Fund's asset coverage ratios. Outstanding loan balances accrue interest daily at a rate equal to LIBOR plus 1.50%, based on current asset coverage ratios. The Fund pays a fee of 0.25% per annum on any unused amounts of the Credit Facility. See Financial Highlights for the Fund's asset coverage ratios under the 1940 Act.

For the nine months ended August 31, 2015, the average amount outstanding under the Credit Facility was \$617 with a weighted average interest rate of 1.72%. As of August 31, 2015, the Fund did not have any borrowings outstanding under the Credit Facility.

At August 31, 2015, the Fund had a \$50,000 unsecured revolving term loan (Term Loan). The Term Loan has a five-year commitment and borrowings under the Term Loan accrue interest at a rate of LIBOR plus 1.30%. The Fund pays a fee of 0.25% per annum on any unused amount of the Term Loan.

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For the nine months ended August 31, 2015, the average amount outstanding under the Term Loan was \$20,299 with a weighted average interest rate of 1.48%. As of August 31, 2015, the Fund did not have any borrowings outstanding under the Term Loan.

As of August 31, 2015, the Fund was in compliance with all financial and operational covenants required by the Credit Facility and Term Loan.

11. Notes

At August 31, 2015, the Fund had \$235,000 aggregate principal amount of Notes outstanding. The Fund redeemed \$50,000 of its Series A Notes during September 2015. See Note 14 Subsequent Events. The table below sets forth the key terms of each series of the Notes at August 31, 2015.

Series	Principal Outstanding, August 31, 2015	Estimated Fair Value August 31, 2015	Fixed Interest Rate	Maturity
A	\$ 55,000	\$ 56,700	3.93%	3/3/16
B	60,000	64,700	4.62%	3/3/18
C	50,000	52,900	4.00%	3/22/22
D	40,000	40,300	3.34%	5/1/23
E	30,000	31,000	3.46%	7/30/21
	\$ 235,000	\$ 245,600		

Holders of the Notes are entitled to receive cash interest payments semi-annually (on September 3 and March 3) at the fixed rate. For the nine months ended August 31, 2015, the weighted average interest rate on the outstanding Notes was 3.96%.

As of August 31, 2015, each series of Notes was rated AAA by FitchRatings. In the event the credit rating on any series of Notes falls below A-, the interest rate on such series will increase by 1% during the period of time such series is rated below A-. The Fund is required to maintain a current rating from one rating agency with respect to each series of Notes.

The Notes were issued in private placement offerings to institutional investors and are not listed on any exchange or automated quotation system. The Notes contain various covenants related to other indebtedness, liens and limits on the Fund's overall leverage. Under the 1940 Act and the terms of the Notes, the Fund may not declare dividends or make other distributions on shares of its common stock or make purchases of such shares if, at any time of the declaration, distribution or purchase, asset coverage with respect to the outstanding Notes would be less than 300%.

The Notes are redeemable in certain circumstances at the option of the Fund. The Notes are also subject to a mandatory redemption to the extent needed to satisfy certain requirements if the Fund fails to meet an asset coverage ratio required by law and is not able to cure the coverage deficiency by the applicable deadline, or fails to cure a deficiency as stated in the Fund's rating agency guidelines in a timely manner.

The Notes are unsecured obligations of the Fund and, upon liquidation, dissolution or winding up of the Fund, will rank: (1) senior to all of the Fund's outstanding preferred shares; (2) senior to all of the Fund's outstanding common shares; (3) on a parity with any unsecured creditors of the

Fund and any unsecured senior securities representing indebtedness of the Fund; and (4) junior to any secured creditors of the Fund.

At August 31, 2015, the Fund was in compliance with all covenants under the agreements of the Notes.

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12. Preferred Stock

At August 31, 2015, the Fund had 4,200,000 shares of MRP Shares outstanding, with a total liquidation value of \$105,000 (\$25.00 per share). The table below sets forth the key terms of each series of the MRP Shares at August 31, 2015.

