IN THE CIRCUIT COURT OF DODDRIDGE COUNTY, WEST VIRGINIA

ANTERO RESOURCES CORPORATION,

Petitioner,

v.

Civil Action No. 17-AA-1
The Honorable Timothy L. Sweeney

THE HONORABLE MARK MATKOVICH,
West Virginia State Tax Commissioner,

THE HONORABLE DAVID SPONAUGLE,
Assessor of Doddridge County, and

THE COUNTY COMMISSION OF DODDRIDGE COUNTY,
Sitting as a Board of Assessment Appeals,

DODDRIDGE COUNTY
CIRCUIT COURT

JAN 20 2017

MICHELE D. BRITTON
CIRCUIT CLERK

Respondents.

COMPLAINT OF PETITIONER ANTERO RESOURCES CORPORATION

I. INTRODUCTION

Antero Resources Corporation ("Antero") is a producer of natural gas throughout the state of West Virginia, with over one-hundred fifty (150) Marcellus wells located in Doddridge County.

Those wells are appraised by the West Virginia Department of Revenue, State Tax Department, Property Tax Division (the "Tax Department" or "State") based on a mass appraisal system, state-wide. Certain variables are used by the State to value producing oil and natural gas wells, including, notably for this Brief, operating expenses. Specifically, the Tax Department periodically circulates a survey by which it solicits data from oil and natural gas producing taxpayers regarding operating expenses for their wells, and based on that, the Tax Department

determines the operating expense variables used in its mass appraisal system. The amount of operating expenses applied to a well using the mass appraisal system is based on a percentage of the well's gross receipts not to exceed a maximum amount, and the percentage and maximum vary by the type of well (typical or conventional, Marcellus, etc.). The operating expense calculations are included in a natural resources "valuation variables" document that the Tax Department releases annually.

In addition to the valuation variables document, the Tax Department releases an annual administrative notice that lists the percentages and caps for operating expense calculations. In prior years, the Tax Department invited taxpayers to submit actual operating expenses that exceed the percentages and maximum amounts listed in the valuation variables document. The 2016 administrative notice, unlike administrative notices from 2000 through 2015, however, does not include language that invites taxpayers to submit actual expenses, despite no changes to the West Virginia Code or the Tax Department's Legislative Rule that governs the valuation of producing natural gas wells. For tax year 2016, Antero had submitted its actual operating expense information to the Tax Department prior to the Tax Department releasing the administrative notice in which it omitted the language inviting taxpayers to submit actual operating expense information.

In this matter, Antero evaluated its actual operating expenses for calendar year 2014, and determined that for Marcellus wells in the county, the amount of operating expenses that it was incurring for these wells exceeded the maximums set by the State. For property tax purposes, the operating expense data from calendar year 2014 is used to value the wells for tax year 2016.

When the Tax Department valued Antero's gas well values for tax year 2016, it failed to adhere to its own regulations that direct how it is to consider actual operating expenses. Antero, like many mineral producers, generally reports its operating expenses to the Tax Department on a state-wide basis. Antero's average operating expense per well was $648,000, which includes all lease operating expenses, gathering and compression expenses, processing expenses, and transportation expenses that are necessary to get the gas to the point of sale. Antero reports its gross revenues based on the amount it receives at the point of sale, and the allowed operating expenses should reflect the expenses incurred to get the gas to the point of sale.

For tax year 2016, the Tax Department capped operating expenses for Marcellus wells at the lesser of 20% of revenue or $150,000. This cap unduly restricts the amount of operating expenses that should be allowed for each of well, and the imposition of a "cap" is not supported by the Tax Department's legislative rule regarding the valuation of producing oil and natural gas properties. In sum, the Tax Department incorrectly and unfairly ignored the actual operating expenses and instead relied on the maximum calculations found in its valuation variables document and administrative notice. By failing to consider Antero's actual operating expenses, the Tax Department significantly overvalued Antero's wells.

On October 20, 2016, Antero protested the Tax Department's valuation (as adopted by the Doddridge County Assessor) to the Doddridge County Commission sitting as the Doddridge County Board of Assessment Appeals (the "Board"). Antero presented clear and convincing evidence that the Tax Department failed to consider Antero's actual operating expenses in determining the valuation for the wells assessed for Doddridge County, which caused those wells to be overvalued. Antero also presented a complete analysis of its actual operating expenses

from the state and local tax firm Altus Group US, Inc. ("Altus"), supported by testimony from Kirsten Evans, that correctly applies the approach to arrive at allowable operating expenses. Additionally, Antero presented an appraisal from Hein & Associates, supported by testimony from Alan Schoephoerster, demonstrating the fair market value of the wells. The Board, however, made no adjustment to the Tax Department's valuation.

Antero timely petitioned the Court for appeal of the Board's decision. As explained below, the Tax Department has abused its discretion by failing to consider Antero's actual and allowable operating expenses in a manner contrary to the statutes, regulations and official releases from the Tax Department governing valuation of personal property. Moreover, the Tax Department has failed to support its valuation with substantial evidence. Antero, on the other hand, presented clear and convincing evidence for its allowable operating expenses to be used in valuing its wells for tax year 2016.

II. FACTUAL BACKGROUND

A. Antero's Property.

Antero owns over one-hundred fifty (150) wells in Doddridge County. (Certified Transcript of October 20, 2016 Hearing before the Doddridge County Board of Assessment Appeals, See Exhibit A [hereinafter "Hr'g Tr."], p. 8:6-8:7). Antero pays significant taxes to Doddridge County for its oil and gas wells.

B. Antero's 2014 Operating Expenses.

Antero completed the Tax Department's survey related to operating expenses. Phil Yoo, an officer of Antero who filled out the survey on Antero's behalf, testified that the survey only sought information regarding lease operating expenses (expenses related to lifting the gas out of

the ground), not gathering and compression, processing, or transportation costs, which are necessary to get the gas to the market. (Hr'g Tr., pp. 82:8-83:3.) The Tax Department's survey information for horizontal Marcellus wells pertained almost solely to typical lease operating expenses and was based on prior surveys used for conventional wells. (Hr'g Tr., pp. 51:6-51:8; 54:24-55:4; 82:8-83:3.) No line items were included for gathering and compression, processing or transportation. If such expense categories had been included on the survey, Antero would have calculated and listed those substantial expenses, and the Tax Department's calculations would have been substantially different, given that Antero is the largest producer for Marcellus wells in West Virginia and represents approximately 40% of the Marcellus well production statewide. (Hr'g Tr., pp. 31:10-34:16; 55:18-55:21; *see also* Hr'g Exhibit 16.) Altus demonstrated that it would be mathematically impossible to get a weighted average of $150,000 in operating expenses for the industry if Antero's average operating expense of $648,000 per well is taken into consideration. (Hr'g Tr., 31:10-32:8; *see also* Hr'g Exhibit 15.) Accordingly, the State's cap of $150,000 in operating expenses does not truly represent the average operating expenses for the industry, as shown by the market share that Antero holds and its operating expenses of $648,000.

As required by the State Tax Department, Antero reports its gross revenues based on the point of sale, and the allowed operating expenses should reflect the expenses incurred to get the gas to the point of sale. Requiring gross receipts to be reported based on the point of sale, while not recognizing the substantial expenses incurred to get the gas to the point of sale, results in overvaluation of the produced natural gas. (Hr'g Tr., pp. 13:3-14:11; 20:16-22:3; 58:5-58:20.)

Antero submitted proof of its actual operating expenses from 2014 to the Tax Department for consideration for tax year 2016. (*See* Hr'g Tr., 22:4-30:4, *See also* Hr'g Exhibits 4, 5, 6, 7, 8, 9, 10.) Antero's average operating costs for Marcellus wells is approximately 23% of gross revenue, or $648,000. (Hr'g Tr. at pp. 20:11-20:13; 88:13-89:2.) Ultimately, the Tax Department did not adjust the operating expenses it used to value Antero's wells in Doddridge County for tax year 2016.

C. The Tax Department's Calculation of Antero's Operating Expenses.

The Tax Department prepares annual natural resource property valuation variables for appraising oil and gas. Further, the Tax Department makes determination of those valuation variables pursuant to Series 1J of Title 110, a legislative rule of the Tax Department, promulgated pursuant to W. Va. Code §§ 11-1C-5(b), 11-1C-5a, and 11-1C-10(d). In order to determine the amount of Antero's operating expenses, and, in turn, the value of Antero's oil and gas wells, the Tax Department further is governed by Administrative Notices.

In the past, the Tax Department included a statement in its Administrative Notices indicating that it was willing to consider actual operating expenses if a taxpayer thought that the value of their wells was overstated. In 2016, the Tax Department decided that it would no longer consider actual operating expenses. (Hr'g Tr., pp. 9:17-10:1; 18:20-19:2). For tax year 2016, Antero had submitted its actual operating expense information to the Tax Department prior to the Tax Department releasing the administrative notice in which it omitted the language inviting taxpayers to submit actual operating expense information.

The State caps the allowed operating expenses for Marcellus Wells at the lesser of 20% of revenue, or $150,000. (Hr'g Tr. at pp. 93:22-94:1.) Antero's operating expenses are on

average $648,000. (Hr'g Tr. at pp. 20:11-20:15.) Due to the State's failure to take into account Antero's actual operating expenses, the value of Antero's wells is significantly overstated. The State valued Antero's wells in Doddridge County at over $812 million, whereas Antero, using the State's mass appraisal model and Antero's **actual** operating expenses, appraised them at $388 million. (Hr'g Tr. p. 39:22-40:6.) Antero also hired an expert, Hein & Associates, to appraise the true and actual value of the wells. Hein & Associates appraised the wells at $291.7 million. (Hr'g Tr., p. 76:9-76:15.)

Antero timely noticed the Doddridge County Commission with its Notice of Protest on February 10, 2016. The Doddridge County Commission, sitting as the Doddridge County Board of Assessment Appeals, held a hearing on October 20, 2016.

At the hearing, the Tax Department offered no credible evidence as the basis for its refusal to accept Antero's calculation of its operating expenses, except to argue that it would be impractical and expensive for the Tax Department to look at the actual expenses for individual wells (Hr'g Tr., at pp. 95:18-96:10), and that the State's current procedures are in accordance with the legislative rule (Hr'g Tr. at p. 99:15-99:21).

D. Antero's Expert Analysis and Testimony.

Antero's expert, Altus, a leading independent state and local tax firm, by Director Kirsten Evans, testified before the Board on October 20, 2016, and showed that a correct application of the allowable operating expenses demonstrated that the Tax Department had erred by failing to allow the operating expenses documented by Antero. (*See* Hr'g Tr., pp. 12:13-64:9.) Detailed charts and documentation of actual operating expenses, with numbers specific to Doddridge

County, were also submitted to the Board. (*see* Certified Record, Petitioner's Exhibits, 3, 4, 5, 6, 7, 8, 9, and 10).

Altus explained that by artificially capping operating expenses at $150,000, which is not required by the legislative rule, the State is grossly overvaluing the fair market value of Antero's wells. (Hr'g Tr., at pp. 40:3-41:3; 88:10-88-20.) The State also does not take into account Antero's point-of-sale, and the operating expenses incurred to get the gas downstream to market. (Hr'g Tr. at pp. 40:3-41:3; 20:16-22:3.) Altus testified that Antero volumetrically represented 40% of horizontal production in West Virginia in 2014, and that its average operating expense was $648,000 per well. (Hr'g Tr., pp. 31:10-31:22.) Altus demonstrated that it would be mathematically impossible to get a weighted average of $150,000 in operating expenses for the industry if Antero's average operating expense of $648,000 per well is taken into consideration. (Hr'g Tr., 31:10-32:8; *see also* Hr'g Exhibit 15.)

An expert appraiser from Hein & Associates, Alan Schoephoerster, also testified at the hearing. Hein & Associates testified that it appraised Antero's wells in Doddridge County. Mr. Schoephoerster explained that the Tax Department's valuation did not properly account for the decline rate or actual operating costs of the wells at issue, and used a different discount rate than Hein & Associate's methodology. (Hr'g Tr. at pp. 66:12-76:17.) Hein & Associates valued Antero's Doddridge County wells at $291.7 million, while the State valued them at over $812 million. (Hr'g Tr. p. 76:9-76:15).

Finally, Altus testified that, while Hein & Associates' valuation is the fair market value of the wells, an alternative approach would be to calculate operating costs as 20% of gross production, without any cap. Altus stressed that this method would still overstate the fair market

value of the wells, but that 20%, without a cap, is a reasonable resolution. (Hr'g Tr., pp. 86:5-89:6; *see also* Hr'g Exhibit 16.) This approach would value Antero's wells at approximately $587 million.

E. Antero's Protest to the Doddridge County Board of Assessment Appeals.

On February 10, 2016, Antero submitted to the Doddridge County Assessor and the Doddridge County Commission sitting as the Board of Assessment Appeals an Application for Review of Property Assessment with regard to its gas wells, and Antero appeared on October 20, 2016, by counsel, before the Board. (*See* W. Va. Code § 11-3-24). Antero hired a third-party court reporter to produce a certified transcript of the hearing at which it presented the evidence discussed above. Exhibits introduced at the hearing and provided to the Board will also be transmitted to the Court within thirty (30) days, as provided by West Virginia Code § 11-3-25. The original transcript of the proceeding was attached to Antero's Petition as Exhibit A. (*See* W. Va. Code § 58-3-4.)

By December 22, 2016 Order, the Board determined to make no adjustment to the State Tax Department's valuation of Antero's gas wells for the 2016 tax year. (*See* Ex. B to Antero's Petition). Antero received notice of the Order on January 4, 2017, and Antero timely petitions this Court for relief from the Board's erroneous determination on January 20, 2017. (*See* W. Va. Code § 11-3-25).

III. ANALYSIS

A. Applicable Legal Standards.

All property in the State of West Virginia is required to "be assessed annually at its true and actual value. . . ." W. Va. Code § 11-3-1. The West Virginia State Tax Commissioner[1] is charged with determining "the fair market value of all natural resource property in the State" and then providing the values to county assessors to use in assessing the property. W. Va. Code § 11-1C-10(d).

Pursuant to this responsibility to value producing mineral property and reserves, the Tax Commissioner promulgated Title 110, Series 1J of the West Virginia Code of State Rules, which explains the mechanisms to be utilized in valuing taxable property.

To determine the fair market value of producing oil and natural gas property, the Tax Department applies "a yield capitalization model to the net receipts (gross receipts less royalties paid less operating expenses) for the working interest. . . ." W. Va. Code R. § 110-1J-4.1. The methodology set forth in § 110-1J-4.1 is reflected in Tax Department Administrative Notice 2016-02, in which the Tax Commissioner states that the Tax Department primarily relies upon the income approach in valuing producing oil and gas property.

The Tax Department should consider actual operating expenses to offset the presumed valuation of expenses for each well. According to the Tax Department's legislative rule, the Tax Commissioner considers "operating expenses" to be "the "ordinary expenses which are directly related to the maintenance of production of natural gas and/or oil. These expenses do not include extraordinary expenses, depreciation, ad valorem taxes, capital expenditures, or expenditures relating to vehicles or other tangible personal property not permanently used in the production of

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[1] Elsewhere in Brief, the Tax Commissioner is variously referred to as the Tax Department or simply the State. All terms refer to the same entity.

natural gas or oil." Section 3.16 of Series 1J, Title 110 State Tax Department Legislative Rule for Valuation of Producing and Reserve Oil & Natural Gas for Ad Valorem Property Tax Purposes. Based on the testimony of Antero's experts, Altus and Hein & Associates, and the documents submitted to the Tax Department and the Board, the operating expenses submitted by Antero are those contemplated in Section 3.14.

Antero's burden before the Board was to show by clear and convincing evidence that the Tax Department's valuation (and, hence, the County's assessment) of its gas well operating expenses was erroneous. Syl. pts. 5-6, *Stone Brooke*, 224 W. Va. 691, 688 S.E.2d 300. On appeal to this Court, the Court relies on the record developed before the Board and determines whether the challenged property valuation is supported by substantial evidence.[2] *See* W. Va. Code § 58-3-4; syl. pts. 1-2, *Stone Brooke*, 224 W. Va. 691, 688 S.E.2d 300.

In this case, the Tax Department failed to apply the demonstrated actual operating expenses supplied by Antero in both informal and formal testimony. Accordingly, Antero now petitions this Court to find (1) that the Board incorrectly made no changes to the Tax Department's valuation and (2) that Antero's calculation of its allowed actual operating expenses to be used to value its producing natural gas wells is correct.

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[2] Furthermore, "[p]ursuant to *In Re Pocahontas Land Co.*, 172 W. Va. 53, 61, 303 S.E.2d 691, 699 (1983), once a taxpayer makes a showing that tax appraisals are erroneous, the Assessor is then bound by law to rebut the taxpayer's evidence." *Mountain Am., LLC v. Huffman*, 224 W. Va. 669, 786 n.23, 687 S.E.2d 768, 785 n.23 (2009). While the Court in *In Re Pocahontas Land Co.* suggested that a county assessor could meet that burden by introducing the State Tax Department's valuation, in this case, Antero showed that the State Tax Department's valuation itself is incorrect, so it was incumbent on the State Tax Department to rebut Antero's evidence.

B. The Tax Department Failed to Consider the Actual Operating Expenses of Antero's Gas Wells and, Thus, Failed to Correctly Value that Property; Antero, on the Other Hand, Introduced Clear Evidence of the Allowable Operating Expenses.

While the State Tax Department has discretion to select the appraisal method that it determines should provide the most accurate valuation of personal property, once it chooses a method, it must correctly apply the method.

For Antero's Marcellus wells in Doddridge County, the Tax Department has not followed its own rules regarding average industry operating expenses, as set forth in Antero's Exhibits and expert testimony at the hearing before the Board on October 20, 2016, and the Tax Department has, therefore, failed to properly calculate the fair market value of Antero's Marcellus wells. It is also improper for the Tax Department to place a cap on operating expenses, another factor resulting in an inflated value for Antero's Marcellus wells. As demonstrated at the hearing, the survey used by the Tax Department to calculate average industry operating expenses for Marcellus wells was poorly drafted and misleading and resulted in the Tax Department calculating an operating expenses "cap" well below the amount of operating expenses actually required to operate a Marcellus well and to get gas to the point of sale. Antero avers that not only is a "cap" not supported by law, but that the Tax Department also calculated a wildly inaccurate "cap."

Additionally, by capping the allowed operating expenses at the lesser of 20% of revenue or $150,000, the Tax Department treats similarly situated tax payers differently in violation of United States Constitution and the West Virginia Constitution, as the "cap" of $150,000 only adversely affects tax payers that have wells with over $750,000 in revenue.

Finally, the Tax Department's valuation of Antero's wells did not properly account for the decline rate or discount rate. As a result, Antero's wells were overvalued.

IV. CONCLUSION

WHEREFORE, Antero Resources Corporation respectfully requests that the Court:

(i) Find that the Doddridge County Board of Assessment Appeals incorrectly upheld the valuation of Antero's Doddridge County gas wells by the West Virginia Department of Revenue, State Tax Department, Property Tax Division for the 2016 tax year;

(ii) Fix the value of Antero's Doddridge County gas wells for the 2016 tax year at its true and actual value of $587,000,738, based on 20% of the actual direct operating expenses incurred by Antero; and

(iii) Order such other relief as the Court deems appropriate.

ANTERO RESOURCES CORPORATION,

By Counsel

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In the case of:

RE: ANTERO NOTICE OF PROTEST, DODDRIDGE COUNTY v

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Page 6

of thumb, most evidence will be allowed into the record and the Board will give the weight it deserves.

The protesting party must prove with clear and convincing evidence that the appraisal of the Assessor or West Virginia Tax Commissioner is incorrect. This is the heaviest burden of proof in non-criminal law.

If denied relief, you as the protestor have the right to appeal to the Circuit Court.

We have two appeals scheduled for this Board of Review and Equalization hearing: One, Antero Resources Corporation; two, Consol Energy, Incorporated.

How would you like for me to determine who goes first? It's your choice.

MR. GRIFFITH: Alphabetical will be fine.

COMMISSIONER SANDORA: Do what?

MR. GRIFFITH: Alphabetical will be fine.

COMMISSIONER SANDORA: Alphabetical will be fine. Yeah, we've already past out the Antero materials, so that will work just fine for us.

Okay. Antero Resources. At this time, we will begin with the appeal for Antero Resources Corporation, followed by the appeal from Consol Energy, Incorporated.

MR. GRIFFITH: Okay. My name's Craig Griffith. I'm with Steptoe & Johnson, and work out of the Charleston

Page 7

offices. Here on behalf of Antero.

And, I guess – I know we've signed the sign-in sheet, but I guess the first thing we could do is kind of introduce the Antero folks that are in the room before we start with our testimony.

MR. YOO: I'm Phil Yoo. I'm the VP of Accounting and Chief Accounting Officer for Antero.

MS. SMITH: Ginger Smith.

MR. GRIFFITH: Okay.

MR. SCHOEPHOERSTER: Alan Schoephoerster, Hein & Associates.

MR. GRIFFITH: Okay. And we've got some folks from the Altus Group here, that our primary witness will be Kirsten Evans, who will testify on their behalf. They do work on behalf of Antero.

And I don't know if you want to do a group swearing in before we get started, or if you want to do it just as a – right before they testify? Either way, it doesn't – it works for us.

MS. SHAW: You can just swear everybody in at the same time. That's fine.

COMMISSIONER SANDORA: Everybody at the same time?

MS. SHAW: Un-huh. Anybody who is going to be a witness, please, stand to be sworn.

Page 8

(WHEREUPON, the witnesses were sworn.)

MR. GRIFFITH: And as Commissioner Sandora mentioned, the purpose of the hearing today is to address the Tax Department's methodology in resulting assessed values of Antero's producing naturel gas wells.

And there's 157 Marcellus wells here in Doddridge County. Antero believes that the Tax Department's operating expense allowance fails to consider all expenses necessary to get its gas to a point of sale.

And that the Tax Department should have allowed Antero to claim a higher amount of operating expenses for each well than what was ultimately allowed by the Tax Department.

And by limiting that amount, the wells here in Doddridge County were overvalued.

Just a brief bit about my background. I actually worked with these folks. I was Tax Commissioner from 2010 through 2013.

So we have a good relationship, a good working relationship with the Tax Department. I think we just disagree on some fundamental issues here on how this valuation should work.

I think we recognize that the Tax Department is tasked with a – you know, a big chore in coming up with an

Page 9

appraisal for all producing wells statewide.

So as part of that, they use a – what's called mass appraisal system. And as part of that mass appraisal system, they use certain valuation veriables that apply for – you know, for instance in this case, for Marcellus wells statewide, with some discrepancies from region to region for certain variables.

One of those variables is operating expenses. The Tax Department, what they've done is, I think, 2013/2014, they circulated – or maybe it's 2014/'15 – circulated a survey to come up a number of – for the average operating expenses statewide.

From 2014 through '16, that averaged for Marcellus wells, horizontal Marcellus wells was 20 percent of gross revenue. And then the Tax Department also places a cap of $150,000 per well in that valuation methodology.

The Tax Department releases administrative notices each year. From 2000 through 2015, that notice indicated the taxpayers – and the returns indicate this, too, that taxpayers with operating expense information that's in excess of those values for those limits placed by the Tax Department can approach the Tax Department with actual operating expense information.

And then in 2016 they changed their

Page 14

And it doesn't contemplate even transporting the gas out of the State of West Virginia to achieve a better sales price.

So it's a flawed system in the fact that the calculation of operating expenses.

It's also a system that wasn't designed to handle this type of well.

Because of these things, the wells are overvalued. The future income stream is based off of actual revenue, but future expenses based off this cap. Just doesn't get to an appropriate value of the wells.

Q Okay. And, I guess, the best way to go about discussing the Tax Department's valuation process is through an example.

Let's look at Exhibit 3 and just have you walk us through that exhibit. It includes revenue expense data from four second-year wells, and including one well that's in Doddridge County.

A So if we want to start with page 2, I think that's the simplest place to start. I want to make sure everybody's on board with how the calculation actually works before we get into, you know, the actuel operating expenses.

So page 2 looks like this (indicating). It's

Page 15

the actual template used by the State to – to arrive at value.

Parts highlighted in yellow are the inputs for revenue. The kind of orangey color, is the decline rate.

And what happens is, the taxpayer reports revenue on their yearly tax return. Depending on the type of well, depending on the formation, that revenue is declined into a future income stream.

Based off of that income stream, the State Department decides what -- the working cost. So what is it going to cost to generate that revenue.

In the State's case, when you file the return, that income stream is either 20 percent of the revenue or it's capped at $150,000, whichever is less.

That creates the net income, that net income is put into a net present value calculation to determine what the well is worth today.

I will point out that, you know, if you look at the factors that get into the discounted income calculation, the revenue and the net income in the years 1 through 5 is weighted much heavier than income in the latter years.

And that's important, because what we're going to talk about is what kind of operating expense does it

Page 16

actually take to generate $2.7 million in revenue?

And we're going to show you that it doesn't take $141,000. It takes much more.

And by putting an artificially low working cost in there, you're overstating that income in the years that it's weighted the most.

So what's giving you on page 1 is an example of four wells, just to kind of drill down on why this is such an issue.

And the four wells, all are producing gas receipts at about the same amount. They're all two-year wells. They're all producing about $3.1 million in revenue, gross revenue per well.

In the gray highlighted areas, we've given you the operating expenses to generate that revenue.

And you'll notice that those vary significantly. And they vary because one of the wells -- for example, in Harrison, is producing dry gas.

So you don't have to process it. You don't have to get the liquids out of it before you can sell the gas.

Whereas the wells -- the three wells below and the well in Doddridge is producing very wet gas, and you have to process those NGL receipts.

So the revenue that we're reporting to the State

Page 17

includes NGL revenue after it's been processed.

So even though they're producing the same amount of gas receipts, the wells are producing revenue reported to the State that's very different.

I point out that the State allowed operating expenses on these wells. The one with the least amount of revenue is getting the most amount of operating expenses.

So the well in Harrison, where you don't have to generate – or you don't have to process NGLs, the State's allowing $150,000 in operating expense. And the actual operating expenses are $650,000.

If you go down to the one that's in Doddridge County, it's producing $4.3 million in revenue, once you count oil and natural gas. The State's only allowing $149,000 of operating expenses.

So they're saying to produce more revenue, it would actually take less operating expenses. When the reality is, it takes $837,000 operating expenses to generate that revenue. And the other two wells followed the same pattern.

The one with the most – or the most revenue is getting the least amount of operating expenses in the State's model. It goes to show that the State is not contemplating NGLs and the expenses it takes to generate

Page 22

income stream of the processed gas, it's important to do apples and apples and also grab the operating expenses necessary to get it to that sellable state.

Q And is that a spreadsheet there under Exhibit 4, ae well, that discusses the categories of operating expenses if you want to walk us through that?

A So this is something that was provided to the State, and it just breaks down that $385,000 million in operating expense between the different categories of expenses.

So where LOE and work over can be broken down into individual accounts. It provided the details to the State so they could look at it and comment on whether, you know, that was a direct and ordinary expense that Antero was incurring.

Q And this information was provided to the Tax Department last November; is that right?

A That is correct.

Q Okay. But was there any objectione to any of those categories at that time?

A We had several conversations with the State regarding this data. Any concern about the data, we provided additional information.

There was a concern at one point about

Page 23

transportation and unutilized transportation and whether that was being miscaptured in these numbers, and it's not.

Q Okay. Let's look at the graph on the last page of that exhibit. Just discuss what that graph represents.

A This graph was used in discussions with the State to talk about how – right now the State ties operating expenses to revenue. And revenue fluctuates based on the price for Mcf of the gas.

Q So this actually tied operating expenses to volume, which shows which operating expenses fluctuate with volume and which operating expenses stay relatively fixed regardless of the volume.

And you'll just note that the LOE, which is the bottom green line and transportation, which is, you know, kind of magenta line, stay relatively flat while the other ones trend directly in line with the volume of gas.

Q Okay. Let's skip ahead to Exhibit 6. I don't think we need to go into any great detail on this exhibit. But just discuss the reason that that information was provided to the Tax Department.

A So over the last year we've been working with the State, providing them information about Antero, about their structure, about their operating expenses in support of our claim that – you know, that the State's allowances

Page 24

do not appropriately get to Antero's net income.

So what's in this example is just one of those reiterations of data showing that, you know, we think your $150,000 cap is incorrect.

If you take a look at how the expenses break down per well by type, this is what you get.

It gave en example that showed what would happen if you declined the opereting expenses consistent with revenue, consistent with the graph that we just telked about.

Q I think you referenced this earlier, but essentially the Tax Department is saying that the $1.6 billion of revenue that Antero generated wes – was made by spending only $52 million.

A Yes. If you look at the wells that were valued and the operating expense allowance allowed for that revenue stream for the tax year 2016 and some of all the operating expenses the State allowed, it comes to $52 million, which is about 3 percent of the revenue.

Q Okay. And Exhibit 8, we can skip forward to that. That's similar to 6. I think you can probably do a high-level discussion of Exhibit 8 and what – why that material was provided to the Tax Depertment.

A So there were lots of questions about the point

Page 25

of sale and the proving that Antero paid the operating expenses that we were claiming in that $350-some million that you saw on the diagram.

So this was an e-mail that went to the State in March of 2016. It provided a sampling of invoice to third parties that Antero paid for the gathering and processing, for the transmission, for compression, all of those expenses.

It also provided point of sale samples. It was four transactions confirmations. They were actually the contracts. They've been left out of the exhibit. But the summary of them is available on the last page.

So it just showed who they were selling to and how long the contract ran and the daily quantity that they were selling them, where the delivery point was.

Q And those transaction confirmations were provided to the Tax Department?

A They were. The actual contracts were provided to the Tax Department.

Q The delivery point listed on this summary reflects what the confirmation – the transaction confirmation said as well?

A That's correct.

Q Any objection from the Tax Department at that

Page 30

So when you really think about these operating expenses, you know, while 22 percent versus 20 makes a difference, it's the artificial cap on these expenses that causes the value to be so drastically overstated.

Q Okay. Let's move on to Exhibit 12, which are the State's valuation variablee. And the first document in that exhibit are the final valuation variablee from 2016.

I think if you flip back to page 16 – these are unnumbered, I apologize. But at the top it will say "Industry Operating Expense Survey and Results."

And discuss – and I think we've touched on this already, but discuss the percentages allowed for 2016 by the Tax Department, along with the maximum operating expenses that they include in those variables.

A So for Marcellus wells, which is largely what we're talking about today, it's – the allowance from the State is for working interest expenses, it's 20 percent, capped at $150,000.

And they refer to the cap as the maximum operating expense allowance.

It's my understanding that that maximum operating expense allowance is generated by the State survey that Jan mentioned. And then revisited every five

Page 31

– four or five years, to see if it's still appropriate to use those same values.

Q I think there's another document in here.

A It's –

Q Sorry, go ahead.

A Are we referring to that? Oh, this? Is that it?

Q Yeah, we can refer to that, if you'd like. So pursuant to that survey, obviously Antero replied to it.

Take a look at Exhibit 16, which discusses the DEP's 2014 calendar year production data for horizontal wells, where Antero sits as far as kind of in the pecking order producers in the state and how much their operating expeneee should be driving that overall – thoee percentages or caps?

A So what you're looking at in Exhibit 16 is a excerpt of the DEP's data from the State of West Virginia for the 2014 year for horizontal wells only.

And you'll notice that Antero has 40 percent of the horizontal well production in the state.

They're operating expenses, as we've talked about, are on average $648,000 per well.

I've also highlighted another taxpayer where, you know, the information was also provided to the State

Page 32

of West Virginia. They represent 3 percent of the market, but also have operating expense of $537,000. So 43 percent of the market of horizontal wells is an average operating expense of $600,000.

It is mathematically impossible to get to an average for the industry and a maximum operating expense of $150,000. Every other person would have to be negative operating expense to get to a weighted average.

Now, the State will tell you that they based it on the surveys. And based – we have asked for all the surveys, and they have not provided them, because they're proprietary to the people who filed them.

But they have provided two: They provided Antero's, which Jan mentioned earlier in his opening statement.

And Antero filled out the survey and reported that they had $32,000 worth of operating expenses.

And we will talk later about the fact that that survey is a little misleading in that it only asks for LOE expenses.

And what they filled out on that survey very closely matches just LOE expenses in the diagram we just went over.

They do have an "Other" line on the survey, but

Page 33

nothing prompting producers to say: Do you have wet gas, include processing; are you transmitting out of state, include transportation; include everything to the point of sale.

So the survey filed by Antero had errors on it. They also have provided us a copy of the other taxpayer highlighted in the – in the spreadsheet here.

There was an error on that survey as well that understated operating expenses.

So while the State may have averaged the survey responses in 2013 to get to this average, there was no audit done on the State's side to know that those operating expenses are correct. Which is why we're coming forward this year, to show you that the survey results may have produced this.

But in actuality that's not what's happening, that's not the reality for producers.

And by using that, you're getting to the wrong value of these tax wells. If that's what was produced for the survey for 2014, we're providing you actually audited financial statements that say the operating expense is $648,000.

And what the Commission is charged with is not did the State use their template right, but did – but did

Page 38

– and we already proved in the graph that we saw, that operating expenses are tied to volumes, not revenues.

And since prices are declining and revenue is declining, the State would ascertain that the – the amount of money it takes to generate the same amount of Mcf, regardless of what it sells for, but the same amount of production out of a well, the State would tell you that the amount of money it takes to generate that income has gone down.

When in reality it's – it stayed the same, because of volume.

Q Okay. And it looks like the chart on page 2 of the WVONGA letter, do thoee – are those consistent with what you've seen for Antero?

I know we've discussed percentages and then kind of a max for Antero. How do those kind of dovetail with what's included in this letter?

A So today we're talking about Antero's operating expenses. They're sitting at 23 percent of revenue.

This letter states that in the industry for Marcellus wells at 38 percent. So there might seem like there's a big discrepancy there.

But in between the 2016 tax year we're talking about and the 2017 tax year that this letter was written

Page 39

out, gas prices have dropped 55 percent.

