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**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549**

**FORM N-CSR**

**CERTIFIED SHAREHOLDER REPORT OF REGISTERED  
MANAGEMENT INVESTMENT COMPANIES**

Investment Company Act file number 811-21593

**Kayne Anderson MLP Investment Company**

(Exact name of registrant as specified in charter)

1800 Avenue of the Stars, Second Floor, Los Angeles, California

(Address of principal executive offices)

90067

(Zip code)

David Shladovsky, Esq.

KA Fund Advisors, LLC, 1800 Avenue of the Stars, Second Floor, Los Angeles, California 90067

(Name and address of agent for service)

Registrant's telephone number, including area code: (310) 556-2721

Date of fiscal year end: November 30, 2007

Date of reporting period: May 31, 2007

Form N-CSR is to be used by management investment companies to file reports with the Commission not later than 10 days after the transmission to stockholders of any report that is required to be transmitted to stockholders under Rule 30e-1 under the Investment Company Act of 1940 (17 CFR 270.30e-1). The Commission may use the information provided on Form N-CSR in its regulatory, disclosure review, inspection, and policymaking roles.

A registrant is required to disclose the information specified by Form N-CSR, and the Commission will make this information public. A registrant is not required to respond to the collection of information contained in Form N-CSR unless the Form displays a currently valid Office of Management and Budget ("OMB") control number. Please direct comments concerning the accuracy of the information collection burden estimate and any suggestions for reducing the burden to Secretary, Securities and Exchange Commission, 450 Fifth Street, NW, Washington, DC 20549-0609. The OMB has reviewed this collection of information under the clearance requirements of 44 U.S.C. § 3507.

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**Item 1. Reports to Stockholders.**

The report of Kayne Anderson MLP Investment Company (the "Registrant") to stockholders for the semi-annual period ended May 31, 2007 is attached below.

# Kayne Anderson

*MLP Investment Company*



**SEMI-ANNUAL REPORT  
MAY 31, 2007**

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**CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS:** This report 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 Company’s historical experience and its present expectations or projections indicated in any forward-looking statements. 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 Company’s filings with the SEC. You should not place undue reliance on forward-looking statements, which speak only as of the date they are made. The Company undertakes no obligation to update or revise any forward-looking statements made herein. There is no assurance that the Company’s investment objectives will be attained.

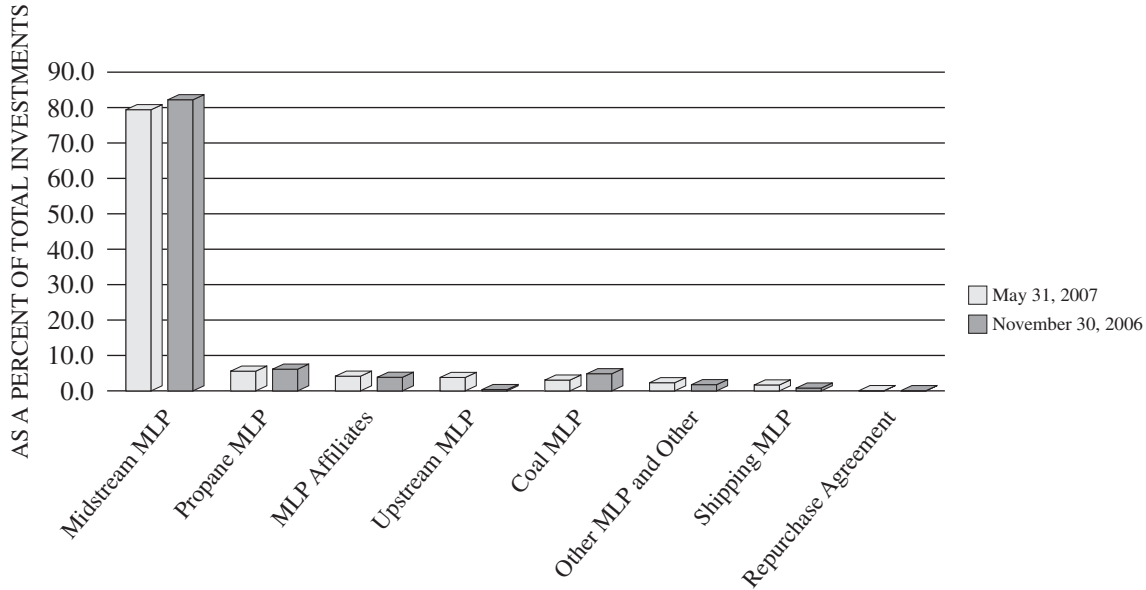
**KAYNE ANDERSON MLP INVESTMENT COMPANY**

**PORTFOLIO SUMMARY**

**MAY 31, 2007**

**(UNAUDITED)**

**Portfolio Investments, by Category**



**Top 10 Holdings, by Issuer**

Holding	Sector	Percent of Total Investments
1. Energy Transfer Partners, L.P.	Midstream MLP	11.5%
2. Plains All American Pipeline, L.P.	Midstream MLP	8.5
3. Magellan Midstream Partners, L.P.	Midstream MLP	7.9
4. Copano Energy, L.L.C.	Midstream MLP	7.5
5. Enterprise Products Partners L.P.	Midstream MLP	7.4
6. Kinder Morgan Management, LLC	Midstream MLP	6.3
7. Inergy, L.P.	Propane MLP	4.5
8. Crosstex Energy, L.P.	Midstream MLP	4.5
9. Enbridge Energy Partners, L.P.	Midstream MLP	3.6
10. MarkWest Energy Partners, L.P.	Midstream MLP	3.2

**KAYNE ANDERSON MLP INVESTMENT COMPANY**

**SCHEDULE OF INVESTMENTS**

**MAY 31, 2007**

**(amounts in 000's)**

**(UNAUDITED)**

Description	No. of Shares/Units	Value
<b>Long-Term Investments — 155.6%</b>		
<b>Equity Investments(a) — 155.6%</b>		
<b>Midstream MLP(b) — 123.6%</b>		
Atlas Pipeline Partners, L.P. . . . .	508	\$ 25,603
Boardwalk Pipeline Partners, LP . . . . .	522	18,447
Buckeye Partners, L.P. . . . .	196	10,191
Copano Energy, L.L.C. . . . .	3,919	171,483
Crosstex Energy, L.P. . . . .	2,585	91,035
Crosstex Energy, L.P. — Senior Subordinated Units(c)(d) . . . . .	356	11,521
DCP Midstream Partners, LP . . . . .	138	6,020
Duncan Energy Partners L.P. . . . .	139	3,788
Enbridge Energy Management, L.L.C.(e) . . . . .	605	33,539
Enbridge Energy Partners, L.P. . . . .	1,454	81,116
Energy Transfer Partners, L.P. . . . .	4,262	260,862
Enterprise Products Partners L.P. . . . .	5,360	167,874
Genesis Energy, L.P. . . . .	120	4,250
Global Partners LP . . . . .	385	14,437
Global Partners LP — Unregistered(c) . . . . .	1,071	38,428
Hiland Partners, LP . . . . .	162	8,758
Holly Energy Partners, L.P. . . . .	226	11,351
Kinder Morgan Management, LLC(e) . . . . .	2,799	143,380
Magellan Midstream Partners, L.P. . . . .	3,875	179,687
MarkWest Energy Partners, L.P. . . . .	1,834	63,268
MarkWest Energy Partners, L.P. — Unregistered(c) . . . . .	303	10,106
Martin Midstream Partners L.P. . . . .	205	8,527
NuStar L.P. . . . .	503	33,245
ONEOK Partners, L.P. . . . .	833	57,301
Plains All American Pipeline, L.P. . . . .	3,112	192,773
Regency Energy Partners LP . . . . .	877	22,806
Regency Energy Partners LP — Unregistered(c) . . . . .	905	22,913
Sunoco Logistics Partners L.P. . . . .	72	4,392
Targa Resources Partners LP . . . . .	427	14,184
TC PipeLines, LP . . . . .	1,168	47,601
TEPPCO Partners, L.P. . . . .	547	24,041
TransMontaigne Partners L.P. . . . .	51	1,816
Williams Partners L.P. . . . .	471	22,959
		1,807,702
<b>Propane MLP — 8.7%</b>		
AmeriGas Partners, L.P. . . . .	42	1,577
Ferrellgas Partners, L.P. . . . .	877	21,877
Inergy, L.P. . . . .	2,839	103,325
		126,779

See accompanying notes to financial statements.

