AN ANALYSIS OF THE COST OF CAPITAL

FOR

MISSOURI GAS ENERGY

CASE NO. GR-2004-0209

SCHEDULES

ΒY

DAVID MURRAY

UTILITY SERVICES DIVISION

MISSOURI PUBLIC SERVICE COMMISSION

**APRIL 2004** 

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#### Federal Reserve Discount Rate Changes

Dete	Discount	Federal Reserve
Date 05/20/85	Rate 7.50%	Rate
03/07/86	7.00%	
04/21/86	6.50%	
07/11/86	6.00%	
08/21/86	5.50%	
09/04/87	6.00%	
08/09/88	6.50%	
02/24/89 07/13/90	7.00%	8.00%
10/29/90		7.75%
11/13/90		7.50%
12/07/90		7.25%
12/18/90	0.50%	7.00%
12/19/90	6.50%	0.75%
01/09/91	0.000/	6.75%
02/01/91	6.00%	6.25%
03/08/91		6.00%
04/30/91	5.50%	5.75%
08/06/91		5.50%
09/13/91	5.00%	5.25%
10/31/91		5.00%
11/06/91	4.50%	4.75%
12/06/91		4.50%
12/20/91	3.50%	4.00%
04/09/92		3.75%
07/02/92	3.00%	3.25%
09/04/92		3.00%
01/01/93		
12/31/93	No Changes	No Changes
02/04/94		3.25%
03/22/94		3.50%
04/18/94		3.75%
05/17/94	3.50%	4.25%
08/16/94	4.00%	4.75%
11/15/94	4.75%	5.50%
02/01/95	5.25%	6.00%
	5.25%	
07/06/95		5.75%
12/19/95	E 00%	5.50%
01/31/96	5.00%	5.25%
03/25/97	5.00%	5.50%
12/12/97	5.00%	
01/09/98	5.00%	
03/06/98	5.00%	
09/29/98		5.25%
10/15/98	4.75%	5.00%
11/17/98	4.50%	4.75%
06/30/99	4.50%	5.00%
08/24/99	4.75%	5.25%
11/16/99	5.00%	5.50%
02/02/00	5.25%	5.75%
03/21/00	5.50%	6.00%
05/16/00	5.50%	6.50%
05/19/00	6.00%	
	5.75%	6.00%
01/03/01		
01/03/01 01/04/01	5.50%	
	5.50% 5.00%	5.50%
01/04/01		
01/04/01 01/31/01	5.00%	5.00%
01/04/01 01/31/01 03/20/01 04/18/01	5.00% 4.50% 4.00%	5.00% 4.50%
01/04/01 01/31/01 03/20/01 04/18/01 05/15/01	5.00% 4.50% 4.00% 3.50%	5.00% 4.50% 4.00%
01/04/01 01/31/01 03/20/01 04/18/01 05/15/01 06/27/01	5.00% 4.50% 4.00% 3.50% 3.25%	5.00% 4.50% 4.00% 3.75%
01/04/01 01/31/01 03/20/01 04/18/01 05/15/01 06/27/01 08/21/01	5.00% 4.50% 4.00% 3.50% 3.25% 3.00%	5.00% 4.50% 4.00% 3.75% 3.50%
01/04/01 01/31/01 03/20/01 04/18/01 05/15/01 06/27/01 08/21/01 09/17/01	5.00% 4.50% 4.00% 3.50% 3.25% 3.00% 2.50%	5.00% 4.50% 4.00% 3.75% 3.50% 3.00%
01/04/01 01/31/01 03/20/01 04/18/01 05/15/01 06/27/01 08/21/01 09/17/01 10/02/01	5.00% 4.50% 4.00% 3.50% 3.25% 3.00% 2.50% 2.00%	5.00% 4.50% 4.00% 3.75% 3.50% 3.00% 2.50%
01/04/01 01/31/01 03/20/01 04/18/01 05/15/01 06/27/01 08/21/01 09/17/01 10/02/01 11/06/01	5.00% 4.50% 4.00% 3.50% 3.25% 3.00% 2.50% 2.00% 1.50%	5.00% 4.50% 4.00% 3.75% 3.50% 3.00% 2.50% 2.00%
01/04/01 01/31/01 03/20/01 04/18/01 05/15/01 06/27/01 08/21/01 09/17/01 10/02/01 11/06/01 12/11/01	5.00% 4.50% 4.00% 3.50% 3.25% 3.00% 2.50% 2.00% 1.50% 1.25%	5.00% 4.50% 4.00% 3.75% 3.50% 3.00% 2.50% 2.00%
01/04/01 01/31/01 03/20/01 04/18/01 05/15/01 06/27/01 08/21/01 09/17/01 10/02/01 11/06/01 12/11/01 01/11/02	5.00% 4.50% 4.00% 3.50% 3.25% 3.00% 2.50% 2.00% 1.50% 1.25% 1.25%	5.00% 4.50% 4.00% 3.75% 3.50% 3.00% 2.50% 2.00%
01/04/01 01/31/01 03/20/01 04/18/01 05/15/01 06/27/01 08/21/01 09/17/01 10/02/01 11/06/01 12/11/01	5.00% 4.50% 4.00% 3.50% 3.25% 3.00% 2.50% 2.00% 1.50% 1.25%	5.50% 5.00% 4.50% 4.00% 3.75% 3.50% 3.00% 2.50% 2.00% 1.75% 1.25%

\* Began tracking the Federal Funds Rate.

Sources: Federal Reserve Bank of New York: http://www.ny.frb.org/pihome/statistics/dlyrates/fedrate.html Historical Changes of the Fed Fund and Discount Rate - Statistics - Federal Reserve Bank of New York



# **Average Prime Interest Rates**

Mo/Year	Rate (%)						
Jan 1988	8.75	Jan 1992	6.50	Jan 1996	8.50	Jan 2000	8.50
Feb	8.51	Feb	6.50	Feb	8.25	Feb	8.73
Mar	8.50	Mar	6.50	Mar	8.25	Mar	8.83
Apr	8.50	Apr	6.50	Apr	8.25	Apr	9.00
Мау	8.84	May	6.50	May	8.25	Мау	9.24
Jun	9.00	Jun	6.50	Jun	8.25	Jun	9.50
Jul	9.29	Jul	6.02	Jul	8.25	Jul	9.50
Aug	9.84	Aug	6.00	Aug	8.25	Aug	9.50
Sep	10.00	Sep	6.00	Sep	8.25	Sep	9.50
Oct	10.00	Oct	6.00	Oct	8.25	Oct	9.50
Nov	10.05	Nov	6.00	Nov	8.25	Nov	9.50
Dec	10.50	Dec	6.00	Dec	8.25	Dec	9.50
Jan 1989	10.50	Jan 1993	6.00	Jan 1997	8.26	Jan 2001	9.05
Feb	10.93	Feb	6.00	Feb	8.25	Feb	8.50
Mar	11.50	Mar	6.00	Mar	8.30	Mar	8.32
Apr	11.50	Apr	6.00	Apr	8.50	Apr	7.80
Мау	11.50	May	6.00	May	8.50	Мау	7.24
Jun	11.07	Jun	6.00	Jun	8.50	Jun	6.98
Jul	10.98	Jul	6.00	Jul	8.50	Jul	6.75
Aug	10.50	Aug	6.00	Aug	8.50	Aug	6.67
Sep	10.50	Sep	6.00	Sep	8.50	Sep	6.28
Oct	10.50	Oct	6.00	Oct	8.50	Oct	5.53
Nov	10.50	Nov	6.00	Nov	8.50	Nov	5.10
Dec	10.50	Dec	6.00	Dec	8.50	Dec	4.84
Jan 1990	10.11	Jan 1994	6.00	Jan 1998	8.50	Jan 2002	4.75
Feb	10.00	Feb	6.00	Feb	8.50	Feb	4.75
Mar	10.00	Mar	6.06	Mar	8.50	Mar	4.75
Apr	10.00	Apr	6.45	Apr	8.50	Apr	4.75
May	10.00	May	6.99	May	8.50	May	4.75
Jun	10.00	Jun	7.25	Jun	8.50	Jun	4.75
Jul	10.00	Jul	7.25	Jul	8.50	Jul	4.75
Aug	10.00	Aug	7.51	Aug	8.50	Aug	4.75
Sep	10.00	Sep	7.75	Sep	8.49	Sep	4.75
Oct	10.00	Oct	7.75	Oct	8.12	Oct	4.75
Nov	10.00	Nov	8.15	Nov	7.89	Nov	4.35
Dec	10.00	Dec	8.50	Dec	7.75	Dec	4.25
Jan 1991	9.52	Jan 1995	8.50	Jan 1999	7.75	Jan 2003	4.25
Feb	9.05	Feb	9.00	Feb	7.75	Feb	4.25
Mar	9.00	Mar	9.00	Mar	7.75	Mar	4.25
Apr	9.00	Apr	9.00	Apr	7.75	Apr	4.25
May	8.50	May	9.00	May	7.75	May	4.25
Jun	8.50	Jun	9.00	Jun	7.75	Jun	4.22
Jul	8.50	Jul	8.80	Jul	8.00	Jul	4.00
Aug	8.50	Aug	8.75	Aug	8.06	Aug	4.00
Sep	8.20	Sep	8.75	Sep	8.25	Sep	4.00
Oct	8.00	Oct	8.75	Oct	8.25	Oct	4.00
Nov	7.58	Nov	8.75	Nov	8.37	Nov	4.00
Dec	7.21	Dec	8.65	Dec	8.50	Dec	4.00