So if we were to recalculate Antero's expenses as a percentage of revenue, we wouldn't be at 23 percent anymore. We would be up in these ranges.

Q Okay. And are you aware of any change – these were submitted in connection with 2017 taxes --

A Yes.

Q -- these comments. Any change for tax year 2017 for Marcellus/Utica wells?

A So for 2017, the State Tax Department changed the $150,000 cap to $175,000, which I would, again, tell you that based on actual data with Antero having 40 percent of the market, which if you refer back to that – in fact, we were looking at in 2015 production, they're still at 39 percent of the market.

So if they have 39 percent of the market, and they're at $648,000 per well, weighted average wise, it is impossible to get to $175,000. You would have to have people reporting negative operating expenses.

So someone is paying them to generate revenue, which doesn't happen.

Q All right. And, finally, in the appeal that was filed in Doddridge County, the original appraised value was $813 million, correct? It's in Exhibit 1. Actually,

Page 40

$812 million. I apologize.

A Yes.

Q Okay. And based on Antero's calculated value, thet would be in the $388 million range in the actual operating expenses?

A That is correct, in that exhibit.

Q And you would deem that – obviously that's a large present valuation. That's primerily or solely the result of the difference in operating expenses; is that accurate?

A That's correct. It's because of the operating expense cap artificially inflating the net income that can be generated from these wells.

It's further exacerbated by the fact that in Doddridge County you have very wet gas coming out of the ground, lots of NGL revenue. But in order to get that NGL revenue, it needs to be processed.

Also, because of you have a lot of newer wells. New Marcellus wells that are producing tremendous amounts of gas in the first couple of years.

So when we talked about that $750,000 threshold for where you get the benefit of the 20 percent of operating expenses, anything over $750,000 in revenue is capped at $150,000.

Page 41

So it doesn't matter if that well's producing $2 million, $5 million, $15 million in revenue, they're saying it can be done for $150,000 in expense.

MR. GRIFFITH: That's all I have for Kirsten for now. I know Jan will do a cross. We plan to recell her after – we're going to have an appraiser testify as well. And then after the eppraiser testifies, we'll bring Kirsten back for some further questions.

EXAMINATION

BY MR. MUDRINICH:

Q Kirsten, can I go back to – I think it'e Exhibit 4, the diagram? Are you there?

A Yes.

Q The first thing, before we go into the diagram, you've come up with West Virginia operating coste at the bottom. Gathering and compression, $166 million. So is that Antero statewide?

A Yes.

Q And who are some of the companies that they have gather and compress?

A So Summit Midstream, Crestwood --

Q Midstream – Summit Midstream?

A I believe that's their formal name. Summit is the first part. But, yes, Crestwood. We provided

Page 46

asking for today after receiving those --
A But --
Q -- correct?
A -- also provided no feedback between March and today, that that was the reason why, which we could have then provided additional information.
Q And you could have brought them here today, and they'd be – they'd either show it, show what they say or they show what they don't say.
A Okay. Revenue is reported by Antero in their 10-K. They have audited financial statements. Those go to the SEC.
If there was an issue with the point of sale and how revenue was being captured, there would be a whole lot more interested parties than the West Virginia Property Tax Commission.
The revenue is the amount of money received for the gas sold.
Q We don't dispute that. And that's like an apple and orange comparison. Because what – what you're doing is here, is you're – we're valuing the State of West Virginia for property tax purposes, is valuing personal property.
That's the well structure up to the field line

Page 47

point of sale. And they simply do it using an income method.
So it's not going to be – it's not needed to review a 10-K to see – there's a – the 10-K, I don't see how it would be concerned with the point of sale as long as you're reporting your revenue correctly to your shareholders.
What you're trying to get at – and since you said that you can value – you could – you know on a well-by-well basis for this company what the costs are. And we are disagreeing on the amount of the allowed cost. But –
A Well, I would argue that in order to report NGL revenue, you have to sell it past the point that it is made into a sellable NGL.
Q That's NGL. But the gas, you don't.
A You cannot sell the gas as gas until the water is out of it --
Q 'Til it's separated?
A -- until the NGL –
Q Uh-huh.
A -- is separated.
Q But we don't have these contracts?
A We do not have the contracts, no.
Q Going back now to the regulation, I'm going to

Page 48

read for you the definition of "Working Interest."
It says: "Working Interest" means "the fractional interest in oil and/or natural gas production subject to development and operating expenses and owned by the leaseholder and/or operator."
So would you describe Antero as the working interest under the reg?
A Yes.
Q And they're the ones subject to expenses?
A Correct.
Q And they're allowed expenses to come off, although you disagree with the amount?
A Yes.
Q And the definition of "Royalty Interest" in the reg, means: "the fractional interest in oil and/or natural gas production that is not subject to development costs or operating expenses and extends undiminished over the life of the property. Typically, it is retained by the oil and/or natural gas rights owner or lessor."
So do you agree that this says that it's the interest not subject to the cost in development or operating expenses, development cost or operating expenses?
A Yes. But I'll point out that this reg was

Page 49

written way before the advent of royalty owners.
Q But this also is still the law?
A That is the administrative rule meant to support the law, which is fair market value.
Q Legislatively approved.
A Legislative.
Q Have we done analysis – go back to the diagram here on Exhibit 4. You have a lot of royalty owners who have done a lot of lessee.
Some leases nowadays put a burden on the royalty owner that he has to get some decreased royalty because he is forced by the terms of the lease to share in all this processing, fractionization, transmission and all that.
Do you agree that there are – Antero has leases such as that?
A There are leases that exist that have the royalty owner share in post-production expenses, but it is a case-by-case basis. It was depending on the actual –
Q And we haven't done any analysis to show how much of this $112 million processing cost was recoupad, for lack of a better term, by Antero in the form of a reduced payment of royalty?
A So while I have not done an analysis to know the exact number, if for argument sake we want to say that

Page 54

the ultimate sales price is, correct?
A No. Because if we sell it at the wellhead, then Antero doesn't have to incur it.
Q Well, you're not sell – you claim you don't sell it at the wellhead. So if you don't – as you claim, you don't sell it at the wellhead, and you're going to sell it after processing --
A Right.
Q – ae you claim?
A Yes.
Q This is going to pretty much stay the same, and those proceesing costs are going to go – and you're going to have these processing costs.
But In return for these additional processing coste, you're also going to get a higher price than you would at the wellhead?
A Yes.
Q So maybe they didn't include these costs because they weren't bearing those coete on thls because they weren't bearing the burden of them, whereas if you bear the burden of these, even if you get dry – even if the well drlee up?
A This is for a year we're not talking about.
Q Well, thls – it's a – It's the concept. I'm

Page 55

talking about the concept: There's no gathering, compression, et cetera, reported on thie form.
A This form doesn't ask for it. The form was derived at a time where those things weren't contemplated.
Q Is there a column for other expenses?
A Yes. But if I did not know the intricacies of this tax calculation, I don't know that I would know to list all my expenses there, including processing of natural gas and gathering and transportation.
Q Isn't Antero a very large company?
A Yes.
Q So you figure somebody in the company would know, if they believed that I have an expense that I'm going to eat, that's an expenee I'm going to incur every time to get thls gas out of the ground, wouldn't they list it?
A I can't speak to what someone should or should not know. If I was filling this out right now for one of my clients, I would include processing, gathering, and transportation if their point of sale went past those points.
Q Field line point of sale, which is not defined anywhere in the reg --
A If the --

Page 56

Q -- correct?
A – the revenue they were reporting as the income stream was past those points.
Q Okay. I'm going to --
A And I understand the field line point of sale is not defined, but that is the place the gas changes hand.
There is no point of sale other than downstream, and severance tax recognizes that as the point of sale.
So even though not deflned, the State of West Virginia recognizes downstream as the point of sale.
Q If you buy a box of widgete, FOB my loading dock, and when does the -- the goods don't change hands until you receive it at your – at the person'e place of business, correct?
A Say that again, I'm sorry.
Q If I sell you an item of widgete, FOB my loading dock, and you're 100 miles down river --
A Okay.
Q -- and I deliver to you, okay --
A Uh-huh.
Q -- get delivered, where did the item change hands?
A Well, I don't think that's a relevant example since the item is not changing hands until the point of

Page 57

sale, which is downstream. But --
Q But in this case, the item doesn't change hands in the FOB situation until it reaches your location, but per the freight on board, the sale took place at my loading dock.
A Okay. Well, we're talking about an incomplete asset in the charge of gas, when it comes out of the ground it's not in the sellable state.
So your widget example, it's – it's complete, it's an asset you can buy. It's the same as – you know, on your loading dock, is the same as when it gets delivered to me.
Gas is not the same. Gas is halfway through manufacturing at that point. It's like buying the peanuts and expecting peanut butter. It's two different things.
So there's time and expense incurred to make those peanuts into the creamy spread you want to put on a piece of toast.
Q But also all this processing and you have to – a larger price than somebody who has got a little conventional well selling gas, I'm going to say, of similar Btu. And, though, a lot of times gas has higher Btus, I recognize that.
But let's say, for an example, we've got similar

Page 62

We're allowed to present information that supports that fair market value hasn't been reached.

The legislative rule doesn't have to say you can provide point of sale contracts, you can provide operating expense. I can provide what gets us to fair market value. And in this case that happens to be operating expenses.

Q And you can agree that the legislative rule's a mass appraisal model?

A Yes, mass appraisal.

Q Okay. You know, and one other thing and then I will be done, Exhibit 16. Can you explain briefly again what this is. Just the last page.

MR. GRIFFITH: We've got it.

A Sure. So these are data downloads from the West Virginia DEP site.

So all the producers have to monthly provide information about how much gas is coming out of the ground in terms of gas production volume.

That database does not have a Marcellus indicator. What they have is a horizontal indicator.

Horizontal wells are largely Marcellus. So what we did, was we took all that data that was reported to the DEP, summarized it by producer, and showed you what percentage, what the average production is per API per

Page 63

producer, end then how much of the total production is represented by Antero.

Q Okay. I've not seen your website. Did you create this or did thie just come straight off your website?

A So on the website you can click on – it says, you know, detabese. And then by yeer you can click on il, and it just produces a table of everything that was reported to the DEP.

Q Did you add – are these averages operating expense per well on the DEP database, or do you simply add them?

A Sure. So everything wilh e blue header on top of it is directly from the DEP database, the averages and the percentages.

So the average is simply taking the gas production total and dividing it by the count of APIs, and the percentage is laking the gas production total and diving il by the grand total.

So everything with a blue column header is directly from the DEP. You could go to – run that yourself.

Q But you have – I could get on the DEP website and see that Antero'e average operating expense of the well is $648,000?

A No. That's what I added.

Q Okay.

A That's what I added. I'm sorry, no, there is no operating expense information.

Q That's all I wanted to hear about.

A Yes. I'm sorry.

MR. MUDRINICH: I don't have any further questions.

MR. GRIFFITH: No redirect for Kirsten. But as we mentioned earlier, we'll bring her back in a few minutes to follow up with some stuff.

And our second witness will be Alan Schoephoerster. I'll let him do his last name from now on. But he's with Hein & Associates, a specialty services group that do tax, audit and advisory work. And they performed an appraisal for the Doddridge County wells, and I'll start by letting Alan discuss his background.

ALAN SCHOEPHOERSTER,

having been first duly sworn to tell the truth, testified as follows:

EXAMINATION

BY MR. GRIFFITH:

Q First, state your name for the record.

A Sure. My name is Alan Schoephoerster, and it's

Page 65

– my last name is spell S-c-h-o-e-p-h-o-e-r-s-t-e-r.

And as he mentioned, I am a managing consultant with Hein & Associates. We're an audit, tax and consulting firm based out of Houston, Texas.

I manage a group of consultants and reservoir engineer. The consultants all conduct valuations on oil and gas assets, amongst other assets for other industries.

As a quick background for me, after I graduated high school, I joined the military. I served with Ihe Army's 82nd Airborne as a paratrooper.

Upon completion of my service, I moved back to Houston and attended the University of Houston, where I got my undergrad, BBA in financial.

Upon graduation from the University of Houston, I started work as an over-the-counter commodities broker, where I brokered oil and gas options and futures. I did that for close – closer to nine years, actually.

And around the time of the financial crisis, I decided to leave and go back to school to get my MBA.

I returned to Ihe University of Houston, where I received my MBA in energy investment analysis and energy finance.

I was recruited from there to an upstream consulting firm in Houston called Opportune, where I was

Page 70

anywhere between – I think it was – yeah, 16 percent to 73 percent.

Even removing outliers, you would get somewhere between 16 and 63 percent.

Based on Antero's actual data for 2014 and 2015, we're looking at, you know, in the low 20s as a percent of revenue for operating cost.

So not only did we feel their operating costs were on the low end, they're most definitely reasonable from a market participant viewpoint.

Once we've netted out the – all costs from the revenues, we come to an undiscounted future estimate of cash flows related to each well.

From that point we need to present value those cash flows, and in order to do that we need to come up with some sort of discount rate that reflects the general or overall risk characteristics of these particular assets.

There's a couple methods to – there's a few methods of accomplishing this.

There's the buildup method, there's the weighted average cost to capital, and then there's several multi-factor models. All have their own merits.

It's worth noting that the State put together –

Page 71

and there's a buildup method.

And the buildup method although a good method, is more reserved for those types of assets that don't have public data on or – or less liquid.

If I was valuing a company obviously public data where the market is trading in, now that the securities is an accurate depiction of value, because that's a market participant viewpoint on where value should fall out, where less liquid assets you have to make certain assumptions.

And that's essentially what the State did. It's not wrong. It's just, I don't think it was – it's – it needed some tweaking, because it's not necessarily applicable to this situation.

So the method I chose, and which is generally used in my industry, and anytime I'm up against the auditors at the Big 4 or any sort of taxing authority, they're always going to want to see a weighted average cost to capital method.

So the weighted average cost to capital method, in its simplest form is taking publically available financial data, establishing kind of an industry average capital structure, how much debt and how much equity they use in their financing, accounting for the overall risk of

Page 72

the market that can't be diversified away through adding the other diversification benefits.

So, again, going back to my market participant assumption and the operators that operate here in West Virginia, we surveyed the market and pulled down their beta.

And beta is a measure of stocks return relative to the overall market sum index, like the S&P or Dow Jones.

The actual – how the stock behaves versus basket of stocks or an index is particular to each – each company, in that each company already has its own capital structure in place.

So if a company has more debt, they have to pay for the interest payment out of their cash flows before equity holders are going to get any kind of a dividend.

So there's going to be more volatility in those earnings than you would see in someone who doesn't have debt. And that's reflected in the overall beta.

Well, we want to remove each individual's capital structure and place in there some market average.

So we unlever beta to get to what we call an asset beta, and then we relever it by incorporating an average industry capital structure.

Page 73

That relevered, new equity beta is used in the model that's called the capital asset pricing model, to develop a cost of equity assumption.

And the capital asset pricing model, which is a widely accepted method of calculating cost to equity uses a risk of the market, which is evident by the market risk premium, which is defined as the risk of the market, less a risk-free rate.

A lot of people, it can – I guess, historically the market risk premium's been 6 to 8 percent. We tend to rely on the study done by Duff & Phelps, who does the long horizon look at it.

They compare long-term government bonds to the return of the market since the Great Depression. And that variable for us is 7 percent.

That market risk premium multiplied by your new relevered equity beta, and then adding a risk free-rate component to that gives you your cost of equity.

Then based on the average market participant capital structure where equity has a proportion of total capital, we weight that cost of equity, and then we take a look at the company's credit rating, and what bonds of that credit rating would yield, and take one minus the equity as a percentage of total capital times that cost of

Page 78

done improperly, and if they serve a market participant, it definitely is in line with our decline rates.

Q Okay. Now, I'll skip over to your snalysis for expenses and turn to the cap rate.

Are you familiar with the cap rate that the State – the capitalization rate analysis that the State filed as a variable with the Secretary of State's office?

A I am.

Q Have you reviewed thst?

A I did.

Q And have you reviewed the legislative rule that sets forth how we're to do a decline rate when – not a decline rate – capitalization rate, excuse me?

A I did.

Q Did you see anywhere in reviewing the State's – did you find anything contrary to the legislative rule?

A No.

Q So basically you, for lack of a better term, believe your method's better?

A I believe given my experience, absolutely my method's better.

Q So it's basically – basically when you went through your method, you came down to – the State's going to call it 15 percent, and you came down – up to, what, 16

Page 79

to start?

A Correct. Yes.

Q And then you added something, because Texas gives an extra 2 percent, and then you threw an extra 1 percent on there on top of it?

A Correct. And typically those add-ons are subjective in nature and it's – it's typically difficult to find any kind of support for those subjective variables.

In this case we did have support for it. And at anytime when we can point to actual data similar to the operating expenses for Antero, as long as it's in line and reasonable, it is – we'll use it.

Q And in some of your analysis of this cap rate, did you use information just specific to Antero, or did you – was it all industry based?

A Well, Antero is a market participant.

Q I just want to talk about the capitaiization rate analysis.

A Yeah, their financial data is being used in – in our cost to capital analysis because they are a market participant. We – we would be wrong to not include them in our analysis.

Q But you included others, too?

Page 80

A Well, yes, CNX. Yes. Chesapeake. Correct.

Q And there's nothing in the rule, like Texas has, that adds another 2 percent, 3 percent or whatever based on some – a specific industry, that they've added an additional risk?

A Yeah. Actually the study done by the State of Texas hes considerable amount of information on how to add additional risk premium base under experience and – I mean, the oil and gas industry in Texas has been around for a while.

So we're fortunate enough to have a ton of data on it, and we're starting to see it come out in other states as well, that – that they develop their oil and gas assets.

But, you know, we feel due to the sophistication of the oil and gas players in Texas, that these additional premium that the State came up with is accurate and fair.

Q And nowhere in our legislative rules there are provisions for an additional West Virginia premium?

A No.

Q And that's to West Virginia --

A Right.

MR. MUDRINICH: Nothing further.

THE DEPONENT: Okay.

Page 81

REEXAMINATION

BY MR. GRIFFITH:

Q Just one foliowup, Alan. You've indicated you've reviewed the legislative rule?

A Uh-huh.

Q Anything in there in relation to average industry operating expenses that talks about a cap or a maximum amount that should be allowed?

A No.

MR. GRIFFITH: That's all I have.

MR. MUDRINICH: Nothing further.

MR. GRIFFITH: We are going to call Phil Yoo from Antero just for a couples. It will take a minute or two. Jan, do you have a copy of the survey?

P H I L Y O O,

having been first duly sworn to tell the truth, testified as follows:

EXAMINATION

BY MR. GRIFFITH:

Q If you could state your name for the record.

A I'm K. Phil Yoo.

Q And your position at Antero and background in the industry?

A I'm the VP – Vice President of Accounting, Chief

Page 86

recall Kirsten Evans, and we should be relatively brief. And then we can move on to the State's witness.

REEXAMINATION

BY MR. GRIFFITH:

Q Kirsten, we're going to flip to Exhibit 15. Discuss what is included in that particular exhibit, kind of a proposal that Antero would be willing to consider – I guess, we could we could call it a compromised proposal. But discuss the thought behind that exhibit and what the – what the thought process is behind it.

A So there's been a lot of numbers thrown at you today. This exhibit is meant to just kind of summarize everything, the first being where the wells are appraised right now. You need sunglasses in here now.

Q I know.

A How the wells are appraised right now. The second column being the values that Alan just testified to.

So using the same net present value calculations, but in more of – instead of adhering to the legislative rule, saying: How would these be valued in a fair market value situation. So looking at actual declines of the well, looking at a cap rate that the industry would accept, and looking at actual operating

Page 87

expenses. That's what gets you to the numbers in the second column.

The third column are the numbers we appealed. So a year ago having to put a number down at the initial discussion with the State that surrounded operating expenses and what would happen if you used actual operating expenses and declined them similar to how the well declines. So that's what's in the third column.

The fourth column takes into consideration everything we've been talking about today.

You know, the State is charged with a mass appraisal technique. And they – that's how they have to value the 1000s of wells that they're charged with valuing.

We've talked at length about the fact that the tax code talks about fair market value.

That's what we're trying to arrive at. And that's what Alan testified to.

But that there's this legislative rule out there that talks about how the State is supposed to come up with this value.

The legislative rule talks about that you have to report gross revenue, less operating expenses, less royalty payment. That's what the basis of the tax says,

Page 88

it's the net present value of that income stream.

In Section 4.3, it talks about that the State has to come up with an average operating expense.

We agree. There's no other way to do it. The State has come up with an average operating expense of 20 percent of revenue. That's what the survey resulted in.

But what the State then did, was they put the cap on there. Nowhere in the administrative rule does it say that they can put a cap on it.

So if we talk about what we – what we would be – what is the most egregious error in what the State has done, it's the cap.

So this fourth scenario is, if our operating expenses are 23 percent, could we live with 20 percent that the State has come up with as an industry average. We could for the 2016 tax year.

But what we can't live with is that cap of $150,000 that overstates every single one of our wells that is over $750,000 in revenue, which is every single well in Doddridge County for Antero.

So if we just talk about that cap, if we take away the cap rate issues, if we take away the actual operating expenses that are 23 percent instead of 20 percent, the compromise that Craig just mentioned is:

Page 89

Let's just talk about the cap. What does that do to value, and that is what the – the fourth column is.

And while it is not fair market value, it's something that, you know, in discussions with the representative from Antero, we feel that it would be a reasonable solution for the 2015 tax year.

MR. GRIFFITH: Nothing further.

MR. MUDRINICH: I don't have anything.

MR. GRIFFITH: I think we're – Antero is – we're done with our portion, and obviously Jan will have a witness, and we can wrap up.

MR. MUDRINICH: We'll take a bathroom break.

COMMISSIONER SANDORA: A 15-minute break.

(WHEREUPON, a recess was taken.)

MR. GRIFFITH: We're going to have Phil Yoo testify to one more thing. I know we thought we were finished, but ...

COMMISSIONER SANDORA: Okay. Continue.

REEXAMINATION

BY MR. GRIFFITH:

Q Phil, in your role an Antero, you're involved in making decisions as to both buy and sell wells; is that correct?

A Not directly, but help to evaluate them, yes.

Page 94

A That is correct.
Q Why is there a cap?
A The survey calls for us to use an average. And when you take all of the numbers that are reported and come up with the average number, that is the number that is used as a cap.
Q But if the 20 percent – we aleo determined that it's roughly 20 percent through the survey, correct?
A Right. They report their income and the number of wells, and so we divided the income reported by the number of wells to see what percentage of the – or the total expenses, I'm sorry, from the income to see what the percentage of income the expenses are.
Q And this is based on surveys of the industry?
A That is correct.
Q And we used what they submitted?
A That is correct.
Q There's been some talk about subetituting actual company expensee for the industry average that we used according to the rule.
Do you know of anything in the rule that allowe ue to use actual expenses?
A No.
Q And let's say we will admit that we – there's

Page 95

language formerly in administrative notices, not currently, that – and aleo in the return – that allowed operatore the abillty – you know, the opportunity to submit their actual coet information; is that correct?
A That is correct.
Q And about how many people over the past several years have done that?
A Maybe four.
Q Okey. And when they do submit their cost information, whet steps are done to verify that they're only allowable costs? In other words, direct operating expenses of a well, not a bunch of overhead and severance taxee and other things that aren't allowed?
A You would have to have documented data, invoices showing the actual expenses, and to see if those are ordinary expenses that continue throughout the life of the well.
Q And if the system wae changed that it could be interpreted that we would be required at anytime that somebody submitted their alleged actual expenses, to substitute those, what would be – would there be an increase in your administrative coets of getting these appraisals out?
A Absolutely. There's no way it could be done

Page 96

with the current steff.
Q So in other worde, somebody would heve to go through all these costs, which could be hundreds of different coet centere, and go through to verify their accuracy and plug it into the model, and we'd basically doing what then amount to e fee appraleal?
A That's correct.
Q And your opinion working in thie for 24 years, that that'e not practical?
A In no way, shape, or form.
Q And you use the model that this calls for, using the industry average?
A That is correct.
Q Have you reviewed – you've been doing thie for a long time. Is there any, like, rules of thumbe to see if a working interest appraisal is out of whack?
A When we look at an account, the first thing we would say is generally a working interest value is going to be 2 to 4 times one year's income, depending upon the sand that the well is producing out of.
Royalty is going to be 3 to 5 times one year's income. And that difference is based on the fect that the royalty does not get an allowance for operating expenses.
With the Marcellus, we've been seeing below

Page 97

2 percent, and sometimes it's not even been equal to one year's income.
Q So in other worde, have you looked at any of these welle here today, to have a – well, I'd like to concentrate on ones that have a full-yeer production, so we don't get that firet year of annualization.
A I have one that's listed on the top five list, that Craig should have a copy of, the bottom one.
It was in production 2015 and '16. And it had 1,844,994 Mcfs. Working interest portion receipts – it's not the total, just the working interest portion, was 8,133,463.
Then it had 287 barrels with $18,885 in income for the working interest portion.
Q Then in 2015, it looks like it didn't produce anywhere near as much. So that was part of – probably a partial year?
A Yes.
Q And what's thie figure over here, 2017?
A That's the income that was reported for 2017, the 156,552 is the Mcf, 437 barrels, working interest receipts 1,620,017, and oil working interest was 13,898.
Q So in the year coming up, it's still producing income close to – cloee to what it did the previous year;

Page 102

Just a few questions. Where did the top 5 go? I had it here somewhere, and it disappeared.

Cindi, just a few questions. On your top five list, and we've discussed this at length. Those are gross revenue numbers, right?

A That is correct.

Q And no operating expensee are reflected on that sheet.

A That is correct.

Q And you would agree that the Tax Department's legislative rule is a net revenue based model?

A That's gross.

Q It asks for gross, but obviously operating expenses are reflected in the legislative rule, correct?

A Right.

Q So the model ie a net revenue base model?

A Right.

Q And any decline rates included on that top five list, are you showing a decline at all in those revenues?

A No.

Q Okay. And you --

A That would be on your yield cap model.

Q Right. You mentioned that the rule of thumb, the Tax Department often based value on 2 to 4 times the revenue that you see for a well?

Page 103

A When we look at a well – except for the Marcellus, which is usually lower.

Q Yeah, are basing that on actual sales of the property, or what's that based on?

A Just as a rule – when we've looked at values over the years, that is the – about what it comes out to be.

Q And it's lower for Marcellus wells?

A That is correct.

Q Okay. For one – I think you were discussing one well that showed $8 million of revenue and a value of $12 million.

A Correct.

Q 18 months from now, that value – or that revenue's going to be much lower than that, right?

A Right. In the yield cap model, which you have a copy of, also, we started with $4,839,410 for the first year for the gas and $11,237 for the oil.

Q Okay. Let's talk about the survey for a little bit. Any information on that survey that breaks down the expenses for – some of the expenses we have heard testified about today: gathering expenses, or transportation expenses, and compression expenses.

Page 104

A No.

Q So, I mean, can you understand from the perspective of the producer that doesn't realize exactly what that survey's being provided for, to look at and see that as lease opereting type expenses, and that's what they would report on that survey?

A We're asking for all expenses and for them to have e say in what number we use. So.

Q But the itemized expenses listed on there are specific to lease operating expenses, would you agree with that?

A Yes.

Q So it would be intuitive to consider the Tax Department including that on the list, which is probably the proper methodology that should have been used for the survey, you're expecting the taxpayer to intuitively understand thet they need to lump in all these substantial expenses, much more substantial than the lease operating expenses into another category?

A Yes.

Q Okay. Let's look at the rule real quick. Can you point in that rule, specifically under 3.16, which defines operating expenses, and probably more specifically Section 4.3, where it discusses average industry operating expenses where there is a – a cap should be imposed by the Tax Department on the amount of average industry operating expenses?

Page 105

A The word "cap" is not used.

Q Is "maximum amount" used anywhere there?

A No.

Q And you include revenue information on that survey, right?

A Yes, we do.

Q And then you've got expense information over that, underneath that? That gives you a percentage, right, when you take the operating expenses that are listed there and then compare it to the amount of revenue listed on that, that would give you an average industry operating expense, would --

A That gives –

Q -- it not?

A -- you your percentage, correct?

Q Which is then --

A And then your expenses divided by your number of wells gives you your average expense.

Q Yeah, I'm not seeing where that's provided for anywhere in the legislative rule.

Certainly, I don't think it's consistent – would

Page 110

Q Now, the 20 percent alternative, how was that determined in the survey?
A By the income and the expenses. So you would see what percentage of the income, the expenses was, and again you would use an average of all of the different people's percentage of income to come up with the 20 percent.
Q Okay. But the cap is the average industry operating expense?
A Yes.
Q I'm going to turn your attention to the – and about two different wells eimilar – just similar treatment of similar wells.
A well that produces $500,000 is going to get 20 percent of its expenses, correct?
A Correct.
Q And a well that produces $1 million is going to be capped at $150,000 –
A Correct.
Q -- correct? Do you consider a well that produces half as much as another one to be a similarly situated well?
A No.
MR. MUDRINICH: I don't have any further questions.

Page 111

REEXAMINATION
BY MR. GRIFFITH:
Q Two or three questions, and wrap up. Cindi, Antero already testified eerller and through both Altus and through Phil Yoo from Antero, that there was an error on the survey and that they were under the assumption that they were just to report leaee operating expenees.
Taking into consideratton Antero's about – probably 40 percent of the Marcellus Induetry in the state, if they had reported the full amount of operating expenses that they're claiming here today, $648,000 per well, would you agree that the math to get to the $150,000 would be incorrect?
A It would include a different average --
Q Correct.
A -- if you --
Q So that would bump --
A -- used a different number, correct.
Q -- the average up well over $150,000, correct?
A Correct.
Q And any red flags when you got these surveys and you – obvlously to get to the $150,000, the number of producers had to report well in excess of $150,000 of expense, right?

Page 112

A I'm not famllar with the totals, because I'm not the one that comes up with the – the average or the --
Q Well, just mathematically –
A Right. You would have to --
Q -- if you have Antero --
A Yes.
Q -- that reported $30,000, obvlously to get to $150,000, some other producers had to report over --
A Exactly.
Q -- $150,000? Were there any red flags besed on that, when you have what'e known as – I mean, obvlously Antero's information is included on there.
I don't think it's any secret that they're one of the major producere in the state.
Were there any follow up with Antero or any other taxpayere to say, "We think you may be under reporting the amount of operating expenses aseociated with theee wells"?
A To my knowledge, no.
Q Okay. One other question, wes staffing issue. And I – you know, ae a former Commissloner and understanding the budget issues at the State Tax Department and statewide now, I can understand that from a staffing perspective.

