



STATE OF WEST VIRGINIA

Department of Revenue
State Tax Department

Earl Ray Tomblin
Governor

Mark W. Matkovich
Acting State Tax Commissioner

August 28, 2013

The Honorable Natalie Tennant
Secretary of State
Building 1, Suite 157-K
State Capitol
Charleston, West Virginia 25305

FILED
2013 AUG 28 AM 11:00
OFFICE WEST VIRGINIA
SECRETARY OF STATE

Dear Secretary Tennant:

Attached are final natural resource property valuation variables for the 2014 Tax Year that have been developed by the State Tax Department for use in appraising oil and gas, managed timberland, coal and other natural resource properties for ad valorem tax purposes.

In accordance with requirements of §§ 110 CSR 1-I, 1-J, and 1-K, tentative variables were made available for public comments on June 27, 2013. The Department received six comments on the tentative variables. Four comments concerned the new expense allowance and decline rates allowed on Marcellus oil and gas wells. One comment was regarding the computation of the managed timberland variables. None of those comments required a revision to the tentative variables. The last comment came from the Tucker County Assessor who suggested we had a reserve oil and gas value of \$20 per acre in a municipality where there was no oil and gas activity and it should be \$1 per acre. This change has been made.

The final valuation variables are being filed for inclusion in the State Register.

Sincerely,

Mark W. Matkovich
Acting State Tax Commissioner

MWM/jaj
Attachment
cc: All County Assessors

Property Tax Division
P. O. Box 2389
Charleston, WV 253282389
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OFFICE WEST VIRGINIA
SECRETARY OF STATE

OIL AND GAS PROPERTIES ANALYSIS

Tax Year 2014

August 28, 2013
Mark W. Matkovich
Acting State Tax Commissioner
Department of Revenue

Capitalization Rate Analysis and Results:

In developing a capitalization rate for use in valuing specific income-producing properties consideration is given to the three approaches generally employed in estimating a discount rate. As a matter of practicality, the Bands-of -Investment and Summation Technique approaches are utilized in establishing discount rates for producing oil and gas properties. Data for analysis has been derived in accordance with current Legislative Rule Title 110, Series 1J.

Safe Rate (3-Month Constant Maturity Interest Rates)

January	December	2012	0.086%
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Risk Rate (Interest differential between Loan Rate and 3-Month Constant Maturity Interest Rates)

<u>Loan Rate*</u>	<u>Risk Rate</u>
2012 5.250%	5.164%
*Prime plus 2%	

Equity (Differential between Equity Rates and 3-Month Constant Maturity Interest Rates)

<u>Equity Rate**</u>	<u>Risk Rate</u>
2012 [11.75%/(1-.37)]-0.053%	18.565%
** Value Line Investment Survey Analysis	

Composite Risk Rate Loan and Equity Rates weighted by industry estimated capital structure.

	<u>Equity Rate</u>	<u>Debt Rate</u>	<u>Composite Risk</u>	
2012	12.0671%	1.807%	14.605%	***
Note: Debt equity Ratio		Debt 35%	Equity 65%	
*** Effective severance tax adjustment		0.95		

Non Liquidity Rate Interest differential between 3-month Constant Maturity Interest Rates and a 1 year Constant Maturity Interest Rates which reflects a reasonable time necessary to sell active property.

			<u>1yr T Bill</u>	<u>90 day T Bill</u>	<u>Non Liquidity Rate</u>
January	December	2012	0.175%	0.086%	0.089%

Management Rate Charges for the management of investment portfolios.

Fixed Rate (by Rule)	0.500%
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Property Tax Rate Sixty percent (60%) of State average Class III property tax rate.

2012	60% of 2.21	1.326%
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Inflation Rate

January	December	2012	1.700%
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Capitalization Rate

Since the valuation of oil and gas property is predicated on a three year production , the capitalization rate will be considered in a similar manner.

	<u>2012</u>	<u>2011</u>	<u>2010</u>
Inflation Rate	-1.700%	-3.000%	-1.500%
Safe Rate	0.086%	0.053%	0.137%
Composite Risk Rate	14.605%	14.911%	15.094%
Non Liquidity Rate	0.089%	0.129%	0.181%
Management Rate	0.500%	0.500%	0.500%
Property Tax Rate	1.326%	1.314%	1.314%
Total	14.906%	13.907%	15.726%
	50.000%	33.333%	16.667%
	7.453%	4.636%	2.621%
			14.710%

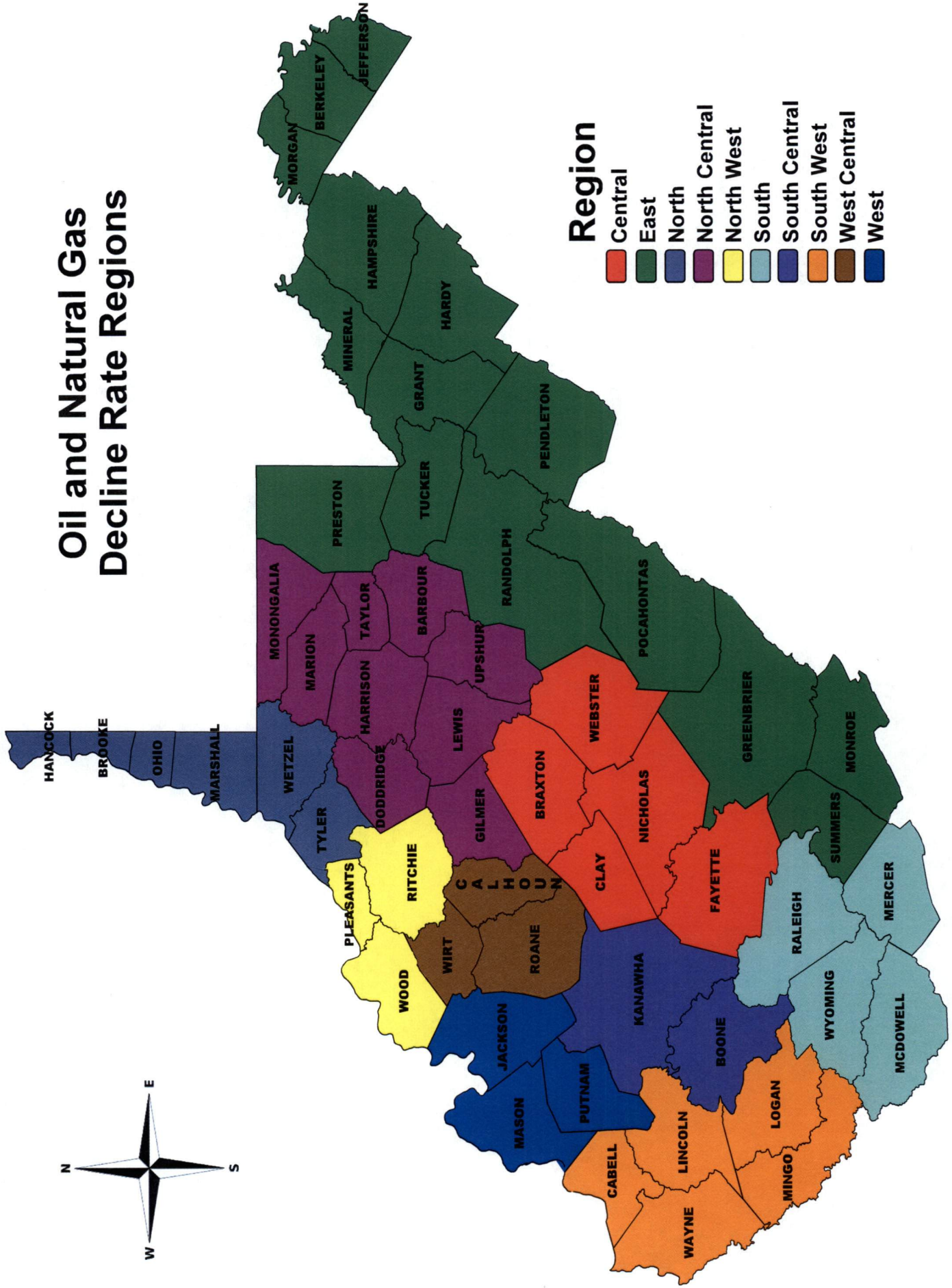
Capitalization Rate Rounded to:

14.70%

MULTIPLIERS FOR 14.7% MID-YEAR LIFE (ANNUALLY)

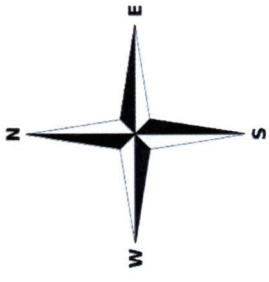
<u>YEAR</u>		<u>YEAR</u>	
1	0.933724	21	0.060110
2	0.814057	22	0.052407
3	0.709727	23	0.045690
4	0.618768	24	0.039835
5	0.539467	25	0.034729
6	0.470328	26	0.030278
7	0.410051	27	0.026398
8	0.357499	28	0.023015
9	0.311681	29	0.020065
10	0.271736	30	0.017494
11	0.236910	31	0.015252
12	0.206548	32	0.013297
13	0.180077	33	0.011593
14	0.156998	34	0.010107
15	0.136877	35	0.008812
16	0.119335	36	0.007682
17	0.104041	37	0.006698
18	0.090707	38	0.005839
19	0.079082	39	0.005091
20	0.068947	40	0.004439