Sources: Federal Reserve, http://www.stls.frb.org/fred/data/irates/mprime



# **SCHEDULE 3-2**

# **Rate of Inflation**

Jan 1988         4.00         Jan 1992         2.60         Jan 1996         2.70         Jan 2000         2.70           Feb         3.90         Feb         2.80         Feb         2.70         Feb         3.20           Mar         3.90         Mar         3.20         Apr         2.90         Mar         3.00           May         3.90         May         3.00         May         2.90         May         3.00           Jun         4.00         Jun         3.10         Jun         2.80         May         3.00           Jul         4.10         Jul         3.20         Jul         3.00         Jul         3.70           Jul         4.10         Jul         3.20         Jul         3.00         Sep         3.00         Jan 1993         3.00         Jan 1997         3.00         Jan 2001         3.70           Jan 1989         4.70         Jan 1993         3.20         Apr         2.80         Mar         2.90	Mo/Year	Rate (%)						
Mar         3.90         Mar         3.20         Mar         2.80         Mar         3.70           Apr         3.90         Apr         3.20         Apr         2.80         May         3.00           May         3.90         May         3.00         May         3.20           Jun         4.00         Jun         3.10         Jun         2.80         May         3.20           Jul         4.10         Jul         3.20         Jul         3.00         Jul         3.70           Jul         4.10         Jul         3.20         Jul         3.00         Sep         3.00         Sep         3.00         Sep         3.00         Sep         3.00         Nov         3.30         Nov         3.40           Nov         4.20         Nov         3.30         Nov         3.30         Nov         3.40           Jan 1989         4.70         Jan 1993         3.30         Jan 1997         3.00         Jan 2001         3.70           Apr         5.00         Mar         3.10         Mar         2.80         Mar         2.80           Jan 1989         5.00         Mar         3.20         Jul	Jan 1988	4.00		2.60		2.70		2.70
Apr3.90Apr3.20Apr2.90Apr3.00May3.90May3.00May2.90May3.20Jun4.00Jun3.10Jun2.80Jun3.70Jul4.10Jul3.20Jul3.00Jul3.70Jug4.00Aug3.10Aug2.90Aug3.40Sep4.20Sep3.00Sep3.00Sep3.50Oct4.20Oct3.20Oct3.00Nov3.40Dec4.40Dec2.90Dec3.30Jan 19873.00Jan 20013.70Feb4.80Feb3.20Feb3.00Jan 20013.70Feb4.80Feb3.20Apr2.50Apr3.30Mar5.00Mar3.10Mar2.80May3.20Jun5.20Jun3.20Apr2.50Apr3.30Jun5.20Jun3.00Jun2.30Jun3.20Jul5.00Jun2.80Jul2.20Jul2.70Sep2.70Sep2.20Aug2.70Sep4.70Aug2.80Aug2.20AugJul5.00Jun2.80Jun2.10Oct2.10Oct4.60Dec2.70Dec1.70Dec1.60Jun5.00Jan 19942.50Jan 1998 <td>Feb</td> <td>3.90</td> <td>Feb</td> <td>2.80</td> <td>Feb</td> <td>2.70</td> <td>Feb</td> <td>3.20</td>	Feb	3.90	Feb	2.80	Feb	2.70	Feb	3.20
May         3.90         May         3.00         May         2.90         May         3.20           Jun         4.00         Jun         3.10         Jun         2.80         Jun         3.70           Aug         4.00         Aug         3.10         Aug         2.90         Aug         3.40           Sep         4.20         Sep         3.00         Sep         3.00         Oct         3.40           Sep         4.20         Oct         3.20         Oct         3.00         Nov         3.40           Dec         4.40         Dec         2.90         Dec         3.30         Nav         3.40           Jan 1989         4.70         Jan 1993         3.30         Jan 1997         3.00         Jan 2001         3.70           Feb         4.80         Feb         3.20         Feb         3.00         Feb         3.00           Jun         5.00         Mar         3.10         Mar         2.80         Apr         2.50         Apr         3.00           Jun         5.00         Jun         3.00         Jun         2.20         May         3.60           Jun         5.00         Jun <td>Mar</td> <td>3.90</td> <td>Mar</td> <td>3.20</td> <td>Mar</td> <td>2.80</td> <td>Mar</td> <td>3.70</td>	Mar	3.90	Mar	3.20	Mar	2.80	Mar	3.70
Jun         4.00         Jun         3.10         Jun         2.80         Jun         3.70           Jul         4.10         Jul         3.20         Jul         3.00         Jul         3.70           Aug         4.00         Aug         3.10         Aug         2.90         Aug         3.40           Sep         4.20         Sep         3.00         Sep         3.00         Sep         3.00           Nov         4.20         Nov         3.00         Nov         3.00         Nov         3.00           Dec         4.40         Dec         2.90         Dec         3.30         Jan 1987         3.00         Jan 2001         3.70           Feb         4.80         Feb         3.20         Per         3.00         Mar         2.90           Apr         5.10         Apr         3.20         Apr         2.50         Apr         3.30           Jul         5.00         Jul         2.80         Jul         2.20         Mar         3.00           Jur         5.00         Jul         2.80         Aug         2.20         Aug         2.70           Aug         4.70         Aug	Apr	3.90	Apr	3.20	Apr	2.90	Apr	3.00
Jul4.10Jul3.20Jul3.00Jul3.70Aug4.00Aug3.10Aug2.90Aug3.40Sep4.20Sep3.00Sep3.00Sep3.50Oct4.20Oct3.20Oct3.00Nov3.40Nov4.20Nov3.00Nov3.00Dec3.40Jan 19894.70Jan 19933.30Jan 19973.00Jan 20013.70Feb4.80Feb3.20Feb3.00Mar2.90Apr5.10Apr3.20Apr2.50Apr3.30May5.40May3.20May2.20May3.60Jul5.00Jul2.80Jul2.20Jul2.70Aug4.70Aug2.80Jul2.20Jul2.70Sep4.30Sep2.70Sep2.20Aug2.70Sep4.70Aug2.80Aug2.20Aug2.70Sep4.70Aug2.80Aug2.20Aug2.70Sep4.70Aug2.70Sep2.20Sep2.60Jan 19975.20Jan 19942.50Jan 19943.80Jul2.70Aug4.70Aug2.70Sep2.20Aug2.70Sep4.70Aug2.70Sep1.60Jan 19943.70Jan 19975.20 <t< td=""><td>Мау</td><td>3.90</td><td>May</td><td>3.00</td><td>May</td><td>2.90</td><td>May</td><td>3.20</td></t<>	Мау	3.90	May	3.00	May	2.90	May	3.20
Aug         4.00         Aug         3.10         Aug         2.90         Aug         3.40           Sep         4.20         Sep         3.00         Sep         3.00         Sep         3.50           Oct         4.20         Oct         3.00         Nov         3.30         Nov         3.40           Nov         4.20         Nov         3.00         Nov         3.30         Jan 1987         3.00         Jan 2001         3.70           Feb         4.80         Feb         3.20         Feb         3.00         Jan 2001         3.70           Feb         4.80         Feb         3.20         Apr         2.80         Mar         2.90           Ayr         5.10         Apr         3.20         May         2.20         May         3.60           Jun         5.00         Jun         3.00         Jun         2.30         Jun         3.20           Jun         5.00         Jun         2.80         Aug         2.20         May         3.20           Jun         5.00         Jun         2.80         Aug         2.20         Aug         2.70           Sep         4.30         Sep	Jun	4.00	Jun	3.10	Jun	2.80	Jun	3.70
Sep         4.20         Sep         3.00         Sep         3.00         Sep         3.50           Oct         4.20         Oct         3.20         Oct         3.00         Nov         3.40           Nov         4.20         Nov         3.00         Nov         3.30         Nov         3.40           Dec         4.40         Dec         2.90         Dec         3.30         Jan 1983         3.00         Jan 2001         3.70           Feb         4.80         Feb         3.20         Feb         3.00         Jan 2001         3.70           Mar         5.00         Mar         3.20         Apr         2.50         Apr         3.30           May         5.40         May         3.20         Apr         2.50         Apr         3.30           Jul         5.00         Jun         3.00         Jun         2.30         Jun         3.20           Jul         5.00         Jun         2.80         Aug         2.20         Aug         2.70           Sep         4.30         Sep         2.70         Sep         1.40         Cct         2.10           Nov         4.70         Nov	Jul	4.10	Jul	3.20	Jul	3.00	Jul	3.70
Oct4.20Oct3.20Oct3.00Oct3.40Nov4.20Nov3.00Nov3.30Nov3.40Dec4.40Dec2.90Dec3.30Jan 19973.00Jan 20013.70Feb4.80Feb3.20Feb3.00Feb3.50Mar5.00Mar3.10Mar2.80Mar2.90Apr5.10Apr3.20Apr2.50Apr3.30Jun5.20Jun3.00Jun2.30Jun3.20Jul5.00Jun3.00Jun2.30Jun3.20Jul5.00Jun3.00Jun2.30Jun3.20Jul5.00Jun2.80Aug2.20Aug2.70Sep4.30Sep2.70Sep2.20Sep2.60Oct4.50Oct2.80Oct2.10Nov1.90Dec4.60Dec2.70Nov1.80Nov1.90Dec4.60Dec2.70Nov1.80Nov1.90Dec4.60Dec2.70Nov1.80Nov1.90Dec4.60Dec2.70Nov1.80Nov1.90Dec4.60Dec2.70Nov1.80Nov1.90Jun1.90Jan 19942.50Jan 19981.60Jan 1901.70Jun4.00 <td>Aug</td> <td>4.00</td> <td>Aug</td> <td>3.10</td> <td>Aug</td> <td>2.90</td> <td>Aug</td> <td>3.40</td>	Aug	4.00	Aug	3.10	Aug	2.90	Aug	3.40
Nov         4.20         Nov         3.00         Nov         3.30         Nov         3.40           Dec         4.40         Dec         2.90         Dec         3.30         Jan 1983         3.00         Jan 1983         3.00         Jan 1983         3.00         Jan 1983         3.00         Jan 1993         3.00         Jan 2001         3.70           Feb         4.80         Feb         3.20         Feb         3.00         Mar         2.80           Apr         5.10         Apr         3.20         Apr         2.50         Apr         3.30           Jun         5.20         Jun         3.00         Jun         2.30         Jun         3.20           Jul         5.00         Jul         2.80         Aug         2.20         May         3.20           Jul         5.00         Jul         2.80         Aug         2.20         Aug         2.60           Oct         4.50         Oct         2.80         Oct         2.10         Nov         1.80         Nov         1.90           Dec         4.60         Dec         2.70         Nec         1.70         Dec         1.60           Jan 1990	Sep	4.20	Sep	3.00	Sep	3.00	Sep	3.50
Dec         4.40         Dec         2.90         Dec         3.30         Jan 1989         4.70         Jan 1993         3.30         Jan 1997         3.00         Jan 2001         3.70           Feb         4.80         Feb         3.20         Feb         3.00         Jan 2001         3.70           Mar         5.00         Mar         3.10         Mar         2.80         Mar         2.90           Apr         5.10         Apr         3.20         Apr         2.50         Apr         3.30           Jun         5.20         Jun         3.00         Jun         2.30         Jun         3.20           Jul         5.00         Jun         3.00         Jun         2.30         Jun         3.20           Aug         4.70         Aug         2.80         Aug         2.20         May         2.70           Sep         4.30         Sep         2.70         Sep         2.20         Sep         2.60           Oct         4.50         Oct         2.80         Aug         1.80         Nov         1.90           Dec         4.60         Dec         2.70         Nov         1.80         Jan 1902	Oct	4.20	Oct	3.20	Oct	3.00	Oct	3.40
Jan 1989         4.70         Jan 1993         3.30         Jan 1997         3.00         Jan 2001         3.70           Feb         4.80         Feb         3.20         Feb         3.00         Mar         2.80           Mar         5.00         Mar         3.10         Mar         2.80         Mar         2.90           Apr         5.10         Apr         3.20         May         2.20         May         3.60           Jun         5.20         Jun         3.00         Jun         2.30         Jun         3.20           Jul         5.00         Jun         3.00         Jun         2.30         Jun         3.20           Jul         5.00         Jun         3.00         Jun         2.30         Jun         3.20           Aug         4.70         Aug         2.80         Jul         2.20         Aug         2.70           Sep         4.30         Sep         2.70         Nov         1.80         Nov         1.90           Dec         4.60         Dec         2.70         Nov         1.80         Na12022         1.10           Feb         3.30         Feb         2.60         Jan	Nov	4.20	Nov	3.00	Nov	3.30	Nov	3.40
Feb4.80Feb3.20Feb3.00Feb3.50Mar5.00Mar3.10Mar2.80Mar2.90Apr5.10Apr3.20Apr2.50Apr3.30May5.40May3.20Apr2.20May3.60Jun5.20Jun3.00Jun2.30Jun3.20Aug4.70Aug2.80Aug2.20Aug2.70Sep4.30Sep2.70Sep2.20Sep2.60Oct4.50Oct2.80Aug2.10Oct2.10Nov4.70Nov2.70Nov1.80Nov1.90Dec4.60Dec2.70Nov1.80Nov1.90Jan 19905.20Jan 19942.50Jan 19981.60Jan 20021.10Mar5.20Mar2.50Feb1.40Mar1.50Apr4.70Apr2.50Mar1.40Mar1.50Apr4.70Apr2.50Jan1.70Jun1.10Jun4.70Jun2.50Jun1.70Jun1.60Jun4.70Jun2.50Jun1.70Jun1.60Apg5.60Aug3.00Aug1.60Aug1.80Sep6.20Sep2.60Sep1.50Sep1.50Aug5.60Aug3.00 <t< td=""><td>Dec</td><td>4.40</td><td>Dec</td><td>2.90</td><td>Dec</td><td>3.30</td><td>Dec</td><td>3.40</td></t<>	Dec	4.40	Dec	2.90	Dec	3.30	Dec	3.40
Mar5.00Mar3.10Mar2.80Mar2.90Apr5.10Apr3.20Apr2.50Apr3.30May5.40May3.20May2.20May3.60Jun5.20Jun3.00Jun2.30Jun3.20Aug4.70Aug2.80Aug2.20Aug2.70Sep4.30Sep2.70Sep2.20Aug2.70Cct4.50Oct2.80Oct2.10Oct2.10Nov4.70Nov2.70Nov1.80Nov1.90Dec4.60Dec2.70Dec1.70Dec1.60Jan 19905.20Jan 19942.50Jan 19981.60Jan 20021.10Feb5.30Feb2.50Mar1.40Mar1.50Apr4.70Apr2.50Mar1.40Mar1.50Apr4.70Apr2.50Jun1.70Jun1.60May4.40May2.30May1.70May1.20Jun4.70Jun2.50Jun1.70Jun1.50Apr4.40May2.90Jun1.70Jun1.60May5.60Aug3.00Aug1.60Aug1.80Sep6.20Sep2.60Sep1.60Nov2.20Nov6.30Nov2.70 <t< td=""><td>Jan 1989</td><td>4.70</td><td>Jan 1993</td><td>3.30</td><td>Jan 1997</td><td>3.00</td><td>Jan 2001</td><td>3.70</td></t<>	Jan 1989	4.70	Jan 1993	3.30	Jan 1997	3.00	Jan 2001	3.70
Apr5.10Apr3.20Apr2.50Apr3.30May5.40May3.20May2.20May3.60Jun5.20Jun3.00Jun2.30Jun3.20Jul5.00Jul2.80Jul2.20Jul2.70Sep4.30Sep2.70Sep2.20Aug2.70Sep4.30Sep2.70Sep2.20Sep2.60Oct4.50Oct2.80Oct2.10Oct2.10Nov4.70Nov2.70Nov1.80Nov1.90Dec4.60Dec2.70Dec1.70Dec1.60Jan 19905.20Jan 19942.50Jan 19981.60Jan 20021.10Feb5.30Feb2.50Feb1.40Mar1.50Apr4.70Apr2.50Mar1.40Mar1.50Jun4.70Jun2.50Jun1.70Jun1.10Jun4.70Jun2.50Jun1.70Jun1.10Jun4.70Jun2.50Jun1.70Jun1.10Jun4.60Jun2.60Jun1.70Jun1.10Jun4.70Jun2.50Jun1.70Jun1.10Jun4.80Jun2.90Jun1.70Jun1.10Jun4.60Jun2.90 <t< td=""><td>Feb</td><td>4.80</td><td>Feb</td><td>3.20</td><td>Feb</td><td>3.00</td><td>Feb</td><td>3.50</td></t<>	Feb	4.80	Feb	3.20	Feb	3.00	Feb	3.50
May         5.40         May         3.20         May         2.20         May         3.60           Jun         5.20         Jun         3.00         Jun         2.30         Jun         3.20           Jul         5.00         Jul         2.80         Jul         2.20         Jul         2.70           Aug         4.70         Aug         2.80         Aug         2.20         Sep         2.60           Oct         4.50         Oct         2.80         Oct         2.10         Oct         2.10           Nov         4.70         Nov         2.70         Sep         2.20         Sep         2.60           Oct         4.60         Dec         2.70         Nov         1.80         Nov         1.90           Jan 1990         5.20         Jan 1994         2.50         Jan 1998         1.60         Jan 2002         1.10           Mar         5.20         Mar         2.50         Mar         1.40         Mar         1.50           Jun         5.20         Mar         2.40         Apr         1.40         Apr         1.60           Jun         4.40         May         2.30         Mar <td>Mar</td> <td>5.00</td> <td>Mar</td> <td>3.10</td> <td>Mar</td> <td>2.80</td> <td>Mar</td> <td>2.90</td>	Mar	5.00	Mar	3.10	Mar	2.80	Mar	2.90
Jun         5.20         Jun         3.00         Jun         2.30         Jun         3.20           Jul         5.00         Jul         2.80         Jul         2.20         Jul         2.70           Aug         4.70         Aug         2.80         Aug         2.20         Aug         2.70           Sep         4.30         Sep         2.70         Sep         2.20         Sep         2.60           Oct         4.50         Oct         2.80         Oct         2.10         Oct         2.10           Nov         4.70         Nov         2.70         Dec         1.70         Dec         1.60           Jan 1990         5.20         Jan 1994         2.50         Jan 1998         1.60         Jan 2002         1.10           Mar         5.20         Mar         2.50         Mar         1.40         Mar         1.50           Apr         4.70         Apr         2.40         Apr         1.40         Mar         1.50           Jul         4.70         Jun         2.50         Jun         1.70         Jun         1.50           Aug         5.60         Aug         3.00         Aug <td>Apr</td> <td>5.10</td> <td>Apr</td> <td>3.20</td> <td>Apr</td> <td>2.50</td> <td>Apr</td> <td>3.30</td>	Apr	5.10	Apr	3.20	Apr	2.50	Apr	3.30
Jul5.00Jul2.80Jul2.20Jul2.70Aug4.70Aug2.80Aug2.20Aug2.70Sep4.30Sep2.70Sep2.20Sep2.60Oct4.50Oct2.80Oct2.10Oct2.10Nov4.70Nov2.70Sep2.20Sep2.60Oct4.50Oct2.70Nov1.80Nov1.90Dec4.60Dec2.70Dec1.70Dec1.60Jan 19905.20Jan 19942.50Jan 19981.60Jan 20021.10Feb5.30Feb2.50Mar1.40Mar1.50Apr5.20Mar2.50Mar1.40Mar1.60May4.40Apr2.50Mar1.40Mar1.50Apr4.70Jun2.50Jun1.70May1.20Jun4.70Jun2.50Jun1.70May1.20Jun4.70Jun2.50Jun1.70May1.50Aug5.60Aug3.00Aug1.60Aug1.50Aug5.60Aug3.00Aug1.60Aug2.20Dec6.30Oct2.70Nov1.50Nov2.20Dec6.30Nov2.70Nov1.50Nov2.20Dec6.10Dec2.80 <t< td=""><td>Мау</td><td>5.40</td><td>May</td><td>3.20</td><td>May</td><td>2.20</td><td>May</td><td>3.60</td></t<>	Мау	5.40	May	3.20	May	2.20	May	3.60
Aug         4.70         Aug         2.80         Aug         2.20         Aug         2.70           Sep         4.30         Sep         2.70         Sep         2.20         Sep         2.60           Oct         4.50         Oct         2.80         Oct         2.10         Oct         2.10           Nov         4.70         Nov         2.70         Nov         1.80         Nov         1.90           Dec         4.60         Dec         2.70         Dec         1.70         Dec         1.60           Jan 1990         5.20         Jan 1994         2.50         Jan 1998         1.60         Jan 2002         1.10           Feb         5.30         Feb         2.50         Mar         1.40         Mar         1.50           Apr         4.70         Apr         2.50         Mar         1.40         Mar         1.50           Jun         4.70         Aug         2.30         May         1.70         May         1.20           Jun         4.70         Jun         2.50         Jun         1.70         Jun         1.50           Aug         5.60         Aug         3.00         Aug <td>Jun</td> <td>5.20</td> <td>Jun</td> <td>3.00</td> <td>Jun</td> <td>2.30</td> <td>Jun</td> <td>3.20</td>	Jun	5.20	Jun	3.00	Jun	2.30	Jun	3.20
Sep         4.30         Sep         2.70         Sep         2.20         Sep         2.60           Oct         4.50         Oct         2.80         Oct         2.10         Oct         2.10           Nov         4.70         Nov         2.70         Nov         1.80         Nov         1.90           Dec         4.60         Dec         2.70         Dec         1.70         Dec         1.60           Jan 1990         5.20         Jan 1994         2.50         Jan 1998         1.60         Jan 2002         1.10           Mar         5.20         Mar         2.50         Feb         1.40         Feb         1.50           Apr         4.70         Apr         2.40         Apr         1.40         Mar         1.50           May         4.40         May         2.30         May         1.70         May         1.20           Jun         4.70         Jun         2.50         Jun         1.70         Jun         1.50           Aug         5.60         Aug         3.00         Aug         1.60         Aug         1.80           Sep         6.20         Sep         2.60         Sep <td>Jul</td> <td>5.00</td> <td>Jul</td> <td>2.80</td> <td>Jul</td> <td>2.20</td> <td>Jul</td> <td>2.70</td>	Jul	5.00	Jul	2.80	Jul	2.20	Jul	2.70
Oct         4.50         Oct         2.80         Oct         2.10         Oct         2.10           Nov         4.70         Nov         2.70         Nov         1.80         Nov         1.90           Dec         4.60         Dec         2.70         Dec         1.70         Dec         1.60           Jan 1990         5.20         Jan 1994         2.50         Jan 1998         1.60         Jan 2002         1.10           Feb         5.30         Feb         2.50         Mar         1.40         Mar         1.50           Apr         4.70         Apr         2.40         Apr         1.40         Apr         1.60           Jun         4.70         Apr         2.40         Apr         1.40         Apr         1.50           Aug         4.40         May         2.30         May         1.70         May         1.20           Jun         4.70         Jun         2.50         Jun         1.70         Jun         1.60           Aug         5.60         Aug         3.00         Aug         1.60         Aug         1.80           Sep         6.20         Sep         2.60         Sep <td>Aug</td> <td>4.70</td> <td>Aug</td> <td>2.80</td> <td>Aug</td> <td>2.20</td> <td>Aug</td> <td>2.70</td>	Aug	4.70	Aug	2.80	Aug	2.20	Aug	2.70
Nov         4.70         Nov         2.70         Nov         1.80         Nov         1.90           Dec         4.60         Dec         2.70         Dec         1.70         Dec         1.60           Jan 1990         5.20         Jan 1994         2.50         Jan 1998         1.60         Jan 2002         1.10           Feb         5.30         Feb         2.50         Feb         1.40         Mar 0.202         1.10           Mar         5.20         Mar         2.50         Mar         1.40         Mar 1.50           Apr         4.70         Apr         2.50         Mar         1.40         Apr 1.50           May         4.40         May         2.30         May         1.70         May         1.20           Jun         4.70         Jun         2.50         Jun         1.70         May         1.20           Jun         4.80         Jul         2.90         Jul         1.70         May         1.20           Aug         5.60         Aug         3.00         Aug         1.60         Aug         1.80           Sep         6.20         Sep         1.50         Sep         1.50	Sep	4.30	Sep	2.70	Sep	2.20	Sep	2.60
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Jan 1990         5.20         Jan 1994         2.50         Jan 1998         1.60         Jan 2002         1.10           Feb         5.30         Feb         2.50         Feb         1.40         Feb         1.10           Mar         5.20         Mar         2.50         Mar         1.40         Mar         1.50           Apr         4.70         Apr         2.40         Apr         1.40         May         1.20           Jun         4.70         Apr         2.40         Apr         1.40         Apr         1.60           Jun         4.70         Jun         2.50         Jun         1.70         May         1.20           Jun         4.70         Jun         2.50         Jun         1.70         Jun         1.10           Jul         4.80         Jul         2.90         Jul         1.70         Jun         1.50           Aug         5.60         Aug         3.00         Aug         1.60         Aug         1.60           Sep         6.30         Oct         2.70         Nov         1.50         Nov         2.20           Dec         6.10         Dec         2.80         Dec <td>Nov</td> <td>4.70</td> <td>Nov</td> <td>2.70</td> <td>Nov</td> <td>1.80</td> <td>Nov</td> <td>1.90</td>	Nov	4.70	Nov	2.70	Nov	1.80	Nov	1.90
Feb5.30Feb2.50Feb1.40Feb1.10Mar5.20Mar2.50Mar1.40Mar1.50Apr4.70Apr2.40Apr1.40Apr1.60May4.40May2.30May1.70May1.20Jun4.70Jun2.50Jun1.70Jun1.10Jul4.80Jul2.90Jul1.70Jul1.50Aug5.60Aug3.00Aug1.60Aug1.80Sep6.20Sep2.60Sep1.50Sep1.50Oct6.30Oct2.70Oct1.50Nov2.20Dec6.10Dec2.80Dec1.60Dec2.40Jan 19915.70Jan 19952.90Jan 19991.70Jan 20032.60Feb5.30Feb2.90Feb1.60Feb3.00Mar4.90Mar3.10Mar1.70Mar3.00Apr4.90Mar3.10Mar1.70Mar3.00Jun4.70Jun3.00Jun2.00Jun2.10Jun4.70Jun3.00Jun2.00Jun2.10Jun4.90Mar3.10Mar1.70Mar3.00Jun4.90Mar3.00Jun2.00Jun2.10Jun4.90Mar3.00 <t< td=""><td>Dec</td><td>4.60</td><td>Dec</td><td>2.70</td><td>Dec</td><td>1.70</td><td>Dec</td><td>1.60</td></t<>	Dec	4.60	Dec	2.70	Dec	1.70	Dec	1.60
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Oct6.30Oct2.70Oct1.50Oct2.00Nov6.30Nov2.70Nov1.50Nov2.20Dec6.10Dec2.80Dec1.60Dec2.40Jan 19915.70Jan 19952.90Jan 19991.70Jan 20032.60Feb5.30Feb2.90Feb1.60Feb3.00Mar4.90Mar3.10Mar1.70Mar3.00Apr4.90Apr2.40Apr2.30Apr2.20May5.00May3.20May2.10May2.10Jun4.70Jun3.00Jun2.00Jun2.10Jul4.40Jul2.80Jul2.10Jul2.10Aug3.80Aug2.60Aug2.30Aug2.20Sep3.40Sep2.50Sep2.60Sep2.30Oct2.90Oct2.80Oct2.60Nov1.80	Aug	5.60	Aug	3.00	Aug	1.60	Aug	1.80
Nov6.30Nov2.70Nov1.50Nov2.20Dec6.10Dec2.80Dec1.60Dec2.40Jan 19915.70Jan 19952.90Jan 19991.70Jan 20032.60Feb5.30Feb2.90Feb1.60Feb3.00Mar4.90Mar3.10Mar1.70Mar3.00Apr4.90Apr2.40Apr2.30Apr2.20May5.00May3.20May2.10May2.10Jun4.70Jun3.00Jun2.00Jun2.10Jul4.40Jul2.80Jul2.10Jul2.10Aug3.80Aug2.60Aug2.30Aug2.20Sep3.40Sep2.50Sep2.60Sep2.30Oct2.90Oct2.80Oct2.60Nov1.80	Sep	6.20	Sep	2.60	Sep	1.50	Sep	1.50
Dec6.10Dec2.80Dec1.60Dec2.40Jan 19915.70Jan 19952.90Jan 19991.70Jan 20032.60Feb5.30Feb2.90Feb1.60Feb3.00Mar4.90Mar3.10Mar1.70Mar3.00Apr4.90Apr2.40Apr2.30Apr2.20May5.00May3.20May2.10May2.10Jun4.70Jun3.00Jun2.00Jun2.10Jul4.40Jul2.80Jul2.10Jul2.10Aug3.80Aug2.60Aug2.30Aug2.20Sep3.40Sep2.50Sep2.60Sep2.30Oct2.90Oct2.80Oct2.60Nov1.80	Oct	6.30	Oct	2.70	Oct	1.50	Oct	2.00
Jan 19915.70Jan 19952.90Jan 19991.70Jan 20032.60Feb5.30Feb2.90Feb1.60Feb3.00Mar4.90Mar3.10Mar1.70Mar3.00Apr4.90Apr2.40Apr2.30Apr2.20May5.00May3.20May2.10May2.10Jun4.70Jun3.00Jun2.00Jun2.10Jul4.40Jul2.80Jul2.10Jul2.10Aug3.80Aug2.60Aug2.30Aug2.20Sep3.40Sep2.50Sep2.60Sep2.30Oct2.90Oct2.80Oct2.60Nov1.80	Nov	6.30	Nov	2.70	Nov	1.50	Nov	2.20
Feb5.30Feb2.90Feb1.60Feb3.00Mar4.90Mar3.10Mar1.70Mar3.00Apr4.90Apr2.40Apr2.30Apr2.20May5.00May3.20May2.10May2.10Jun4.70Jun3.00Jun2.00Jun2.10Jul4.40Jul2.80Jul2.10Jul2.10Aug3.80Aug2.60Aug2.30Aug2.20Sep3.40Sep2.50Sep2.60Sep2.30Oct2.90Oct2.80Oct2.60Nov1.80	Dec	6.10	Dec	2.80	Dec	1.60	Dec	2.40
Mar4.90Mar3.10Mar1.70Mar3.00Apr4.90Apr2.40Apr2.30Apr2.20May5.00May3.20May2.10May2.10Jun4.70Jun3.00Jun2.00Jun2.10Jul4.40Jul2.80Jul2.10Jul2.10Aug3.80Aug2.60Aug2.30Aug2.20Sep3.40Sep2.50Sep2.60Sep2.30Oct2.90Oct2.80Oct2.60Oct2.00Nov3.00Nov2.60Nov2.60Nov1.80	Jan 1991	5.70	Jan 1995	2.90	Jan 1999	1.70	Jan 2003	2.60
Apr4.90Apr2.40Apr2.30Apr2.20May5.00May3.20May2.10May2.10Jun4.70Jun3.00Jun2.00Jun2.10Jul4.40Jul2.80Jul2.10Jul2.10Aug3.80Aug2.60Aug2.30Aug2.20Sep3.40Sep2.50Sep2.60Sep2.30Oct2.90Oct2.80Oct2.60Oct2.00Nov3.00Nov2.60Nov2.60Nov1.80	Feb	5.30	Feb	2.90	Feb	1.60	Feb	3.00
May5.00May3.20May2.10May2.10Jun4.70Jun3.00Jun2.00Jun2.10Jul4.40Jul2.80Jul2.10Jul2.10Aug3.80Aug2.60Aug2.30Aug2.20Sep3.40Sep2.50Sep2.60Sep2.30Oct2.90Oct2.80Oct2.60Nov2.60Nov3.00Nov2.60Nov2.60Nov1.80	Mar	4.90	Mar	3.10	Mar	1.70	Mar	3.00
Jun4.70Jun3.00Jun2.00Jun2.10Jul4.40Jul2.80Jul2.10Jul2.10Aug3.80Aug2.60Aug2.30Aug2.20Sep3.40Sep2.50Sep2.60Sep2.30Oct2.90Oct2.80Oct2.60Oct2.00Nov3.00Nov2.60Nov2.60Nov1.80	Apr	4.90	Apr	2.40	Apr	2.30	Apr	2.20
Jul4.40Jul2.80Jul2.10Jul2.10Aug3.80Aug2.60Aug2.30Aug2.20Sep3.40Sep2.50Sep2.60Sep2.30Oct2.90Oct2.80Oct2.60Oct2.00Nov3.00Nov2.60Nov2.60Nov1.80	Мау	5.00	May	3.20	May	2.10	May	2.10
Aug3.80Aug2.60Aug2.30Aug2.20Sep3.40Sep2.50Sep2.60Sep2.30Oct2.90Oct2.80Oct2.60Oct2.00Nov3.00Nov2.60Nov2.60Nov1.80	Jun	4.70	Jun	3.00	Jun	2.00	Jun	2.10
Sep         3.40         Sep         2.50         Sep         2.60         Sep         2.30           Oct         2.90         Oct         2.80         Oct         2.60         Oct         2.00           Nov         3.00         Nov         2.60         Nov         2.60         Nov         1.80	Jul	4.40	Jul	2.80	Jul	2.10	Jul	2.10
Oct         2.90         Oct         2.80         Oct         2.60         Oct         2.00           Nov         3.00         Nov         2.60         Nov         2.60         Nov         1.80	Aug	3.80	Aug	2.60	Aug	2.30	-	2.20
Nov         3.00         Nov         2.60         Nov         2.60         Nov         1.80	Sep	3.40	Sep	2.50	Sep	2.60	Sep	2.30
Dec         3.10         Dec         2.50         Dec         2.70         Dec         2.50	Nov		Nov		Nov		Nov	
	Dec	3.10	Dec	2.50	Dec	2.70	Dec	2.50

Source: U.S. Department of Labor, Bureau of Labor Statistics, Consumer Price Index - All Urban Cc Change for 12-Month Period, Bureau of Labor Statistics, ftp://ftp.bls.gov/pub/special.reques



