

COST OF CAPITAL STUDY

YIELD CAPITALIZATION
2014 ASSESSMENT YEAR

APPENDIX C

NATURAL GAS DISTRIBUTION

EQUITY RATE						8.50%	
CAPITAL ASSET PRICING MODEL							PAGE
	CAPM Ex Ante		7.50%				5
DIVIDEND GROWTH MODELS							
	Value Line, based on Dividends Growth		7.50%				7
	Value Line, based on Earnings Growth		10.50%				8
	Value Line, based on Return on Equity		7.25%				9
				RANGE	7.25 - 10.50%		
DEBT RATE						5.00%	10
MARKET CAPITAL STRUCTURE							
	Equity	60%	x	8.50%	=	5.10%	3
	Debt	40%	x	5.00%	=	2.00%	3
	Marginal Tax Rate	38%	=	(1-.38)	x	2.00%	
						<u>1.24%</u>	
WEIGHTED AVERAGE COST OF CAPITAL						6.34%	

SUPPORT FOR GUIDELINE COMPANIES

WASHINGTON STATE DEPARTMENT OF REVENUE

2014 ASSESSMENT YEAR

NATURAL GAS DISTRIBUTION

Capital Structure at Book Value

Company	Ticker	Beta	P/E Ratio	Div'd Yield	Common Stock	%	Preferred Stock	%	Long Term Debt	%	Total Debt & Equity
AGL Resources	gas	0.75	16.1	4.0%	4,009,114,913	51.2%		0.0%	3,816,000,000	48.8%	7,825,114,913
Atmos Energy Corp	ato	0.80	16.7	3.3%	2,583,246,014	51.3%		0.0%	2,455,600,000	48.7%	5,038,846,014
Laclede Group	lg	0.65	16.9	3.8%	1,318,857,644	59.1%		0.0%	912,700,000	40.9%	2,231,557,644
New Jersey Resources	njr	0.70	16.5	3.7%	827,611,160	61.6%		0.0%	516,200,000	38.4%	1,343,811,160
Nisource Inc	ni	0.85	19.6	3.1%	5,482,659,770	43.6%		0.0%	7,089,100,000	56.4%	12,571,759,770
NW Natural Gas	nwn	0.65	19.3	4.3%	753,371,312	52.5%		0.0%	681,700,000	47.5%	1,435,071,312
Piedmont Natural Gas	pny	0.75	18.0	3.7%	1,195,905,139	57.7%		0.0%	875,000,000	42.3%	2,070,905,139
South Jersey Industries	sjj	0.70	18.8	3.5%	768,137,141	57.0%		0.0%	580,400,000	43.0%	1,348,537,141
Southwest Gas	swx	0.80	15.7	2.6%	1,395,160,976	52.1%		0.0%	1,280,400,000	47.9%	2,675,560,976
UGI Corp	ugi	0.75	16.2	2.8%	2,424,582,628	42.4%		0.0%	3,298,200,000	57.6%	5,722,782,628
WGL Holdings	wgl	0.65	17.1	4.2%	1,277,110,461	69.8%	28,200,000	1.5%	524,100,000	28.6%	1,829,410,461
	Mean	0.73	17.4	3.5%	2,003,250,651	54.4%		0.1%	2,002,672,727	45.5%	
	Weighted Mean				22,035,757,157	50.0%	28,200,000	0.1%	22,029,400,000	50.0%	44,093,357,157
	Median					52.5%		0.0%		47.5%	

**SUPPORT FOR CAPITAL STRUCTURE
MARKET VALUE**

WASHINGTON STATE DEPARTMENT OF REVENUE
2014 ASSESSMENT YEAR
NATURAL GAS DISTRIBUTION

Capital Structure at Market Value

Company	Ticker	Stock Price	Common Shares	Common Stock	%	Preferred Stock	%	Long Term Debt	%	Total Debt & Equity
AGL Resources	gas	47.230	118,788,590	5,610,385,106	57.4%		0.0%	4,166,626,800	42.6%	9,777,011,906
Atmos Energy Corp	ato	45.420	90,640,211	4,116,878,384	62.3%		0.0%	2,492,311,220	37.7%	6,609,189,604
Laclede Group	lg	45.540	32,709,763	1,489,602,607	59.0%		0.0%	1,036,719,234	41.0%	2,526,321,841
New Jersey Resources	njr	46.240	41,380,558	1,913,437,002	77.0%		0.0%	572,429,643	23.0%	2,485,866,645
Nisource Inc	ni	32.880	313,294,844	10,301,134,471	56.5%		0.0%	7,916,340,100	43.5%	18,217,474,571
NW Natural Gas	nwn	42.820	27,002,556	1,156,249,448	59.0%		0.0%	803,284,087	41.0%	1,959,533,535
Piedmont Natural Gas	pny	33.160	75,930,485	2,517,854,883	72.3%		0.0%	963,462,500	27.7%	3,481,317,383
South Jersey Industries	sjj	55.960	32,207,008	1,802,304,168	75.4%		0.0%	589,222,080	24.6%	2,391,526,248
Southwest Gas	swx	55.910	46,350,863	2,591,476,750	61.0%		0.0%	1,658,502,120	39.0%	4,249,978,870
UGI Corp	ugi	41.460	114,098,006	4,730,503,329	56.5%		0.0%	3,647,404,778	43.5%	8,377,908,107
WGL Holdings	wgl	40.060	51,809,755	2,075,498,785	77.6%	28,200,000	1.1%	571,728,379	21.4%	2,675,427,164
			Mean		64.9%		0.1%		35.0%	
			Weighted Mean	38,305,324,932	61.0%	28,200,000	0.0%	24,418,030,941	38.9%	62,751,555,872
			Median		61.0%		0.0%		39.0%	
			Max		77.6%		1.1%		43.5%	
			Min		56.5%		0.0%		21.4%	

Source:

