

BLACKROCK MUNIHOLDINGS INVESTMENT QUALITY FUND
Form N-Q
July 23, 2015

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM N-Q

**QUARTERLY SCHEDULE OF PORTFOLIO HOLDINGS OF REGISTERED
MANAGEMENT INVESTMENT COMPANY**

Investment Company Act file number: 811-08349

Name of Fund: BlackRock MuniHoldings Investment Quality Fund (MFL)

Fund Address: 100 Bellevue Parkway, Wilmington, DE 19809

Name and address of agent for service: John M. Perlowski, Chief Executive Officer, BlackRock MuniHoldings Investment Quality Fund, 55 East 52nd Street, New York, NY 10055

Registrant's telephone number, including area code: (800) 882-0052, Option 4

Date of fiscal year end: 08/31/2015

Date of reporting period: 05/31/2015

Item 1 Schedule of Investments

Schedule of Investments May 31, 2015 (Unaudited)

BlackRock MuniHoldings Investment Quality Fund (MFL)

(Percentages shown are based on Net Assets)

| | Par | |
|--|------------|--------------|
| | (000) | Value |
| Municipal Bonds | | |
| Alabama 3.5% | | |
| City of Birmingham Alabama Special Care Facilities Financing Authority, RB, Children s Hospital (AGC): | | |
| 6.13%, 6/01/34 | \$ 4,980 | \$ 5,760,715 |
| 6.00%, 6/01/39 | 10,995 | 12,638,642 |
| City of Selma Alabama IDB, RB, Gulf Opportunity Zone, International Paper Co. Project, Series A, 5.38%, 12/01/35 | 1,745 | 1,966,755 |
| | | 20,366,112 |
| California 22.8% | | |
| California Educational Facilities Authority, RB, University of Southern California, Series A, 5.25%, 10/01/38 | | |
| | 8,920 | 9,975,058 |
| California Health Facilities Financing Authority, RB, Sutter Health, Series B, 6.00%, 8/15/42 | | |
| | 5,370 | 6,379,130 |
| City & County of San Francisco California Airports Commission, Refunding ARB, 2nd Series A, AMT: | | |
| 5.50%, 5/01/28 | 3,330 | 3,903,692 |
| 5.25%, 5/01/33 | 2,600 | 2,931,526 |
| City of Manteca California Financing Authority, RB, Manteca Sewer (AGC): | | |
| 5.63%, 12/01/33 | 2,450 | 2,837,223 |
| 5.75%, 12/01/36 | 3,285 | 3,797,230 |
| City of San Jose California, Refunding ARB, Series A-1, AMT, 5.75%, 3/01/34 | | |
| | 4,450 | 5,063,833 |
| County of Sacramento California, ARB, Senior Series A (AGC), 5.50%, 7/01/41 | | |
| | 5,600 | 6,251,168 |
| Kern Community College District, GO, Safety, Repair & Improvement, Election of 2002, Series C, 5.50%, 11/01/33 | | |
| | 4,365 | 5,129,137 |
| Los Angeles California Unified School District, GO, Election of 2002, Series D, 5.25%, 7/01/25 | | |
| | 3,485 | 4,012,176 |
| Los Angeles Community College District California, GO: | | |
| Election of 2001, Series A (NPFGC), 5.00%, 8/01/17 (a) | 10,000 | 10,896,800 |
| Election of 2008, Series C, 5.25%, 8/01/39 | 3,375 | 3,932,989 |
| | Par | |
| Municipal Bonds | | |
| California (concluded) | | |
| Los Angeles Department of Water & Power, RB, Power System, Sub-Series A-1, 5.25%, 7/01/38 | | |
| | \$ 5,000 | \$ 5,540,700 |
| Los Angeles Municipal Improvement Corp., Refunding LRB, Real Property, Series B (AGC), 5.50%, 4/01/39 | | |
| | 2,980 | 3,372,049 |
| Redondo Beach Unified School District, GO, Election of 2008, Series E, 5.50%, 8/01/34 | | |
| | 4,110 | 4,761,106 |
| San Diego Public Facilities Financing Authority Water, Refunding RB, Series B (AGC), 5.38%, 8/01/34 | | |
| | 4,690 | 5,356,684 |
| State of California, GO, Various Purposes (AGC), 5.50%, 11/01/39 | | |
| | 15,000 | 17,341,950 |
| State of California Public Works Board, LRB, Various Capital Projects, Series I: | | |
| 5.50%, 11/01/30 | 4,500 | 5,372,325 |
| 5.50%, 11/01/31 | 2,615 | 3,106,855 |
| 5.50%, 11/01/33 | 2,000 | 2,376,360 |
| State of California Public Works Board, RB, Department of Corrections & Rehabilitation, Series F, 5.25%, 9/01/33 | | |
| | 2,240 | 2,609,600 |
| Township of Washington California Health Care District, GO, Election of 2004, Series B, 5.50%, 8/01/40 | | |
| | 1,685 | 1,980,616 |
| University of California, Refunding RB, The Regents of Medical Center, Series J, 5.25%, 5/15/38 | | |
| | 12,250 | 14,002,485 |
| | | 130,930,692 |
| Colorado 2.1% | | |
| City & County of Denver Colorado Airport System, ARB, Series A, AMT: | | |
| 5.50%, 11/15/28 | 2,700 | 3,130,245 |
| 5.50%, 11/15/30 | 1,040 | 1,194,461 |
| 5.50%, 11/15/31 | 1,250 | 1,428,750 |

