Kayne Anderson MLP Investment CO Form N-Q April 29, 2010

UNITED STATES SECURITIES AND EXCHANGE COMMISSION Washington, D.C. 20549 FORM N-O

QUARTERLY SCHEDULE OF PORTFOLIO HOLDINGS OF REGISTERED MANAGEMENT INVESTMENT COMPANY INVESTMENT COMPANY ACT FILE NUMBER 811-21593 KAYNE ANDERSON MLP INVESTMENT COMPANY

(Exact name of registrant as specified in charter)

717 Texas Avenue, Suite 3100, Houston, Texas

77002

(Address of principal executive offices)

(Zip code)

David Shladovsky, Esq. KA Fund Advisors, LLC, 717 Texas Avenue, Suite 3100, Houston, Texas 77002

(Name and address of agent for service)

Registrant s telephone number, including area code: (713) 493-2020

Date of fiscal year end: November 30, 2010

Date of reporting

February 28, 2010

period:

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Item 1: Schedule of Investments

KAYNE ANDERSON MLP INVESTMENT COMPANY SCHEDULE OF INVESTMENTS FEBRUARY 28, 2010

(amounts in 000 s except number of option contracts) (UNAUDITED)

	No. of	
Description	Shares/Units	Value
Long-Term Investments 151.9%		
Equity Investments(a) 147.9%		
Midstream MLP(b) 105.1%		
Boardwalk Pipeline Partners, LP	350	\$ 10,464
Buckeye Partners, L.P.	830	48,799
Copano Energy, L.L.C.	3,634	86,491
Crosstex Energy, L.P.(c)	2,868	27,188
DCP Midstream Partners, LP	861	26,546
Duncan Energy Partners L.P.	592	15,087
El Paso Pipeline Partners, L.P.	1,064	27,540
Enbridge Energy Partners, L.P.	1,307	66,945
Energy Transfer Partners, L.P.(d)	1,846	85,450
Enterprise Products Partners L.P.	4,416	144,678
Exterran Partners, L.P.	1,092	23,960
Global Partners LP	1,302	32,346
Holly Energy Partners, L.P.	562	23,951
Magellan Midstream Partners, L.P.	3,130	141,580
MarkWest Energy Partners, L.P.	3,502	103,581
Martin Midstream Partners L.P.	318	10,051
ONEOK Partners, L.P.(d)	951	57,657
Plains All American Pipeline, L.P.(e)	2,876	159,380
Quicksilver Gas Services LP	612	12,352
Regency Energy Partners LP(d)	3,383	71,860
Spectra Energy Partners, LP	381	11,415
Sunoco Logistics Partners L.P.	114	7,716
Targa Resources Partners LP	952	23,797
TC PipeLines, LP	772	28,469
TransMontaigne Partners L.P.	502	13,850
Western Gas Partners, LP	932	19,921
Williams Partners L.P.	1,430	55,555
Williams Pipeline Partners L.P.	722	21,065

MLP Affiliates(b) 13.5%		
Enbridge Energy Management, L.L.C.(f)	782	39,090
Kinder Morgan Management, LLC(d)(f)	2,351	134,825
		173,915
C ID 4 MID 427		
General Partner MLP 12.6%		
Alliance Holdings GP L.P.	874	25,096
Buckeye GP Holdings L.P.	57	1,857
Energy Transfer Equity, L.P.	2,473	79,919
Enterprise GP Holdings L.P.	1,347	55,299
Inergy Holdings, L.P.	8	555
		162,726

KAYNE ANDERSON MLP INVESTMENT COMPANY SCHEDULE OF INVESTMENTS FEBRUARY 28, 2010

$\begin{array}{c} \text{(amounts in 000 } \ s \ except \ number \ of \ option \ contracts)} \\ \text{(UNAUDITED)} \end{array}$