Stock Price: Yahoo

Market Value Debt: Bond Analysis

Target

60%

0%

40%

100%

SUPPORT FOR MARKET MULTIPLES

WASHINGTON STATE DEPARTMENT OF REVENUE

2014 ASSESSMENT YEAR

NATURAL GAS DISTRIBUTION

Company	Ticker	Stock Price	Revenues	Multiple	Cash Flow	Multiple	Earnings	Multiple	Divds Decld	Multiple	Book Value	Multiple
AGL Resources	gas	47.230	38.150	1.2	6.50	7.3	2.70	17.5	1.88	25.1	33.75	1.4
Atmos Energy Corp	ato	45.420	42.950	1.1	5.15	8.8	2.50	18.2	1.40	32.4	28.50	1.6
Laclede Group	lg	45.540	39.190	1.2	3.93	11.6	2.02	22.5	1.69	26.9	40.32	1.1
New Jersey Resources	njr	46.240	76.770	0.6	3.90	11.9	2.73	16.9	1.60	28.9	20.00	2.3
Nisource Inc	ni	32.880	17.600	1.9	3.50	9.4	1.55	21.2	0.98	33.6	17.50	1.9
NW Natural Gas	nwn	42.820	26.500	1.6	4.05	10.6	2.15	19.9	1.83	23.4	27.90	1.5
Piedmont Natural Gas	pny	33.160	16.800	2.0	3.20	10.4	1.80	18.4	1.23	27.0	15.75	2.1
South Jersey Industries	sjj	55.960	23.100	2.4	4.30	13.0	2.85	19.6	1.80	31.1	23.85	2.3
Southwest Gas	swx	55.910	41.950	1.3	8.40	6.7	3.25	17.2	1.32	42.4	30.10	1.9
UGI Corp	ugi	41.460	63.140	0.7	5.28	7.9	2.39	17.3	1.09	38.0	21.25	2.0
WGL Holdings	wgl	40.060	47.700	0.8	4.30	9.3	2.31	17.3	1.66	24.1	24.65	1.6
		Mean		1.3		9.7		18.7		30.3		1.8
		Median		1.2		9.4		18.2		28.9		1.9
		Max		2.4		13.0		22.5		42.4		2.3
		Min		0.60		6.7		16.9		23.4		1.1
		Std Dev		0.6		2.0		1.9		6.0		0.4
		Coefficient of Variation		0.4		0.2		0.1		0.2		0.2
		Say		1.2		9.5		18.2		29.0		1.9

**SUPPORT FOR YIELD CAPITALIZATION EQUITY COMPONENT
CAPITAL ASSET PRICING MODEL**

WASHINGTON STATE DEPARTMENT OF REVENUE
2014 ASSESSMENT YEAR
NATURAL GAS DISTRIBUTION

Ex Ante
Ke = Rf + B (Rp)

Ke = Cost of Equity **7.50%**

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Rm =	rate of return	8.75%	
Rf =	risk free rate	3.75%	
Rp =	risk premium	5.00%	
B =	Beta	0.75	

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Rp = Risk Premium **5.00%**

to above

Shannon Pratt and Roger Grabowski	Cost of Capital, Applications and Examples, 3rd Ed, 2008	3.50- 6.00%	
Dr. Aswath Damodaran	http://pages.stern.nyu.edu/~adamodar/ 2013 Implied Premium	4.96%	4.25% adjusted risk free rate
Ibbotson	2014 Ibbotson S&P Market Report, Table 10 Long-horizon expected ERP (supply side)	6.12%	
John Graham & Campbell Harvey	Equity Risk Premium 2014, Table 1	3.25%	December 2013 10 year average range
		2.43-4.56%	

Rf = Risk Free Rate **3.75%**

to above

2014 Ibbotson S&P Market Report, Table 3
Long Term (20 years) US Treasury Bond Yield 3.67%

Value Line Investment Survey, Selected Yields January 10, 2014, page 553
as of 12-31-13 US Treasury Securities year end data

	30 year	3.96%	
	30 year Zero	4.24%	

Federal Reserve Statistical Release (http://www.federalreserve.gov/Releases/H15/Current/)			Imputed Inflation
January 6, 2014 as of 12-31-13	Treasury Constant Maturities		
	20 year	3.72%	
	30 year	3.96%	
	20 year TIPS	<u>1.36%</u>	2.36%
	30 year TIPS	<u>1.64%</u>	2.32%

Inflation **2.30%**

Value Line Investment Survey, Economic Series January 11, 2014, page 1300
Consumer Price Index Annual Rate of Change 2016-18 2.00%

The Livingston Survey December 12, 2013 page 3
Inflation average (measured by the CPI) over next 10 year 2.35%

BETA CALCULATION FOR CAPM

WASHINGTON STATE DEPARTMENT OF REVENUE
2014 ASSESSMENT YEAR
NATURAL GAS DISTRIBUTION

Company	Ticker	Value Line
AGL Resources	gas	0.75
Atmos Energy Corp	ato	0.80
Laclede Group	lg	0.65
New Jersey Resources	njr	0.70
Nisource Inc	ni	0.85
NW Natural Gas	nwn	0.65
Piedmont Natural Gas	pny	0.75
South Jersey Industries	sjj	0.70
Southwest Gas	swx	0.80
UGI Corp	ugi	0.75
WGL Holdings	wgl	0.65
	Mean	0.73
	Median	0.75
	Max	0.85
	Min	0.65

Source: Value Line-five year, weekly

Say

0.75

SUPPORT FOR YIELD CAPITALIZATION EQUITY COMPONENT DIVIDEND GROWTH MODEL

WASHINGTON STATE DEPARTMENT OF REVENUE
2014 ASSESSMENT YEAR
NATURAL GAS DISTRIBUTION

Based on Dividend Growth

$$K_e = (D_1 / P_o) + G$$

Ke = Cost of Equity
 D1 = Expected Dividends
 Po = Current Price
 G = Sustainable Growth