Schedule of Investments (continued)

BlackRock MuniHoldings Investment Quality Fund (MFL)

(Percentages shown are based on Net Assets)

| | Par | |
|--|--------------|--------------|
| | (000) | Value |
| Municipal Bonds | | |
| Colorado (concluded) | | |
| Colorado Health Facilities Authority, RB, Hospital, NCMC, Inc. Project, Series B (AGM), 6.00%, 5/15/26 | \$ 5,925 | \$ 6,667,106 |
| | | 12,420,562 |
| Florida 9.5% | | |
| City of Jacksonville Florida, Refunding RB, Series A, 5.25%, 10/01/33 | 1,250 | 1,435,213 |
| County of Hillsborough Florida Aviation Authority, Refunding ARB, Tampa International Airport, Series A, AMT: 5.50%, 10/01/29 | 5,360 | 6,141,756 |
| 5.25%, 10/01/30 | 3,255 | 3,646,251 |
| County of Lee Florida, Refunding ARB, Series A, AMT, 5.38%, 10/01/32 | 7,100 | 7,770,595 |
| County of Manatee Florida Housing Finance Authority, RB, S/F Housing, Series A, AMT (Ginnie Mae, Fannie Mae & Freddie Mac), 5.90%, 9/01/40 | 350 | 356,419 |
| County of Miami-Dade Florida Aviation, Refunding ARB, AMT, Series A: Miami International Airport (AGM), 5.50%, 10/01/41 | 3,500 | 3,893,960 |
| 5.00%, 10/01/31 | 5,465 | 6,032,486 |
| County of Miami-Dade Florida, Refunding RB, Water & Sewer System, Series B, 5.25%, 10/01/29 | 2,870 | 3,299,782 |
| County of Miami-Dade Florida, Seaport Department, RB: Series A, 5.38%, 10/01/33 | 3,145 | 3,542,685 |
| Series B, AMT, 6.25%, 10/01/38 | 1,405 | 1,716,390 |
| Series B, AMT, 6.00%, 10/01/42 | 1,885 | 2,251,764 |
| County of Osceola Florida, RB, Sales Tax, Series A: 5.00%, 10/01/40 | 2,165 | 2,400,898 |
| 5.00%, 10/01/44 | 4,970 | 5,468,392 |
| Florida Housing Finance Corp., Refunding RB, S/F Housing, Homeowner Mortgage, Series 2, AMT (NPFGC), 5.90%, 7/01/29 | 3,065 | 3,083,605 |
| | Par | |
| | (000) | Value |
| Municipal Bonds | | |
| Florida (concluded) | | |
| Reedy Creek Improvement District, GO, Series A, 5.25%, 6/01/32 | \$ 3,225 | \$ 3,688,658 |
| | | 54,728,854 |
| Hawaii 0.8% | | |
| State of Hawaii, Department of Transportation, COP, AMT: 5.25%, 8/01/25 | 1,350 | 1,556,320 |
| 5.25%, 8/01/26 | 2,500 | 2,856,875 |
| | | 4,413,195 |
| Illinois 26.9% | | |
| Chicago Midway International Airport, Refunding ARB, 2nd Lien, Series A, AMT, 5.00%, 1/01/33 | 4,355 | 4,665,512 |
| City of Chicago Illinois, GARB, O Hare International Airport, 3rd Lien: Series A, 5.75%, 1/01/39 | 7,395 | 8,402,865 |
| Series C, 6.50%, 1/01/41 | 16,800 | 20,226,024 |
| City of Chicago Illinois, Refunding RB, Sales Tax, Series A, 5.25%, 1/01/38 | 2,445 | 2,568,350 |
| City of Chicago Illinois Midway International Airport, Refunding ARB, 2nd Lien, Series A, AMT: 5.50%, 1/01/30 | 6,500 | 7,258,680 |
| 5.50%, 1/01/32 | 6,275 | 6,963,618 |
| City of Chicago Illinois Midway International Airport, Refunding GARB, 2nd Lien, Series A, AMT, 5.00%, 1/01/41 | 8,020 | 8,436,960 |
| City of Chicago Illinois Transit Authority, RB: Federal Transit Administration, Section 5309, Series A (AGC), 6.00%, 6/01/26 | 6,315 | 7,047,919 |
| Sales Tax Receipts, 5.25%, 12/01/36 | 1,960 | 2,076,091 |
| Sales Tax Receipts, 5.25%, 12/01/40 | 10,960 | 11,532,660 |
| Sales Tax Receipts, 5.00%, 12/01/44 | 8,420 | 8,802,352 |
| Sales Tax Receipts, 5.00%, 12/01/44 | 2,500 | 2,687,875 |

