

PIONEER MUNICIPAL HIGH INCOME ADVANTAGE TRUST

Form NSAR-A

November 28, 2008

PAGE 1  
000 A000000 09/30/2008  
000 C000000 1258943  
000 D000000 N  
000 E000000 NF  
000 F000000 Y  
000 G000000 N  
000 H000000 N  
000 I000000 6.1  
000 J000000 A  
001 A000000 PIONEER MUNICIPAL HIGH INCOME ADVANTAGE TRUST  
001 B000000 811-21409  
001 C000000 6177427825  
002 A000000 60 STATE STREET  
002 B000000 BOSTON  
002 C000000 MA  
002 D010000 02109  
003 000000 N  
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007 A000000 N  
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007 C010600 6  
007 C010700 7  
007 C010800 8  
007 C010900 9  
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008 A000001 PIONEER INVESTMENT MANAGEMENT, INC.  
008 B000001 A  
008 C000001 801-8255  
008 D010001 BOSTON  
008 D020001 MA  
008 D030001 02109  
010 A000001 PIONEER INVESTMENT MANAGEMENT, INC.  
010 B000001 801-8255  
010 C010001 BOSTON  
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010 A000002 PRINCETON ADMINISTRATORS, LLC  
010 C010002 PRINCETON  
010 C020002 NJ  
010 C030002 08543  
010 C040002 9095  
011 A000001 PIONEER FUNDS DISTRIBUTOR, INC.  
011 B000001 8-12345678  
011 C010001 BOSTON  
PAGE 2  
011 C020001 MA  
011 C030001 02109  
011 C040001 1820  
011 A000002 UBS INVESTMENT BANK  
011 B000002 8-022651  
011 C010002 STAMFORD

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011 C020002 CT  
011 C030002 06901  
011 A000003 RBC CAPITAL MARKETS CORP.  
011 B000003 8-045411  
011 C010003 MINNEAPOLIS  
011 C020003 MN  
011 C030003 55402  
011 C040003 4422  
011 A000004 MERRILL LYNCH & CO.  
011 B000004 8-7221  
011 C010004 NEW YORK  
011 C020004 NY  
011 C030004 10281  
011 C040004 1201  
011 A000005 JANNEY MONTGOMERY SCOTT, LLC  
011 B000005 8-462  
011 C010005 PHILADELPHIA  
011 C020005 PA  
011 C030005 19103  
011 C040005 1675  
011 A000006 WACHOVIA CAPITAL MARKETS, LLC  
011 B000006 8-99999  
011 C010006 RICHMOND  
011 C020006 VA  
011 C030006 23219  
012 A000001 PIONEER INVEST. MGMT. SHAREHOLDER SERVICES  
012 B000001 85-01359  
012 C010001 BOSTON  
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012 A000002 AMERICAN STOCK TRANSFER & TRUST CO.  
012 B000002 85-00000  
012 C010002 BROOKLYN  
012 C020002 NY  
012 C030002 11219  
012 A000003 DEUTSCHE BANK TRUST COMPANY AMERICAS (PREF.)  
012 B000003 85-00000  
012 C010003 NEW YORK CITY  
012 C020003 NY  
012 C030003 10005  
013 A000001 ERNST & YOUNG, LLP  
013 B010001 BOSTON  
013 B020001 MA  
013 B030001 02116  
013 B040001 5072  
PAGE 3  
015 A000001 BROWN BROTHERS HARRIMAN & CO.  
015 B000001 C  
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020 C000007 0  
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 022 A000001 BLACKROCK INVESTMENTS, INC.  
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 022 A000002 LEHMAN BROTHERS, INC.  
 022 B000002 13-2518466  
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 022 A000003 FIRST TRYON SECURITIES, LLC  
 022 B000003 56-1986792  
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 022 A000004 B.C. ZIEGLER AND CO.  
 022 B000004 39-0727640  
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 022 A000005 PIPER JAFFRAY & CO.  
 022 B000005 41-0953246  
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 022 A000006 CITIGROUP GLOBAL MARKETS, INC.  
 022 B000006 11-2418191  
 022 C000006 5741  
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 022 A000007 BB&T INVESTMENTS SERVICES, INC.  
 022 C000007 3262  
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 022 A000008 RAYMOND JAMES & ASSOCIATES, INC.  
 022 B000008 59-1237041  
 022 C000008 0  
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 PAGE 4  
 022 A000009 RBC CAPITAL MARKETS CORP.  
 022 B000009 13-5033225  
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 022 A000010 FIFTH THIRD SECURITIES, INC.  
 022 B000010 31-0961761  
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 026 H000000 N  
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| 054 | K000000 | N     |   |
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| 062 | K000000 | 0.0   |   |

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| 070 | D010000 | N      |
| 070 | D020000 | N      |
| 070 | E010000 | Y      |
| 070 | E020000 | N      |
| 070 | F010000 | N      |
| 070 | F020000 | N      |
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| 070 | G020000 | N      |
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| 070 | H020000 | N      |
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| 070 | K010000 | Y      |
| 070 | K020000 | Y      |
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| 072 E000000 | 0    |
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| 072 I000000 | 213  |

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|             |       |
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| 072 T000000 | 0     |
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| 072 Y000000 | 0     |
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| 072BB000000 | 6283  |
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| 074 R020000 | 0      |
| 074 R030000 | 0      |
| 074 R040000 | 1347   |
| 074 S000000 | 150068 |
| 074 T000000 | 262770 |

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|             |       |
|-------------|-------|
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| 074 U020000 | 0     |
| 074 V010000 | 11.50 |
| 074 V020000 | 0.00  |

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|           |                    |                            |
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| 074       | W000000            | 0.0000                     |
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| 074       | Y000000            | 0                          |
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| 080       | A000000            | ICI MUTUAL INSURANCE CO.   |
| 080       | C000000            | 45000                      |
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| 081       | B000000            | 77                         |
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| 085       | B000000            | N                          |
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| 086       | B020000            | 0                          |
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| 087       | A030000            | MAV                        |
| 087       | B010000            | PREFERRED STOCK - SERIES A |
| 087       | B020000            | 723762209                  |
| 087       | C010000            | PREFERRED STOCK - SERIES B |
| 087       | C020000            | 723762308                  |
| 088       | A000000            | N                          |
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| 088       | C000000            | N                          |
| 088       | D000000            | Y                          |
| SIGNATURE | MARY KELLERMANN    |                            |
| TITLE     | ACCOUNTING MANAGER |                            |