**KAYNE ANDERSON MLP INVESTMENT COMPANY**  
**SCHEDULE OF INVESTMENTS — (CONTINUED)**  
**MAY 31, 2007**  
**(amounts in 000's)**  
**(UNAUDITED)**

<u>Description</u>	<u>No. of Shares/Units</u>	<u>Value</u>
<b>Shipping MLP — 2.6%</b>		
Capital Product Partners LP(d) . . . . .	200	\$ 5,095
K-Sea Transportation Partners L.P. . . . .	140	6,190
Teekay LNG Partners L.P. . . . .	355	12,815
Teekay Offshore Partners L.P. . . . .	230	7,695
U.S. Shipping Partners L.P. . . . .	340	<u>6,256</u>
		<u>38,051</u>
<b>Coal MLP — 4.7%</b>		
Clearwater Natural Resources, LP — Unregistered(c)(d)(f) . . . . .	3,889	54,445
Natural Resource Partners L.P. — Subordinated Units . . . . .	205	7,399
Penn Virginia Resource Partners, L.P. . . . .	251	<u>7,537</u>
		<u>69,381</u>
<b>Upstream MLP(b) — 5.9%</b>		
Atlas Energy Resources, LLC . . . . .	619	22,150
BreitBurn Energy Partners L.P. . . . .	97	3,306
BreitBurn Energy Partners L.P. — Unregistered(c) . . . . .	1,426	44,973
Constellation Energy Partners LLC . . . . .	216	7,681
Dorchester Minerals, L.P. . . . .	70	1,589
Legacy Reserves LP . . . . .	222	<u>6,633</u>
		<u>86,332</u>
<b>MLP Affiliates — 6.5%</b>		
Atlas Pipeline Holdings, L.P. . . . .	65	1,944
Buckeye GP Holdings L.P. . . . .	311	8,146
Crosstex Energy, Inc. . . . .	205	6,154
Energy Transfer Equity, L.P. . . . .	236	9,623
Energy Transfer Equity, L.P. — Unregistered(c) . . . . .	365	14,845
Hiland Holdings GP, LP . . . . .	161	5,022
Magellan Midstream Holdings, L.P. . . . .	259	7,631
Magellan Midstream Holdings, L.P. — Unregistered(c) . . . . .	1,020	28,842
MarkWest Hydrocarbon, Inc. . . . .	208	<u>12,390</u>
		<u>94,597</u>
<b>Other MLP — 2.9%</b>		
Calumet Specialty Products Partners, L.P. . . . .	597	30,661
Universal Compression Partners, L.P. . . . .	356	<u>12,182</u>
		<u>42,843</u>
<b>Other — 0.7%</b>		
Double Hull Tankers, Inc. . . . .	165	2,617
Nordic American Tanker Shipping Limited . . . . .	79	3,104
Omega Navigation Enterprises, Inc. . . . .	165	<u>3,848</u>
		<u>9,569</u>
<b>Total Long-Term Investments (Cost — \$1,414,167) . . . . .</b>		<u><u>2,275,254</u></u>

See accompanying notes to financial statements.

**KAYNE ANDERSON MLP INVESTMENT COMPANY**  
**SCHEDULE OF INVESTMENTS — (CONCLUDED)**  
**MAY 31, 2007**  
**(amounts in 000's)**  
**(UNAUDITED)**

	<b>Interest Rate</b>	<b>Maturity Date</b>	<b>Value</b>
<b>Short-Term Investment — 0.1%</b>			
<b>Repurchase Agreement — 0.1%</b>			
Bear, Stearns & Co. Inc. (Agreement dated 5/31/07 to be repurchased at \$1,484), collateralized by \$1,530 in U.S. Treasury Notes (Cost \$1,484) . . . . .	5.080%	6/01/07	\$ 1,484
<b>Total Investments — 155.7% (Cost — \$1,415,651) . . . . .</b>			<b>2,276,738</b>
 <b>Liabilities</b>			
<b>Auction Rate Senior Notes . . . . .</b>			(320,000)
<b>Deferred Taxes . . . . .</b>			(317,884)
<b>Revolving Credit Line . . . . .</b>			(105,500)
<b>Other Liabilities . . . . .</b>			(9,742)
<b>Total Liabilities . . . . .</b>			<b>(753,126)</b>
<b>Unrealized Appreciation on Interest Rate Swap Contracts . . . . .</b>			5,397
<b>Income Tax Receivable . . . . .</b>			2,448
<b>Other Assets . . . . .</b>			6,233
<b>Total Liabilities in Excess of Other Assets . . . . .</b>			(739,048)
<b>Preferred Stock at Redemption Value . . . . .</b>			(75,000)
<b>Net Assets Applicable to Common Stockholders . . . . .</b>			<b>\$1,462,690</b>

- (a) Unless otherwise noted, equity investments are common units/common shares.
- (b) Includes Limited Liability Companies.
- (c) Fair valued securities, restricted from public sale (See Notes 2 and 6).
- (d) Security is currently not paying cash distributions but is expected to pay cash distributions or convert to securities which pay cash distributions within the next 12 months.
- (e) Distributions are paid in-kind.
- (f) Clearwater Natural Resources, LP is a privately-held MLP that the Company believes is a controlled affiliate.

See accompanying notes to financial statements.



**KAYNE ANDERSON MLP INVESTMENT COMPANY**  
**STATEMENT OF ASSETS AND LIABILITIES**  
**MAY 31, 2007**  
(amounts in 000's, except share and per share amounts)  
**(UNAUDITED)**

**ASSETS**

Investments at fair value, non-controlled (Cost — \$1,343,922) . . . . .	\$2,220,809
Investments at fair value, controlled (Cost — \$70,245). . . . .	54,445
Repurchase agreement (Cost — \$1,484) . . . . .	1,484
	<u>2,276,738</u>
Total investments (Cost — \$1,415,651) . . . . .	2,276,738
Deposits with brokers . . . . .	252
Receivable for securities sold . . . . .	1,188
Interest, dividends and distributions receivable. . . . .	736
Income tax receivable . . . . .	2,448
Deferred debt issuance costs and other, net . . . . .	4,057
Unrealized appreciation on interest rate swap contracts . . . . .	5,397
	<u>2,290,816</u>
<b>Total Assets</b> . . . . .	<b>2,290,816</b>

**LIABILITIES**

Revolving credit line . . . . .	105,500
Investment management fee payable . . . . .	7,204
Payable for securities purchased . . . . .	153
Accrued directors' fees and expenses . . . . .	52
Accrued expenses and other liabilities . . . . .	2,333
Deferred tax liability. . . . .	317,884
	<u>433,126</u>
<b>Total Liabilities before Senior Notes</b> . . . . .	<b>433,126</b>
Auction Rate Senior Notes:	
Series A, due April 3, 2045 . . . . .	85,000
Series B, due April 5, 2045 . . . . .	85,000
Series C, due March 31, 2045 . . . . .	90,000
Series E, due December 21, 2045 . . . . .	60,000
	<u>320,000</u>
<b>Total Liabilities</b> . . . . .	<b>753,126</b>

**PREFERRED STOCK**

\$25,000 liquidation value per share applicable to 3,000 outstanding shares (10,000 shares authorized). . . . .	<u>75,000</u>
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**NET ASSETS APPLICABLE TO COMMON STOCKHOLDERS** . . . . . \$1,462,690

**NET ASSETS APPLICABLE TO COMMON STOCKHOLDERS CONSIST OF**

Common stock, \$0.001 par value (42,854,973 shares issued and outstanding, 199,990,000 shares authorized) . . . . .	\$ 43
Paid-in capital . . . . .	924,944
Accumulated net investment loss, net of income taxes less dividends . . . . .	(48,718)
Accumulated realized gains on investments and interest rate swap contracts, net of income taxes . . . . .	40,571
Net unrealized gains on investments and interest rate swap contracts, net of income taxes. . . . .	<u>545,850</u>

**NET ASSETS APPLICABLE TO COMMON STOCKHOLDERS** . . . . . \$1,462,690

**NET ASSET VALUE PER COMMON SHARE** . . . . . \$34.13

See accompanying notes to financial statements.

**KAYNE ANDERSON MLP INVESTMENT COMPANY**

**STATEMENT OF OPERATIONS  
FOR THE SIX MONTHS ENDED MAY 31, 2007**

(amounts in 000's)  
(UNAUDITED)

**INVESTMENT INCOME**

**Income**

Dividends and distributions . . . . .	\$ 50,282
Return of capital . . . . .	(44,465)
Net dividends and distributions . . . . .	5,817
Interest and other fees . . . . .	30
Total Investment Income . . . . .	<u>5,847</u>

**Expenses**

Investment management fees . . . . .	13,992
Administration fees . . . . .	449
Professional fees . . . . .	303
Reports to stockholders . . . . .	188
Custodian fees . . . . .	104
Directors' fees . . . . .	95
Insurance . . . . .	85
Other expenses . . . . .	280
Total Expenses — Before Interest Expense, Auction Agent Fees and Taxes . . . . .	15,496
Interest expense . . . . .	11,312
Auction agent fees . . . . .	500
Total Expenses — Before Taxes . . . . .	<u>27,308</u>

Net Investment Loss — Before Taxes . . . . .	(21,461)
Deferred tax benefit . . . . .	7,479
<b>Net Investment Loss</b> . . . . .	<u>(13,982)</u>

**REALIZED AND UNREALIZED GAINS/(LOSSES)**

**Net Realized Gains/(Losses)**

Investments . . . . .	17,765
Payments on interest rate swap contracts . . . . .	1,209
Deferred tax expense . . . . .	(6,612)
Net Realized Gains . . . . .	<u>12,362</u>

**Net Change in Unrealized Gains/(Losses)**

Investments . . . . .	352,327
Interest rate swap contracts . . . . .	3,074
Deferred tax expense . . . . .	(123,851)
Net Change in Unrealized Gains . . . . .	<u>231,550</u>

Net Realized and Unrealized Gains . . . . .	243,912
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**NET INCREASE IN NET ASSETS RESULTING FROM OPERATIONS** . . . . . 229,930

**DIVIDENDS TO PREFERRED STOCKHOLDERS** . . . . . (1,976)

**NET INCREASE IN NET ASSETS APPLICABLE TO COMMON STOCKHOLDERS  
RESULTING FROM OPERATIONS** . . . . . \$ 227,954

See accompanying notes to financial statements.