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City of Chicago Illinois Transit Authority, Refunding RB, Federal Transit Administration,
Section 5309 (AGM), 5.00%, 6/01/28

7,735

8,129,021

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BLACKROCK MUNIHOLDINGS INVESTMENT QUALITY FUND

MAY 31, 2015

Schedule of Investments (continued)

BlackRock MuniHoldings Investment Quality Fund (MFL)

(Percentages shown are based on Net Assets)

| | Par | |
|--|------------|--------------|
| | (000) | Value |
| Municipal Bonds | | |
| Illinois (concluded) | | |
| County of Cook Illinois Community College District No. 508, GO, City College of Chicago: | | |
| 5.50%, 12/01/38 | \$ 2,895 | \$ 3,252,069 |
| 5.25%, 12/01/43 | 6,305 | 6,920,872 |
| Illinois Finance Authority, RB: | | |
| Carle Foundation, Series A, 6.00%, 8/15/41 | 4,000 | 4,680,120 |
| University of Chicago, Series B, 5.50%, 7/01/18 (a) | 10,000 | 11,277,200 |
| Railsplitter Tobacco Settlement Authority, RB: | | |
| 5.50%, 6/01/23 | 4,365 | 5,072,130 |
| 6.00%, 6/01/28 | 1,245 | 1,469,785 |
| State of Illinois, GO: | | |
| 5.25%, 2/01/31 | 2,700 | 2,812,401 |
| 5.25%, 2/01/32 | 5,525 | 5,731,027 |
| 5.50%, 7/01/33 | 7,820 | 8,388,827 |
| 5.50%, 7/01/38 | 1,295 | 1,376,520 |
| 5.00%, 2/01/39 | 5,000 | 5,048,700 |
| | | 154,827,578 |
| Indiana 3.6% | | |
| Indiana Finance Authority, RB, Private Activity Bond, Ohio River Bridges, Series A, AMT, 5.00%, 7/01/40 | 1,240 | 1,303,922 |
| Indiana Municipal Power Agency, Refunding RB, Series A: | | |
| 5.25%, 1/01/32 | 1,500 | 1,717,575 |
| 5.25%, 1/01/33 | 1,500 | 1,716,435 |
| Indianapolis Local Public Improvement Bond Bank, Refunding RB, Waterworks Project, Series A (AGC), 5.50%, 1/01/38 | 14,105 | 15,931,597 |
| | | 20,669,529 |
| Louisiana 1.9% | | |
| City of New Orleans Louisiana Aviation Board, RB, Series B, AMT, 5.00%, 1/01/45 | 4,995 | 5,372,922 |
| City of New Orleans Louisiana Aviation Board, Refunding GARB, Restructuring (AGC): | | |
| Series A-1, 6.00%, 1/01/23 | 500 | 573,410 |
| Series A-2, 6.00%, 1/01/23 | 720 | 822,470 |
| | Par | |
| Municipal Bonds | | |
| Louisiana (concluded) | | |
| Tobacco Settlement Financing Corp., Refunding RB, Asset-Backed, Series A, 5.50%, 5/15/29 | \$ 3,735 | \$ 4,116,456 |
| | | 10,885,258 |
| Massachusetts 0.5% | | |
| Massachusetts Educational Financing Authority, RB, Education Loan, Issue I, AMT: | | |
| 5.00%, 1/01/26 | 820 | 906,764 |
| 5.00%, 1/01/27 | 2,000 | 2,196,360 |
| | | 3,103,124 |
| Michigan 3.6% | | |
| City of Detroit Michigan Water Supply System, RB, 2nd Lien, Series B (AGM), 6.25%, 7/01/36 | 6,320 | 6,891,012 |
| Hudsonville Public Schools, GO, School Building & Site (Q-SBLF), 5.25%, 5/01/41 | 6,015 | 6,583,538 |
| Royal Oak Hospital Finance Authority Michigan, Refunding RB, William Beaumont Hospital, Series V, 8.25%, 9/01/18 (a) | 5,780 | 7,090,095 |
| | | 20,564,645 |
| Minnesota 2.0% | | |
| City of Minneapolis Minnesota, Refunding RB, Fairview Health Services, Series B (AGC), 6.50%, 11/15/38 | 9,900 | 11,456,775 |