# Average Yields on Mergent's Public Utility Bonds

Mo/Year	Rate (%)						
Jan 1988	10.75	Jan 1992	8.67	Jan 1996	7.20	Jan 2000	8.22
Feb	10.11	Feb	8.77	Feb	7.37	Feb	8.10
Mar	10.11	Mar	8.84	Mar	7.72	Mar	8.14
Apr	10.53	Apr	8.79	Apr	7.88	Apr	8.14
May	10.75	May	8.72	Мау	7.99	May	8.55
Jun	10.71	Jun	8.64	Jun	8.07	Jun	8.22
Jul	10.96	Jul	8.46	Jul	8.02	Jul	8.17
Aug	11.09	Aug	8.34	Aug	7.84	Aug	8.05
Sep	10.56	Sep	8.32	Sep	8.01	Sep	8.16
Oct	9.92	Oct	8.44	Oct	7.76	Oct	8.08
Nov	9.89	Nov	8.53	Nov	7.48	Nov	8.03
Dec	10.02	Dec	8.36	Dec	7.58	Dec	7.79
Jan 1989	10.02	Jan 1993	8.23	Jan 1997	7.79	Jan 2001	7.76
Feb	10.02	Feb	8.00	Feb	7.68	Feb	7.69
Mar	10.16	Mar	7.85	Mar	7.92	Mar	7.59
Apr	10.14	Apr	7.76	Apr	8.08	Apr	7.81
May	9.92	May	7.78	Мау	7.94	May	7.88
Jun	9.49	Jun	7.68	Jun	7.77	Jun	7.75
Jul	9.34	Jul	7.53	Jul	7.52	Jul	7.71
Aug	9.37	Aug	7.21	Aug	7.57	Aug	7.57
Sep	9.43	Sep	7.01	Sep	7.50	Sep	7.73
Oct	9.37	Oct	6.99	Oct	7.37	Oct	7.64
Nov	9.33	Nov	7.30	Nov	7.24	Nov	7.61
Dec	9.31	Dec	7.33	Dec	7.16	Dec	7.86
Jan 1990	9.44	Jan 1994	7.31	Jan 1998	7.03	Jan 2002	7.69
Feb	9.66	Feb	7.44	Feb	7.09	Feb	7.62
Mar	9.75	Mar	7.83	Mar	7.13	Mar	7.83
Apr	9.87	Apr	8.20	Apr	7.12	Apr	7.74
May	9.89	May	8.32	Мау	7.11	May	7.76
Jun	9.69	Jun	8.31	Jun	6.99	Jun	7.67
Jul	9.66	Jul	8.47	Jul	6.99	Jul	7.54
Aug	9.84	Aug	8.41	Aug	6.96	Aug	7.34
Sep	10.01	Sep	8.65	Sep	6.88	Sep	7.23
Oct	9.94	Oct	8.88	Oct	6.88	Oct	7.43
Nov	9.76	Nov	9.00	Nov	6.96	Nov	7.31
Dec	9.57	Dec	8.79	Dec	6.84	Dec	7.20
Jan 1991	9.56	Jan 1995	8.77	Jan 1999	6.87	Jan 2003	7.13
Feb	9.31	Feb	8.56	Feb	7.00	Feb	6.92
Mar	9.39	Mar	8.41	Mar	7.18	Mar	6.80
Apr	9.30	Apr	8.30	Apr	7.16	Apr	6.68
May	9.29	May	7.93	Мау	7.42	May	6.35
Jun	9.44	Jun	7.62	Jun	7.70	Jun	6.21
Jul	9.40	Jul	7.73	Jul	7.66	Jul	6.54
Aug	9.16	Aug	7.86	Aug	7.86	Aug	6.78
Sep	9.03	Sep	7.62	Sep	7.87	Sep	6.58
Oct	8.99	Oct	7.46	Oct	8.02	Oct	6.50
Nov	8.93	Nov	7.40	Nov	7.86	Nov	6.44
Dec	8.76	Dec	7.21	Dec	8.04	Dec	6.35

Source: Mergent Bond Record

# Average Yields on Thirty-Year U.S. Treasury Bonds

Mo/Year	Rate (%)						
Jan 1988	8.83	Jan 1992	7.58	Jan 1996	6.05	Jan 2000	6.63
Feb	8.43	Feb	7.85	Feb	6.24	Feb	6.23
Mar	8.63	Mar	7.97	Mar	6.60	Mar	6.05
Apr	8.95	Apr	7.96	Apr	6.79	Apr	5.85
May	9.23	May	7.89	May	6.93	May	6.15
Jun	9.00	Jun	7.84	Jun	7.06	Jun	5.93
Jul	9.14	Jul	7.60	Jul	7.03	Jul	5.85
Aug	9.32	Aug	7.39	Aug	6.84	Aug	5.72
Sep	9.06	Sep	7.34	Sep	7.03	Sep	5.83
Oct	8.89	Oct	7.53	Oct	6.81	Oct	5.80
Nov	9.02	Nov	7.61	Nov	6.48	Nov	5.78
Dec	9.01	Dec	7.44	Dec	6.55	Dec	5.49
Jan 1989	8.93	Jan 1993	7.34	Jan 1997	6.83	Jan 2001	5.54
Feb	9.01	Feb	7.09	Feb	6.69	Feb	5.45
Mar	9.17	Mar	6.82	Mar	6.93	Mar	5.34
Apr	9.03	Apr	6.85	Apr	7.09	Apr	5.65
May	8.83	May	6.92	May	6.94	May	5.78
Jun	8.27	Jun	6.81	Jun	6.77	Jun	5.67
Jul	8.08	Jul	6.63	Jul	6.51	Jul	5.61
Aug	8.12	Aug	6.32	Aug	6.58	Aug	5.48
Sep	8.15	Sep	6.00	Sep	6.50	Sep	5.48
Oct	8.00	Oct	5.94	Oct	6.33	Oct	5.32
Nov	7.90	Nov	6.21	Nov	6.11	Nov	5.12
Dec	7.90	Dec	6.25	Dec	5.99	Dec	5.48
Jan 1990	8.26	Jan 1994	6.29	Jan 1998	5.81	Jan 2002	5.45
Feb	8.50	Feb	6.49	Feb	5.89	Feb	5.39
Mar	8.56	Mar	6.91	Mar	5.95	Mar	5.71
Apr	8.76	Apr	7.27	Apr	5.92	Apr	5.67
May	8.73 8.46	May Jun	7.41 7.40	May Jun	5.93 5.70	May	5.64 5.52
Jun Jul	8.50	Jul	7.58	Jul	5.68	Jun Jul	5.38
	8.86		7.58		5.54		5.08
Aug Sep	9.03	Aug Sep	7.49	Aug Sep	5.20	Aug Sep	4.76
Oct	8.86	Oct	7.94	Oct	5.01	Oct	4.93
Nov	8.54	Nov	8.08	Nov	5.25	Nov	4.95
Dec	8.24	Dec	7.87	Dec	5.06	Dec	4.92
Jan 1991	8.27	Jan 1995	7.85	Jan 1999	5.16	Jan 2003	4.94
Feb	8.03	Feb	7.61	Feb	5.37	Feb	4.81
Mar	8.29	Mar	7.45	Mar	5.58	Mar	4.80
Apr	8.21	Apr	7.36	Apr	5.55	Apr	4.90
May	8.27	May	6.95	May	5.81	May	4.53
Jun	8.47	Jun	6.57	Jun	6.04	Jun	4.37
Jul	8.45	Jul	6.72	Jul	5.98	Jul	4.93
Aug	8.14	Aug	6.86	Aug	6.07	Aug	5.30
Sep	7.95	Sep	6.55	Sep	6.07	Sep	5.14
Oct	7.93	Oct	6.37	Oct	6.26	Oct	5.16
Nov	7.92	Nov	6.26	Nov	6.15	Nov	5.13
Dec	7.70	Dec	6.06	Dec	6.35	Dec	5.08

Source: Federal Reserve, http://www.stls.frb.org/fred/data/irates/gs30





# **SCHEDULE 5-4**

# Economic Estimates and Projections, 2003 - 2005

		Inflation Rat	e		Real GDP			Unemploymer	nt	3	-Mo. T-Bill Ra	te	30	)-Yr. T-Bond Ra	ate
Source	2003	2004	2005	2003	2004	2005	2003	2004	2005	2003	2004	2005	2003	2004	2005
Value Line Investment Survey (11/28/03)	2.10%	2.00%	2.10%	2.90%	4.20%	3.60%	6.10%	6.00%	5.80%	1.00%	1.20%	1.70%	4.90%	5.50%	6.00%
The Budget and Economic Outlook FY2005-2014 (01/31/04)	2.30%	1.60%	1.70%	3.20%	4.80%	4.20%	6.00%	5.80%	5.30%	1.00%	1.30%	3.00%	N.A.	N.A.	N.A.
Current rate	1.90%			4.10% *			5.60% **	×		0.94%			4.71%		

Notes: N.A. = Not Available.

\* Reflects 2003 Fourth Quarter Growth. \*\*Rate reported by Bureau of Labor Statisitics for the period ending February 2004.

Sources of Current Rates:	The Bureau of Labor Statistics, Consumer Price Index - All Urban Consumers, 12-Month Period Ending January 31, 2004. Federal Reserve website, http://research.stlouisfed.org/fred2/data/GS3M.tst, February 2004. U.S. Department of Commerce, Bureau of Economic Analysis, for 2003 Fourth Quarter. The Bureau of Labor Statistics, Employment Situation Summary, February 2004. 30-Year Treasury Bond Rates as reported on Investopedia website: http://www.investopedia.com/offsite.asp?URL=http://quote.yahoo.com/q?s=%5ETYX&d=1y, as of March 15, 2004.
Other Sources:	The Congressional Budget Office, The Budget and Economic Outlook: Fiscal Years 2005-2014, January 2004, http://www.cbo.gov/showdoc.cfm?index=1824&sequence=0

# Historical Capital Structures for Southern Union Company Consolidated Basis

(Thousands of Dollars)

Capital Components	1999	2000	2001	2002	2003
	¢204.059	¢705.054	¢704 057	<b>#005 040</b>	¢000.440
Common Equity	\$301,058	\$735,854	\$721,857	\$685,346	\$920,418
Preferred Stock	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000
Long-Term Debt	\$392,457	\$735,967	\$1,335,544	\$1,190,413	\$2,346,405
Short-Term Debt	\$21,003	\$3	\$190,600	\$131,800	\$251,500
Total	\$814,518	\$1,571,824	\$2,348,001	\$2,107,559	\$3,618,323

Capital Structure	1999	2000	2001	2002	2003
Common Equity	36.96%	46.82%	30.74%	32.52%	25.44%
Preferred Stock	12.28%	6.36%	4.26%	4.74%	2.76%
Long-Term Debt	48.18%	46.82%	56.88%	56.48%	64.85%
Short-Term Debt	2.58%	0.00%	8.12%	6.25%	6.95%
Total	100.00%	100.00%	100.00%	100.00%	100.00%

Notes: The amount of Long-Term Debt includes Current Maturities.

Source: Southern Union Company's Stockholders 2001 and 2003 Annual Reports.

# Selected Financial Ratios for Southern Union Company Consolidated Basis

Financial Ratios	1999	2000	2001	2002	2003
Return on Common Equity	3.50%	1.50%	1.80%	5.30%	4.70%
Earnings Per Common Share	\$0.28	\$0.22	\$0.21	\$0.61	\$0.74
Cash Dividends Per Common Share	NA	NA	NA	NA	NA
Common Dividend Payout Ratio	0.00%	0.00%	0.00%	0.00%	0.00%
Market Price Per Common Share	\$20.71 *	\$15.81 *	\$18.86 **	\$16.50 **	\$18.40 **
Book Value Per Common Share	\$9.83 *	\$15.17 *	\$12.26 ***	\$11.89 ***	\$12.60 ***
Year-End Market to Book Ratio	2.11 x	1.04 x	1.54 x	1.39 x	1.46 x
Senior Debt Rating	BBB+	BBB+	BBB+	BBB+	BBB

Notes: Common Dividend Payout Ratio = Cash Dividends Per Common Share / Earnings Per Common Share.

Market to Book Ratio = Market Price Per Common Share / Book Value Per Common Share.

Year-End Market Price Per Common Share has been adjusted for stock splits and stock dividends.

Sources: \*Southern Union Company's Stockholders Annual Reports. \*\*Standard & Poor's Stock Guide, December 2001, 2002, and 2003. \*\*\*Value Line Investment Survey: Ratings and Reports, December 19, 2003 Standard & Poor's RatingsDirect for credit ratings. Value Line Investment Survey: Ratings and Reports, December 19, 2003 for return on common equity and earnings per common share.

## Capital Structure as of December 31, 2003 for Southern Union Company

Capital Component	Amount in Dollars	Percentage of Capital
Common Stock Equity	\$920,418,000	25.38%
Preferred Stock	223,828,509	6.17%
Long-Term Debt	2,216,067,767 *	61.10%
Short-Term Debt	266,599,601 **	7.35%
Total Capitalization	\$3,626,913,877	100.00%

## Gas Distribution Financial Ratio Benchmarks Total Debt / Total Capital - Including Preferred Stock

Standard & Poor's Corporation's	Lower Quartile	Median	Upper Quartile
Utility Rating Service,	BBB	BBB	BBB
Financial Statistics as of July 7, 2000	52%	56%	61%
(median)			

Note: \* See Schedule 10 for the amount of Long-Term Debt at December 31, 2003. \*\*Short-term debt balance equals short-term debt as of December 31, 2003 less Construction Work in Progress (CWIP)

Source: Southern Union Company's response to Staff's Data Request No. 0102.

#### Embedded Cost of Long-Term Debt as of December 31, 2003 for Southern Union Company (Consolidated)

#### Southern Union Company Parent Only Embedded Cost of Long-Term Debt

Description	Issuance Date	Maturity Date	Original Issue	Outstanding as of December 31	Ann Int Rate	Ann Int Costs	Interest Pmt Dates	Issuance Costs (Orig)	Unamortized Issuance Costs & Discounts as of December 31	Embedded Rate
7.6% Senior Notes	2/1/1994	2/1/2024	475,000,000	359,765,000	7.60%	27,342,140	2/1 & 8/1	(5,386,788)	\$ (2,766,840.80)	7.697%
8.25% Senior Notes	11/4/1999	11/15/2029	300,000,000	300,000,000	8.25%	24,750,000	5/15 & 11/15	(6,659,906)	\$ (5,724,512.47)	8.486%
PGE MTG Notes 9.34%	11/4/1999	9/1/2019	15,000,000	15,000,000	9.34%	1,401,000	3/1 & 9/1	(639,460)	\$ (270,839.21)	9.629%
Providence Series M 10.25%	9/28/2000	7/31/2008	10,000,000	1,363,000	10.25%	139,708	1/31 & 7/31	(80,531)	\$ (48,112.07)	11.424%
Providence Series N 9.63%	9/28/2000	5/30/2020	10,000,000	10,000,000	9.63%	963,000	5/31 & 11/30	(284,477)	\$ (244,135.84)	10.023%
Providence Series O 8.46%	9/28/2000	9/30/2022	12,500,000	11,875,000	8.46%	1,004,625	3/31 & 9/30	(678,625)	\$ (587,448.76)	9.178%
Providence Series P 8.09%	9/28/2000	9/30/2022	12,500,000	12,500,000	8.09%	1,011,250	3/31 & 9/30	(323,564)	\$ (284,266.16)	8.402%
Providence Series R 7.5%	9/28/2000	12/15/2025	15,000,000	15,000,000	7.50%	1,125,000	6/15 & 12/15	(367,971)	\$ (330,904.32)	7.772%
Providence Series S 6.82%	9/28/2000	4/1/2018	15,000,000	14,464,000	6.82%	986,445	4/1 & 10/1	(391,911)	\$ (328,976.38)	7.142%
Providence Series T 6.5%	9/28/2000	2/1/2029	15,000,000	13,802,000	6.50%	897,130	2/1 & 5/1& 8/1 & 11/1	(2,485,117)		8.491%
all River 9.44%	9/28/2000	2/15/2020	6,500,000	6,500,000	9.44%	613,600	2/15 & 8/15	(226,342)		9.911%
all River 7.99%	9/28/2000	12/15/2026	7,000,000	7,000,000	7.96%	559,300	3/15 & 9/15	(135,410)		8.204%
all River 7.24%	9/28/2000	12/15/2027	6,000,000	6,000,000	7.24%	434,400	6/15 & 12/15	(109,972)		7.428%
Andatory Convertibles 5.75%	6/11/2003	8/16/2006	125,000,000	125,000,000	5.75%	7,187,500	8/16, 11/16, 2/16 & 5/16	(411,010)		5.871%
Ferm Loan	7/15/2002	8/26/2005	311,086,956		LIBOR+87.5bp	3,552,303	monthly	(1,470,798)		2.616%
cct 189 unamortized issue cos cct 257 unamortorized premiur									\$ (16,317,490.52) \$ 2,096,132.78	
otals for Southern Union Comp	bany		1,335,586,956	1,059,355,956		71,967,400		(19,651,882)	(28,820,689)	7.170%
Panhandle Eastern Pipe Line	Company Embec	Ided Cost of Long-Ter	m debt						Unamortized	
									Issuance Costs	
	Issuance	Maturity	Original	Outstanding	Ann Int	Ann Int	Interest Pmt	Issuance	& Discounts	Embedded
Description	Date	Date	Issue	as of December 31	Rate	Costs	Dates	Costs (Orig)	as of December 31	Rate
~										
.125% Senior Notes	3/15/1994	3/15/2004	300,000,000	146,080,000	6.125%	8,947,400	3/15 & 9/15	(5,386,788)	\$ (39,997.00)	6.237%
.875% Senior Notes	8/15/1994	8/15/2004	100,000,000	52,455,000	7.875%	4,130,831	2/15 & 8/15	(6,659,906)	\$ (27,122.00)	8.437%
.50% Senior Notes	7/15/1999	7/15/2009	200,000,000	60,623,000	6.500%	3,940,495	1/15 & 7/15	(342,871)	\$ (507,191.00)	6.511%
.25% Senior Notes	4/1/2000	4/1/2010	100,000,000	40,500,000	8.250%	3,341,250	4/1 & 10/1	(80,531)	\$ (26,739.00)	8.257%
.00% Senior Notes	7/15/1999	7/15/1999	300,000,000	66,305,000	7.000%	4,641,350	1/15 & 7/15	(284,477)	,	7.007%
.80% Senior Notes	8/15/1994	9/30/2022	300,000,000	300,000,000	4.800%	14,400,000	2/15 & 8/15	(678,625)		4.811%
.05% Senior Notes	8/18/2003	9/30/2022	250.000.000	250,000,000	6.050%	15,125,000	2/15 & 8/15	(323,564)		6.058%
erm Loan	12/21/2001	1/31/2007	290,000,000	269,569,500	4.464%	12,033,582	1/31,4/30,7/31,10/31	(10,937,822)	,	4.639%
mbedded Cost of long-term	debt for Panhand	lle	1,840,000,000	1,185,532,500		66,559,909		(24,694,584)	(14,846,276)	5.698%
			1,040,000,000	1,100,002,000		00,000,000		(27,007,004)	(17,070,270)	5.090 /
Fotal consolidated embedded	cost of long-terr	n debt for	2 175 596 056	2 244 999 466		129 527 200		(44 246 466)	(42,666,064)	6 2020

138,527,309

(44,346,466)

(43,666,964)

Long-Term Debt Balance for Capital Structure in Schedule 9 2,216,067,767

3,175,586,956

2,244,888,456

Source: Company Response to Data Request 0102.

Southern Union Company

6.383%

#### Embedded Cost of Preferred Stock as of December 31, 2003 for Southern Union Company

		(1)	(2)		
Issuance Date	Original Issue	Outstanding as of 12/31/2003	Annual Interest Rate	Unamortized Issuance Cost	Annualized Cost to Company (1*2)
10/1/03	230,000,000	\$230,000,000	7.55%	\$ (6,171,490.72)	\$17,365,000
		\$230,000,000		-	\$17,365,000
	Date	Date Issue	ssuance         Original         Outstanding as of           Date         Issue         12/31/2003           10/1/03         230,000,000         \$230,000,000	ssuance DateOriginal IssueOutstanding as of 12/31/2003Annual Interest Rate10/1/03230,000,000\$230,000,0007.55%	ssuance       Original       Outstanding as of       Annual Interest       Unamortized Issuance         Date       Issue       12/31/2003       Rate       Cost         10/1/03       230,000,000       \$230,000,000       7.55%       \$ (6,171,490.72)

Embedded Cost of Preferred Stock	=	\$17,365,000  \$223,828,509
	=	7.76%

Notes:

Source: Southern Union Company's response to Staff's Data Request 0102

# Weighted Average Cost of Short-Term Debt as of December 31, 2003 for Southern Union Company

		Average STD		Interest
Month	Bala	ance During Month		Cost per Month
1/31/2003		\$272,950,000.00		\$472,152.00
2/28/2003		\$255,179,030.00		\$402,215.00
3/31/2003		\$232,129,030.00		\$388,815.00
4/30/2003		\$217,550,000.00		\$346,911.00
5/31/2003		\$260,150,000.00		\$433,367.00
6/30/2003		\$272,250,000.00		\$443,540.00
7/31/2003		\$282,750,000.00		\$463,353.00
8/30/2003		\$314,250,000.00		\$598,575.00
9/30/2003		\$319,150,000.00		\$510,053.00
10/31/2003		\$272,950,000.00		\$306,112.00
11/30/2003		\$283,825,000.00		\$386,934.00
12/31/2003		\$295,175,000.00		\$421,571.00
		\$273,192,338.33		5,173,598
AVERAGE	\$	273,192,338.33	\$	431,133.17
			=	1.89%

Source: Southern Union's response to DR 0102

# **Criteria for Selecting Comparable Natural Gas Distribution Companies**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		Distribution		Positive DPS				
		Revenues		Annualized	No			Comparable
	Stock	to Total	Information	Compound	Missouri	10-Years	Total	Company
	Publicly	Revenue	Printed In	Growth Rate	Regulated	of Data	Capitalization	Met All
Natural Gas Distribution Companies	Traded	>90%	Value Line	(1992 - 2002)	Operations	Available	<5 Billion	Criteria
AGL Resources, Inc.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Atmos Energy Corporation	Yes	Yes	Yes	Yes	No			
Cascade Natural Gas Corporation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Delta Natural Gas Company, Inc.	Yes	Yes	No					
Energy West	Yes	Yes	No					
Energysouth, Inc.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Laclede Gas Company	Yes	Yes	Yes	Yes	No			
New Jersey Resources Corporation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Northwest Natural Gas Company	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Peoples Energy Corporation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Piedmont Natural Gas Company, Inc.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
RGC Resources, Inc.	Yes	Yes	Yes	Yes	Yes	No		
South Jersey Industries, Inc.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Southern Union Company	Yes	Yes	Yes	Yes	No			
WGL Holdings, Inc.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Sources: Columns 1, 3, 4, and 6 = The Value Line Investment Survey: Ratings & Reports, December 19, 2003.

Column 2 and 7 = Edward Jones' Natural Gas Industry Summary, December 31, 2003.

# Eight Comparable Natural Gas Distribution Companies For Missouri Gas Energy

	Ticker	
Number	Symbol	Company Name
1	ATG	AGL Resources, Inc.
2	CGC	Cascade Natural Gas
3	NJR	New Jersey Resources Corporation
4	NWN	Northwest Natural Gas
5	PGL	Peoples Energy Corporation
6	PNY	Piedmont Natural Gas Company, Inc.
7	SJI	South Jersey Industries, Inc.
8	WGL	WGL Holdings, Inc.

Note: Removed Energysouth, Inc. because of lack of projected information in Value Line.