			No. of		
Description Description			Shares/Units	Value	e
Propane MLP 9.5%			2.404	ф 100 (020
Inergy, L.P.(d)			3,404	\$ 122,9	938
Shipping MLP 6.3%					
Capital Product Partners L.P.			895	7,7	766
K-Sea Transportation Partners L.P.			78		737
Navios Maritime Partners L.P.			1,247	19,6	617
Teekay LNG Partners L.P.			1,132	30,8	886
Teekay Offshore Partners L.P.			876	16,4	456
Teekay Tankers Ltd.			524	5,3	354
				80,8	816
				00,0	010
Upstream MLP 0.5%					
Legacy Reserves LP			313	6,0	632
Coal MLP 0.4%					
Alliance Resource Partners, L.P.			83	3,4	466
Penn Virginia Resource Partners, L.P.			98	2,2	266
				5.7	722
				3,	732
Total Equity Investments (Cost \$1,346,54	1)			1,910,4	453
	Interest	Maturity	Principal		
	Rate	Date	Amount		
Energy Debt Investments 4.0%					
Midstream MLP (b) 2.1%					
Copano Energy, L.L.C.	7.750 %	6/1/18	\$ 1,800	1,759	9
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Copano Energy, L.L.C. Crosstex Energy, L.P. Niska Gas Storage U.S., LLC	8.125 8.875 8.875	3/1/16 2/15/18 3/15/18	500 20,000 5,000	504 20,300 5,000 27,563
Upstream MLP(b) 1.5% Atlas Energy Resources, LLC Atlas Energy Resources, LLC	12.125 10.750	8/1/17 2/1/18	9,000 9,000	10,125 9,743 19,868
Coal MLP 0.4% Clearwater Natural Resources, LP(c)(g)(h)	(i)	12/3/09	13,601	4,420
Total Energy Debt Investments (Cost \$57,421)				51,851
Total Long-Term Investments (Cost \$1,403,962)				1,962,304

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KAYNE ANDERSON MLP INVESTMENT COMPANY SCHEDULE OF INVESTMENTS FEBRUARY 28, 2010

$\begin{array}{c} \text{(amounts in 000 } \ s \ except \ number \ of \ option \ contracts)} \\ \text{(UNAUDITED)} \end{array}$

Description Short-Term Investment 0.2%	Interest Rate	Maturity Date		Value
Repurchase Agreement 0.2% J.P. Morgan Securities Inc. (Agreement dated 2/26/10 to be repurchased at \$2,087), collateralized by \$2,152 in U.S. Treasury note (Cost \$2,087)	0.020	3/1/10		\$ 2,087
Total Investments 152.1% (Cost \$1,406,049)				1,964,391
Liabilities			No. of Contracts	
Call Option Contracts Written(c)				
Midstream MLP	4040 0 045 00		006	(126)
Energy Transfer Partners, L.P., call option expiring 3)	906	(136)
ONEOK Partners, L.P., call option expiring 3/19/10 (Regency Energy Partners LP, call option expiring 3/1			1,000 250	(115) (34)
Regency Energy Farthers Er, can option expiring 3/1	19/10 @ \$20.00		230	(34)
				(285)
Propane MLP				
Inergy, L.P., call option expiring 3/19/10 @ \$35.00			1,000	(145)
Total Call Option Contracts Written (Premiums F	Received \$391))		(430)
Senior Unsecured Notes Unrealized Depreciation on Interest Pate Swap Co	antraats			(370,000)
Unrealized Depreciation on Interest Rate Swap Co Revolving Credit Line	ontracts			(416) (40,000)
Deferred Tax Liability				(174,308)
Other Liabilities				(17,708)
Other Diabilities				(17,700)
Total Liabilities Other Assets				(602,862) 5,331
Total Liabilities in Excess of Other Assets				(597,531)
Preferred Stock at Redemption Value				(75,000)
110201100 Stock at Reachiphon value				(73,000)
Net Assets Applicable to Common Stockholders				\$ 1,291,860