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Mississippi 2.8%

| | | |
|---|-------|-----------|
| Mississippi Development Bank, RB, Jackson Water & Sewer System Project (AGM): | | |
| 6.88%, 12/01/40 | 6,405 | 8,204,741 |
| Special Obligation, 6.75%, 12/01/31 | 3,775 | 4,876,771 |
| Special Obligation, 6.75%, 12/01/33 | 2,350 | 3,024,568 |

16,106,080

Nebraska 1.5%

| | | |
|---|-------|-----------|
| Omaha Public Power District, Refunding RB, Series A, 5.25%, 2/01/46 | 7,500 | 8,568,300 |
|---|-------|-----------|

Nevada 5.4%

| | | |
|---|--------|------------|
| County of Clark Nevada, ARB, Las Vegas-McCarran International Airport, Series A (AGM), 5.25%, 7/01/39 | 11,175 | 12,514,771 |
|---|--------|------------|

BLACKROCK MUNIHOLDINGS INVESTMENT QUALITY FUND

MAY 31, 2015

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Schedule of Investments (continued)

BlackRock MuniHoldings Investment Quality Fund (MFL)

(Percentages shown are based on Net Assets)

| | Par | |
|---|------------|---------------|
| | (000) | Value |
| Municipal Bonds | | |
| Nevada (concluded) | | |
| County of Clark Nevada, GO, Limited Tax, 5.00%, 6/01/38 | \$ 11,245 | \$ 12,277,966 |
| County of Clark Nevada Water Reclamation District, GO, Series A, 5.25%, 7/01/34 | 5,850 | 6,611,260 |
| | | 31,403,997 |
| New Jersey 7.3% | | |
| New Jersey EDA, RB: | | |
| School Facilities Construction (AGC), 6.00%, 12/15/18 (a) | 4,280 | 4,980,979 |
| School Facilities Construction (AGC), 6.00%, 12/15/34 | 70 | 80,273 |
| The Goethals Bridge Replacement Project, AMT, 5.38%, 1/01/43 | 7,000 | 7,619,220 |
| The Goethals Bridge Replacement Project, AMT (AGM), 5.00%, 1/01/31 | 2,425 | 2,686,124 |
| New Jersey Health Care Facilities Financing Authority, RB, Virtua Health, Series A (AGC), 5.50%, 7/01/38 | 6,500 | 7,205,250 |
| New Jersey Higher Education Student Assistance Authority, Refunding RB, Series 1, AMT, 5.75%, 12/01/28 | 4,475 | 4,913,147 |
| New Jersey Transportation Trust Fund Authority, RB, Transportation System: | | |
| Series A, 5.50%, 6/15/41 | 5,410 | 5,649,771 |
| Series AA, 5.50%, 6/15/39 | 8,175 | 8,636,724 |
| | | 41,771,488 |
| New York 8.0% | | |
| City of New York New York Municipal Water Finance Authority, Refunding RB: | | |
| 2nd General Resolution, Fiscal 2009, Series EE, 5.25%, 6/15/40 | 7,500 | 8,523,225 |
| Water & Sewer System, 2nd General Resolution, Series EE, 5.38%, 6/15/43 | 3,475 | 4,066,723 |
| Water & Sewer System, Series FF-2, 5.50%, 6/15/40 | 4,000 | 4,603,200 |
| City of New York New York Transitional Finance Authority, BARB, Fiscal 2009, Series S-4 (AGC), 5.50%, 1/15/29 | 4,000 | 4,560,680 |
| County of Nassau New York, GO, General Improvement, Series B, 5.00%, 4/01/35 (b) | 3,000 | 3,320,190 |
| | Par | |
| Municipal Bonds | | |
| New York (concluded) | | |
| Metropolitan Transportation Authority, RB: | | |
| Series A, 5.25%, 11/15/38 | \$ 4,000 | \$ 4,545,120 |
| Series A-1, 5.25%, 11/15/39 | 4,490 | 5,099,787 |
| Port Authority of New York & New Jersey, Refunding ARB, Consolidated, 166th Series, 5.25%, 7/15/36 | 10,000 | 11,222,900 |
| | | 45,941,825 |
| Ohio 1.5% | | |
| State of Ohio Turnpike Commission, RB, Junior Lien, Infrastructure Projects, Series A-1: | | |
| 5.25%, 2/15/31 | 5,145 | 5,905,894 |
| 5.25%, 2/15/32 | 2,250 | 2,571,143 |
| | | 8,477,037 |
| Pennsylvania 2.4% | | |
| Pennsylvania Economic Development Financing Authority, RB, AMT, Pennsylvania Bridges Finco LP: | | |
| 5.00%, 12/31/34 | 3,700 | 4,007,877 |
| 5.00%, 12/31/38 | 865 | 928,975 |
| Pennsylvania Turnpike Commission, RB, Sub-Series A, 6.00%, 12/01/16 (a) | 4,945 | 5,348,364 |
| Township of Bristol Pennsylvania School District, GO, 5.25%, 6/01/37 | 3,000 | 3,404,100 |
| | | 13,689,316 |
| South Carolina 4.7% | | |
| County of Charleston South Carolina, RB, Special Source, 5.25%, 12/01/38 | | |
| County of Charleston South Carolina Airport District, ARB, Series A, AMT: | 6,735 | 7,750,099 |