#### Ten-Year Dividends Per Share, Earnings Per Share & Book Value Per Share Growth Rates for the Natural Gas Distribution Industry Companies

	Dividends F	Per Share	Earnings Pe	er Share	Book Value F	Per Share
Company Name	1992	2002	1992	2002	1992	2002
AGL Resources, Inc.	\$1.03	\$1.08	\$1.13	\$1.82	\$9.70	\$12.52
Cascade Natural Gas	\$0.93	\$0.96	\$0.63	\$1.13	\$9.09	\$10.34
New Jersey Resources Corporation	\$1.01	\$1.20	\$1.09	\$2.09	\$9.44	\$13.06
Northwest Natural Gas	\$1.15	\$1.26	\$0.74	\$1.62	\$12.41	\$18.88
Peoples Energy Corporation	\$1.76	\$2.07	\$2.06	\$2.80	\$17.72	\$22.74
Piedmont Natural Gas Company, Inc.	\$0.91	\$1.60	\$1.40	\$1.89	\$10.27	\$17.82
South Jersey Industries, Inc.	\$1.41	\$1.51	\$1.61	\$2.43	\$13.90	\$19.34
WGL Holdings, Inc.	\$1.07	\$1.27	\$1.27	\$1.14	\$10.66	\$15.78

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	DPS	EPS	BVPS	
Company Name	1992 - 2002	1992 - 2002	1992 - 2002	Average
AGL Resources, Inc.	0.48%	4.88%	2.58%	2.65%
Cascade Natural Gas	0.32%	6.02%	1.30%	2.54%
New Jersey Resources Corporation	1.74%	6.73%	3.30%	3.92%
Northwest Natural Gas	0.92%	8.15%	4.29%	4.45%
Peoples Energy Corporation	1.64%	3.12%	2.53%	2.43%
Piedmont Natural Gas Company, Inc.	5.81%	3.05%	5.67%	4.84%
South Jersey Industries, Inc.	0.69%	4.20%	3.36%	2.75%
WGL Holdings, Inc.	<u>1.73%</u>	<u>-1.07%</u>	4.00%	1.55%
Average	<u>1.66%</u>	<u>4.38%</u>	<u>3.38%</u>	
Standard Deviation	1.65%	2.64%	1.23%	

Annual Compound Growth Rates

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Source: The Value Line Investment Survey: Ratings & Reports, December 19, 2003.

#### Five-Year Dividends Per Share, Earnings Per Share & Book Value Per Share Growth Rates for the Natural Gas Distribution Industry Companies

	Dividends F	Per Share	Earnings Pe	er Share	Book Value F	Per Share
Company Name	1997	2002	1997	2002	1997	2002
AGL Resources, Inc.	\$1.08	\$1.08	\$1.37	\$1.82	\$10.99	\$12.52
Cascade Natural Gas	\$0.96	\$0.96	\$0.93	\$1.13	\$10.16	\$10.34
New Jersey Resources Corporation	\$1.07	\$1.20	\$1.48	\$2.09	\$10.38	\$13.06
Northwest Natural Gas	\$1.21	\$1.26	\$1.76	\$1.62	\$16.02	\$18.88
Peoples Energy Corporation	\$1.87	\$2.07	\$2.81	\$2.80	\$20.43	\$22.74
Piedmont Natural Gas Company, Inc.	\$1.21	\$1.60	\$1.85	\$1.89	\$13.90	\$17.82
South Jersey Industries, Inc.	\$1.44	\$1.51	\$1.71	\$2.43	\$12.86	\$19.34
WGL Holdings, Inc.	\$1.17	\$1.27	\$1.85	\$1.14	\$13.48	\$15.78

#### Annual Compound Growth Rates ------

	DPS	EPS	BVPS	
Company Name	1997 - 2002	1997 - 2002	1997 - 2002	Average
AGL Resources, Inc.	0.00%	5.84%	2.64%	2.83%
Cascade Natural Gas	0.00%	3.97%	0.35%	1.44%
New Jersey Resources Corporation	2.32%	7.15%	4.70%	4.72%
Northwest Natural Gas	0.81%	-1.64%	3.34%	0.84%
Peoples Energy Corporation	2.05%	-0.07%	2.17%	1.38%
Piedmont Natural Gas Company, Inc.	5.75%	0.43%	5.09%	3.76%
South Jersey Industries, Inc.	0.95%	7.28%	8.50%	5.58%
WGL Holdings, Inc.	<u>1.65%</u>	<u>-9.23%</u>	<u>3.20%</u>	-1.46%
Average	<u>1.69%</u>	<u>1.72%</u>	<u>3.75%</u>	
Standard Deviation	1.73%	5.23%	2.27%	

Source: The Value Line Investment Survey: Ratings & Reports, December 19, 2003.

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# Average of Ten and Five-Year Dividends Per Share, Earnings Per Share & Book Value Per Share Growth Rates for the Natural Gas Distribution Industry Companies

	10-Year	5-Year	Average of
	Average	Average	5-Year &
	DPS, EPS &	DPS, EPS &	10-Year
Company Name	BVPS	BVPS	Averages
AGL Resources, Inc.	2.65%	2.83%	2.74%
Cascade Natural Gas	2.54%	1.44%	1.99%
New Jersey Resources Corporation	3.92%	4.72%	4.32%
Northwest Natural Gas	4.45%	0.84%	2.64%
Peoples Energy Corporation	2.43%	1.38%	1.90%
Piedmont Natural Gas Company, Inc.	4.84%	3.76%	4.30%
South Jersey Industries, Inc.	2.75%	5.58%	4.16%
WGL Holdings, Inc.	<u>1.55%</u>	<u>-1.46%</u>	<u>0.05%</u>
Average	<u>3.14%</u>	<u>2.39%</u>	<u>2.76%</u>

## Historical and Projected Growth Rates for the Eight Comparable Natural Gas Distribution Companies

	(1)	(2)	(3)	(4)	(5)	(6)
		Projected				
	Historical	5-Year	Projected	Projected		Average of
	Growth Rate	Growth	5-Year	3-5 Year	Average	Historical
	(DPS, EPS and	IBES	EPS Growth	EPS Growth	Projected	& Projected
Company Name	BVPS)	(Median)	S&P	Value Line	Growth	Growth
AGL Resources, Inc.	2.74%	5.00%	5.00%	6.50%	5.50%	4.12%
Cascade Natural Gas	1.99%	4.00%	4.00%	4.50%	4.17%	3.08%
New Jersey Resources Corporation	4.32%	6.50%	6.00%	8.00%	6.83%	5.58%
Northwest Natural Gas	2.64%	4.00%	4.00%	5.00%	4.33%	3.49%
Peoples Energy Corporation	1.90%	5.00%	5.00%	4.00%	4.67%	3.29%
Piedmont Natural Gas Company, Inc.	4.30%	5.00%	5.00%	7.50%	5.83%	5.07%
South Jersey Industries, Inc.	4.16%	5.00%	5.00%	6.50%	5.50%	4.83%
WGL Holdings, Inc.	0.05%	4.00%	4.00%	4.00%	4.00%	2.02%
	2.76%	4.81%	4.75%	5.75%	5.10%	3.93%

Proposed Range of Growth: 3.90%-4.90%

Column 5 = [ (Column 2 + Column 3 + Column 4) / 3 ]

Column 6 = [ ( Column 1 + Column 5 ) / 2 ]

Sources: Column 1 = Average of 10-Year and 5-Year Annual Compound Growth Rates from Schedule 15-3.

Column 2 = I/B/E/S Inc.'s Institutional Brokers Estimate System, January 15, 2004.

Column 3 = Standard & Poor's Earnings Guide, February 2004.

Column 4 = The Value Line Investment Survey: Ratings and Reports, December 19, 2003.

# Average High / Low Stock Price for October 2003 through January 2004 for the Eight Comparable Natural Gas Distribution Companies

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Octobe	er 2003	Novemb	oer 2003	Decemb	oer 2003	Januar	ry 2004	Average High/Low
	High	Low	High	Low	High	Low	High	Low	Stock
	Stock	Stock	Stock	Stock	Stock	Stock	Stock	Stock	Price
Company Name	Price	Price	Price	Price	Price	Price	Price	Price	(10/03 - 1/04)
AGL Resources, Inc.	29.040	27.240	28.720	27.500	29.350	28.250	30.630	28.600	28.666
Cascade Natural Gas	20.370	19.410	20.750	19.550	21.990	19.900	23.050	21.150	20.771
New Jersey Resources Corporation	38.000	35.760	39.250	36.450	39.540	37.550	39.490	37.750	37.758
Northwest Natural Gas	30.500	28.510	30.850	28.910	31.300	29.500	31.970	29.950	29.928
Peoples Energy Corporation	42.720	40.030	40.900	38.820	42.640	40.060	43.260	41.370	40.862
Piedmont Natural Gas Company, Inc.	40.000	38.850	41.130	39.410	43.950	40.710	43.750	41.270	40.675
South Jersey Industries, Inc.	39.610	37.770	39.400	37.850	40.700	39.000	41.490	40.210	39.055
WGL Holdings, Inc.	28.500	27.370	28.160	26.200	28.550	26.630	28.700	27.150	27.568

#### Notes:

Column 9 = [ ( Column 1 + Column 2 + Column 3 + Column 4 + Column 5 + Column 6 + Column 7 + Column 8 ) / 8 ].

Sources: Standard & Poor's Stock Guides: November 2003, December 2003, January 2004 and February 2004.

# DCF Estimated Costs of Common Equity for the Eight Comparable Natural Gas Distribution Companies

	(1)	(2)	(3)	(4)	(5)	
Company Name	Expected Annual Dividend	Average High/Low Stock Price	Projected Dividend Yield	Average of Historical & Projected Growth	Estimated Cost of Common Equity	
AGL Resources, Inc.	\$1.12	\$28.666	3.91%	4.12%	8.03%	
Cascade Natural Gas	\$0.96	\$20.771	4.62%	3.08%	7.70%	
New Jersey Resources Corporation	\$1.27	\$37.758	3.36%	5.58%	8.94%	
Northwest Natural Gas	\$1.29	\$29.928	4.31%	3.49%	7.80%	
Peoples Energy Corporation	\$2.14	\$40.862	5.24%	3.29%	8.80%	
Piedmont Natural Gas Company, Inc.	\$1.69	\$40.675	4.15%	5.07%	9.89%	
South Jersey Industries, Inc.	\$1.59	\$39.055	4.07%	4.83%	8.90%	
WGL Holdings, Inc.	\$1.29	\$27.568	4.68%	2.02%	6.70%	
Average			4.29%	3.93%	8.35%	
		Proposed Div	idend Yield:		4.30%	
		Proposed Rar	nge of Growth:	_	3.90% - 4.90%	
		Estimated Cos	st of Common Equ	ity:	8.20% - 9.20%	
Notes: Column 1 = Estimated Dividends Declared per share represents the average projected dividends for 2003 and 2004.						
Column 3 = ( Column 1 / Column 2 ).						

Column 5 = ( Column 3 + Column 4 ).

Sources: Column 1 = The Value Line Investment Survey: Ratings & Reports, December 19, 2003.

Column 2 = Schedule 17.

Column 4 = Schedule 16.

# Capital Asset Pricing Model (CAPM) Costs of Common Equity Estimates for the Eight Comparable Natural Gas Distribution Companies

	(1)	(2)	(3)	(4)	(5)	(6)
					CAPM	CAPM
			Market	Market	Cost of	Cost of
	Risk	Company's	Risk	Risk	Common	Common
	Free	Value Line	Premium	Premium	Equity	Equity
Company Name	Rate	Beta	(1926-2002)	(1993-2002)	(1926-2002)	(1993-2002)
AGL Resources, Inc.	4.93%	0.75	6.40%	-0.34%	9.73%	4.68%
Cascade Natural Gas	4.93%	0.70	6.40%	-0.34%	9.41%	4.69%
New Jersey Resources Corporation	4.93%	0.70	6.40%	-0.34%	9.41%	4.69%
Northwest Natural Gas	4.93%	0.60	6.40%	-0.34%	8.77%	4.73%
Peoples Energy Corporation	4.93%	0.75	6.40%	-0.34%	9.73%	4.68%
Piedmont Natural Gas Company, Inc.	4.93%	0.70	6.40%	-0.34%	9.41%	4.69%
South Jersey Industries, Inc.	4.93%	0.55	6.40%	-0.34%	8.45%	4.74%
WGL Holdings, Inc.	4.93%	0.70	6.40%	-0.34%	9.41%	4.69%
Average		0.68			9.29%	4.70%

Sources:

Column 1 = The appropriate yield is equal to the average 30-year U.S. Treasury Bond yield for February 2004 which was obtained from Investopedia at:http://www.investopedia.com

- Column 2 = Beta is a measure of the movement and relative risk of an individual stock to the market as a whole as reported by the Value Line Investment Survey: Ratings & Reports, December 19, 2003.
- Column 3 = The Market Risk Premium represents the expected return from holding the entire market portfolio less the expected return from holding a risk free investment. The appropriate Market Risk Premium was determined to be 6.40% as calculated in Ibbotson Associates, Inc.'s Stocks, Bonds, Bills, and Inflation: 2003 Yearbook for the period 1926 - 2002.
- Column 4 = The Market Risk Premium represents the expected return from holding the entire market portfolio less the expected return from holding a risk free investment. The appropriate Market Risk Premium was determined to be -.40% as calculated in Ibbotson Associates, Inc.'s Stocks, Bonds, Bills, and Inflation: 2003 Yearbook for the period 1993 - 2002.

Column 5 = (Column 1 + (Column 2 \* Column 3)).

Column 6 = (Column 1 + (Column 2 \* Column 4)).

#### Average Risk Premium above the Yields of 30-Year U.S. Treasury Bonds for AGL Resources' Expected Returns on Common Equity

		30-Year				30-Year	
	AGL's	U.S. Treasury	AGL's		AGL's	U.S. Treasury	AGL's
M-0/	Expected	Bond	Risk	M- M	Expected	Bond	Risk
Mo/Year Jan 1994	ROE 11.00%	Yields 6.29%	Premium 4.71%	Mo/Year Jan 1999	ROE 12.00%	Yields 5.16%	Premium 6.84%
Feb	11.00%		4.71%		12.00%		6.63%
Mar	11.00%	6.49% 6.91%	4.09%	Feb Mar	12.00%	5.37% 5.58%	6.42%
Apr	10.50%	7.27%	3.23%	Apr	12.00%	5.55%	6.45%
May	10.50%	7.41%	3.09%	May	12.00%	5.81%	6.19%
Jun	10.50%	7.40%	3.10%	Jun	12.00%	6.04%	5.96%
Jul	11.00%	7.58%	3.42%	Jul	11.50%	5.98%	5.52%
Aug	11.00%	7.49%	3.51%	Aug	11.50%	6.07%	5.43%
Sep	11.00%	7.71%	3.29%	Sep	11.50%	6.07%	5.43%
Oct	11.00%	7.94%	3.06%	Oct	9.50%	6.26%	3.24%
Nov	11.00%	8.08%	2.92%	Nov	9.50%	6.15%	3.35%
Dec	11.00%	7.87%	3.13%	Dec	9.50%	6.35%	3.15%
Jan 1995	11.00%	7.85%	3.15%	Jan 2000	9.50%	6.63%	2.87%
Feb	11.00%	7.61%	3.39%	Feb	9.50%	6.23%	3.27%
Mar	11.00%	7.45%	3.55%	Mar	9.50%	6.05%	3.45%
Apr	12.00%	7.36%	4.64%	Apr	10.00%	5.85%	4.15%
May	12.00%	6.95%	5.05%	May	10.00%	6.15%	3.85%
Jun	12.00%	6.57%	5.43%	Jun	10.00%	5.93%	4.07%
Jul	11.50%	6.72%	4.78%	Jul	10.50%	5.85%	4.07%
Aug	11.50%	6.86%	4.64%	Aug	10.50%	5.72%	4.03%
Sep	11.50%	6.55%	4.95%	Sep	10.50%	5.83%	4.78%
Oct	12.50%	6.37%	6.13%	Oct	10.50%	5.80%	4.70%
Nov	12.50%	6.26%	6.24%	Nov	10.50%	5.78%	4.72%
Dec	12.50%	6.06%	6.44%	Dec	10.50%	5.49%	5.01%
Jan 1996	13.00%	6.05%	6.95%	Jan 2001	11.50%	5.54%	5.96%
Feb	13.00%	6.24%	6.76%	Feb	11.50%	5.45%	6.05%
Mar	13.00%	6.60%	6.40%	March	11.50%	5.34%	6.16%
Apr	13.50%	6.79%	6.71%	Apr	12.00%	5.65%	6.35%
May	13.50%	6.93%	6.57%	May	12.00%	5.78%	6.22%
Jun	13.50%	7.06%	6.44%	June	12.00%	5.67%	6.33%
Jul	14.00%	7.03%	6.97%	July	13.00%	5.61%	7.39%
Aug	14.00%	6.84%	7.16%	Aug	13.00%	5.48%	7.52%
Sep	14.00%	7.03%	6.97%	Sept	13.00%	5.48%	7.52%
Oct	14.00%	6.81%	7.19%	Oct	12.50%	5.32%	7.18%
Nov	14.00%	6.48%	7.52%	Nov	12.50%	5.12%	7.38%
Dec	14.00%	6.55%	7.45%	Dec	12.50%	5.48%	7.02%
Jan 1997	14.50%	6.83%	7.67%	Jan 2002	13.00%	5.45%	7.55%
Feb	14.50%	6.69%	7.81%	Feb	13.00%	5.40%	7.60%
Mar	14.50%	6.93%	7.57%	Mar	13.00%	5.71%	7.29%
Apr	14.00%	7.09%	6.91%	Apr	13.00%	5.67%	7.33%
May	14.00%	6.94%	7.06%	May	13.00%	5.64%	7.36%
Jun	14.00%	6.77%	7.23%	Jun	13.00%	5.52%	7.48%
Jul	14.00%	6.51%	7.49%	Jul	12.50%	5.38%	7.12%
Aug	14.00%	6.58%	7.42%	Aug	12.50%	5.08%	7.42%
Sep	14.00%	6.50%	7.50%	Sep	12.50%	4.76%	7.74%
Oct	13.50%	6.33%	7.17%	Oct	13.00%	4.93%	8.07%
Nov	13.50%	6.11%	7.39%	Nov	13.00%	4.95%	8.05%
Dec	13.50%	5.99%	7.51%	Dec	13.00%	4.92%	8.08%
Jan 1998	11.50%	5.81%	5.69%	Jan 2003	13.50%	4.94%	8.56%
Feb	11.50%	5.89%	5.61%	Feb	13.50%	4.81%	8.69%
Mar	11.50%	5.95%	5.55%	Mar	13.50%	4.80%	8.70%
Apr	11.00%	5.92%	5.08%	Apr	14.00%	4.90%	9.10%
May	11.00%	5.93%	5.07%	May	14.00%	4.53%	9.47%
Jun	11.00%	5.70%	5.30%	Jun	14.00%	4.37%	9.63%
Jul	10.50%	5.68%	4.82%	Jul	14.50%	4.93%	9.57%
Aug	10.50%	5.54%	4.96%	Aug	14.50%	5.30%	9.20%
Sep	10.50%	5.20%	5.30%	Sep	14.50%	5.14%	9.36%
Oct	10.50%	5.01%	5.49%	Oct	13.50%	5.16%	8.34%
Nov	10.50%	5.25%	5.25%	Nov	13.50%	5.13%	8.37%
Dec	10.50%	5.06%	5.44%	Dec	13.50%	5.08%	8.42%

	Summary Information	(1994 - 2003)
	Average Risk Premium: (Jan 1994 - Dec 2003)	6.09%
	High Risk Premium: (June 2003)	9.63%
lata/GS30.txt	Low Risk Premium: (January 2000)	2.87%

Sources: The Value Line Investment Survey: Ratings & Reports.

Yahoo's Financial Website: www.investopedia.com St. Louis Federal Reserve website: http://research.stlouisfed.org/fred2/data/GS30.

#### Average Risk Premium above the Yields of 30-Year U.S. Treasury Bonds for Cascade's Expected Returns on Common Equity

		30-Year		
	Cascade's	U.S. Treasury	Cascade's	
Mo/Year	Expected ROE	Bond Yields	Risk Premium	Mo
Jan 1994	11.50%	6.29%	5.21%	Jar
Feb	11.50%	6.49%	5.01%	Fel
Mar	11.50%	6.91%	4.59%	Ma
Apr	10.00%	7.27%	2.73%	Ap
May	10.00%	7.41%	2.59%	Ma
Jun	10.00%	7.40%	2.60%	Jur
Jul	9.00%	7.58%	1.42%	Jul
Aug	9.00%	7.49%	1.51%	Au
Sep Oct	9.00%	7.71%	1.29%	Se
Nov	8.00% 8.00%	7.94% 8.08%	0.06% -0.08%	Oc No
Dec	8.00%	7.87%	0.13%	De
Jan 1995	10.50%	7.85%	2.65%	Jar
Feb	10.50%	7.61%	2.89%	Fel
Mar	10.50%	7.45%	3.05%	Ma
Apr	9.00%	7.36%	1.64%	Ap
May	9.00%	6.95%	2.05%	Ma
Jun	9.00%	6.57%	2.43%	Jur
Jul	10.50%	6.72%	3.78%	Jul
Aug	10.50%	6.86%	3.64%	Au
Sep	10.50%	6.55%	3.95%	Se
Oct Nov	10.00% 10.00%	6.37% 6.26%	3.63% 3.74%	Oc No
Dec	10.00%	6.06%	3.94%	De
Jan 1996	10.50%	6.05%	4.45%	Jar
Feb	10.50%	6.24%	4.26%	Fel
Mar	10.50%	6.60%	3.90%	Ma
Apr	8.50%	6.79%	1.71%	Ap
May	8.50%	6.93%	1.57%	Ma
Jun	8.50%	7.06%	1.44%	Jur
Jul	10.50%	7.03%	3.47%	Jul
Aug	10.50%	6.84%	3.66%	Au
Sep Oct	10.50% 8.50%	7.03% 6.81%	3.47% 1.69%	Se Oc
Nov	8.50%	6.48%	2.02%	No
Dec	8.50%	6.55%	1.95%	De
Jan 1997	14.50%	6.83%	7.67%	Jar
Feb	14.50%	6.69%	7.81%	Fel
Mar	14.50%	6.93%	7.57%	Ma
Apr	14.00%	7.09%	6.91%	Ap
May	14.00%	6.94%	7.06%	Ma
Jun	14.00%	6.77%	7.23%	Jur
Jul	10.50%	6.51%	3.99%	Jul
Aug	10.50%	6.58% 6.50%	3.92% 4.00%	Au
Sep Oct	10.50% 10.00%	6.33%	4.00%	Se Oc
Nov	10.00%	6.11%	3.89%	No
Dec	10.00%	5.99%	4.01%	De
Jan 1998	10.50%	5.81%	4.69%	Jar
Feb	10.50%	5.89%	4.61%	Fel
Mar	10.50%	5.95%	4.55%	Ma
Apr	9.50%	5.92%	3.58%	Ap
May	9.50%	5.93%	3.57%	Ma
Jun	9.50%	5.70%	3.80%	Jur
Jul	8.00%	5.68%	2.32%	Jul
Aug Sep	8.00% 8.00%	5.54% 5.20%	2.46% 2.80%	Au Se
Oct	8.00%	5.01%	2.80%	Oc
Nov	8.00%	5.25%	2.99%	No
Dec	8.00%	5.06%	2.94%	De

Mo/Year	Expected	Bond	
Mo/Year			Risk
	ROE	Yields 5.16%	Premium 5.34
Jan 1999	10.50%		
Feb	10.50%	5.37%	5.13
Mar	10.50%	5.58% 5.55%	4.92
Apr Mov	11.00% 11.00%	5.81%	5.45° 5.19°
May Jun	11.00%	6.04%	5.19° 4.96°
Jul	11.00%	5.98%	5.02
Aug	11.00%	6.07%	4.93
Sep	11.00%	6.07%	4.93
Oct	11.00%	6.26%	4.53
Nov	11.00%	6.15%	4.74
Dec	11.00%	6.35%	4.65
Jan 2000	12.00%	6.63%	5.37
Feb	12.00%	6.23%	5.77
Mar	12.00%	6.05%	5.95
	12.50%		
Apr		5.85%	6.65
May	12.50%	6.15%	6.35
Jun	12.50%	5.93%	6.57
Jul	13.50%	5.85%	7.65
Aug	13.50%	5.72%	7.78
Sep	13.50%	5.83%	7.67
Oct	13.00%	5.80%	7.20
Nov	13.00%	5.78%	7.22
Dec	13.00%	5.49%	7.51
Jan 2001	14.00%	5.54%	8.46
Feb	14.00%	5.45%	8.55
March	14.00%	5.34%	8.66
Apr	13.50%	5.65%	7.85
May	13.50%	5.78%	7.72
June	13.50%	5.67%	7.83
July	13.00%	5.61%	7.39
Aug	13.00%	5.48%	7.52
Sept	13.00%	5.48%	7.52
Oct	10.50%	5.32%	5.18
Nov	10.50%	5.12%	5.38
Dec	10.50%	5.48%	5.02
Jan 2002	8.00%	5.45%	2.55
Feb	8.00%	5.40%	2.60
Mar	8.00%	5.71%	2.29
Apr	8.00%	5.67%	2.33
May	8.00%	5.64%	2.36
Jun	8.00%	5.52%	2.48
Jul	9.00%	5.38%	3.62
Aug	9.00%	5.08%	3.92
Sep	9.00%	4.76%	4.24
Oct	10.50%	4.93%	5.57
Nov	10.50%	4.95%	5.55
Dec	10.50%	4.92%	5.58
Jan 2003	11.50%	4.94%	6.56
Feb	11.50%	4.81%	6.69
Mar	11.50%	4.80%	6.70
Apr	14.50%	4.90%	9.60
May	14.50%	4.53%	9.97
Jun	14.50%	4.37%	10.13
Jul	13.00%	4.93%	8.07
Aug	13.00%	5.30%	7.70
Sep	13.00%	5.14%	7.86
Oct	12.50%	5.16%	7.34
Nov	12.50%	5.13%	7.37
Dec	12.50%	5.08%	7.42
Summary Infe	ormation	(1994 - 2003)	)
Average Risk	Premium:	4.79	9%

10.13%

-0.08%

High Risk Premium: (June 2003)

Low Risk Premium: (November 1994)

Sources: The Value Line Investment Survey: Ratings & Reports.