Oil and Natural Gas Decline Rate Regions



Region

- Central
- East
- North
- North Central
- North West
- South
- South Central
- South West
- West Central
- West



Decline Rates for Natural Gas and Oil Formations: Central				
Central:Braxton, Clay, Fayette, Nicholas, Webster				
Code	Formation	Year 1	Year 2	Year 3 +
12	Alexander, Benson	-0.31	-0.20	-0.10
14	Benson	-0.48	-0.08	-0.08
16	Benson, Balltown	-0.45	-0.16	-0.12
17	Gordon +	-0.30	-0.07	-0.07
18	Big Injun	-0.34	-0.13	-0.13
19	Big Injun, Big Lime	-0.36	-0.13	-0.13
22	Big Lime	-0.34	-0.34	-0.13
26	Ravenclyff	-0.40	-0.40	-0.25
93	4th Sand	-0.42	-0.32	-0.08
94	50 Foot	-0.34	-0.26	-0.07
95	Injun/Weir	-0.51	-0.26	-0.09
96	Maxton	-0.70	-0.27	-0.08
109	Trenton/Deeper *	-0.41	-0.22	-0.09
110	Marcellus *	-0.41	-0.22	-0.09
9	Exception (Median)	-0.41	-0.22	-0.09
10	Non-Filer	-0.30	-0.07	-0.07

* New Formation(s) involved in recent production. These will be valued with the Exception Rates until decline information is available.

Decline Rates for Natural Gas and Oil Formations: East

East: Berkeley, Grant, Greenbrier, Hampshire, Hardy, Jefferson, Mineral, Monroe, Morgan, Pendleton, Pocahontas, Preston, Randolph, Summers, Tucker

Code	Formation	Year 1	Year 2	Year 3 +
1	Oriskany	-0.30	-0.30	-0.19
14	Benson	-0.31	-0.17	-0.12
20	Benson +	-0.44	-0.20	-0.08
21	Benson, Fifth	-0.29	-0.28	-0.09
32	Brallier +	-0.48	-0.20	-0.05
33	Elk, Benson	-0.39	-0.21	-0.08
34	Elk, Benson, Riley	-0.53	-0.19	-0.05
35	Elk, Benson, Riley +	-0.36	-0.19	-0.11
36	Elk, Benson, Balltown	-0.34	-0.18	-0.11
37	Elk, Alexander, Benson	-0.50	-0.07	-0.07
38	Elk, Alexander, Benson +	-0.40	-0.16	-0.16
39	Huntermville	-0.31	-0.31	-0.14
40	Fox, Haverty	-0.36	-0.21	-0.15
93	4th Sand	-0.42	-0.32	-0.08
94	50 Foot	-0.34	-0.26	-0.07
95	Injun/Weir	-0.51	-0.26	-0.09
96	Maxton	-0.70	-0.27	-0.08
110	Marcellus	-0.59	-0.22	-0.17
9	Exception (Median)	-0.41	-0.22	-0.10
10	Non-Filer	-0.29	-0.07	-0.05

Decline Rates for Natural Gas and Oil Formations: North**North: Brooke, Hancock, Marshall, Ohio, Tyler, Wetzel**

Code	Formation	Year 1	Year 2	Year 3 +
11	Gordon	-0.47	-0.31	-0.09
13	Alexander, Benson, Riley	-0.26	-0.16	-0.15
15	Benson, Riley	-0.18	-0.16	-0.06
93	4th Sand	-0.42	-0.32	-0.08
94	50 Foot	-0.34	-0.26	-0.07
95	Injun/Weir	-0.51	-0.26	-0.09
96	Maxton	-0.70	-0.27	-0.08
97	Coalbed Methane (Vertical)	-0.23	-0.08	-0.05
110	Marcellus	-0.52	-0.23	-0.18
9	Exception (Median)	-0.39	-0.23	-0.08
10	Non-Filer	-0.18	-0.16	-0.06

Decline Rates for Natural Gas and Oil Formations: North Central

**North Central: Barbour, Doddridge, Gilmer, Harrison, Lewis, Marion,
Monongalia, Taylor, Upshur**

Code	Formation	Year 1	Year 2	Year 3 +
11	Gordon	-0.41	-0.14	-0.12
12	Alexander, Benson	-0.37	-0.19	-0.11
13	Alexander, Benson, Riley	-0.40	-0.28	-0.05
14	Benson	-0.31	-0.17	-0.12
15	Benson, Riley	-0.34	-0.17	-0.14
18	Big Injun	-0.36	-0.16	-0.13
21	Benson, Fifth	-0.31	-0.20	-0.14
28	Weir	-0.34	-0.34	-0.07
29	Weir +	-0.28	-0.28	-0.23
33	Elk, Benson	-0.34	-0.16	-0.11
34	Elk, Benson, Riley	-0.42	-0.27	-0.08
37	Elk, Alexander, Benson	-0.49	-0.23	-0.08
38	Elk, Alexander, Benson +	-0.38	-0.20	-0.12
40	Fox, Haverty	-0.46	-0.16	-0.08
50	Rhinestreet	-0.28	-0.03	-0.03
57	Alexander, Benson, Balltown	-0.39	-0.26	-0.08
58	Alexander	-0.35	-0.20	-0.10
59	Alexander +	-0.39	-0.22	-0.10
60	Alexander, Benson, Riley +	-0.39	-0.35	-0.12
61	Balltown	-0.35	-0.20	-0.10
62	Balltown, Speechley	-0.28	-0.22	-0.10
63	Balltown, Speechley +	-0.30	-0.13	-0.10
64	Benson, Balltown, Speechley	-0.28	-0.22	-0.09
65	Benson, Bradford	-0.37	-0.20	-0.10
66	Benson, Balltown	-0.29	-0.23	-0.11
67	Benson, Riley +	-0.38	-0.14	-0.10
68	Benson, Speechley	-0.30	-0.22	-0.14
69	Brallier, Elk	-0.42	-0.20	-0.13
70	Brallier	-0.40	-0.22	-0.15
71	Deeper/Onondaga or Oriskany/Helderberg	-0.24	-0.24	-0.03
72	Elk, Alexander	-0.42	-0.22	-0.09
73	Elk, Benson +	-0.38	-0.20	-0.12
74	Elk	-0.43	-0.12	-0.10
75	Elk, Riley	-0.60	-0.35	-0.17
76	Fox +	-0.46	-0.18	-0.09
77	Haverty, Elk, Benson (No Alexander)	-0.35	-0.16	-0.16
78	Haverty	-0.45	-0.15	-0.15
79	Riley	-0.44	-0.22	-0.10
80	Speechley	-0.30	-0.18	-0.09
81	Alexander, Benson, Speechley	-0.39	-0.24	-0.10
82	Haverty, Elk, Alexander	-0.47	-0.14	-0.14
85	Fifth, Oil	-0.45	-0.25	-0.22
87	Bayard All	-0.30	-0.20	-0.05
88	Fifth	-0.29	-0.18	-0.12
89	Fifth +	-0.25	-0.15	-0.13
90	Gordon, Injun All	-0.41	-0.23	-0.23
91	Squaw	-0.37	-0.31	-0.06
92	Injun +	-0.34	-0.22	-0.22
93	4th Sand	-0.42	-0.32	-0.08
94	50 Foot	-0.34	-0.26	-0.07
95	Injun/Weir	-0.51	-0.26	-0.09
96	Maxton	-0.70	-0.27	-0.08
97	Coalbed Methane (Vertical)	-0.23	-0.08	-0.05
98	Coalbed Methane (Horizontal)	-0.05	-0.05	-0.32
109	Trenton/Deeper *	-0.38	-0.21	-0.11
110	Marcellus	-0.59	-0.29	-0.23
9	Exception (Median)	-0.38	-0.21	-0.11
10	Non-Filer	-0.23	-0.03	-0.03

* New Formation(s) involved in recent production. These will be valued with the Exception Rates until decline information is available.