Series	Liquidation Value August 31, 2015	Estimated Fair Value August 31, 2015	Rate	Maturity Redemption Date
A	\$ 35,000	\$ 37,000	5.32%	3/3/18
B	30,000	31,300	4.50%	3/22/20
C	40,000	40,600	4.06%	7/30/21
	\$ 105,000	\$ 108,900		

Holders of the MRP Shares are entitled to receive cumulative cash dividend payments on the first business day following each quarterly period (February 28, May 31, August 31 and November 30).

As of August 31, 2015, each series of the Fund's MRP Shares was rated AA by FitchRatings. The dividend rate on the Fund's MRP Shares will increase between 0.5% and 4.0% if the credit rating is downgraded below A by FitchRatings. Further, the annual dividend rate for all series of MRP Shares will increase by 4.0% if no ratings are maintained, and the annual dividend rate will increase by 5.0% if the Fund fails to make quarterly dividend or certain other payments. The Fund is required to maintain a current rating from one rating agency with respect to each series of MRP Shares.

The MRP Shares rank senior to all of the Fund's outstanding common shares and on parity with any other preferred stock. The MRP Shares are redeemable in certain circumstances at the option of the Fund and are also subject to a mandatory redemption if the Fund fails to meet a total leverage (debt and preferred stock) asset coverage ratio of 225% or fails to maintain its basic maintenance amount as stated in the Fund's rating agency guidelines.

Under the terms of the MRP Shares, the Fund may not declare dividends or make other distributions on shares of its common stock or make purchases of such shares if, at any time of the declaration, distribution or purchase, asset coverage with respect to total leverage would be less than 225% or the Fund would fail to maintain its basic maintenance amount as stated in the Fund's rating agency guidelines.

The holders of the MRP Shares have one vote per share and will vote together with the holders of common stock as a single class except on matters affecting only the holders of MRP Shares or the holders of common stock. The holders of the MRP Shares, voting separately as a single class, have the right to elect at least two directors of the Fund.

At August 31, 2015, the Fund was in compliance with the asset coverage and basic maintenance requirements of its MRP Shares.

13. Common Stock

At August 31, 2015, the Fund had 195,800,000 shares of common stock authorized and 21,663,136 shares outstanding. As of that date, KAFA owned 4,000 shares. Transactions in common shares for the nine months ended August 31, 2015 were as follows:

Shares outstanding at November 30, 2014	21,621,933
Shares issued through reinvestment of distributions	41,203
Shares outstanding at August 31, 2015	21,663,136

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14. Subsequent Events

On July 23, 2015, KA Fund Advisors, LLC (KAFAs), Kayne Anderson Capital Advisors, L.P., the managing member of KAFAs (KACALP), and Ares Management, L.P. (Ares), entered into a business combination and merger agreement (the Merger). Under the terms of the Fund s investment management agreement, the Merger would have caused a technical change of control at KAFAs, resulting in a termination of the current investment management agreement. In September, the Fund sent proxy materials (the Proxy Materials) to stockholders calling for a special meeting of stockholders (the Special Meeting) for the purpose of considering and voting on the new investment management agreement (the New Agreement).

On October 27, 2015, KACALP and Ares announced an agreement to terminate the Merger. As a result of the Merger being terminated, the Fund announced that its Board of Directors has withdrawn the proposal for stockholders to approve the New Agreement and cancelled the Special Meeting. KAFAs will continue to serve as the investment adviser for the Fund, and the existing management agreement will remain in place until it expires on March 31, 2016.

On September 24, 2015, the Fund redeemed \$30,000 of its Series A Notes that were scheduled to mature on March 3, 2016. On September 29, 2015, the Fund redeemed an additional \$20,000 of its Series A Notes. The Series A Notes were redeemed at a price of 100.8% plus accrued interest.

On September 30, 2015, the Fund declared its quarterly distribution of \$0.51 per common share for the third quarter of fiscal 2015 for a total quarterly distribution payment of \$11,048. The distribution was paid October 23, 2015. Of this total, pursuant to the Fund s dividend reinvestment plan \$1,266 was reinvested into the Fund through open market purchases of common stock.

The Fund has performed an evaluation of subsequent events through the date the financial statements were issued and has determined that no additional items require recognition or disclosure.