Page 113

Would that compromise that what – that Kirsten testlfied to earlier of simply applying the 20 percent wlthout a cap, would that create significant staffing issues?
A For everyone or for Antero?
Q Well, if you did that for all Marcellue' producers, is that basically just changing a line item or a column that calculatee tax – or calculatee value through a simple removel of that $150,000 cep?
A It would be a programing change, yes.
Q Right. But you don't --
A If it was just Antero --
Q -- think that would create staffing issuee that a – that – the scenarlo that Jan discussed earller of valuing each well separately would create, correct?
A Correct.
MR. GRIFFITH: That's all I have.
REEXAMINATION
BY MR. MUDRINICH:
Q Just one other thing on redirect. Cindi, I know you're not the dlrector of the Property Tax Division or the Tax Commissioner.
But is it a fair statement to say that the Tax Department, since you can see in this matter, does not –

Exhibits

Exhibit 1 4:0 39:24 116:1,5

$

$1 51:17,18 52:20,22 110:17

$1.06 51:4

$1.3 19:18

$1.50 21:18

$1.6 19:18 21:15,16 24:12

$10 18:18

$100,000 109:17

$11,237 103:19

$112 49:20

$12 98:23,24 103:13

$12,612,983 98:7 99:2

$141,000 16:3

$149,000 17:15 20:5

$15 41:2

$15,250,815 100:16

$150,000 9:16 10:6 11:19 15:14 17:10 18:2,19 24:4 30:19 32:7 34:15,21,23 35:2 39:11 40:24 41:3 50:9 58:19 88:18 90:11,13, 19,21 91:2 93:24 107:15,16,20,22,24 109:15,23 110:18 111:12,19,22,23 112:8,10 113:9

$166 41:16

$175,000 39:11,18

$18,885 97:13 98:13

$189,000 20:4

$2 41:1 44:18

$2.7 16:1

$250,000 109:16

$263 19:19

$280,000 20:1

$291.7 76:15

$3 66:3

$3.1 16:12

$30,000 34:18 109:16 112:7

$31,000 19:24 51:11

$31,411 98:7 99:3

$32,000 32:17 34:20 91:5

$32,994 11:24 50:23

$350-some 25:2

$385 52:12

$385,000 22:8

$388 40:4

$4,839,410 103:18

$4.3 17:13

$5 18:17 41:2 45:9

$500,000 110:14

$52 20:14 24:14,18

$537,000 32:2

$580,000,000 50:8

$600,000 32:4

$64,000,000 50:6

$648,000 20:12 31:22 33:22 39:17 51:18 52:21 64:1 111:11

$648,000,000 50:4

$650,000 17:11

$680,000 12:3

$750,000 18:11,13,16 40:21,23 88:19 107:11,19,24

$8 37:17 103:12

$8,133,463 98:12

$812 40:1 76:13

$813 39:24

$837,000 17:18

$968 36:6,9

0

0320156260 101:4

03201566260 100:15

1

1 15:20 16:7 37:8 39:24 51:20,21 75:18 79:4 92:21

1,620,017 97:22

1,844,994 97:10

1-1/2 98:16

1-J 45:2

10 28:13 50:5

10-K 20:7 46:11 47:4

100 56:17 75:18

1000s 87:13

11 5:13 52:5,16 66:13 67:14 82:6

12 30:5 50:5 51:24

12.75 50:2,11

13 35:4 59:7

13,898 97:22

13th 45:14

14 37:21

15 12:24 59:6 69:5 75:11 76:24 78:24 86:5 98:20,21 99:4

15-minute 89:13

15.3 74:10

156,552 97:21

157 8:6

16 9:13 30:9 31:10,16 62:11 70:1,4 78:24 97:9 98:10

16.3 74:9

17-1/2 75:10,14

18 92:17,23,24 93:8, 14 103:15

1st 101:13

2

2 14:19,24 29:24 35:16 37:17,18 38:12 51:1 75:13,16 79:4 80:3 96:19 97:1 100:13 101:2,3 102:24

20 9:14 11:18 13:10 15:13 18:14 28:9,11 29:2,22 30:2,18 40:22 58:9,19 88:5,14,23 93:23 94:7,8 107:12, 14,22 110:1,6,14 113:2

200 75:13

2000 9:18 108:18

2005 27:7

2008 37:15,16

2010 8:18 37:10

2011 66:7

2012 37:20

2013 8:18 33:11 50:20 51:13 82:10

2013/2014 9:10

2014 9:13 28:15 31:11,18 33:20 51:14, 23 67:23 70:5 92:20 98:8

2014/'15 9:10

2015 9:18 39:14 51:2 67:23 70:5 89:6 92:21 97:9,15 108:23

2016 9:24 10:3 11:16, 17 13:3 24:17 25:5 28:16 30:8,13 37:18 38:23 51:22 88:18 92:19 98:6 108:24

2017 37:13,18 38:24 39:6,8,10 97:19,20

20s 70:6

20th 5:10

22 29:21,23 30:2

23 38:19 39:3 69:6 77:6 88:14,23

24 75:10 96:8

24b 5:14

287 97:13

29 69:8 77:6

3

3 5:13 14:15 20:15 24:19 32:1 36:11 59:7 75:3 80:3 96:21 100:13 101:2,3

3.18 104:22

30 28:11 35:24 36:5

300 75:2

31 51:2

35 29:18,20

36 76:17

38 38:21

39 39:15,16

3:03 5:10

4

4 19:8 22:4 41:12 49:8 51:10 71:17 83:7 96:19 102:24

4.1 59:9,18

4.3 88:2 104:24

40 31:19 39:12 69:5 76:23 111:9

43 32:2

437 97:21

5

5 15:21 82:3 96:21 102:1

50 34:12,14 84:7 98:3

500 61:5

500,000 10:22

55 39:1

59 69:6 77:6

armed 67:9
Army's 65:10
arrive 15:1 34:8 36:24 37:5 59:22 87:17
arriving 37:2
arrow 42:23
Article 5:13
artificial 18:2,12 30:3
artificially 13:12 16:4 40:12
ascertain 38:4
asks 32:19 102:13
assessed 8:4
assessing 66:19 68:2
assessment 92:20, 24
assessments 5:23
assessor 5:20 6:4 60:24
asset 57:7,10 66:2 67:1 72:23 73:2,4 90:5
assets 59:19 65:7 67:8,12,19 70:18 71:3,9 74:5,13 75:12 80:14
assist 66:8,19
Associates 7:11 64:14 65:3 66:8
assume 20:18 34:21
assumption 69:21 72:4 73:3 111:6
assumptions 71:10
attempt 106:24
attended 65:12
attention 51:1 109:5 110:11
attributable 114:3
audit 33:12 64:15 65:3 106:14
audited 20:8,9 33:20 46:11
auditors 71:17
authority 71:17
authorized 11:5 12:5 99:17
automatically 75:12
average 9:12 11:24 12:2 19:24 20:1,11 29:3,17 31:22 32:3,6, 8 33:11 34:12,13,15, 18 39:17 50:4,8 51:4, 11,16 52:19 62:24 63:18,24 67:20 70:22 71:18,20,22 72:21,24 73:19 74:2,7,17 75:17,22 81:6 88:3,5, 15 92:10 94:3,5,19 96:12 104:24 105:2, 14,21 106:4 107:12 109:9,14,19,20,22 110:5,8 111:14,19 112:2
averaged 9:13 33:10
averages 52:9 83:10, 14
aware 39:5 61:13

B

back 20:9 26:13 27:7 28:19 30:9 39:13 41:8,11 43:24 44:4,6 45:6 47:24 49:7 51:9 61:24 64:10 65:11,19 69:22 72:3 83:13 92:17 93:7 109:5 114:19
background 8:16 12:17 64:17 65:8 81:22
background's 12:23
bankruptcy 66:7
barrels 97:13,21
base 34:11 38:17 80:8 102:18
based 11:17,20 14:9, 10 15:9 21:24 23:8 32:9,10 39:12 40:3 61:2 65:4 70:5 73:19 79:16 80:3 82:9 91:4 92:14 94:14 96:22 98:9,12 99:9 102:11, 24 103:5 107:1 109:15 112:10
baseline 67:18 75:11
basically 44:3 45:13 60:14,15,17 78:18,22 96:5 109:13 113:7
basing 103:4
basis 47:10 49:18 75:2,13,18 87:24
basket 72:10
bathroom 89:12
BBA 65:13
bear 54:20
bearing 45:9 54:19, 20
bed 107:6
begin 8:21 92:22
behalf 7:1,14,15
behave 68:4
behaves 72:10
behavior 75:24
believed 45:22 55:13
believes 8:7 59:8
benefit 18:14 40:22 44:14,15 45:1 58:6 74:18 108:13 115:4
benefits 72:2
beta 72:6,7,19,22,23 73:1,17
big 8:24 29:23 38:22 71:17 84:6
bill 101:6,9
billion 19:18,19 21:15,16 24:13 66:4
bills 101:12
bit 8:16 66:12 98:2 100:12 103:21
Blend 74:1
blindly 60:3
blue 63:13,20
board 5:11,15 6:2,9 14:21 57:4
Board's 5:17
bonds 73:13,22
book 26:13 115:20
books 20:10
bottom 19:13,21 23:14 37:8 41:16 97:8 100:11
bound 12:4
box 56:11
break 24:5 89:12,13
breaking 29:5,8
breaks 19:21 22:8 27:2 103:21
briefly 10:21 62:11 85:13 91:24
bring 41:7 45:8,17 64:10
brings 66:11
broken 22:11
broker 65:15
brokered 65:16
brought 10:9 46:7
Btu 57:22 58:1
Btus 57:23
budget 112:22
build 74:24
building 85:6
buildup 70:21 71:1,2 74:10
built 84:17
bump 111:17
bunch 45:23 60:2 95:12
burden 6:6 34:7 49:10 54:20,21 60:19
business 44:21 56:14 66:2 84:23
butter 57:15
buy 44:4 56:11 57:10 89:22 90:2
buying 43:5,6 57:14
by-well 47:10

C

calculate 13:17
calculated 40:3 66:17 93:14
calculates 113:8
calculating 73:5
calculation 14:5,21 15:16,20 36:10 55:7
calculations 86:20
calendar 28:15 31:11 50:19 51:13,23 52:10 82:9 92:20
call 5:8 34:10 72:22 78:24 81:12 86:8 91:6
called 9:2 65:24 68:10 73:2 75:1
calls 93:5 94:3 96:11
cap 9:16 10:6 13:11, 12 14:10 18:2,12,16 24:4 30:3,20 34:15 35:23 36:4 39:11 40:12 50:9 58:20 78:4,5 79:14 81:7 86:23 88:8,9,12,17, 21,22 89:1 93:21 94:2,6 102:22 103:17 105:1,4 109:6 110:8 113:3,9
capital 70:22 71:19, 20,23 72:12,21,24 73:2,4,20,21,24 74:2, 8,17 75:17 79:21
capitalization 11:4 78:6,13 79:18 92:13
capped 11:19 15:14 30:19 40:24 93:23,24 107:16 109:23 110:18
capping 106:4
caps 31:15
capture 13:8 21:21
captured 27:3 46:14 114:9

68:17 75:21 76:11 77:3 88:20 101:8,15 115:16,24

County's 58:6

couple 40:20 70:19 83:6

couples 81:13

court 6:8 115:21

Craig 6:23 88:24 97:8 99:23 115:19

Craig's 100:13

creamy 57:17

create 63:4 113:3,13, 15

creates 15:15

credit 73:22,23

Crestwood 41:21,24 42:1

crisis 65:18

cross 41:5

current 96:1

curve 76:7

curves 68:19

cut 77:11

Cynthia 91:14

D

daily 25:14

dark 100:7,9

data 14:16 18:24 19:5 22:22 24:3 31:11,17 36:16 39:12 51:12,13 52:1,3,4,5 59:10 61:2, 4,19 62:14,22 68:9,12 70:5 71:4,5,22 74:14 77:12,15 79:11,20 80:11 95:14

database 62:19 63:7, 11,14

date 92:21,24

daughter 101:24

Dave 100:19

day 44:18 90:24 101:24

day-to-day 90:24 91:1

days 11:8 35:10

deal 11:3

dealing 11:14 18:21 26:15 75:12 91:18

deals 66:4

debt 71:23 72:14,19 74:1

December 52:2 82:4

decided 65:19 67:11 75:2

decides 13:14 15:10

decision 90:2

decisions 5:18 89:22

decline 11:4 15:4 68:18,18,19,20,21 69:2,5,9,11 75:19 76:7,14,17,22,23 77:2,8,10,20 78:2,12, 13 92:15 93:10 98:19 102:18,19

declined 15:8 24:8 87:7

declines 77:17 86:23 87:8

declining 38:3,4 68:16

decreased 37:15 49:11

deduct 36:15 59:9

deem 40:7

default 10:5,10

defined 55:22 56:6,9 66:23 73:7

defines 104:23

definition 48:1,14

deliver 44:4 56:19

delivered 56:21 57:12

delivery 25:15,20 43:9,10,16,21 45:13

demonstrate 35:23

denied 6:7

DEP 62:15,23 63:9, 11,14,21,23

DEP's 31:11,17

Department 8:10,13, 20,23 9:9,15,17,22 10:3,9,15 11:11 15:10 18:21 22:17 23:20 24:12,23 25:17,19,24 26:9 27:10 30:14 35:8,13 38:14 39:10 59:8,13,14 60:1,12 61:10 66:17 82:8 91:15 102:24 104:14 105:2 108:18 112:23 113:24

Department's 8:4,8 14:13 37:9 102:10

depending 15:6,7 49:18 92:3 96:19

depends 77:10

depiction 71:7 83:11

deployed 87:8

DEPONENT 80:24 101:3

Depression 73:14

derived 55:4 74:8 75:4 90:6

describe 48:6

deserves 6:2

designed 14:6

detail 23:18 45:15 93:2

details 22:12

determination 77:22 114:16

determine 6:12 15:16 44:11 50:14 52:8

determined 20:17 43:2,3 94:7 110:2

determining 61:6

develop 73:3 80:13 92:14

developed 13:19 92:13

development 48:4, 16,21,22

diagram 19:9,10,14, 20,21 21:7 25:3 32:22 41:12,14 49:7 51:9,18 52:9 83:7

difference 29:24 30:3 40:9 52:21 58:17 68:21 76:5 77:16 96:22 108:10

differences 66:15 76:5

differently 28:4 107:3,4,18

difficult 79:7

direct 22:14 82:15 95:11 114:2

directly 23:16 63:14, 21 89:24

director 113:21

disagree 8:21 48:12

disagreeing 47:11

disagreement 115:7

disappeared 102:2

discount 70:16 75:7, 10 76:6,14

discounted 15:19 21:22 92:15 93:21

discrepancies 9:6

discrepancy 38:22

discuss 10:1,16 19:11 20:16 23:4,19 30:12,13 64:17 77:23 86:6,9

discussed 38:15 43:4 51:6 76:4 83:8 102:4 108:6 113:14 115:14

discusses 22:5 31:10 104:24

discussing 14:13 35:5 103:11

discussion 24:22 83:5,10 87:5

discussions 23:5 28:21 89:4

disproportionally 10:11

dispute 46:19 109:6

diversification 72:2 74:18,21

diversified 72:1

divided 94:10 105:20

dividend 72:16

dividing 63:17

diving 63:19

Division 113:21

dock 56:12,17 57:5, 11

document 30:6 31:3

documented 95:14

Doddridge 5:9,15,16, 19,20 8:7,15 13:4 14:18 16:22 17:12 39:23 40:15 58:6 64:16 68:17 76:10 77:3 88:20 101:8 115:24

dollar 29:19,20 37:19

dovetail 38:16

Dow 72:8

downloads 62:14

downstream 21:19 43:17 44:14 56:7,10 57:1

drafted 27:6

drastically 30:4

dries 54:22

drill 16:8

drilling 13:19 85:4

Drillinginfo 68:10

drive 84:7

driving 31:14

dropped 39:1

drove 66:15 76:5

dry 16:18 54:21 58:16 108:6

due 80:15 98:19 109:7

flaw 13:16 36:10
flawed 14:4
flip 30:9 35:16 86:5
flows 68:4 70:13,15 72:15 90:6,7
fluctuate 23:10
fluctuates 23:7
FOB 43:20 56:11,17 57:3
focused 66:1
folks 7:4,12 8:17
follow 34:4 64:11 112:15
followup 81:3
forced 49:12
foresight 85:3
form 49:21 55:2,3 71:21 74:3 82:19 96:10
formal 41:23
formation 15:7
fortunate 80:11
forward 24:20 33:14 51:15
fourth 87:9 88:13 89:2 92:5
fractional 48:3,15
fractionization 49:13
free-rate 73:17
freight 57:4
front 101:7,17
full 36:12 77:13 107:20,21,22 108:1 111:10
full-year 97:5
fully 20:23
fundamental 8:21
future 14:9,10 15:8 68:4 69:13 70:12 90:6 92:14 99:13
futures 65:16

G

gain 68:23
gas 8:5,9 10:14 11:2, 21 12:21 13:2,22,23, 24 14:2 16:10,18,20, 22 17:3,14 19:19 20:3,22 21:2,3,5,16, 17,21 22:1 23:8,16 26:16,21,22 27:12,22 28:5,11 29:3,6,13,21 33:1 37:6,14,16 39:1 40:15,20 42:16,21,22 43:5,11,13,15 46:18 47:15,16 48:3,16,19 53:9,13,15,20 55:9,15 56:6 57:7,13,21,22 58:1,2,3,16 60:18 61:15 62:17,18 63:16, 18 65:7,16 66:1,7,9, 10,20 68:6,12 75:8,12 80:9,13,16 82:5 83:2, 12,24 84:5,9,10,13, 17,19 85:7 91:18 98:2,3,6,12 99:2 103:19 107:1,5,6 108:5,6,9
Gaskins 101:4
gather 41:20
gathering 13:23 20:1 21:6,10 25:6 26:10 41:16 42:2,3,5,6,12 53:1 55:1,9,19 83:23 84:5 103:23 106:21
gave 24:7
general 70:16
generally 66:23 67:3 71:15 82:17,24 96:18
generate 13:7 15:11 16:1,15 17:9,19,24 18:4 19:22 20:11,12 38:5,8 39:20 90:7
generated 21:13 24:13 28:24 30:23 40:13
generating 18:11
Ginger 7:8
give 6:2 27:5 45:9 83:7 101:1 105:14 115:21
giving 16:7
good 8:19 71:2 74:12 84:21
goods 56:12
government 73:13
grab 22:2
graduated 65:8
graduation 65:14
grand 63:19
grant 45:23
graph 23:3,4,5 24:9 38:1
gray 16:14
great 23:18 73:14
green 23:14
Griffith 6:14,16,23 7:9,12 8:2 12:13 41:4 59:3,5 62:13 64:9,22 76:18 77:22 81:2,10, 12,19 85:9,24 86:4 89:7,9,15,20 90:16 101:1,22 109:2 111:2 113:17 114:8 115:10, 12
gross 9:15 16:13 18:9 87:23 93:3,5,11,13,18 98:9 102:4,12,13 114:12 115:2
ground 27:18 40:16 53:10,15 55:15 57:8 62:17 83:21
group 7:13,16 12:15, 20 64:15 65:5 106:24
groups 19:23
guess 7:2,3 14:12 73:9 86:8
guide 67:6
guidelines 106:7
guy 44:19

H

haircut 69:8
half 44:5 93:8,10 110:21
halfway 57:13 100:12
hand 56:6
handle 14:7 93:12
hands 43:11 56:12, 22,24 57:2
happen 24:7 39:21 87:6
happened 59:19
happening 33:16
Harrison 16:18 17:8
head 50:6
header 63:13,20
hear 64:6
heard 103:22
hearing 6:10 8:3 61:3,4
hears 60:22
heavier 15:21
heaviest 6:6
Hein 7:10 64:14 65:3 66:8
high 28:21 65:9 91:3
high-level 24:22
higher 8:11 10:12 28:8,12 43:18 54:15 57:22 58:3,7,8 74:22
highlighted 15:3 16:14 31:23 33:7
hire 60:13
hired 12:20
historic 67:10,11,23
historically 73:9
history 18:23 75:20 77:14
hit 18:16
hits 21:10
hitting 21:6
hold 44:13
holders 69:17 72:16
holding 13:23 45:1
holds 20:22 43:13,15
Hoover 11:16 91:7,14
horizon 73:12
horizontal 9:14 13:19 31:11,18,20 32:3 62:20,21 83:15 84:2
horizontal/vertical 107:5
Houston 85:4,12,14, 20,24
hundreds 96:3
hyperbolic 68:19,22 69:2 76:22

I

IH40479 101:4
immediately 5:2
impacted 34:15
impartial 5:18
implies 36:5
important 15:23 21:11,20 22:1
imposed 105:1
impossible 32:5 36:8 39:18
impression 13:23
improperly 78:1
include 18:7 28:6,7 30:15 33:2,3 53:21 54:18 55:19 79:22 83:2 105:7 111:14
included 19:11,12 27:21 28:17 38:17 42:13 45:20 79:24 82:13 88:8 102:18 106:21 112:12
includes 14:16 17:1 28:14
including 12:17 14:17 28:1,5 55:8 66:6 67:15 104:14 115:18
inclusion 27:5
inclusive 21:2

M

made 19:18 24:13 47:14

magenta 23:15

maintain 90:22 91:5

major 112:14

make 14:20 27:20 45:12 57:16 58:12,14 71:9 77:22 101:18 115:5,6

makee 30:2

making 18:17 44:21 84:23 89:22 90:2

manage 65:5

Manager 91:17

managing 65:2

mandates 11:1

manufacturing 57:14

Marcellus 8:6 9:5,14 11:18,22 13:20 21:12 27:11 30:16 36:2 38:21 40:19 62:19,21 77:3 83:15,16 90:11, 12 93:23 96:24 103:3, 9 107:5,7,10,19 111:9

Marcellus' 113:6

Marcellus/utica 37:11 39:9

March 25:5 45:14 46:4

Mark 26:7,15,16,17, 19,20 42:18 84:8,11

market 21:17 32:1,3 34:1,2,6,9 37:1,3,4 39:13,15,16 43:17 49:4 59:15,18,21,23 60:21 61:1,24 62:2,5 66:9,16,19,22,24 67:3,5,12,13,19 69:21,23 70:10 71:6,7 72:1,3,5,8,21 73:6,7, 10,14,16,19 74:6,16 76:10 78:1 79:17,21 83:24 85:2 86:22 87:16 89:3 90:5 106:2,6,10 115:6

markets 85:8

mass 9:3 10:21 34:4, 5 36:24 59:15,20 60:14 62:8,9 87:11

matches 32:22

material 24:23

materials 6:18

math 111:12

mathematically 32:5 112:3

matter 41:1 113:24

max 34:21 38:16

maximum 30:14,20, 22 32:6 34:11,16 81:8 105:5 106:11

MBA 65:19,21

Mcf 10:13 21:18 23:8 26:12 35:17,19 37:17 38:5 43:13 44:18 53:16 97:21

Mcfs 97:10

means 18:10 34:12 48:2,15 85:1

meant 35:22 49:3 86:12

measure 72:7

mention 10:20 58:23 106:11

mentioned 8:2 10:15 27:8 30:24 32:14 64:10 65:2 66:13,18 74:18 83:4 85:24 88:24 102:23

merger 66:4

merit 11:12

merits 70:23

methane 107:6

method 11:1 47:2 70:21 71:1,2,15,19,20 73:5 74:10,11,12 78:23

method's 78:19,21

methodology 8:4 9:16 66:13 104:15

methods 70:19,20

mid-year 93:20

Midstream 41:21,22 42:1,10

miles 56:17

military 85:9

million 16:1,12 17:13 18:17,18 19:19 20:15 22:8 24:14,19 25:2 39:24 40:1,4 41:2,16 49:20 51:5,17,18 52:12,20,22 76:13,15 98:23,24 103:12,13 110:17

minus 73:23

minute 81:13

minutes 64:10

miscaptured 23:2

misleading 32:19

missing 100:21 101:14

mistake 35:3

model 13:9 17:23 27:6 38:21 62:8 73:2, 4 92:13,14 96:5,11 98:17 102:11,16,22 103:17

models 70:23

moment 5:2,4

money 38:5,8 44:15, 17,21 46:17 58:8 84:23 98:22

monster 84:6

month 52:1,3,4

monthly 62:16

months 52:1,5,15,16 92:17,23,24 93:8,15 103:15

mouth 93:12

move 19:8 26:5 28:18 30:5 37:7 86:2

moved 65:11

MUDRINICH 10:20 11:17 41:10 64:8 76:20 80:23 81:11 85:12,23 89:8,12 90:18 91:6,12 101:18 109:4 110:24 113:19 114:6 115:11,16

multi- 70:22

multiplied 73:16

N

name's 6:23 12:19 82:10

named 101:24

natural 8:5 12:18 17:14 26:22 37:14 42:16 48:3,16,19 55:9 83:12

nature 79:7

necessarily 71:13 74:12 114:1,3

needed 5:21 47:3 68:5 71:13

negative 32:7 39:19

neighborhood 12:3

net 13:12,14 15:15,16, 20 18:9 24:1 36:17 40:12 44:20,23,24 69:13 84:12 86:19 88:1 93:19 102:11,16

netted 70:11

newer 40:18

NGL 16:23 17:1 19:19 27:15,21 28:12 29:11, 12,18,19 40:16 47:12, 14,15,19

NGLS 10:14 13:24 17:9,24 20:3 27:5,7,9, 17 28:2,23 29:7,13 58:15 84:10,11

nicely 83:5

Noble 67:16

non-criminal 6:8

non-processing 29:9

Northeast 42:4

note 10:7 23:13

notebook 115:23

notice 9:18 10:1 16:16 19:17 31:19 51:10 108:24 115:24

noticed 43:7 69:23

notices 9:18 95:1 108:17,19 115:19

noting 70:24

November 22:17

nowadays 49:10

NRA 100:15

number 9:11 21:18 34:22 42:13 49:24 61:6,8 87:4 94:5,9,11 100:15 101:7 104:8 105:20 111:18,22

numbers 19:20,21 20:7,9 23:2 51:10 60:2,4,6 86:11 87:1,3 94:4 99:9 102:5

O

objection 25:24

objections 22:19

objective 5:17

October 5:9

office 78:7

Officer 7:7 82:1

offices 7:1

oil 11:2,21 13:2 17:14 29:7 48:3,15,19 61:14,15 65:6,16 66:1,7,9,10,20 68:6, 12 75:8,12 80:9,13,16 82:5 91:18 97:22 98:2,7,13 99:2 103:19 107:6

omit 108:24

opening 32:14 34:8

operate 10:24 36:6,9 42:14 72:4 107:4

operated 68:17

operating 8:8,11 9:8,

processing 11:2 13:24 20:2,19 25:6 26:7,14,21 28:23 29:12,17 33:2 42:16 43:16 49:13,20 54:7, 12,13,14 55:8,19 57:19 83:24 106:21

produce 17:16 58:18 83:17 97:15 98:21 99:5 108:5

produced 33:15,19

producer 29:3 36:16 43:15 58:9 59:10 62:23 63:1 104:3 107:10

producer's 53:9

producers 10:12 13:21 18:5 21:4 31:13 33:1,17 34:22 62:16 108:4,7 111:23 112:8, 14 113:7

produces 63:8 107:10 110:14,17,21

producing 8:5 9:1 18:10,12,18,22 17:2, 3,13 20:3 37:6 40:19 41:1 51:22,23 58:15 60:20 68:10,20 92:1, 15 96:20 97:23 98:18

product 83:21 84:24

production 21:14 31:11,20 38:7 39:14 48:3,16 53:21 62:18, 24 63:1,17,18 68:7, 12,23,24 69:2 75:20 77:12 92:10,17,20,23 93:8,15 97:5,9 107:1

products 85:2

profile 68:8

profit 44:23

programing 113:10

prompting 33:1

proof 6:6

proper 104:15

properties 37:6

property 5:23 12:18 13:1 46:15,22,23 48:18 60:16 90:20,22, 24 91:17 92:1 103:5 113:21

proportion 73:20

proposal 86:7,8

proprietary 32:12 45:18

protest 100:14,15 115:24

protested 91:20 100:5,6,22

protesting 6:3

protestor 6:7

prove 6:3 26:3 34:7 45:11

proved 38:1

provide 5:22 11:3 62:4,5,16 77:21 106:18

provided 10:4 11:20, 21 22:7,12,16,23 23:20 24:23 25:5,9, 17,18 26:8 29:4 31:24 32:11,13 33:8 36:16 41:24 45:14 46:4,6 59:10,22 67:10,24 68:1 69:19 104:4 105:22

provider 68:9

providing 18:24 23:22 29:9 33:20 61:7

proving 25:1

provisions 80:19

public 35:9 45:19 71:4,5 82:2

publically 71:21

published 77:2

pull 19:5,6

pulled 72:5

purchaser's 44:3

purpose 5:11 8:3

purposes 46:22

pursuant 10:24 31:9

put 15:16 49:10 52:24 57:17 70:24 87:4 88:7,9 93:11

putting 16:4 50:10 109:13

Q

quantity 25:14

question 5:23 45:21 85:10 112:20

questions 24:24 41:8 45:15 64:8 83:6 101:20,23 102:1,3 110:24 111:3

quick 65:8 104:21

quickly 26:6

R

railroad 68:11

raise 90:9,15

raised 28:22 45:15,21

ran 25:14

range 40:4 67:16 75:9

ranges 37:19 39:4

rate 15:4 26:12 68:22 69:5,9 70:16 73:8 76:6,14,22,23 77:3,8, 11 78:4,5,6,12,13 79:14,19 86:23 88:22 92:15 93:10,21

rates 11:4 68:16 69:4, 11 75:7,10 77:20 78:2 98:19 102:18

rating 73:22,23

reached 62:2

reaches 57:3

read 34:8 48:1

reads 59:8

ready 20:24 27:19

real 80:22 104:21

reality 17:18 33:17 38:10

realize 85:8 104:3 114:14

realized 84:20 101:14

reason 23:19 46:5 109:23

reasonable 67:1 70:9 79:13 89:6 90:23 91:2

recalculate 39:2

recall 41:5 86:1

receipts 16:11,23 17:3 29:6 93:5 97:10, 22 98:15

receive 56:13 84:11 99:12 100:23

received 26:2 35:12 46:17 65:21 66:24 106:14

receiving 46:1

recent 19:1

recess 89:14

recited 5:7

recognize 8:23 57:23 114:14,18

recognizes 56:8,10

recognizing 21:19

record 6:1 12:17 45:19 64:23 81:20 100:17 115:15

records 20:10

recouped 49:20 85:20

recruited 65:23

red 90:10,15 111:21 112:10

redirect 64:9 113:20

reduced 45:24 49:22

REEXAMINATION 81:1 88:3 89:19 90:17 109:3 111:1 113:18 114:7

refer 30:20 31:8 39:13 51:9

referenced 24:11

referring 31:6

reflected 37:20,21 72:19 102:7,14

reflects 25:21 70:18

reg 48:7,15,24 55:23

regard 5:22

region 9:6,7 13:2

regulation 36:23 45:2 47:24

reiterations 24:3

rejected 10:3

related 29:11 36:18, 20 51:13,14 70:13 75:19 83:1

relates 26:7

relation 81:6

relationship 8:19,20

relative 35:24 72:7

released 35:11

releases 9:17

relevant 56:23

relever 72:23

relevered 73:1,17

relief 8:7

rely 73:11

remained 37:10

remember 21:11

removal 113:9

remove 42:19,20 72:20

removing 70:3

replied 31:9

report 18:8 47:12 51:20 68:13 87:23 94:9 104:6 111:7,23 112:8 114:10 115:2

reported 17:3 19:15 20:7,13 21:1 29:6 32:16 34:22 35:1,2 46:10 50:17 55:2 62:22 63:9 92:2 93:4 94:4,10 97:20 111:10 112:7

reporter 115:22

reporting 18:24 39:19 47:6 56:2 92:20

single 19:5 29:5 50:1, 12 88:18,19

sir 10:19 12:8 77:1

sit 10:16

site 62:15 90:21,22 91:1,5

sits 31:12 83:5

sitting 38:19

situated 107:18 110:22

situation 57:3 71:14 86:22

skip 23:17 24:20 78:3

Smith 7:8

Society 75:5

sold 20:23 21:16 27:19 43:18,23 46:18 53:15 58:1,2 84:1,19

solely 40:8

solicit 35:9

solicited 108:18

solution 89:6

Solutions 42:7

sophistication 80:15

sort 66:15 70:16 71:17 74:24 76:2

sounds 43:19

sources 77:21

speak 55:17

special 5:8,11 91:17

specialty 64:14

specific 79:15 80:4 104:10

specifically 13:1 27:8 82:14 104:22,23

spell 65:1

spending 20:12 24:14

spent 12:24

spread 57:17

spreadsheet 22:4 28:17 29:4 33:7

staff 96:1

staffing 112:20,24 113:3,13

stand 5:1 7:24

standard 115:18

start 7:5 12:14 14:19, 20 51:21 64:17 67:6, 21 74:4 79:1

started 7:17 51:23 65:15 69:22 103:18

starting 67:23 68:1, 18 80:12

starts 13:9 36:12

state 10:20,23 11:22 13:5,8,13,17 14:2 15:1,9 16:24 17:4,5, 23 18:5,6,18,21,24 19:6,15 20:13,14,23 21:1,5 22:3,8,13,21 23:8,22 24:18 25:4 27:13,20 28:21,22 29:5 30:18,23 31:13, 17,20,24 32:9 33:2, 10,24 34:1,3 35:14,23 36:4,23 37:23 38:4,7 39:10 45:15,20,23 46:21 50:10 51:19 52:4,18 56:9 57:8 58:11,24 59:13 60:8 61:15 64:23 68:12 69:11 70:24 71:11 74:9 75:6,7,9 76:12 77:18 78:8 80:6,17 81:20 87:5,11,20 88:2,5,7,11,15 91:13, 24 111:10 112:14,22

State's 13:9 15:12 17:9,14,23 23:24 27:6 28:9 29:22 30:6 33:12 36:10 69:6 74:11 76:11 77:2,8 78:7,15, 23 86:2 115:22

stated 43:12

statement 20:8 26:24 32:15 59:11 99:19 113:23

statements 27:1 33:21 46:11

states 38:20 61:10 80:13

statewide 9:1,6,12 28:15 41:17 112:23

static 53:24

stay 23:11,15 54:11

stayed 38:10

steep 75:19

steps 95:10

Steptoe 6:24

stock 72:10

stocks 72:7,11

stopped 19:1

straight 20:7 63:4 69:2

stream 13:15 14:9 15:8,9,13 19:17 20:15 22:1 24:17 26:19 27:22 36:18 44:7 53:19 56:3 58:7,9 69:13 85:21 88:1 92:14,22 99:13

structure 23:23 46:24 71:23 72:13,21, 24 73:20 107:3

studies 75:5

study 73:11 75:7 80:6

stuff 60:21 64:11 115:17

subject 48:4,9,16,21

subjective 79:7,8

submit 35:8 95:4,9

submitted 34:18 39:6 60:11 82:9 94:16 95:20

substantial 104:17, 18

substitute 95:21

substituting 94:18

subtracted 93:19

sum 72:8

summarizs 86:12

summarized 82:23

summary 25:12,20 28:18 29:15

Summit 41:21,22,23

sunglasses 86:14

support 23:23 49:3 59:22 79:8,10

supporting 26:8

supports 35:5 59:14 62:2

supposed 87:20

surrounded 87:5

survey 9:11 11:17,20 12:5 30:11,24 31:9 32:16,19,21,24 33:5, 8,10,14,20 34:17,24 35:1 50:18 51:6 53:4, 6 69:6 81:14 82:9,12, 13,14 83:13,14 88:6 94:3,8 103:20,21 104:6,16 105:8 106:13,22 109:8,12 110:2 111:6

survey's 12:5 104:4

surveyed 72:5

surveying 69:23

surveye 11:20,24 32:10,11 94:14 111:21

suspect 101:15

swabbing 82:22

swear 7:20

swearing 7:17

sworn 7:24 8:1 12:10 64:19 81:16 91:9

system 9:3,4 13:18 14:4,6 27:10 42:15 60:14 61:6 95:18

systems 42:12

T

table 83:8

takes 13:10,13 16:3 17:18,24 18:3 27:1 38:5,8 52:4 87:9 107:2 114:14

taking 63:16,18 67:21 71:21 76:2 84:5 93:16 111:8

talk 12:17 15:24 23:6 28:17 32:18 66:12 79:18 82:11,17 83:9 88:10,21 89:1 93:1,22 94:18 103:20 106:13

talked 24:9 31:21 40:21 87:15

talking 21:13 27:3 28:21 29:24 30:17 36:2 38:18,23 44:20 51:14 52:21 54:23 55:1 57:6 87:10 90:23

talks 35:16 51:16 81:7 87:16,20,22 88:2

tasked 8:24 59:18

tax 5:21 6:5 8:3,7,10, 12,17,20,23 9:9,15, 17,22 10:3,9,15 11:11,15 12:18 13:1 14:13 15:6 18:21 21:4,24 22:16 23:20 24:12,17,23 25:17,19, 24 26:8 27:9 30:14 33:19 34:2 35:8,12 36:14 37:9,10,18 38:23,24 39:8,10 46:16,22 51:22 53:19 55:7 56:8 59:8,14 60:1,12 61:10,24 64:15 65:3 66:17 67:3 82:8 87:16,24 88:16 89:6 91:15,17 92:19 98:5,6 101:6,12 102:10,24 104:13 105:2 108:18,23 112:22 113:8,21,22, 23

taxed 13:8

taxes 28:16 39:6 95:13

taxing 71:17

taxpayer 15:5 31:23 33:6 35:2 36:8 61:5 104:16 114:10

taxpayer's 18:6

taxpayers 9:19,20 34:14 107:18 108:20 112:16

technique 10:22 59:15,20 87:12

walk 14:15 19:10 22:6 26:6 28:13 66:14

wanted 44:5 64:6 68:3 101:18 114:18

wash 44:17

water 47:18

website 63:3,5,6,23

weight 6:2 73:21

weighted 15:21 16:6 32:8 39:17 70:21 71:18,20 74:1,7,17 75:17 92:10

welcomed 81:15

well's 41:1

well- 47:9

wellhead 13:22 20:19 21:17,21 36:18 44:2, 22 54:2,5,6,16 58:14 84:1,20 85:14 114:19, 20

wells 8:5,8,14 9:1,6, 14 11:18 12:21,22 14:8,11,17 16:8,10, 12,17,21 17:3,6,19 19:16 20:2 21:9,12,14 24:15 27:14 30:16 31:12,18 32:3 33:19 34:1 35:24 36:21 38:21 39:9 40:13,18, 19 60:8 62:21 64:16 66:10,20 68:8,13,17, 24 75:19,20 83:15,17, 19 84:2 85:5 86:13,16 87:13 88:18 89:22 94:10,11 97:4 100:4 103:9 105:21 106:2 107:19 108:5 110:12, 13 112:18

West 5:14,20 6:5 12:21 13:20 14:2 19:16 20:13 21:5 26:7,15,16,17,19,20 29:5 31:17 32:1 36:5 41:15 42:17,18 46:15, 21 51:19 56:9 58:5 60:8 62:14 86:11,21 67:15 68:6 72:4 80:19,21 84:8,11

wet 13:24 16:22 20:3 21:17 26:16 27:11 33:1 40:15 107:1 108:6

whack 96:16

whichever 15:14

widely 73:5

widget 57:9

widgets 56:11,16

wise 39:17

witnesses 8:1

word 105:4

words 43:19 83:21 85:13 93:11 95:11 96:2 97:3

work 6:19,24 7:15 8:22 12:19 22:11 27:9 64:15 65:15 92:18

worked 8:17 82:5

working 8:19 12:24 15:10 16:4 18:23 23:21 30:18 44:12 48:1,2,6 50:7,15 69:15,16 93:1,19 96:8,16,18 97:10,11, 14,21,22 98:6 101:8

works 7:19 14:22 20:17

worth 15:17 32:17 52:12 66:4 70:24 92:16

wrap 89:11 111:3

written 38:24 49:1

wrong 33:18 71:12 77:8,9 79:22

WVONGA 35:14 37:7 38:13

WVONGA's 37:8

Y

year 9:18 10:24 11:3, 14,15 23:21 24:17 28:15 31:11,18 33:14 36:6 37:10,18 38:23, 24 39:8 50:20 51:12, 13,15,20,21,22,23 52:7,10,11,14 54:23 60:7,9 63:7 76:23,24 77:11 82:10 87:4 88:16 89:6 90:21 92:4,5,19,20 93:9,10 97:6,17,23,24 98:5,6, 9 103:19 108:17,23

year's 96:19,21 97:2

yearly 15:6

years 12:24 15:20,22 16:5 19:1 31:1 40:20 65:17 69:4,9 75:22 82:3,6 85:3 92:10 95:7 98:8 98:20,21 99:4 103:7

yellow 15:3

yield 73:23 102:22 103:17

Yoo 7:6 53:5 81:12,21 89:15 111:5

EXHIBIT
1

STEPTOE & JOHNSON PLLC
ATTORNEYS AT LAW

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www.steptoe-johnson.com

Writer's Contact Information

February 10, 2016

VIA FACSIMILE/CERTIFIED MAIL TO FOLLOW
Both A. Rodgers
Clerk of the Doddridge County Commiasion
135 Court Stroet, Room 102
West Union, WV 26456

Re: Antero Resources Corporation
Notice of Protest and Election to have matter
heard by the Board of Assessment Appeals

Dear Ms. Rodgers:

This firm serves as West Virginia tax counsel to Antero Resources Corporation. Attached for filing on behalf of Antero Resources Corporation please find the company's Notice of Protest and Election to have matter heard by the Board of Assessment Appeals. Please contact me if you have any questions regarding this matter or if any further information or actions is required to lodge this appeal and secure a hearing date in October.