Company	Ticker	Stock Price (Po)	Expected Dividend (D1)	Dividend Yield (D1/Po)	Dividend Growth (G)	Ke
AGL Resources	gas	47.230	1.92	4.07%	4.50%	8.57%
Atmos Energy Corp	ato	45.420	1.48	3.26%	4.00%	7.26%
Laclede Group	lg	45.540	1.76	3.86%	3.50%	7.36%
New Jersey Resources	njr	46.240	1.64	3.55%	3.00%	6.55%
Nisource Inc	ni	32.880	1.02	3.10%	4.50%	7.60%
NW Natural Gas	nwn	42.820	1.87	4.37%	2.50%	6.87%
Piedmont Natural Gas	pnv	33.160	1.27	3.83%	3.00%	6.83%
South Jersey Industries	sjj	55.960	1.95	3.48%	8.50%	11.98%
Southwest Gas	swx	55.910	1.40	2.50%	7.00%	9.50%
UGI Corp	ugi	41.460	1.14	2.75%	4.00%	6.75%
WGL Holdings	wgl	40.060	1.71	4.27%	2.50%	6.77%
					Mean	7.82%
					Median	7.26%
					Max	11.98%
					Min	6.55%

Source: Value Line Projections to 13-15

Say 7.50%

**SUPPORT FOR YIELD CAPITALIZATION EQUITY COMPONENT
DIVIDEND GROWTH MODEL**

WASHINGTON STATE DEPARTMENT OF REVENUE
2014 ASSESSMENT YEAR
NATURAL GAS DISTRIBUTION

Based on Earnings Growth

$$K_e = (D1 / P_o) + G$$

Ke = Cost of Equity
D1 = Expected Dividends
Po = Current Price
G = Sustainable Growth

Company	Ticker	Stock Price (Po)	Expected Dividend (D1)	Dividend Yield (D1/Po)	Earnings Growth (G)	Ke
AGL Resources	gas	47.230	1.92	4.07%	8.00%	12.07%
Atmos Energy Corp	ato	45.420	1.48	3.26%	7.50%	10.76%
Laclede Group	lg	45.540	1.76	3.86%	6.00%	9.86%
New Jersey Resources	njr	46.240	1.64	3.55%	5.50%	9.05%
Nisource Inc	ni	32.880	1.02	3.10%	10.50%	13.60%
NW Natural Gas	nwn	42.820	1.87	4.37%	4.50%	8.87%
Piedmont Natural Gas	pry	33.160	1.27	3.83%	4.00%	7.83%
South Jersey Industries	sjj	55.960	1.95	3.48%	7.50%	10.98%
Southwest Gas	swx	55.910	1.40	2.50%	8.00%	10.50%
UGI Corp	ugi	41.460	1.14	2.75%	8.00%	10.75%
WGL Holdings	wgl	40.060	1.71	4.27%	3.50%	7.77%
Mean						10.19%
Median						10.50%
Max						13.60%
Min						7.77%

Source: Value Line Projections to 13-15

Say 10.50%

SUPPORT FOR YIELD CAPITALIZATION EQUITY COMPONENT DIVIDEND GROWTH MODEL

WASHINGTON STATE DEPARTMENT OF REVENUE
2014 ASSESSMENT YEAR
NATURAL GAS DISTRIBUTION

Based on Return on Equity

Ke = (D1 / Po) + G
Ke = Cost of Equity
D1 = Expected Dividends
Po = Current Price
G = Sustainable Growth
b = Retained Earnings (plowback)
ROE = Return on Equity

Company	Ticker	Stock Price (Po)	Expected Dividend (D1)	Dividend Yield (D1/Po)	b payout ratio (1-)	ROE	Growth (b*ROE)	Ke
AGL Resources	gas	47.230	1.92	4.07%	30.0%	9.50%	2.85%	6.92%
Atmos Energy Corp	ato	45.420	1.48	3.26%	44.0%	9.00%	3.96%	7.22%
Laclede Group	lg	45.540	1.76	3.86%	15.0%	5.00%	0.75%	4.61%
New Jersey Resources	njr	46.240	1.64	3.55%	42.0%	13.50%	5.67%	9.22%
Nisource Inc	ni	32.880	1.02	3.10%	37.0%	9.00%	3.33%	6.43%
NW Natural Gas	nwn	42.820	1.87	4.37%	15.0%	7.50%	1.13%	5.49%
Piedmont Natural Gas	pny	33.160	1.27	3.83%	32.0%	11.50%	3.68%	7.51%
South Jersey Industries	sjj	55.960	1.95	3.48%	35.0%	11.50%	4.03%	7.51%
Southwest Gas	swx	55.910	1.40	2.50%	60.0%	11.00%	6.60%	9.10%
UGI Corp	ugi	41.460	1.14	2.75%	55.0%	11.50%	6.33%	9.07%
WGL Holdings	wgl	40.060	1.71	4.27%	28.0%	9.40%	2.63%	6.90%
							Mean	7.27%
							Median	7.22%
							Max	9.22%
							Min	4.61%
							Say	7.25%

SUPPORT FOR DEBT RATING AND DEBT YIELD RATE

WASHINGTON STATE DEPARTMENT OF REVENUE
2014 ASSESSMENT YEAR
NATURAL GAS DISTRIBUTION

Company	Ticker	Mergent's Ratings	S&P Ratings	WAYTM
AGL Resources	gas		BBB+	3.78%
Atmos Energy Corp	ato	Baa1	A-	4.32%
Laclede Group	lg	A2	A-	4.40%
New Jersey Resources	njr		A	
Nisource Inc	ni		BBB-	3.19%
NW Natural Gas	nwn		A+	4.52%
Piedmont Natural Gas	pny	A3	A	5.51%
South Jersey Industries	sjj		BBB+	5.44%
Southwest Gas	swx	Baa1	A-	4.90%
UGI Corp	ugi			2.68%
WGL Holdings	wgl		A+	3.64%
Overall Average Debt Rating		A3	A-	4.24%

bond analysis, A-BBB bonds

All issues 20+ year maturities

Guideline Companies, All Ratings	3.70%	5.20%
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bond analysis page 12

Mergent's Bond Record January 2014, page 211				
Corporate	Aaa	Aa	A	Baa
October	4.53%	4.59%	4.73%	5.31%
November	4.63%	4.67%	4.82%	5.38%
December	4.62%	4.68%	4.85%	5.38%
4th Qtr Average	4.59%	4.65%	4.80%	5.36%
Public Utilities	Aaa	Aa	A	Baa
October		4.48%	4.70%	5.17%
November		4.56%	4.77%	5.24%
December		4.59%	4.81%	5.25%
4th Qtr Average		4.54%	4.76%	5.22%
Industrials	Aaa	Aa	A	Baa
October	4.53%	4.69%	4.76%	5.44%
November	4.63%	4.79%	4.85%	5.52%
December	4.62%	4.76%	4.89%	5.51%
4th Qtr Average	4.59%	4.75%	4.83%	5.49%