Decline Rates for Natural Gas and Oil Formations: North West				
North West: Pleasants, Ritchie, Wood				
Code	Formation	Year 1	Year 2	Year 3 +
2	Huron, Rhinestreet	-0.41	-0.26	-0.07
4	Huron	-0.42	-0.24	-0.14
5	Huron, Shales above Huron	-0.39	-0.25	-0.14
8	Berea	-0.31	-0.15	-0.15
11	Gordon	-0.38	-0.10	-0.10
12	Alexander, Benson (No Riley)	-0.34	-0.23	-0.10
13	Alexander, Benson, Riley	-0.32	-0.20	-0.10
14	Benson	-0.19	-0.19	-0.10
44	Rhinestreet, Huron, Shallow Shale	-0.43	-0.28	-0.11
47	Alexander, Riley, (No Benson)	-0.41	-0.05	-0.05
48	Rhinestreet, Alexander, Benson, Riley	-0.31	-0.24	-0.10
49	Weir, Squaw, Big Injun	-0.27	-0.17	-0.07
50	Rhinestreet	-0.40	-0.27	-0.27
51	Rhinestreet +	-0.36	-0.21	-0.10
52	All Upper Devonian (Undiv)	-0.48	-0.33	-0.19
53	Huron, Chemung	-0.35	-0.11	-0.09
54	Huron, Hampshire, Pocono	-0.12	-0.12	-0.11
55	Upper Devonian (Above Huron)	-0.46	-0.33	-0.23
56	Chemung Sands= Riley, Bradford, Balltown, Speechley, Warren (No Benson or Alexander)	-0.28	-0.18	-0.10
83	Huron Oil	-0.74	-0.44	-0.40
93	4th Sand	-0.42	-0.32	-0.08
94	50 Foot	-0.34	-0.26	-0.07
95	Injun/Weir	-0.51	-0.26	-0.09
96	Maxton	-0.70	-0.27	-0.08
109	Trenton/Deeper *	-0.39	-0.23	-0.13
110	Marcellus *	-0.39	-0.23	-0.13
9	Exception (Median)	-0.39	-0.23	-0.13
10	Non-Filer	-0.12	-0.05	-0.05

* New Formation(s) involved in recent production. These will be valued with the Exception Rates until decline information is available.

Decline Rates for Natural Gas and Oil Formations: South

South: McDowell, Mercer, Raleigh, Wyoming

Code	Formation	Year 1	Year 2	Year 3 +
8	Berea	-0.34	-0.15	-0.15
22	Big Lime	-0.31	-0.19	-0.07
23	Big Lime, Maxton	-0.31	-0.19	-0.07
24	Big Lime, Ravencloff	-0.29	-0.29	-0.17
25	Berea +	-0.37	-0.12	-0.08
26	Ravencloff	-0.40	-0.08	-0.07
28	Weir	-0.44	-0.20	-0.10
29	Weir +	-0.28	-0.21	-0.08
30	Weir, Big Lime	-0.37	-0.19	-0.13
42	Maxton, Ravencloff	-0.40	-0.08	-0.07
93	4th Sand	-0.42	-0.32	-0.08
94	50 Foot	-0.34	-0.26	-0.07
95	Injun/Weir	-0.51	-0.26	-0.09
96	Maxton	-0.27	-0.13	-0.09
97	Coalbed Methane (Vertical)	0.03	0.10	-0.05
98	Coalbed Methane (Horizontal)	-0.05	-0.05	-0.32
110	Marcellus *	-0.36	-0.19	-0.09
9	Exception (Median)	-0.36	-0.19	-0.09
10	Non-Filer	-0.23	-0.08	-0.05

* New Formation(s) involved in recent production. These will be valued with the Exception Rates until decline information is available.

Decline Rates for Natural Gas and Oil Formations: South Central

South Central: Boone, Kanawha

Code	Formation	Year 1	Year 2	Year 3 +
3	Devonian Shale	-0.23	-0.08	-0.05
4	Huron	-0.31	-0.15	-0.04
8	Berea	-0.23	-0.14	-0.09
18	Big Injun	-0.29	-0.25	-0.12
27	Huron, Shales above Huron	-0.21	-0.08	-0.05
28	Weir	-0.30	-0.21	-0.14
29	Weir +	-0.31	-0.25	-0.09
31	Devonian Shales +	-0.27	-0.07	-0.05
86	Big Injun-Oil	-0.19	-0.18	-0.10
93	4th Sand	-0.42	-0.32	-0.08
94	50 Foot	-0.34	-0.26	-0.07
95	Injun/Weir	-0.51	-0.26	-0.09
96	Maxton	-0.70	-0.27	-0.08
109	Trenton/Deeper *	-0.33	-0.19	-0.08
110	Marcellus *	-0.33	-0.19	-0.08
9	Exception (Median)	-0.33	-0.19	-0.08
10	Non-Filer	-0.19	-0.07	-0.04

* New Formation(s) involved in recent production. These will be valued with the Exception Rates until decline information is available.

Decline Rates for Natural Gas and Oil Formations: South West

South West: Cabell, Lincoln, Logan, Mingo, Wayne

Code	Formation	Year 1	Year 2	Year 3 +
3	Devonian Shale	-0.31	-0.15	-0.04
8	Berea	-0.36	-0.11	-0.11
18	Big Injun	-0.38	-0.22	-0.04
22	Big Lime	-0.19	-0.19	-0.19
43	Berea, Big Lime	-0.18	-0.18	-0.18
93	4th Sand	-0.42	-0.32	-0.08
94	50 Foot	-0.34	-0.26	-0.07
95	Injun/Weir	-0.51	-0.26	-0.09
96	Maxton	-0.70	-0.27	-0.08
109	Trenton/Deeper *	-0.38	-0.22	-0.10
110	Marcellus *	-0.38	-0.22	-0.10
9	Exception (Median)	-0.38	-0.22	-0.10
10	Non-Filer	-0.18	-0.11	-0.04

* New Formation(s) involved in recent production. These will be valued with the Exception Rates until decline information is available.

Decline Rates for Natural Gas and Oil Formations: West Central

West Central: Calhoun, Roane, Wirt

Code	Formation	Year 1	Year 2	Year 3 +
2	Huron, Rhinestreet	-0.49	-0.11	-0.06
4	Huron	-0.33	-0.22	-0.14
27	Huron, Shales above Huron	-0.42	-0.23	-0.12
44	Rhinestreet, Huron, Shallow Shale	-0.51	-0.14	-0.11
45	Devonian Shale, Pocono	-0.25	-0.17	-0.12
46	Pocono	-0.29	-0.25	-0.12
84	Big Injun, Oil	-0.41	-0.41	-0.11
93	4th Sand	-0.42	-0.32	-0.08
94	50 Foot	-0.34	-0.26	-0.07
95	Injun/Weir	-0.51	-0.26	-0.09
96	Maxton	-0.70	-0.27	-0.08
109	Trenton/Deeper *	-0.42	-0.24	-0.10
110	Marcellus *	-0.42	-0.24	-0.10
9	Exception (Median)	-0.42	-0.24	-0.10
10	Non-Filer	-0.25	-0.11	-0.06

* New Formation(s) involved in recent production. These will be valued with the Exception Rates until decline information is available.

Decline Rates for Natural Gas and Oil Formations: West

West: Jackson, Mason, Putnam

Code	Formation	Year 1	Year 2	Year 3 +
1	Oriskany	-0.40	-0.40	-0.29
2	Huron, Rhinestreet	-0.13	-0.12	-0.03
3	Devonian Shale	-0.31	-0.15	-0.04
4	Huron	-0.29	-0.14	-0.05
5	Huron, Shales above Huron	-0.38	-0.15	-0.06
6	Huron, Berea	-0.29	-0.08	-0.08
7	Berea, Devonian Shale	-0.08	-0.08	-0.08
8	Berea	-0.36	-0.16	-0.16
93	4th Sand	-0.42	-0.32	-0.08
94	50 Foot	-0.34	-0.26	-0.07
95	Injun/Weir	-0.51	-0.26	-0.09
96	Maxton	-0.70	-0.27	-0.08
109	Trenton/Deeper *	-0.35	-0.20	-0.09
110	Marcellus *	-0.35	-0.20	-0.09
9	Exception (Median)	-0.35	-0.20	-0.09
10	Non-Filer	-0.08	-0.08	-0.03

* New Formation(s) involved in recent production. These will be valued with the Exception Rates until decline information is available.

Industry Operating Expense Survey and Results

This component was determined through a review of responses to a survey distributed by the State Tax Department to producers of all oil and natural gas wells producing in West Virginia and through use of other market data. Marcellus data was reviewed during 2013.

GAS

- % Working Interest Expenses for Typical Producing Well	=	30%
- Maximum Operating Expenses	=	\$5,000
- Coal Bed Methane, Vertical Wells Expenses	=	\$9,000

OIL

- % Working Interest Expenses for Typical Producing Well	=	35%
- Maximum Operating Expenses	=	\$5,750
- Maximum Enhanced Operating Expenses	=	\$9,000

MARCELLUS

- % Working Interest Expenses for Vertical Producing Well	=	30%
- Maximum Operating Expenses	=	\$30,000
- % Working Interest Expenses for Horizontal Producing Well	=	20%
- Maximum Operating Expenses	=	\$150,000

Minimum Working Interest Appraisal = \$500 per well

Flat Rate Royalty Multiplier = 5.75

Home Use Only Wells: Appraised at \$500 per well

Industrial Use Only Wells:* MCF usage X \$ 2.66/MCF
BBL usage X \$94.05/BBL

*(Also includes Department of Environmental Protection reported wells.)

Non-Filer Valuations

Working Interest = 150% of previous year's appraisal
Royalty Interest = 90% of previous year's appraisal

Valuation

The previously discussed variables are used to establish a future income stream converted to present worth through application of a capitalization rate. The sum of the discounted future net income per year represents a reasonable estimate of market value.