**KAYNE ANDERSON MLP INVESTMENT COMPANY**

**STATEMENT OF CHANGES IN NET ASSETS APPLICABLE TO COMMON STOCKHOLDERS**  
(amounts in 000's, except share amounts)

	<u>For the Six Months Ended May 31, 2007 (Unaudited)</u>	<u>For the Fiscal Year Ended November 30, 2006</u>
<b>OPERATIONS</b>		
Net investment loss . . . . .	\$ (13,982)	\$ (23,356)
Net realized gains . . . . .	12,362	14,152
Net change in unrealized gains . . . . .	<u>231,550</u>	<u>226,725</u>
<b>Net Increase in Net Assets Resulting from Operations . . . . .</b>	<u>229,930</u>	<u>217,521</u>
<b>DISTRIBUTIONS TO PREFERRED STOCKHOLDERS</b>		
Distributions — return of capital . . . . .	<u>(1,976)<sup>(1)</sup></u>	<u>(3,732)<sup>(2)</sup></u>
<b>DISTRIBUTIONS TO COMMON STOCKHOLDERS</b>		
Distributions — return of capital . . . . .	<u>(36,258)<sup>(1)</sup></u>	<u>(65,492)<sup>(2)</sup></u>
<b>CAPITAL STOCK TRANSACTIONS</b>		
Proceeds from common stock public offerings of 4,420,916 shares of common stock. . . . .	160,647	—
Underwriting discounts and offering expenses associated with the issuance of common stock. . . . .	(4,559)	—
Issuance of 369,221 and 889,285 shares of common stock from reinvestment of distributions, respectively. . . . .	<u>11,514</u>	<u>23,005</u>
<b>Net Increase in Net Assets Applicable to Common Stockholders from Capital Stock Transactions . . . . .</b>	<u>167,602</u>	<u>23,005</u>
<b>Total Increase in Net Assets Applicable to Common Stockholders . .</b>	<u>359,298</u>	<u>171,302</u>
<b>NET ASSETS</b>		
Beginning of period . . . . .	<u>1,103,392</u>	<u>932,090</u>
End of period . . . . .	<u>\$1,462,690</u>	<u>\$1,103,392</u>

- (1) The information presented in each of these items is a current estimate of the characterization of a portion of the total dividends paid to preferred stockholders and common stockholders for the six months ended May 31, 2007 as either a dividend (ordinary income) or a distribution (return of capital). This estimate is based on the Company's operating results during the period. The actual characterization of the preferred stock dividend and the common stock dividend made during the current year will not be determinable until after the end of the calendar year when the Company can determine earnings and profits and, therefore, it may differ from the preliminary estimates.
- (2) The information presented in each of these items is a characterization of a portion of the total dividends paid to preferred stockholders and common stockholders for the fiscal year ended November 30, 2006 as either a dividend (ordinary income) or a distribution (return of capital). This characterization is based on the Company's earnings and profits.

See accompanying notes to financial statements.

**KAYNE ANDERSON MLP INVESTMENT COMPANY**

**STATEMENT OF CASH FLOWS  
FOR THE SIX MONTHS ENDED MAY 31, 2007**

(amounts in 000's)  
(UNAUDITED)

**CASH FLOWS FROM OPERATING ACTIVITIES**

Net increase in net assets resulting from operations . . . . .	\$ 229,930
Adjustments to reconcile net increase in net assets resulting from operations to net cash used in operating activities:	
Purchase of investments . . . . .	(319,674)
Proceeds from sale of investments . . . . .	80,917
Purchase of short-term investments, net . . . . .	(535)
Realized gains . . . . .	(18,974)
Return of capital distributions . . . . .	44,465
Unrealized gains on investments and interest rate swap contracts . . . . .	(355,401)
Increase in deferred tax liability . . . . .	122,984
Increase in deposits with brokers . . . . .	(134)
Decrease in receivable for securities sold . . . . .	2,488
Increase in interest, dividend and distributions receivables . . . . .	(130)
Increase in income tax receivable . . . . .	(339)
Increase in deferred debt issuance costs and other . . . . .	(93)
Decrease in investment management fee payable . . . . .	(3,091)
Decrease in payable for securities purchased . . . . .	(1,336)
Increase in accrued expenses and other liabilities . . . . .	<u>1,055</u>
<b>Net Cash Used in Operating Activities . . . . .</b>	<u><b>(217,868)</b></u>

**CASH FLOWS FROM FINANCING ACTIVITIES**

Issuance of shares of common stock . . . . .	156,088
Proceeds from revolving credit line . . . . .	88,500
Cash distributions paid to preferred stockholders . . . . .	(1,976)
Cash distributions paid to common stockholders . . . . .	<u>(24,744)</u>
<b>Net Cash Provided by Financing Activities . . . . .</b>	<b>217,868</b>

**NET CHANGE IN CASH . . . . .** —

**CASH — BEGINNING OF PERIOD . . . . .** —

**CASH — END OF PERIOD . . . . .** \$ —

Supplemental disclosure of cash flow information:

Noncash financing activities not included herein consist of reinvestment of distributions of \$11,514 pursuant to the Company's dividend reinvestment plan.

During the six months ended May 31, 2007, federal and state taxes paid were \$339 and interest paid was \$8,493.

See accompanying notes to financial statements.

**KAYNE ANDERSON MLP INVESTMENT COMPANY**

**FINANCIAL HIGHLIGHTS**

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

	For the Six Months Ended May 31, 2007 (Unaudited)	For the Fiscal Year Ended November 30,		For the Period September 28, 2004 <sup>(1)</sup> through November 30, 2004
		2006	2005	
<b>Per Share of Common Stock</b>				
Net asset value, beginning of period . . . . .	\$ 28.99	\$ 25.07	\$ 23.91	\$ 23.70 <sup>(2)</sup>
<b>Income from Operations<sup>(3)</sup></b>				
Net investment income/(loss) . . . . .	(0.36)	(0.62)	(0.17)	0.02
Net realized and unrealized gain on investments, securities sold short, options and interest rate swap contracts . . . . .	6.23	6.39	2.80	0.19
Total income from investment operations . . . . .	5.87	5.77	2.63	0.21
<b>Dividends/Distributions — Preferred Stockholders<sup>(3)</sup></b>				
Dividends . . . . .	— <sup>(4)</sup>	— <sup>(5)</sup>	(0.05) <sup>(5)</sup>	—
Distributions . . . . .	(0.05) <sup>(4)</sup>	(0.10) <sup>(5)</sup>	— <sup>(5)</sup>	—
Total dividends/distributions — Preferred Stockholders . .	(0.05)	(0.10)	(0.05)	—
<b>Dividends/Distributions — Common Stockholders</b>				
Dividends . . . . .	— <sup>(4)</sup>	— <sup>(5)</sup>	(0.13) <sup>(5)</sup>	—
Distributions . . . . .	(0.95) <sup>(4)</sup>	(1.75) <sup>(5)</sup>	(1.37) <sup>(5)</sup>	—
Total dividends/distributions — Common Stockholders . .	(0.95)	(1.75)	(1.50)	—
<b>Capital Stock Transactions<sup>(3)</sup></b>				
Underwriting discounts and offering costs on the issuance of preferred stock . . . . .	—	—	(0.03)	—
Anti-dilutive effect due to issuance of common stock, net of underwriting discounts and offering costs . . . . .	0.26	—	0.11	—
Anti-dilutive effect due to shares issued in reinvestment of dividends . . . . .	0.01	—	—	—
Total capital stock transactions . . . . .	0.27	—	0.08	—
Net asset value, end of period . . . . .	<u>\$ 34.13</u>	<u>\$ 28.99</u>	<u>\$ 25.07</u>	<u>\$ 23.91</u>
Market value per share of common stock, end of period . . .	<u>\$ 34.17</u>	<u>\$ 31.39</u>	<u>\$ 24.33</u>	<u>\$ 24.90</u>
Total investment return based on common stock market value <sup>(6)</sup> . . . . .	<u>12.20%</u>	<u>37.93%</u>	<u>3.66%</u>	<u>(0.40)%</u>
<b>Supplemental Data and Ratios<sup>(7)</sup></b>				
Net assets applicable to common stockholders, end of period . . . . .	\$1,462,690	\$1,103,392	\$932,090	\$792,836
Ratio of expenses to average net assets, including current and deferred income tax expense . . . . .	24.99% <sup>(8)</sup>	18.85% <sup>(8)</sup>	8.73% <sup>(8)</sup>	4.73% <sup>(8)</sup>
Ratio of expenses to average net assets, excluding current and deferred income taxes . . . . .	4.54% <sup>(8)</sup>	5.10% <sup>(8)</sup>	2.32% <sup>(8)</sup>	1.20% <sup>(8)</sup>
Ratio of expenses, excluding taxes and interest expenses, to average net assets . . . . .	2.58%	3.42%	1.52%	—
Ratio of net investment income/(loss) to average net assets . . . . .	(2.33)%	(2.37)%	(0.68)%	0.50%
Net increase in net assets to common stockholders resulting from operations to average net assets . . . . .	18.90% <sup>(9)</sup>	21.66%	10.09%	0.93% <sup>(9)</sup>
Portfolio turnover rate . . . . .	4.12% <sup>(10)</sup>	9.95% <sup>(10)</sup>	25.59% <sup>(10)</sup>	11.78% <sup>(10)</sup>
Auction Rate Senior Notes outstanding, end of period . . . .	\$ 320,000	\$ 320,000	\$260,000	—
Auction Rate Preferred Stock, end of period . . . . .	\$ 75,000	\$ 75,000	\$ 75,000	—
Asset coverage of Auction Rate Senior Notes . . . . .	580.53%	468.25%	487.34%	—
Asset coverage of Auction Rate Preferred Stock . . . . .	470.30%	379.34%	378.24%	—
Average amount of borrowings outstanding per share of common stock during the period . . . . .	\$ 10.54 <sup>(3)</sup>	\$ 8.53 <sup>(3)</sup>	\$ 5.57 <sup>(3)</sup>	—

See accompanying notes to financial statements.