A copy of this filing is also being provided to the Assessor and to the Tax Commissioner as indicated below.

Thank you for your assistance.

Very truly yours,

Craig A. Griffith

cc: David Sponaugle
Doddridge County Assessor
118 East Court Street, Suite B6
West Union, WV 26456
(via facsimile and certified mail)

Mark W. Matkovich
State Tax Commissioner
PO Box 11771
Charleston, WV 25339-1171
(via facsimile and certified mail)

A copy of this letter is also being provided to the County Assessor and State Tax Commissioner.

Best regards,
Antero Resources Corporation

K. Phil Yoo
Vice President of Accounting and Chief Accounting Officer

CC: David Sponaugle
Doddridge County Assessor
118 East Court Street, Suite B6
West Union, WV 26456
(via facsimile and certified mail)

Mark W. Metkovich
State Tax Commissioner
West Virginia Department of Tax & Revenue
PO Box 11771
Charleston, WV 25339-1771
(via facsimile and certified mail)

Kirsten Evens
Director
Altus Group US Inc.
910 Ridgebrook Road, Suite 200
Sparks, MD 21152

Antero Resources Corporation
Tax Year 7/1/15-6/30/16
Doddridge County, WV

Account #	# of Wells	API #	API # for Second Well (if applicable)	Property Description	State Appraised Value	Taxpayer Value	Value the Taxpayer Believes to Be In Controversy
0120166189	1	017-06189		DOTSON UNIT 1H 40415	8,579,720	5,098,971	3,480,749
0120166190	1	017-06190		AHOUSE UNIT 1H (40435)	3,813,442	1,168,866	2,644,576
0120166191	1	017-06191		AHOUSE UNIT 2H (40499)	2,922,072	972,670	1,949,402
0120166192	1	017-06192		CALLIE UNIT 1H (40497)	2,530,204	648,681	1,881,523
0120166193	1	017-06193		CALLIE UNIT 2H (40498)	2,241,529	738,650	1,502,879
0320138194	1	017-06194		COSTLOW UNIT 1H 40440	19,188,484	12,479,239	6,709,245
0120166201	1	017-06201		SHALE UNIT 1H (40473)	6,022,168	1,834,593	4,187,575
0320168202	1	017-06202		HOLDEN UNIT 1H (40483)	2,886,947	1,425,114	1,461,833
0320168203	1	017-06203		HOLDEN UNIT 2H (40439)	3,129,653	1,667,641	1,462,212
0320138204	1	017-06204		LANGFITT UNIT 2H 40985	12,844,394	8,197,389	4,487,005
0320138205	1	017-06205		GASKINS UNIT 2H 40446	13,428,462	8,308,285	5,120,177
0120166206	1	017-06206		VIOLET UNIT 1H (40436)	3,308,298	890,486	2,414,812
0120166207	1	017-06207		SHALE UNIT 2H (40490)	5,503,056	1,452,511	4,050,545
0420168210	1	017-06210		GAINER UNIT 1H (40992)	2,959,082	849,416	2,111,666
0120166211	1	017-06211		NERO UNIT 1H 40981	12,476,763	7,137,994	5,338,769
0120166212	1	017-06212		NERO UNIT 2H (40982)	4,917,234	1,319,176	2,998,058
0120166213	1	017-06213		VONDA UNIT 1H (40980)	4,600,221	1,304,458	3,295,764
0420168219	1	017-06219		BOWEN UNIT 1H (40484)	5,060,815	2,144,428	2,916,387
0320168220	1	017-06220		COSTLOW UNIT 2H (40450)	6,267,663	1,566,097	4,701,566
0320138221	1	017-06221		LANGFITT UNIT 1H 40984	6,233,333	4,217,109	2,016,224
0820166228	1	017-06228		LIVINGSTON UNIT 1H (40488	8,445,714	1,616,897	4,828,837
0820166224	1	017-06224		LIVINGSTON UNIT 2H (40487	5,939,274	1,393,918	4,945,356
0820166225	1	017-06225		VONDA UNIT 2H (40492)	5,641,485	1,837,899	3,803,826
0420168226	1	017-06226		GAINER UNIT 2H (40912)	3,898,202	1,082,835	2,815,367
0410166227	1	017-06227		GOLDEN UNIT 1H (40453)	6,175,259	2,036,041	4,139,218
0420166230	1	017-06230		GOLDEN UNIT 2H (40454)	5,606,271	1,821,310	3,784,961
0820166238	1	017-06238		CROSS UNIT 1H (40473)	3,431,454	980,964	2,450,490
0820166240	1	017-06240		CROSS UNIT 2H (40474)	3,460,180	1,025,107	2,435,073
0620166241	1	017-06241		DOROTHY UNIT 1H (40471)	4,038,508	1,187,440	2,839,068
0820166244	1	017-06244		DOROTHY UNIT 2H (40472)	3,273,387	1,130,027	2,143,370
0120166245	1	017-06245		IRONS UNIT 1H (40515)	3,888,628	1,017,350	2,871,271
0320166246	1	017-06246		DUFF UNIT 1H (40513)	6,520,906	2,012,760	4,508,146
0320166247	1	017-06247		DUFF UNIT 2H (40820)	7,255,820	2,013,864	5,241,956
0320166248	1	017-06248		CONNIE UNIT 1H 40448	4,503,218	2,645,558	1,857,671
0320166236	1	017-06256		CONNIE UNIT 2H 40144	3,869,870	2,027,777	1,237,693
0820166258	1	017-06258		SQUIRREL UNIT 1H (40489)	4,346,533	1,301,651	3,044,882
0320166259	1	017-06259		MISHKA UNIT 1H (40519)	3,497,561	1,029,623	2,467,938
0320138260	1	017-06260		GASKINS UNIT 1H 40479	15,250,815	9,858,460	5,391,355
0620166261	1	017-06261		DOSIE UNIT 2H (40493)	4,445,178	1,576,432	2,868,746
0320166262	1	017-06262		VANSCOY UNIT 1H (40562)	2,496,618	828,432	1,668,186
0320166263	1	017-06263		MCCONNELL UNIT 2H (405600	3,670,050	1,073,391	2,596,659
0320166264	1	017-06264		VANSCOY UNIT 2H (40563)	1,746,470	788,466	958,004
0620166265	1	017-06265		DOSIE UNIT 1H (40452)	4,185,441	1,451,153	2,734,288
0120166266	1	017-06266		MARK9 UNIT 1H (40447)	4,739,892	975,914	3,777,778
0320166267	1	017-06267		KOCH UNIT 2H (40516)	4,682,092	1,358,896	3,335,196
0320166268	1	017-06268		MT SALEM REVIVAL UNIT 2H	5,141,077	1,607,009	3,934,068
0320166269	1	017-06269		MT SALEM REVIVAL UNIT 1H	4,197,070	1,181,819	3,015,251
0120166272	1	017-06272		MASH UNIT 1H (40448)	7,663,644	3,081,402	4,982,242
0120166275	1	017-06275		MASH UNIT 2H (40488)	8,907,298	3,342,824	5,564,469
0420168276	1	017-06276		DELTON UNIT 1H (40543)	4,486,173	1,235,745	3,250,428
0420168278	1	017-06279		CAROLE UNIT 1H (40484)	4,256,952	1,240,092	3,019,860
0410166280	1	017-06280		CAROLE UNIT 2H (40544)	4,022,100	1,162,363	2,038,737
0320166281	1	017-06281		GAVIN UNIT 1H (40482)	3,393,434	1,203,598	2,189,650
0120166288	1	017-06288		PIKE UNIT 1H (40550)	2,349,024	530,324	1,818,700
0120166292	1	017-06292		LEGGETT UNIT 1 H (40508)	2,229,218	763,600	1,461,818
0120166293	1	017-06293		LEGGETT UNIT 2H (40549)	1,981,591	458,738	1,322,812
0120168294	1	017-06294		PIKE UNIT 2H (40351D	2,250,783	578,594	1,872,139
0620166295	1	017-06295		SWISHER UNIT 1H (40531)	4,604,731	1,458,102	3,149,629
0620166296	1	017-06296		SWISHER UNIT 2H (40342)	5,333,832	1,609,691	3,724,141
0320166301	1	017-06301		HEFLIN UNIT 2H (40501)	7,814,768	3,088,437	4,726,312
0320168302	1	017-06302		GAVIN UNIT 2H (40483)	4,295,658	1,464,171	1,831,487
0620166311	1	017-06311		NICKERS UNIT 2H (40346)	3,166,718	903,987	2,202,732
0820169312	1	017-06312		HEFLIN UNIT 1H (40484)	4,926,288	1,435,020	3,491,268
0620166313	1	017-06313		PROUDFOOT UNIT 1H (40533)	789,077	113,995	671,682

EXHIBIT
2

Antero Resources Corporation
Doddridge County, WV
2016 Tax Year
Accounts Included in Tax Bill Payment

County	District Name	Due Date	YEAR	TICKET#	Tax Account	Updated Tax Yo Be Paid	Owner Name
Doddridge	McClellan	9/1/2016	2016	0000306381	20141378	11.74	BRAMER, RICHARD N.
Doddridge	McClellan	9/1/2016	2016	0000303384	20141379	17.58	BRAMER, RICHARD R.
Doddridge	McClellan	9/1/2016	2016	0000305389	20141381	17.58	BRAMER, TIMOTHY
Doddridge	McClellan	8/31/2016	2015	0000304002	20141378	31.87	BRAMER, RICHARD N
Doddridge	McClellan	8/31/2016	2014	0000303910	20141378	33.34	BRAMER, RICHARD N
Doddridge	McClellan	8/31/2016	2013	0000304003	20141379	37.81	BRAMER, RICHARD R.
Doddridge	McClellan	8/31/2016	2015	0000304009	30141381	37.81	BRAMER, TIMOTHY
Doddridge	McClellan	8/31/2016	2014	0000303913	20141379	40.03	BRAMER, RICHARD R.
Doddridge	McClellan	8/31/2016	2014	0000303916	20141381	40.03	BRAMER, TIMOTHY
Doddridge	New Milton	9/1/2016	2016	0000307363	03009341	14.14	ANTERO RESOURCES CORPORATION
Doddridge	McClellan	9/1/2016	2016	0000305160	20141333	28.30	ANTERO RESOURCES BLUESTONE LLC
Doddridge	McClellan	8/1/2016	2016	0000305338	20141374	90,455.13	ANTERO RESOURCES CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000307023	20183096	97,480.04	ANTERO RESOURCES CORPORATION
Doddridge	Grant	9/1/2016	2016	0000302266	20141153	116,553.13	ANTERO RESOURCES CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000307033	30183705	118,878.70	ANTERO RESOURCES CORPORATION
						424,857.21	

Antero Resources Corporation
Doddridge County, WV
2016 Tax Year
Accounts Included in Tax Bill Payment

County	District Name	Due Date	YEAR	TICKET#	Tax Account	Updated Tax To Be Paid	Owner Name
Doddridge	McClellan	9/1/2016	2016	0000305382	20141423	3.46	BRAMER, RICHARD N
Doddridge	McClellan	9/1/2016	2016	0000305752	20080690	3.68	
Doddridge	McClellan	9/1/2016	2016	000030538E	20141424	5.16	BRAMER, RICHARD R.
Doddridge	McClellan	9/1/2016	2016	0000305386	20141426	5.18	BRAMER, TIMOTHY
Doddridge	McClellan	8/31/2016	2014	0000E03911	20141423	22.78	BRAMER, RICHARD N
Doddridge	McClellan	8/31/2016	2015	0000304001	20141423	23.64	BRAMER, RICHARD N
Doddridge	McClellan	8/E1/2016	2014	0000503912	20141424	24.16	BRAMER, RICHARD R
Doddridge	McClellan	8/31/2016	2014	0000302917	20141426	24.18	BRAMER, TIMOTHY
Doddridge	McClellan	8/31/2016	2015	0000304004	20141424	25.51	BRAMER, RICHARD R.
Doddridge	McClellan	8/31/2016	2015	0000304009	20141426	25.51	BRAMER, TIMOTHY
Doddridge	McClellan	9/1/2016	2016	0000307422	20130181	40.04	DOUGLAS 1A UNKNOWN OWNERS
Doddridge	New Milton	8/31/2016	2016	0000305817	20130181	111.75	DOUGLAS 1A UNKNOWN OWNERS
Doddridge	New Milton	9/1/2016	2016	0000807564	00000184	7.08	ANTERO RESOURCES CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000307565	00656528	7.08	ANTERO RESOURCES CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000307675	20010770	7.08	ANTERO RESOURCES CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000307576	20010771	7.08	ANTERO RESOURCES CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000307577	20010772	7.08	ANTERO RESOURCES CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000307578	20010773	7.08	ANTERO RESOURCES CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000307580	20010776	7.08	ANTERO RESOURCES CORPORATION
Doddridge	McClellan	9/1/2016	2016	0000305741	20010829	7.08	ANTERO RESOURCES CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000307594	20030416	7.08	ANTERO RESOURCES CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000807590	20080556	7.08	ANTERO RESOURCES CORPORATION
Doddridge	Grant	9/1/2016	2016	0000302869	20080537	7.08	ANTERO RESOURCES CORPORATION
Doddridge	Grant	9/1/2016	2016	0000202869	20080542	7.08	ANTERO RESOURCES CORPORATION
Doddridge	McClellan	9/1/2016	2016	0000305185	20080575	7.08	ANTERO RESOURCES BLUESTONE LLC
Doddridge	West Union	9/1/2016	2016	0000209773	20090897	7.08	ANTERO RESOURCES BLUESTONE LLC
Doddridge	McClellan	9/1/2016	2016	0000305191	20090884	7.08	ANTERO RESOURCES BLUESTONE LLC
Doddridge	McClellan	9/1/2016	2016	0000305178	20100981	7.08	ANTERO RESOURCES BLUESTONE LLC
Doddridge	McClellan	9/1/2016	2016	0000509235	20150835	7.08	ANTERO RESOURCES CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000507066	20151230	7.08	ANTERO RESOURCES CORPORATION
Doddridge	Grant	9/1/2016	2016	0000502866	20080568	7.28	ANTERO RESOURCES CORPORATION
Doddridge	McClellan	9/1/2016	2016	0000305241	20080704	8.54	ANTERO RESOURCES CORPORATION
Doddridge	Grant	8/1/2016	2016	0000302866	20080541	11.70	ANTERO RESOURCES CORPORATION
Doddridge	Grant	9/1/2016	2016	0000302274	20161710	18.74	ANTERO RESOURCES CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000207566	20010782	18.90	ANTERO RESOURCES CORPORATION
Doddridge	Grant	9/1/2016	2016	0000802864	20080646	18.52	ANTERO RESOURCES CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000307674	20010789	20.22	ANTERO RESOURCES CORPORATION
Doddridge	Grant	9/1/2016	2016	0000302874	20100801	21.96	ANTERO RESOURCES CORPORATION
Doddridge	McClellan	9/1/2016	2016	0000305195	20100972	24.70	ANTERO RESOURCES BLUESTONE LLC
Doddridge	McClellan	9/1/2016	2016	0000305245	20080322	24.94	ANTERO RESOURCES CORPORATION
Doddridge	Grant	9/1/2016	2016	0000502872	20080634	25.94	ANTERO RESOURCES CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000307668	00081571	25.70	ANTERO RESOURCES CORPORATION
Doddridge	Grant	9/1/2016	2016	0000502868	20080780	30.94	ANTERO RESOURCES CORPORATION
Doddridge	McClellan	9/1/2016	2016	0000305750	20080866	35.34	ANTERO RESOURCES CORPORATION
Doddridge	Grant	9/1/2016	2016	0000502875	20080635	38.90	ANTERO RESOURCES CORPORATION
Doddridge	McClellan	9/1/2016	2016	0000305744	20011040	41.58	ANTERO RESOURCES CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000E07565	20010780	48.84	ANTERO RESOURCES CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000307566	00000409	48.84	ANTERO RESOURCES CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000307582	20010779	50.48	ANTERO RESOURCES CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000307396	03009342	50.34	ANTERO RESOURCES CORPORATION
Doddridge	McClellan	9/1/2016	2016	0000E05238	20090701	53.18	ANTERO RESOURCES CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000307579	20010776	55.10	ANTERO RESOURCES CORPORATION
Doddridge	McClellan	9/1/2016	2016	0000505755	20080899	58.82	ANTERO RESOURCES CORPORATION
Doddridge	McClellan	9/1/2016	2016	0000505201	20100578	62.08	ANTERO RESOURCES BLUESTONE LLC
Doddridge	McClellan	9/1/2016	2016	0000305211	20100607	68.38	ANTERO RESOURCES BLUESTONE LLC
Doddridge	McClellan	9/1/2016	2016	0000305204	20100385	67.78	ANTERO RESOURCES BLUESTONE LLC
Doddridge	McClellan	9/1/2016	2016	0000305242	03009118	68.50	ANTERO RESOURCES CORPORATION
Doddridge	McClellan	9/1/2016	2016	0000305747	20010828	70.34	ANTERO RESOURCES CORPORATION
Doddridge	McClellan	9/1/2016	2016	0000305189	20090584	76.12	ANTERO RESOURCES BLUESTONE LLC
Doddridge	West Union	9/1/2016	2016	0000610511	00000308	78.66	ANTERO RESOURCES CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000307587	05639386	77.76	ANTERO RESOURCES CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000307588	05639867	79.16	ANTERO RESOURCES CORPORATION
Doddridge	West Union	9/1/2016	2016	0000309788	20010905	83.78	ANTERO RESOURCES CORPORATION
Doddridge	McClellan	9/1/2016	2016	0000305219	20100595	87.74	ANTERO RESOURCES BLUESTONE LLC
Doddridge	McClellan	9/1/2016	2016	0000305237	20080698	88.98	ANTERO RESOURCES CORPORATION
Doddridge	McClellan	9/1/2016	2016	0000305740	20080705	89.64	ANTERO RESOURCES CORPORATION
Doddridge	McClellan	9/1/2016	2016	0000305248	20080692	90.08	ANTERO RESOURCES CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000307573	20010788	94.38	ANTERO RESOURCES CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000307570	00061374	94.92	ANTERO RESOURCES CORPORATION

Antero Resources Corporation
Doddridge County, WV
1016 Tax Year
Accounts Included in Tax Bill Payment

County	District Name	Due Date	YEAR	TICKET#	Tax Account	Updated Tax To Be Paid	Owner Name
Doddridge	McClellan	9/1/2016	1016	0000305212	20100604	332 92	ANTERO RESOURCES BLUESTONE LLC
Doddridge	Grant	9/1/2016	2016	0000302231	20110580	334.08	ANTERO RESOURCES BLUESTONE LLC
Doddridge	New Milton	9/1/2016	1016	0000307004	20141745	338.68	ANTERO RESOURCES CORPORATION
Doddridge	McClellan	9/1/2016	2016	0000305196	10100579	344.50	ANTERO RESOURCES BLUESTONE LLC
Doddridge	McClellan	9/1/2016	2016	0000205194	20100572	356.76	ANTERO RESOURCES BLUESTONE LLC
Doddridge	New Milton	9/1/2016	1016	0000307007	20060643	379.86	ANTERO RESOURCES BLUESTONE LLC
Doddridge	McClellan	9/1/2016	2016	0000305179	20110640	394.76	ANTERO RESOURCES BLUESTONE LLC
Doddridge	New Milton	9/1/2016	2016	0000307008	20101052	401 54	ANTERO RESOURCES BLUESTONE LLC
Doddridge	McClellan	9/1/2016	2016	0000205208	10100589	476.70	ANTERO RESOURCES BLUESTONE LLC
Doddridge	New Milton	9/1/2016	2016	0000307009	20100824	539 04	ANTERO RESOURCES BLUESTONE LLC
Doddridge	Grant	9/1/2016	2016	0000302250	20100920	566 02	ANTERO RESOURCES BLUESTONE LLC
Doddridge	McClellan	9/1/2016	2016	0000305202	20100561	590 60	ANTERO RESOURCES BLUESTONE LLC
Doddridge	McClellan	9/1/2016	2016	0000205210	20100610	642.42	ANTERO RESOURCES BLUESTONE LLC
Doddridge	Grant	9/1/2016	2016	0000202240	20110521	644.98	ANTERO RESOURCES BLUESTONE LLC
Doddridge	Grant	9/1/2016	2016	0000302251	20110504	668.96	ANTERO RESOURCES BLUESTONE LLC
Doddridge	McClellan	9/1/2016	2016	0000305215	20100596	671.50	ANTERO RESOURCES BLUESTONE LLC
Doddridge	Grant	9/1/2016	2016	0000302245	20110550	694.76	ANTERO RESOURCES BLUESTONE LLC
Doddridge	Grant	9/1/2016	1016	0000302254	20120779	706.50	ANTERO RESOURCES BLUESTONE LLC
Doddridge	McClellan	9/1/2016	1016	0000305178	20110698	712.98	ANTERO RESOURCES BLUESTONE LLC
Doddridge	Grant	9/1/2016	1016	0000302245	20110564	716 64	ANTERO RESOURCES BLUESTONE LLC
Doddridge	Grant	9/1/2016	2016	0000302238	20110741	716 50	ANTERO RESOURCES BLUESTONE LLC
Doddridge	Grant	9/1/2016	1016	0000302256	20120721	720 18	ANTERO RESOURCES BLUESTONE LLC
Doddridge	Grant	9/1/2016	2016	0000302244	20110534	726 54	ANTERO RESOURCES BLUESTONE LLC
Doddridge	McClellan	9/1/2016	2016	0000305209	20100590	744 28	ANTERO RESOURCES BLUESTONE LLC
Doddridge	Grant	9/1/2016	2016	0000302230	20110684	760.82	ANTERO RESOURCES BLUESTONE LLC
Doddridge	Grant	9/1/2016	1016	0000302246	10110568	812.98	ANTERO RESOURCES BLUESTONE LLC
Doddridge	McClellan	9/1/2016	2016	0000305167	20090581	621 22	ANTERO RESOURCES BLUESTONE LLC
Doddridge	Grant	9/1/2016	2016	0000302282	20110808	944.22	ANTERO RESOURCES BLUESTONE LLC
Doddridge	McClellan	9/1/2016	1016	0000305176	20110838	946.16	ANTERO RESOURCES BLUESTONE LLC
Doddridge	Grant	9/1/2016	2016	0000302258	20110824	971.84	ANTERO RESOURCES BLUESTONE LLC
Doddridge	Grant	9/1/2016	2016	0000302249	20100510	998.86	ANTERO RESOURCES BLUESTONE LLC
Doddridge	Grant	9/1/2016	2016	0000302242	20110826	1,007 26	ANTERO RESOURCES BLUESTONE LLC
Doddridge	Greenbrier	9/1/2016	1016	0000303962	20110828	1,014 72	ANTERO RESOURCES BLUESTONE LLC
Doddridge	Grant	9/1/2016	2016	0000302241	20110520	1,021 14	ANTERO RESOURCES BLUESTONE LLC
Doddridge	McClellan	9/1/2016	2016	0000305172	20100616	1,036.16	ANTERO RESOURCES BLUESTONE LLC
Doddridge	Grant	9/1/2016	2016	0000302588	20110750	1,054 66	ANTERO RESOURCES BLUESTONE LLC
Doddridge	McClellan	9/1/2016	1016	0000305177	20110654	1,062 76	ANTERO RESOURCES BLUESTONE LLC
Doddridge	Grant	9/1/2016	2016	0000302234	20110616	1,069 94	ANTERO RESOURCES BLUESTONE LLC
Doddridge	McClellan	9/1/2016	2016	0000305200	20100877	1,082 60	ANTERO RESOURCES BLUESTONE LLC
Doddridge	Grant	9/1/2016	1016	0000302297	20110594	1,085.90	ANTERO RESOURCES BLUESTONE LLC
Doddridge	Grant	9/1/2016	2016	0000302259	20110519	1,115.00	ANTERO RESOURCES BLUESTONE LLC
Doddridge	McClellan	9/1/2016	2016	0000305217	20100591	1,124.12	ANTERO RESOURCES BLUESTONE LLC
Doddridge	Grant	9/1/2016	2016	0000302248	20100425	1,179.46	ANTERO RESOURCES BLUESTONE LLC
Doddridge	Grant	9/1/2016	2016	0000302255	20110610	1,168.70	ANTERO RESOURCES BLUESTONE LLC
Doddridge	Grant	9/1/2016	1016	0000302247	20110570	1,291.48	ANTERO RESOURCES BLUESTONE LLC
Doddridge	West Union	9/1/2016	2016	0000309777	00646288	1,486.54	ANTERO RESOURCES CORPORATION
Doddridge	Grant	9/1/2016	2016	0000302235	20110619	2,224 66	ANTERO RESOURCES BLUESTONE LLC
Doddridge	McClellan	9/1/2016	2016	0000305182	20090566	3,069 46	ANTERO RESOURCES BLUESTONE LLC
Doddridge	McClellan	9/1/2016	2016	0000305174	20100895	3,102 18	ANTERO RESOURCES BLUESTONE LLC
Doddridge	McClellan	9/1/2016	2016	0000306216	20100564	3,113 42	ANTERO RESOURCES BLUESTONE LLC
Doddridge	New Milton	9/1/2016	1016	0000507006	20141640	4,555 76	ANTERO RESOURCES BLUESTONE LLC
Doddridge	New Milton	9/1/2016	2016	0000307026	20160465	11,110 66	ANTERO RESOURCES CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000307028	20160467	11,380.76	ANTERO RESOURCES CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000307027	20160466	15,779.46	ANTERO RESOURCES CORPORATION
Doddridge	Grant	9/1/2016	2016	0000302272	20160995	24,698.22	ANTERO RESOURCES CORPORATION
Doddridge	Grant	9/1/2016	1016	0000302267	20141165	25,271.54	ANTERO RESOURCES CORPORATION
Doddridge	Grant	6/1/2016	2015	03000000835	22221396	26,101.36	ANTERO RESOURCES CORPORATION
Doddridge	Central	9/1/2016	1016	0000300091	10161129	16,022 69	ANTERO RESOURCES CORPORATION
Doddridge	Greenbrier	9/1/2016	1016	0000309695	20161781	26,029 20	ANTERO RESOURCES CORPORATION
Doddridge	McClellan	9/1/2016	1016	0000305129	10141416	31,353 34	ANTERO RESOURCES CORPORATION
						166,114 67	

Antero Resources Corporation
Doddridge County, WV
2016 Tax Year
Accounts Included in Tax Bill Payment

County	District Name	Due Date	YEAR	TICKET#	Tax Account	Updated Tax To Be Paid	Owner Name
Doddridge	New Milton	9/1/2016	2016	0000307039	20160477	31,375.72	ANTERO RESOURCES CORPORATION
Doddridge	Central	9/1/2016	2016	0000300090	20161227	31,468.58	ANTERO RESOURCES CORPORATION
Doddridge	Central	9/1/2016	2016	0000300100	20161368	31,689.22	ANTERO RESOURCES CORPORATION
Doddridge	West Union	9/1/2016	2016	0000309794	20162314	31,742.92	ANTERO RESOURCES CORPORATION
Doddridge	Central	9/1/2016	2016	0000300092	20161231	31,829.70	ANTERO RESOURCES CORPORATION
Doddridge	Central	9/1/2016	2016	0000300096	20161239	32,324.76	ANTERO RESOURCES CORPORATION
Doddridge	Central	9/1/2016	2016	0000300093	20161237	32,438.96	ANTERO RESOURCES CORPORATION
Doddridge	Greenbrier	9/1/2016	2016	0000303983	20161767	32,760.88	ANTERO RESOURCES CORPORATION
Doddridge	Central	9/1/2016	2016	0000300094	20161235	32,663.92	ANTERO RESOURCES CORPORATION
Doddridge	Greenbrier	9/1/2016	2016	0000303987	20161831	32,963.14	ANTERO RESOURCES CORPORATION
Doddridge	Central	9/1/2016	2016	0000300089	20161228	33,218.40	ANTERO RESOURCES CORPORATION
Doddridge	McClellan	9/1/2016	2016	0000303232	20141439	34,164.88	ANTERO RESOURCES CORPORATION
Doddridge	Central	9/1/2016	2016	0000300077	20161990	34,735.98	ANTERO RESOURCES CORPORATION
						423,647.66	

Antero Resources Corporation
Doddridge County, WV
2016 Tax Year
Accounts Included in Tax Bill Payment

County	District Name	Due Date	YEAR	TICKET#	Tax Account	Updated Tax To Be Paid	Owner Name
Doddridge	Grant	9/1/2016	2016	0000302271	20160994	35,306.66	ANTERO RESOURCES CORPORATION
Doddridge	Central	9/1/2016	2016	0000300101	20161353	39,781.60	ANTERO RESOURCES CORPORATION
Doddridge	Greenbrier	9/1/2016	2016	0000305986	20161834	39,927.08	ANTERO RESOURCES CORPORATION
Doddridge	Grant	9/1/2016	2016	0000302269	20160992	40,548.76	ANTERO RESOURCES CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000307031	20160479	40,671.66	ANTERO RESOURCES CORPORATION
Doddridge	Greenbrier	9/1/2016	2016	0000305984	20161769	40,826.34	ANTERO RESOURCES CORPORATION
Doddridge	McClellan	9/1/2016	2016	0000305230	20141433	41,133.84	ANTERO RESOURCES CORPORATION
Doddridge	Grant	9/1/2016	2016	0000302256	20130713	41,208.32	ANTERO RESOURCES CORPORATION
Doddridge	Central	9/1/2016	2016	0000300102	20161345	41,223.52	ANTERO RESOURCES CORPORATION
Doddridge	Greenbrier	9/1/2016	2016	0000304009	20162998	41,728.02	ANTERO RESOURCES CORPORATION
Doddridge	West Union	9/1/2016	2016	0000309795	20162312	43,776.26	ANTERO RESOURCES CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000307034	20160479	44,124.12	ANTERO RESOURCES CORPORATION
						468,368.18	