Lease Rate/Term Survey and Results

The non-producing property value for each county is determined by multiplying the average delay rental by a factor, which represents the average lease term under present economic conditions.

As a result of higher lease terms being inversely proportional to the value of oil and gas (thus counties with little leasing or production activities reflect inflated values) and with the volatile nature of county activity, necessary adjustments in the review have been made.

A compilation of lease terms produced a statewide average of 5 years. This term (5 years) was applied to all county lease rates and compared to the appraisal rates derived from calculations using individual county data. The two resulting calculations were reviewed and considered in the assignment of an appraisal rate per acre.

The appraisal rate/acre amounts shown on the next page are preliminary figures, which may change if additional lease data is received. These rates have been applied to all county magisterial districts with either producing wells, lease activity within the past 5 years or both. Tax districts void of activity within the past 5 years have been assigned the minimum value per acre.

OIL & GAS RESERVE RATES FOR TY 2014			
COUNTY	CO #	DISTRICT #	TY2014 \$/AC
BARBOUR	1	1	\$45.00
		2	\$45.00
		3	\$45.00
		4	\$45.00
		5	\$45.00
		6	\$1.00
		7	\$45.00
		8	\$45.00
		9	\$45.00
		10	\$45.00
		11	\$45.00
BERKELEY	2	1	\$1.00
		2	\$1.00
		3	\$1.00
		4	\$1.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$1.00
BOONE	3	1	\$20.00
		2	\$1.00
		3	\$1.00
		4	\$20.00
		5	\$20.00
		6	\$20.00
		7	\$20.00
		8	\$20.00
		9	\$1.00
BRAXTON	4	1	\$20.00
		2	\$1.00
		3	\$1.00
		4	\$1.00
		5	\$20.00
		6	\$20.00
		7	\$20.00
		8	\$1.00
BROOKE	5	1	\$1.00
		2	\$1.00
		3	\$20.00
		4	\$20.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$1.00

OIL & GAS RESERVE RATES FOR TY 2014			
COUNTY	CO #	DISTRICT #	TY2014 \$/AC
CABELL	6	1	\$20.00
		2	\$1.00
		3	\$20.00
		4	\$20.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$20.00
		9	\$1.00
		10	\$20.00
CALHOUN	7	1	\$30.00
		2	\$1.00
		3	\$30.00
		4	\$30.00
		5	\$30.00
		6	\$30.00
CLAY	8	1	\$20.00
		2	\$1.00
		3	\$20.00
		4	\$20.00
		5	\$20.00
		6	\$20.00
DODDRIDGE	9	1	\$45.00
		2	\$45.00
		3	\$45.00
		4	\$45.00
		5	\$45.00
		6	\$45.00
		7	\$45.00
		8	\$45.00
		9	\$1.00
FAYETTE	10	1	\$20.00
		2	\$20.00
		3	\$20.00
		4	\$1.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$1.00
		9	\$1.00
		10	\$1.00
		11	\$1.00
		12	\$1.00
		13	\$1.00

OIL & GAS RESERVE RATES FOR TY 2014			
COUNTY	CO #	DISTRICT #	TY2014 \$/AC
GILMER	11	1	\$25.00
		2	\$25.00
		3	\$25.00
		4	\$1.00
		5	\$1.00
		6	\$25.00
GRANT	12	1	\$1.00
		2	\$1.00
		3	\$15.00
		4	\$1.00
		5	\$15.00
GREENBRIER	13	1	\$1.00
		2	\$1.00
		3	\$15.00
		4	\$15.00
		5	\$1.00
		6	\$15.00
		7	\$15.00
		8	\$15.00
		9	\$15.00
		10	\$1.00
		11	\$15.00
		12	\$1.00
		13	\$1.00
		14	\$1.00
		15	\$1.00
		16	\$15.00
		17	\$1.00
		18	\$15.00
HAMPSHIRE	14	1	\$10.00
		2	\$1.00
		3	\$1.00
		4	\$1.00
		5	\$10.00
		6	\$1.00
		7	\$10.00
		8	\$1.00
		9	\$10.00
		10	\$10.00
HANCOCK	15	1	\$20.00
		2	\$1.00
		3	\$20.00
		4	\$20.00
		5	\$1.00
		6	\$1.00

OIL & GAS RESERVE RATES FOR TY 2014			
COUNTY	CO #	DISTRICT #	TY2014 \$/AC
HARDY	16	1	\$1.00
		2	\$10.00
		3	\$10.00
		4	\$10.00
		5	\$10.00
		6	\$1.00
HARRISON	17	1	\$45.00
		2	\$1.00
		3	\$1.00
		4	\$1.00
		5	\$45.00
		6	\$1.00
		7	\$45.00
		8	\$1.00
		9	\$45.00
		10	\$1.00
		11	\$45.00
		12	\$45.00
		13	\$1.00
		14	\$45.00
		15	\$45.00
		16	\$1.00
		17	\$1.00
		18	\$45.00
		19	\$1.00
		20	\$45.00
		21	\$1.00
JACKSON	18	1	\$30.00
		2	\$30.00
		3	\$30.00
		4	\$30.00
		5	\$30.00
		6	\$30.00
		7	\$30.00
JEFFERSON	19	1	\$1.00
		2	\$1.00
		3	\$1.00
		4	\$1.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$1.00
		9	\$1.00
		10	\$1.00

OIL & GAS RESERVE RATES FOR TY 2014					
COUNTY	CO #	DISTRICT #	TY2014 \$/AC		
KANAWHA	20	1	\$20.00		
		2	\$20.00		
		3	\$20.00		
				4	\$1.00
				5	\$1.00
				6	\$1.00
				7	\$1.00
				8	\$1.00
				9	\$1.00
				10	\$1.00
				11	\$1.00
				12	\$1.00
				13	\$1.00
				14	\$1.00
				15	\$20.00
				16	\$20.00
				17	\$1.00
				18	\$1.00
				19	\$20.00
				20	\$1.00
				21	\$1.00
				22	\$1.00
				23	\$20.00
				24	\$20.00
				25	\$20.00
				26	\$1.00
				27	\$1.00
				28	\$20.00
				29	\$1.00
				30	\$1.00
				31	\$1.00
LEWIS	21	1	\$25.00		
		2	\$25.00		
		3	\$25.00		
		4	\$25.00		
		5	\$1.00		
		6	\$25.00		
		7	\$1.00		
		8	\$1.00		
		9	\$1.00		
LINCOLN	22	1	\$15.00		
		2	\$15.00		
		3	\$1.00		
		4	\$15.00		
		5	\$15.00		
		6	\$15.00		
		7	\$15.00		
		8	\$15.00		
		9	\$15.00		
				10	\$1.00

OIL & GAS RESERVE RATES FOR TY 2014			
COUNTY	CO #	DISTRICT #	TY2014 \$/AC
LOGAN	23	1	\$15.00
		2	\$15.00
		3	\$15.00
		4	\$15.00
		5	\$1.00
		6	\$15.00
		7	\$15.00
		8	\$15.00
		9	\$1.00
MARION	24	1	\$40.00
		2	\$40.00
		3	\$1.00
		4	\$1.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$1.00
		9	\$40.00
		10	\$1.00
		11	\$40.00
		12	\$40.00
		13	\$1.00
		14	\$1.00
		15	\$1.00
		16	\$40.00
		17	\$1.00
		18	\$40.00
		19	\$40.00
		20	\$1.00
		21	\$1.00
		22	\$1.00
MARSHALL	25	1	\$1.00
		2	\$1.00
		3	\$35.00
		4	\$35.00
		5	\$35.00
		6	\$1.00
		7	\$35.00
		8	\$1.00
		9	\$35.00
		10	\$1.00
		11	\$1.00
		12	\$35.00
		13	\$35.00
		14	\$35.00
		15	\$35.00
		16	\$1.00

OIL & GAS RESERVE RATES FOR TY 2014			
COUNTY	CO #	DISTRICT #	TY2014 \$/AC
MASON	26	1	\$20.00
		2	\$20.00
		3	\$20.00
		4	\$20.00
		5	\$20.00
		6	\$20.00
		7	\$1.00
		8	\$1.00
		9	\$1.00
		10	\$20.00
		11	\$1.00
		12	\$1.00
		13	\$1.00
		14	\$20.00
		15	\$20.00
		16	\$20.00
MC DOWELL	27	1	\$20.00
		2	\$1.00
		3	\$20.00
		4	\$20.00
		5	\$1.00
		6	\$20.00
		7	\$1.00
		8	\$1.00
		9	\$1.00
		10	\$1.00
		11	\$20.00
		12	\$1.00
		13	\$20.00
		14	\$1.00
		15	\$1.00
		16	\$1.00
MERCER	28	1	\$1.00
		2	\$15.00
		3	\$1.00
		4	\$1.00
		5	\$1.00
		6	\$15.00
		7	\$1.00
		8	\$1.00
		9	\$15.00
		10	\$1.00
		11	\$15.00