**KAYNE ANDERSON MLP INVESTMENT COMPANY**  
**FINANCIAL HIGHLIGHTS — (CONCLUDED)**  
**(amounts in 000's, except share and per share amounts)**

- 
- (1) Commencement of operations.
  - (2) Initial public offering price of \$25.00 per share less underwriting discounts of \$1.25 per share and offering costs of \$0.05 per share.
  - (3) Based on average shares of common stock outstanding of 39,215,929, 37,638,314, 34,077,731 and 33,165,900, for the six months ended May 31, 2007, fiscal year ended November 30, 2006, the fiscal year ended November 30, 2005 and the period September 28, 2004 through November 30, 2004, respectively.
  - (4) The information presented in each of these items is a current estimate of the characterization of a portion of the total dividends paid to preferred stockholders and common stockholders for the six months ended May 31, 2007 as either a dividend (ordinary income) or a distribution (return of capital). This characterization is based on the Company's operating results during the period. The actual characterization of the preferred stock dividend and the common stock dividend made during the current year will not be determinable until after the end of the calendar year when the Company can determine earnings and profits and, therefore, it may differ from the preliminary estimates.
  - (5) The information presented in each of these items is a characterization of a portion of the total dividends paid to preferred stockholders and common stockholders for the fiscal years ended November 30, 2006 and November 30, 2005 as either a dividend (ordinary income) or a distribution (return of capital). This characterization is based on the Company's earnings and profits.
  - (6) Not annualized for the six months ended May 31, 2007 and the period September 28, 2004 through November 30, 2004. Total investment return 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 dividends, if any, at actual prices pursuant to the Company's dividend reinvestment plan.
  - (7) Unless otherwise noted, ratios are annualized for periods of less than one full year.
  - (8) For the six months ended May 31, 2007, the Company's deferred tax benefit was \$7,479 and deferred tax expense was \$130,463. For the fiscal year ended November 30, 2006, the Company's current tax benefit was \$65 and deferred tax expense was \$135,738. For the fiscal year ended November 30, 2005, its current tax expense was \$3,669 and deferred tax expense was \$52,179. For the period September 28, 2004 through November 30, 2004, its current income tax expense was \$763 and deferred tax expense was \$3,755.
  - (9) Not annualized.
  - (10) Amount not annualized for the six months ended May 31, 2007 and the period September 28, 2004 through November 30, 2004. For the six months ended May 31, 2007, and fiscal years ended November 30, 2006 and November 30, 2005, and the period September 28, 2004 through November 30, 2004, calculated based on the sales of \$80,917, \$144,884, \$263,296 and \$16,880, respectively of long-term investments divided by the average long-term investment balance of \$1,966,198, \$1,456,695, \$1,029,035 and \$143,328, respectively.

See accompanying notes to financial statements.

# KAYNE ANDERSON MLP INVESTMENT COMPANY

## NOTES TO FINANCIAL STATEMENTS

MAY 31, 2007

(amounts in 000's, except option contracts written, share and per share amounts)  
(UNAUDITED)

### 1. Organization

Kayne Anderson MLP Investment Company (the "Company") was organized as a Maryland corporation on June 4, 2004, and is a non-diversified closed-end management investment company registered under the Investment Company Act of 1940, as amended (the "1940 Act"). The Company's investment objective is to obtain a high after-tax total return by investing at least 85% of its net assets plus any borrowings ("total assets") in energy-related master limited partnerships and their affiliates (collectively, "MLPs"), and in other companies that, as their principal business, operate assets used in the gathering, transporting, processing, storing, refining, distributing, mining or marketing of natural gas, natural gas liquids (including propane), crude oil, refined petroleum products or coal (collectively with MLPs, "Midstream Energy Companies"). The Company commenced operations on September 28, 2004. The Company's shares of common stock are listed on the New York Stock Exchange, Inc. ("NYSE") under the symbol "KYN".

### 2. Significant Accounting Policies

A. *Use of Estimates* — The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America ("GAAP") requires management to make estimates and assumptions that affect the reported amount of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenue and expenses during the period. Actual results could differ materially from those estimates.

B. *Calculation of Net Asset Value* — The Fund determines its net asset value as of the close of regular session trading on the NYSE (normally 4:00 p.m. Eastern time) no less frequently than the last business day of each month, and makes its net asset value available for publication monthly. Net asset value is computed by dividing the value of the Company's assets (including accrued interest and dividends), less all of its liabilities (including accrued expenses, dividends payable, current and deferred and other accrued income taxes, and any borrowings) and the liquidation value of any outstanding preferred stock, by the total number of common shares outstanding.

C. *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 asked prices on such day, except for short sales and call options contracts written, for which the last quoted asked price is used. 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. Fixed income securities with a remaining maturity of 60 days or more are valued by the Company using a pricing service. Fixed income securities maturing within 60 days will be valued on an amortized cost basis.

The Company holds securities that are privately issued or otherwise restricted as to resale. For these securities, as well as any other portfolio security held by the Company for which reliable market quotations are not readily available, valuations are determined in a manner that most fairly reflects fair value of the security on the valuation



**KAYNE ANDERSON MLP INVESTMENT COMPANY**  
**NOTES TO FINANCIAL STATEMENTS — (UNAUDITED) (CONTINUED)**

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 initially valued by KA Fund Advisors, LLC (“Kayne Anderson” or the “Adviser”) investment professionals responsible for the portfolio investments;
- **Investment Team Valuation Documentation.** Preliminary valuation conclusions are documented and discussed with senior management of Kayne Anderson. Such valuations generally are submitted to the Valuation Committee (a committee of the Company’s Board of Directors) or the Board of Directors on a monthly basis, and stand for intervening periods of time.
- **Valuation Committee.** The Valuation Committee meets on or about the end of each month to consider new valuations presented by Kayne Anderson, if any, which were made in accordance with the Valuation Procedures in such month. Between meetings of the Valuation Committee, a senior officer of Kayne Anderson is authorized to make valuation determinations. The Valuation Committee’s valuations stand for intervening periods of time unless the Valuation Committee meets again at the request of Kayne Anderson, the Board of Directors, or the Committee itself. All valuation determinations of the Valuation Committee are subject to ratification by the Board at its next regular meeting.
- **Valuation Firm.** No less than quarterly, a third-party valuation firm engaged by the Board of Directors reviews the valuation methodologies and calculations employed for these securities.
- **Board of Directors Determination.** The Board of Directors meets quarterly to consider the valuations provided by Kayne Anderson and the Valuation Committee, if applicable, 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.

Unless otherwise determined by the Board of Directors, securities that are convertible into or otherwise will become publicly traded (*e.g.*, through subsequent registration or expiration of a restriction on trading) are valued through the process described above, using a valuation based on the market value of the publicly traded security less a discount. The discount is initially equal in amount to the discount negotiated at the time the purchase price is agreed to. To the extent that such securities are convertible or otherwise become publicly traded within a time frame that may be reasonably determined, Kayne Anderson may determine an amortization schedule for the discount in accordance with a methodology approved by the Valuation Committee.

At May 31, 2007, the Company held 15.5% of its net assets applicable to common stockholders (9.9% of total assets) in securities valued at fair value as determined pursuant to procedures adopted by the Board of Directors, with fair value of \$226,073. Although these securities may be resold in privately negotiated transactions (subject to certain lock-up restrictions), these values may differ from the values that would have been used had a ready market for these securities existed, and the differences could be material.

Any option transaction that the Company enters into may, depending on the applicable market environment have no value or a positive/negative value. Exchange traded options and futures contracts are valued at the closing price in the market where such contracts are principally traded.