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- (a) Unless otherwise noted, equity investments are common units/common shares.
- (b) Includes Limited Liability Companies.
- (c) Security is non-income producing.
- (d) Security or a portion thereof is segregated as collateral on option contracts written or interest rate swap contract.
- (e) The Company believes that it is an affiliate of Plains All American, L.P.
- (f) Distributions are paid in-kind.
- (g) Fair valued securities, restricted from public sale.
- (h) Clearwater
 Natural
 Resources, LP is
 a privately-held
 MLP that the
 Company
 believes is a
 controlled
 affiliate. On

January 12, 2010, Clearwater closed on the sale of all of its reserves and a substantial portion of its operating assets to International Resource Partners, L.P. (IRP). On March 16, 2010, the Bankruptcy Court confirmed Clearwater s plan of reorganization (including such sale of assets to IRP).

KAYNE ANDERSON MLP INVESTMENT COMPANY SCHEDULE OF INVESTMENTS FEBRUARY 28, 2010

(amounts in 000 s except number of option contracts) (UNAUDITED)

As part of

Clearwater s

plan of

reorganization,

the Company

will receive

consideration

for its unsecured

term loan. Such

consideration

will be in the

form of cash

and a royalty

interest in the

reserves sold.

Pursuant to the

plan of

reorganization,

the Company

will not receive

any

consideration

for its equity

investment in

Clearwater or

CNR GP

Holdco, LLC. In

addition to the

unsecured term

loan, the

Company owns

3,889 common

units, 34

warrants and 41

unregistered,

deferred

participation

units of

Clearwater. The

Company

assigned no

value to these

equity

investments as

of February 28, 2010. CNR GP Holdco, LLC is the general partner of Clearwater. The Company owns 83.7% of CNR GP Holdco, LLC, which was assigned no value as of February 28, 2010, and believes it is a controlled affiliate.

(i) Floating rate unsecured working capital term loan. Interest is paid-in-kind at a rate of the higher of (i) one year LIBOR or (ii) 4.75%, plus 900 basis points (13.75% as of February 28, 2010). The Company is not accruing interest on this investment.

From time to time, certain of the Company s investments may be restricted as to resale. For instance, private investments that are not registered under the Securities Act of 1933, as amended, cannot be offered for public sale in a non-exempt transaction without first being registered. In other cases, certain of the Company s investments have restrictions such as lock-up agreements that preclude the Company from offering these securities for public sale. At February 28, 2010, the Company held the following restricted investments:

				Number of Units, Principal				Percent
		Acquisition	Type of	(\$)	Cost	Fair	Percent of Net	of Total
Investment Clearwater	Security	Date	Restriction	(in 000s)	Basis	Value	Assets	Assets
Natural Resources, L.P. Clearwater Natural	Common Units	(1)	(2)	3,889	\$72,860	\$		
Resources, L.P.	Unsecured Term Loan	(3)	(2)	\$ 13,601	13,690	4,420	0.3%	0.2%
Clearwater Natural Resources,					ŕ	ŕ		
L.P. Clearwater Natural	Deferred Participation Units	3/5/08	(2)	41				
Resources, L.P. CNR GP Holdco,	Warrants	9/29/08	(2)	34				
LLC	LLC Interests	3/5/08	(2)	n/a	1,082			
Total of secu Board of Dir	urities valued in accordance v rectors ⁽⁴⁾	with procedu	res establisho	ed by the	\$ 87,632	\$4,420	0.3%	0.2%
Niska Gas Storage U.S., LLC	Senior Notes	(5)	(6)	\$ 5,000	\$ 5,023	\$ 5,000	0.4%	0.3%
Total of secu pricing servi	ırities valued by prices provi ices	ded by mark	et maker or i	independent	\$ 5,023	\$ 5,000	0.4%	0.3%
Total of all restricted securities					\$ 92,655	\$ 9,420	0.7%	0.5%