Yahoo's Financial Website: www.investopedia.com

St. Louis Federal Reserve website: http://research.stlouisfed.org/fred2/data/GS30.txt

SCHEDULE 20-2

#### Average Risk Premium above the Yields of 30-Year U.S. Treasury Bonds for New Jersey's Expected Returns on Common Equity

		30-Year	
	New Jersey's	U.S. Treasury	New Jersey's
	Expected	Bond	Risk
Mo/Year	ROE	Yields	Premium
Jan 1994 Feb	12.00% 12.00%	6.29% 6.49%	5.71% 5.51%
Mar	12.00%	6.91%	5.09%
Apr	12.00%	7.27%	4.73%
May	12.00%	7.41%	4.59%
Jun	12.00%	7.40%	4.60%
Jul	12.00%	7.58%	4.42%
Aug	12.00%	7.49%	4.51%
Sep	12.00%	7.71%	4.29%
Oct	12.00%	7.94%	4.06%
Nov	12.00% 12.00%	8.08%	3.92% 4.13%
Dec Jan 1995	12.00%	7.87% 7.85%	4.13% 3.65%
Feb	11.50%	7.61%	3.89%
Mar	11.50%	7.45%	4.05%
Apr	12.00%	7.36%	4.64%
May	12.00%	6.95%	5.05%
Jun	12.00%	6.57%	5.43%
Jul	12.50%	6.72%	5.78%
Aug	12.50%	6.86%	5.64%
Sep	12.50%	6.55%	5.95%
Oct	13.00%	6.37%	6.63%
Nov	13.00%	6.26%	6.74%
Dec Jan 1996	13.00% 13.50%	6.06% 6.05%	6.94% 7.45%
Feb	13.50%	6.24%	7.26%
Mar	13.50%	6.60%	6.90%
Apr	13.50%	6.79%	6.71%
May	13.50%	6.93%	6.57%
Jun	13.50%	7.06%	6.44%
Jul	13.50%	7.03%	6.47%
Aug	13.50%	6.84%	6.66%
Sep	13.50%	7.03%	6.47%
Oct	13.50%	6.81%	6.69%
Nov Dec	13.50% 13.50%	6.48% 6.55%	7.02% 6.95%
Jan 1997	13.50%	6.83%	7.67%
Feb	14.50%	6.69%	7.81%
Mar	14.50%	6.93%	7.57%
Apr	14.00%	7.09%	6.91%
May	14.00%	6.94%	7.06%
Jun	14.00%	6.77%	7.23%
Jul	14.50%	6.51%	7.99%
Aug	14.50%	6.58%	7.92%
Sep	14.50%	6.50%	8.00%
Oct	14.50%	6.33%	8.17%
Nov Dec	14.50% 14.50%	6.11% 5.99%	8.39% 8.51%
Jan 1998	14.50%	5.81%	8.69%
Feb	14.50%	5.89%	8.61%
Mar	14.50%	5.95%	8.55%
Apr	14.50%	5.92%	8.58%
May	14.50%	5.93%	8.57%
Jun	14.50%	5.70%	8.80%
Jul	15.00%	5.68%	9.32%
Aug	15.00%	5.54%	9.46%
Sep	15.00%	5.20%	9.80%
Oct	15.00%	5.01%	9.99%
Nov Dec	15.00% 15.00%	5.25% 5.06%	9.75% 9.94%
Dec	13.00%	5.00%	5.54 70

	New Jersey's	U.S. Treasury Bond	New Jers Risk
Mo/Year	Expected ROE	Yields	Premiu
Jan 1999	14.50%	5.16%	9.34
Feb	14.50%	5.37%	9.13
Mar	14.50%	5.58%	8.92
Apr	14.50%	5.55%	8.95
May	14.50%	5.81%	8.69
Jun	14.50%	6.04%	8.46
Jul	14.50%	5.98%	8.52
Aug	14.50%	6.07%	8.43
Sep	14.50%	6.07%	8.43
Oct	14.50%	6.26%	8.24
Nov	14.50%	6.15%	8.35
Dec	14.50%	6.35%	8.15
Jan 2000	15.00%	6.63%	8.37
Feb	15.00%	6.23%	8.77
Mar	15.00%	6.05%	8.95
Apr	15.00%	5.85%	9.15
Мау	15.00%	6.15%	8.85
Jun	15.00%	5.93%	9.07
Jul	15.00%	5.85%	9.15
Aug	15.00%	5.72%	9.28
Sep	15.00%	5.83%	9.17
Oct	15.00%	5.80%	9.20
Nov	15.00%	5.78%	9.22
Dec	15.00%	5.49%	9.51
Jan 2001	14.50%	5.54%	8.96
Feb	14.50%	5.45%	9.05
March	14.50%	5.34%	9.16
Apr	14.50%	5.65%	8.85
May	14.50%	5.78%	8.72
June	14.50%	5.67%	8.83
July	12.50%	5.61%	6.89
Aug	12.50%	5.48%	7.02
Sept	12.50%	5.48%	7.02
Oct	12.50%	5.32%	7.18
Nov	12.50%	5.12%	7.38
Dec	12.50%	5.48%	7.02
Jan 2002	14.50%	5.45%	9.05
Feb	14.50%	5.40%	9.10
Mar	14.50%	5.71%	8.79
Apr	14.00%	5.67%	8.33
May	14.00%	5.64%	8.36
Jun	14.00%	5.52%	8.48
Jul	15.00%	5.38%	9.62
Aug	15.00%	5.08%	9.92
Sep	15.00%	4.76%	10.24
Oct	14.50%	4.93%	9.57
Nov	14.50%	4.95%	9.55
Dec	14.50%	4.92%	9.58
Jan 2003	14.50%	4.94%	9.56
Feb	14.50%	4.81%	9.69
Mar	14.50%	4.80%	9.70
Apr	15.00%	4.90%	10.10
May	15.00%	4.53%	10.10
Jun	15.00%	4.37%	10.47
Jul	15.00%	4.93%	10.03
Aug	15.00%	5.30%	9.70
Sep	15.00%	5.14%	9.86
Oct	15.00%	5.16%	9.84
Nov	15.00%	5.13%	9.84
Dec	15.00%	5.08%	9.92
200	10.0070	0.00 /0	5.92

Average Risk Premium: (Jan 1994 - Dec 2003)	7.86%
High Risk Premium: (June 2003)	10.63%
Low Risk Premium: (January 1995)	3.65%

Sources: The Value Line Investment Survey: Ratings & Reports.

Yahoo's Financial Website: www.investopedia.com St. Louis Federal Reserve website: http://research.stlouisfed.org/fred2/data/GS30.txt

SCHEDULE 20-3

#### Average Risk Premium above the Yields of 30-Year U.S. Treasury Bonds for Northwest Natural Gas' Expected Returns on Common Equity

		30-Year	
	Northwest Natural Gas'	U.S. Treasury	Northwest Natural Gas'
M- 0/	Expected	Bond	Risk
Mo/Year Jan 1994	ROE 12.50%	Yields 6.29%	Premium 6.21%
Feb	12.50%	6.49%	6.01%
Mar	12.50%	6.91%	5.59%
Apr	11.50%	7.27%	4.23%
May	11.50%	7.41%	4.09%
Jun	11.50%	7.40%	4.10%
Jul Aug	9.50% 9.50%	7.58% 7.49%	1.92% 2.01%
Sep	9.50%	7.71%	1.79%
Oct	10.50%	7.94%	2.56%
Nov	10.50%	8.08%	2.42%
Dec	10.50%	7.87%	2.63%
Jan 1995	11.50%	7.85%	3.65%
Feb Mar	11.50% 11.50%	7.61% 7.45%	3.89% 4.05%
Apr	11.00%	7.36%	3.64%
May	11.00%	6.95%	4.05%
Jun	11.00%	6.57%	4.43%
Jul	10.50%	6.72%	3.78%
Aug	10.50%	6.86%	3.64%
Sep	10.50%	6.55%	3.95%
Oct Nov	10.50% 10.50%	6.37% 6.26%	4.13% 4.24%
Dec	10.50%	6.06%	4.44%
Jan 1996	11.50%	6.05%	5.45%
Feb	11.50%	6.24%	5.26%
Mar	11.50%	6.60%	4.90%
Apr	11.50%	6.79%	4.71%
May	11.50%	6.93%	4.57% 4.44%
Jun Jul	11.50% 12.00%	7.06% 7.03%	4.44%
Aug	12.00%	6.84%	5.16%
Sep	12.00%	7.03%	4.97%
Oct	11.50%	6.81%	4.69%
Nov	11.50%	6.48%	5.02%
Dec	11.50%	6.55%	4.95%
Jan 1997 Feb	12.50% 12.50%	6.83% 6.69%	5.67% 5.81%
Mar	12.50%	6.93%	5.57%
Apr	11.50%	7.09%	4.41%
May	11.50%	6.94%	4.56%
Jun	11.50%	6.77%	4.73%
Jul	12.00%	6.51%	5.49%
Aug Sep	12.00% 12.00%	6.58% 6.50%	5.42% 5.50%
Oct	12.50%	6.33%	6.17%
Nov	12.50%	6.11%	6.39%
Dec	12.50%	5.99%	6.51%
Jan 1998	11.50%	5.81%	5.69%
Feb	11.50%	5.89%	5.61%
Mar	11.50%	5.95%	5.55%
Apr May	11.50% 11.50%	5.92% 5.93%	5.58% 5.57%
Jun	11.50%	5.70%	5.80%
Jul	9.50%	5.68%	3.82%
Aug	9.50%	5.54%	3.96%
Sep	9.50%	5.20%	4.30%
Oct	9.50%	5.01%	4.49%
Nov Dec	9.50% 9.50%	5.25% 5.06%	4.25% 4.44%
Dec	9.00%	0.00%	4.44%