In September 2006, the Financial Accounting Standards Board (FASB) issued Statement of Financial Accounting Standards (SFAS) No. 157, “Fair Value Measurements.” This standard establishes a single authoritative definition of fair value, sets out a framework for measuring fair value and requires additional disclosures about fair value measurements. SFAS No. 157 applies to fair value measurements already required or permitted by existing standards. SFAS No. 157 is effective for financial statements issued for fiscal years beginning after November 15, 2007 and interim periods within those fiscal years. The changes to current generally accepted accounting principles from the application of this Statement relate to the definition of fair value, the methods used to measure fair value, and the expanded disclosures about fair value measurements. As of May 31, 2007, the Company does not believe the adoption of SFAS No. 157 will impact the financial statement amounts, however, additional disclosures may be



**KAYNE ANDERSON MLP INVESTMENT COMPANY**  
**NOTES TO FINANCIAL STATEMENTS — (UNAUDITED) (CONTINUED)**

required about the inputs used to develop the measurements and the effect of certain of the measurements on changes in net assets for the period.

D. *Repurchase Agreements* — The Company 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 Company enters into repurchase agreements are banks and broker/ dealers which Kayne Anderson 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. Kayne Anderson 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 Company to possible loss because of adverse market action or delays in connection with the disposition of the underlying securities.

E. *Short Sales* — A short sale is a transaction in which the Company 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 Company may arrange through a broker to borrow the securities to be delivered to the buyer. The proceeds received by the Company for the short sale are retained by the broker until the Company replaces the borrowed securities. In borrowing the securities to be delivered to the buyer, the Company becomes obligated to replace the securities borrowed at their market price at the time of replacement, whatever the price may be.

All short sales are fully collateralized. The Company maintains 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 Company is liable for any dividends or distributions paid on securities sold short.

The Company may also sell short "against the box" (*i.e.*, the Company enters into a short sale as described above while holding an offsetting long position in the security which it sold short). If the Company enters into a short sale "against the box," the Company segregates an equivalent amount of securities owned as collateral while the short sale is outstanding. At May 31, 2007, the Company had no open short sales.

F. *Option Writing* — When the Company writes an option, an amount equal to the premium received by the Company 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 Company on the expiration date as realized gains from investments. The difference between the premium and the amount paid on effecting a closing purchase transaction, including brokerage commissions, is also treated as a realized gain, or if the premium is less than the amount paid for the closing purchase transaction, as a realized 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 Company has realized a gain or loss. If a put option is exercised, the premium reduces the cost basis of the securities purchased by the Company. The Company, 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 7 — Option Contracts Written for more detail.

G. *Security Transactions and Investment Income* — Security transactions are accounted for on the date the securities are purchased or sold (trade date). Realized gains and losses are reported on an identified cost basis. Dividend and distribution income is recorded on the ex-dividend date. Distributions received from the Company's investments in MLPs generally are comprised of income and return of capital. For the six months ended May 31, 2007, the Company estimated that 90% of the MLP distributions received would be treated as a return of capital. The Company recorded as return of capital the amount of \$44,465 of dividends and distributions received from MLPs. The return of capital of \$44,465, resulted in an equivalent reduction in the cost basis of the associated MLP investments. Net Realized Gains and Net Change in Unrealized Gains in the accompanying Statement of Operations were increased by \$1,561 and \$42,904, respectively, attributable to the recording of such dividends and distributions as reductions in the cost basis of investments. The Company records investment income and return of capital based on estimates made at the time such distributions are received. Such estimates are based on historical information

**KAYNE ANDERSON MLP INVESTMENT COMPANY**  
**NOTES TO FINANCIAL STATEMENTS — (UNAUDITED) (CONTINUED)**

available from each MLP and other industry sources. These estimates may subsequently be revised based on information received from MLPs after their tax reporting periods are concluded. Interest income is recognized on the accrual basis, including amortization of premiums and accretion of discounts.

H. *Dividends and Distributions to Stockholders* — Dividends to common stockholders are recorded on the ex-dividend date. The character of dividends made during the year may differ from their ultimate characterization for federal income tax purposes. Distributions to stockholders of the Company's Auction Rate Preferred Stock, Series D are accrued on a daily basis and are determined as described in Note 11 — Preferred Stock. The Company's dividends will be comprised of return of capital and/or ordinary income, which is based on the earnings and profits of the Company. The Company is unable to make final determinations as to the character of the dividend until after the end of the calendar year. The Company informed its common stockholders in January 2007 of the character of dividends paid during fiscal year 2006. Prospectively, the Company will inform its common stockholders of the character of dividends during that fiscal year in January following such fiscal year.

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

J. *Federal and State Income Taxation* — The Company, as a corporation, is obligated to pay federal and state income tax on its taxable income. The Company invests its assets primarily in MLPs, which generally are treated as partnerships for federal income tax purposes. As a limited partner in the MLPs, the Company includes its allocable share of the MLP's taxable income in computing its own taxable income. Deferred income taxes reflect (i) taxes on unrealized gains/(losses), which are attributable to the temporary difference between fair market value and book basis, (ii) the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes and (iii) the net tax benefit of accumulated net operating losses. To the extent the Company has a net deferred tax asset, a valuation allowance is recognized if, based on the weight of available evidence, it is more likely than not that some portion or all of the deferred income tax asset will not be realized. Future realization of deferred tax assets ultimately depends on the existence of sufficient taxable income of the appropriate character in either the carryback or carryforward period under the tax law.

The Company may rely to some extent on information provided by the MLPs, which may not necessarily be timely, to estimate taxable income allocable to the MLP units held in the portfolio and to estimate the associated deferred tax liability. Such estimates are made in good faith and reviewed in accordance with the valuation process approved by the Board of Directors. From time to time the Company modifies its estimates or assumptions regarding the deferred tax liability as new information become available.

In June 2006, the Financial Accounting Standards Board ("FASB") issued FASB Interpretation 48 ("FIN 48"), "Accounting for Uncertainty in Income Taxes." This standard 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 percent likely to be realized. FIN 48 is effective as of the beginning of the first fiscal year beginning after December 15, 2006. At adoption, companies must adjust their financial statements to reflect only those tax positions that are more-likely-than-not to be sustained as of the adoption date. As of May 31, 2007, the Company has not evaluated the impact that will result from adopting FIN 48.

K. *Organization Expenses, Offering and Debt Issuance Costs* — The Company was responsible for paying all organization expenses, which were expensed when the shares of common stock were issued in the Company's IPO. Offering costs (including underwriting discount) related to the Company's issuances of common stock and issuance of Series D preferred stock were charged to additional paid-in capital when the shares were issued. Debt

**KAYNE ANDERSON MLP INVESTMENT COMPANY**  
**NOTES TO FINANCIAL STATEMENTS — (UNAUDITED) (CONTINUED)**

issuance costs (including underwriting discount) related to the auction rate senior notes payable are being capitalized and amortized over the period the notes are outstanding.

L. *Derivative Financial Instruments* — The Company uses derivative financial instruments (principally interest rate swap contracts) to manage interest rate risk. The Company has established policies and procedures for risk assessment and the approval, reporting and monitoring of derivative financial instrument activities. The Company does not hold or issue derivative financial instruments for speculative purposes. All derivative financial instruments 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 are recorded as realized gains or losses in the Statement of Operations. The Company 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.

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

### **3. Concentration of Risk**

The Company's investment objective is to obtain a high after-tax total return with an emphasis on current income paid to its stockholders. Under normal circumstances, the Company intends to invest at least 85% of its total assets in securities of MLPs and other Midstream Energy Companies, and to invest at least 80% of its total assets in MLPs, which are subject to certain risks, such as supply and demand risk, depletion and exploration risk, commodity pricing risk, acquisition risk and the risk associated with the hazards inherent in midstream energy industry activities. A substantial portion of the cash flow received by the Company is derived from investment in equity securities of MLPs. The amount of cash that an MLP has available for distributions and the tax character of such distributions are dependent upon the amount of cash generated by the MLP's operations. The Company may invest up to 15% of its total assets in any single issuer and a decline in value of the securities of such an issuer could significantly impact the net asset value of the Company. The Company may invest up to 20% of its total assets in debt securities, which may include below investment grade securities. The Company may, for defensive purposes, temporarily invest all or a significant portion of its assets in investment grade securities, short-term debt securities and cash or cash equivalents. To the extent the Company uses this strategy, it may not achieve its investment objectives.

### **4. Agreements and Affiliations**

A. *Investment Management Agreement* — The Company has entered into an investment management agreement with Kayne Anderson under which the Adviser, subject to the overall supervision of the Company's Board of Directors, manages the day-to-day operations of, and provides investment advisory services to, the Company. For providing these services, the Adviser receives a management fee from the Company.

On December 12, 2006, the Company held a special meeting of stockholders at which stockholders approved a new investment management agreement. As a result of the vote on this matter, the new investment management agreement replaced the previous performance-based fee structure with a fixed investment management fee at an annual rate of 1.375% of average total assets.

Pursuant to the previous investment management agreement, which was in effect through December 12, 2006, the Company agreed to pay Kayne Anderson Capital Advisors, L.P., the Adviser's parent company and the

**KAYNE ANDERSON MLP INVESTMENT COMPANY**  
**NOTES TO FINANCIAL STATEMENTS — (UNAUDITED) (CONTINUED)**

Company's former investment adviser, a basic management fee at an annual rate of 1.75% of the Company's average total assets, adjusting upward or downward (by up to 1.00% of the Company's average total assets, as defined), depending on to what extent, if any, the Company's investment performance for the relevant performance period exceeded or trailed the Company's "Benchmark" over the same period. The Company's Benchmark was the total return (capital appreciation and reinvested dividends) of the Standard & Poor's 400 Utilities Index plus 600 basis points (6.00%). The basic management fee and the performance fee adjustment were calculated and paid quarterly, using a rolling 12-month performance period.