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| | | |
|---|-------|------------|
| 5.25%, 7/01/25 | 4,490 | 5,202,024 |
| 5.50%, 7/01/38 | 3,000 | 3,356,640 |
| 6.00%, 7/01/38 | 5,270 | 6,086,587 |
| 5.50%, 7/01/41 | 4,170 | 4,659,558 |
| | | 27,054,908 |
| Texas 16.8% | | |
| Central Texas Transportation Commission Turnpike System, Refunding RB, Series C, 5.00%, 8/15/42 | 4,000 | 4,261,560 |

Schedule of Investments (continued)

BlackRock MuniHoldings Investment Quality Fund (MFL)

(Percentages shown are based on Net Assets)

| | Par | |
|--|------------|--------------------|
| | (000) | Value |
| Municipal Bonds | | |
| Texas (concluded) | | |
| City of Beaumont Texas, GO, Certificates of Obligation, 5.25%, 3/01/37 | \$ 4,190 | \$ 4,757,116 |
| City of Houston Texas Utility System, Refunding RB, Combined 1st Lien, Series A (AGC): | | |
| 6.00%, 11/15/35 | 12,700 | 14,988,667 |
| 6.00%, 11/15/36 | 9,435 | 11,135,281 |
| 5.38%, 11/15/38 | 5,000 | 5,658,750 |
| County of Tarrant Texas Cultural Education Facilities Finance Corp., Refunding RB, Christus Health, Series A (AGC): | | |
| 6.50%, 1/01/19 (a) | 320 | 376,800 |
| 6.50%, 7/01/37 | 1,450 | 1,653,754 |
| Dallas Area Rapid Transit, Refunding RB, Senior Lien, 5.25%, 12/01/38 | 9,110 | 10,143,803 |
| Dallas-Fort Worth International Airport, ARB, Joint Improvement, AMT: | | |
| Series A, 5.00%, 11/01/38 | 5,580 | 5,885,561 |
| Series H, 5.00%, 11/01/37 | 4,575 | 4,879,741 |
| Lower Colorado River Authority, Refunding RB, 5.50%, 5/15/33 | 3,735 | 4,345,897 |
| North Texas Tollway Authority, Refunding RB, 1st Tier: | | |
| (AGM), 6.00%, 1/01/43 | 5,555 | 6,481,074 |
| Series K-1 (AGC), 5.75%, 1/01/38 | 12,150 | 13,702,041 |
| Red River Education Financing Corp., RB, Texas Christian University Project, 5.25%, 3/15/38 | 7,170 | 8,150,067 |
| | | 96,420,112 |
| Virginia 1.2% | | |
| City of Lexington Virginia IDA, RB, Washington & Lee University, 5.00%, 1/01/43 | 1,750 | 1,923,740 |
| Virginia Public School Authority, RB, Fluvanna County School Financing, 6.50%, 12/01/18 (a) | 4,300 | 5,084,621 |
| | | 7,008,361 |
| Washington 1.5% | | |
| City of Seattle Washington Municipal Light & Power, Refunding RB, Series A, 5.25%, 2/01/36 | 4,200 | 4,740,750 |
| | Par | |
| Municipal Bonds | | |
| Washington (concluded) | | |
| State of Washington, GO, Various Purposes, Series B, 5.25%, 2/01/36 | \$ 3,290 | \$ 3,778,828 |
| | | 8,519,578 |
| Total Municipal Bonds 130.3% | | 749,327,326 |
| Municipal Bonds Transferred to | | |
| Tender Option Bond Trusts (c) | | |
| California 2.0% | | |
| California State University, Refunding RB, Systemwide, Series A (AGM), 5.00%, 11/01/32 | 7,960 | 8,503,190 |
| Los Angeles Unified School District California, GO, Series I, 5.00%, 1/01/34 | 2,400 | 2,702,928 |
| | | 11,206,118 |
| District of Columbia 0.7% | | |
| District of Columbia Water & Sewer Authority, Refunding RB, Senior Lien, Series A, 6.00%, 10/01/18 (a)(d) | 3,378 | 3,913,544 |
| Florida 2.2% | | |
| County of Hillsborough Florida Aviation Authority, ARB, Tampa International Airport, Series A, AMT (AGC), 5.50%, 10/01/38 | 10,657 | 11,791,250 |
| County of Lee Florida Housing Finance Authority, RB, S/F Housing, Multi-County Program, Series A-2, AMT (Ginnie Mae), 6.00%, 9/01/40 | 1,116 | 1,134,910 |
| | | 12,926,160 |