Jul Aug Sep Oct Nov Dec Jan 2000 Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan 2001 Feb March Apr May June June June June June June June June	10.00% 10.00% 10.50% 10.50% 10.50% 10.50% 10.50% 10.50% 10.50% 10.50% 10.50% 10.50% 10.50% 10.50% 9.50% 9.50% 9.50% 9.50% 9.50% 10.00% 10.00% 10.00% 10.00% 10.00% 10.50% 10.00% 10.	6.23% 6.05% 5.85% 6.15% 5.93% 5.83% 5.88% 5.80% 5.78% 5.45% 5.45% 5.54% 5.54% 5.65% 5.67% 5.61% 5.61% 5.48% 5.48% 5.48% 5.48% 5.48% 5.48% 5.48% 5.48% 5.40% 5.71% 5.61% 5.64% 5.52% 5.64% 5.52% 5.38% 5.08% 4.92% 4.92% 4.92% 4.92% 4.92% 4.92% 4.92% 4.92% 4.92% 4.92% 4.92% 4.92% 4.92% 4.92% 4.92% 4.92% 4.92% 4.92% 4.93% 5.30% 5.16% 5.30% 5.16% 5.30% 5.16% 5.30% 5.16% 5.30% 5.16% 5.30% 5.16% 5.30% 5.16% 5.30% 5.16% 5.30% 5.16% 5.30% 5.16% 5.30% 5.16% 5.30%	$\begin{array}{r} 4.27\% \\ 4.45\% \\ 4.45\% \\ 4.15\% \\ 3.85\% \\ 4.07\% \\ 4.65\% \\ 4.78\% \\ 4.07\% \\ 4.20\% \\ 4.20\% \\ 4.22\% \\ 4.51\% \\ 4.96\% \\ 5.05\% \\ 5.16\% \\ 4.85\% \\ 4.72\% \\ 4.85\% \\ 4.72\% \\ 4.83\% \\ 4.02\% \\ 4.02\% \\ 4.02\% \\ 4.02\% \\ 4.02\% \\ 4.02\% \\ 4.02\% \\ 4.02\% \\ 4.02\% \\ 4.55\% \\ 4.60\% \\ 4.29\% \\ 4.55\% \\ 4.60\% \\ 4.29\% \\ 4.55\% \\ 4.60\% \\ 4.29\% \\ 4.55\% \\ 4.60\% \\ 5.92\% \\ 6.24\% \\ 6.06\% \\ 6.19\% \\ 6.20\% \\ 5.60\% \\ 5.97\% \\ 3.57\% \\ 3.20\% \\ 3.36\% \\ 3.87\% \\ 3.92\% \end{array}$
Aug Sep Dot Vav Vav Vav Jan 2000 =eb War Jun Jul Vaug Sep Dot Var Vav June June June June June June June June	10.00% 10.00% 10.00% 10.50% 10.50% 10.50% 10.00% 10.00% 10.00% 10.50% 10.50% 10.50% 10.50% 9.50% 10.00% 10.00% 10.00% 10.00% 10.00% 10.50% 10.50% 10.50% 10.50% 10.50% 10.50% 11.00% 11.00% 11.00% 11.00% 11.00% 11.00% 15.0% 9.50% 9.50% 9.50% 9.50% 9.50% 9.50% 9.50% 9.50% 10.50% 10.50% 10.50% 10.50% 10.00%	6.23% 6.05% 5.85% 6.15% 5.93% 5.85% 5.72% 5.83% 5.80% 5.72% 5.43% 5.49% 5.54% 5.78% 5.65% 5.78% 5.67% 5.61% 5.48% 5.48% 5.48% 5.48% 5.48% 5.48% 5.48% 5.48% 5.48% 5.48% 5.48% 5.48% 5.40% 5.40% 5.64% 5.64% 5.52% 5.38% 5.08% 4.93% 4.93% 4.92% 4.93% 4.93% 4.37% 4.93% 5.30% 5.10% 5.30% 5.30% 5.30% 5.10% 5.30% 5.10% 5.30% 5.10% 5.30% 5	$\begin{array}{r} 4.27\% \\ 4.45\% \\ 4.45\% \\ 4.15\% \\ 3.85\% \\ 4.07\% \\ 4.65\% \\ 4.78\% \\ 4.67\% \\ 4.20\% \\ 4.22\% \\ 4.51\% \\ 4.96\% \\ 5.05\% \\ 5.16\% \\ 4.85\% \\ 4.72\% \\ 4.85\% \\ 4.72\% \\ 4.83\% \\ 4.02\% \\ 4.02\% \\ 4.02\% \\ 4.02\% \\ 4.02\% \\ 4.02\% \\ 4.02\% \\ 4.02\% \\ 4.02\% \\ 4.57\% \\ 4.88\% \\ 4.98\% \\ 5.62\% \\ 5.92\% \\ 6.24\% \\ 4.57\% \\ 4.55\% \\ 4.55\% \\ 4.55\% \\ 4.55\% \\ 4.55\% \\ 4.55\% \\ 4.55\% \\ 4.55\% \\ 4.55\% \\ 4.55\% \\ 4.55\% \\ 4.55\% \\ 4.55\% \\ 4.55\% \\ 4.55\% \\ 4.55\% \\ 4.57\% \\ 4.55\% \\ 4.55\% \\ 4.55\% \\ 4.55\% \\ 4.56\% \\ 5.92\% \\ 5.92\% \\ 5.92\% \\ 5.92\% \\ 5.92\% \\ 5.92\% \\ 5.92\% \\ 5.92\% \\ 5.92\% \\ 5.92\% \\ 5.92\% \\ 5.5\% \\ 4.55\% \\ 4.55\% \\ 4.55\% \\ 4.55\% \\ 4.56\% \\ 5.97\% \\ 5.60\% \\ 5.97\% \\ 5.60\% \\ 5.97\% \\ 5.60\% \\ 5.97\% \\ 3.20\% \\ 3.36\% \\ 3.84\% \\ 3.87\% \end{array}$
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Aug           Sep           Sep           Sold           Vav           Var           Apr           Valu           Jun           Jun           Jun           Jun           Jun           Sep           Jun           Jun           Jun           Jun           Jun           Jun           June           June           July           Aug           Sept           Oct           Nov           Dec           Jan 2001           =eb           Varch           Apr           Var           Apr           Valug           Sep           Jun           Jun           Jun           Vav           Sep           Jun	10.00% 10.00% 10.50% 10.50% 10.50% 10.50% 10.00% 10.00% 10.00% 10.50% 10.50% 10.50% 10.50% 10.50% 9.50% 9.50% 9.50% 9.50% 9.50% 9.50% 10.00% 10.00% 10.00% 10.00% 10.00% 10.00% 10.00% 10.00% 10.50% 10.50% 10.50% 10.50% 10.50% 10.50% 10.00% 11.00% 10.50% 10.00%	6.23% 6.05% 5.85% 6.15% 5.93% 5.85% 5.72% 5.83% 5.80% 5.72% 5.43% 5.49% 5.54% 5.78% 5.65% 5.78% 5.67% 5.61% 5.48% 5.48% 5.48% 5.48% 5.48% 5.48% 5.48% 5.48% 5.48% 5.48% 5.40% 5.40% 5.40% 5.64% 5.64% 5.52% 5.38% 5.08% 4.92% 4.93% 4.93% 4.92% 4.92% 4.92% 4.94% 4.80% 4.90%	$\begin{array}{r} 4.27\% \\ 4.45\% \\ 4.45\% \\ 4.15\% \\ 3.85\% \\ 4.07\% \\ 4.65\% \\ 4.20\% \\ 4.20\% \\ 4.20\% \\ 4.21\% \\ 4.96\% \\ 5.05\% \\ 5.16\% \\ 5.16\% \\ 4.85\% \\ 4.72\% \\ 4.85\% \\ 4.72\% \\ 4.83\% \\ 4.02\% \\ 4.02\% \\ 4.02\% \\ 4.02\% \\ 4.02\% \\ 4.02\% \\ 4.28\% \\ 4.02\% \\ 4.28\% \\ 4.88\% \\ 4.98\% \\ 5.62\% \\ 5.92\% \\ 6.24\% \\ 4.55\% \\ 4.56\% \\ 6.10\% \\ 6.10\% \\ 6.20\% \\ 5.60\% \end{array}$
Aug           Sep           Sep           Oct           Nov           Soct           Nov           Dec           Jan 2000           Feb           Mar           Apr           May           Jul           Aug           Sep           Oct           Nov           Dec           June           July           Aug           Sept           Oct           May           June           July           Aug           Sept           Oct           Nov           Dec           Jan 2002           Feb           Mar           Apr           May           Jun           Jun <td>10.00% 10.00% 10.50% 10.50% 10.50% 10.00% 10.00% 10.00% 10.50% 10.50% 10.50% 10.50% 10.50% 10.50% 10.50% 9.50% 9.50% 9.50% 9.50% 9.50% 10.00% 10.00% 10.00% 10.00% 10.00% 10.00% 10.50% 10.00% 10.00% 10.00% 10.00% 10.00% 11.00% 11.00%</td> <td>6.23% 6.05% 5.85% 6.15% 5.93% 5.72% 5.83% 5.80% 5.72% 5.49% 5.49% 5.49% 5.45% 5.45% 5.67% 5.67% 5.61% 5.48% 5.52% 5.52% 5.52% 5.52% 5.52% 5.52% 5.38% 5.08% 4.93% 4.95% 4.94% 4.94% 4.81%</td> <td><math display="block">\begin{array}{r} 4.27\% \\ 4.45\% \\ 4.45\% \\ 4.15\% \\ 3.85\% \\ 4.07\% \\ 4.65\% \\ 4.78\% \\ 4.67\% \\ 4.20\% \\ 4.20\% \\ 4.22\% \\ 4.51\% \\ 4.96\% \\ 5.05\% \\ 5.16\% \\ 4.85\% \\ 4.72\% \\ 4.83\% \\ 4.02\% \\ 4.02\% \\ 4.02\% \\ 4.02\% \\ 4.02\% \\ 4.02\% \\ 4.02\% \\ 4.55\% \\ 4.60\% \\ 4.98\% \\ 5.62\% \\ 5.92\% \\ 6.24\% \\ 4.55\% \\ 4.55\% \\ 4.55\% \\ 4.55\% \\ 4.55\% \\ 4.55\% \\ 4.55\% \\ 4.55\% \\ 4.58\% \\ 6.06\% \\ 6.19\% \end{array}</math></td>	10.00% 10.00% 10.50% 10.50% 10.50% 10.00% 10.00% 10.00% 10.50% 10.50% 10.50% 10.50% 10.50% 10.50% 10.50% 9.50% 9.50% 9.50% 9.50% 9.50% 10.00% 10.00% 10.00% 10.00% 10.00% 10.00% 10.50% 10.00% 10.00% 10.00% 10.00% 10.00% 11.00% 11.00%	6.23% 6.05% 5.85% 6.15% 5.93% 5.72% 5.83% 5.80% 5.72% 5.49% 5.49% 5.49% 5.45% 5.45% 5.67% 5.67% 5.61% 5.48% 5.52% 5.52% 5.52% 5.52% 5.52% 5.52% 5.38% 5.08% 4.93% 4.95% 4.94% 4.94% 4.81%	$\begin{array}{r} 4.27\% \\ 4.45\% \\ 4.45\% \\ 4.15\% \\ 3.85\% \\ 4.07\% \\ 4.65\% \\ 4.78\% \\ 4.67\% \\ 4.20\% \\ 4.20\% \\ 4.22\% \\ 4.51\% \\ 4.96\% \\ 5.05\% \\ 5.16\% \\ 4.85\% \\ 4.72\% \\ 4.83\% \\ 4.02\% \\ 4.02\% \\ 4.02\% \\ 4.02\% \\ 4.02\% \\ 4.02\% \\ 4.02\% \\ 4.55\% \\ 4.60\% \\ 4.98\% \\ 5.62\% \\ 5.92\% \\ 6.24\% \\ 4.55\% \\ 4.55\% \\ 4.55\% \\ 4.55\% \\ 4.55\% \\ 4.55\% \\ 4.55\% \\ 4.55\% \\ 4.58\% \\ 6.06\% \\ 6.19\% \end{array}$
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Aug           Sep           Sep           Oct           Nov           Dec           Jan 2000           =eb           War           Apr           May           Jun           Sep           Oct           Way           Jun           Oct           Varch           Apr           Vlarch           Sept           Oct           Nov           Dec           Feb           Vlarch           Apr           May           June           July           Sept           Oct           Nov           Dec           Feb           Vlar           Apr           May           Jun           Jun           Jun           Jun           Sep           Oct           Nov           Oct           Nov           Occ	10.00% 10.00% 10.50% 10.50% 10.50% 10.00% 10.00% 10.00% 10.50% 10.50% 10.50% 10.50% 10.50% 10.50% 10.50% 9.50% 9.50% 9.50% 9.50% 9.50% 9.50% 10.00% 10.00% 10.00% 10.00% 10.00% 10.00% 10.00% 10.00% 10.50% 10.50% 10.50% 10.50% 10.50% 10.50% 10.50% 10.00% 10.00% 10.00% 10.00% 10.00% 10.00% 10.50% 10.00% 10.00% 10.00% 10.00% 10.00% 10.50% 10.00%	6.23% 6.05% 5.85% 6.15% 5.93% 5.85% 5.72% 5.83% 5.80% 5.78% 5.49% 5.49% 5.49% 5.49% 5.65% 5.78% 5.67% 5.61% 5.61% 5.48% 5.48% 5.48% 5.48% 5.45% 5.67% 5.67% 5.61% 5.67% 5.61% 5.67% 5.61% 5.67% 5.61% 5.67% 5.61% 5.61% 5.48% 5.45% 5.67% 5.67% 5.61% 5.48% 5.45% 5.45% 5.40% 5.67% 5.64% 5.52% 5.38% 5.08% 4.95% 4.92%	$\begin{array}{r} 4.27\% \\ 4.45\% \\ 4.45\% \\ 4.45\% \\ 4.15\% \\ 3.85\% \\ 4.07\% \\ 4.65\% \\ 4.20\% \\ 4.20\% \\ 4.20\% \\ 4.21\% \\ 4.96\% \\ 5.05\% \\ 5.16\% \\ 5.16\% \\ 4.85\% \\ 4.72\% \\ 4.85\% \\ 4.72\% \\ 4.83\% \\ 4.02\% \\ 4.02\% \\ 4.02\% \\ 4.02\% \\ 4.02\% \\ 4.18\% \\ 4.38\% \\ 4.02\% \\ 4.55\% \\ 4.60\% \\ 4.29\% \\ 4.83\% \\ 4.86\% \\ 4.98\% \\ 5.62\% \\ 5.92\% \\ 5.92\% \\ 5.92\% \\ 4.55\% \\ 4.55\% \\ 4.55\% \\ 4.55\% \\ 4.55\% \\ 4.58\% \end{array}$
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Aug           Sep           Sep           Oct           Nov           Jan 2000           =eb           Mar           Apr           Jun           Jun           Jun           Jun           Jun           Jun           Jun           Jun           Jun           Jon 2001           =eb           Warch           Apr           Varch           Apr           Varch           June           July           June           July           Aug           Sept           Oct           Nov           Dec           Jan 2002           =eb           Way           Jun           Jun           Jun           Jun           Jun           Sep	10.00% 10.00% 10.50% 10.50% 10.50% 10.00% 10.00% 10.00% 10.00% 10.50% 10.50% 10.50% 10.50% 10.50% 9.50% 9.50% 9.50% 9.50% 9.50% 9.50% 10.00% 10.00% 10.00% 10.00% 10.00% 10.00% 10.00% 10.50% 10.00%	6.23% 6.05% 5.85% 6.15% 5.93% 5.85% 5.72% 5.83% 5.80% 5.72% 5.49% 5.49% 5.49% 5.49% 5.54% 5.78% 5.65% 5.78% 5.67% 5.61% 5.48% 5.48% 5.48% 5.48% 5.48% 5.48% 5.48% 5.45% 5.40% 5.40% 5.64% 5.64% 5.52% 5.38% 5.08% 5.08% 4.76%	$\begin{array}{r} 4.27\% \\ 4.45\% \\ 4.45\% \\ 4.15\% \\ 3.85\% \\ 4.07\% \\ 4.65\% \\ 4.20\% \\ 4.20\% \\ 4.20\% \\ 4.21\% \\ 4.96\% \\ 5.05\% \\ 5.16\% \\ 5.16\% \\ 4.85\% \\ 4.72\% \\ 4.85\% \\ 4.72\% \\ 4.83\% \\ 4.02\% \\ 4.02\% \\ 4.02\% \\ 4.02\% \\ 4.02\% \\ 4.28\% \\ 4.28\% \\ 4.28\% \\ 4.88\% \\ 4.88\% \\ 4.88\% \\ 4.88\% \\ 4.88\% \\ 4.98\% \\ 5.62\% \\ 5.92\% \\ 5.92\% \\ 6.24\% \end{array}$
Aug Sep Oct Nov Dec Eab Mar Apr Jun Jun Jun Sep Dct Jan 2000 Feb Way Jun Sep Jun Sep Jun Sep Jun Sep Jun June Juny Aug Sept Oct Sep Jun Sep Jun Sept Oct Sep March Apr May Jun Sep Jun Jun Sep Jun Jun Sep Jun Jun Sep Jun Jun Sep Jun Jun Sep Jun Jun Sep Jun Jun Sep Jun Jun Sep Jun Jun Sep Jun Jun Sep Jun Jun Sep Jun Jun Sep Jun Jun Sep Jun Jun Jun Sep Jun Jun Jun Sep Jun Jun Sep Jun Jun Jun Sep Jun Sep Sep Jun Sep Sep Jun Sep Sep Sep Sep Sep Sep Sep Sep Sep Sep	10.00% 10.00% 10.50% 10.50% 10.50% 10.00% 10.00% 10.00% 10.50% 10.50% 10.50% 10.50% 10.50% 10.50% 9.50% 9.50% 9.50% 9.50% 9.50% 9.50% 9.50% 9.50% 10.00% 10.00% 10.00% 10.00% 10.00% 10.50% 11.00% 11.00%	6.23% 6.05% 5.85% 6.15% 5.93% 5.85% 5.72% 5.83% 5.49% 5.49% 5.49% 5.49% 5.49% 5.45% 5.34% 5.65% 5.78% 5.67% 5.61% 5.48% 5.48% 5.48% 5.48% 5.48% 5.48% 5.48% 5.48% 5.48% 5.48% 5.45% 5.48% 5.45% 5.48% 5.45% 5.48% 5.45% 5.48% 5.45% 5.48% 5.45% 5.48% 5.45% 5.48% 5.45% 5.48% 5.45% 5.48% 5.45% 5.67% 5.67% 5.67% 5.67% 5.67% 5.67% 5.67% 5.48% 5.45% 5.48% 5.45% 5.48% 5.45% 5.48% 5.45% 5.48% 5.45% 5.48% 5.45% 5.48% 5.67% 5.67% 5.67% 5.67% 5.67% 5.61% 5.85% 5.85% 5.67% 5.67% 5.61% 5.67% 5.67% 5.67% 5.67% 5.67% 5.67% 5.67% 5.67% 5.67% 5.67% 5.67% 5.67% 5.67% 5.67% 5.67% 5.67% 5.67% 5.64% 5.52% 5.64% 5.52% 5.68% 5.68% 5.63% 5.63% 5.63% 5.63% 5.63% 5.63% 5.63% 5.63% 5.63% 5.64% 5.52% 5.08% 5.08%	$\begin{array}{r} 4.27\% \\ 4.45\% \\ 4.45\% \\ 4.15\% \\ 3.85\% \\ 4.07\% \\ 4.65\% \\ 4.20\% \\ 4.20\% \\ 4.20\% \\ 4.21\% \\ 4.51\% \\ 4.96\% \\ 5.05\% \\ 5.16\% \\ 4.85\% \\ 4.72\% \\ 4.83\% \\ 4.02\% \\ 4.02\% \\ 4.02\% \\ 4.02\% \\ 4.02\% \\ 4.38\% \\ 4.02\% \\ 4.38\% \\ 4.02\% \\ 4.38\% \\ 4.02\% \\ 4.88\% \\ 4.38\% \\ 4.02\% \\ 4.55\% \\ 4.60\% \\ 4.29\% \\ 4.83\% \\ 4.86\% \\ 4.98\% \\ 5.62\% \\ 5.92\% \end{array}$
Aug Sep Dot Nov Vov Dec Jan 2000 Feb Mar Apr May Jul Sep Dot Vav Dec Jan 2001 Feb March Apr May July Aug Sept Dot Vav July Aug Sept Dot Vav July Aug Sept Dot Vav May July Aug Sept Dot Vav May July Aug Sept Dot Mar Apr May July Aug Sept Dot Mar Aug Sept Dot Mar May July Aug Sept Dot Mar May July Aug Sept Dot Mar May July July Aug Sept Dot May July July July July July July July Jul	10.00% 10.00% 10.50% 10.50% 10.50% 10.00% 10.00% 10.00% 10.50% 10.50% 10.50% 10.50% 10.50% 10.50% 9.50% 9.50% 9.50% 9.50% 9.50% 9.50% 9.50% 10.00% 10.00% 10.00% 10.00% 10.00% 10.00% 10.50% 10.00% 1	6.23% 6.05% 5.85% 6.15% 5.93% 5.85% 5.72% 5.83% 5.80% 5.78% 5.48% 5.49% 5.54% 5.54% 5.54% 5.65% 5.78% 5.67% 5.61% 5.48% 5.71% 5.67% 5.67% 5.67% 5.67% 5.71% 5.67% 5.67% 5.67% 5.67% 5.71% 5.67% 5.67% 5.67% 5.62%	$\begin{array}{r} 4.27\% \\ 4.45\% \\ 4.45\% \\ 4.15\% \\ 3.85\% \\ 4.07\% \\ 4.65\% \\ 4.20\% \\ 4.22\% \\ 4.22\% \\ 4.22\% \\ 4.51\% \\ 4.96\% \\ 5.05\% \\ 5.16\% \\ 4.85\% \\ 4.72\% \\ 4.83\% \\ 3.89\% \\ 4.02\% \\ 4.02\% \\ 4.02\% \\ 4.18\% \\ 4.38\% \\ 4.38\% \\ 4.55\% \\ 4.60\% \\ 4.29\% \\ 4.83\% \\ 4.86\% \\ 4.98\% \\ 4.9\% $
Aug Sep Oct Nov Vov Dec Eeb Mar Apr May Jun Jul Sep Oct Vav Sep Oct Vav Dec Jan 2001 Feb March Apr May June July Aug Sept Oct Vav June July Vav Sept Oct Var Apr May June July Sept Oct Var Apr Sept Dec Dec March Apr May June July July Aug Sept Oct Vav June July July Aug Sept Oct Var Apr May June July July July July July July July July	10.00% 10.00% 10.50% 10.50% 10.50% 10.00% 10.00% 10.00% 10.50% 10.50% 10.50% 10.50% 10.50% 9.50% 9.50% 9.50% 9.50% 9.50% 9.50% 9.50% 10.00% 10.00% 10.00% 10.00% 10.00% 10.50%	6.23% 6.05% 5.85% 6.15% 5.93% 5.85% 5.72% 5.83% 5.80% 5.78% 5.48% 5.49% 5.54% 5.54% 5.65% 5.65% 5.67% 5.61% 5.61% 5.48% 5.48% 5.48% 5.48% 5.42% 5.42% 5.40% 5.40% 5.67% 5.67% 5.64% 5.67%	$\begin{array}{c} 4.27\%\\ 4.45\%\\ 4.45\%\\ 4.15\%\\ 3.85\%\\ 4.07\%\\ 4.65\%\\ 4.78\%\\ 4.67\%\\ 4.20\%\\ 4.22\%\\ 4.51\%\\ 4.96\%\\ 5.05\%\\ 5.16\%\\ 5.16\%\\ 4.85\%\\ 4.72\%\\ 4.83\%\\ 3.89\%\\ 4.02\%\\ 4.02\%\\ 4.02\%\\ 4.02\%\\ 4.02\%\\ 4.02\%\\ 4.60\%\\ 4.29\%\\ 4.83\%\\ 4.86\%\\ 4.98\%\\ \end{array}$
Aug           Sep           Sep           Oct           Nov           Dec           Jan 2000           =eb           War           Apr           May           Jun           Jul           Aug           Sep           Oct           Jun 2001           Feb           Warch           Apr           Way           June           June      June	10.00% 10.00% 10.50% 10.50% 10.50% 10.00% 10.00% 10.00% 10.50% 10.50% 10.50% 10.50% 10.50% 10.50% 9.50% 9.50% 9.50% 9.50% 9.50% 9.50% 10.00% 10.00% 10.00% 10.00% 10.00% 10.00% 10.00% 10.50%	6.23% 6.05% 5.85% 6.15% 5.93% 5.85% 5.72% 5.83% 5.80% 5.78% 5.49% 5.49% 5.49% 5.49% 5.54% 5.65% 5.78% 5.67% 5.61% 5.48% 5.48% 5.48% 5.48% 5.48% 5.45% 5.67% 5.67% 5.67% 5.67% 5.67% 5.67% 5.67% 5.67% 5.67%	$\begin{array}{r} 4.27\% \\ 4.45\% \\ 4.45\% \\ 4.15\% \\ 3.85\% \\ 4.07\% \\ 4.65\% \\ 4.20\% \\ 4.20\% \\ 4.20\% \\ 4.21\% \\ 4.51\% \\ 4.96\% \\ 5.05\% \\ 5.16\% \\ 4.85\% \\ 4.72\% \\ 4.85\% \\ 4.72\% \\ 4.83\% \\ 4.02\% \\ 4.02\% \\ 4.02\% \\ 4.18\% \\ 4.38\% \\ 4.02\% \\ 4.55\% \\ 4.60\% \\ 4.29\% \\ 4.83\% \\ 4.86\% \end{array}$
Aug Sep Dot Nov Vov Dec Eeb Mar Apr May Jul Aug Sep Dot Nov Dec Jan 2001 Feb March Apr May July Aug Sept July Aug Sept July Aug Sept Dot Vay Mar May Mar May Mar May Mar May Mar May Mar Mar May Mar Mar May Mar Mar Mar Mar Mar May Mar Mar May Mar Mar May Mar Mar May Mar May Mar May Mar May Mar May May May May May May May May May May	10.00% 10.00% 10.50% 10.50% 10.50% 10.00% 10.00% 10.00% 10.50% 10.50% 10.50% 10.50% 10.50% 10.50% 9.50%	6.23% 6.05% 5.85% 6.15% 5.93% 5.85% 5.72% 5.83% 5.80% 5.78% 5.48% 5.49% 5.54% 5.54% 5.54% 5.54% 5.65% 5.78% 5.65% 5.65% 5.61% 5.61% 5.48% 5.48% 5.32% 5.12% 5.48% 5.45% 5.40% 5.71%	$\begin{array}{c} 4.27\% \\ 4.45\% \\ 4.45\% \\ 4.15\% \\ 3.85\% \\ 4.07\% \\ 4.66\% \\ 4.20\% \\ 4.20\% \\ 4.22\% \\ 4.22\% \\ 4.22\% \\ 4.51\% \\ 4.96\% \\ 5.05\% \\ 5.16\% \\ 4.85\% \\ 4.72\% \\ 4.83\% \\ 3.89\% \\ 4.02\% \\ 4.02\% \\ 4.02\% \\ 4.55\% \\ 4.55\% \\ 4.55\% \\ 4.60\% \\ 4.29\% \end{array}$
Aug Sep Dot Nov Vov Dec Eeb Mar Apr May Jul Aug Sep Dot Nov Dec Jan 2001 Feb March Apr May July Aug Sept July Aug Sept July Aug Sept Dot Vay Mar May Mar May Mar May Mar May Mar May Mar Mar May Mar Mar May Mar Mar Mar Mar Mar May Mar Mar May Mar Mar May Mar Mar May Mar May Mar May Mar May Mar May May May May May May May May May May	10.00% 10.00% 10.50% 10.50% 10.50% 10.00% 10.00% 10.00% 10.50% 10.50% 10.50% 10.50% 10.50% 10.50% 9.50%	6.23% 6.05% 5.85% 6.15% 5.93% 5.85% 5.72% 5.83% 5.80% 5.78% 5.48% 5.49% 5.54% 5.54% 5.54% 5.54% 5.65% 5.78% 5.65% 5.65% 5.61% 5.61% 5.48% 5.48% 5.32% 5.12% 5.48% 5.45% 5.40% 5.71%	$\begin{array}{c} 4.27\% \\ 4.45\% \\ 4.45\% \\ 4.15\% \\ 3.85\% \\ 4.07\% \\ 4.66\% \\ 4.20\% \\ 4.20\% \\ 4.22\% \\ 4.22\% \\ 4.22\% \\ 4.51\% \\ 4.96\% \\ 5.05\% \\ 5.16\% \\ 4.85\% \\ 4.72\% \\ 4.83\% \\ 3.89\% \\ 4.02\% \\ 4.02\% \\ 4.02\% \\ 4.55\% \\ 4.55\% \\ 4.55\% \\ 4.60\% \\ 4.29\% \end{array}$
Aug           Sep           Sep           Oct           Nov           Dec           Jan 2000           Feb           Mar           Apr           May           Jul           Jul           Sep           Oct           Nov           Dec           Jan 2001           Feb           Warch           Apr           Varch           Apr           Valan 2001           Feb           Varch           Apr           Valan 2001           Feb           Varch           Apr           Valan 2001           Feb           Valan 2001           Sept           Oct           Nov           Oct           Jan 2002	10.00% 10.00% 10.50% 10.50% 10.50% 10.00% 10.00% 10.00% 10.50% 10.50% 10.50% 10.50% 10.50% 10.50% 10.50% 10.50% 9.50%	6.23% 6.05% 5.85% 5.93% 5.85% 5.72% 5.83% 5.72% 5.83% 5.78% 5.49% 5.54% 5.54% 5.54% 5.65% 5.78% 5.65% 5.78% 5.61% 5.61% 5.48% 5.48% 5.32% 5.12% 5.48% 5.45%	$\begin{array}{r} 4.27\% \\ 4.45\% \\ 4.45\% \\ 4.15\% \\ 3.85\% \\ 4.07\% \\ 4.65\% \\ 4.20\% \\ 4.20\% \\ 4.20\% \\ 4.22\% \\ 4.51\% \\ 4.96\% \\ 5.05\% \\ 5.16\% \\ 4.85\% \\ 4.72\% \\ 4.83\% \\ 4.02\% \\ 4.02\% \\ 4.18\% \\ 4.38\% \\ 4.02\% \\ 4.55\% \end{array}$
Aug Sep Dot Nov Doc Jan 2000 Feb Mar Apr May Jun Jul Sep Doc Joc Sep Doc Jan 2001 Feb March Apr May June July Aug Sept July Aug Sept Doc Nov Doc Doc Sept Doc July Sept Doc July Sept Doc July Sept Doc Doc Doc Sept Doc Doc Sept Doc Doc Doc Sept Doc Doc Doc Sept Doc Doc Doc Doc Doc Doc Doc Sept Doc Doc Doc Doc Doc Doc Doc Doc Doc Doc	10.00% 10.00% 10.50% 10.50% 10.50% 10.00% 10.00% 10.00% 10.50% 10.50% 10.50% 10.50% 10.50% 10.50% 10.50% 9.50% 9.50% 9.50% 9.50% 9.50% 9.50% 9.50% 9.50%	6.23% 6.05% 5.85% 6.15% 5.93% 5.85% 5.72% 5.83% 5.80% 5.48% 5.48% 5.48% 5.44% 5.65% 5.65% 5.65% 5.65% 5.65% 5.61% 5.61% 5.61% 5.48% 5.32% 5.32% 5.12% 5.48%	$\begin{array}{r} 4.27\% \\ 4.45\% \\ 4.45\% \\ 4.15\% \\ 3.85\% \\ 4.07\% \\ 4.65\% \\ 4.78\% \\ 4.67\% \\ 4.20\% \\ 4.22\% \\ 4.22\% \\ 4.22\% \\ 4.51\% \\ 4.96\% \\ 5.05\% \\ 5.16\% \\ 4.85\% \\ 4.72\% \\ 4.83\% \\ 3.89\% \\ 4.02\% \\ 4.18\% \\ 4.38\% \\ 4.38\% \\ 4.02\% \end{array}$
Aug           Sep           Sep           Oct           Nov           Jan 2000           =eb           Mar           Apr           Jul           Jun 2001           Sep           Jon 2001           Feb           Vav           Jon 2001           Feb           Varch           Apr           Vlare           June           July           Aug           Sept           Oct           Nov	10.00% 10.00% 10.50% 10.50% 10.50% 10.00% 10.00% 10.00% 10.00% 10.50% 10.50% 10.50% 10.50% 10.50% 10.50% 9.50% 9.50% 9.50%	6.23% 6.05% 5.85% 6.15% 5.93% 5.85% 5.72% 5.83% 5.80% 5.78% 5.48% 5.49% 5.54% 5.45% 5.65% 5.65% 5.67% 5.61% 5.61% 5.48% 5.48% 5.42% 5.32%	4.27% 4.45% 4.15% 3.85% 4.07% 4.65% 4.20% 4.22% 4.22% 4.51% 4.96% 5.05% 5.16% 5.05% 5.16% 4.85% 4.72% 4.85% 4.72% 4.83% 3.89% 4.02% 4.02% 4.02% 4.18%
Aug Sep Oct Nov Dec Eab Mar Apr Jun Jun Jun Sep Dct Jan 2001 Feb Way Jun Poc Varch Apr May June Juny Sept Dct Sept Dct	10.00% 10.00% 10.50% 10.50% 10.50% 10.00% 10.00% 10.00% 10.50% 10.50% 10.50% 10.50% 10.50% 10.50% 10.50% 10.50% 9.50% 9.50%	6.23% 6.05% 5.85% 5.93% 5.85% 5.72% 5.83% 5.72% 5.83% 5.49% 5.54% 5.54% 5.54% 5.54% 5.65% 5.78% 5.65% 5.67% 5.61% 5.48% 5.48% 5.32%	4.27% 4.45% 4.15% 4.07% 4.65% 4.78% 4.67% 4.20% 4.20% 4.51% 4.96% 5.05% 5.16% 4.85% 4.72% 4.83% 4.83% 4.02% 4.02% 4.18%
Aug Sep Dot Nov Doc Jan 2000 Feb Mar Apr Jul Jun Jul Sep Dot Jul Sep Dot Doc Jan 2001 Feb March Apr May June July Sept July Sept	$\begin{array}{c} 10.00\% \\ 10.00\% \\ 10.00\% \\ 10.50\% \\ 10.50\% \\ 10.50\% \\ 10.00\% \\ 10.00\% \\ 10.00\% \\ 10.00\% \\ 10.50\% \\ 10.50\% \\ 10.50\% \\ 10.50\% \\ 10.50\% \\ 10.50\% \\ 10.50\% \\ 9.50\% \\ 9.50\% \end{array}$	6.23% 6.05% 5.85% 6.15% 5.93% 5.85% 5.85% 5.72% 5.83% 5.80% 5.78% 5.49% 5.54% 5.54% 5.54% 5.65% 5.78% 5.65% 5.67% 5.61% 5.61% 5.48% 5.48%	4.27% 4.45% 4.15% 3.85% 4.07% 4.65% 4.78% 4.67% 4.20% 4.22% 4.22% 4.21% 4.96% 5.05% 5.16% 4.85% 4.72% 4.83% 3.89% 4.02%
Aug Sep Oct Nov Dec Jan 2000 Feb Mar Apr May Jul May Jul Sep Doct Jul Sep Doct Jan 2001 Feb March Apr May Juley July Aug	$\begin{array}{c} 10.00\% \\ 10.00\% \\ 10.50\% \\ 10.50\% \\ 10.50\% \\ 10.50\% \\ 10.00\% \\ 10.00\% \\ 10.00\% \\ 10.00\% \\ 10.50\% \\ 10.50\% \\ 10.50\% \\ 10.50\% \\ 10.50\% \\ 10.50\% \\ 9.50\% \end{array}$	6.23% 6.05% 5.85% 6.15% 5.93% 5.85% 5.72% 5.83% 5.80% 5.78% 5.49% 5.49% 5.54% 5.34% 5.65% 5.78% 5.65% 5.67% 5.61% 5.64% 5.61% 5.61% 5.61% 5.61% 5.61% 5.64% 5.61% 5.61% 5.61% 5.61% 5.64% 5.61% 5.61% 5.61% 5.64% 5.61% 5.61% 5.61% 5.64% 5.61% 5.61% 5.64% 5.61% 5.61% 5.64% 5.61% 5.64% 5.61% 5.64% 5.61% 5.64% 5.61% 5.64% 5.61% 5.64% 5.65% 5.6%	4.27% 4.45% 4.15% 3.85% 4.07% 4.65% 4.67% 4.20% 4.22% 4.22% 4.22% 4.51% 4.96% 5.05% 5.16% 4.85% 4.72% 4.83% 3.89% 3.89%
Aug Sep Oct Nov Dec Jan 2000 Feb Mar Apr Jun Jul Aug Sep Oct Jan 2001 Feb May Dec Dec Jan 2001 Feb March Apr May June June	10.00% 10.00% 10.50% 10.50% 10.50% 10.00% 10.00% 10.00% 10.50% 10.50% 10.50% 10.50% 10.50% 10.50% 9.50%	6.23% 6.05% 5.85% 6.15% 5.93% 5.85% 5.72% 5.83% 5.80% 5.78% 5.45% 5.45% 5.45% 5.54% 5.65% 5.67% 5.61%	4.27% 4.45% 4.15% 4.07% 4.65% 4.78% 4.67% 4.20% 4.20% 4.51% 4.96% 5.05% 5.16% 4.85% 4.72% 4.85% 4.72% 4.83% 3.88%
Aug Sep Dot Nov Dec Jan 2000 Feb Mar Apr Jul Jun Jul Sep Dot Sep Dot Jan 2001 Feb March Apr May June	10.00% 10.00% 10.50% 10.50% 10.50% 10.00% 10.00% 10.00% 10.00% 10.50% 10.50% 10.50% 10.50% 10.50% 10.50%	6.23% 6.05% 5.85% 6.15% 5.93% 5.85% 5.83% 5.80% 5.72% 5.49% 5.54% 5.49% 5.54% 5.34% 5.65% 5.65% 5.67%	$\begin{array}{c} 4.27\%\\ 4.45\%\\ 4.15\%\\ 3.85\%\\ 4.07\%\\ 4.65\%\\ 4.78\%\\ 4.65\%\\ 4.67\%\\ 4.20\%\\ 4.20\%\\ 4.22\%\\ 4.51\%\\ 4.96\%\\ 5.05\%\\ 5.16\%\\ 4.85\%\\ 4.72\%\\ 4.83\%\\ 4.72\%\\ \end{array}$
Aug Sep Oct Nov Dec Jan 2000 Feb Mar Apr May Jul Jul Sep Oct Vay Dec Dec Jan 2001 Feb March Apr May May	10.00% 10.00% 10.50% 10.50% 10.50% 10.00% 10.00% 10.00% 10.00% 10.50% 10.50% 10.50% 10.50%	6.23% 6.05% 5.85% 6.15% 5.93% 5.85% 5.85% 5.83% 5.80% 5.72% 5.83% 5.72% 5.80% 5.74% 5.49% 5.54% 5.45% 5.34% 5.65% 5.78%	4.27% 4.45% 4.15% 3.85% 4.07% 4.65% 4.65% 4.20% 4.22% 4.22% 4.22% 4.22% 4.51% 5.05% 5.16% 4.85% 4.85% 4.72%
Aug Sep Oct Nov Dec Jan 2000 =eb Mar Apr Jun Jul Jul Sep Doct Jan 2001 =eb Vav Aug Sep Dec Jan 2001 Apr	10.00% 10.00% 10.50% 10.50% 10.50% 10.00% 10.00% 10.00% 10.50% 10.50% 10.50%	6.23% 6.05% 5.85% 6.15% 5.93% 5.85% 5.72% 5.83% 5.80% 5.78% 5.49% 5.54% 5.45% 5.45% 5.34% 5.65%	4.27% 4.45% 4.15% 3.85% 4.07% 4.65% 4.67% 4.20% 4.22% 4.51% 4.96% 5.05% 5.16% 4.85%
Aug Sep Oct Nov Dec Jan 2000 Feb Mar Apr May Jun Jun Jun Jun Jun Jun Jun Sep Oct Nov Dec Jan 2001 Feb March	10.00% 10.00% 10.50% 10.50% 10.50% 10.00% 10.00% 10.00% 10.50% 10.50%	6.23% 6.05% 5.85% 6.15% 5.93% 5.85% 5.72% 5.83% 5.72% 5.83% 5.78% 5.49% 5.54% 5.45% 5.45% 5.34%	4.27% 4.45% 4.15% 4.07% 4.65% 4.78% 4.67% 4.20% 4.20% 4.21% 4.51% 4.96% 5.05%
Aug Sep Oct Nov Dec Jan 2000 Feb Mar Apr Apr Jun Jun Jun Jun Jun Jun Jun Jun Jun Jun	10.00% 10.00% 10.50% 10.50% 10.50% 10.00% 10.00% 10.00% 10.50%	6.23% 6.05% 5.85% 6.15% 5.93% 5.85% 5.85% 5.83% 5.80% 5.72% 5.80% 5.78% 5.49% 5.54% 5.45%	4.27% 4.45% 4.15% 3.85% 4.07% 4.65% 4.78% 4.67% 4.20% 4.22% 4.51% 4.96% 5.05%
Aug Sep Oct Nov Dec Jan 2000 Feb Mar Apr Jun Jun Jun Jun Aug Sep Oct Nov Dec	10.00% 10.00% 10.50% 10.50% 10.50% 10.00% 10.00% 10.00%	6.23% 6.05% 5.85% 6.15% 5.93% 5.85% 5.72% 5.83% 5.80% 5.78% 5.78% 5.49%	4.27% 4.45% 4.15% 3.85% 4.07% 4.65% 4.65% 4.20% 4.20% 4.22% 4.51%
Aug Sep Oct Nov Dec Jan 2000 Feb Mar Apr May Jun Jun Jun Sep Oct Nov	10.00% 10.00% 10.50% 10.50% 10.50% 10.50% 10.00%	6.23% 6.05% 5.85% 6.15% 5.93% 5.85% 5.72% 5.83% 5.80% 5.78%	4.27% 4.45% 4.15% 3.85% 4.07% 4.65% 4.78% 4.67% 4.20%
Aug Sep Oct Nov Dec Jan 2000 Feb Mar Apr May Jun Jun Jun Aug Sep Oct	10.00% 10.00% 10.00% 10.50% 10.50% 10.50% 10.00%	6.23% 6.05% 5.85% 6.15% 5.93% 5.85% 5.72% 5.83% 5.83%	4.27% 4.45% 4.15% 3.85% 4.07% 4.65% 4.78% 4.78% 4.20%
Aug Sep Oct Nov Dec Jan 2000 Feb Mar Apr May Jun Jul Jul Aug Sep	10.00% 10.00% 10.00% 10.50% 10.50% 10.50%	6.23% 6.05% 5.85% 6.15% 5.93% 5.85% 5.72% 5.83%	4.27% 4.45% 4.15% 3.85% 4.07% 4.65% 4.78% 4.65%
Aug Sep Oct Nov Dec Jan 2000 Feb Mar Apr May Jun Jun Jul Aug	10.00% 10.00% 10.00% 10.50% 10.50%	6.23% 6.05% 5.85% 6.15% 5.93% 5.85% 5.72%	4.27% 4.45% 4.15% 3.85% 4.07% 4.65% 4.78%
Aug Sep Oct Nov Dec Jan 2000 Feb Mar Apr May Jun Jul	10.00% 10.00% 10.00% 10.50%	6.23% 6.05% 5.85% 6.15% 5.93% 5.85%	4.27% 4.45% 4.15% 3.85% 4.07% 4.65%
Aug Sep Oct Dec Jan 2000 Feb Mar Apr May Jun	10.00% 10.00% 10.00%	6.23% 6.05% 5.85% 6.15% 5.93%	4.27% 4.45% 4.15% 3.85% 4.07%
Aug Sep Oct Nov Dec Jan 2000 Feb Mar Apr May	10.00% 10.00%	6.23% 6.05% 5.85% 6.15%	4.27% 4.45% 4.15% 3.85%
Aug Sep Oct Nov Dec Jan 2000 Feb Mar Apr	10.00%	6.23% 6.05% 5.85%	4.27% 4.45% 4.15%
Aug Sep Oct Nov Dec Jan 2000 Feb Mar		6.23% 6.05%	4.27% 4.45%
Aug Sep Oct Nov Dec Jan 2000 Feb	10.50%	6.23%	4.27%
Aug Sep Oct Nov Dec Jan 2000	10.50%		
Aug Sep Oct Nov Dec	10.50%	6.63%	3.87%
Aug Sep Oct	10.50%	6.35%	4.15%
Aug Sep	10.50%	6.15%	4.35%
Aug	10.50%	6.26%	4.24%
	9.50%	6.07%	3.43%
Lot.	9.50%	5.98% 6.07%	3.52%
Jun	8.50% 9.50%	6.04% 5.98%	2.46% 3.52%
May	8.50%	5.81%	2.69%
Apr	8.50%	5.55%	2.95%
Mar	11.00%	5.58%	5.42%
Feb	11.00%		
Jan 1999	11.00%	5.37%	5.63%
Mo/Year		5.16% 5.37%	5.84%
	ROE	Yields 5.16% 5.37%	Premium 5.84%
		5.16% 5.37%	5.84%