Antero Resources Corporation
Doddridge County, WV
2016 Tax Year
Accounts Included in Tax Bill Payment

County	District Name	Due Date	YEAR	TICKET#	Tax Account	Updated Tax To Be Paid	Owner Name
Doddridge	Grant	9/1/2016	2016	0000302270	20160996	44,261.72	ANTERO RESOURCES CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000307025	20160461	44,763.08	ANTERO RESOURCES CORPORATION
Doddridge	Central	9/1/201R	2016	0000300085	20161216	44,806.76	ANTERO RESOURCES CORPORATION
Doddridge	Greenbrier	9/1/2016	201R	0000303990	20162019	46,407.84	ANTERO RESOURCES CORPORATION
Doddridge	Greenbrier	9/1/2016	2016	0000304015	201R1992	46,084.20	ANTERO RESOURCES CORPORATION
Doddridge	New Milton	9/1/201R	201R	0000307019	20163R61	46,291.70	ANTERO RESOURCES CORPORATION
Doddridge	Grant	9/1/2016	201R	0000302282	2D160910	46,316.68	ANTERO RESOURCES CORPORATION
Doddridge	New Milton	9/1/2016	201R	0000307022	20163259	47,605.28	ANTERO RESOURCES CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000307052	2D160475	47,739.72	ANTERO RESOURCES CORPORATION
Doddridge	McClellan	9/1/2016	2016	0000309233	20141466	46,115.16	ANTERO RESOURCES CORPORATION
						461,408.16	

Antero Resources Corporation
Doddridge County, WV
2016 Tax Year
Accounts Included in Tax Bill Payment

County	District Name	Due Date	YEAR	TICKET#	Tax Account	Updated Tax To Be Paid	Owner Name
Doddridge	Greenbrier	9/1/2016	2016	0000304012	20162025	49,229.80	ANTERO RESOURCES CORPORATION
Doddridge	Grant	9/1/2016	2016	0000302278	20160914	49,461.76	ANTERO RESOURCES CORPORATION
Doddridge	Central	9/1/2016	2016	0000300109	20161652	50,175.19	ANTERO RESOURCES CORPORATION
Doddridge	Greenbrier	9/1/2016	2016	0000303989	20162022	50,209.06	ANTERO RESOURCES CORPORATION
Doddridge	Central	9/1/2016	2016	0000300097	20161242	51,100.32	ANTERO RESOURCES CORPORATION
Doddridge	Grant	9/1/2016	2016	0000301275	20160913	51,900.80	ANTERO RESOURCES CORPORATION
Doddridge	McClellan	9/1/2016	2016	0000303221	20150969	51,942.30	ANTERO RESOURCES CORPORATION
Doddridge	Greenbrier	9/1/2016	2016	0000303963	20161906	52,141.30	ANTERO RESOURCES CORPORATION
Doddridge	Greenbrier	9/1/2016	2016	0000304007	20162000	52,293.30	ANTERO RESOURCES CORPORATION
						456,450.04	

Antero Resources Corporation
Doddridge County, WV
2016 Tax Year
Accounts Included in Tax Bill Payment

County	District Name	Due Date	YEAR	TICKET#	Tax Account	Updated Tax To Be Paid	Owner Name
Doddridge	New Milton	9/1/2016	2016	0000307029	20180489	53,304.28	ANTERO RESOURCES CORPORATION
Doddridge	Greenbrier	9/1/2016	2016	0000304011	20182031	54,108.78	ANTERO RESOURCES CORPORATION
Doddridge	Grant	9/1/2016	2016	0000302264	20150738	54,667.48	ANTERO RESOURCES CORPORATION
Doddridge	Greenbrier	9/1/2016	2016	0000304004	20182008	54,910.04	ANTERO RESOURCES CORPORATION
Doddridge	Greenbrier	9/1/2016	2016	0000304014	20182029	58,050.60	ANTERO RESOURCES CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000307046	20142097	56,307.34	ANTERO RESOURCES CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000307010	20151160	58,537.70	ANTERO RESOURCES CORPORATION
Doddridge	Grant	9/1/2016	2016	0000302263	20150734	56,818.22	ANTERO RESOURCES CORPORATION
						442,704.42	

Antero Resources Corporation
Doddridge County, WV
2016 Tax Year
Accounts Included in Tax Bill Payment

County	District Name	Due Date	YEAR	TICKET#	Tax Account	Updated Tax To Be Paid	Owner Name
Doddridge	Greenbrier	9/1/2016	2016	0000303981	20182016	58,679.70	ANTERO RESOURCES CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000307016	20183632	57,083.48	ANTERO RESOURCES CORPORATION
Doddridge	McClellan	9/1/2016	2016	0000303169	20150971	57,505.28	ANTERO RESOURCES CORPORATION
Doddridge	Grant	9/1/2016	2016	0000302285	20180911	58,826.86	ANTERO RESOURCES CORPORATION
Doddridge	Grant	9/1/2016	2016	0000302281	20160909	59,286.16	ANTERO RESOURCES CORPORATION
Doddridge	Grant	9/1/2016	2016	0000302280	20160908	59,354.08	ANTERO RESOURCES CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000307030	20160471	59,372.16	ANTERO RESOURCES CORPORATION
Doddridge	McClellan	9/1/2016	2016	0000305224	20162900	59,474.14	ANTERO RESOURCES CORPORATION
						467,561.86	

Antero Resources Corporation
Doddridge County, WV
2016 Tax Year
Accounts Included in Tax Bill Payment

County	District Name	Due Date	YEAR	TICKET#	Tax Account	Updated Tax To Be Paid	Owner Name
Doddridge	Greenbrier	9/1/2016	2016	0000304013	20162027	59,854.88	ANTERO RESOURCES CORPORATION
Doddridge	Greenbrier	9/1/2016	2016	0000304016	20162013	60,243.34	ANTERO RESOURCES CORPORATION
Doddridge	West Union	9/1/2016	2016	0000309778	20163549	61,467.76	ANTERO RESOURCES CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000307020	20163261	61,872.98	ANTERO RESOURCES CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000307012	20161162	62,054.14	ANTERO RESOURCES CORPORATION
Doddridge	Greenbrier	9/1/2016	2016	0000303991	20162017	63,128.36	ANTERO RESOURCES CORPORATION
Doddridge	Greenbrier	9/1/2016	2016	0000304003	20162011	63,442.52	ANTERO RESOURCES CORPORATION
Doddridge	Central	9/1/2016	2016	0000300106	20161476	63,861.76	ANTERO RESOURCES CORPORATION
						495,945.74	

Antero Resources Corporation
Doddridge County, WV
2016 Tax Year
Accounts Included in Tax Bill Payment

County	District Name	Due Date	YEAR	TICKET#	Tax Account	Updated Tax To Be Paid	Owner Name
Doddridge	McClellan	9/1/2016	2016	0000305223	20162887	64,948.20	ANTERO RESOURCES CORPORATION
Doddridge	Central	9/1/2016	2016	0000300087	20161221	65,055.36	ANTERO RESOURCES CORPORATION
Doddridge	McClellan	9/1/2016	2016	0000309220	20150968	63,386.48	ANTERO RESOURCES CORPORATION
Doddridge	Grant	9/1/2016	2016	0000302284	20160912	66,354.56	ANTERO RESOURCES CORPORATION
Doddridge	Central	9/1/2016	2016	0000300099	20161233	66,604.92	ANTERO RESOURCES CORPORATION
Doddridge	Greenbrier	9/1/2016	2016	0000304010	20161994	67,117.74	ANTERO RESOURCES CORPORATION
Doddridge	Central	9/1/2016	2016	0000300066	20161223	67,225.72	ANTERO RESOURCES CORPORATION
						462,893.02	

Antero Resources Corporation
Doddridge County, WV
2016 Tax Year
Accounts Included in Tax Bill Payment

County	District Name	Due Date	YEAR	TICKET#	Tax Account	Updated Tax To Be Paid	Owner Name
Doddridge	West Union	9/1/2016	2016	0000309788	20162147	69,666.52	ANTERO RESOURCES CORPORATION
Doddridge	West Union	9/1/2016	2016	0000309793	20162231	70,867.02	ANTERO RESOURCES CORPORATION
Doddridge	McClellan	9/1/2016	2016	0000305228	20141413	70,891.84	ANTERO RESOURCES CORPORATION
Doddridge	McClellan	9/1/2016	2016	0000303227	20141407	71,098.30	ANTERO RESOURCES CORPORATION
Doddridge	Greenbrier	9/1/2016	2016	0000304008	20161999	71,569.00	ANTERO RESOURCES CORPORATION
Doddridge	Central	9/1/2016	2016	0000300082	20161036	72,109.48	ANTERO RESOURCES CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000307016	20169637	72,468.48	ANTERO RESOURCES CORPORATION
						498,686.82	

Antero Resources Corporation
Doddridge County, WV
2016 Tax Year
Accounts Included in Tax Bill Payment

County	District Name	Due Date	YEAR	TICKET#	Tax Account	Updated Tax To Be Paid	Owner Name
Doddridge	Grant	9/1/2016	2016	0D003C2279	20160907	72,704.04	ANTERO RESOURCES CORPORATION
Doddridge	New Milton	9/1/2016	2016	00D0307014	20150422	72,639.50	ANTERO RESOURCES CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000307045	20151151	73,187.66	ANTERO RESOURCES CORPORATION
Doddridge	Greenbrier	9/1/2016	2016	00003D3986	20161917	73,463.20	ANTERO RESOURCES CORPORATION
Doddridge	Grant	9/1/2016	2016	00003C2286	20150807	74,145.22	ANTERO RESOURCES CORPORATION
Doddridge	New Milton	9/1/2016	2016	D0D0307017	20163638	74,669.94	ANTERO RESOURCES CORPORATION
						440,969.56	

Antaro Resources Corporation
Doddridge County, WV
2016 Tax Year
Accounts Included In Tax Bill Payment

County	District Name	Due Date	YEAR	TICKET#	Tax Account	Updated Tax To Be Paid	Owner Name
Doddridge	McClellan	9/1/2016	2016	0000305225	20162901	79,142.32	AR CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000307021	20163216	75,429.94	AR CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000307047	20142096	76,696.34	AR CORPORATION
Doddridge	Central	9/1/2016	2016	0000300086	20161219	77,623.06	AR CORPORATION
Doddridge	Greenbrier	9/1/2016	2016	0000304005	20162006	79,262.72	AR CORPORATION
Doddridge	Grant	9/1/2016	2016	0300000082	22221396	79,571.36	AR CORPORATION
						463,945.76	

Antero Resources Corporation
Doddridge County, WV
2016 Tax Year
Accounts Included in Tax Bill Payment

County	District Name	Due Date	YEAR	TICKET#	Tax Account	Updated Tax To Be Paid	Owner Name
Doddridge	West Union	9/1/2016	2016	0000309789	20162143	79,780.40	AR CORPORATION
Doddridge	Central	9/1/2016	2016	0000300099	20161033	81,816.46	AR CORPORATION
Doddridge	Central	9/1/2016	2016	0000300096	20161213	83,169.90	AR CORPORATION
Doddridge	McClellan	9/1/2016	2016	0000305236	20150910	83,367.80	AR CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000307042	20151132	83,580.50	AR CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000307043	20151149	83,598.08	AR CORPORATION
						495,313.12	

Antero Resources Corporation
Doddridge County, WV
2016 Tax Year
Accounts Included in Tax Bill Payment

County	District Name	Due Date	YEAR	TICKET#	Tax Account	Updated Tax To Be Paid	Owner Name
Doddridge	West Union	9/1/2016	2016	0000309790	20162141	83,991.96	AR CORPORATION
Doddridge	Greenbrier	9/1/2016	2016	0000303998	20150678	84,958.50	AR CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000307035	20160481	86,353.76	AR CORPORATION
Doddridge	Greenbrier	9/1/2016	2016	0000304006	20162004	87,329.20	AR CORPORATION
Doddridge	Grant	9/1/2016	2016	0000302262	20150732	88,150.50	AR CORPORATION
						430,783.92	

Antero Resources Corporation
Doddridge County, WV
2016 Tax Year
Accounts Included In Tax Bill Payment

County	District Name	Due Date	YEAR	TICKET#	Tax Account	Updated Tax To Be Paid	Owner Name
Doddridge	Grant	9/1/2016	2016	0000302268	20162778	88,918.82	AR CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000307037	20151127	89,083.30	AR CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000307011	20151161	90,261.32	AR CORPORATION
Doddridge	West Union	9/1/2016	2016	0000309791	20162139	91,153.92	AR CORPORATION
Doddridge	Grant	9/1/2016	2016	0000302277	20160915	92,217.30	AR CORPORATION
						451,634.66	

Antero Resources Corporation
Doddridge County, WV
2016 Tax Year
Accounts Included In Tax Bill Payment

County	District Name	Due Date	YEAR	TICKET#	Tax Account	Updated Tax To Be Paid	Owner Name
Doddridge	New Milton	9/1/2016	2016	0000307038	20151128	92,338.84	AR CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000307024	20163034	94,793.30	AR CORPORATION
Doddridge	Grant	9/1/2016	2016	0000302285	20150796	95,051.42	AR CORPORATION
Doddridge	Grant	9/1/2016	2016	0000302265	20150749	98,566.06	AR CORPORATION
Doddridge	Central	9/1/2016	2016	0000300112	20142100	100,914.22	AR CORPORATION
						481,663.84	

Antero Resources Corporation
Doddridge County, WV
2016 Tax Year
Accounts Included in Tax Bill Payment

County	District Name	Due Date	YEAR	TICKET#	Tax Account	Updated Tax To Be Paid	Owner Name
Doddridge	Grant	9/1/2016	2016	0000302278	20160916	102,610.28	AR CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000307044	20151150	104,211.40	AR CORPORATION
Doddridge	Central	9/1/2016	2016	0000300104	20161530	105,131.90	AR CORPORATION
Doddridge	Central	9/1/2016	2016	0000300111	20142099	108,797.22	AR CORPORATION
						420,750.80	

Antero Resources Corporation
Doddridge County, WV
2016 Tax Year
Accounts Included In Tax Bill Payment

County	District Name	Due Date	YEAR	TICKET#	Tax Account	Updated Tax To Be Paid	Owner Name
Doddridge	New Milton	9/1/2016	2016	0000307041	20151131	110,492.24	AR CORPORATION
Doddridge	Grant	9/1/2016	2016	0000302273	20160996	110,514.82	AR CORPORATION
Doddridge	Central	9/1/2016	2016	0000300079	20150596	115,973.08	AR CORPORATION
Doddridge	Greenbrier	9/1/2016	2016	0000303984	20161907	116,265.56	AR CORPORATION
						453,245.70	

Antero Resources Corporation
Doddridge County, WV
2016 Tax Year
Accounts Included in Tax Bill Payment

County	District Name	Due Date	YEAR	TICKET#	Tax Account	Updated Tax To Be Paid	Owner Name
Doddridge	Greenbrier	9/1/2016	2016	0000303997	20150676	118,525.01	AR CORPORATION
Doddridge	Greenbrier	9/1/2016	2016	0000304002	20150703	120,456.84	AR CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000307039	20151129	121,130.62	AR CORPORATION
Doddridge	Central	9/1/2016	2016	0000300081	20150598	121,331.60	AR CORPORATION
						481,445.08	

Antero Resources Corporation
Doddridge County, WV
2016 Tax Year
Accounts Included in Tax Bill Payment

County	District Name	Due Date	YEAR	TICKET#	Tax Account	Updated Tax To	Owner Name
Doddridge	Central	9/1/2016	2016	0000300105	20161528	123,260.22	AR CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000307040	20151130	125,737.60	AR CORPORATION
Doddridge	Central	9/1/2016	2016	0000300080	20150597	129,203.80	AR CORPORATION
						378,201.62	

Antero Resources Corporation
Doddridge County, WV
2016 Tax Year
Accounts Included in Tax Bill Payment

County	District Name	Due Date	YEAR	TICKET#	Tax Account	Updated Tax To Be Paid	Owner Name
Doddridge	Greenbrier	9/1/2016	2016	0000303999	20150695	129,471.78	AR CORPORATION
Doddridge	Greenbrier	9/1/2016	2016	0000304000	20150697	130,575.60	AR CORPORATION
Doddridge	Central	9/1/2016	2016	0000300075	20150591	147,338.66	AR CORPORATION
						407,386.04	

Antero Resources Corporation
Doddridge County, WV
2016 Tax Year
Accounts Included in Tax Bill Payment

County	District Name	Due Date	YEAR	TICKET#	Tax Account	Updated Tax To Be Paid	Owner Name
Doddridge	Central	9/1/2016	2016	0000300078	20150594	153,248.18	AR CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000307015	20150423	166,248.10	AR CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000307013	20150421	175,839.18	AR CORPORATION
						495,335.46	

Antero Resources Corporation
Doddridge County, WV
2016 Tax Year
Accounts Included in Tax Bill Payment

County	District Name	Due Date	YEAR	TICKET#	Tax Account	Updated Tax To Be Paid	Owner Name
Doddridge	Central	9/1/2016	2016	0000300084	20161404	176,444.04	AR CORPORATION
Doddridge	Grant	9/1/2016	2016	0000302260	20150728	178,814.38	AR CORPORATION
						355,258.42	

Antero Resources Corporation
Doddridge County, WV
2016 Tax Year
Accounts Included in Tax Bill Payment

County	District Name	Due Date	YEAR	TICKET#	Tax Account	Updated Tax To Be Paid	Owner Name
Doddridge	Grant	9/1/2016	2016	0000302261	20150730	189,874.22	AR CORPORATION
Doddridge	New Milton	9/1/2016	2016	0000307051	20160450	193,518.82	AR CORPORATION
						383,393.04	

Antero Resources Corporation
Doddridge County, WV
2016 Tax Year
Accounts Included In Tax Bill Payment

County	District Name	Due Date	YEAR	TICKET#	Tax Account	Updated Tax To Be Paid	Owner Name
Doddridge	Grant	9/1/2016	2016	0000302259	20150726	271,359.50	AR CORPORATION
						271,359.50	

Antero Resources Co
7/1/15 West Virginia ... as Producer/ Operator Retain
Actual Operating Expenses for West Virginia

					2013 Calendar Year												
					Gas	NGLs			Gas	Gas	NGLs						
Well Code	NRA Account #	County	API #	Production Start Year	Total Gas Receipts	Total NGL Receipts	Total Oil Receipts	Total Reported Expenses	LDS Expenses	Gathering and Compression Expenses	Transportation Expenses	Processing Expenses (Note 2)	Total Operating Expenses	Operating Expenses as a Percentage of Revenue	State Allowed Operating Expenses	State Allowed Operating Expenses as a % of NA Revenue	Well Type
40309	17-20201155208	Harrison	47-033-05808	2013	3,160,516	-	-	3,160,516	88,755	344,795	207,181	-	640,731	20%	158,026	5%	Marcellus, Horizontal
40311	08-08201156087	Doddridge	47-017-05087	2013	3,180,853	1,185,085	8,919	4,376,858	122,224	719,980	117,908	385,355	1,345,467	31%	438,306	7%	Marcellus, Horizontal
40572	17-20201155677	Harrison	47-033-05677	2013	3,178,892	570,431	4,513	3,753,776	91,942	461,424	108,988	276,614	939,328	25%	149,637	4%	Marcellus, Horizontal
40324	43-03201159563	Ritchie	47-085-09963	2013	3,126,150	2,054,507	313,584	5,494,252	88,738	374,506	119,797	484,571	1,067,562	19%	140,707	3%	Marcellus, Horizontal
				Totals	12,646,395	3,810,024	327,016	16,785,405	391,659	1,904,706	553,772	1,144,490	3,994,087	24%	886,676	5%	
								% of Total Expenses	9%	41%	14%	29%					

Facts

- State allowed operating expenses for Horizontal Marcellus Wells are 20% of Revenue capped at $150,000
- Data above shows 4 similar wells. All in their second year of production, all with similar natural gas receipts.
- Differences in the data set are whether the well produces NGL and Oil as well as Natural Gas.

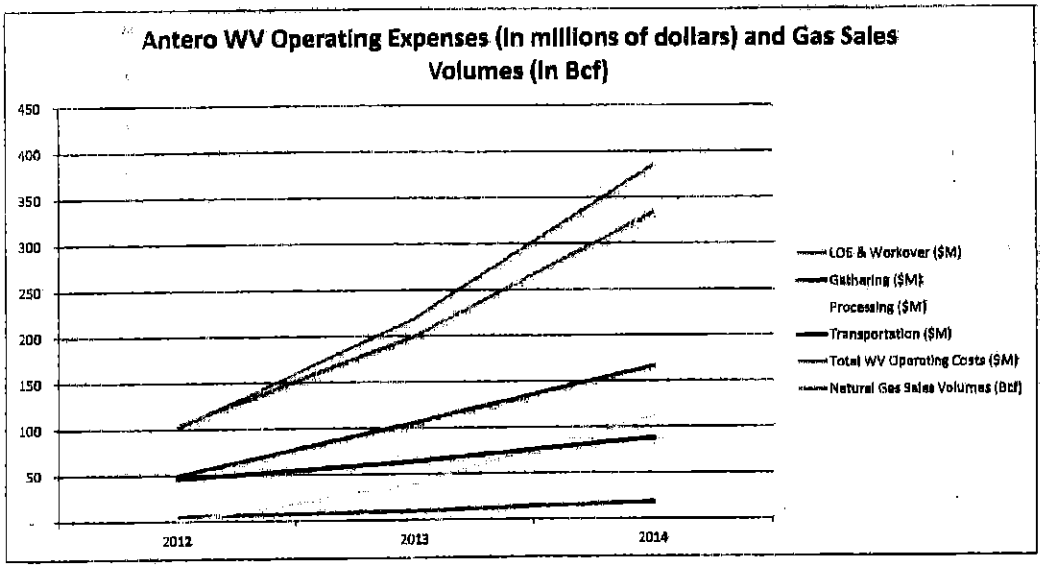
Concerns

- Wells that produce oil, even at an immaterial amount, are assigned a lower operating expense than wells that do not, even when natural gas receipts are the same.
- The actual operating expense for each well is roughly 20% of revenue, [illegible]
- The State's calculation fails to account for the added expense incurred to generate NGL receipts
- The cap of operating expense coupled with the production of oil on well 40324 has the well with the highest total receipts receiving the lowest operating expense allowance in the State's calculation. The state calculation implies that it costs less to operate a well with $6.5M revenue than it does to operate one with $3.1M in revenue.
- Once the cap is reached, the State's value calculation assumes that the operating expense incurred in year one or year two, or even year three is the exact same number that the company will incur in future years, when the reality is that over 75% of the operating expenses incurred are dependent on production volume.
- State calculation doesn't work if you want to pay actual operating expenses in the template, you need to decline the number, or use an operating expense that is between the state cap and actual.

EXHIBIT
4

Antero Resources Corporation
2014 West Virginia Operating Expenses by Account

Stage	Expense	Acct #	Account Name	1014 WV Operating Expenses	Notes
Pre-Processing	LOE & Workover	400.500.010	LOE SURVEYS, PERMITS, ROW	282,878	
Pre-Processing	LOE & Workover	400.500.020	LOE COMPRESSOR RENTAL	17,485	
Pre-Processing	LOE & Workover	400.500.030	LOE COMPRESSOR SUPPLIES	(15,126)	
Pre-Processing	LOE & Workover	400.500.040	LOE ELECTRICITY	69,555	
Pre-Processing	LOE & Workover	400.500.060	LOE SLICKLINE / WIRELINE SVCS	3,233	
Pre-Processing	LOE & Workover	400.500.090	LOE COMPANY LABOR - GENERAL	1,477,979	
Pre-Processing	LOE & Workover	400.500.100	LOE CONTRACT PUMPING	954,519	
Pre-Processing	LOE & Workover	400.500.110	LOE WELL SERVICING	1,359	
Pre-Processing	LOE & Workover	400.500.120	LOE CONTRACT SVCS / LABOR	2,536,718	
Pre-Processing	LOE & Workover	400.500.130	LOE CONTRACT SUPERVISION	10,316	
Pre-Processing	LOE & Workover	400.500.140	LOE COMPANY LABOR PUMPER	11,559	
Pre-Processing	LOE & Workover	400.500.150	LOE COMPANY ROUSTABOUTS	1,596	
Pre-Processing	LOE & Workover	400.500.160	LOE COMMUNICATIONS	2,449	
Pre-Processing	LOE & Workover	400.500.170	LOE EQUIPMENT RENTAL	1,010,353	Contains generators, trailers, frac tanks, pumps, cranes, lights, gas monitors, etc. (no vehicles)
Pre-Processing	LOE & Workover	400.500.180	LOE EQUIPMENT - COMPANY	1,377	
Pre-Processing	LOE & Workover	400.500.190	LOE AUTOMATION & INSTRUMENTATION	266,775	
Pre-Processing	LOE & Workover	400.500.200	LOE METERS & ASSEMBLIES	554	
Pre-Processing	LOE & Workover	400.500.210	LOE METER READING, CHARTS, SUPPLIES	3,348	
Pre-Processing	LOE & Workover	400.500.220	LOE METER CALIBRATION / TEST	14,413	
Pre-Processing	LOE & Workover	400.500.230	LOE WATER DISPOSAL / TRUCKING	2,548,524	
Pre-Processing	LOE & Workover	400.500.260	LOE TRANSFER OIL	75,993	
Pre-Processing	LOE & Workover	400.500.290	LOE CONTRACT ENGINEERING SVCS	211,886	
Pre-Processing	LOE & Workover	400.500.310	LOE CONSULTANT & PROFESSIONAL SVCS	104,214	
Pre-Processing	LOE & Workover	400.500.320	LOE PULLING SERVICES	12,628	
Pre-Processing	LOE & Workover	400.500.340	LOE POWER & FUEL	24,624	
Pre-Processing	LOE & Workover	400.500.350	LOE SUPPLIES/MATERIALS	1,158,932	
Pre-Processing	LOE & Workover	400.500.360	LOE TRUCKING & HAULING	1,299,624	
Pre-Processing	LOE & Workover	400.500.370	LOE WELDING SERVICES	19,357	
Pre-Processing	LOE & Workover	400.500.380	LOE CHEMICAL TREATMENT / METHANOL	40,284	
Pre-Processing	LOE & Workover	400.500.390	LOE SWABBING & SOAP STICKS	119,549	
Pre-Processing	LOE & Workover	400.500.410	LOE LOCATION & ROAD MAINTENANCE	2,314,357	
Pre-Processing	LOE & Workover	400.500.450	LOE REPAIRS / SEPARATORS	2,533	
Pre-Processing	LOE & Workover	400.500.470	LOE REPAIRS / WELL AUTOMATION	143	
Pre-Processing	LOE & Workover	400.500.490	LOE REPAIRS / CHEMICAL PUMPS	687	
Pre-Processing	LOE & Workover	400.500.500	LOE REPAIRS / WELLHEADS	1,023	
Pre-Processing	LOE & Workover	400.500.510	LOE REPAIRS / FLOWLNS & VLVS	112,413	
Pre-Processing	LOE & Workover	400.500.520	LOE REPAIRS / PUMPING UNIT	3,354	
Pre-Processing	LOE & Workover	400.500.590	LOE REPAIRS / COMPRESSORS	26,909	
Pre-Processing	LOE & Workover	400.500.600	LOE REPAIRS / OTHER	8,293	
Pre-Processing	LOE & Workover	400.500.620	LOE YARD LSE & SURFACE RENTALS	20,955	



Year	Natural Gas Sales Volume (Bcf)	LOE & Workover ($M)	Gathering ($M)	Processing ($M)	Transportation ($M)	Total WV Operating Costs ($M)
2012	104	6	50	-	46	102
2013	200	10	106	40	64	219
2014	334	18	166	112	88	384

Craig Griffith

From: Nancy Sitton <nancy.sitton@altusgroup.com>
Sent: Thursday, November 19, 2015 10:56 AM
To: jeff.a.arnburgey@wv.gov; Hoover, Cindi R
Cc: Craig Griffith; Kirsten Evans
Subject: Antero Operating Expenses
Attachments: Antero 10K 12.31.14.pdf; Antero Op Exp - Comparison to Form 10-K - 11.19.15.xlsx

Jeff and Cindi,

Thank you again for taking the time to discuss Antero's operating expenses this past Tuesday. You mentioned that you were going to take a look at the Form 10-K before Monday's meeting, so I have attached a comparison of operating expenses per the 10-K vs. reported WV operating expenses. The differences between the two totals and the reports they are based on are noted in the file.

Also, Antero is using Crestwood and Summit Midstream for its third party gathering.

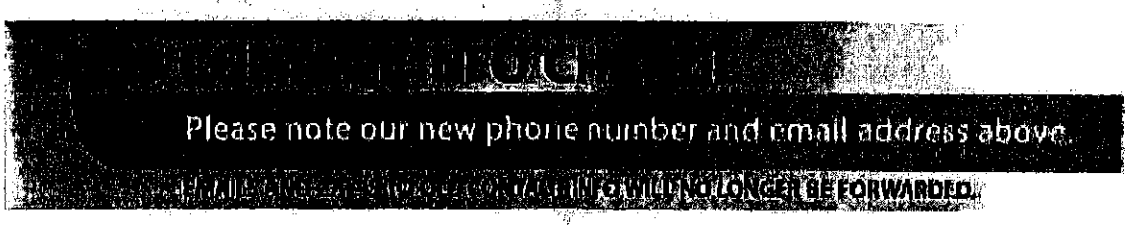
Please let us know if you have any questions about this or the information provided on Tuesday.

Thank you,
Nancy

Nancy Sitton, CPA
Manager, State & Local Tax and Advisory, Altus Group US Inc.

D: 410.568.0771 T: 410.568.0800 ext 3771 M: 703.999.3780 F: 410.568.0801
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ANTERO RESOURCES CORP

FORM 10-K
(Annual Report)

Filed 02/25/15 for the Period Ending 12/31/14

Address	1615 WYNKOOP STREET
	DENVER, CO 80202
Telephone	303-357-7325
CIK	0001433270
Symbol	AR
SIC Code	1311 - Crude Petroleum and Natural Gas
Fiscal Year	12/31

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CAUTIONARY STATEMENT REGARDING FORWARD -LOOKING STATEMENTS

The information in this report includes "forward -looking statements" within the meaning of Section 27A of the Securities Act of 1933, as amended (the "Securities Act"), and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). All statements, other than statements of historical fact included in this Annual Report on Form 10 -K, regarding our strategy, future operations, financial position, estimated revenues and losses, projected costs, prospects, plans and objectives of management are forward -looking statements. When used, the words "could," "believe," "anticipate," "intend," "estimate," "expect," "project" and similar expressions are intended to identify forward -looking statements, although not all forward -looking statements contain such identifying words. These forward -looking statements are based on our current expectations and assumptions about future events and are based on currently available information as to the outcome and timing of future events. When considering forward -looking statements, you should keep in mind the risk factors and other cautionary statements described under the heading "Item 1A. Risk Factors" in this Annual Report on Form 10 -K. These forward -looking statements are based on management's current belief, based on currently available information, as to the outcome and timing of future events.

Forward -looking statements may include statements about our:

- business strategy;
- reserves;
- financial strategy, liquidity and capital required for our development program;
- realized natural gas, natural gas liquids ("NGLs"), and oil prices;
- timing and amount of future production of natural gas, NGLs, and oil;
- hedging strategy and results;
- ability to utilize or monetize our firm transportation commitments;
- future drilling plans;
- competition and government regulations;
- pending legal or environmental matters;
- marketing of natural gas, NGLs, and oil;
- leasehold or business acquisitions;
- costs of developing our properties ;
- the operations of Antero Midstream Partners LP;
- general economic conditions;
- credit markets;
- uncertainty regarding our future operating results; and
- plans, objectives, expectations and intentions contained in this report that are not historical.

We caution you that these forward -looking statements are subject to all of the risks and uncertainties, most of which are difficult to predict and many of which are beyond our control, incident to the exploration for and development, production, gathering and sale of natural gas, NGLs, and oil. These risks include, but are not limited to, commodity price volatility, inflation, lack of availability of drilling and production equipment and services, environmental risks, drilling and other operating risks, marketing and transportation risks, regulatory changes, the uncertainty inherent in estimating natural gas, NGLs, and oil reserves and in projecting

Table of Contents

GLOSSARY OF OIL AND NATURAL GAS TERMS

The following are abbreviations and definitions of certain terms used in this document, which are commonly used in the oil and gas industry:

"*Basin*." A large natural depression on the earth's surface in which sediments, generally brought by water, accumulate.

"*Bbl*." One stock tank barrel, of 42 U.S. gallons liquid volume, used herein in reference to crude oil, condensate, NGLs, or water.

"*Bcf*." One billion cubic feet of natural gas.

"*Bcfe*." One billion cubic feet of natural gas equivalent with one barrel of oil, condensate or NGLs converted to six thousand cubic feet of natural gas.

"*Btu*." British thermal unit.

"*Completion*." The process of treating a drilled well followed by the installation of permanent equipment for the production of natural gas or oil, or in the case of a dry hole, the reporting of abandonment to the appropriate agency.

"*DD&A*." Depreciation, depletion, and amortization.

"*Delineation*." The process of placing a number of wells in various parts of a reservoir to determine its boundaries and production characteristics.

"*Developed acreage*." The number of acres that are allocated or assignable to productive wells or wells capable of production.

"*Development well*." A well drilled within the proved area of an oil or natural gas reservoir to the depth of a stratigraphic horizon known to be productive.

"*Dry hole*." A well found to be incapable of producing hydrocarbons in sufficient quantities such that proceeds from the sale of such production exceed production expenses and taxes.

"*Exploratory well*." A well drilled to find and produce natural gas or oil reserves not classified as proved, to find a new reservoir in a field previously found to be productive of natural gas or oil in another reservoir or to extend a known reservoir.