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| | | |
|--|-------|------------|
| Indiana 1.8% | | |
| Indiana Health & Educational Facilities Financing Authority, Refunding RB, St. Francis, Series E (AGM), 5.25%, 5/15/41 | 9,850 | 10,488,182 |
| Kentucky 0.1% | | |
| Kentucky State Property & Building Commission, Refunding RB, Project No. 93 (AGC), 5.25%, 2/01/27 | 404 | 456,790 |
| Nevada 2.6% | | |
| County of Clark Nevada Water Reclamation District, GO: Limited Tax, 6.00%, 7/01/38 | 8,000 | 9,115,200 |

BLACKROCK MUNIHOLDINGS INVESTMENT QUALITY FUND

MAY 31, 2015

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Schedule of Investments (continued)

BlackRock MuniHoldings Investment Quality Fund (MFL)

(Percentages shown are based on Net Assets)

| Municipal Bonds Transferred to | Par | |
|---|---------------|---------------|
| Tender Option Bond Trusts (c) | (000) | Value |
| Nevada (concluded) | | |
| County of Clark Nevada Water Reclamation District, GO (concluded): Series B, 5.50%, 7/01/29 | \$ 5,008 | \$ 5,771,191 |
| | | 14,886,391 |
| New Jersey 3.4% | | |
| New Jersey Housing & Mortgage Finance Agency, RB, S/F Housing, Series CC, 5.25%, 10/01/29 | 7,402 | 7,814,111 |
| New Jersey Transportation Trust Fund Authority, RB, Transportation System: Series A (AMBAC), 5.00%, 12/15/32 | 8,000 | 8,674,480 |
| Series B, 5.25%, 6/15/36 (d) | 2,961 | 3,032,907 |
| | | 19,521,498 |
| New York 11.0% | | |
| City of New York New York Municipal Water Finance Authority, Refunding RB, Water & Sewer System, 2nd General Resolution, Series FF-2, 5.50%, 6/15/40 | 4,994 | 5,747,462 |
| City of New York New York Transitional Finance Authority, BARB, Fiscal 2009, Series S-3, 5.25%, 1/15/39 | 5,619 | 6,258,248 |
| Hudson Yards Infrastructure Corp., RB, Fiscal 2012, Series A, 5.75%, 2/15/47 (d) | 9,249 | 10,558,385 |
| New York Liberty Development Corp., RB, 1 World Trade Center Port Authority Consolidated Bonds, 5.25%, 12/15/43 | 13,950 | 15,917,926 |
| New York Liberty Development Corp., Refunding RB, 4 World Trade Center Project, 5.75%, 11/15/51 (d) | 8,200 | 9,458,208 |
| Municipal Bonds Transferred to | | |
| Tender Option Bond Trusts (c) | | |
| New York (concluded) | | |
| New York State Dormitory Authority, ERB, Personal Income Tax, Series B, 5.25%, 3/15/38 | \$ 13,500 | \$ 15,193,035 |
| | | 63,133,264 |
| Texas 4.3% | | |
| City of San Antonio Texas Public Service Board, Refunding RB, Series A, 5.25%, 2/01/31 (d) | 12,027 | 13,524,278 |
| North Texas Tollway Authority, RB, Special Projects System, Series A, 5.50%, 9/01/41 | 9,640 | 11,280,632 |
| | | 24,804,910 |
| Utah 1.2% | | |
| City of Riverton Utah, RB, IHC Health Services, Inc., 5.00%, 8/15/41 | 6,371 | 6,955,820 |
| Total Municipal Bonds Transferred to | | |
| Tender Option Bond Trusts 29.3% | | 168,292,677 |
| Total Long-Term Investments | | |
| (Cost \$834,973,086) 159.6% | | 917,620,003 |
| Short-Term Securities | | |
| | Shares | |
| FFI Institutional Tax-Exempt Fund, 0.02% (e)(f) | 13,809,281 | 13,809,281 |
| Total Short-Term Securities | | |
| (Cost \$13,809,281) 2.4% | | 13,809,281 |
| Total Investments (Cost \$848,782,367*) 162.0% | | 931,429,284 |
| Other Assets Less Liabilities 0.7% | | 3,802,140 |
| Liability for TOB Trust Certificates, Including Interest | | |
| Expense and Fees Payable (14.9%) | | (85,655,253) |
| VRDP Shares, at Liquidation Value (47.8%) | | (274,600,000) |