30-Year

Average Risk Premium:	4.56%
(Jan 1994 - Dec 2003)	
High Risk Premium:	6.51%
(December 1997)	
Low Risk Premium:	1.79%
(September 1994)	

Sources: The Value Line Investment Survey: Ratings & Reports.

Yahoo's Financial Website: www.investopedia.com

St. Louis Federal Reserve website: http://research.stlouisfed.org/fred2/data/GS30.txt

#### Average Risk Premium above the Yields of 30-Year U.S. Treasury Bonds for People's Expected Returns on Common Equity

	People's	30-Year U.S. Treasury	People's		People's	30-Year U.S. Treasury	People's
	Expected	Bond	Risk		Expected	Bond	Risk
Mo/Year	ROE	Yields	Premium	Mo/Year	ROE	Yields	Premium
Jan 1994 Feb	12.00% 12.00%	6.29% 6.49%	5.71% 5.51%	Jan 1999 Feb	12.00% 12.00%	5.16% 5.37%	6.84% 6.63%
Mar	12.00%	6.91%	5.09%	Mar	12.00%	5.58%	6.42%
Apr	12.50%	7.27%	5.23%	Apr	10.50%	5.55%	4.95%
May	12.50%	7.41%	5.09%	May	10.50%	5.81%	4.69%
Jun	12.50%	7.40%	5.10%	Jun	10.50%	6.04%	4.46%
Jul	11.50%	7.58%	3.92%	Jul	10.50%	5.98%	4.52%
Aug	11.50%	7.49%	4.01%	Aug	10.50%	6.07%	4.43%
Sep	11.50%	7.71%	3.79%	Sep	10.50%	6.07%	4.43%
Oct	11.50%	7.94%	3.56%	Oct	10.50%	6.26%	4.24%
Nov	11.50%	8.08%	3.42%	Nov	10.50%	6.15%	4.35%
Dec	11.50%	7.87%	3.63%	Dec	10.50%	6.35%	4.15%
Jan 1995	11.00%	7.85%	3.15%	Jan 2000	12.00%	6.63%	5.37%
Feb	11.00%	7.61%	3.39%	Feb	12.00%	6.23%	5.77%
Mar	11.00%	7.45%	3.55%	Mar	12.00%	6.05%	5.95%
Apr	10.00%	7.36%	2.64%	Apr	11.50%	5.85%	5.65%
May Jun	10.00% 10.00%	6.95% 6.57%	3.05% 3.43%	May Jun	11.50% 11.50%	6.15% 5.93%	5.35% 5.57%
Jul	9.50%	6.72%	2.78%	Jul	12.00%	5.85%	6.15%
Aug	9.50%	6.86%	2.64%	Aug	12.00%	5.72%	6.28%
Sep	9.50%	6.55%	2.95%	Sep	12.00%	5.83%	6.17%
Oct	9.50%	6.37%	3.13%	Oct	12.00%	5.80%	6.20%
Nov	9.50%	6.26%	3.24%	Nov	12.00%	5.78%	6.22%
Dec	9.50%	6.06%	3.44%	Dec	12.00%	5.49%	6.51%
Jan 1996	12.00%	6.05%	5.95%	Jan 2001	12.50%	5.81%	6.69%
Feb	12.00%	6.24%	5.76%	Feb	12.50%	5.89%	6.61%
Mar	12.00%	6.60%	5.40%	March	12.50%	5.95%	6.55%
Apr	12.00%	6.79%	5.21%	Apr	13.50%	5.92%	7.58%
May	12.00%	6.93%	5.07%	May	13.50%	5.93%	7.57%
Jun	12.00%	7.06%	4.94%	June	13.50%	5.70%	7.80%
Jul Aug	13.50% 13.50%	7.03% 6.84%	6.47% 6.66%	July Aug	13.50% 13.50%	5.68% 5.54%	7.82% 7.96%
Sep	13.50%	7.03%	6.47%	Sept	13.50%	5.20%	8.30%
Oct	15.00%	6.81%	8.19%	Oct	13.50%	5.01%	8.49%
Nov	15.00%	6.48%	8.52%	Nov	13.50%	5.25%	8.25%
Dec	15.00%	6.55%	8.45%	Dec	13.50%	5.06%	8.44%
Jan 1997	12.00%	6.83%	5.17%	Jan 2002	12.00%	5.16%	6.84%
Feb	12.00%	6.69%	5.31%	Feb	12.00%	5.37%	6.63%
Mar	12.00%	6.93%	5.07%	Mar	12.00%	5.58%	6.42%
Apr	12.00%	7.09%	4.91%	Apr	12.00%	5.55%	6.45%
May	12.00%	6.94%	5.06%	May	12.00%	5.81%	6.19%
Jun	12.00%	6.77%	5.23%	Jun	12.00%	6.04%	5.96%
Jul	12.50%	6.51%	5.99%	Jul	11.50%	5.98%	5.52%
Aug	12.50%	6.58%	5.92%	Aug	11.50%	6.07%	5.43%
Sep Oct	12.50% 14.00%	6.50% 6.33%	6.00% 7.67%	Sep Oct	11.50% 11.50%	6.07% 6.26%	5.43% 5.24%
Nov	14.00%	6.11%	7.89%	Nov	11.50%	6.15%	5.24%
Dec	14.00%	5.99%	8.01%	Dec	11.50%	6.35%	5.15%
Jan 1998	12.50%	5.81%	6.69%	Jan 2003	11.50%	6.63%	4.87%
Feb	12.50%	5.89%	6.61%	Feb	11.50%	6.23%	5.27%
Mar	12.50%	5.95%	6.55%	Mar	11.50%	6.05%	5.45%
Apr	11.50%	5.92%	5.58%	Apr	12.00%	5.85%	6.15%
May	11.50%	5.93%	5.57%	May	12.00%	6.15%	5.85%
Jun	11.50%	5.70%	5.80%	Jun	12.00%	5.93%	6.07%
Jul	11.00%	5.68%	5.32%	Jul	12.50%	5.85%	6.65%
Aug	11.00%	5.54%	5.46%	Aug	12.50%	5.72%	6.78%
Sep	11.00%	5.20%	5.80%	Sep	12.50%	5.83%	6.67%
Oct	11.00%	5.01%	5.99%	Oct	12.00%	5.80%	6.20%
Nov Dec	11.00% 11.00%	5.25% 5.06%	5.75% 5.94%	Nov Dec	12.00% 12.00%	5.78% 5.49%	6.22% 6.51%
Dec	11.00%	5.00%	5.94%	Dec	12.00%	5.49%	0.51%
				Summary Inf	ormation	(1994 - 2003	)

	Average Risk Premium: (Jan 1994 - Dec 2003)	5.65%
	High Risk Premium: (November 1996)	8.52%
Sources: The Value Line Investment Survey: Ratings & Reports. Yahoo's Financial Website: www.investopedia.com St. Louis Federal Reserve website: http://research.stlouisfed.org/fred2/data/GS30.txt	Low Risk Premium: (April 1995)	2.64%

#### Average Risk Premium above the Yields of 30-Year U.S. Treasury Bonds for Piedmont's Expected Returns on Common Equity