During the period December 1, 2006 through December 12, 2006, the Company paid and accrued management fees at an annual rate of 2.75% of average total assets based on the Company's investment performance. During the remainder of the six months ended May 31, 2007, the Company paid and accrued management fees at an annual rate of 1.375% of average total assets.

For purposes of calculating the management fee, the Company's total assets are equal to the Company's gross asset value (which includes assets attributable to or proceeds from the Company's use of preferred stock, commercial paper or notes issuances and other borrowings), minus the sum of the Company's accrued and unpaid dividends on any outstanding common stock and accrued and unpaid dividends on any outstanding preferred stock and accrued liabilities (other than liabilities associated with borrowing or leverage by the Company and any accrued taxes). Liabilities associated with borrowing or leverage by the Company include the principal amount of any borrowings, commercial paper or notes issued by the Company, 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 Company.

B. *Portfolio Companies* — From time to time, the Company may "control" or may be an "affiliate" of one or more portfolio companies, each as defined in the 1940 Act. In general, under the 1940 Act, the Company would be presumed to "control" a portfolio company if the Company owned 25% or more of its outstanding voting securities and would be an "affiliate" of a portfolio company if the Company 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 Company's investment adviser), principal underwriters and affiliates of those affiliates or underwriters.

The Company believes that there is significant ambiguity in the application of existing SEC staff interpretations of the term "voting security" to complex structures such as privately negotiated limited partnership interests of the kind in which the Company invests. As a result, it is possible that the SEC staff may consider that certain securities investments in private limited partnerships are voting securities under the staff's prevailing interpretations of this term. If such determination is made, the Company may be regarded as a person affiliated with and controlling the issuers(s) of those securities for purposes of Section 17 of the 1940 Act.

In light of the ambiguity of the definition of voting securities, the Company does not intend to treat any class of securities that it holds as "voting securities" unless the security holders of such class have the ability, under the partnership agreement, to remove the general partner (assuming a sufficient vote of such securities, other than securities held by the general partner, in favor of such removal) or the Company has an economic interest of sufficient size that otherwise gives it the de facto power to exercise a controlling influence over the partnership. The Company believes this treatment is appropriate given that the general partner controls the partnership, and without the ability to remove the general partner or the power to otherwise exercise a controlling influence over the partnership due to the size of an economic interest, the security holders have no control over the partnership.

At May 31, 2007, the Company held approximately 42.5% of the partnership interest of Clearwater Natural Resources, LP ("Clearwater"). The Company's Chief Executive Officer serves as a director on the board of the general partner of Clearwater. The Company may be deemed to "control" and be an "affiliate" of Clearwater, each as defined in the 1940 Act, because the Company has an economic interest in Clearwater of size that may give it the power to exercise a controlling influence over Clearwater, notwithstanding the limited scope and character of the

**KAYNE ANDERSON MLP INVESTMENT COMPANY**  
**NOTES TO FINANCIAL STATEMENTS — (UNAUDITED) (CONTINUED)**

rights of such securities that the Company holds, which power effectively makes such securities the equivalent of “voting securities.” Based on the totality of the facts and circumstances as they exist as of May 31, 2007, the Company believes that it “controls” and is an “affiliate” of Clearwater. During the period there were no purchases or sales of this security.

C. *Other Affiliates* — For the six months ended May 31, 2007, KA Associates, Inc., an affiliate of Kayne Anderson, earned approximately \$3 in brokerage commissions from portfolio transactions executed on behalf of the Company.

**5. Income Taxes**

Deferred income taxes reflect (i) taxes on unrealized gains/(losses), which are attributable to the difference between fair market value and book basis, (ii) the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes and (iii) the net tax benefit of accumulated net operating losses. Components of the Company’s deferred tax assets and liabilities as of May 31, 2007 are as follows:

Deferred tax assets:	
Organizational costs . . . . .	\$ (27)
Net operating loss carryforwards . . . . .	(20,621)
Deferred tax liabilities:	
Unrealized gains on investment securities . . . . .	336,535
Other . . . . .	<u>1,997</u>
Total net deferred tax liability . . . . .	<u>\$317,884</u>

At May 31, 2007, the Company did not record a valuation allowance against its deferred tax assets.

At May 31, 2007, the cost basis of investments for Federal income tax purposes was \$1,367,183. The cost basis of investments includes a \$48,468 reduction in basis attributable to the Company’s portion of the allocated losses from its MLP investments. At May 31, 2007, gross unrealized appreciation and depreciation of investments for Federal income tax purposes were as follows:

Gross unrealized appreciation of investments . . . . .	\$926,061
Gross unrealized depreciation of investments . . . . .	<u>(16,506)</u>
Net unrealized appreciation before tax and interest rate swap contracts . . . . .	909,555
Unrealized appreciation on interest rate swap contracts . . . . .	<u>5,397</u>
Net unrealized appreciation before tax . . . . .	<u>\$914,952</u>
Net unrealized appreciation after tax . . . . .	<u>\$576,420</u>

For the six months ended May 31, 2007, the components of income tax expense include \$123,520 of expense and \$536 of benefit for federal income taxes and state income taxes (net of the federal tax benefit), respectively. Total income taxes are computed by applying the Federal statutory income tax rate plus a blended state income tax rate. During the period the Company’s income tax rate decreased from 38.5% to 37.0% due to changes in certain state tax jurisdictions. The decrease in the Company’s tax rate resulted in a \$7,593 benefit which is included in the Company’s income tax expense and resulted in an effective tax rate of 34.85% for the six month period. Total income taxes have been computed by applying the Company’s effective income tax rate of 34.85% to net investment income and realized and unrealized gains on investments before taxes.

During the six months ended May 31, 2007, permanent tax differences were reclassified from Accumulated Net Investment Loss to Paid-in Capital.



**KAYNE ANDERSON MLP INVESTMENT COMPANY**  
**NOTES TO FINANCIAL STATEMENTS — (UNAUDITED) (CONTINUED)**

**6. Restricted Securities**

From time to time certain of the Company's investments are restricted as to resale. Such restricted investments are valued in accordance with procedures established by the Board of Directors and more fully described in Note 2 — Significant Accounting Policies. The table below shows the number of units held, the acquisition date, purchase price, aggregate cost, fair value as of May 31, 2007, value per unit of such security, percent of net assets applicable to common stockholders and percent of total assets which the security comprises:

Investment	Security	Number of Units	Acquisition Date	Purchase Price	Cost	Fair Value	Value Per Unit	Percent of Net Assets <sup>(1)</sup>	Percent of Total Assets
BreitBurn Energy Partners L.P.	Common Units <sup>(2)</sup>	1,212	5/24/07	\$ 38,794	\$ 38,794	\$ 38,111	\$31.44	2.6%	1.7%
BreitBurn Energy Partners L.P.	Common Units <sup>(2)</sup>	214	5/25/07	6,647	6,647	6,862	32.00	0.5	0.3
Clearwater Natural Resources, LP	Common Units <sup>(2)</sup>	3,889	<sup>(3)</sup>	77,778	70,245	54,445	14.00	3.7	2.4
Crosstex Energy, L.P.	Senior Subordinated Units	356	6/29/06	10,022	10,022	11,521	32.33	0.8	0.5
Energy Transfer Equity, L.P.	Common Units <sup>(2)</sup>	365	11/27/06	10,009	9,898	14,845	40.69	1.0	0.6
Global Partners LP	Common Units <sup>(2)</sup>	1,071	5/9/07	30,000	29,552	38,428	35.87	2.6	1.7
Magellan Midstream Holdings, L.P.	Common Units <sup>(2)</sup>	1,020	4/3/07	25,000	24,760	28,842	28.27	2.0	1.3
MarkWest Energy Partners, L.P.	Common Units <sup>(2)</sup>	303	4/9/07	10,000	9,861	10,106	33.33	0.7	0.4
Regency Energy Partners LP	Common Units <sup>(2)</sup>	905	9/21/06	19,012	19,012	22,913	25.32	1.6	1.0
				<u>\$227,262</u>	<u>\$218,791</u>	<u>\$226,073</u>		<u>15.5%</u>	<u>9.9%</u>

<sup>(1)</sup> Applicable to common stockholders.

<sup>(2)</sup> Unregistered security.

<sup>(3)</sup> The Company purchased common units on 8/1/05 and 10/2/06.

**7. Option Contracts Written**

Transactions in written call options for the six months ended May 31, 2007 were as follows:

	Number of Contracts	Premiums Received
Options outstanding at beginning of period . . . . .	—	—
Options written . . . . .	1,000	\$ 115
Options exercised . . . . .	<u>(1,000)</u>	<u>(115)</u>
Options outstanding at end of period . . . . .	<u>—</u>	<u>\$ —</u>

**8. Investment Transactions**

For the six months ended May 31, 2007, the Company purchased and sold securities in the amount of \$319,674 and \$80,917 (excluding short-term investments, securities sold short and interest rate swaps), respectively.