Debt Yield Rate	5.00%
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Natural Gas Distribution Bond Analysis

2014.5

Company	type	coupon	maturity	Price 12/13	Issued / Book	current yield	yield to maturity	WAYTM	Rating	Mkt Val	Mkt : Book	Embedded	Debt Service
AGL Capital	Nt	4.950	2015	104 \$	200,000,000	4.76%	0.91%	0.02%	BBB+	\$ 208,000,000	104.00%		9,900,000
AGL Capital	Sr Nt	5.875	2041	109.68 \$	700,000,000	5.36%	5.20%	0.37%	BBB+	\$ 767,760,000	109.68%		41,125,000
AGL Capital	Sr Nt	6.375	2016	111.5 \$	300,000,000	5.72%	2.37%	0.07%	BBB+	\$ 334,500,000	111.50%		19,125,000
	3	300	Sum	325.18 \$	1,200,000,000	Percent of book	108.39%	0.46%	\$	1,310,260,000	109.19%	5.85% \$	70,150,000
Atlanta Gas & Light	MTN	7.300	2027	115.39 \$	54,000,000	6.33%	5.69%	0.03%	BBB+	\$ 62,310,600	115.39%		3,942,000
	1	100	Sum	115.39 \$	54,000,000	Percent of book	115.39%	0.03%	\$	62,310,600	115.39%	7.30%	3,942,000
Atmos Energy	Sr Nt	6.350	2017	113.08 \$	250,000,000	5.62%	1.83%	0.05%	A-	\$ 282,700,000	113.08%		15,875,000
Atmos Energy	Sr Nt	6.750	2028	111.79 \$	150,000,000	6.04%	5.56%	0.09%	A-	\$ 167,685,000	111.79%		10,125,000
Atmos Energy	Sr Nt	4.150	2043	89.94 \$	500,000,000	4.61%	4.81%	0.25%	A-	\$ 449,700,000	89.94%		20,750,000
Atmos Energy	Sr Nt	5.950	2034	108.18 \$	200,000,000	5.50%	5.29%	0.11%	A-	\$ 216,360,000	108.18%		11,900,000
	4	400	Sum	422.99 \$	1,100,000,000	Percent of book	105.75%	0.49%	\$	1,116,445,000	101.50%	5.33%	58,650,000
Laclede Gas	1st Mtg	7.900	2030	130.61 \$	30,000,000	6.05%	5.15%	0.02%	A	\$ 39,183,000	130.61%		2,370,000
Laclede Gas	1st Mtg	7.000	2029	121.73 \$	25,000,000	5.75%	4.93%	0.01%	A	\$ 30,432,500	121.73%		1,750,000
Laclede Gas	1st Mtg	5.500	2019	109.96 \$	150,000,000	5.00%	3.31%	0.05%	A	\$ 164,940,000	109.96%		8,250,000
Laclede Gas	1st Mtg	6.150	2036	114.72 \$	55,000,000	5.36%	5.03%	0.03%	A	\$ 63,096,000	114.72%		3,382,500
Laclede Gas	1st Mtg	6.000	2034	112.04 \$	150,000,000	5.35%	5.03%	0.08%	A	\$ 168,060,000	112.04%		9,000,000
	5	500	Sum	589.06 \$	410,000,000	Percent of book	117.81%	0.18%	\$	465,711,500	113.59%	6.04% \$	24,752,500
Nisource Finance	Gtd Nt	6.800	2019	116.44 \$	500,000,000	5.84%	3.20%	0.16%	BBB-	\$ 582,200,000	116.44%		34,000,000
Nisource Finance	Gtd Nt	6.125	2022	111.01 \$	500,000,000	5.52%	4.48%	0.23%	BBB-	\$ 555,050,000	111.01%		30,625,000
Nisource Finance	Gtd Nt	6.400	2018	115.12 \$	800,000,000	5.56%	2.40%	0.20%	BBB-	\$ 920,960,000	115.12%		51,200,000
Nisource Finance	Gtd Nt	5.250	2017	110.44 \$	1,000,000,000	4.75%	2.49%	0.25%	BBB-	\$ 1,104,400,000	110.44%		52,500,000
Nisource Finance	Gtd Nt	10.750	2016	117.48 \$	600,000,000	9.15%	1.78%	0.11%	BBB-	\$ 704,880,000	117.48%		64,500,000
Nisource Finance	Gtd Nt	5.250	2043	97.5 \$	500,000,000	5.40%	5.44%	0.28%	BBB-	\$ 487,500,000	97.50%		26,250,000
Nisource Finance	Gtd Nt	5.450	2020	111.68 \$	1,000,000,000	4.90%	3.61%	0.37%	BBB-	\$ 1,116,800,000	111.68%		54,500,000
	7	700	Sum	779.67 \$	4,900,000,000	Percent of book	111.38%	1.60%	\$	5,471,790,000	111.67%	6.40%	313,575,000
Northwest Nat Gas	MTN	5.660	2033	105.87 \$	150,000,000	5.36%	5.20%	0.08%	AA-	\$ 158,805,000	105.87%		8,490,000
Northwest Nat Gas	MTN	5.820	2032	105.23 \$	108,000,000	5.54%	5.39%	0.06%	AA-	\$ 113,648,400	105.23%		6,285,600