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KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

GLOSSARY OF KEY TERMS

(UNAUDITED)

This glossary contains definitions of certain key terms, as they are used in our investment objective and policies and as described in this report. These definitions may not correspond to standard sector definitions.

Energy Assets means assets that are used in the energy sector, including assets used in exploring, developing, producing, generating, transporting, transmitting, storing, gathering, processing, refining, distributing, mining or marketing of natural gas, natural gas liquids, crude oil, refined products, coal or electricity.

Energy Companies means companies that own and operate Energy Assets or provide energy-related services. For purposes of this definition, this includes companies that (i) derive at least 50% of their revenues or operating income from operating Energy Assets or providing services for the operation of such Energy Assets or (ii) have Energy Assets that represent the majority of their assets.

General Partner MLPs means Master Limited Partnerships whose assets consist of ownership interests of an affiliated Master Limited Partnership (which may include general partnership interests, incentive distribution rights, common units and subordinated units).

Master Limited Partnerships means limited partnerships and limited liability companies that are publicly traded and are treated as partnerships for federal income tax purposes.

Midstream Assets means assets used in energy logistics, including, but not limited to, assets used in transporting, storing, gathering, processing, distributing, or marketing of natural gas, natural gas liquids, crude oil or refined products.

Midstream Companies means companies, other than Midstream MLPs, that own and operate Midstream Assets and are taxed as corporations for federal income tax purposes. This includes companies structured like MLPs, but not treated as a publicly-traded partnership for RIC qualification purposes. For purposes of this definition, this includes companies that (i) derive at least 50% of their revenue or operating income from operating Midstream Assets or (ii) have Midstream Assets that represent the majority of their assets.

Midstream/Energy Sector consists of (a) Midstream MLPs, (b) Midstream Companies, (c) Other MLPs and (d) Other Energy Companies.

Midstream Sector consists of (a) Midstream MLPs and (b) Midstream Companies.

Midstream MLPs means MLPs that principally own and operate Midstream Assets. Midstream MLPs also include (a) MLPs that provide transportation and distribution services of energy related products through the ownership of marine transportation vessels, (b) General Partner MLPs whose assets consist of ownership interests of an affiliated Midstream MLP and (c) MLP Affiliates of Midstream MLPs.

MLPs means entities that are structured as Master Limited Partnerships and their affiliates and includes Midstream MLPs, Other MLPs and MLP Affiliates.

MLP Affiliates means affiliates of Master Limited Partnerships, substantially all of whose assets consist of i-units. MLP Affiliates are not treated as partnerships for federal income tax purposes.

Other Energy Companies means Energy Companies, excluding MLPs and Midstream Companies.

Other MLPs consists of (a) upstream MLPs, (b) coal MLPs, (c) propane MLPs and (d) MLPs that operate other energy assets or provide energy-related services.

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KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

REPURCHASE DISCLOSURE

(UNAUDITED)

Notice is hereby given in accordance with Section 23(c) of the 1940 Act, that the Fund may from time to time purchase shares of its common and preferred stock and its Notes in the open market or in a privately negotiated transactions.

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Directors and Corporate Officers

Kevin S. McCarthy	Chairman of the Board of Directors, President and Chief Executive Officer
William R. Cordes	Director
Barry R. Pearl	Director
Albert L. Richey	Director
William L. Thacker	Director
Terry A. Hart	Chief Financial Officer and Treasurer
David J. Shladovsky	Secretary
Michael J. O Neil	Chief Compliance Officer
J.C. Frey	Executive Vice President, Assistant Secretary and Assistant Treasurer
James C. Baker	Executive Vice President
Ron M. Logan, Jr.	Senior Vice President
Jody C. Meraz	Vice President

Investment Adviser

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Administrator

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Custodian

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Dallas, TX 75254

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Los Angeles, CA 90017

Legal Counsel

Paul Hastings LLP
55 Second Street, 24th Floor
San Francisco, CA 94105

Please visit us on the web at <http://www.kaynefunds.com> or call us toll-free at 1-877-657-3863.

This report, including the financial statements herein, is made available to stockholders of the Fund for their information. It is not a prospectus, circular or representation intended for use in the purchase or sale of shares of the Fund or of any securities mentioned in this report.