**9. Revolving Credit Line**

The Company has an uncommitted revolving credit line with Custodial Trust Company (an affiliate of the administrator, Bear Stearns Funds Management Inc.), under which the Company may borrow from Custodial Trust Company an aggregate amount of up to the lesser of \$200,000 or the maximum amount the Company is permitted to borrow under the 1940 Act, subject to certain limitations imposed by the lender. The credit line is secured by Company assets held in custody by Custodial Trust Company. During the six months ended May 31, 2007, the average amount outstanding was \$93,310 with a weighted average interest rate of 6.33%. As of May 31,

**KAYNE ANDERSON MLP INVESTMENT COMPANY**  
**NOTES TO FINANCIAL STATEMENTS — (UNAUDITED) (CONTINUED)**

2007, the Company had outstanding borrowings on the revolving credit line of \$105,500 and the interest rate was 6.32%. Any loans under this line are repayable on demand by the lender at any time.

**10. Auction Rate Senior Notes**

The Company issued four series of auction rate senior notes, each with a maturity of 40 years from the date of original issuance, having an aggregate principal amount of \$320,000 ("Senior Notes"). The Senior Notes were issued in denominations of \$25. The fair value of those notes approximates carrying amount because the interest rate fluctuates with changes in interest rates available in the current market.

Holders of the Senior Notes are entitled to receive cash interest payments at an annual rate that may vary for each rate period. Interest rates for Series A, Series B, Series C and Series E as of May 31, 2007 were 5.00%, 5.00%, 5.25% and 5.00%, respectively. The weighted average interest rates for Series A, Series B, Series C and Series E for the six months ended May 31, 2007, were 5.08%, 5.08%, 5.25%, and 5.12% respectively. These rates include the applicable rate based on the latest results of the auction and do not include commissions paid to the auction agent in the amount of 0.25%. For each subsequent rate period, the interest rate will be determined by an auction conducted in accordance with the procedures described in the Senior Notes' prospectus. The reset rate period for Series A, Series B and Series E Senior Notes is seven days, while Series C Senior Notes reset every 28 days. The Senior Notes are not listed on any exchange or automated quotation system.

The Senior Notes are redeemable in certain circumstances at the option of the Company. The Senior Notes are also subject to a mandatory redemption if the Company fails to meet an asset coverage ratio required by law, or fails to cure deficiency as stated in the Company's rating agency guidelines in a timely manner.

The Senior Notes are unsecured obligations of the Company and, upon liquidation, dissolution or winding up of the Company, will rank: (1) senior to all the Company's outstanding preferred shares; (2) senior to all of the Company's outstanding common shares; (3) on a parity with any unsecured creditors of the Company and any unsecured senior securities representing indebtedness of the Company; and (4) junior to any secured creditors of the Company.

**11. Preferred Stock**

The Company issued 3,000 shares of Series D auction rate preferred stock totaling \$75,000. The Company has 10,000 shares of authorized preferred stock. The preferred stock has rights determined by the Board of Directors. The preferred stock has a liquidation value of \$25,000 per share plus any accumulated, but unpaid dividends, whether or not declared.

Holders of preferred stock are entitled to receive cash dividend payments at an annual rate that may vary for each rate period. The dividend rate as of May 31, 2007 was 5.10%. The weighted average dividend rate for the six months ended May 31, 2007, was 5.21%. This rate includes the applicable rate based on the latest results of the auction and does not include commissions paid to the auction agent in the amount of 0.25%. Under the 1940 Act, the Company may not declare dividends or make other distribution on shares of common stock or purchases of such shares if, at any time of the declaration, distribution or purchase, asset coverage with respect to the outstanding preferred stock would be less than 200%.

The preferred stock is redeemable in certain circumstances at the option of the Company. The preferred stock is also subject to a mandatory redemption if the Company fails to meet an asset coverage ratio required by law, or fails to cure deficiency as stated in the Company's rating agency guidelines in a timely manner.

The holders of the preferred stock have voting rights equal to the holders of common stock (one vote per share) and will vote together with the holders of shares of common stock as a single class except on matters affecting only the holders of preferred stock or the holders of common stock.

**KAYNE ANDERSON MLP INVESTMENT COMPANY**  
**NOTES TO FINANCIAL STATEMENTS — (UNAUDITED) (CONTINUED)**

**12. Interest Rate Swap Contracts**

The Company has entered into interest rate swap contracts to partially hedge itself from increasing interest expense on its leverage resulting from increasing short-term interest rates. 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 Company. In addition, if the counterparty to the interest rate swap contracts defaults, the Company would not be able to use the anticipated receipts under the swap contracts to offset the interest payments on the Company's leverage. At the time the interest rate swap contracts reach their scheduled termination, there is a risk that the Company 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 Company is required to terminate any swap contract early, then the Company could be required to make a termination payment. As of May 31, 2007, the Company has entered into twelve interest rate swap contracts with UBS AG as summarized below. For all twelve swaps, the Company receives a floating rate, based on one-month LIBOR.

<u>Termination Date</u>	<u>Notional Amount</u>	<u>Fixed Rate Paid by the Company</u>	<u>Net Unrealized Appreciation</u>
3/25/2008	\$ 35,000	4.31%	\$ 292
3/25/2008	25,000	4.40	188
4/7/2008	25,000	4.35	217
3/24/2010	25,000	4.65	358
4/8/2010	25,000	4.55	440
4/15/2010	35,000	4.45	710
6/2/2010	30,000	4.12	930
2/28/2012	40,000	4.99	379
4/16/2012	25,000	4.65	624
5/9/2012	25,000	4.37	948
11/14/2013	10,000	5.00	141
11/18/2013	<u>10,000</u>	4.95	<u>170</u>
Total	<u>\$310,000</u>		<u>\$5,397</u>

At May 31, 2007, the weighted average duration of the interest rate swap contracts was 3.1 years and the weighted average fixed rate was 4.53%. The Company is exposed to credit risk on the interest rate swap contracts if the counterparty should fail to perform under the terms of the interest rate swap contracts.

**13. Common Stock**

The Company has 199,990,000 shares of common stock authorized and 42,854,973 shares outstanding at May 31, 2007. As of that date, Kayne Anderson Capital Advisors, L.P. owned 4,000 shares. Transactions in common shares for the six months ended May 31, 2007, were as follows:

Shares outstanding at November 30, 2006 . . . . .	38,064,836
Shares issued through reinvestment of distributions . . . . .	369,221
Shares issued in connection with offerings of common stock . . . . .	<u>4,420,916</u>
Shares outstanding at May 31, 2007 . . . . .	<u>42,854,973</u>



**KAYNE ANDERSON MLP INVESTMENT COMPANY**  
**NOTES TO FINANCIAL STATEMENTS — (UNAUDITED) (CONCLUDED)**

**14. Subsequent Events**

On June 27, 2007, the Company announced the successful completion of its public offering of \$185,000 aggregate principal amount of Series F Auction Rate Senior Notes (“Series F Senior Notes”) due July 9, 2047. The net proceeds of the offering of Series F Senior Notes were approximately \$183,150, after deducting the underwriting discount and net estimated offering expenses. The Series F Senior Notes belong to the same class as the other four series of Senior Notes issued by the Company. The Series F Senior Notes are rated ‘Aaa’ and ‘AAA’ by Moody’s Investor Service, Inc. and Fitch Ratings, respectively. The initial annual interest rate on the Series F Senior Notes for the initial rate period was 5.15%. The subsequent interest rates for the Series F Senior Notes vary and are determined for each rate period which typically resets every seven days.

On July 12, 2007, the Company paid a dividend to its common stockholders in the amount of \$0.49 per share, for a total of \$20,999. Of this total, pursuant to the Company’s dividend reinvestment plan, \$6,070 was reinvested into the Company, and in connection with that reinvestment 173,572 shares of common stock were issued.

**KAYNE ANDERSON MLP INVESTMENT COMPANY**  
**PRIVACY POLICY NOTICE**  
**(UNAUDITED)**

Kayne Anderson MLP Investment Company (the “Company”) considers privacy to be fundamental to its relationship with its stockholders. The Company is committed to maintaining the confidentiality, integrity and security of the non-public personal information of its stockholders and potential investors. Accordingly, the Company has developed internal policies to protect confidentiality while allowing stockholders’ needs to be met. This notice applies to former as well as current stockholders and potential investors who provide the Company with nonpublic personal information.

The Company may collect several types of nonpublic personal information about stockholders or potential investors, including:

- Information from forms that you may fill out and send to the Company or one of its affiliates or service providers in connection with an investment in the Company (such as name, address, and social security number);
- Information you may give orally to the Company or one of its affiliates or service providers;
- Information about your transactions with the Company, its affiliates, or other third parties, such as the amount stockholders have invested in the Company;
- Information about any bank account stockholders or potential investors may use for transfers between a bank account and an account that holds or is expected to hold shares of its stock; and
- Information collected through an Internet “cookie” (an information collecting device from a web server based on your use of a web site).

The Company may disclose all of the information it collects, as described above, to certain nonaffiliated third parties such as attorneys, accountants, auditors and persons or entities that are assessing its compliance with industry standards. Such third parties are required to uphold and maintain its privacy policy when handling your nonpublic personal information.