OIL & GAS RESERVE RATES FOR TY 2014			
COUNTY	CO #	DISTRICT #	TY2014 \$/AC
MINERAL	29	1	\$20.00
		2	\$20.00
		3	\$1.00
		4	\$20.00
		5	\$1.00
		6	\$20.00
		7	\$1.00
		8	\$20.00
		9	\$1.00
		10	\$1.00
		11	\$1.00
MINGO	30	1	\$1.00
		2	\$1.00
		3	\$20.00
		4	\$20.00
		5	\$20.00
		6	\$20.00
		7	\$20.00
		8	\$1.00
		9	\$20.00
		10	\$20.00
		11	\$20.00
		12	\$1.00
MONONGALIA	31	1	\$25.00
		2	\$1.00
		3	\$25.00
		4	\$25.00
		5	\$25.00
		6	\$1.00
		7	\$25.00
		8	\$25.00
		9	\$1.00
		10	\$1.00
		11	\$1.00
		12	\$1.00
		13	\$1.00
		14	\$1.00
		15	\$1.00
		16	\$1.00
		17	\$1.00
		18	\$25.00
		19	\$1.00

OIL & GAS RESERVE RATES FOR TY 2014			
COUNTY	CO #	DISTRICT #	TY2014 \$/AC
MONROE	32	1	\$1.00
		2	\$1.00
		3	\$15.00
		4	\$15.00
		5	\$15.00
		6	\$1.00
		7	\$15.00
		8	\$15.00
		9	\$15.00
MORGAN	33	1	\$1.00
		2	\$1.00
		3	\$1.00
		4	\$1.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$1.00
NICHOLAS	34	1	\$15.00
		2	\$15.00
		3	\$15.00
		4	\$15.00
		5	\$1.00
		6	\$1.00
		7	\$15.00
		8	\$1.00
		9	\$15.00
OHIO	35	1	\$1.00
		2	\$1.00
		3	\$25.00
		4	\$25.00
		5	\$25.00
		6	\$25.00
		7	\$1.00
		8	\$1.00
		9	\$1.00
		10	\$1.00
PENDLETON	36	1	\$1.00
		2	\$15.00
		3	\$1.00
		4	\$1.00
		5	\$1.00
		6	\$1.00
		7	\$15.00

OIL & GAS RESERVE RATES FOR TY 2014			
COUNTY	CO #	DISTRICT #	TY2014 \$/AC
PLEASANTS	37	1	\$1.00
		2	\$35.00
		3	\$35.00
		4	\$35.00
		5	\$35.00
		6	\$1.00
		7	\$35.00
		8	\$35.00
POCAHONTAS	38	1	\$1.00
		2	\$1.00
		3	\$20.00
		4	\$20.00
		5	\$1.00
		6	\$20.00
		7	\$20.00
		8	\$1.00
PRESTON	39	1	\$35.00
		2	\$35.00
		3	\$35.00
		4	\$35.00
		5	\$35.00
		6	\$35.00
		7	\$1.00
		8	\$35.00
		9	\$1.00
		10	\$35.00
		11	\$1.00
		12	\$1.00
		13	\$1.00
		14	\$1.00
		15	\$1.00
		16	\$1.00
		17	\$1.00
		18	\$1.00
		19	\$1.00
		20	\$1.00
PUTNAM	40	1	\$20.00
		2	\$20.00
		3	\$20.00
		4	\$20.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$20.00
		9	\$20.00
		10	\$20.00
		11	\$20.00
		12	\$20.00
		13	\$1.00

OIL & GAS RESERVE RATES FOR TY 2014			
COUNTY	CO #	DISTRICT #	TY2014 \$/AC
RALEIGH	41	1	\$20.00
		2	\$20.00
		3	\$1.00
		4	\$1.00
		5	\$20.00
		6	\$1.00
		7	\$20.00
		8	\$20.00
		9	\$20.00
		10	\$1.00
		11	\$20.00
		12	\$20.00
RANDOLPH	42	1	\$20.00
		2	\$20.00
		3	\$1.00
		4	\$20.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$1.00
		9	\$20.00
		10	\$20.00
		11	\$20.00
		12	\$1.00
		13	\$20.00
		14	\$1.00
		15	\$20.00
		16	\$20.00
		17	\$20.00
		18	\$1.00
RITCHIE	43	1	\$30.00
		2	\$1.00
		3	\$30.00
		4	\$1.00
		5	\$30.00
		6	\$1.00
		7	\$30.00
		8	\$1.00
		9	\$1.00
		10	\$30.00

OIL & GAS RESERVE RATES FOR TY 2014			
COUNTY	CO #	DISTRICT #	TY2014 \$/AC
ROANE	44	1	\$25.00
		2	\$25.00
		3	\$25.00
		4	\$25.00
		5	\$25.00
		6	\$25.00
		7	\$25.00
		8	\$1.00
		9	\$25.00
SUMMERS	45	1	\$1.00
		2	\$1.00
		3	\$1.00
		4	\$1.00
		5	\$15.00
		6	\$1.00
		7	\$1.00
TAYLOR	46	1	\$1.00
		2	\$1.00
		3	\$45.00
		4	\$45.00
		5	\$45.00
		6	\$45.00
		7	\$45.00
TUCKER	47	1	\$20.00
		2	\$20.00
		3	\$1.00
		4	\$1.00
		5	\$20.00
		6	\$20.00
		7	\$1.00
		8	\$1.00
		9	\$20.00
		10	\$1.00
		11	\$20.00
		12	\$1.00

OIL & GAS RESERVE RATES FOR TY 2014			
COUNTY	CO #	DISTRICT #	TY2014 \$/AC
TYLER	48	1	\$45.00
		2	\$45.00
		3	\$1.00
		4	\$45.00
		5	\$45.00
		6	\$45.00
		7	\$1.00
		8	\$1.00
		9	\$1.00
		10	\$45.00
UPSHUR	49	1	\$40.00
		2	\$40.00
		3	\$1.00
		4	\$40.00
		5	\$40.00
		6	\$40.00
		7	\$40.00
WAYNE	50	1	\$15.00
		2	\$15.00
		3	\$15.00
		4	\$1.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$15.00
		9	\$15.00
		10	\$15.00
		11	\$1.00
		12	\$15.00
WEBSTER	51	1	\$1.00
		2	\$1.00
		3	\$15.00
		4	\$15.00
		5	\$15.00
		6	\$15.00
		7	\$1.00

OIL & GAS RESERVE RATES FOR TY 2014			
COUNTY	CO #	DISTRICT #	TY2014 \$/AC
WETZEL	52	1	\$35.00
		2	\$35.00
		3	\$35.00
		4	\$35.00
		5	\$35.00
		6	\$1.00
		7	\$1.00
		8	\$35.00
		9	\$1.00
		10	\$1.00
		11	\$1.00
		12	\$35.00
		13	\$1.00
WIRT	53	1	\$25.00
		2	\$25.00
		3	\$25.00
		4	\$1.00
		5	\$25.00
		6	\$25.00
		7	\$25.00
		8	\$25.00
WOOD	54	1	\$35.00
		2	\$35.00
		3	\$35.00
		4	\$35.00
		5	\$1.00
		6	\$35.00
		7	\$35.00
		8	\$35.00
		9	\$35.00
		10	\$1.00
		11	\$35.00
		12	\$35.00
		13	\$1.00
		14	\$1.00
WYOMING	55	1	\$20.00
		2	\$20.00
		3	\$20.00
		4	\$20.00
		5	\$20.00
		6	\$1.00
		7	\$20.00
		8	\$1.00
		9	\$20.00
		10	\$20.00

**MANAGED TIMBER
PROPERTY ANALYSIS**

Tax Year 2014

August 28, 2013
Mark W. Matkovich
Acting State Tax Commissioner
Department of Revenue

MANAGED TIMBERLAND APPRAISAL RATES TAX YEAR 2014

(based on market 2008-2012)

Rates Per Acre

Class II Parcels

	<u>Grade 1</u>	<u>Grade 2</u>	<u>Grade 3</u>
Region 1	\$240	\$160	\$50
Region 2	\$200	\$140	\$50
Region 3	\$280	\$185	\$50
Region 4	\$250	\$170	\$50
Region 5	\$200	\$140	\$50

Class III/IV Parcels

	<u>Grade 1</u>	<u>Grade 2</u>	<u>Grade 3</u>
Region 1	\$225	\$150	\$75
Region 2	\$225	\$150	\$75
Region 3	\$250	\$170	\$75
Region 4	\$225	\$150	\$75
Region 5	\$225	\$150	\$75

- Region 1 = Brooke, Cabell, Hancock, Jackson, Marshall, Mason, Ohio, Pleasants, Putnam, Tyler, Wetzel, and Wood Counties
- Region 2 = Braxton, Calhoun, Clay, Doddridge, Gilmer, Harrison, Lewis, Marion, Monongalia, Ritchie, Roane, Taylor, and Wirt Counties
- Region 3 = Barbour, Greenbrier, Monroe, Nicholas, Pendleton, Pocahontas, Preston, Randolph, Tucker, Upshur, and Webster Counties
- Region 4 = Berkeley, Grant, Hampshire, Hardy, Jefferson, Mineral and Morgan Counties
- Region 5 = Boone, Fayette, Kanawha, Lincoln, Logan, McDowell, Mercer, Mingo, Raleigh, Summers, Wayne, and Wyoming Counties