- (1) The Company purchased common units on August 1, 2005 and October 2, 2006.
- (2) On January 7, 2009, Clearwater Natural Resources, LP (Clearwater) filed a voluntary petition under Chapter 11 of the U.S. Bankruptcy Code. Clearwater continued operations debtor-in-possession during fiscal 2009. On January 12, 2010, Clearwater closed on the sale of substantially all of its reserves and operating assets. See Clearwater Update below for a status update.
- (3) The Company purchased term loans on January 11, 2008; February 28, 2008; May 5, 2008; July 8, 2008; August 6, 2 0 0 8; and September 29, 2008. The Company is not accruing interest income on this investment.
- (4) Restricted securities that are classified as a Level 3. Security is valued using inputs reflecting the Company sown assumptions.

- (5) These securities were acquired during the three months ended February 28, 2010.
- (6) Unregistered security of a public company that are classified as a Level 2. These securities have a fair market value determined by the mean of the bid and ask prices provided by a syndicate bank, principal market maker or an independent pricing service. These securities have limited trading volume and are not listed on a national exchange.

Clearwater Update. On January 12, 2010, Clearwater closed on the sale of all of its reserves and a substantial portion of its operating assets to International Resource Partners, L.P. (IRP). On March 16, 2010, the Bankruptcy Court confirmed Clearwater s plan of reorganization (including such sale of assets to IRP). As part of Clearwater s plan of reorganization, the Company will receive consideration for its unsecured term loan. Such consideration will be in the form of cash and a royalty interest in the reserves sold. The Company will not receive any consideration for its equity investment in Clearwater or CNR GP Holdco, LLC. The Company will receive such consideration when Clearwater s plan of reorganization becomes effective, which is expected to be May or June 2010.

At February 28, 2010, the cost basis of investments for federal income tax purposes was \$1,224,870. At February 28, 2010, gross unrealized appreciation and depreciation of investments for federal income tax purposes were as follows:

Gross unrealized appreciation of investments	\$ 803,173
Gross unrealized depreciation of investments	(63,652)
Net unrealized appreciation	\$739,521

The identified cost basis of federal tax purposes is estimated based on information available from the Company s portfolio companies. In some cases, this information is very limited. Accordingly, the actual cost basis may prove higher or lower than the estimated cost basis included in this footnote.

As required by the Fair Value Measurement and Disclosures of the FASB Accounting Standards Codification, the Company 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.

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

Level 1 Quoted unadjusted prices for identical instruments in active markets to which the Company has access at the date of measurement.

Level 2 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 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 Company 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 Company s assets and liabilities measured at fair value at February 28, 2010. Note that the valuation levels below are not necessarily an indication of the risk or liquidity associated with the underlying investment. For instance, the Company s repurchase agreements, which are collateralized by U.S. Treasury notes, are generally high quality and liquid; however, the Company reflects these repurchase agreements as Level 2 because the inputs used to determine fair value may not always be quoted prices in an active market.

	Total	Quoted Prices in Active Markets (Level 1)	Prices with Other Observable Inputs (Level 2)	Unobservable Inputs (Level 3)(1)
Assets at Fair Value				
Equity investments	\$ 1,910,453	\$ 1,910,453	\$	\$
Energy debt investments	51,851		47,431	4,420
Repurchase agreement	2,087		2,087	
Total assets at fair value	\$ 1,964,391	\$ 1,910,453	\$ 49,518	\$ 4,420
<u>Liabilities at Fair Value</u>	\$ 416	\$	\$ 416	\$

Unrealized depreciation on interest rate

swaps

Option contracts written 430 430

Total liabilities at fair value \$ 846 \$ \$ 846

(1) The Company s

investments in

Level 3

represent its

investments in

Clearwater

Natural

Resources, L.P.

and CNR GP

Holdco, LLC.

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The following table presents the Company s assets measured at fair value on a recurring basis using significant unobservable inputs (Level 3) for the period ended February 28, 2010.