"*Field*." An area consisting of a single reservoir or multiple reservoirs all grouped on, or related to, the same individual geological structural feature or stratigraphic condition. The field name refers to the surface area, although it may refer to both the surface and the underground productive formations.

"*Formation*." A layer of rock which has distinct characteristics that differs from nearby rock.

"*Gross acres or gross wells*." The total acres or wells, as the case may be, in which a working interest is owned.

"*Horizontal drilling*." A drilling technique used in certain formations where a well is drilled vertically to a certain depth and then drilled at a right angle within a specified interval.

"*MBbl*." One thousand barrels of crude oil, condensate or NGLs.

"*Mcf*." One thousand cubic feet of natural gas.

"*PV-10*." When used with respect to natural gas and oil reserves, PV-10 means the estimated future gross revenue to be generated from the production of proved reserves, net of estimated production, future development and abandonment costs, using prices and costs in effect at the determination date, before income taxes, and without giving effect to non-property-related expenses, discounted to a present value using an annual discount rate of 10% in accordance with the guidelines of the SEC. PV-10 is not a financial measure calculated in accordance with generally accepted accounting principles ("GAAP") and generally differs from Standardized Measure, the most directly comparable GAAP financial measure, because it does not include the effects of income taxes on future net revenues. Neither PV-10 nor Standardized Measure represents an estimate of the fair market value of our natural gas and oil properties. We and others in the industry use PV-10 as a measure to compare the relative size and value of proved reserves held by companies without regard to the specific tax characteristics of such entities.

"*Recompletion*." The process of re-entering an existing wellbore that is either producing or not producing and completing new reservoirs in an attempt to establish or increase existing production.

"*Reservoir*." A porous and permeable underground formation containing a natural accumulation of producible oil and/or natural gas that is confined by impermeable rock or water barriers and is separate from other reservoirs.

"*Spacing*." The distance between wells producing from the same reservoir. Spacing is often expressed in terms of acres, e.g., 40-acre spacing, or distance between two horizontal well legs, and is often established by regulatory agencies.

"*Standardized measure*." Discounted future net cash flows estimated by applying year-end prices to the estimated future production of year-end proved reserves. Future cash inflows are reduced by estimated future production and development costs based on period-end costs to determine pre-tax cash inflows. Future income taxes, if applicable, are computed by applying the statutory tax rate to the excess of pre-tax cash inflows over our tax basis in the natural gas and oil properties. Future net cash inflows after income taxes are discounted using a 10% annual discount rate.

"*Undeveloped acreage*." Lease acreage on which wells have not been drilled or completed to a point that would permit the production of commercial quantities of natural gas, NGLs, and oil regardless of whether such acreage contains proved reserves.

"*Unit*." The joining of all or substantially all interests in a reservoir or field, rather than a single tract, to provide for development and operation without regard to separate property interests. Also, the area covered by a unitization agreement.

"*Working interest*." The right granted to the lessee of a property to explore for and to produce and own natural gas or other minerals. The working interest owners bear the exploration, development, and operating costs on either a cash, penalty, or carried basis.

"*WTI*." West Texas Intermediate light sweet crude oil.

We have secured sufficient long-term firm takeaway capacity on major pipelines that are in existence or currently under construction in each of our core operating areas to accommodate our current development plans.

We operate in the following industry segments: (i) the exploration, development and production of natural gas, NGLs, and oil, (ii) gathering and compression, (iii) fresh water distribution, and (iv) marketing of excess firm transportation capacity. All of our operations are conducted in the United States. Financial information for our industry segment operations is located under "Note 13: Segment Information".

2014 Developments and Highlights

Energy Industry Environment

Recently, global energy commodity prices have declined precipitously as a result of several factors including increased worldwide supplies, a stronger U.S. dollar, relatively mild weather in the U.S., and strong competition among oil producing countries for market share. Specifically, prices for WTI have declined from approximately $106.00 per Bbl in June 2014 to less than $50.00 per Bbl in January 2015. Henry Hub natural gas has traded around $3.00 per MMBtu in January 2015 compared to prices a year ago in January 2014 of around $4.40 per MMBtu. In response to these market conditions and concerns about access to capital markets, U.S. exploration and development companies have significantly reduced capital spending plans. Our capital budget for 2015 is $1.8 billion (not including the capital budget of Antero Midstream Partners LP), a 41% reduction from our final 2014 capital budget. We plan to operate an average of 14 drilling rigs in 2015 down from 21 at December 31, 2014 and to complete 130 horizontal Marcellus and Utica wells in 2015, down from 177 in 2014. We believe that our 2015 capital budget will be fully funded through operating cash flow and available borrowing capacity under our revolving credit facility. We will continue to monitor commodity prices and may revise the capital budget if conditions warrant.

Initial Public Offering of Subsidiary

On November 10, 2014, our subsidiary, Antero Midstream Partners LP ("Antero Midstream"), completed its initial public offering ("IPO"). We contributed midstream gathering and compression assets to Antero Midstream as well as rights to develop additional midstream infrastructure to service our growing production. Additionally, Antero Midstream has an option to purchase our fresh water distribution systems at fair market value. A total of 46 million common units representing limited partner interests were sold in the IPO at a price to the public of $25.00 per common unit. After subtracting underwriting discounts and offering costs, net proceeds received by Antero Midstream were approximately $1.1 billion. Antero Midstream used approximately $843 million of the net proceeds to repay indebtedness assumed from us and to reimburse us for certain capital expenditures incurred. Antero Midstream retained $250 million of the net proceeds for general partnership purposes. After completion of the IPO, we own approximately 69.7% of the outstanding limited partner interests in Antero Midstream and the public owns the remaining 30.3% of the limited partner interests in Antero Midstream.

Reserves, Production, and Financial Results

As of December 31, 2014, our estimated proved reserves were 12.7 Tcfe, consisting of 10.5 Tcf of natural gas, 330 MMBbl of NGLs and 28 MMBbl of oil. As of December 31, 2014, 83% of our estimated proved reserves by volume were natural gas, 16% were NGLs, and 1% was oil. Proved developed reserves were 3.8 Tcfe, or 30% of total proved reserves.

For the year ended December 31, 2014, our production totaled 368 Bcfe, or 1,007 MMcfe per day. The 2014 production levels represent a 93% increase over 2013 levels. The average price received for 2014 production before the effects of realized hedge gains was $4.73 per Mcfe compared to $4.31 in 2013. The 10% increase was primarily attributable to the increased proportion of NGLs and oil production to total production in 2014 compared to the prior year. Average prices after the effects of cash settled commodity hedges were $5.10 per Mcfe for 2014 compared to $5.17 per Mcfe for 2013.

For the year ended December 31, 2014, we generated cash flow from operations of $998 million, net income of $674 million, and Adjusted EBITDAX of $1.2 billion. Net income in 2014 included (i) unrealized hedge gains of $732 million (ii) a noncash charge of $112 million for equity-based compensation, (iii) a noncash tax expense of $446 million, (iv) a charge of $20 million for redemption premiums and the write-off of unamortized deferred financing charges and premium associated with the retirement of $260 million of our 7.25% senior notes due 2019, and (v) income from discontinued operations of $2 million. See "Item 6. Selected Financial Data" for a definition of Adjusted EBITDAX (a non-GAAP measure) and a reconciliation of Adjusted EBITDAX to net income (loss).

Our Properties and Operations

Estimated Proved Reserves

The information with respect to our estimated proved reserves presented below has been prepared in accordance with the rules and regulations of the SEC.

Reserves Presentation

The following table summarizes our estimated proved reserves and related standardized measure and PV-10 at December 31, 2012, 2013, and 2014. Our estimated proved reserves are based on evaluations prepared by our internal reserve engineers, which have been audited by our independent engineers, DeGolyer and MacNaughton ("D&M"). We refer to D&M as our independent engineers. A copy of the summary report of D&M with respect to our reserves at December 31, 2014 is filed as Exhibit 99.1 to this Annual Report on Form 10-K. The information in the following table does not give any effect to or reflect our commodity hedges. Reserves at December 31, 2012 were prepared assuming ethane recovery from our production process, while reserves at December 31, 2013 and 2014 were prepared assuming ethane rejection. When ethane is rejected at the processing plant, it is left in the gas stream and sold with the methane gas.

	At December 31,		
	2012	2013	2014
Estimated proved reserves:			
Proved developed reserves:			
Natural gas (Bcf)	828	1,818	3,283
NGLs (MMBbl)	36	33	80
Oil (MMBbl)	1	2	6
Total equivalent proved developed reserves (Bcfe)	1,047	2,022	3,803
Proved undeveloped reserves:			
Natural gas (Bcf)	2,866	4,936	7,250
NGLs (MMBbl)	167	105	250
Oil (MMBbl)	2	8	22
Total equivalent proved undeveloped reserves (Bcfe)	3,882	5,610	8,880
Total estimated proved reserves (Bcfe)	4,929	7,632	12,683
Proved developed producing (Bcfe)	935	1,771	3,508
Proved developed non-producing (Bcfe)	112	251	295
Percent developed	21%	27%	30%
PV-10 (in millions) [1]	$1,923	$5,998	$11,320
Standardized measure (in millions) [1]	$1,601	$4,510	$ 7,635

(1) Pre-tax PV-10 was prepared using average yearly prices computed using SEC rules, discounted at 10% per annum, without giving effect to taxes. Pre-tax PV-10 is a non-GAAP financial measure. We believe that the presentation of pre-tax PV-10 is relevant and useful to our investors as supplemental disclosure to the standardized measure of future net cash flows, or after tax amount, because it presents the discounted future net cash flows attributable to our proved reserves prior to taking into account future corporate income taxes and our current tax structure. While the standardized measure is dependent on the unique tax situation of each company, pre-tax PV-10 is based on a pricing methodology and discount factors that are consistent for all companies. Because of this, pre-tax PV-10 can be used within the industry and by creditors and securities analysts to evaluate estimated net cash flows from proved reserves on a more comparable basis. The difference between the standardized measure and the pre-tax PV-10 amount is the discounted amount of estimated future income taxes. For more information about the calculation of standardized measure, see footnote 18 to our consolidated financial statements included in Item 8 of this Annual Report on Form 10-K.

Proved Undeveloped Reserves

Proved undeveloped reserves are included in the previous table of total proved reserves. The following table summarizes the changes in our estimated proved undeveloped reserves during 2014 (in Bcfe):

Proved undeveloped reserves, December 31, 2013	5,610
Extension, discoveries, and other additions	5,570
Reclassifications to proved developed reserves	(1,112)
Performance revisions	228
Revisions due to 5-year development rule	(1,417)
Price revisions	1
Proved undeveloped reserves, December 31, 2014	8,880

Extensions, discoveries, and other additions during 2014 of 5,570 Bcfe of proved undeveloped reserves were added through delineation and developmental drilling in the Marcellus and Utica Shales. Development drilling resulted in the reclassification of 1,112 Bcfe to proved developed reserves. Performance revisions of 228 Bcfe relate to improved well performance from shorter stage length completions. Downward revisions of 1,417 Bcfe due were due to the reclassification of 191 dry gas wells to the probable category because they are no longer expected to be drilled within five years of initial booking, as our drilling plans are more focused on our liquids-rich acreage. Upward price revisions of 1 Bcfe were due to increases in the reference price for natural gas, partially offset by decreases in the reference prices for NGLs and oil. Proved undeveloped reserves include reserves that are expected to be drilled and developed within five years; wells that are not drilled within five years from booking are reclassified from proved reserves to probable reserves.

During the year ended December 31, 2014, we converted approximately 1,112 Bcfe of proved undeveloped reserves to proved developed reserves at a total capital cost of approximately $991 million. Estimated future development costs relating to the development of our proved undeveloped reserves at December 31, 2014 are approximately $8.2 billion over the next five years, which we expect to finance through cash flow from operations, borrowings under our revolving credit facility, and other sources of capital financing. Our drilling programs to date have focused on proving our undeveloped leasehold acreage through delineation drilling. While we will continue to drill leasehold delineation wells and build on our current leasehold position, we will also continue drilling our proved undeveloped reserves. All of our proved undeveloped reserves are expected to be developed over the next five years. See "Item 1A. Risk Factors—The development of our estimated proved undeveloped reserves may take longer and may require higher levels of capital expenditures than we currently anticipate. Therefore, our estimated proved undeveloped reserves may not be ultimately developed or produced."

Preparation of Reserve Estimates

Our reserve estimates as of December 31, 2012, 2013, and 2014 included in this Annual Report on Form 10-K were prepared by our internal reserve engineers in accordance with petroleum engineering and evaluation standards published by the Society of Petroleum Evaluation Engineers and definitions and guidelines established by the SEC. Our internally prepared reserve estimates were audited by our independent reserve engineers. Our independent reserve engineers were selected for their historical experience and geographic expertise in engineering unconventional resources. The technical persons responsible for overseeing the audit of our reserve estimates presented herein meet the requirements regarding qualifications, independence, objectivity and confidentiality set forth in the Standards Pertaining to the Estimating and Auditing of Oil and Gas Reserves Information promulgated by the Society of Petroleum Engineers.

Our internal staff of petroleum engineers and geoscience professionals work closely with our independent reserve engineers to ensure the integrity, accuracy and timeliness of data furnished to our independent reserve engineers in their reserve auditing process. Periodically, our technical team meets with the independent reserve engineers to review properties and discuss methods and assumptions used by us to prepare reserve estimates. Our internally prepared reserve estimates and related reports are reviewed and approved by our Vice President of Reserves, Planning & Midstream, Ward D. McNeilly, and our Vice President of Production, Kevin J. Kilstrom. Mr. McNeilly has been with the Company since October 2010. Mr. McNeilly has 35 years of experience in oil and gas operations, reservoir management, and strategic planning. From 2007 to October 2010 Mr. McNeilly was the Operations Manager for BHP Billiton's Gulf of Mexico operations. From 1996 through 2007, Mr. McNeilly served in various North Sea and Gulf of Mexico Deepwater operations and asset management positions with Amoco and then BP. From 1979 through 1996 Mr. McNeilly served in various domestic and international operations and reservoir and asset management positions with Amoco. Mr. McNeilly holds a B.S. in Geological Engineering from the Mackay School of Mines at the University of Nevada.

horizontal wells at December 31, 2014 , averaging an 83% working interest. Our wells are gas wells, many of which also produce oil, condensate and NGLs. Additionally, at December 31, 2014 we had 102 gross horizontal wells (93 net) waiting on completion or pipeline connection.

Acreage

The following table sets forth certain information regarding the total developed and undeveloped acreage in which we owned an interest as of December 31, 2014 . A majority of our developed acreage is subject to liens securing our revolving credit facility. Approximately 50% of our Marcellus acreage and 21% of our Utica acreage is held by production. Acreage related to royalty, overriding royalty and other similar interests is excluded from this table.

	Developed Acres		Undeveloped Acres		Total Acres	
Basin	Gross	Net	Gross	Net	Gross	Net
Marcellus	58,021	56,843	475,776	338,018	533,797	394,861
Utica Shale	12,491	9,439	161,985	138,903	174,476	148,342
Other	—	—	6,609	6,599	6,609	6,599
Total	70,512	66,282	644,370	483,520	714,882	549,802

The following table provides a summary of our current gross and net acreage by county in the Marcellus Shale and the Utica Shale.

	Marcellus	
County	Gross Acres	Net Acres
Doddridge, WV	190,683	135,480
Gilmer, WV	11,887	8,201
Harrison, WV	119,806	101,569
Lewis, WV	89	65
Marion, WV	3,800	3,655
Monongalia, WV	1,649	1,467
Pleasants, WV	4,844	2,604
Ritchie, WV	86,173	62,453
Tyler, WV	78,560	50,293
Wetzel, WV	7,233	3,709
Fayette, PA	7,364	5,423
Greene, PA	974	454
Washington, PA	13,601	12,552
Westmoreland, PA	7,134	6,936
Total Marcellus Shale	533,797	394,861

	Utica	
	Gross Acres	Net Acres
Athens, OH	84	84
Belmont, OH	17,771	16,907
Guernsey, OH	10,342	8,435
Harrison, OH	577	577
Monroe, OH	58,207	53,438
Noble, OH	84,428	66,470
Washington, OH	3,067	2,431
Total Utica Shale	174,476	148,342
Total Marcellus and Utica Shale	708,273	543,203

- We have firm transportation contrac ts for 11,500 Bbl per day of ethane and for 50,000 Bbl per day of propane or butane on the Sunoco pipeline (or " Mariner East 2 ") , from Houston, Pennsylvania to Marcus Hook near Philadelphia, PA. The expected in-service date of Mariner East 2 is late 2016. These contracts expire on the tenth anniver sary from the in-service date. The Mariner East 2 provides access to international markets via trans ocean cargo carriers.

Under firm transportation contracts, we are obligated to deliver minimum daily volumes or pay fees for any deficiencies in deliveries. See "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations—Debt Agreements and Contractual Obligations" for information on our minimum fees for such contracts. Based on current projected 2015 annual production levels, we estimate that we could incur marketing expense pf $100 million to $150 million for unused and un-marketed transportation capacity. We continue to actively market any excess capacity in order to offset minimum commitment fees.

Fresh Water Distribution

We own two independent fresh water distribution systems that distribute fresh water from the Ohio River and several regional water sources for well completion operations in the Marcellus and Utica Shales. These systems consist of permanent buried pipelines, movable surface pipelines and fresh water storage facilitates, as well as pumping stations to transport the fresh water throughout the pipeline networks. To the extent necessary, we move surface pipelines to well pads for service completion operations in concert with our drilling program. As of December 31, 2014, we have the ability to store a total of 3.5 million barrels of fresh water in 30 impoundments. We believe our water distribution system eliminated over 400,000 water truck trips in our operating areas during 2014.

Due to the extensive geographic distribution of our water pipeline systems in both West Virginia and Ohio, we have provided water delivery services to a ne ighboring oil and gas producer within and adjacent to our operating area , and are able to provide water delivery services to other oil and gas producers in the area , subject to commercial arrangements, in an effort to further reduce water truck traffic.

As of Dece mber 31, 2014 in West Virginia, we owned and operated 103 miles of buried fresh water pipelines that service our drilling activities in the Marcellus Shale, as well as 22 centralized water storage facilities equipped with transfer pumps . As of December 31, 2014 i n Ohio, we owned and operated 49 miles of buried fresh water pipelines that service our drilling activities in the Utica Shale, as well as 8 centralized water storage facilities equipped with transfer pumps.

In connection with the Antero Midstream IPO, we granted Antero Midstream an option to purchase our fresh water distribution systems at fair market value.

Major Customers

For the year ended December 31, 2014 , sales to South Jersey Resources Group LLC, Sequent Energy Management L.P., and Nextera Energy Powermarketing LLC represented 29 %, 16%, and 12% of our total sales, respectively. For the year ended December 31, 2013, sales to South Jersey Resources Group LLC, Sequent Energy Management L.P., and Nextera Energy Powermarketing LLC represented 30%, 14%, and 8% of our total sales, respectively. For the year ended December 31, 2012, sales to South Jersey Resources Group, LLC, Nextera Energy Powermarketing LLC and Dominion Field Services Inc. represented 23%, 13% and 10% of our total sales, respectively. Although a substantial portion of our production is purchased by these major customers, we do not believe the loss of any one or several customers would have a material adverse effect on our business, as we believe other customers or markets would be accessible to us.

Title to Properties

We believe that we have satisfactory title to all of our producing properties in accordance with generally accepted industry standards. As is customary in the industry, often in the case of undeveloped properties, cursory investigation of record title is made at the time of lease acquisition. Investigations are made before the consummation of an acquisition of producing properties and before commencement of drilling operations on undeveloped properties. Individual properties may be subject to burdens that we believe do not materially interfere with the use, or affect the value of, the properties. Burdens on properties may include:

- customary royalty interests;
- liens incident to operating agreements and for current taxes;

effect of these regulations is to limit the amount of natural gas and oil that we can produce from our wells and to limit the number of wells or the locations at which we can drill, although we can apply for exceptions to such regulations or to have reductions in well spacing or density. Moreover, each state generally imposes a production or severance tax with respect to the production and sale of oil, natural gas, and NGLs within its jurisdiction.

The failure to comply with these rules and regulations can result in substantial penalties. Our competitors in the oil and natural gas industry are subject to the same regulatory requirements and restrictions that affect our operations.

Regulation of Transportation of Natural Gas

The transportation and sale for resale of natural gas in interstate commerce are regulated by the Federal Energy Regulatory Commission, or FERC, under the Natural Gas Act of 1938, or NGA, the Natural Gas Policy Act of 1978, or NGPA, and regulations issued under those statutes. FERC regulates interstate natural gas transportation rates and service conditions, which affects the marketing of natural gas that we produce, as well as the revenues we receive for sales of our natural gas. Since 1985, FERC has endeavored to make natural gas transportation more accessible to natural gas buyers and sellers on an open and non-discriminatory basis. Although FERC's orders do not directly regulate natural gas producers, they are intended to foster increased competition within all phases of the natural gas industry.

Gathering service, which occurs upstream of jurisdictional transmission services, is regulated by the states onshore and in state waters. Section 1(b) of the NGA exempts natural gas gathering facilities from regulation by FERC as a natural gas company under the NGA. Although FERC has not made any formal determinations with respect to any of our facilities, we believe that the natural gas pipelines in our gathering systems meet the traditional tests FERC has used to establish a pipeline's status as a gatherer not subject to regulation as a natural gas company. The distinction between FERC-regulated transmission services and federally unregulated gathering services, however, has been the subject of substantial litigation, and FERC determines whether facilities are gathering facilities on a case-by-case basis, so the classification and regulation of our gathering facilities may be subject to change based on future determinations by FERC, the courts or Congress. State regulation of natural gas gathering facilities generally include various safety, environmental and, in some circumstances, nondiscriminatory-take requirements. Although such regulation has not generally been affirmatively applied by state agencies, natural gas gathering may receive greater regulatory scrutiny in the future.

Intrastate natural gas transportation is also subject to regulation by state regulatory agencies. The basis for intrastate regulation of natural gas transportation and the degree of regulatory oversight and scrutiny given to intrastate natural gas pipeline rates and services varies from state to state. Insofar as such regulation within a particular state will generally affect all intrastate natural gas shippers within the state on a comparable basis, we believe that the regulation of similarly situated intrastate natural gas transportation in any states in which we operate and ship natural gas on an intrastate basis will not affect our operations in any way that is of material difference from those of our competitors. Like the regulation of interstate transportation rates, the regulation of intrastate transportation rates affects the marketing of natural gas that we produce, as well as the revenues we receive for sales of our natural gas.

Regulation of Sales of Natural Gas, NGLs, and Oil

The prices at which we sell natural gas, NGLs, and oil is not currently subject to federal regulation and, for the most part, is not subject to state regulation. FERC, however, regulates interstate natural gas transportation rates, and terms and conditions of transportation service, which affects the marketing of the natural gas we produce, as well as the prices we receive for sales of our natural gas. Similarly, the price we receive from the sale of oil and NGLs is affected by the cost of transporting those products to market. FERC regulates the transportation of oil and liquids on interstate pipelines under the provision of the Interstate Commerce Act, the Energy Policy Act of 1992 and regulations issued under those statutes. Intrastate transportation of oil, NGLs, and other products, is dependent on pipelines whose rates, terms and conditions of service are subject to regulation by state regulatory bodies under state statutes. In addition, while sales by producers of natural gas and all sales of crude oil, condensate, and NGLs can currently be made at uncontrolled market prices, Congress could reenact price controls in the future.

With regard to our physical sales of these energy commodities and any related hedging activities that we undertake, we are required to observe anti-market manipulation laws and related regulations enforced by the FERC as described below, the U.S. Commodity Futures Trading Commission under Commodity Exchange Act, or CEA, and the Federal Trade Commission, or FTC. We are also subject to various reporting requirements that are designed to facilitate transparency and prevent market manipulation. Should we violate the anti-market manipulation laws and regulations, we could be subject to fines and penalties as well as related third party damage claims by, among others, market participants, sellers, royalty owners and taxing authorities.

The Domenici Barton Energy Policy Act of 2005, or EPAct of 2005 amended the NGA to add an anti-market manipulation provision which makes it unlawful for any entity to engage in prohibited behavior to be prescribed by FERC, and furthermore provided FERC with additional civil penalty authority. In Order No. 670, FERC promulgated rules implementing the anti-market manipulation provision of the EPAct of 2005, which make it unlawful to: (1) in connection with the purchase or sale of natural gas subject to the jurisdiction of FERC, or the purchase or sale of transportation services subject to the jurisdiction of FERC, for any entity, directly or indirectly, to use or employ any device, scheme or artifice to defraud; (2) to make any untrue statement of material fact or omit to make any such statement necessary to make the statements made not misleading; or (3) to engage in any act or practice that operates as a fraud or deceit upon any person. The anti-market manipulation rules do not apply to activities that relate only to intrastate or other non-jurisdictional sales or gathering, but does apply to activities of gas pipelines and storage companies that provide interstate services, as well as otherwise non-jurisdictional entities to the extent the activities are conducted "in connection with" gas sales, purchases or transportation subject to FERC jurisdiction, which now includes the annual reporting requirements under Order No. 704 described below. Under the EPAct of 2005, FERC has the power to assess civil penalties of up to $1,000,000 per day for each violation of the NGA and the NGPA.

Under Order No. 704, wholesale buyers and sellers of more than 2.2 million MMBtus of physical natural gas in the previous calendar year, including interstate and intrastate natural gas pipelines, natural gas gatherers, natural gas processors, natural gas marketers and natural gas producers are required to report, on May 1 of each year, aggregate volumes of natural gas purchased or sold at wholesale in the prior calendar year. It is the responsibility of the reporting entity to determine which individual transactions should be reported based on the guidance of Order 704. Order 704 also requires market participants to indicate whether they report prices to any index publishers, and if so, whether their reporting complies with FERC's policy statement on price reporting.

The CEA prohibits any person from manipulating or attempting to manipulate the price of any commodity in interstate commerce or futures on such commodity. The CEA also prohibits knowingly delivering or causing to be delivered false or misleading or knowingly inaccurate reports concerning market information or conditions that affect or tend to affect the price of a commodity. In November 2009, the FTC issued regulations pursuant to the Energy Independence and Security Act of 2007 intended to prohibit market manipulation in the petroleum industry. Violators of the regulations face civil penalties of up to $1,000,000 per violation per day. Together with FERC, these agencies have imposed broad rules and regulations prohibiting fraud and manipulation in oil and gas markets and energy futures markets.

Changes in law and to FERC policies and regulations may adversely affect the availability and reliability of firm and/or interruptible transportation service on interstate pipelines, and we cannot predict what future action FERC will take. We do not believe, however, that any regulatory changes will affect us in a way that materially differs from the way they will affect other natural gas producers, gatherers and marketers with which we compete.

Regulation of Environmental and Occupational Safety and Health Matters

Our natural gas, NGLs, and oil exploration and production operations are subject to numerous stringent federal, regional, state and local statutes and regulations governing occupational safety and health and the discharge of materials into the environment or otherwise relating to environmental protection, some of which carry substantial administrative, civil and criminal penalties for failure to comply. These laws and regulations may require the acquisition of a permit before drilling or other regulated activity commences, restrict the types, quantities and concentrations of various substances that can be released into the environment in connection with drilling, production and transporting through pipelines, govern the sourcing and disposal of water used in the drilling and completion process, limit or prohibit drilling activities in certain areas and on certain lands lying within wilderness, wetlands, frontier and other protected areas, require some form of remedial action to prevent or mitigate pollution from former operations such as plugging abandoned wells or closing earthen pits, establish specific safety and health criteria addressing worker protection and impose substantial liabilities for pollution resulting from operations or failure to comply with applicable laws and regulations. In addition, these laws and regulations may restrict the rate of production.

The following is a summary of the more significant existing environmental and occupational health and safety laws and regulations, as amended from time to time, to which our business operations are subject and for which compliance may have a material adverse impact on our capital expenditures, results of operations or financial position.

Hazardous Substances and Waste Handling

The Comprehensive Environmental Response, Compensation, and Liability Act, or CERCLA, also known as the "Superfund" law, and comparable state laws impose liability, without regard to fault or the legality of the original conduct, on certain

classes of persons that are considered to have contributed to the release of a "hazardous substance" into the environment. These persons include the current and past owner or operator of the disposal site or the site where the release occurred and companies that disposed or arranged for the disposal of the hazardous substances at the site where the release occurred. Under CERCLA, such persons may be subject to joint and several strict liability for the costs of cleaning up the hazardous substances that have been released into the environment and for damages to natural resources, and it is not uncommon for neighboring landowners and other third parties to file claims for personal injury and property damage allegedly caused by the hazardous substances released into the environment. We are able to control directly the operation of only those wells with respect to which we act as operator. Notwithstanding our lack of direct control over wells operated by others, the failure of an operator other than us to comply with applicable environmental regulations may, in certain circumstances, be attributed to us as owners under CERCLA. In addition, despite the "petroleum exclusion" of Section 101(14) of CERCLA, which currently encompasses crude oil and natural gas, we generate materials in the course of our operations that may be regulated as hazardous substances; however, we are unaware of any liabilities for which we may be held responsible that would materially and adversely affect us.

The Resource Conservation and Recovery Act, or RCRA, and analogous state laws, impose detailed requirements for the generation, handling, storage, treatment and disposal of nonhazardous and hazardous solid wastes. RCRA specifically excludes drilling fluids, produced waters, and other wastes associated with the exploration, development, or production of crude oil, natural gas or geothermal energy from regulation as hazardous wastes. However, these wastes may be regulated by the U.S. Environmental Protection Agency, or the EPA, or state agencies under RCRA's less stringent nonhazardous solid waste provisions, state laws or other federal laws. Moreover, it is possible that these particular oil and natural gas exploration, development and production wastes now classified as nonhazardous solid wastes could be classified as hazardous wastes in the future. A loss of the RCRA exclusion for drilling fluids, produced waters and related wastes could result in an increase in our costs to manage and dispose of generated wastes, which could have a material adverse effect on our results of operations and financial position. In addition, in the course of our operations, we generate some amounts of ordinary industrial wastes, such as waste solvents, laboratory wastes and waste compressor oils that may become regulated as hazardous wastes if such wastes have hazardous characteristics. Although the costs of managing hazardous waste may be significant, we do not believe that our costs in this regard are materially more burdensome than those for similarly situated companies.

We currently own, lease, or operate numerous properties that have been used for oil and natural gas exploration and production activities for many years. Although we believe that we have utilized operating and waste disposal practices that were standard in the industry at the time, hazardous substances, wastes, or petroleum hydrocarbons may have been released on, under or from the properties owned or leased by us, or on, under or from other locations, including off-site locations, where such substances have been taken for recycling or disposal. In addition, some of our properties have been operated by third parties or by previous owners or operators whose treatment and disposal of hazardous substances, wastes, or petroleum hydrocarbons was not under our control. These properties and the substances disposed or released on, under or from them may be subject to CERCLA, RCRA and analogous state laws. Under such laws, we could be required to undertake response or corrective measures, which could include removal of previously disposed substances and wastes, cleanup of contaminated property or performance of remedial plugging or waste pit closure operations to prevent future contamination.

Water Discharges

The Federal Water Pollution Control Act, or the Clean Water Act, and comparable state laws impose restrictions and strict controls regarding the discharge of pollutants, including produced waters and other oil and natural gas wastes, into federal and state waters. The discharge of pollutants into regulated waters is prohibited, except in accordance with the terms of a permit issued by the EPA or the state. The discharge of dredge and fill material in regulated waters, including wetlands, is also prohibited, unless authorized by a permit issued by the U.S. Army Corps of Engineers. Obtaining permits has the potential to delay the development of natural gas and oil projects. These laws and any implementing regulations provide for administrative, civil and criminal penalties for any unauthorized discharges of oil and other substances in reportable quantities and may impose substantial potential liability for the costs of removal, remediation and damages.

Pursuant to these laws and regulations, we may be required to obtain and maintain approvals or permits for the discharge of wastewater or storm water and are required to develop and implement spill prevention, control and countermeasure plans, also referred to as "SPCC plans," in connection with on-site storage of significant quantities of oil. We believe that we maintain all required discharge permits necessary to conduct our operations, and further believe we are in substantial compliance with the terms thereof. We are currently undertaking a review of recently acquired natural gas properties to determine the need for new or updated SPCC plans and, where necessary, we will be developing or upgrading such plans implementing the physical and operation controls imposed by these plans, the costs of which are not expected to be substantial.

- localized and global supply and demand fundamentals and transportation availability;
- weather conditions;
- technological advances affecting energy consumption;
- the price and availability of alternative fuels; and
- domestic, local and foreign governmental regulation and taxes.

Recently, global energy commodity prices have declined precipitously as a result of several factors including increased worldwide supplies, a stronger U.S. dollar, relatively mild weather in the U.S., and strong competition among oil producing countries for market share. Specifically, prices for WTI have declined from approximately $106.00 per Bbl in June 2014 to less than $50.00 per Bbl in January 2015. Henry Hub natural gas has traded around $3.00 per MMBtu in January 2015 compared to prices a year ago in January 2014 of around $4.40 per MMBtu.

Lower commodity prices reduce our cash flows and borrowing ability. We may be unable to obtain needed capital or financing on satisfactory terms, which could lead to a decline in our reserves as existing reserves are depleted. Lower commodity prices may also reduce the amount of natural gas, NGLs and oil that we can produce economically.

If commodity prices further decrease, a significant portion of our exploitation, development and exploration projects could become uneconomic. This may result in our having to make significant downward adjustments to our estimated proved reserves. As a result, a substantial or extended decline in commodity prices may materially and adversely affect our future business, financial condition, results of operations, liquidity or ability to finance planned capital expenditures.

Our exploitation, development, and exploration projects require substantial capital expenditures. We may be unable to obtain required capital or financing on satisfactory terms, which could lead to a decline in our natural gas reserves.