The Company may disclose information about stockholders or potential investors at their request. The Company will not sell or disclose your nonpublic personal information to anyone except as disclosed above or as otherwise permitted or required by law.

Within the Company and its affiliates, access to information about stockholders and potential investors is restricted to those personnel who need to know the information to service stockholder accounts. The personnel of the Company and its affiliates have been instructed to follow its procedures to protect the privacy of your information.

The Company reserves the right to change this privacy notice in the future. Except as described in this privacy notice, the Company will not use your personal information for any other purpose unless it informs you how such information will be used at the time you disclose it or the Company obtains your permission to do so.

**KAYNE ANDERSON MLP INVESTMENT COMPANY**  
**PROXY VOTING AND PORTFOLIO HOLDINGS INFORMATION**  
**(UNAUDITED)**

The policies and procedures that the Company uses to determine how to vote proxies relating to its portfolio securities are available:

- without charge, upon request, by calling (877) 657-3863/MLP-FUND;
- on the Company's website, <http://www.kaynemlp.com>; or
- on the website of the Securities and Exchange Commission, <http://www.sec.gov>.

Information regarding how the Company voted proxies relating to portfolio securities during the most recent 12-month period ended June 30 is available without charge, upon request, by calling (877) 657-3863/MLP-FUND, and on the SEC's website at <http://www.sec.gov> (see Form N-PX).

The Company files a complete schedule of its portfolio holdings for the first and third quarters of its fiscal year with the SEC on Form N-Q. The Company's Forms N-Q are available on the SEC's website at <http://www.sec.gov> and may be reviewed and copied at the SEC's Public Reference Room in Washington, DC. Information on the operation of the SEC's Public Reference Room may be obtained by calling 1-202-551-8090. The Company also makes its Forms N-Q available on its website at <http://www.kaynemlp.com>.

**RESULTS OF ANNUAL MEETING OF STOCKHOLDERS**  
**(UNAUDITED)**

On June 15, 2007, the Company held its annual meeting of stockholders where the following matter was approved by stockholders: the election of two Class III Directors of the Company, consisting of Anne K. Costin, the nominee elected by the Common and Auction Rate Preferred stockholders, and Michael C. Morgan, the nominee elected by the Auction Rate Preferred stockholders only. On this matter, 35,715,896 shares (Common and Auction Rate Preferred) were cast in favor, no shares were cast against, and 288,278 shares abstained for the election of Ms. Costin, and 2,943 shares (Auction Rate Preferred) were cast in favor for the election of Mr. Morgan. As a result of the vote on this matter, Anne K. Costin and Michael C. Morgan were elected to serve as directors of the Company for a 3-year term.

**Directors and Corporate Officers**

Kevin S. McCarthy

Anne K. Costin

Steven C. Good

Gerald I. Isenberg

Michael C. Morgan

Terry A. Hart

David J. Shladovsky

J.C. Frey

James C. Baker

Chairman of the Board of Directors, President and Chief Executive Officer

Director

Director

Director

Director

Chief Financial Officer and Treasurer

Secretary and Chief Compliance Officer

Vice President, Assistant Secretary and Assistant Treasurer

Vice President

**Investment Adviser**

KA Fund Advisors, LLC

717 Texas Avenue, Suite 3100

Houston, TX 77002

1800 Avenue of the Stars, Second Floor

Los Angeles, CA 90067

**Administrator**

Bear Stearns Funds Management Inc.

383 Madison Avenue

New York, NY 10179

**Stock Transfer Agent and Registrar**

American Stock Transfer & Trust Company

59 Maiden Lane

New York, NY 10038

**Custodian**

Custodial Trust Company

101 Carnegie Center

Princeton, NJ 08540

**Independent Registered Public Accounting Firm**

PricewaterhouseCoopers LLP

350 South Grand Avenue

Los Angeles, CA 90071

**Legal Counsel**

Paul, Hastings, Janofsky & Walker LLP

55 Second Street, 24th Floor

San Francisco, CA 94105

For stockholder inquiries, registered stockholders should call (800) 937-5449. For general inquiries, please call (877) 657-3863/MLP-FUND; or visit us on the web at <http://www.kaynemlp.com>.



This report, including the financial statements herein, is made available to stockholders of the Company for their information. The financial information included herein is taken from the records of the Company without examination by its independent registered public accounting firm who do not express an opinion thereon. It is not a prospectus, circular or representation intended for use in the purchase or sale of shares of the Company or of any securities mentioned in this report.

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**Item 2. Code of Ethics.**

Not applicable.

**Item 3. Audit Committee Financial Expert.**

Not applicable.

**Item 4. Principal Accountant Fees and Services.**

Not applicable.

**Item 5. Audit Committee of Listed Registrants.**

Not applicable.

**Item 6. Schedule of Investments.**

Please see the schedule of investments contained in the Report to Stockholders included under Item 1 of this Form N-CSR.

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**Item 7. Disclosure of Proxy Voting Policies and Procedures for Closed-End Management Investment Companies.**

Not applicable.

**Item 8. Portfolio Managers of Closed-End Management Investment Companies.**

Not applicable.

**Item 9. Purchases of Equity Securities by Closed-End Management Companies and Affiliated Purchasers.**

None.

**Item 10. Submission of Matters to a Vote of Security Holders.**

None.

**Item 11. Controls and Procedures.**

(a) The Registrant's principal executive officer and principal financial officer have evaluated the Registrant's disclosure controls and procedures as of a date within 90 days of this filing and have concluded that the Registrant's disclosure controls and procedures are effective, as of such date, in ensuring that information required to be disclosed by the registrant in this Form N-CSR was recorded, processed, summarized, and reported timely.

(b) The Registrant's principal executive officer and principal financial officer are aware of no changes in the Registrant's internal control over financial reporting that occurred during the Registrant's last fiscal half-year that has materially affected, or is reasonably likely to materially affect, the Registrant's internal control over financial reporting.

**Item 12. Exhibits.**

(a)(1) Not applicable.

(a)(2) Separate certifications of Principal Executive and Financial Officers pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 attached as EX-99.CERT.

(b) Certification of Principal Executive and Financial Officers pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 furnished as EX-99.906 CERT.

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SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934 and the Investment Company Act of 1940, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Kayne Anderson MLP Investment Company

By: /S/ KEVIN S. MCCARTHY  
Kevin S. McCarthy  
Chairman, President and Chief Executive Officer  
(Principal Executive Officer)

Date: August 3, 2007

Pursuant to the requirements of the Securities Exchange Act of 1934 and the Investment Company Act of 1940, this report has been signed below by the following persons on behalf of the Registrant and in the capacities and on the dates indicated.

By: /S/ KEVIN S. MCCARTHY  
Kevin S. McCarthy  
Chairman, President and Chief Executive Officer  
(Principal Executive Officer)

Date: August 3, 2007

By: /S/ TERRY A. HART  
Terry A. Hart  
Chief Financial Officer and Treasurer  
(Principal Financial Officer)

Date: August 3, 2007

CERTIFICATIONS

I, Kevin S. McCarthy, certify that:

1. I have reviewed this report on Form N-CSR of Kayne Anderson MLP Investment Company;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations, changes in net assets, and cash flows (if the financial statements are required to include a statement of cash flows) of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Rule 30a-3(c) under the Investment Company Act of 1940) and internal control over financial reporting (as defined in Rule 30a-3(d) under the Investment Company Act of 1940) for the registrant and have:
  - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
  - b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
  - c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of a date within 90 days prior to the filing date of this report based on such evaluation; and
  - d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the second fiscal quarter of the period covered by this report that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
  - a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize, and report financial information; and
  - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: August 3, 2007

/s/ KEVIN S MCCARTHY

Kevin S. McCarthy  
Chairman, President and Chief Executive Officer  
(Principal Executive Officer)



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## CERTIFICATIONS

I, Terry A. Hart, certify that:

1. I have reviewed this report on Form N-CSR of Kayne Anderson MLP Investment Company;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations, changes in net assets, and cash flows (if the financial statements are required to include a statement of cash flows) of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Rule 30a-3(c) under the Investment Company Act of 1940) and internal control over financial reporting (as defined in Rule 30a-3(d) under the Investment Company Act of 1940) for the registrant and have:
  - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
  - b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
  - c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of a date within 90 days prior to the filing date of this report based on such evaluation; and
  - d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the second fiscal quarter of the period covered by this report that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
  - a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize, and report financial information; and
  - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: August 3, 2007

/s/ TERRY A. HART

Terry A. Hart  
Chief Financial Officer and Treasurer  
(Principal Financial Officer)

**SECTION 906 CERTIFICATIONS**

Kevin S. McCarthy, Principal Executive Officer, and Terry A. Hart, Principal Financial Officer, of Kayne Anderson MLP Investment Company (the “Company”), each certify to his knowledge that:

1. The Company’s periodic report on Form N-CSR for the semi-annual period ended May 31, 2007 (the “Report”) fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operation of the Company.

August 3, 2007

/S/ KEVIN S. MCCARTHY

Kevin S. McCarthy  
Chairman, President and Chief Executive Officer  
(Principal Executive Officer)

/S/ TERRY A. HART

Terry A. Hart  
Chief Financial Officer and Treasurer  
(Principal Financial Officer)