Northwest Nat Gas	MTN	7.850	2030	127.03 \$	123,000,000	6.19%	5.40%	0.07%	AA-	\$ 156,246,900	127.03%		9,655,500
Northwest Nat Gas	MTN	7.740	2030	125.83 \$	123,000,000	6.16%	5.40%	0.07%	AA-	\$ 154,770,900	125.83%		9,520,200
Northwest Nat Gas	MTN	4.700	2015	105.21 \$	40,000,000	4.47%	2.00%	0.01%	AA-	\$ 42,084,000	105.21%		1,880,000
Northwest Nat Gas	MTN	9.050	2021	134.09 \$	10,000,000	6.75%	4.00%	0.00%	AA-	\$ 13,409,000	134.09%		905,000
Northwest Nat Gas	MTN	5.620	2023	113.66 \$	150,000,000	4.94%	3.95%	0.06%	AA-	\$ 170,490,000	113.66%		8,430,000
Northwest Nat Gas	MTN	7.630	2019	123.32 \$	123,000,000	6.19%	3.29%	0.04%	AA-	\$ 151,683,600	123.32%		9,384,900
Northwest Nat Gas	MTN	7.720	2025	129.63 \$	123,000,000	5.96%	4.49%	0.06%	AA-	\$ 159,444,900	129.63%		9,495,600
Northwest Nat Gas	MTN	7.000	2017	114.97 \$	40,000,000	6.09%	2.98%	0.01%	AA-	\$ 45,988,000	114.97%		2,800,000
	10	1000	Sum	1184.84 \$	990,000,000	Percent of book	118.48%	0.46%	\$	1,166,570,700	117.84%	6.75%	66,846,800
Piedmont Nat Gas	Nt	6.000	2033	114.28 \$	200,000,000	5.26%	4.88%	0.10%	A	\$ 228,560,000	114.28%		12,000,000
Piedmont Nat Gas	Nt	6.250	2036	100.00 \$	200,000,000	6.25%	6.25%	0.13%	NR	\$ 200,000,000	100.00%		12,500,000
Piedmont Nat Gas	MTN	7.950	2029	129.91 \$	60,000,000	6.13%	5.17%	0.03%	A	\$ 77,946,000	129.91%		4,770,000
	3	300	Sum	344.19 \$	460,000,000	Percent of book	114.73%	0.26%	\$	506,506,000	110.11%	6.36%	29,270,000
South Jersey Gas	MTN	5.550	2033	101.52 \$	30,000,000	5.48%	5.44%	0.02%	A	\$ 30,456,000	101.52%		1,665,000
	1	100	Sum	101.52 \$	30,000,000	Percent of book	101.52%	0.02%	\$	30,456,000	101.52%	5.55%	1,665,000
Southwest Gas	Deb	8.000	2026	129.53 \$	75,000,000	6.19%	4.90%	0.04%	A-	\$ 97,147,500	129.53%		6,000,000
	1	100	Sum	129.53 \$	75,000,000	Percent of book	129.53%	0.04%	\$	97,147,500	129.53%	8.00%	6,000,000
UGI Utilities	Sr Nt	5.753	2016	111 \$	175,000,000	5.18%	1.93%	0.03%	NR	\$ 194,250,000	111.00%		10,067,750
UGI Utilities	Sr Nt	6.206	2036	112.27 \$	100,000,000	5.54%	5.29%	0.05%	NR	\$ 112,270,000	112.27%		6,206,000
UGI Utilities	MTN	5.640	2015	107.85 \$	125,000,000	5.23%	1.60%	0.02%	NR	\$ 134,812,500	107.85%		7,050,000
UGI Utilities	MTN	7.250	2017	115.68 \$	20,000,000	6.27%	3.02%	0.01%	BBB	\$ 23,136,000	115.68%		1,450,000
	4	400	Sum	446.8 \$	420,000,000	Percent of book	111.70%	0.12%	\$	464,468,500	110.59%	5.90%	24,773,750
Washington Gas & Light	MTN	5.700	2036	107.56 \$	25,000,000	5.31%	5.15%	0.01%	A+	\$ 26,890,000	107.56%		1,425,000
Washington Gas & Light	MTN	5.170	2016	105.93 \$	25,000,000	4.88%	2.10%	0.01%	A+	\$ 26,482,500	105.93%		1,292,500
Washington Gas & Light	MTN	5.781	2036	108.66 \$	25,000,000	5.34%	5.34%	0.00%	A+	\$ 27,165,000	108.66%		1,445,250
Washington Gas & Light	MTN	6.490	2027	114.28 \$	8,000,000	5.69%	5.06%	0.00%	A+	\$ 9,142,400	114.28%		519,200
Washington Gas & Light	MTN	6.820	2026	117.98 \$	25,000,000	5.79%	4.93%	0.01%	A+	\$ 29,495,000	117.98%		1,705,000
Washington Gas & Light	MTN	5.440	2025	105.77 \$	41,000,000	5.15%	4.81%	0.02%	A+	\$ 43,365,700	105.77%		2,230,400
	6	600	Sum	660.18 \$	149,000,000	Percent of book	110.03%	0.06%	\$	162,540,600	109.09%	5.78%	8,617,350
Total				\$	9,788,000,000			3.70%	Total \$	10,854,206,400	110.89%	6.21% \$	608,242,400