Harvest Volumes per Acre

Harvest Interval <u>Grades</u>	<u>35 yrs.</u>	<u>45 yrs.</u>	<u>55 yrs.</u>	<u>80 yrs.</u>	<u>Total</u>
1 - Site Index 75 or more	4.6 cords	--	2.6 cords	3.3 cords	10.5 cords
	1.5 Mbf	--	4.4 Mbf	8.6 Mbf	14.5 Mbf
2 - Site Index 65 - 75	3.3 cords	--	7.0 cords	4.6 cords	14.9 cords
	1.0 Mbf	--	3.2 Mbf	5.5 Mbf	9.7 Mbf
3 - Site Index less than 65	--	3.1 cords	--	15.4 cords	18.5 cords
	--	0.8 Mbf	--	3.7 Mbf	4.5 Mbf

Managed Timberland Statistics

Estimation of Required Rate of Return: Class II Rates

A. Safe Rate of Return (5 Year T-Bill Rate)

Year	Rate	W/A %	W/A Rate
2012	0.7608	20.00%	0.1522
2011	1.5225	20.00%	0.3045
2010	1.9275	20.00%	0.3855
2009	2.1908	20.00%	0.4382
2008	2.7983	20.00%	0.5597

1.840 %

B. Nonliquidity Rate

(12 Month T-Bills vs. 3 Month T-Bills)

Year	Rate	W/A %	W/A Rate
2012	0.0892	33.33%	0.0297
2011	0.1292	26.67%	0.0345
2010	0.1817	20.00%	0.0363
2009	0.3200	13.33%	0.0427
2008	0.4308	6.67%	0.0287

0.172 %

C. Risk Rate (30 yr T-bills vs 5 yr T-bills)

Year	Rate	W/A %	W/A Rate
2012	2.1600	33.33%	0.7199
2011	2.3883	26.67%	0.6370
2010	2.3233	20.00%	0.4647
2009	1.8783	13.33%	0.2504
2008	1.4808	6.67%	0.0988

2.171 %

D. Management Factor of 0.5%

0.500 %

E. Property Tax Component

(60% of Class II Rate)

Year	Rate	W/A %	W/A Rate
2012	0.714	33.33%	0.2380
2011	0.708	26.67%	0.1888
2010	0.708	20.00%	0.1416
2009	0.702	13.33%	0.0936
2008	0.696	6.67%	0.0464

0.708 %

F. Inflation Rate:

(Bureau of Labor Statistics)

Year	Rate	W/A %	W/A Rate
2012	1.700	20.00%	0.3400
2011	3.000	20.00%	0.6000
2010	1.500	20.00%	0.3000
2009	2.700	20.00%	0.5400
2008	0.100	20.00%	0.0200

(1.800) %

TOTAL REQUIRED RATE OF RETURN (REAL)

3.591 %

LESS: PROPERTY TAX COMPONENT

(0.708)

TOTAL DISCOUNT COMPONENT

2.883 %

Stumpage Prices:

	<u>Sawtimber</u>	<u>Pulpwood</u>
Stumpage Price Adjustment Factor	0.33%	1.67%

		1.1222	1.1598	1.1987	1.3016
SAWTIMBER	Current	\$/MBF at age	\$/MBF at age	\$/MBF at age	\$/MBF at age
	Region	35	45	55	80
	\$/MBF				
	Region 1	179.05	200.94	207.67	214.62
	Region 2	158.78	178.19	184.16	190.33
	Region 3	204.05	228.99	236.66	244.59
	Region 4	182.47	204.77	211.63	218.72
	Region 5	134.10	150.49	155.53	160.74

		1.7855	2.1071	2.4866	3.7621
PULPWOOD:	\$/Cord	\$/cd at age	\$/cd at age	\$/cd at age	\$/cd at age
	Region	35	45	55	80
	\$/Cord				
	Region 1	7.35	13.12	15.49	18.28
	Region 2	4.75	8.49	10.02	11.82
	Region 3	7.16	12.78	15.08	17.80
	Region 4	8.49	15.16	17.90	21.12
	Region 5	6.13	10.94	12.91	15.23

Management Costs:

Region	\$/acre (1)
1	3.17
2	3.17
3	3.17
4	3.17
5	3.17
State	

Tax Rates:

Effective Federal Income Tax Rate	35.00%
Effective WV State Income Tax Rate (6.5% * (1-.35))	4.23%
Effective WV Severance Tax Rate (4.0% * (1-.35))	2.60%

Yield (Volumes) (80 year rotation)

Timberland Productivity Grades	Site Index	Yield - MBF	Yield - Cords
Grade I	75 or more	14.5	10.5
Grade II	65-74	9.7	14.9
Grade III	less than 65	4.5	18.5

Managed Timberland Statistics

Estimation of Required Rate of Return: Class III & IV Blended Rates

A. Safe Rate of Return (5 Year T-Bill Rate)

Year	Rate	W/A %	W/A Rate		
2012	0.7608	20.00%	0.1522		
2011	1.5225	20.00%	0.3045		
2010	1.9275	20.00%	0.3855		
2009	2.1908	20.00%	0.4382		
2008	2.7983	20.00%	0.5597	1.840	%

B. Nonliquidity Rate

(12 Month T-Bills vs. 3 Month T-Bills)

Year	Rate	W/A %	W/A Rate		
2012	0.0892	33.33%	0.0297		
2011	0.1292	26.67%	0.0345		
2010	0.1817	20.00%	0.0363		
2009	0.3200	13.33%	0.0427		
2008	0.4308	6.67%	0.0287	0.172	%

C. Risk Rate (30 yr T-bills vs 5 yr T-bills)

Year	Rate	W/A %	W/A Rate		
2012	2.1600	33.33%	0.7199		
2011	2.3883	26.67%	0.6370		
2010	2.3233	20.00%	0.4647		
2009	1.8783	13.33%	0.2504		
2008	1.4808	6.67%	0.0988	2.171	%

D. Management Factor of 0.5%

0.500 %

E. Property Tax Component

(60% of Blended III&IV Rates)

Year	Rate	W/A %	W/A Rate		
2012	1.326	33.33%	0.4420		
2011	1.314	26.67%	0.3504		
2010	1.308	20.00%	0.2616		
2009	1.296	13.33%	0.1728		
2008	1.302	6.67%	0.0868	1.314	%

F. Inflation Rate:

(Bureau of Labor Statistics)

Year	Rate	W/A %	W/A Rate		
2012	1.700	20.00%	0.3400		
2011	3.000	20.00%	0.6000		
2010	1.500	20.00%	0.3000		
2009	2.700	20.00%	0.5400		
2008	0.100	20.00%	0.0200	(1.800)	%

TOTAL REQUIRED RATE OF RETURN (REAL)

4.196 %

LESS: PROPERTY TAX COMPONENT

(1.314)

TOTAL DISCOUNT COMPONENT

2.883 %

Stumpage Prices:

		<u>Sawtimber</u>	<u>Pulpwood</u>		
Stumpage Price Adjustment Factor		0.33%	1.67%		
		1.1222	1.1598	1.1987	1.3016
SAWTIMBER	Current	\$/MBF at age	\$/MBF at age	\$/MBF at age	\$/MBF at age
Region	\$/MBF	35	45	55	80
Region 1	179.05	200.94	207.67	214.62	233.05
Region 2	158.78	178.19	184.16	190.33	206.67
Region 3	204.05	228.99	236.66	244.59	265.58
Region 4	182.47	204.77	211.63	218.72	237.49
Region 5	134.10	150.49	155.53	160.74	174.54
		1.7855	2.1071	2.4866	3.7621
PULPWOOD:		\$/cd at age	\$/cd at age	\$/cd at age	\$/cd at age
Region	\$/Cord	35	45	55	80
Region 1	7.35	13.12	15.49	18.28	27.65
Region 2	4.75	8.49	10.02	11.82	17.89
Region 3	7.16	12.78	15.08	17.80	26.93
Region 4	8.49	15.16	17.90	21.12	31.95
Region 5	6.13	10.94	12.91	15.23	23.04

Management Costs:

Region	\$/acre (1)
1	3.17
2	3.17
3	3.17
4	3.17
5	3.17
State	

Tax Rates:

Effective Federal Income Tax Rate	35.00%
Effective WV State Income Tax Rate (6.5% * (1-.35))	4.23%
Effective WV Severance Tax Rate (4.0% * (1-.35))	2.60%

Yield (Volumes) (80 year rotation)

Timberland Productivity Grades	Site Index	Yield - MBF	Yield - Cords
Grade I	75 or more	14.5	10.5
Grade II	65-74	9.7	14.9
Grade III	less than 65	4.5	18.5