The natural gas industry is capital intensive. We make and expect to continue to make substantial capital expenditures for the exploitation, development, and acquisition of natural gas reserves. Our cash flow used in investing activities related to capital and exploration expenditures was approximately $4.1 billion in 2014. Our board of directors has approved a capital budget for 2015 of $1.8 billion that includes $1.6 billion for drilling and completion, $50 million for fresh water distribution and $150 million for core leasehold acreage acquisitions. Our capital budget excludes acquisitions. We expect to fund these capital expenditures with cash generated by operations and borrowings under our revolving credit facility or capital market transactions; however, our financing needs may require us to alter or increase our capitalization substantially through the issuance of debt or equity securities or the sale of assets. The actual amount and timing of our future capital expenditures may differ materially from our estimates as a result of, among other things, commodity prices, actual drilling results, the availability of drilling rigs and other services and equipment, and regulatory, technological, and competitive developments. A further reduction in commodity prices from current levels may result in an additional decrease in our actual capital expenditures, which would negatively impact our ability to grow production. For additional discussion of the risks regarding our ability to obtain funding, please read "Item 1A. Risk Factors -- The borrowing base under our revolving credit facility is subject to semi-annual redetermination by our lenders, which could result in a reduction of our borrowing base. This may hinder or prevent us from meeting our future capital needs." The issuance of additional indebtedness would require that a portion of our cash flow from operations be used for the payment of interest and principal on our indebtedness, thereby reducing our ability to use cash flow from operations to fund working capital, capital expenditures and acquisitions.

Our cash flow from operations and access to capital are subject to a number of variables, including:

- our proved reserves;
- the level of hydrocarbons we are able to produce from existing wells;
- the prices at which our production is sold;
- our ability to acquire, locate and produce new reserves; and

level of cash flows from operating activities sufficient to permit us to pay the principal, premium, if any, and interest on our indebtedness, including the senior notes.

If our cash flows and capital resources are insufficient to fund our debt service obligations, we may be forced to reduce or delay investments and capital expenditures, sell assets, seek additional capital or restructure or refinance our indebtedness, including the senior notes. Our ability to restructure or refinance our indebtedness will depend on the condition of the capital markets, including the market for senior unsecured notes, and our financial condition at such time. Any refinancing of our indebtedness could be at higher interest rates and may require us to comply with more onerous covenants, which could further restrict our business operations. The terms of existing or future debt instruments, including the indentures governing our senior notes, may restrict us from adopting some of these alternatives. In addition, any failure to make payments of interest and principal on our outstanding indebtedness on a timely basis would likely result in a reduction of our credit rating, which could harm our ability to incur additional indebtedness. In the absence of sufficient cash flows and capital resources, we could face substantial liquidity problems and might be required to dispose of material assets or operations to meet our debt service and other obligations. Our revolving credit facility and the indentures governing our senior notes currently restrict our ability to dispose of assets and our use of the proceeds from such disposition. We may not be able to consummate those dispositions, and the proceeds of any such disposition may not be adequate to meet any debt service obligations then due. These alternative measures may not be successful and may not permit us to meet our scheduled debt service obligations.

The borrowing base under our revolving credit facility may be reduced in light of recent commodity price declines, which could hinder or prevent us from meeting our future capital needs.

The borrowing base under our revolving credit facility is currently $4.0 billion, and lender commitments under our revolving credit facility are $4.0 billion. Our borrowing base is redetermined by the lenders twice per year, and the next scheduled borrowing base redetermination is expected to occur in October 2015. Our borrowing base may decrease as a result of lower oil or natural gas prices, operating difficulties, declines in reserves, lending requirements or regulations, the issuance of new indebtedness or for any other reason. We cannot be certain that funding will be available if needed, and to the extent required, on acceptable terms. In the event of a decrease in our borrowing base due to declines in commodity prices or otherwise, we may be unable to meet our obligations as they come due and could be required to repay any indebtedness in excess of the redetermined borrowing base. In addition, we may be unable to access the equity or debt capital markets, including the market for senior unsecured notes, to meet our obligations. As a result, we may be unable to implement our drilling and development plan, make acquisitions or otherwise carry out our business plan, which would have a material adverse effect on our financial condition and results of operations and impair our ability to service our indebtedness.

We are required to pay fees to our service providers based on minimum volumes under long-term contracts regardless of actual volume throughput.

We have various firm transportation and gas processing, gathering and compression service agreements in place, each with minimum volume delivery commitments. Lower commodity prices may lead to reductions in our drilling program, which may result in insufficient production to utilize our full firm transportation capacity. Our firm transportation agreements expire at various dates from 2018 to 2045, and our gas processing, gathering, and compression services agreements expire at various dates from 2016 to 2027. We are obligated to pay fees on minimum volumes to our service providers regardless of actual volume throughput. As of December 31, 2014, our long-term contractual obligations under agreements with minimum volume commitments totaled approximately $16 billion over the term of the contracts. If we have insufficient production to meet the minimum volumes, our cash flow from operations will be reduced, which may require us to reduce or delay our planned investments and capital expenditures or seek alternative means of financing all of which may have a material adverse effect on our results of operations.

Based on current projected 2015 annual production levels, we estimate that we could incur marketing expense of $100 million to $150 million for unused and un-marketed transportation capacity.

Restrictions in our existing and future debt agreements could limit our growth and our ability to engage in certain activities.

Our revolving credit facility contains a number of significant covenants (in addition to covenants restricting the incurrence of additional indebtedness), including restrictive covenants that may limit our ability to, among other things:

- sell assets;

our production was covered by our hedge contracts. If development drilling costs increase significantly because of inflation, increased demand for oilfield services, increased costs to comply with regulations governing our industry or other factors, future hedged revenues may not be sufficient to cover our costs.

In certain circumstances we may have to make cash payments under our hedging arrangements and these payments could be significant.

If natural gas or oil prices exceed the price at which we have hedged our commodities, we will be obligated to make cash payments to our hedge counterparties, which could, in certain circumstances, be significant. As of December 31, 2014, we had entered into hedging contracts through December 31, 2020 covering a total of approximately 1.8 Tcfe of our projected natural gas, NGLs, and oil production at a weighted average price of $4.43 per Mcfe. If we have to post cash collateral to meet our obligations under such arrangements, our cash otherwise available for use in our operations would be reduced.

Our derivative activities could result in financial losses or could reduce our earnings.

To achieve more predictable cash flows and reduce our exposure to adverse fluctuations in the prices of natural gas, we enter into derivative instrument contracts for a significant portion of our natural gas production, including fixed-price swaps. As of December 31, 2014, we had entered into hedging contracts through December 31, 2020 covering a total of approximately 1.8 Tcfe of our projected natural gas, NGLs, and oil production at an average index price of $4.43 per MMBtu. Accordingly, our earnings may fluctuate significantly as a result of changes in fair value of our derivative instruments.

Derivative instruments also expose us to the risk of financial loss in some circumstances, including when:

- the counterparty to the derivative instrument defaults on its contractual obligations;
- there is an increase in the differential between the underlying price in the derivative instrument and actual prices received; or
- there are issues with regard to legal enforceability of such instruments.

The use of derivatives may, in some cases, require the posting of cash collateral with counterparties. If we enter into derivative instruments that require cash collateral and commodity prices or interest rates change in a manner adverse to us, our cash otherwise available for use in our operations would be reduced which could limit our ability to make future capital expenditures and make payments on our indebtedness, and which could also limit the size of our borrowing base. Future collateral requirements will depend on arrangements with our counterparties, highly volatile oil and natural gas prices and interest rates.

In addition, derivative arrangements could limit the benefit we would receive from increases in the prices for natural gas, which could also have an adverse effect on our financial condition.

Our hedging transactions expose us to counterparty credit risk.

As of December 31, 2014, the estimated fair value of our commodity derivative contracts was approximately $1.6 billion. Any default by the counterparties to these derivative contracts when they become due would have a material adverse effect on our financial condition and results of operations. The fair value of our commodity derivative contracts at December 31, 2014 includes the following values by bank counterparty: Credit Suisse — $268 million; Barclays — $257 million; JP Morgan — $253 million; BNP Paribas — $233 million; Citigroup — $231 million; Wells Fargo — $211 million; Scotiabank — $77 million; Fifth Third Bank — $31 million; Toronto Dominion Bank — $28 million; Bank of Montreal — $4 million. The credit ratings of certain of these banks have been downgraded because of the sovereign debt crisis in Europe.

Our hedging transactions expose us to risk of financial loss if a counterparty fails to perform under a derivative contract. Disruptions in the financial markets could lead to sudden decreases in a counterparty's liquidity, which could make them unable to perform under the terms of the derivative contract and we may not be able to realize the benefit of the derivative contract.

If commodity prices decrease to a level such that our future undiscounted cash flows from our properties are less than their carrying value for a significant period of time, we will be required to take write-downs of the carrying values of our properties.

Accounting rules require that we periodically review the carrying value of our properties for possible impairment. Based on specific market factors and circumstances at the time of prospective impairment reviews, and the continuing evaluation of development plans, production data, economics and other factors, we may be required to write down the carrying value of our properties. A writedown constitutes a non-cash charge to earnings. We may incur impairment charges in the future, which could have a material adverse effect on our results of operations for the periods in which such charges are taken.

Unless we replace our reserves with new reserves and develop those reserves, our reserves and production will decline, which would adversely affect our future cash flows and results of operations.

Producing natural gas reservoirs generally are characterized by declining production rates that vary depending upon reservoir characteristics and other factors. Unless we conduct successful ongoing exploitation, development and exploration activities or continually acquire properties containing proved reserves, our proved reserves will decline as those reserves are produced. Our future natural gas reserves and production, and therefore our future cash flow and results of operations, are highly dependent on our success in efficiently developing and exploiting our current reserves and economically finding or acquiring additional recoverable reserves. We may not be able to develop, exploit, find or acquire sufficient additional reserves to replace our current and future production. If we are unable to replace our current and future production, the value of our reserves will decrease, and our business, financial condition and results of operations would be adversely affected.

Conservation measures and technological advances could reduce demand for oil and natural gas.

Fuel conservation measures, alternative fuel requirements, increasing consumer demand for alternatives to oil and natural gas, technological advances in fuel economy and energy generation devices could reduce demand for oil and natural gas. The impact of the changing demand for oil and gas services and products may have a material adverse effect on our business, financial condition, results of operations and cash flows.

The inability of our significant customers to meet their obligations to us may adversely affect our financial results.

In addition to credit risk related to receivables from commodity derivative contracts, our principal exposures to credit risk are through joint interest receivables ($116 million at December 31, 2014) and the sale of our natural gas production ($192 million in receivables at December 31, 2014), which we market to energy marketing companies, end users, and refineries. Joint interest receivables arise from billing entities who own partial interest in the wells we operate. These entities participate in our wells primarily based on their ownership in leased properties on which we wish to drill. We can do very little to choose who participates in our wells. We are also subject to credit risk due to concentration of our natural gas receivables with several significant customers. The largest purchaser of our natural gas during the twelve months ended December 31, 2014 purchased approximately 29% of our operated production. We do not require our customers to post collateral. The inability or failure of our significant customers to meet their obligations to us or their insolvency or liquidation may adversely affect our financial results.

Our operations may be exposed to significant delays, costs and liabilities as a result of environmental and occupational health and safety requirements applicable to our business activities.

We may incur significant delays, costs and liabilities as a result of environmental and occupational health and safety requirements applicable to our exploration, development and production activities. Those delays, costs and liabilities could arise under a wide range of federal, regional, state and local laws and regulations relating to protection of the environment and worker health and safety, including regulations and enforcement policies that have tended to become increasingly strict over time resulting in longer waiting periods to receive permits and other regulatory approvals. Failure to comply with these laws and regulations may result in the assessment of administrative, civil and criminal penalties, imposition of cleanup and site restoration costs and liens, and, in some instances, issuance of orders or injunctions limiting or requiring discontinuation of certain operations.

For example, in June 2013 and January 2014, we received orders for compliance from federal regulatory agencies, including the EPA, relating to certain of our activities in West Virginia. The orders allege that certain of our operations at several well sites are in non-compliance with certain environmental regulations, such as unpermitted discharges of fill material into wetlands or waters of the United States that are potentially in violation of the Clean Water Act. We have responded to all pending orders and are actively

cooperating with the relevant agencies. No fine or penalty relating to these matters has been proposed at this time, but the Company believes that these actions will result in monetary sanctions exceeding $100,000. In addition, we expect to incur additional costs to remediate these well locations in order to bring them into compliance with applicable environmental laws and regulations. We have not, however, been required to suspend our operations at these locations to date and our management team does not expect these matters to have a material adverse effect on our financial condition, results of operations or cash flows.

Strict, joint and several liabilities may be imposed under certain environmental laws, which could cause us to become liable for the conduct of others or for consequences of our own actions that were in compliance with all applicable laws at the time those actions were taken. In addition, claims for damages to persons or property, including natural resources, may result from the environmental and worker health and safety impacts of our operations. We have been named from time to time as a defendant in litigation related to such matters. For example, we have been named as the defendant in separate lawsuits in Colorado, West Virginia and Pennsylvania in which the plaintiffs have alleged that our oil and natural gas activities exposed them to hazardous substances and damaged their properties. The plaintiffs have requested unspecified damages and other injunctive or equitable relief. We are not yet able to estimate what our aggregate exposure for monetary or other damages resulting from these or other similar claims might be. Also, new laws, regulations or enforcement policies could be more stringent and impose unforeseen liabilities or significantly increase compliance costs. If we were not able to recover the resulting costs through insurance or increased revenues, our business, financial condition or results of operations could be adversely affected.

We may incur substantial losses and be subject to substantial liability claims as a result of our operations. Additionally, we may not be insured for, or our insurance may be inadequate to protect us against, these risks.

We are not insured against all risks. Losses and liabilities arising from uninsured and underinsured events could materially and adversely affect our business, financial condition or results of operations.

Our natural gas exploration and production activities are subject to all of the operating risks associated with drilling for and producing natural gas, including the possibility of:

- environmental hazards, such as uncontrollable releases of oil, natural gas, brine, well fluids, toxic gas or other pollution into the environment, including groundwater, air and shoreline contamination;
- abnormally pressured formations;
- mechanical difficulties, such as stuck oilfield drilling and service tools and casing collapse;
- fires, explosions and ruptures of pipelines;
- personal injuries and death;
- natural disasters; and
- terrorist attacks targeting natural gas and oil related facilities and infrastructure.

Any of these risks could adversely affect our ability to conduct operations or result in substantial loss to us as a result of claims for:

- injury or loss of life;
- damage to and destruction of property, natural resources and equipment;
- pollution and other environmental damage;
- regulatory investigations and penalties;
- suspension of our operations; and

disproportionate amount of our managerial and financial resources. In addition, possible future acquisitions may be larger and for purchase prices significantly higher than those paid for earlier acquisitions. No assurance can be given that we will be able to identify additional suitable acquisition opportunities, negotiate acceptable terms, obtain financing for acquisitions on acceptable terms or successfully acquire identified targets. Our failure to achieve consolidation savings, to integrate the acquired businesses and assets into our existing operations successfully or to minimize any unforeseen operational difficulties could have a material adverse effect on our financial condition and results of operations.

In addition, our revolving credit facility and the indentures governing our senior notes impose certain limitations on our ability to enter into mergers or combination transactions. Our revolving credit facility and the indentures governing our senior notes also limit our ability to incur certain indebtedness, which could indirectly limit our ability to engage in acquisitions of businesses.

Market conditions or operational impediments may hinder our access to natural gas, NGLs, and oil markets or delay our production.

Market conditions or the unavailability of satisfactory natural gas, NGLs, and oil transportation arrangements may hinder our access to natural gas, NGLs, and oil markets or delay our production. The availability of a ready market for our natural gas and oil production depends on a number of factors, including the demand for and supply of natural gas, NGLs, and oil and the proximity of reserves to pipelines and terminal facilities. Our ability to market our production depends in substantial part on the availability and capacity of gathering systems, pipelines, and processing facilities owned and operated by third parties. Our failure to obtain such services on acceptable terms could materially harm our business. We may be required to shut in wells due to lack of a market or inadequacy or unavailability of natural gas, NGLs, and oil pipelines or gathering system capacity. In addition, if natural gas, NGLs, or oil quality specifications for the third –party natural gas, NGLs, or oil pipelines with which we connect change so as to restrict our ability to transport natural gas, NGLs, or oil, our access to natural gas, NGLs, and oil markets could be impeded. If our production becomes shut in for any of these or other reasons, we would be unable to realize revenue from those wells until other arrangements were made to deliver the products to market.

We are subject to complex federal, state, local and other laws and regulations that could adversely affect the cost, manner or feasibility of conducting our operations or expose us to significant liabilities.

Our natural gas exploration, production and transportation operations are subject to complex and stringent laws and regulations. In order to conduct our operations in compliance with these laws and regulations, we must obtain and maintain numerous permits, approvals and certificates from various federal, state and local governmental authorities. We may incur substantial costs in order to maintain compliance with these existing laws and regulations. In addition, our costs of compliance may increase if existing laws and regulations are revised or reinterpreted, or if new laws and regulations become applicable to our operations. Such costs could have a material adverse effect on our business, financial condition and results of operations.

Our business is subject to federal, state and local laws and regulations as interpreted and enforced by governmental authorities possessing jurisdiction over various aspects of the exploration for, and the production and transportation of, natural gas, NGLs, and oil. Failure to comply with such laws and regulations, including any evolving interpretation and enforcement by governmental authorities, could have a material adverse effect on our business, financial condition and results of operations.

Changes to existing or new regulations may unfavorably impact us, could result in increased operating costs and have a material adverse effect on our financial condition and results of operations. Such potential regulations could increase our operating costs, reduce our liquidity, delay or halt our operations or otherwise alter the way we conduct our business, which could in turn have a material adverse effect on our financial condition, results of operations and cash flows.

The unavailability or high cost of additional drilling rigs, equipment, supplies, personnel, and oilfield services could adversely affect our ability to execute our exploration and development plans within our budget and on a timely basis.

The demand for qualified and experienced field personnel to drill wells and conduct field operations, geologists, geophysicists, engineers, and other professionals in the oil and natural gas industry can fluctuate significantly, often in correlation with natural gas and oil prices, causing periodic shortages. Historically, there have been shortages of drilling and workover rigs, pipe and other equipment as demand for rigs and equipment has increased along with the number of wells being drilled. We cannot predict whether these conditions will exist in the future and, if so, what their timing and duration will be. Such shortages could delay or cause us to incur significant expenditures that are not provided for in our capital budget, which could have a material adverse effect on our business, financial condition or results of operations.

Federal, state and local legislative and regulatory initiatives relating to hydraulic fracturing as well as governmental reviews of such activities could result in increased costs and additional operating restrictions or delays in the completion of oil and natural gas wells and adversely affect our production.

Hydraulic fracturing is an important and common practice that is used to stimulate production of natural gas and/or oil from dense subsurface rock formations. The hydraulic fracturing process involves the injection of water, sand, and chemicals under pressure into targeted subsurface formations to fracture the surrounding rock and stimulate production. We regularly use hydraulic fracturing as part of our operations. Hydraulic fracturing typically is regulated by state oil and natural gas commissions, but the EPA has asserted federal regulatory authority pursuant to the federal SDWA over certain hydraulic fracturing activities involving the use of diesel fuels and issued permitting guidance in February 2014 regarding the use of diesel fuels in fracturing fluids. In May 2012, the EPA announced its intent to develop and issue regulations under the Toxic Substances Control Act to require companies to disclose information regarding the chemicals used in hydraulic fracturing. Furthermore, the EPA has adopted regulations requiring the reduction of volatile organic compound emissions from oil and natural gas production facilities by mandating the use of "green completions" for hydraulic fracturing activities. These regulations require the operator to recover rather than vent gas and natural gas liquids that return to the surface during well completion operations. In addition, Congress has from time to time considered legislation to provide for federal regulation of hydraulic fracturing under the SDWA and to require disclosure of the chemicals used in the hydraulic fracturing process. At the state level, several states have adopted or are considering legal requirements that could impose more stringent permitting, disclosure, and well construction requirements on hydraulic fracturing activities. Local government also may seek to adopt ordinances within their jurisdictions regulating the time, place and manner of drilling activities in general or hydraulic fracturing activities in particular. Some states and municipalities have sought to ban hydraulic fracturing altogether. We believe that we follow applicable standard industry practices and legal requirements for groundwater protection in our hydraulic fracturing activities. Nonetheless, if new or more stringent federal, state, or local legal restrictions relating to the hydraulic fracturing process are adopted in areas where we operate, we could incur potentially significant added costs to comply with such requirements, experience delays or curtailment in the pursuit of exploration, development, or production activities, and perhaps even be precluded from drilling wells.

In addition, certain governmental reviews have been conducted or are underway that focus on environmental aspects of hydraulic fracturing practices. The White House Council on Environmental Quality is coordinating an administration – wide review of hydraulic fracturing practices. The EPA has commenced a study of the potential environmental effects of hydraulic fracturing on drinking water and groundwater, with a draft final report drawing conclusions about the potential impacts of hydraulic fracturing on drinking water resources expected to be available for public comment and peer review sometime in the first half of 2015. Moreover, the EPA is developing effluent limitations for the treatment and discharge of wastewater resulting from hydraulic fracturing activities and plans to propose these standards sometime in the first half of 2015. In addition, the U.S. Department of the Interior published a revised proposed rule in May 2013 that would implement updated requirements for hydraulic fracturing activities on federal lands, including new requirements relating to public disclosure, well bore integrity and handling of flowback water. Other governmental agencies, including the U.S. Department of Energy, have evaluated or are evaluating various other aspects of hydraulic fracturing. These activities could spur initiatives to further regulate hydraulic fracturing under the SDWA or other regulatory mechanisms, and could ultimately make it more difficult or costly for us to perform hydraulic fracturing activities and increase our costs of compliance and doing business.

Competition in the natural gas industry is intense, making it more difficult for us to acquire properties, market natural gas and secure trained personnel.

Our ability to acquire additional prospects and to find and develop reserves in the future will depend on our ability to evaluate and select suitable properties and to consummate transactions in a highly competitive environment for acquiring properties, marketing natural gas and securing trained personnel. Also, there is substantial competition for capital available for investment in the oil and natural gas industry. Many of our competitors possess and employ financial, technical and personnel resources substantially greater than ours. Those companies may be able to pay more for productive natural gas properties and exploratory prospects and to evaluate, bid for and purchase a greater number of properties and prospects than our financial or personnel resources permit. In addition, other companies may be able to offer better compensation packages to attract and retain qualified personnel than we are able to offer. The cost to attract and retain qualified personnel has increased over the past three years due to competition and may increase substantially in the future. We may not be able to compete successfully in the future in acquiring prospective reserves, developing reserves, marketing hydrocarbons, attracting and retaining quality personnel and raising additional capital, which could have a material adverse effect on our business.

Certain federal income tax deductions currently available with respect to natural gas and oil exploration and development may be eliminated, and additional state taxes on natural gas extraction may be imposed, as a result of future legislation.

The Fiscal Year 2016 Budget proposed by the President of the United States recommends the elimination of certain key U.S. federal income tax incentives currently available to oil and gas exploration and production companies, and legislation has been introduced in Congress that would implement many of these proposals. Such changes include, but are not limited to, (i) the repeal of the percentage depletion allowance for oil and gas properties; (ii) the elimination of current deductions for intangible drilling and development costs; (iii) the elimination of the deduction for certain U.S. production activities for oil and gas production; and (iv) an extension of the amortization period for certain geological and geophysical expenditures. It is unclear, however, whether any such changes will be enacted or how soon such changes could be effective.

The passage of this legislation or any other similar change in U.S. federal income tax law could eliminate or postpone certain tax deductions that are currently available with respect to natural gas and oil exploration and development, and any such change could negatively affect our financial condition and results of operations.

In May 2014, the Ohio State House passed House Bill 375, which introduced a severance tax on production from horizontally fractured wells at a rate of 2.5 percent of wellhead gross receipts. The Ohio State Senate has yet to consider this proposal. It is unclear whether this or any similar Ohio legislation will be enacted or when such legislation could be made effective.

Item 1B. Unresolved Staff Comments

Not applicable.

Item 3. Legal Proceedings

In March 2011, we received orders for compliance from federal regulatory agencies, including the EPA, relating to certain of our activities in West Virginia. The orders allege that certain of our operations at several well sites are in non-compliance with certain environmental regulations, such as unpermitted discharges of fill material into wetlands or waters of the United States that are potentially in violation of the Clean Water Act. No fine or penalty relating to these matters has been proposed at this time, but the Company believes that these actions will result in monetary sanctions exceeding $100,000. We are unable to estimate the total amount of such monetary sanctions or costs to remediate these locations in order to bring them into compliance with applicable environmental laws and regulations. We have not, however, been required to suspend our operations at these locations to date and management does not expect these matters to have a material adverse effect on our financial condition, results of operations or cash flows.

We have been named in separate lawsuits in Colorado, West Virginia, Ohio, and Pennsylvania in which the plaintiffs have alleged that our oil and natural gas activities exposed them to hazardous substances and damaged their properties and their persons. The plaintiffs have requested unspecified damages and other injunctive or equitable relief. We deny as such allegations and intend to vigorously defend ourselves against these actions. We are unable to estimate the amount of monetary damages, if any, that might result from these claims.

We are party to various other legal proceedings and claims in the ordinary course of our business. We believe certain of these matters will be covered by insurance and that the outcome of other matters will not have a material adverse effect on our consolidated financial position, results of operations or liquidity.

Item 4. Mine Safety Disclosures

Not applicable.

Item 6. Selected Financial Data

The following table shows our selected historical consolidated financial data, for the periods ended and as of the dates indicated, for Antero Resources Corporation and its subsidiaries.

The selected statement of operations data for the years ended December 31, 2012, 2013, and 2014 and the balance sheet data as of December 31, 2013 and 2014 are derived from our audited consolidated financial statements included in Item 8 of this Annual Report on Form 10-K. The selected statement of operations data for the years ended December 31, 2009 and 2010 and the balance sheet data as of December 31, 2010, 2011, and 2012 are derived from our audited consolidated financial statements not included in Item 8 of this Annual Report on Form 10-K.

The statement of operations data for all periods presented has been recast to present the results of operations from our Piceance Basin and Arkoma Basin operations in discontinued operations. The losses on the sales of these properties are also included in discontinued operations in 2012, with adjustments in 2013 and 2014 due to the resolution of certain liabilities recorded at the time of the sales and the settlement of final purchase price adjustments. The results from continuing operations reflect our remaining operations in the Appalachian Basin. No part of our general and administrative expenses or interest expense was allocated to discontinued operations.

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our consolidated financial statements and related notes included elsewhere in this report. The following discussion contains "forward -looking statements" that reflect our future plans, estimates, beliefs and expected performance. We caution that assumptions, expectations, projections, intentions, or beliefs about future events may, and often do, vary from actual results and the differences can be material. Some of the key factors that could cause actual results to vary from our expectations include changes in natural gas, NGLs and oil prices, the timing of planned capital expenditures, our ability to fund our development programs, availability of acquisitions, uncertainties in estimating proved reserves and forecasting production results, operational factors affecting the commencement or maintenance of producing wells, the condition of the capital markets generally, as well as our ability to access them, and uncertainties regarding environmental regulations or litigation and other legal or regulatory developments affecting our business, as well as those factors discussed below, all of which are difficult to predict. In light of these risks, uncertainties and assumptions, the forward -looking events discussed may not occur. See "Cautionary Statement Regarding Forward -Looking Statements." Also, see the risk factors and other cautionary statements described under the heading "Item 1A. Risk Factors." We do not undertake any obligation to publicly update any forward -looking statements except as otherwise required by applicable law.

In this section, references to "Antero," "Antero Resources," "we," "us," and "our" refer to Antero Resources Corporation and its subsidiaries, unless otherwise indicated or the context otherwise requires.

Our Company

Antero Resources Corporation is an independent oil and natural gas company engaged in the exploitation, development and acquisition of natural gas, NGLs, and oil properties located in the Appalachian Basin. We focus on unconventional reservoirs, which can generally be characterized as fractured shale formations. Our management team has worked together for many years and has a successful track record of reserve and production growth as well as significant expertise in unconventional resource plays. Our strategy is to leverage our team's experience delineating and developing natural gas resource plays to profitably grow our reserves and production, primarily on our existing multi-year project inventory.

We have assembled a portfolio of long-lived properties that are characterized by what we believe to be low geologic risk and repeatability. Our drilling opportunities are focused in the Marcellus Shale and Utica Shale of the Appalachian Basin. As of December 31, 2014 , we held approximately 395,000 net acres in the southwestern core of the Marcellus Shale and approximately 148,000 net acres in the core of the Utica Shale. In addition, we estimate that approximately 191,000 net acres of our Marcellus Shale leasehold are prospective for the slightly shallower Upper Devonian Shale. Finally, we own the deep rights on approximately 171,000 net acres of our Marcellus Shale acreage that we believe is prospective for the dry gas Utica Shale.

As of December 31, 2014 , our estimated proved reserves were approximately 12.7 Tcfe, consisting of 10.5 Tcf of natural gas, 330 MMBbl of NGLs, and 28 MMBbl of oil. This represents a 66 % increase from proved reserve volumes at December 31, 2013 . These reserve estimates have been prepared by our internal reserve engineers and management and audited by our independent reserve engineers. As of December 31, 2014 , we had approximately 5,331 potential horizontal well locations on our existing leasehold acreage, both proven and unproven.

We believe we have secured sufficient long-term firm takeaway capacity on major pipelines that are operating or are currently under construction in each of our core operating areas to accommodate our current development plans.

We operate in the following industry segments: (i) the exploration, development and production of natural gas, NGLs, and oil, (ii) gathering and compression, (iii) fresh water distribution, and (iv) marketing of excess firm transportation capacity. All of our operations are conducted in the United States.

Energy Industry Environment

Recently, global energy commodity prices have declined precipitously as a result of several factors including increased worldwide supplies, a stronger U.S. dollar, relatively mild weather in the U.S., and strong competition among oil producing countries for market share. Specifically, prices for WTI have declined from approximately $106.00 per Bbl in June 2014 to less than $50.00 per Bbl in January 2015. Henry Hub natural gas has traded around $3.00 per MMBtu in January 2015 compared to prices a year ago in January 2014 of around $4.40 per MMBtu. In response to these market conditions and concerns about access to capital markets, U.S. exploration and development companies have significantly reduced capital spending plans. Our capital budget for 2015 is $1.8 billion

(not including the capital budget of Antero Midstream Partners LP), a 41% reduction from our final 2014 capital budget. We plan to operate an average of 14 drilling rigs in 2015 down from 21 at December 31, 2014 and to complete 130 horizontal Marcellus and Utica wells in 2015, down from 177 in 2014. We believe that our 2015 capital budget will be fully funded through operating cash flow and available borrowing capacity under our revolving credit facility. We will continue to monitor commodity prices and may revise the capital budget if conditions warrant.

Source of Our Revenues

Our revenues are primarily derived from the sale of natural gas and oil production, as well as the sale of NGLs that are extracted from our natural gas during processing. Our production revenues derive entirely from the continental United States. During 2014 our revenues from production were comprised of approximately 75% from the sale of natural gas and 25% from the sale of NGLs and oil. Natural gas, NGLs, and oil prices are inherently volatile and are influenced by many factors outside of our control. All of our production is derived from natural gas wells, some of which also produce NGLs, after processing, and limited quantities of oil. To achieve more predictable cash flows and to reduce our exposure to downward price fluctuations, we use derivative instruments to hedge future sales prices on a significant portion of our production. We currently use fixed-price natural gas, propane, and oil swaps in which we receive a fixed price for future production in exchange for a payment of the variable market price received at the time future production is sold. At the end of each period, we estimate the fair value of these swaps and, because we have not elected hedge accounting, we recognize the changes in the fair value of commodity derivative instruments in earnings at the end of each accounting period. We expect continued volatility in the prices we receive for our production and the fair value of our swaps.

Principal Components of Our Cost Structure

- *Lease operating expenses.* These are the day to day operating costs incurred to maintain production of our natural gas, NGLs, and oil. Such costs include labor-related costs to monitor producing wells, produced water recycling, monitoring, pumping, maintenance, repairs, and workover expenses. Cost levels for these expenses can vary based on supply and demand for oilfield services.
- *Gathering, compression, processing and transportation.* These are costs incurred to bring natural gas, NGLs, and oil to the market. Such costs include the costs to operate and maintain our low- and high-pressure gathering and compression systems as well as fees paid to third parties who operate low – and high –preasure gathering systems that transport our gas. They also include costs to process and extract NGLs from our produced gas and to transport our NGLs and oil to market. We often enter into fixed price long –term contracts that secure transportation and processing capacity which may include minimum volume commitments, the cost for which is included in these expenses to the extent that they are not excess capacity.
- *Production and ad valorem taxes.* Production and ad valorem taxes consist of severance and ad valorem taxes. Severance taxes are paid on produced natural gas, NGLs, and oil based on a percentage of realized prices (not hedged prices) and at fixed per unit rates established by federal, state or local taxing authorities. Ad valorem taxes are paid based on the value of our property and equipment in service.
- *Marketing expenses .* In 2014, we began to purchase and sell third-party natural gas and ethane, and market our excess firm transportation capacity, in order to utilize our excess firm transportation capacity. Marketing costs include firm transportation costs related to capacity contracted for in advance of having sufficient production and infrastructure to fully utilize the capacity and the costs of third-party purchased gas and ethane. We enter into long-term firm transportation agreements for a significant part of our current and expected future production in order to secure guaranteed capacity on major pipelines.
- *Exploration expense.* These are geological and geophysical costs and include seismic costs, costs of unsuccessful exploratory dry holes and costs related to unsuccessful leasing efforts.
- *Impairment of unproved and proved properties.* These costs include unproved property impairment and costs associated with lease expirations. We would also record impairment charges for proved properties if the carrying value were to exceed estimated future cash flows. Through December 31, 2014 , we have not recorded any impairment for proved properties.