This includes short term. For 20+ year maturities see below

Company	type	coupon	maturity	Price 12/13	Issued / Book	current yield	yield to maturity	Weighted A	Rating	Mkt Val	Mkt : Book	Debt Service
AGL Capital	Sr Nt	5.875	2041	109.68 \$	700,000,000	5.36%	5.20%	1.48%	BBB+	\$ 767,760,000	109.68%	41,125,000
Atmos Energy	Sr Nt	4.150	2043	89.94 \$	500,000,000	4.61%	4.81%	0.98%	A-	\$ 449,700,000	89.94%	20,750,000
Atmos Energy	Sr Nt	5.950	2034	108.18 \$	200,000,000	5.50%	5.29%	0.43%	A-	\$ 216,360,000	108.18%	11,900,000

DATA INPUT

WASHINGTON STATE DEPARTMENT OF REVENUE

2014 ASSESSMENT YEAR

NATURAL GAS DISTRIBUTION

Instructions: Data entered on this page will flow to the applicable worksheets.

div to earnings

Guideline Companies		Stock Price	Revenues	Cash Flow	Earnings	Dividends	Bk Value	Common	Calculated Debt	Wtd Avg YTM	Payout Ratio	Payout Ratio	ROE
Name	Ticker	Year End	Per Share	Per Share	Per Share	Per Share	Stock	Shares	mk to bk		calculated	V L	V L
AGL Resources	gas	47.230	38.15	6.50	2.70	1.88	33.75	118,788,590	109.19%	3.78%	70%	70%	9.5%
Atmos Energy Corp	ato	45.420	42.95	5.15	2.50	1.40	28.50	90,640,211	101.50%	4.32%	56%	56%	9.0%
Laclede Group	lg	45.540	39.19	3.93	2.02	1.69	40.32	32,709,763	113.59%	4.40%	84%	85%	5.0%
New Jersey Resources	njr	46.240	76.77	3.90	2.73	1.60	20.00	41,380,558	110.89%	0.33%	59%	58%	13.5%
Nisource Inc	ni	32.880	17.60	3.50	1.55	0.98	17.50	313,294,844	111.67%	3.19%	63%	63%	9.0%
NW Natural Gas	nwn	42.820	26.50	4.05	2.15	1.83	27.90	27,002,556	117.84%	4.52%	85%	85%	7.5%
Piedmont Natural Gas	pny	33.160	16.80	3.20	1.80	1.23	15.75	75,930,485	110.11%	5.51%	68%	68%	11.5%
South Jersey Industries	sjj	55.960	23.10	4.30	2.85	1.80	23.85	32,207,008	101.52%	5.44%	63%	65%	11.5%
Southwest Gas	swx	55.910	41.95	8.40	3.25	1.32	30.10	46,350,863	129.53%	4.90%	41%	40%	11.0%
UGI Corp	ugi	41.460	63.14	5.28	2.39	1.09	21.25	114,098,006	110.59%	2.68%	nmf	45%	11.5%
WGL Holdings	wgl	40.060	47.70	4.30	2.31	1.66	24.65	51,809,755	109.09%	3.64%	72%	72%	9.4%

Value Line December 6, 2013

Yahoo

Value Line

Value Line

Value Line

Value Line

Value Line

Value Line

Bond analysis
111.41%
110.89%

Bond analysis

calculated

Value Line

Value Line

SUPPORT FOR DIRECT CAPITALIZATION EQUITY COMPONENT

WASHINGTON STATE DEPARTMENT OF REVENUE

2014 ASSESSMENT YEAR

NATURAL GAS DISTRIBUTION

Company	Ticker	Stock Price	2013		2014		2013		2014	
			Actual Earnings Ratio (EPS/P)	Projected Earnings Ratio (PEPS/P)	Cash Flow Ratio (CF/P)	Projected Cash Flow Ratio				
AGL Resources	gas	47.23	2.70	5.7%	2.95	6.2%	6.50	13.8%	6.85	14.5%
Atmos Energy Corp	ato	45.42	2.50	5.5%	2.70	5.9%	5.15	11.3%	5.35	11.8%
Laclede Group	lg	45.54	2.02	4.4%	2.95	6.5%	3.93	8.6%	4.75	10.4%
New Jersey Resources	njr	46.24	2.73	5.9%	2.80	6.1%	3.90	8.4%	3.85	8.3%
Nisource Inc	ni	32.88	1.55	4.7%	1.70	5.2%	3.50	10.6%	3.70	11.3%
NW Natural Gas	nwn	42.82	2.15	5.0%	2.30	5.4%	4.05	9.5%	4.25	9.9%
Piedmont Natural Gas	pnj	33.16	1.80	5.4%	1.85	5.6%	3.20	9.7%	3.25	9.8%
South Jersey Industries	sjj	55.96	2.85	5.1%	3.15	5.6%	4.30	7.7%	4.80	8.6%
Southwest Gas	swx	55.91	3.25	5.8%	3.45	6.2%	8.40	15.0%	8.70	15.6%
UGI Corp	ugi	41.46	2.39	5.8%	2.60	6.3%	5.28	12.7%	5.60	13.5%
WGL Holdings	wgl	40.06	2.31	5.8%	2.35	5.9%	4.30	10.7%	4.35	10.9%
Mean			5.4%		5.9%		10.7%		11.3%	
Median			5.5%		5.9%		10.6%		10.9%	
Max			5.9%		6.5%		15.0%		15.6%	
Min			4.4%		5.2%		7.7%		8.3%	

Source: **Say** **5.5%** **5.9%** **10.6%** **11.0%**

Actual earnings: Value Line / Q4 average stock price

Estimated Earnings: Value Line / Q4 average stock price

Actual Cash Flow: Value Line / Q4 average stock price

Estimated Cash Flow: Value Line / Q4 average stock price

SUPPORT FOR DIRECT CAPITALIZATION EQUITY COMPONENT												
WASHINGTON STATE DEPARTMENT OF REVENUE												
2014 ASSESSMENT YEAR												
NATURAL GAS DISTRIBUTION												
					5.00%							
Company	Ticker	Stock Price	Enterprise Value	CF to Equity	Debt Svc	Sales	EBITDA	EV / EBITDA	EV / CF	EV / Sales	Dividend Growth	Earnings Growth
AGL Resources	gas	47.23	9,777,011,906	772,125,835	208,331,340	4,531,784,709	1,090,000,000	8.97	9.97	2.16	4.5%	8.0%
Atmos Energy Corp	ato	45.42	6,609,189,604	466,797,087	124,615,561	3,892,997,062	755,350,000	8.75	11.18	1.70	4.0%	7.5%
Laclede Group	lg	45.54	2,526,321,841	128,549,369	51,835,962	1,281,895,612	175,490,000	14.40	14.01	1.97	3.5%	6.0%
New Jersey Resources	njr	46.24	2,485,866,645	161,384,176	28,621,482	3,176,785,438	132,840,000	18.71	13.08	0.78	3.0%	5.5%
Nisource Inc	ni	32.88	18,217,474,571	1,096,531,954	395,817,005	5,513,989,254	1,630,000,000	11.18	12.21	3.30	4.5%	10.5%
NW Natural Gas	nwn	42.82	1,959,533,535	109,360,352	40,164,204	715,567,734	218,650,000	8.96	13.11	2.74	2.5%	4.5%
Piedmont Natural Gas	pny	33.16	3,481,317,383	242,977,552	48,173,125	1,275,632,148	342,330,000	10.17	11.96	2.73	3.0%	4.0%
South Jersey Industries	sjj	55.96	2,391,526,248	138,490,134	29,461,104	743,981,885	134,530,000	17.78	14.24	3.21	8.5%	7.5%
Southwest Gas	swx	55.91	4,249,978,870	389,347,249	82,925,106	1,944,418,703	511,030,000	8.32	9.00	2.19	7.0%	8.0%
UGI Corp	ugi	41.46	8,377,908,107	602,437,472	182,370,239	7,204,148,099	1,300,000,000	6.44	10.68	1.16	4.0%	8.0%
WGL Holdings	wgl	40.06	2,675,427,164	222,781,947	28,586,419	2,471,325,314	208,480,000	12.83	10.64	1.08	2.5%	3.5%
		Mean	5,704,686,897	393,707,557	110,991,050	2,977,502,360	590,790,909	11.50	11.82	2.09	4.3%	6.6%
		Median	3,481,317,383	242,977,552	51,835,962	2,471,325,314	342,330,000	10.17	11.96	2.16	4.0%	7.5%
		Max	18,217,474,571	1,096,531,954	395,817,005	7,204,148,099	1,630,000,000	18.71	14.24	3.30	8.5%	10.5%
		Min	1,959,533,535	109,360,352	28,586,419	715,567,734	132,840,000	6.44	9.00	0.78	2.5%	3.5%
Source:												
Value Line & Yahoo Finance												