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| | | |
|--|--------|----------------|
| Net Assets Applicable to Common Shares | 100.0% | \$ 574,976,171 |
|--|--------|----------------|

* As of May 31, 2015, gross unrealized appreciation and depreciation based on cost for federal income tax purposes were as follows:

| | |
|-------------------------------|----------------|
| Tax cost | \$ 764,420,892 |
| Gross unrealized appreciation | \$ 83,470,808 |
| Gross unrealized depreciation | (2,088,663) |
| Net unrealized appreciation | \$ 81,382,145 |

Notes to Schedule of Investments

- (a) U.S. Government securities, held in escrow, are used to pay interest on this security, as well as to retire the bond in full at the date indicated, typically at a premium to par.

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Schedule of Investments (continued)

BlackRock MuniHoldings Investment Quality Fund (MFL)

(b) When-issued security. Unsettled when-issued transactions were as follows:

| Counterparty | Value | Unrealized Appreciation |
|--------------------------|--------------|-------------------------|
| JP Morgan Clearing Corp. | \$ 3,320,190 | \$ 54,780 |

(c) Represent bonds transferred to a TOB Trust in exchange of cash and residual interest certificates received by the Trust. These bonds serve as collateral in a secured borrowing.

(d) All or a portion of security is subject to a recourse agreement, which may require the Trust to pay the liquidity provider in the event there is a shortfall between the TOB Trust Certificates and proceeds received from the sale of the security contributed to the TOB Trust or in the event of a default on the security. In the case of a shortfall or default, the aggregate maximum potential amount the Trust could ultimately be required to pay under the agreements, which expire from October 1, 2016 to November 15, 2019 is \$22,519,117.

(e) During the period ended May 31, 2015, investments in issuers considered to be an affiliate of the Trust for purposes of Section 2(a)(3) of the Investment Company Act 1940, as amended, were as follows:

| Affiliate | Shares Held | | | |
|-----------------------------------|--------------------------------|--------------|-----------------|----------|
| | Shares Held at August 31, 2014 | Net Activity | at May 31, 2015 | Income |
| FFI Institutional Tax-Exempt Fund | 6,198,367 | 7,610,914 | 13,809,281 | \$ 2,244 |

(f) Represents the current yield as of report date.

Portfolio Abbreviations

| | |
|---------------|---|
| AGC | Assured Guarantee Corp. |
| AGM | Assured Guaranty Municipal Corp. |
| AMBAC | American Municipal Bond Assurance Corp. |
| AMT | Alternative Minimum Tax (subject to) |
| ARB | Airport Revenue Bonds |
| BARB | Building Aid Revenue Bonds |
| COP | Certificates of Participation |
| EDA | Economic Development Authority |
| ERB | Education Revenue Bonds |
| GARB | General Airport Revenue Bonds |
| GO | General Obligation Bonds |
| IDA | Industrial Development Authority |
| IDB | Industrial Development Board |
| LRB | Lease Revenue Bonds |
| NPFGC | National Public Finance Guarantee Corp. |
| Q-SBLF | Qualified School Bond Loan Fund |
| RB | Revenue Bonds |
| S/F | Single-Family |

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As of May 31, 2015, financial futures contracts outstanding were as follows:

| Contracts Short | Issue | Exchange | Expiration | Notional Value | Unrealized Depreciation |
|----------------------------|----------------------------|------------------------|-------------------|---------------------------|------------------------------------|
| (429) | 10-Year U.S. Treasury Note | Chicago Board of Trade | September 2015 | \$ 54,777,938 | \$ (174,903) |

BLACKROCK MUNIHOLDINGS INVESTMENT QUALITY FUND

MAY 31, 2015

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Schedule of Investments (concluded)

BlackRock MuniHoldings Investment Quality Fund (MFL)