West Virginia Wgt/Avg Managed Timberland Stumpage Prices

REGION 1 - Sawtimber

Year	Volume	\$/MBF	W/A%	\$/MBF
2012	12,628.15	186.56	33.33%	62.19
2011	11,195.24	144.89	26.67%	38.64
2010	15,157.58	173.52	20.00%	34.70
2009	13,311.70	208.09	13.33%	27.75
2008	18,483.95	236.57	6.67%	15.78
	70,776.62			179.05

REGION 1 - Pulpwood *

Year	Volume	\$/CORD	W/A%	\$/CORD
2012	45,387.00	6.42	33.33%	2.14
2011	48.10	9.67	26.67%	2.58
2010	1,859.30	6.90	20.00%	1.38
2009	3,351.10	8.35	13.33%	1.11
2008	1,929.30	2.07	6.67%	0.14
	52,574.80			7.35

REGION 2 - Sawtimber

Year	Volume	\$/MBF	W/A%	\$/MBF
2012	25,640.98	149.01	33.33%	49.67
2011	12,639.41	156.26	26.67%	41.67
2010	56,575.40	163.96	20.00%	32.79
2009	43,105.11	165.92	13.33%	22.12
2008	62,741.47	187.95	6.67%	12.53
	200,702.37			158.78

REGION 2 - Pulpwood

Year	Volume	\$/CORD	W/A%	\$/CORD
2012	22,647.40	2.86	33.33%	0.95
2011	5,235.20	6.78	26.67%	1.81
2010	23,291.90	4.15	20.00%	0.83
2009	6,342.60	5.94	13.33%	0.79
2008	12,213.00	5.57	6.67%	0.37
	69,730.10			4.75

REGION 3 - Sawtimber

Year	Volume	\$/MBF	W/A%	\$/MBF
2012	111,920.60	201.57	33.33%	67.19
2011	102,218.30	201.45	26.67%	53.72
2010	145,592.20	211.21	20.00%	42.24
2009	136,208.60	187.01	13.33%	24.93
2008	223,321.70	239.45	6.67%	15.96
	719,261.40			204.05

REGION 3 - Pulpwood

Year	Volume	\$/CORD	W/A%	\$/CORD
2012	183,132.60	6.39	33.33%	2.13
2011	159,040.70	7.34	26.67%	1.96
2010	123,858.50	9.34	20.00%	1.87
2009	206,464.40	6.14	13.33%	0.82
2008	280,717.80	5.76	6.67%	0.38
	953,214.00			7.16

REGION 4 - Sawtimber

Year	Volume	\$/MBF	W/A%	\$/MBF
2012	4,808.73	193.47	33.33%	64.49
2011	15,517.51	178.40	26.67%	47.57
2010	24,125.85	167.02	20.00%	33.40
2009	15,403.79	168.15	13.33%	22.42
2008	31,170.06	218.70	6.67%	14.58
	<u>91,025.94</u>			<u>182.47</u>

REGION 4 - Pulpwood

Year	Volume	\$/CORD	W/A%	\$/CORD
2012	7,382.20	9.61	33.33%	3.20
2011	21,074.10	8.64	26.67%	2.30
2010	26,223.70	5.93	20.00%	1.19
2009	9,678.90	11.49	13.33%	1.53
2008	49,931.50	4.02	6.67%	0.27
	<u>114,290.40</u>			<u>8.49</u>

REGION 5 - Sawtimber

Year	Volume	\$/MBF	W/A%	\$/MBF
2012	10,887.05	138.63	33.33%	46.21
2011	24,760.43	122.43	26.67%	32.65
2010	56,603.00	143.15	20.00%	28.63
2009	49,494.92	115.82	13.33%	15.44
2008	53,526.41	167.56	6.67%	11.17
	<u>195,271.81</u>			<u>134.10</u>

REGION 5 - Pulpwood

Year	Volume	\$/CORD	W/A%	\$/CORD
2012	8,296.30	6.93	33.33%	2.31
2011	6,432.30	6.26	26.67%	1.67
2010	19,223.30	4.06	20.00%	0.81
2009	281,600.40	7.23	13.33%	0.96
2008	34,275.00	5.55	6.67%	0.37
	<u>349,827.30</u>			<u>6.13</u>

COAL PROPERTIES ANALYSIS

Tax Year 2014

August 28, 2013
Mark W. Matkovich
Acting State Tax Commissioner
Department of Revenue

COAL CAPITALIZATION RATE

Capitalization Rate Analysis and Results:

In developing a capitalization rate for use in valuing specific income-producing properties consideration is given to the three approaches generally employed in estimating a discount rate. As a matter of practicality, the Bands-of-Investment and Summation Technique approaches are utilized in establishing discount rates for active coal. Data for analysis has been derived in accordance with current Legislative Rule Title 110, Series 11.

<u>Safe Rate</u>			<u>Safe Rate</u>		
90 day Treasury Bills					
January	December	2012			0.086%
January	December	2011			0.053%
January	December	2010			0.137%

<u>Risk Rate</u> Interest differential between Loan Rate and 90 day Treasury Bills					
<u>Loan Rate*</u>			<u>Debt Risk Rate</u>		
2012	5.25%		5.164%		
2011	5.25%		5.197%		
2010	5.25%		5.113%		
*Prime plus 2%					

<u>Equity</u> Differential between Equity Rates and 90 day Treasury Bills					
<u>Equity Rate**</u>			<u>Equity Risk Rate</u>		
2012	[13.25%/(1-.30)]-0.086		18.843%		
2011	[13.25%/(1-.30)]-0.053		18.876%		
2010	[13.5%/(1-.30)]-0.137		19.149%		
** Value Line Investment Survey Analysis					

<u>Composite Risk Rate</u> Loan and Equity Rates weighted by industry estimated capital structure					
<u>Equity Rate</u>		<u>Debt Rate</u>		<u>Composite Risk</u>	
2012	11.306%	2.066%		13.372%	
2011	11.325%	2.079%		13.404%	
2010	11.489%	2.045%		13.534%	
Note: Debt Equity Ratio		Debt	40%	Equity	60%

<u>Non Liquidity Rate</u> Interest differential between a 90 day Treasury Bill and a 1 year Treasury Bill which reflects a reasonable time necessary to sell active property.					
			<u>1yr T Bill</u>	<u>90 d T Bill</u>	<u>Non Liquidity Rate</u>
January	December	2012	0.175%	0.086%	0.089%
January	December	2011	0.182%	0.053%	0.129%
January	December	2010	0.318%	0.137%	0.181%

<u>Management Rate</u> Charges for the management of investment portfolios.		
Fixed Rate (by Rule)		0.500%

<u>Inflation Rate</u>			
January	December	2012	1.700%
January	December	2011	3.000%
January	December	2010	1.500%

Capitalization Rate Since the valuation of active coal property is predicated on a three year production average, the capitalization rate is considered in a similar manner.

	<u>2012</u>	<u>2011</u>	<u>2010</u>
Inflation Rate	-1.700%	-3.000%	-1.500%
Safe Rate	0.086%	0.053%	0.137%
Composite Risk Rate	13.372%	13.404%	13.534%
Non Liquidity Rate	0.089%	0.129%	0.181%
Management Rate	0.500%	0.500%	0.500%
Total	12.347%	11.086%	12.852%
Three Yr Average:	12.095	Rounded to:	12.10%

<u>CAPITALIZATION RATE - 12.1%</u>			
<u>MULTIPLIERS:</u>		<u>%</u>	
1YR	0.944	9YR	5.620
2YR	1.787	10YR	5.958
3YR	2.539	11YR	6.259
4YR	3.209	12YR	6.528
5YR	3.807	13YR	6.768
6YR	4.341	14YR	6.982
7YR	4.817	15YR	7.173
8YR	5.241		

COAL

Price and Royalty Rate Analysis

The development of royalty rates for the various categories of mines and markets involves information collection and review from a variety of sources. Coal lease rates have been derived from transaction information provided by county assessors, tax auditors, producers, and by individual lessors/lessees involved in the specific transaction. The prices for mined coal, as per 110-CSR-11, have been calculated from information provided by the WV Public Service Commission and U.S. Energy Information Administration concerning power plant fuel purchases. Prices provided by producers as part of tax filing and from data obtained from market summaries are included for comparison. Because a large portion of the data used in this analysis is, by law, considered confidential, only a summary of the results are published.