STOCK PRICE

WASHINGTON STATE DEPARTMENT OF REVENUE

2014 ASSESSMENT YEAR

NATURAL GAS DISTRIBUTION

	Date	Open	High	Low	Close	Volume	Adj Close		Year End
AGL Resources gas									44.24
	12/31/2013	47.18	47.28	46.95	47.23	296700	47.23		47.230
Atmos Energy Corp ato									
	12/31/2013	45.31	45.71	45.15	45.42	234900	45.42		45.420
Laclede Group Inc lg									
	12/31/2013	45.67	45.73	45.39	45.54	89200	45.54		45.540
New Jersey Resources njr									
	12/31/2013	45.83	46.62	45.78	46.24	178600	46.24		46.240
Nisource Inc ni									
	12/31/2013	32.72	32.95	32.68	32.88	1363600	32.88		32.880
NW Natural Gas nwn									
	12/31/2013	42.84	42.99	42.75	42.82	150700	42.82		42.820
Piedmont Natural Gas pny									
	12/31/2013	33.09	33.35	32.96	33.16	190100	33.16		33.160
South Jersey Industries sji									
	12/31/2013	55.25	56.16	55.08	55.96	129700	55.96		55.960
Southwest Gas Corp swx									
	12/31/2013	55.65	56.03	55.4	55.91	130300	55.91		55.910
UGI Corp ugi									
	12/31/2013	41.33	41.56	41.24	41.46	257800	41.46		41.460
WGL Holdings wgl									
	12/31/2013	39.70	40.18	39.55	40.06	276800	39.64		40.060

Source:
finance.yahoo.com
Historical Stock Quotes

IMPLIED PREMIUMS FOR US MARKET

As of January 1, 2014.

These implied premiums are calculated using the S&P 500.