Assets at Fair Value Using Unobservable Inputs (Level 3)	Long-Term Investments
Balance November 30, 2009	\$ 4,080
Transfers out of Level 3	
Realized gains/(losses)	
Unrealized gains, net	340
Purchases, issuances or settlements	
Balance February 28, 2010	\$ 4,420

The \$340 of unrealized gains presented in the table above relate to investments that are still held at February 28, 2010. The Company did not have any liabilities that were measured at fair value on a recurring basis using significant unobservable inputs (Level 3) at February 28, 2010 and at November 30, 2009.

In January 2010, the FASB issued Accounting Standards Update (ASU) No. 2010-06 Improving Disclosures about Fair Value Measurements. ASU 2010-06 amends FASB Accounting Standards Codification Topic, Fair Value Measurements and Disclosures, to require additional disclosures regarding fair value measurements. Certain disclosures required by ASU No. 2010-06 are effective for interim and annual reporting periods beginning after December 15, 2009, and other required disclosures are effective for fiscal years beginning after December 15, 2010, and for interim periods within those fiscal years. Management is currently evaluating the impact ASU No. 2010-06 will have on its financial statement disclosures.

As required by the Derivatives and Hedging Topic of the FASB Accounting Standards Codification, the following are the derivative instruments and hedging activities of the Company.

The following table sets forth the fair value of the Company s derivative instruments.

Derivatives Not Accounted		Fair Value as of February 28,
for as Hedging Instruments Liabilities	Statement of Assets and Liabilities Location	2010
Call options	Call option contracts written Unrealized depreciation on interest rate swap	\$430
Interest rate swap contracts	contracts	416
		\$846

The following table sets forth the effect of the Company s derivative instruments.

		For the Three Months	
		Ended	
		February 28, 2010	
			Change in
		Net	Unrealized
		Realized	Gains/
		Gains	
		(Losses) on	(Losses) on
		Derivatives	Derivatives
		Recognized	
Derivatives Not Accounted For as	Location of Gains/(Losses)	in	Recognized in
Hedging Instruments	on Derivatives Recognized in Income	Income	Income
Put options	Options	\$ (90)	\$ 76
Call options	Options	74	767
Interest rate swap contracts	Interest rate swap contracts	(240)	(211)
		\$ (256)	\$ 632

Securities valuation policies and other investment related disclosures are hereby incorporated by reference to the Fund s annual report previously filed with the Securities and Exchange Commission on form N-CSR on February 8, 2010 with a file number 811-21593.

Other information regarding the Company is available in the Company s most recent annual report. This information is also available on the Company s website at www.kaynefunds.com; or on the website of the Securities and Exchange Commission at www.sec.gov.

Item 2: Controls and Procedures

- (a) As of a date within 90 days from the filing date of this report, the principal executive officer and principal financial officer concluded that the registrant s disclosure controls and procedures (as defined in Rule 30a-3(c) under the Investment Company Act of 1940 (the Act)), were effective based on their evaluation of the disclosure controls and procedures required by Rule 30a-3(b) under the Act and Rules 13a-15(b) or 15d-15(b) under the Securities and Exchange Act of 1934.
- (b) There were no changes in the registrant s internal control over financial reporting (as defined in Rule 30a-3(d) under the Act) that occurred during the registrant s last fiscal quarter that have materially affected, or are reasonably likely to materially affect, the registrant s internal control over financial reporting.

ITEM 3: Exhibits

1. The certifications of the registrant as required by Rule 30a-2(a) under the Act are exhibits to this report.

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

/s/ Kevin S. McCarthy

Name: Kevin S. McCarthy

Title: Chairman of the Board of Directors,

President and Chief Executive Officer

Date: April 29, 2010

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.

/s/ Kevin S. McCarthy Name: Kevin S. McCarthy

Title: Chairman of the Board of Directors,

President and Chief Executive Officer

Date: April 29, 2010

/s/ Terry A. Hart Name: Terry A. Hart

Title: Chief Financial Officer and Treasurer

Date: April 29, 2010