Fair Value Measurements Various inputs are used in determining the fair value of investments and derivative financial instruments. These inputs to valuation techniques are categorized into a disclosure hierarchy consisting of three broad levels for financial reporting purposes. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1 measurements) and the lowest priority to unobservable inputs (Level 3 measurements). Accordingly, the degree of judgment exercised in determining fair value is greatest for instruments categorized in Level 3. The inputs used to measure fair value may fall into different levels of the fair value hierarchy. In such cases, for disclosure purposes, the fair value hierarchy classification is determined based on the lowest level input that is significant to the fair value measurement in its entirety. The categorization of a value determined for investments and derivative financial instruments is based on the pricing transparency of the investment and derivative financial instrument and is not necessarily an indication of the risks associated with investing in those securities. The three levels of the fair value hierarchy are as follows:

Level 1 unadjusted quoted prices in active markets/exchanges for identical assets or liabilities that the Trust has the ability to access

Level 2 other observable inputs (including, but not limited to, quoted prices for similar assets or liabilities in markets that are active, quoted prices for identical or similar assets or liabilities in markets that are not active, inputs other than quoted prices that are observable for the assets or liabilities (such as interest rates, yield curves, volatilities, prepayment speeds, loss severities, credit risks and default rates) or other market-corroborated inputs)

Level 3 unobservable inputs based on the best information available in the circumstances, to the extent observable inputs are not available (including the Trust's own assumptions used in determining the fair value of investments and derivative financial instruments)

Changes in valuation techniques may result in transfers into or out of an assigned level within the disclosure hierarchy. In accordance with the Trust's policy, transfers between different levels of the fair value disclosure hierarchy are deemed to have occurred as of the beginning of the reporting period. For information about the Trust's policy regarding valuation of investments and derivative financial instruments, refer to the Trust's most recent financial statements as contained in its semi-annual report.

As of May 31, 2015, the following tables summarize the Trust's investments and derivative financial instruments categorized in the disclosure hierarchy:

| | Level 1 | Level 2 | Level 3 | Total |
|------------------------------------|---------------|----------------|---------|----------------|
| Assets: | | | | |
| Investments: | | | | |
| Long-Term Investments ¹ | | \$ 917,620,003 | | \$ 917,620,003 |
| Short-Term Securities | \$ 13,809,281 | | | 13,809,281 |
| Total | \$ 13,809,281 | \$ 917,620,003 | | \$ 931,429,284 |

¹ See above Schedule of Investments for values in each state or political subdivision.

| | Level 1 | Level 2 | Level 3 | Total |
|---|--------------|---------|---------|--------------|
| Derivative Financial Instruments² | | | | |
| Liabilities: | | | | |
| Interest rate contracts | \$ (174,903) | | | \$ (174,903) |

² Derivative financial instruments are financial futures contracts, which are valued at the unrealized appreciation (depreciation) on the instrument.

The Trust may hold assets and/or liabilities in which the fair value approximates the carrying amount for financial reporting purposes. As of May 31, 2015, such assets and/or liabilities are categorized within the disclosure hierarchy as follows:

| | Level 1 | Level 2 | Level 3 | Total |
|--|------------|------------------|---------|------------------|
| Assets: | | | | |
| Cash pledged for financial futures contracts | \$ 579,150 | | | \$ 579,150 |
| Liabilities: | | | | |
| TOB Trust Certificates | | \$ (85,626,247) | | (85,626,247) |
| VRDP Shares | | (274,600,000) | | (274,600,000) |
| Total | \$ 579,150 | \$ (360,226,247) | | \$ (359,647,097) |

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During the period ended May 31, 2015, there were no transfers between levels.

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BLACKROCK MUNIHOLDINGS INVESTMENT QUALITY FUND

MAY 31, 2015

Item 2 Controls and Procedures

- 2(a) The registrant's principal executive and principal financial officers, or persons performing similar functions, have concluded that the registrant's disclosure controls and procedures (as defined in Rule 30a-3(c) under the Investment Company Act of 1940, as amended (the "1940 Act")) are effective as of a date within 90 days of the filing of this report based on the evaluation of these controls and procedures required by Rule 30a-3(b) under the 1940 Act and Rule 13a-15(b) under the Securities Exchange Act of 1934, as amended.
- 2(b) There were no changes in the registrant's internal control over financial reporting (as defined in Rule 30a-3(d) under the 1940 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

Certifications Attached hereto

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.

BlackRock MuniHoldings Investment Quality Fund

By: /s/ John M. Perlowski
John M. Perlowski
Chief Executive Officer (principal executive officer) of
BlackRock MuniHoldings Investment Quality Fund

Date: July 23, 2015

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/ John M. Perlowski
John M. Perlowski
Chief Executive Officer (principal executive officer) of
BlackRock MuniHoldings Investment Quality Fund

Date: July 23, 2015

By: /s/ Neal J. Andrews
Neal J. Andrews
Chief Financial Officer (principal financial officer) of
BlackRock MuniHoldings Investment Quality Fund

Date: July 23, 2015