COAL SALE PRICES CY2012 FOR TY2014 APPLICATION

GRAND SUMMARY ALL SOURCES	STEAM	STEAM	MET	
	SPOT	TERM		
PSC	\$63.93	\$66.86		
FERC Data	\$56.55	\$68.80		
Coal Market Publication		\$67.77		(SNL ENERGY OTC Market Index)
Active Return Summary	\$58.74	56.7 MM tons (S+T)	\$144.43	16.8 MM tons

STATE STEAM PRICE (SPOT Market)	\$57.77 FERC & PSC, 3 YR AVE
STATE MET PRICE	\$113.31 Active Return, 3 YR AVE

	Spot Sales	Term Sales	Total
2012 PSC Tons reported in millions	9.40	3.13	12.53

COAL TY2014 ROYALTY RATES	2012		2011		2010		2009		2008	
	%S	%D	%S	%D	%S	%D	%S	%D	%S	%D
TOTAL RECORDS	1,908	2,756	1,677	2,241	2,448	3,197	2,528	2,823	2,530	2,851
SUM of PERCENT	11,881.66	14,663.03	8,924.28	11,181.05	14,406.71	16,405.76	14,922.03	14,006.00	14,564.83	14,753.30
STRAIGHT AVERAGE	6.23	5.32	5.32	4.99	5.89	5.13	5.90	4.96	5.76	5.17
MEDIAN	6.00	5.13	5.00	5.00	5.22	5.00	4.39	5.06	4.39	5.06
WEIGHTED AVERAGE	6.45	6.28	6.27	5.72	6.24	5.66	5.31	5.21	5.18	5.43
TENTATIVE RATE DEEP (%)	5.66									
TENTATIVE RATE SURFACE (%)	5.89									
ROYALTY RATE CALCULATIONS										
Steam Coal/ Deep Mine	\$57.77	per ton X	5.66%	=	\$3.27	per ton				
Metallurgical Coal/ Deep Mine	\$113.31	per ton X	5.66%	=	\$6.41	per ton				
Steam Coal/ Surface Mine	\$57.77	per ton X	5.89%	=	\$3.40	per ton				
Metallurgical Coal/ Surface Mine	\$113.31	per ton X	5.89%	=	\$6.67	per ton				

Explanation of Reserve Coal Valuation

The RCVM consists of a computer model, which utilizes a database consisting of coal beds and characteristics, property locations, mine locations, sales, transportation, etc., for the entire state. An extensive algorithm calculates in-place tonnage, expected time of mining and present value for all the mineable coal on every property.

There are, therefore, no set "rates" available on reserve coal under the Rule. The RCVM values on each property will not be available until all data has been entered, after October 15 of each year. Please refer to the State Register, Legislative Rules, Title 110, Series 1I for details of the process.

Title 110, Series 11
Valuation of Active and Reserve Coal Property for Ad Valorem Property Tax Purposes

The above Legislative Rule was modified during the 2005 Legislative Session requiring biannual (every two years) updating of the geostatistical basis for several valuation factors used in the Reserve Coal Valuation Model. To satisfy that requirement, maps and data files concerning coal BTU values, coal Sulfur values, coal Ash values, coal Volatility values, the Market Interest Factor, the Market Mineability Factor, the Use Conflict Factor and the Environmental Factor have been revised for Tax Year 2013. Additionally, preliminary research has been conducted to determine the effects of the factors on coal valuation. The results are as follows:

Market Interest Factor

This is the relationship between transactions (sales, leases, prospects, permit applications, etc.) and mining as it relates to properties and locations. Trans_Ct is the number of transactions counted within the radius.

Radius = 5 miles

If Trans_Ct >= 12 Then TransFactor = 20

If Trans_Ct < 12 And Trans_Ct >= 4 Then TransFactor = 40

Else TransFactor = 80

Market Mineability Factor

This is the relationship between property location and mining, through time. Determining feature is count of mines within the radius.

Radius = 5 miles

Surface Mines: Smine

Deep Mines: Dmine

Boom Mines: Bmine

Historic Mines: Omine

Current Mines: Cmine

To assign MineFactor:

If Cmine > 0 Then MineFactor = 20

If Cmine = 0 And (Omine > 0 Or Bmine > 0) Then MineFactor = 40

Else MineFactor = 80

Use Conflict Factor

This is the relationship between oil & gas well drilling and mining as it relates to property location. Well density is in wells per square mile.

WellDensity < 7 Then WellFactor = 0

WellDensity >= 7 And WellDensity < 19 Then WellFactor = 20

WellDensity >= 19 And WellDensity < 29 Then WellFactor = 40

WellDensity > 29 Then WellFactor = 80

Environmental Factor

This is the relationship of known environmental hazards and impediments to the likelihood of mining occurring at this location. The rates are compiled from maps and represent densities of problems mapped.

Envrate = <=30 and Null Then EnvFactor = 0

Envrate >30 and Envrate <= 60 Then EnvFactor = 20

Envrate > 60 and Envrate < 100 Then EnvFactor = 40

Envrate >= 100 Then EnvFactor = 80

**OTHER MINED MINERAL
PROPERTY ANALYSIS**

Tax Year 2014

August 28, 2013
Mark W. Matkovich
Acting State Tax Commissioner
Department of Revenue

OTHER MINED MINERALS CAPITALIZATION RATE

Capitalization Rate Analysis and Results:

In developing a capitalization rate for use in valuing specific income-producing properties consideration is given to the three approaches generally employed in estimating a discount rate. As a matter of practicality, the Bands-of -Investment and Summation Technique approaches are utilized in establishing discount rates for active coal. Data for analysis has been derived in accordance with current Legislative Rule Title 110, Series 1k.

<u>Safe Rate</u>	90 day Treasury Bills		<u>Safe Rate</u>
January	December	2012	0.086%
January	December	2011	0.053%
January	December	2010	0.137%

<u>Risk Rate</u>	Interest differential between Loan Rate and 90 day Treasury Bills		
	<u>Loan Rate*</u>		<u>Debt Risk Rate</u>
	2012	5.25%	5.164%
	2011	5.25%	5.197%
	2010	5.25%	5.113%

*Prime plus 2%

<u>Equity</u>	Differential between Equity Rates and 90 day Treasury Bills		
	<u>Equity Rate**</u>		<u>Equity Risk Rate</u>
	2012	[11.75%/(1-.30)]-0.086	16.700%
	2011	[12.0%/(1-.30)]-0.053	17.090%
	2010	[12.5%/(1-.30)]-0.137	17.720%

** Value Line Investment Survey Analysis

<u>Composite Risk Rate</u>	Loan and Equity Rates weighted by industry estimated capital structure.			
	Equity Rate	Debt Rate	Composite Risk	
	2012	10.020%	2.066%	12.086%
	2011	10.254%	2.079%	12.333%
	2010	10.632%	2.045%	12.677%

Note: Debt Equity Ratio Debt 40% Equity 60%

<u>Non Liquidity Rate</u>	Interest differential between 90 day Treasury Bills and a 1 year Treasury Bill which reflects a reasonable time necessary to sell active property.					
			<u>1yr T Bill</u>	<u>90 d T Bill</u>	<u>Non Liquidity Rate</u>	
	January	December	2012	0.175%	0.086%	0.089%
	January	December	2011	0.182%	0.053%	0.129%
	January	December	2010	0.318%	0.137%	0.181%

<u>Management Rate</u>	Charges for the management of investment portfolios.	
	Fixed Rate (by Rule)	0.500%

<u>Inflation Rate</u>				
	January	December	2012	1.700%
	January	December	2011	3.000%
	January	December	2010	1.500%

<u>Property Tax Rate</u>	Sixty percent (60%) of State average Class III property tax rate.				
	January	December	2012	60% of 2.210 =	1.326%
	January	December	2011	60% of 2.190 =	1.314%
	January	December	2010	60% of 2.190 =	1.314%

Capitalization Rate Since the valuation of other mined mineral property is predicated on a three year production average, the capitalization rate is considered in a similar manner.

	2012	2011	2010
Inflation Rate	-1.700%	-3.000%	-1.500%
Safe Rate	0.086%	0.053%	0.137%
Composite Risk Rate	12.086%	12.333%	12.677%
Non Liquidity Rate	0.089%	0.129%	0.181%
Management Rate	0.500%	0.500%	0.500%
Property Tax Rate	1.326%	1.314%	1.314%
<u>Total</u>	12.387%	11.329%	13.309%

Three Yr Average: 12.342% Rounded to: 12.30%

CAPITALIZATION RATE - 12.30%

MULTIPLIERS:	%	%
1YR	0.944	5.583
2YR	1.784	5.915
3YR	2.532	6.211
4YR	3.198	6.474
5YR	3.792	6.709
6YR	4.320	6.917
7YR	4.791	7.103
8YR	5.210	

OTHER MINED MINERALS

ROYALTY RATE SURVEY

The determination of royalty rates for other mined minerals within the state of West Virginia is dependent upon the availability of leasehold information. Since this information is limited, the Department has chosen to review data for the most recent thirty year period. A summary only of this review is shown below in order to protect the confidentiality of parties involved.

RESOURCE	DATA SOURCES	AVERAGE ROYALTY	MEDIAN ROYALTY	TY2014 RATE
LIMESTONE	15	\$0.22	\$0.20	\$0.22
SANDSTONE	8	\$0.31	\$0.25	\$0.30
CLAY/SHALE	34	\$0.12	\$0.10	\$0.11
SAND/GRAVEL	10	\$0.35	\$0.40	\$0.40
SALT BRINE	1	N/A	N/A	\$0.10

RESERVE VALUES

	number of sales	\$/AC
LIMESTONE	5	\$3,000.00
SANDSTONE	8	\$2,300.00
CLAY/SHALE	16	\$850.00
SAND/GRAVEL	6	\$4,000.00
SALT	2	\$1,140.00