	Piedmont's Expected	30-Year U.S. Treasury Bond	Piedmont's Risk		Piedmont's Expected	30-Year U.S. Treasury Bond	Piedmonť Risk
Mo/Year	ROE	Yields	Premium	Mo/Year	ROE	Yields	Premium
Jan 1994	10.00%	6.29%	3.71%	Jan 1999	13.50%	5.16%	8.34%
Feb	10.00%	6.49%	3.51%	Feb	13.50%	5.37%	8.13%
Mar	10.00%	6.91%	3.09%	Mar	13.50%	5.58%	7.92%
Apr	10.00%	7.27%	2.73%	Apr	13.00%	5.55%	7.45%
May	10.00%	7.41%	2.59%	May	13.00%	5.81%	7.19%
Jun	10.00%	7.40%	2.60%	Jun	13.00%	6.04%	6.96%
Jul	11.00%	7.58%	3.42%	Jul	12.50%	5.98%	6.52%
Aug	11.00%	7.49%	3.51%	Aug	12.50%	6.07%	6.43%
Sep	11.00%	7.71%	3.29%	Sep	12.50%	6.07%	6.43%
Oct	11.50%	7.94%	3.56%	Oct	12.00%	6.26%	5.74%
Nov	11.50%	8.08%	3.42%	Nov	12.00%	6.15%	5.85%
Dec	11.50%	7.87%	3.63%	Dec	12.00%	6.35%	5.65%
Jan 1995	11.50%	7.85%	3.65%	Jan 2000	13.00%	6.63%	6.37%
Feb	11.50%	7.61%	3.89%	Feb	13.00%	6.23%	6.77%
Mar	11.50%	7.45%	4.05%	Mar	13.00%	6.05%	6.95%
Apr	12.00%	7.36%	4.64%	Apr	12.50%	5.85%	6.65%
May	12.00%	6.95%	5.05%	May	12.50%	6.15%	6.35%
Jun	12.00%	6.57%	5.43%	Jun	12.50%	5.93%	6.57%
Jul	11.50%	6.72%	4.78%	Jul	12.50%	5.85%	6.65%
Aug	11.50%	6.86%	4.64%	Aug	12.50%	5.72%	6.78%
Sep	11.50%	6.55%	4.95%	Sep	12.50%	5.83%	6.67%
Oct	11.50%	6.37%	5.13%	Oct	12.50%	5.80%	6.70%
Nov	11.50%	6.26%	5.24%	Nov	12.50%	5.78%	6.72%
Dec	11.50%	6.06%	5.44%	Dec	12.50%	5.49%	7.01%
Jan 1996	12.00%	6.05%	5.95%	Jan 2001	12.50%	5.81%	6.69%
Feb	12.00%	6.24%	5.76%	Feb	12.50%	5.89%	6.61%
Mar	12.00%	6.60%	5.40%	March	12.50%	5.95%	6.55%
Apr	12.00%	6.79%	5.21%	Apr	12.50%	5.92%	6.58%
May	12.00%	6.93%	5.07%	May	12.50%	5.93%	6.57%
Jun	12.00%	7.06%	4.94%	June	12.50%	5.70%	6.80%
Jul	12.50%	7.03%	5.47%	July	12.00%	5.68%	6.32%
Aug	12.50%	6.84%	5.66%	Aug	12.00%	5.54%	6.46%
Sep	12.50%	7.03%	5.47%	Sept	12.00%	5.20%	6.80%
Oct	12.50%	6.81%	5.69%	Oct	10.50%	5.01%	5.49%
Nov	12.50%	6.48%	6.02%	Nov	10.50%	5.25%	5.25%
Dec	12.50%	6.55%	5.95%	Dec	10.50%	5.06%	5.44%
Jan 1997	12.00%	6.83%	5.17%	Jan 2002	11.00%	5.16%	5.84%
Feb	12.00%	6.69%	5.31%	Feb	11.00%	5.37%	5.63%
Mar	12.00%	6.93%	5.07%	Mar	11.00%	5.58%	5.42%
Apr	12.50%	7.09%	5.41%	Apr	11.00%	5.55%	5.45%
May	12.50%	6.94%	5.56%	May	11.00%	5.81%	5.19%
Jun	12.50%	6.77%	5.73%	Jun	11.00%	6.04%	4.96%
Jul	12.50%	6.51%	5.99%	Jul	10.50%	5.98%	4.52%
Aug	12.50%	6.58%	5.92%	Aug	10.50%	6.07%	4.43%
Sep	12.50%	6.50%	6.00%	Sep	10.50%	6.07%	4.43%
Oct	13.00%	6.33%	6.67%	Oct	10.00%	6.26%	3.74%
Nov	13.00%	6.11%	6.89%	Nov	10.00%	6.15%	3.85%
Dec	13.00%	5.99%	7.01%	Dec	10.00%	6.35%	3.65%
Jan 1998	13.00%	5.81%	7.19%	Jan 2003	10.50%	6.63%	3.87%
Feb	13.00%	5.89%	7.11%	Feb	10.50%	6.23%	4.27%
Mar	13.00%	5.95%	7.05%	Mar	10.50%	6.05%	4.45
Apr	13.00%	5.92%	7.08%	Apr	11.00%	5.85%	5.15%
May	13.00%	5.93%	7.07%	May	11.00%	6.15%	4.85%
Jun	13.00%	5.70%	7.30%	Jun	11.00%	5.93%	5.07%
Jul	13.50%	5.68%	7.82%	Jul	11.00%	5.85%	5.15%
Aug	13.50%	5.54%	7.96%	Aug	11.00%	5.72%	5.28
Sep	13.50%	5.20%	8.30%	Sep	11.00%	5.83%	5.179
Oct	13.50%	5.01%	8.49%	Oct	10.50%	5.80%	4.70%
Nov	13.50%	5.25%	8.25%	Nov	10.50%	5.78%	4.709
Dec	13.50%	5.06%	8.44%	Dec	10.50%	5.49%	5.01%
160	13.30%	0.0070	0.4470	Dec	10.0070	0.4970	5.017

Summary Information	(1994 - 2003)
Average Risk Premium: (Jan 1994 - Dec 2003)	5.65%
High Risk Premium: (October 1998)	8.49%
Low Risk Premium: (May 1994)	2.59%

Sources: The Value Line Investment Survey: Ratings & Reports.

Yahoo's Financial Website: www.investopedia.com St. Louis Federal Reserve website: http://research.stlouisfed.org/fred2/data/GS30.txt

#### Average Risk Premium above the Yields of 30-Year U.S. Treasury Bonds for South Jersey's Expected Returns on Common Equity

	South Jersey's Expected	30-Year U.S. Treasury Bond	South Jersey's Risk		South Jersey's Expected	30-Year U.S. Treasury Bond	South Jersey's Risk
Mo/Year	ROE	Yields	Premium	Mo/Year	ROE	Yields	Premium
Jan 1994	NA NA	6.29% 6.49%	NA NA	Jan 1999	10.50% 10.50%	5.16% 5.37%	5.34%
Feb Mar	NA	6.91%	NA	Feb Mar	10.50%	5.58%	5.13% 4.92%
Apr	NA	7.27%	NA	Apr	11.00%	5.55%	4.92 % 5.45%
May	NA	7.41%	NA	May	11.00%	5.81%	5.19%
Jun	NA	7.40%	NA	Jun	11.00%	6.04%	4.96%
Jul	NA	7.58%	NA	Jul	12.00%	5.98%	6.02%
Aug	NA	7.49%	NA	Aug	12.00%	6.07%	5.93%
Sep	NA	7.71%	NA	Sep	12.00%	6.07%	5.93%
Oct	NA	7.94%	NA	Oct	12.00%	6.26%	5.74%
Nov	NA	8.08%	NA	Nov	12.00%	6.15%	5.85%
Dec	NA	7.87%	NA	Dec	12.00%	6.35%	5.65%
Jan 1995	NA	7.85%	NA	Jan 2000	11.50%	6.63%	4.87%
Feb Mar	NA NA	7.61% 7.45%	NA NA	Feb Mar	11.50% 11.50%	6.23% 6.05%	5.27% 5.45%
Apr	NA	7.36%	NA	Apr	11.50%	5.85%	5.65%
May	NA	6.95%	NA	May	11.50%	6.15%	5.35%
Jun	NA	6.57%	NA	Jun	11.50%	5.93%	5.57%
Jul	NA	6.72%	NA	Jul	11.50%	5.85%	5.65%
Aug	NA	6.86%	NA	Aug	11.50%	5.72%	5.78%
Sep	NA	6.55%	NA	Sep	11.50%	5.83%	5.67%
Oct	NA	6.37%	NA	Oct	11.50%	5.80%	5.70%
Nov	NA	6.26%	NA	Nov	11.50%	5.78%	5.72%
Dec	NA	6.06%	NA	Dec	11.50%	6.10%	5.40%
Jan 1996	NA	6.05%	NA	Jan 2001	12.00%	5.81%	6.19%
Feb	NA	6.24%	NA	Feb	12.00%	5.89%	6.11%
Mar	NA	6.60%	NA	March	12.00%	5.95%	6.05%
Apr May	NA NA	6.79% 6.93%	NA NA	Apr	12.00% 12.00%	5.92% 5.93%	6.08% 6.07%
Jun	NA	7.06%	NA	May June	12.00%	5.70%	6.30%
Jul	10.50%	7.03%	3.47%	July	12.00%	5.68%	6.32%
Aug	10.50%	6.84%	3.66%	Aug	12.00%	5.54%	6.46%
Sep	10.50%	7.03%	3.47%	Sept	12.00%	5.20%	6.80%
Oct	11.00%	6.81%	4.19%	Oct	12.00%	5.01%	6.99%
Nov	11.00%	6.48%	4.52%	Nov	12.00%	5.25%	6.75%
Dec	11.00%	6.55%	4.45%	Dec	12.00%	5.06%	6.94%
Jan 1997	NA	6.83%	NA	Jan 2002	12.00%	5.16%	6.84%
Feb	NA	6.69%	NA	Feb	12.00%	5.37%	6.63%
Mar	NA	6.93%	NA	Mar	12.00%	5.58%	6.42%
Apr	NA	7.09%	NA	Apr	12.50%	5.55%	6.95%
May Jun	NA NA	6.94% 6.77%	NA NA	May Jun	12.50% 12.50%	5.81% 6.04%	6.69% 6.46%
Jul	10.50%	6.51%	3.99%	Jul	12.50%	5.98%	6.52%
Aug	10.50%	6.58%	3.92%	Aug	12.50%	6.07%	6.43%
Sep	10.50%	6.50%	4.00%	Sep	12.50%	6.07%	6.43%
Oct	10.50%	6.33%	4.17%	Oct	12.50%	6.26%	6.24%
Nov	10.50%	6.11%	4.39%	Nov	12.50%	6.15%	6.35%
Dec	10.50%	5.99%	4.51%	Dec	12.50%	6.35%	6.15%
Jan 1998	11.50%	5.81%	5.69%	Jan 2003	12.50%	6.63%	5.87%
Feb	11.50%	5.89%	5.61%	Feb	12.50%	6.23%	6.27%
Mar	11.50%	5.95%	5.55%	Mar	12.50%	6.05%	6.45%
Apr	11.00%	5.92%	5.08%	Apr	12.50%	5.85%	6.65%
May	11.00%	5.93%	5.07%	May	12.50%	6.15%	6.35%
Jun Jul	11.00% 9.50%	5.70% 5.68%	5.30% 3.82%	Jun Jul	12.50% 12.50%	5.93% 5.85%	6.57% 6.65%
Aug	9.50%	5.54%	3.96%	Aug	12.50%	5.72%	6.78%
Sep	9.50%	5.20%	4.30%	Sep	12.50%	5.83%	6.67%
Oct	9.00%	5.01%	3.99%	Oct	12.50%	5.80%	6.70%
Nov	9.00%	5.25%	3.75%	Nov	12.50%	5.78%	6.72%
Dec	9.00%	5.06%	3.94%	Dec	12.50%	6.10%	6.40%
				Summary In	formation	(1994 - 200	3)

	Average Risk Premium: (Jan 1994 - Dec 2003)	3.91%
	High Risk Premium: (October 2001)	6.99%
Sources: The Value Line Investment Survey: Ratings & Reports. Yahoo's Financial Website: www.investopedia.com St. Louis Federal Reserve website: http://research.stlouisfed.org/fred2/data/GS30.txt	Low Risk Premium: (July and September 1996)	3.47%

Note: Expected ROE's were not available to the Missouri Public Service Commission before June 1996 and between January 1997 and June 1997

#### Average Risk Premium above the Yields of 30-Year U.S. Treasury Bonds for WGL Holding's Expected Returns on Common Equity

		30-Year				30-Year	
	WGL's	U.S. Treasury	WGL's		WGL's	U.S. Treasury	WGL's
	Expected	Bond	Risk		Expected	Bond	Risk
Mo/Year	ROE	Yields	Premium	Mo/Year	ROE	Yields	Premium
Jan 1994	11.50% 11.50%	6.29% 6.49%	5.21%	Jan 1999	10.50%	5.16%	5.34%
Feb Mar	11.50%	6.91%	5.01% 4.59%	Feb Mar	10.50% 10.50%	5.37% 5.58%	5.13% 4.92%
Apr	12.00%	7.27%	4.73%	Apr	9.00%	5.55%	3.45%
May	12.00%	7.41%	4.59%	May	9.00%	5.81%	3.19%
Jun	12.00%	7.40%	4.60%	Jun	9.00%	6.04%	2.96%
Jul	12.50%	7.58%	4.92%	Jul	9.50%	5.98%	3.52%
Aug	12.50%	7.49%	5.01%	Aug	9.50%	6.07%	3.43%
Sep	12.50%	7.71%	4.79%	Sep	9.50%	6.07%	3.43%
Oct	12.00%	7.94%	4.06%	Oct	10.00%	6.26%	3.74%
Nov	12.00%	8.08%	3.92%	Nov	10.00%	6.15%	3.85%
Dec	12.00%	7.87%	4.13%	Dec	10.00%	6.35%	3.65%
Jan 1995	11.00%	7.85%	3.15%	Jan 2000	12.00%	6.63%	5.37%
Feb	11.00%	7.61%	3.39%	Feb	12.00%	6.23%	5.77%
Mar	11.00%	7.45%	3.55%	Mar	12.00%	6.05%	5.95%
Apr	11.00%	7.36%	3.64%	Apr	12.00%	5.85%	6.15%
May	11.00%	6.95%	4.05%	May	12.00%	6.15%	5.85%
Jun	11.00%	6.57%	4.43%	Jun	12.00%	5.93%	6.07%
Jul	11.50%	6.72%	4.78%	Jul	12.00%	5.85%	6.15%
Aug	11.50%	6.86%	4.64% 4.95%	Aug	12.00%	5.72%	6.28%
Sep Oct	11.50% 11.50%	6.55% 6.37%	4.95% 5.13%	Sep Oct	12.00% 12.00%	5.83% 5.80%	6.17% 6.20%
Nov	11.50%	6.26%	5.24%	Nov	12.00%	5.78%	6.22%
Dec	11.50%	6.06%	5.44%	Dec	12.00%	5.49%	6.51%
Jan 1996	12.00%	6.05%	5.95%	Jan 2001	12.50%	5.81%	6.69%
Feb	12.00%	6.24%	5.76%	Feb	12.50%	5.89%	6.61%
Mar	12.00%	6.60%	5.40%	March	12.50%	5.95%	6.55%
Apr	13.00%	6.79%	6.21%	Apr	13.50%	5.92%	7.58%
May	13.00%	6.93%	6.07%	May	13.50%	5.93%	7.57%
Jun	13.00%	7.06%	5.94%	June	13.50%	5.70%	7.80%
Jul	14.00%	7.03%	6.97%	July	12.50%	5.68%	6.82%
Aug	14.00%	6.84%	7.16%	Aug	12.50%	5.54%	6.96%
Sep	14.00%	7.03%	6.97%	Sept	12.50%	5.20%	7.30%
Oct	14.50%	6.81%	7.69%	Oct	11.00%	5.01%	5.99%
Nov	14.50%	6.48%	8.02%	Nov	11.00%	5.25%	5.75%
Dec	14.50%	6.55%	7.95%	Dec	11.00%	5.06%	5.94%
Jan 1997 Feb	14.50%	6.83%	7.67%	Jan 2002 Feb	10.50%	5.16%	5.34%
Mar	14.50% 14.50%	6.69% 6.93%	7.81% 7.57%	Mar	10.50% 10.50%	5.37% 5.58%	5.13% 4.92%
Apr	12.50%	7.09%	5.41%	Apr	8.50%	5.55%	2.95%
May	12.50%	6.94%	5.56%	May	8.50%	5.81%	2.69%
Jun	12.50%	6.77%	5.73%	Jun	8.50%	6.04%	2.46%
Jul	13.00%	6.51%	6.49%	Jul	7.00%	5.98%	1.02%
Aug	13.00%	6.58%	6.42%	Aug	7.00%	6.07%	0.93%
Sep	13.00%	6.50%	6.50%	Sep	7.00%	6.07%	0.93%
Oct	13.50%	6.33%	7.17%	Oct	7.00%	6.26%	0.74%
Nov	13.50%	6.11%	7.39%	Nov	7.00%	6.15%	0.85%
Dec	13.50%	5.99%	7.51%	Dec	7.00%	6.35%	0.65%
Jan 1998	13.50%	5.81%	7.69%	Jan 2003	10.50%	6.63%	3.87%
Feb	13.50%	5.89%	7.61%	Feb	10.50%	6.23%	4.27%
Mar	13.50%	5.95%	7.55%	Mar	10.50%	6.05%	4.45%
Apr	12.00%	5.92%	6.08%	Apr	12.00%	5.85%	6.15%
May	12.00%	5.93%	6.07%	May	12.00%	6.15%	5.85%
Jun	12.00%	5.70%	6.30% 6.32%	Jun	12.00%	5.93%	6.07%
Jul Aug	12.00% 12.00%	5.68% 5.54%	6.32%	Jul Aug	10.50% 10.50%	5.85% 5.72%	4.65% 4.78%
Sep	12.00%	5.20%	6.80%	Sep	10.50%	5.83%	4.78%
Oct	11.50%	5.01%	6.49%	Oct	12.00%	5.80%	6.20%
Nov	11.50%	5.25%	6.25%	Nov	12.00%	5.78%	6.22%
Dec	11.50%	5.06%	6.44%	Dec	12.00%	5.49%	6.51%
				Summary Inf	ormation	(1994 - 2003	)

	Summary Information	(1994 - 2003)
	Average Risk Premium: (Jan 1994 - Dec 2003)	5.35%
	High Risk Premium: (November 1996)	8.02%
ed.org/fred2/data/GS30.txt	Low Risk Premium: (December 2002)	0.65%

Sources: The Value Line Investment Survey: Ratings & Reports.

Yahoo's Financial Website: www.investopedia.com St. Louis Federal Reserve website: http://research.stlouisfed.org/fred2/data/GS3

# Risk Premium Cost of Equity Estimates for the Eight Comparable Natural Gas Distribution Companies

	(1)	(2)	(3)
			Cost of
	Appropriate	Equity	Common
Company Name	Yield	Premium	Equity
AGL Resources, Inc.	4.93%	6.09%	11.02%
Cascade Natural Gas	4.93%	4.79%	9.72%
New Jersey Resources Corporation	4.93%	7.86%	12.79%
Northwest Natural Gas	4.93%	4.56%	9.49%
Peoples Energy Corporation	4.93%	5.65%	10.58%
Piedmont Natural Gas Company, Inc.	4.93%	5.65%	10.58%
South Jersey Industries, Inc.	4.93%	3.91%	8.84%
WGL Holdings, Inc.	4.93%	5.35%	10.28%
Average (all companies)			10.41%
Average (excluding South Jersey Industries, In	c. because of incomplete information	ו)	10.64%

#### NOTES:

Column 1 = The appropriate yield is equal to the average 30-year U.S. Treasury Bond yield for February 2004 which was obtained from Investopedia at:http://www.investopedia.com

Column 2 = The equity premium represents the average positive difference between the Company's expected return on common equity as reported in The Value Line Investment Survey: Ratings & Report and the yield on 30-year U.S. Treasury Bonds January 1994 through December 2003. See Schedules 20-1 through 20-8.

Column 3 = Column 1 + Column 2.

## Selected Financial Ratios for the Eight Comparable Natural Gas Distribution Companies

	(1)	(2)	(3)	(4)	(5)	(6)
	2002 Common Equity	Year 2002	Pre-Tax		2003 Projected	
	to	Long-Term	Interest	Market-	Return on	
Company Name	Total Capital Ratio	Debt Ratio	Coverage Ratio	to-Book Value	Common Equity	Bond Rating
AGL Resources, Inc.	41.70%	58.30%	2.42 x	2.06 x	13.50%	A-
Cascade Natural Gas	40.90%	59.10%	2.07 x	2.09 x	8.00%	BBB+
New Jersey Resources Corporation	49.40%	50.60%	8.67 x	2.50 x	15.00%	A+
Northwest Natural Gas	51.50%	47.60%	3.41 x	1.63 x	9.00%	А
Peoples Energy Corporation	59.30%	40.70%	3.88 x	1.82 x	12.30%	A-
Piedmont Natural Gas Company, Inc.	56.10%	43.90%	3.56 x	2.26 x	10.50%	А
South Jersey Industries, Inc.	46.10%	53.60%	3.91 x	2.06 x	13.50%	BBB+
WGL Holdings, Inc.	52.40%	45.70%	5.79 x	<u>1.65</u> x	13.70%	AA-
Average	49.68%	49.94%	<u>4.21</u> x	<u>2.01</u> x	11.94%	A
Southern Union Company	36.70%	63.30%	1.53 x	1.46 x	4.70%	BBB

Sources: The Value Line Investment Survey: Ratings and Reports, December 19, 2003 for columns (1), (2) and (5). Edward Jones, Natural Gas Industry Summary, December 31, 2003 for columns (3) and (4). Standard & Poor's Utilities & Perspectives, March 1, 2004 for column (6)

# Pro Forma Pre-Tax Interest Coverage Ratios for Southern Union Company

	8.52%	9.02%	9.52%	
1. Common Equity ( Schedule 10 )	\$920,418,000	\$920,418,000	\$920,418,000	
2. Earnings Allowed (ROE * [ 1 ] )	\$78,419,614	\$83,021,704	\$87,623,794	
3. Tax Multiplier (1 / { 1 - Tax Rate })	1.6231		1.6231	
4. Pre-Tax Earnings ([2]*[3])	\$127,282,875	\$134,752,527	\$142,222,179	
5. Preferred Dividends	\$17,365,000	\$17,365,000	\$17,365,000	
<ol> <li>Annual Interest Costs</li> <li>(Schedule 10 &amp; Schedule 12)*</li> </ol>	\$143,700,907	\$143,700,907	\$143,700,907	
7. Avail. for Coverage ([4]+[5]+[6])	\$288,348,782	\$295,818,434	\$303,288,086	
8. Pro Forma Pre-Tax Interest Coverage ([7]/[6])	2.01 x	2.06 x	2.11 x	

## Natural Gas Distribution Financial Medians - Pretax Interest Coverage (x)

Standard & Poor's Corporation's	Lower Quartile	Median	Upper Quartile
Utility Rating Service as of July 7, 2000	BBB	BBB	BBB
	1.98	2.85	3.01

Note: \* Long-term debt interest expense plus short-term debt interest expense.

# Public Utility Revenue Requirement

## or

# **Cost of Service**

The formula for the revenue requirement of a public utility may be stated as follows :

Equation 1 :	Revenue Requirement = Cost of Service		
	or		
Equation 2 :	R R = O + ( V - D ) R		

The symbols in the second equation are represented by the following factors :

(

R R	= Revenue Requirement
0	= Prudent Operating Costs, including Depreciation and Taxes
V	= Gross Valuation of the Property Serving the Public
D	= Accumulated Depreciation
(V-D)	<ul> <li>Rate Base (Net Valuation)</li> </ul>
V - D ) R	= Return Amount (\$\$) or Earnings Allowed on Rate Base
R	= iL+dP+kE or Overall Rate of Return (%)
i	= Embedded Cost of Debt
L	<ul> <li>Proportion of Debt in the Capital Structure</li> </ul>
d	= Embedded Cost of Preferred Stock
Р	= Proportion of Preferred Stock in the Capital Structure
k	= Required Return on Common Equity (ROE)
E	= Proportion of Common Equity in the Capital Structure

# Weighted Cost of Capital as of December 31, 2003 for Missouri Gas Energy

Capital Component		Embedded Cost	Weighted Cost of Capital Using Common Equity Return of:		
	Percentage of Capital		8.52%	9.02%	9.52%
Common Stock Equity	25.38%		2.16%	2.29%	2.42%
Preferred Stock	6.17%	7.76%	0.48%	0.48%	0.48%
Long-Term Debt	61.10%	6.38%	3.90%	3.90%	3.90%
Short-Term Debt	7.35%	1.89%	0.14%	0.14%	0.14%
	100.00%		6.68%	6.81%	6.94%

Notes:

See Schedule 9 for the Capital Structure Ratios.

See Schedule 10 for the Embedded Cost of Long-Term Debt.

See Schedule 11 for the Embedded Cost of Preferred Stock.

See Schedule 12 for Weighted Average Cost of Short-Term Debt.