Year	Earnings Yield	Dividend Yield	S&P 500	Earnings*	Dividends*	Change in Earnings	Change in Divid	T-Bill Rate	T-Bond Rate	Bond-Bill	Boothed Growth	Premium (t Growth Es	Implied Premium (FCFE)	ERP/Riskfree Rate	
1960	5.34%	3.41%	58.11	3.10	1.98			0.0266	2.76%	0.10%	2.45%				
1961	4.71%	2.85%	71.55	3.37	2.04	8.60%	2.91%	2.13%	2.35%	0.22%	2.41%	2.92%	2.92%	1.24	
1962	5.81%	3.40%	63.1	3.67	2.15	8.79%	5.21%	2.73%	3.85%	1.12%	4.05%	3.56%	3.56%	0.92	
1963	5.51%	3.13%	75.02	4.13	2.35	12.75%	9.45%	3.12%	4.14%	1.02%	4.96%	3.38%	3.38%	0.82	
1964	5.62%	3.05%	84.75	4.76	2.58	15.23%	10.08%	3.54%	4.21%	0.67%	5.13%	3.31%	3.31%	0.79	
1965	5.73%	3.06%	92.43	5.30	2.83	11.20%	9.42%	3.93%	4.65%	0.72%	5.46%	3.32%	3.32%	0.71	
1966	6.74%	3.59%	80.33	5.41	2.88	2.23%	1.96%	4.76%	4.64%	-0.12%	4.19%	3.68%	3.68%	0.79	
1967	5.66%	3.09%	96.47	5.46	2.98	0.85%	3.37%	4.21%	5.70%	1.49%	5.25%	3.20%	3.20%	0.56	
1968	5.51%	2.93%	103.86	5.72	3.04	4.81%	2.09%	5.21%	6.16%	0.95%	5.32%	3.00%	3.00%	0.49	
1969	6.63%	3.52%	92.06	6.10	3.24	6.66%	6.49%	6.58%	7.88%	1.30%	7.55%	3.74%	3.74%	0.47	
1970	5.98%	3.46%	92.15	5.51	3.19	-9.72%	-1.61%	6.53%	6.50%	-0.03%	4.78%	3.41%	3.41%	0.52	
1971	5.46%	3.10%	102.09	5.57	3.16	1.15%	-0.74%	4.39%	5.89%	1.50%	4.57%	3.09%	3.09%	0.52	
1972	5.23%	2.70%	118.05	6.17	3.19	10.76%	0.71%	3.84%	6.41%	2.57%	5.21%	2.72%	2.72%	0.42	
1973	8.16%	3.70%	97.55	7.96	3.61	28.93%	13.24%	6.93%	6.90%	-0.03%	8.30%	4.30%	4.30%	0.62	
1974	13.64%	5.43%	68.56	9.35	3.72	17.48%	3.14%	8.00%	7.40%	-0.60%	6.42%	5.59%	5.59%	0.76	
1975	8.55%	4.14%	90.19	7.71	3.73	-17.54%	0.30%	5.80%	7.76%	1.96%	5.99%	4.13%	4.13%	0.53	
1976	9.07%	3.93%	107.46	9.75	4.22	26.39%	13.10%	5.08%	6.81%	1.73%	8.19%	4.55%	4.55%	0.67	
1977	11.43%	5.11%	95.1	10.87	4.86	11.53%	15.07%	5.12%	7.78%	2.66%	9.52%	5.92%	5.92%	0.76	
1978	12.11%	5.39%	96.11	11.64	5.18	7.07%	6.60%	7.18%	9.15%	1.97%	8.48%	5.72%	5.72%	0.63	
1979	13.48%	5.53%	107.94	14.55	5.97	25.01%	15.23%	10.38%	10.33%	-0.05%	11.70%	6.45%	6.45%	0.62	
1980	11.04%	4.74%	135.76	14.99	6.44	3.01%	7.81%	11.24%	12.43%	1.19%	11.01%	5.03%	5.03%	0.40	
1981	12.39%	5.57%	122.55	15.18	6.83	1.31%	6.08%	14.71%	13.98%	-0.73%	11.42%	5.73%	5.73%	0.41	
1982	9.83%	4.93%	140.64	13.82	6.93	-8.95%	1.58%	10.54%	10.47%	-0.07%	7.96%	4.90%	4.90%	0.47	
1983	8.06%	4.32%	164.93	13.29	7.12	-3.84%	2.76%	8.80%	11.80%	3.00%	9.09%	4.31%	4.31%	0.37	
1984	10.07%	4.68%	167.24	16.84	7.83	26.69%	9.85%	9.85%	11.51%	1.66%	11.02%	5.11%	5.11%	0.44	
1985	7.42%	3.88%	211.28	15.68	8.20	-6.91%	4.74%	7.72%	8.99%	1.27%	7.89%	4.03%	6.75%	3.84%	0.43
1986	5.96%	3.38%	242.17	14.43	8.19	-7.93%	-0.15%	6.16%	7.22%	1.06%	5.54%	3.36%	6.96%	3.58%	0.50
1987	6.49%	3.71%	247.08	16.04	9.17	-11.10%	11.99%	5.47%	8.86%	3.39%	9.66%	4.18%	8.58%	3.99%	0.45
1988	8.20%	3.68%	277.72	24.12	10.22	50.42%	11.49%	6.35%	9.14%	2.79%	9.76%	4.12%	7.67%	3.77%	0.41
1989	6.80%	3.32%	353.4	24.32	11.73	0.83%	14.80%	8.37%	7.93%	-0.44%	9.58%	3.85%	7.46%	3.51%	0.44
1990	6.58%	3.74%	330.22	22.65	12.35	-6.87%	5.26%	7.81%	8.07%	0.26%	7.39%	3.92%	7.19%	3.89%	0.48
1991	4.58%	3.11%	417.09	19.30	12.97	-14.79%	5.03%	7.00%	6.70%	-0.30%	6.34%	3.27%	7.81%	3.48%	0.52
1992	4.16%	2.90%	435.71	20.87	12.64	8.13%	-2.59%	5.30%	6.68%	1.38%	4.67%	2.83%	9.83%	3.55%	0.53
1993	4.25%	2.72%	466.45	26.90	12.69	28.89%	0.41%	3.50%	5.79%	2.29%	4.73%	2.74%	8.00%	3.17%	0.55
1994	5.89%	2.91%	459.27	31.75	13.36	18.03%	5.34%	5.00%	7.82%	2.82%	7.23%	3.06%	7.17%	3.55%	0.45
1995	5.74%	2.30%	615.93	37.70	14.17	18.74%	6.00%	3.50%	5.57%	2.07%	5.65%	2.44%	6.50%	3.29%	0.59
1996	4.83%	2.01%	740.74	40.63	14.89	7.77%	5.10%	5.00%	6.41%	1.41%	6.13%	2.11%	7.92%	3.20%	0.50
1997	4.08%	1.60%	970.43	44.09	15.52	8.52%	4.25%	5.35%	5.74%	0.39%	5.45%	1.67%	8.00%	2.73%	0.48
1998	3.11%	1.32%	1229.23	44.27	16.20	0.41%	4.37%	4.33%	4.65%	0.32%	4.60%	1.38%	7.20%	2.26%	0.49
1999	3.07%	1.14%	1469.25	51.68	16.71	16.74%	3.16%	5.37%	6.44%	1.07%	5.75%	1.20%	12.50%	2.05%	0.32
2000	3.94%	1.23%	1320.28	56.13	16.27	8.61%	-2.65%	5.73%	5.11%	-0.62%	3.71%	1.65%	12.00%	2.87%	0.56
2001	3.85%	1.37%	1148.09	38.85	15.74	-30.79%	-3.24%	1.80%	5.05%	3.25%	3.56%	1.73%	10.30%	3.62%	0.72
2002	5.23%	1.83%	879.82	46.04	16.08	18.51%	2.15%	1.20%	3.81%	2.61%	3.57%	2.29%	8.00%	4.10%	1.08
2003	4.87%	1.61%	1111.91	54.69	17.88	18.79%	11.19%	1.00%	4.25%	3.25%	5.35%	2.12%	11.00%	3.69%	0.87
2004	5.58%	1.60%	1211.92	67.68	19.407	23.75%	8.54%	2.18%	4.22%	2.04%	4.90%	2.02%	8.50%	3.65%	0.86
2005	5.47%	1.79%	1248.29	76.45	22.38	12.96%	15.32%	4.31%	4.39%	0.08%	6.16%	2.20%	8.00%	4.08%	0.93
2006	6.18%	1.77%	1418.3	87.72	25.05	14.74%	11.93%	4.88%	4.70%	-0.18%	5.93%	1.97%	12.50%	4.16%	0.89
2007	5.62%	1.89%	1468.36	82.54	27.73	-5.91%	10.70%	3.31%	4.02%	0.71%	5.03%	2.06%	5.00%	4.37%	1.09
2008	7.24%	3.11%	903.25	65.39	28.05	-20.78%	1.15%	1.59%	2.21%	0.62%	2.11%	4.05%	4.00%	6.43%	2.91
2009	5.35%	2.00%	1115.10	59.65	22.31	-8.78%	-20.46%	0.14%	3.84%	3.70%	0.28%	2.60%	7.20%	4.36%	1.14
2010	6.65%	1.84%	1257.64	83.66	23.12	40.25%	3.63%	0.13%	3.29%	3.16%	3.33%	2.24%	6.95%	5.20%	1.58