Results of Operations

Year Ended December 31, 2013 Compared to Year Ended December 31, 2014

The Company has four operating segments: (1) exploration and production, (2) gathering and compression, (3) fresh water distribution, and (4) marketing. Revenues from the gathering and compression and fresh water distribution operations are primarily derived from intersegment transactions for services provided to our exploration and production operations. Marketing revenues are primarily derived from activities to purchase and sell third-party natural gas and to market excess firm transportation capacity to third parties. Marketing of excess firm transportation capacity began in the second quarter of 2014, and was subsequently determined to be a new reportable segment. Prior to 2013, the Company's gathering and compression and fresh water distribution operations were immaterial and were considered ancillary to the Company ' s exploration and production activities. The operating results and assets of the Company ' s reportable segments were as follows for the years ended December 31, 2013 and 2014

Following is an analysis of operating income for the various segments for the years ended December 31, 2013 and 2014:

	Exploration and production	Gathering and compression	Fresh water distribution	Elimination of intersegment transactions	Consolidated total
2013:					
Sales and revenues:					
Third-party	$ 1,313,134	—	—	—	1,313,134
Intersegment	—	22,363	35,871	(58,234)	—
	$ 1,313,134	22,363	35,871	(58,234)	1,313,134
Operating expenses:					
Lease operating	$ 9,439	—	3,843	(3,843)	9,439
Gathering, compression, processing, and transportation	238,712	2,079	—	(22,363)	218,428
Depletion, depreciation, and amortization	219,757	11,346	2,773	—	233,876
General and administrative expense (before equity-based compensation)	50,442	7,193	2,523	—	60,158
Equity-based compensation expense	340,931	15,931	8,418	—	365,280
Other operating expenses	82,787	—	1,959	—	84,746
Total	942,068	36,549	19,516	(26,206)	971,927
Operating income (loss)	$ 371,066	(14,186)	16,355	(32,028)	341,207

	Exploration and production	Gathering and compression	Fresh water distribution	Marketing	Elimination of intersegment transactions	Consolidated total
2014:						
Sales and revenues:						
Third-party	$2,644,953	6,810	15,265	53,604	—	2,720,632
Intersegment	195	88,936	156,660	—	(245,791)	—
	$2,645,148	95,746	171,925	53,604	(245,791)	2,720,632
Operating expenses:						
Lease operating	$ 28,041	—	34,737	—	(33,437)	29,341
Gathering, compression, processing, and transportation	536,879	13,497	—	—	(88,963)	461,413
Depletion, depreciation, and amortization	424,684	36,972	16,240	—	—	477,896
General and administrative expense (before equity-based compensation)	85,701	13,416	5,332	—	(168)	104,281
Equity-based compensation expense	100,634	8,619	2,999	—	—	112,252
Other operating expenses	128,419	1,973	1,888	103,435	—	235,715
Total	1,304,358	74,477	61,196	103,435	(122,568)	1,420,898
Operating income (loss)	$1,340,790	21,269	110,729	(49,831)	(123,223)	1,299,734

The following table a set forth selected operating data for the year ended December 31, 2013 compared to the year ended December 31, 2014 :

(in thousands, except per unit and production data)	Year ended December 31, 2013	2014	Amount of Increase (Decrease)	Percent Change
Operating revenues:				
Natural gas sales	$ 689,198	$ 1,301,349	$ 612,151	89 %
NGLs sales	111,663	328,323	216,660	194 %
Oil sales	20,584	107,080	86,496	420 %
Gathering, compression, and water distribution	—	22,075	22,075	*
Marketing	—	53,604	53,604	*
Commodity derivative fair value gains	491,689	868,201	376,512	77 %
Gain on sale of gathering system	—	40,000	40,000	*
Total operating revenues	1,313,134	2,720,632	1,407,498	107 %
Operating expenses:				
Lease operating	9,439	29,341	19,902	211 %
Gathering, compression, processing, and transportation	218,428	461,413	242,985	111 %
Production and ad valorem taxes	50,481	87,918	37,437	74 %
Marketing	—	103,435	103,435	*
Exploration	22,272	27,893	5,621	25 %
Impairment of unproved properties	10,928	15,198	4,270	39 %
Depletion, depreciation, and amortization	233,878	477,896	244,020	104 %
Accretion of asset retirement obligations	1,065	1,271	206	19 %
General and administrative (before equity-based compensation)	60,158	104,281	44,123	73 %
Equity-based compensation	365,280	112,252	(253,028)	(69)%
Total operating expenses	971,927	1,420,899	448,971	46 %
Operating income	341,207	1,299,734	958,527	281 %
Other Expenses:				
Interest expense	(136,617)	(160,051)	(23,434)	17 %
Loss on early extinguishment of debt	(42,567)	(20,386)	22,181	(52)%
Total other expenses	(179,184)	(180,437)	(1,253)	1 %
Income from continuing operations before income taxes and discontinued operations	162,023	1,119,297	957,274	591 %
Income tax expense	(186,210)	(445,672)	(259,462)	139 %
Income (loss) from continuing operations	(24,187)	673,625	697,812	*
Income from discontinued operations	5,257	2,210	(3,047)	(58)%
Net income (loss) and comprehensive income (loss) including noncontrolling interest	(18,930)	675,835	694,765	*
Net income and comprehensive income attributable to noncontrolling interest	—	2,248	2,248	*
Net income (loss) and comprehensive income (loss) attributable to Antero Resources Corporation	$ (18,930)	$ 673,587	$ 692,517	*
Adjusted EBITDAX (1)	$ 649,358	$ 1,161,767	$ 512,409	79 %

future plans to develop the acreage, and recognize impairment costs accordingly.

DD&A. DD&A increased from $234 million for the year ended December 31, 2013 to $478 million for the year ended December 31, 2014, primarily because of increased production. DD&A per Mcfe increased by 6%, from $1.23 per Mcfe during the year ended December 31, 2013 to $1.30 per Mcfe during the year ended December 31, 2014, primarily due to increased depreciation on growing midstream assets and facilities.

We evaluate the impairment of our proved natural gas and oil properties on a field-by-field basis whenever events or changes in circumstances indicate that a property's carrying amount may not be recoverable. If the carrying amount exceeds the estimated undiscounted future cash flows, we reduce the carrying amount of the oil and gas properties to their estimated fair value. No impairment expenses were recorded for the year ended December 31, 2013 or 2014 for proved properties.

General and administrative and equity-based compensation expense. General and administrative expense (before equity-based compensation expense) increased from $60 million for the year ended December 31, 2013 to $104 million for the year ended December 31, 2014, primarily as a result of increased staffing levels and related salary and benefits expenses, as well as increases in legal and other general corporate expenses, all of which are due to our increase in development activities and production levels. On a per unit basis, general and administrative expense before equity-based compensation decreased by 13%, from $0.32 per Mcfe during the year ended December 31, 2013 to $0.28 per Mcfe during the year ended December 31, 2014 primarily due to a 93% increase in production. We had 233 employees as of December 31, 2013 and 444 employees as of December 31, 2014.

Noncash equity-based compensation expense decreased from $365 million for the year ended December 31, 2013 to $112 million for the year ended December 31, 2014. Noncash equity-based compensation expense included charges of $365 million and $84 million for the years ended December 31, 2013 and 2014, respectively, for the amortization of expense related to the vesting of profits interests issued upon the completion of our IPO in 2013. See note 1 to the consolidated financial statements included elsewhere in this report for more information on the vested profits interest charges.

Interest expense. Interest expense increased from $137 million for the year ended December 31, 2013 to $160 million for the year ended December 31, 2014, primarily due to increased indebtedness. Interest expense includes approximately $ 6 million and $8 million of non-cash amortization of deferred financing costs for the years ended December 31, 2013 and 2014, respectively.

Income tax expense. Income tax expense increased from $186 million for the year ended December 31, 2013 to $446 million for the year ended December 31, 2014 because of the increase in pre-tax income compared to the prior year. Equity-based compensation expense of $365 million in 2013 and $84 million in 2014 related to the vested profits interests charge is not deductible for federal or state income taxes and, along with the effect of state taxes, largely accounts for the difference between the federal tax rate of 35% and the rates at which income tax expense was provided for the years ended December 31, 2013 and 2014.

At December 31, 2014, we had approximately $1.1 billion of U.S. federal net operating loss carryforward a (NOLs) and approximately $1.0 billion of state NOLs, whi ch expire from 2024 through 2034. From time to time there has been proposed legislation in the U.S. Congress to eliminate or limit future deductions for intangible drilling costs; such legislation could significantly affect our future taxable position if passed. The impact of any change will be recorded in the period that any such legislation might be enacted.

The calculation of our tax liabilities involves uncertainties in the application of complex tax laws and regulations. We give financial statement recognition to those tax positions that wa believe are more-likely-than-not to be sustained upon examination by the Internal Revenue Service or state revenue authorities. The financial statements include unrecognized benefits at December 31, 2014 of $11 million that, if recognized, would result in a reduction of current income taxes payable and an increase in noncurrent deferred tax liabilities. As of December 31, 2014, we have accrued approximately $ 0.8 million of interest on unrecognized tax benefits.

During 2014, the Internal Revenue Service completed its examination of the tax returns of Antero Resources Finance Corporation (which was merged with Antero Resources Corporation in December 2013) for its tax years 2011 and 2012. There were no adjustments to our tax returns as a result of the examination. The Company's state tax returns are being examined by West Virginia taxing authorities for tax years 2010 through 2012. The Company does not expect any material adjustments to tax liabilities will result from the examination.

Income from discontinued operations. In 2012, the Company sold its Piceance Basin assets in Colorado and its Arkoma Basin assets in Oklahoma. Total proceeds from the sales, including liquidation of related hedge positions, were approximately $843 million and pre-tax losses on the asset sales of approximately $796 million were recorded in 2012. Pre-tax losses were adjnsted

downward in 2013 and 2014 by $8.5 million and $3.6 million for the resolution of certain liabilities recorded at the time of the sales and settlement of final contractual purchase price adjustments.

Adjusted EBITDAX. Adjusted EBITDAX increased from $649 million for the year ended December 31, 2013 to $1.162 billion for the year ended December 31, 2014, an increase of 79%. The increase in Adjusted EBITDAX was primarily due to a 93% increase in production, which was partially offset by a 1% decrease in the average per Mcfe price received after the impact of cash settled derivatives, net of the related increases in cash operating and general and administrative expenses. See "Item 6. Selected Financial Data" included elsewhere in this report for a definition of EBITDAX (a non-GAAP measure) and a reconciliation of EBITDAX to net income (loss) from continuing operations.

Discussion of Segment Results for 2014 Compared to 2013

Gathering and Compression

Revenue for the gathering and compression segment increased from $22.4 million for the year ended December 31, 2013 to $95.7 million for the year ended December 31, 2014, an increase of $73.3 million, or 327%. Gathering revenues increased by $68.1 million from the prior year and compression revenues increased by $5.2 million as additional wells on production increased throughput volumes. During 2014, we added twelve high-pressure gathering lines, a condensate gathering system, and three Antero compressor stations. Gathering throughput volumes increased from 73.1 Bcf, or 200 MMcf per day, in 2013 to 349.7 Bcf, or 958 MMcf per day in 2014. Compression throughput volumes increased from 9.9 Bcf, or 27 MMcf per day, in 2013 to 38.1 Bcf, or 104 MMcf per day, in 2014. Total operating expenses related to gathering and compression increased from $36.5 million in 2013 to $74.5 million in 2014 as a result of the increased throughput volumes.

Fresh Water Distribution

Revenue for the fresh water distribution segment increased from $35.9 million for the year ended December 31, 2013 to $171.9 million for the year ended December 31, 2014, an increase of $136.0 million. The increase was due driven by the build out of the water system and resulting increased use of the water system in our hydraulic fracturing activities and the addition of a third-party customer. The volume of water delivered through the system increased from 10.5 MMBbls in 2013 to 48.7 MMBbls in 2014. Operating expenses for the fresh water distribution system increased from $19.5 million in 2013 to $61.2 million in 2014 as a result of the increased use of the system.

Marketing

In 2014, we began to purchase and sell third-party natural gas and NGLs and market our excess firm transportation capacity in order to optimize the revenues from these assets. Marketing revenues of $54 million and expenses of $103 million for the year ended December 31, 2014 relate to these activities. Marketing costs include firm transportation costs related to current excess capacity as well as the cost of third-party purchased gas and NGLs. This includes firm transportation costs of $4.3 million for the year ended December 31, 2014 related to an ethane transportation contract which is not being utilized because we are not currently recovering ethane. We enter into long-term firm transportation agreements for a significant part of our current and expected future production in order to secure guaranteed capacity to favorable markets.

(1) See "Item 6. Selected Financial Data" included elsewhere in this report for a definition of EBITDAX (a non –GAAP measure) and a reconciliation of EBITDAX to net income (loss).

Exploration expense. Exploration expense increased from $15 million for the year ended December 31, 2012 to $22 million for the year ended December 31, 2013 primarily because of an increase in the cost of unsuccessful lease acquisition efforts as we materially increased the number of contract lease brokers providing services to us in the Appalachian Basin.

Impairment of unproved properties. Impairment of unproved properties was approximately $11 million for the year ended December 31, 2013 compared to $12 million for the year ended December 31, 2012. We charge impairment expense for expired or soon-to-be expired leases when we determine they are impaired based on factors such as remaining lease terms, reservoir performance, commodity price outlooks or future plans to develop the acreage and recognize impairment costs accordingly.

DD&A. DD&A increased from $102 million for the year ended December 31, 2012 to $234 million for the year ended December 31, 2013, an increase of $132 million, as a result of increased production in 2013 compared to 2012. DD&A per Mcfe increased 5%, from $1.17 per Mcfe during 2012 to $1.23 per Mcfe during 2013 as a result of increased depreciation on growing gathering and water systems and facilities and increased proved property costs subject to depletion.

We evaluate the impairment of our proved natural gas, NGLs, and oil properties on a field-by-field basis whenever events or changes in circumstances indicate that a property's carrying amount may not be recoverable. If the carrying amount exceeds the estimated undiscounted future cash flows, we reduce the carrying amount of the oil and gas properties to their estimated fair value. There were no impairment expenses recorded for the years ended December 31, 2012 or 2013 for proved properties. As of December 31, 2013, no significant exploratory well costs had been deferred for over one year pending proved reserves determination.

General and administrative expense. General and administrative expense (before equity-based compensation) increased from $45 million for the year ended December 31, 2012 to $60 million during 2013, an increase of $15 million. The increase is due to increased costs related to salaries, employee benefits, contract personnel and other general business expenses required to support the growth of our capital expenditure program and production levels. The number of our full-time employees grew from 150 at December 31, 2012 to 233 at December 31, 2013. On a per-Mcfe basis, general and administrative expense (before equity-based compensation) decreased by 38%, from $0.52 per Mcfe during the year ended December 31, 2012 to $0.32 per Mcfe during 2013 primarily due to a 119% growth in production. No portion of general and administrative expenses was allocated to discontinued operations as we did not expect any reduction of such expenses as a result of the sale of the Arkoma and Piceance properties. When all discontinued operations are included, general and administrative expenses were $0.37 per Mcfe in 2012.

In 2013, we recognized noncash equity-based compensation expense of approximately $365 million, almost all of which was related to the interests of our employees in Antero Employee Holdings LLC ("Employee Holdings"), which owns interests in Antero Investment LLC ("Antero Investment"). Prior to our IPO, the interests of Employee Holdings were subject to performance and service conditions which could be met generally only in the event of a liquidation or distribution event. In connection with our IPO, the terms of the Antero Investment operating agreement provided for a mechanism by which the shares of our common stock to be allocated amongst the members of Antero Investment, including Employee Holdings, will be specifically determined. As a result, the satisfaction of all performance and service conditions relative to the membership interests of Employee Holdings in Antero Investment became probable. Accordingly, we recognized approximately $365 million of equity-based compensation expense in 2013 relative to these interests and will recognize approximately another $121 million over the remaining expected service period. The equity-based compensation relative to these interests is treated as a capital contribution from Antero Investment in our financial statements and is not deductible for Federal or state income tax purposes in 2013 or in the future.

Interest expense and loss on early extinguishment of debt. Interest expense increased from $98 million for the year ended December 31, 2012 to $137 million for the year ended December 31, 2013, an increase of $39 million as a result of an increase in the amount of senior notes outstanding and the average balance of the revolving credit facility outstanding during 2013 compared to 2012. During 2013, we incurred a loss of $43 million on the early extinguishment of debt resulting from (i) the retirement of $140 million of the 7.25% senior notes due 2019 from the proceeds of our IPO and (ii) the retirement of the 9.375% senior notes due 2017 having a principal amount of $525 million from the proceeds of the issuance of the 5.375% notes due 2021. The loss of $43 million is comprised of redemption premiums of $35 million and the write-off of deferred financing costs and unamortized premium and discounts of $8 million.

Income tax expense. Income tax expense related to continuing operations was $186 million (84% of pre-tax income) in 2013 compared to $121 million (35% of pre-tax income) in 2012. Income tax expense increased from 35% of pre-tax income to 115% of pre-tax income because the equity-based compensation expense recognized in 2013, related to the allocation of shares among the members of Antero Investment and Employee Holdings, is a nondeductible permanent difference between our taxable income and income recognized for financial statements. Although we have accrued $11 million at December 31, 2013 for unrecognized tax

benefits, no taxes were due at the end of either December 31, 2012 or 2013. We have not generated current taxable income in either the current or prior years, which is primarily attributable to the differing book and tax treatment of unrealized derivative gains and intangible drilling costs. At December 31, 2013, we had approximately $1.2 billion of U.S. federal and state net operating loss carryforwards, which expire starting in 2024 and continue through 2033. At December 31, 2013, we recorded valuation allowances of approximately $27 million for deferred tax assets primarily related to state loss carryforwards in states where we no longer operate. From time to time there has been proposed legislation in the U.S. Congress to delay or limit future deductions for intangible drilling costs; such legislation could significantly affect our future taxable position if passed. The impact of any change will be recorded in the period that such legislation might be enacted.

The calculation of our tax liabilities involves uncertainties in the application of complex tax laws and regulations. We give financial statement recognition to those tax positions that we believe are more -likely -than -not to be sustained upon examination by the Internal Revenue Service or state revenue authorities. The financial statements include unrecognized benefits at December 31, 2013 of $11 million that, if recognized, would result in a reduction of current income taxes payable and an increase in noncurrent deferred tax liabilities. No impact to our 2013 effective tax rate would result. As of December 31, 2013, approximately $0.5 million of interest has been accrued on unrecognized tax benefits.

The tax returns of Antero Resources Finance Corporation (which was merged with the Antero Resources Corporation in December 2013) are being examined by the Internal Revenue Service for its tax years 2011 and 2012. The Company's state tax returns are being examined by West Virginia taxing authorities for tax years 2010 through 2012. The Company does not expect any material adjustments to tax liabilities will result from either the federal or the state examination.

Income (loss) from discontinued operations. Income (loss) from discontinued operations includes the results of operations from the Arkoma Basin and Piceance Basin operations (including revenues and direct operating expenses and allocated income tax expense, but not general and administrative or interest expenses) and, in 2012, the loss on the sale of these assets. An analysis of these operations is included in note 3 to the consolidated financial statements included elsewhere in this report. Income (loss) from discontinued operations was $(510) million in 2012, primarily as a result of the loss on the sale of the properties of $796 million and a $273 million tax benefit from the loss. Income from discontinued operations of $5 million in 2013 resulted from the reduction of various liability provisions made in connection with the sale of $8 million, net of tax benefits of $3 million and final purchase price adjustments.

Adjusted EBITDAX from continuing and discontinued operations. Adjusted EBITDAX from continuing operations increased to $649 million for the year ended December 31, 2013 from $285 million for the year ended December 31, 2012, an increase of 128%. The increase in Adjusted EBITDAX resulted from a 119% increase in production, a 2% increase in the average per Mcfe price received after the impact of cash settled derivatives, net of the related increases in cash operating and general and administrative expenses. Adjusted EBITDAX from discontinued operations related to the Piceance and Arkoma Basin assets disposed of in 2012 was $150 million for the year ended December 31, 2012. See "Item 6. Selected Financial Data" included elsewhere in this report for a definition of EBITDAX (a non -GAAP measure) and a reconciliation of EBITDAX to net income (loss).

Capital Resources and Liquidity

Historically, our primary sources of liquidity have been through issuances of debt and equity securities, borrowings under our revolving credit facility, asset sales, and net cash provided by operating activities. During 2014 , we raised capital through the issuance of $1.1 billion of 5.125% senior notes due 2022, and the initial public offering of our subsidiary, Antero Midstream Partners LP, receiving net proceeds of $1.1 billion. Our primary use of cash has been for the exploration, development and acquisition of natural gas, NGLs, and oil properties as well as for development of gathering, compression, and fresh water system infrastructure. As we pursue reserve and production growth, we continually monitor what capital resources, including equity and debt financings, are available to meet our future financial obligations, planned capital expenditure activities and liquidity requirements. Our future success in growing proved reserves and production will be highly dependent on the capital resources available to us.

As of December 31, 2014 , we had 5,331 potential horizontal well locations, which will take many years to develop. More specifically, our proved undeveloped reserves will require an estimated $8.2 billion of development capital over the next five years in order to fully develop the properties associated with our proved reserves . A significant portion of this capital requirement will be funded out of operating cash flows. However, we may be required to generate or raise significant capital to develop our proved undeveloped reserves.

Cash Flow Provided by Operating Activities

Net cash provided by operating activities was $332 million, $535 million and $998 million for the years ended December 31, 2012, 2013 and 2014, respectively. The increase in cash flows from operations from 2012 to 2013 and also from 2013 to 2014 was primarily the result of increased revenues from oil and gas production and cash settled derivatives, net of increased operating expenses and interest expense and changes in working capital.

Our operating cash flow is sensitive to many variables, the most significant of which is the volatility of prices for natural gas, NGLs, and oil prices. Prices for these commodities are determined primarily by prevailing market conditions. Factors including regional and worldwide economic activity, weather, infrastructure capacity to reach markets, and other variables influence market conditions for these products. These factors are beyond our control and are difficult to predict. For additional information on the impact of changing prices on our financial position, see "Item 7A. Quantitative and Qualitative Disclosure About Market Risk."

Cash Flow Used in Investing Activities

During the years ended December 31, 2012, 2013, and 2014, we used cash flows in investing activities of $463 million, $2.7 billion, and $4.1 billion, respectively, as a result of our capital expenditures for drilling, development, acquisitions, and construction of midstream infrastructure. Net of proceeds from asset sales in 2012 of $1.2 billion, capital expenditures for drilling, development, and acquisition were $1.7 billion in 2012.

Our board of directors has approved a capital budget of $1.8 billion for 2015, which does not include the capital budget of $425 million to $450 million for Antero Midstream, our consolidated subsidiary. Our capital budget may be adjusted as business conditions warrant. The amount, timing and allocation of capital expenditures is largely discretionary and within our control. If natural gas, NGLs, and oil prices decline to levels below our acceptable levels or costs increase to levels above our acceptable levels, we could choose to defer a significant portion of our budgeted capital expenditures until later periods to achieve the desired balance between sources and uses of liquidity and prioritize capital projects that we believe have the highest expected returns and potential to generate near-term cash flow. We routinely monitor and adjust our capital expenditures in response to changes in prices, availability of financing, drilling and acquisition costs, industry conditions, the timing of regulatory approvals, the availability of rigs, success or lack of success in drilling activities, contractual obligations, internally generated cash flow and other factors both within and outside our control.

Cash Flow Provided by Financing Activities

Net cash provided by financing activities in 2014 of $3.3 billion was primarily the result of (i) proceeds from the issuance of senior notes of $1.1 billion, (ii) net borrowings on our credit facilities of $1.4 billion, (iii) proceeds from the Antero Midstream IPO of $1.1 billion, net of (iv) $309 for retirements of senior notes and payments for early redemption premiums and deferred financing costs. The increase in cash and cash equivalents of $228 million in 2014 is primarily due to cash retained by Antero Midstream subsequent to its IPO. Antero Midstream had a cash balance of $230 million as of December 31, 2014.

Net cash provided by financing activities in 2013 of $2.1 billion was primarily the result of (i) proceeds from our IPO of $1.6 billion, (ii) proceeds from the issuance of senior notes of $1.2 billion, net of (iii) $744 million for retirements of senior notes and payments for early redemption premiums and deferred financing costs.

Net cash provided by financing activities in 2012 of $147 million was primarily the result of (i) $300 million of cash provided by the issuance of senior notes, net of (ii) net repayments of our revolving credit facility of $148 million and other items of $5 million, including deferred financing costs.

Debt Agreements and Contractual Obligations

Senior Secured Revolving Credit Facility. Our revolving credit facility (the "Credit Facility") provides for a maximum amount of $4.0 billion and at December 31, 2014 has a borrowing base of $4.0 billion. The borrowing base is redetermined semi-annually and is dependent upon the amount of our proved oil and gas reserves and estimated cash flows from these reserves and our hedge positions. The next redetermination is scheduled to occur in October 2015. Current lender commitments are $4.0 billion. At December 31, 2014, we had $1.73 billion of borrowings and $387 million of letters of credit outstanding under the Credit Facility. The Credit Facility matures on May 5, 2019.

Midstream Credit Facility. On November 10, 2014, in connection with the closing of its IPO, Antero Midstream entered into a new revolving credit facility (the "Midstream Facility") among Antero Midstream, certain lenders party thereto, Wells Fargo Bank, National Association, as administrative agent, letter of credit issuer and swing line lender, and 16 other financial institutions thereto. The Midstream Facility provides for lender commitments of $1.0 billion and for a letter of credit sublimit of $150 million. There were no borrowings or letters of credit outstanding under the Midstream Facility as of December 31, 2014. The Midstream Facility will mature on November 10, 2019.

Principal amounts borrowed are payable on the maturity date with such borrowings bearing interest that is payable quarterly. Antero Midstream has a choice of borrowing in Eurodollars or at the base rate. Eurodollar loans bear interest at a rate per annum equal to the LIBOR Rate administered by the ICE Benchmark Administration for one, two, three, six or twelve months plus an applicable margin ranging from 150 to 225 basis points, depending on the leverage ratio then in effect. Base rate loans bear interest at a rate per annum equal to the greatest of (i) the agent bank's reference rate, (ii) the federal funds effective rate plus 50 basis points and (iii) the rate for one month Eurodollar loans plus 100 basis points, plus an applicable margin ranging from 50 to 125 basis points, depending on the leverage ratio then in effect.

The Midstream Facility is secured by mortgages on substantially all of Antero Midstream's and its restricted subsidiaries' properties—primarily assets used in the provision of gathering and compression services to the Company and third parties—and guarantees from its restricted subsidiaries. The Midstream Facility is not guaranteed by Antero Resources Corporation. Interest is payable at a variable rate based on LIBOR or the prime rate based on Antero Midstream's election at the time of borrowing. The Midstream Facility contains restrictive covenants that may limit Antero Midstream's ability to, among other things:

- incur additional indebtedness;
- sell assets;
- make loans to others;
- make investments;
- enter into mergers;
- make certain restricted payments;
- incur liens; and
- engage in certain other transactions without the prior consent of the lenders.

Borrowings under the Midstream Facility also require Antero Midstream to maintain the following financial ratios:

- an interest coverage ratio, which is the ratio of Antero Midstream's consolidated EBITDA to its consolidated current interest charges of at least 2.5 to 1.0 at the end of each fiscal quarter; provided that upon obtaining investment grade rating, the borrower may elect not to be subject to such ratio;
- a consolidated total leverage ratio, which is the ratio of consolidated debt to consolidated EBITDA, of not more than 5.0 to 1.0; provided that after electing to issue unsecured high yield notes, the consolidated total leverage ratio will not be more than 5.25 to 1.0, or, following the election of the borrower for two fiscal quarters after a material acquisition, 5.50 to 1.0; and
- if Antero Midstream elects to issue unsecured high yield notes, a consolidated senior secured leverage ratio, which is the ratio of consolidated senior secured debt to consolidated EBITDA, of not more than 3.75 to 1.0.

Antero Midstream was in compliance with such covenants and ratios as of December 31, 2014.

Senior Notes. We have $525 million of 6.00% senior notes outstanding, which are due December 1, 2020. The 2020 notes are unsecured and effectively subordinated to the Credit Facility and the Water Facility to the extent of the value of the collateral securing such facilities. The 2020 notes rank pari passu to our other outstanding senior notes. The 2020 notes are guaranteed on a

Contractual Obligations. A summary of our contractual obligations as of December 31, 2013 is provided in the following table (in millions).

	Year						
(In millions)	2015	2016	2017	2018	2019	Thereafter	Total
Credit Facility and Water Facility(1)	$ —	115	—	—	1,615	—	1,730
Senior notes—principal(2)	—	—	—	—	—	2,625	2,625
Senior notes—interest(2)	142	142	142	142	142	279	989
Drilling rig and frac service commitments(3)	212	161	96	—	—	—	469
Firm transportation (4)	316	593	800	867	939	10,376	13,891
Gas processing, gathering, and compression services (5)	336	237	245	244	193	1,040	2,295
Office and equipment leases	9	9	8	6	4	11	47
Asset retirement obligations(6)	—	—	—	—	—	17	17
Total	$ 1,015	1,257	1,291	1,259	2,893	14,348	22,063

(1) Includes outstanding principal amounts at December 31, 2014 . This table does not include future commitment fees, interest expense or other fees on our Credit Facility and Water Facility because they are floating rate instruments and we cannot determine with accuracy the timing of future loan advances, repayments, or future interest rates to be charged.

(2) Includes the 6.00% notes due 2020, the 5.375% notes due 2021, and the 5.125% notes due 2022 .

(3) Includes contracts for the services of drilling rigs and frac fleets, which expire at various dates from March 2015 through September 2017. The values in the table represent the gross amounts that we are committed to pay; however, we will record in our financial statements our proportionate share of costs based on our working interest.

(4) Includes firm transportation agreements with various pipelines in order to facilitate the delivery of production to market. These contracts commit us to transport minimum daily natural gas or NGLs volumes at negotiated rates, or pay for any deficiencies at specified reservation fee rates. The amounts in this table represent our minimum daily volumes at the reservation fee rate. The values in the table represent the gross amounts that we are committed to pay; however, we will record in our financial statements our proportionate share of costs based on our working interest.

(5) Contractual commitments for gas processing, gathering and compression services agreements represent minimum commitments under long-term gas processing agreements as well as various gas compression agreements. The values in the table represent the gross amounts that we are committed to pay; however, we will record in our financial statements our proportionate share of costs based on our working interest.

(6) Represents the present value of our estimated asset retirement obligations. Neither the ultimate settlement amounts nor the timing of our asset retirement obligations can be precisely determined in advance; however, we believe it is likely that a very small amount of these obligations will be settled within the next five years.

Critical Accounting Policies and Estimates

The discussion and analysis of our financial condition and results of operations are based upon our consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States. The preparation of our financial statements requires us to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues and expenses and related disclosure of contingent assets and liabilities. Certain accounting policies involve judgments and uncertainties to such an extent that there is reasonable likelihood that materially different amounts could have been reported under different conditions, or if different assumptions had been used. We evaluate our estimates and assumptions on a regular basis. We base our estimates on historical experience and various other assumptions that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates and assumptions used in preparation of our consolidated financial statements. We provide expanded discussion of our more significant accounting policies, estimates and judgments below. We believe these accounting policies reflect our more significant estimates and assumptions used in preparation of

The primary objective of the following information is to provide forward -looking quantitative and qualitative information about our potential exposure to market risk. The term "market risk" refers to the risk of loss arising from adverse changes in natural gas, NGLs, and oil prices and interest rates. The disclosures are not meant to be precise indicators of expected future losses, but rather indicators of reasonably possible losses. This forward -looking information provides indicators of how we view and manage our ongoing market risk exposures. All of our market risk sensitive instruments were entered into for hedging purposes, rather than for speculative trading.

Commodity Hedging Activities

Our primary market risk exposure is in the price we receive for our natural gas, NGLs, and oil production. Realized pricing is primarily driven by spot regional market prices applicable to our U.S. natural gas production and the prevailing worldwide price for crude oil. Pricing for natural gas, NGLs, and oil production has been volatile and unpredictable for several years, and we expect this volatility to continue in the future. The prices we receive for production depend on many factors outside of our control, including volatility in the differences between product prices at sales points and the applicable index price.

To mitigate some of the potential negative impact on our cash flow caused by changes in commodity prices, we enter into financial commodity swap contracts to receive fixed prices for a portion of our natural gas, NGLs, and oil production when management believes that favorable future prices can be secured. We hedge part of our production at a fixed price for natural gas at our sales points (New York Mercantile Exchange ("NYMEX") less basis) to mitigate the risk of differentials to the sales point prices. Part of our production is also hedged at NYMEX prices.

Our financial hedging activities are intended to support natural gas, NGLs, and oil prices at targeted levels and to manage our exposure to natural gas, NGLs, and oil price fluctuations. The counterparty is required to make a payment to us for the difference between the fixed price and the settlement price if the settlement price is below the fixed price. We are required to make a payment to the counterparty for the difference between the fixed price and the settlement price if the fixed price is below the settlement price. These contracts may include financial price swaps whereby we will receive a fixed price for our production and pay a variable market price to the contract counterparty, cashless price collars that set a floor and ceiling price for the hedged production, or basis differential swaps . If the applicable monthly price indices are outside of the ranges set by the floor and ceiling prices in the various collars, we and the counterparty to the collars would be required to settle the difference. The Company was not party to any collars as of, or during the year ended, December 31 , 2014.

At December 31, 2014 , we had in place natural gas, oil, and propane swaps covering portions of our projected production from 2015 through 2020. Our commodity hedge position as of December 31, 2014 is summarized in note 8 to our consolidated financial statements included elsewhere herein. Our financial hedging activities are intended to support natural gas, NGLs, and oil prices at targeted levels and to manage our exposure to natural gas price fluctuations. As amended on February 17, 2015, our revolving credit facility allows us to hedge up to 75% of our projected oil and gas production for the next five years, and 65% of projected production in 2020. Based on our annual production and our fixed price swap contracts in place during 2014 , our income before taxes for the year ended December 31, 2014 would have decreased by approximately $13 million for each $0.10 decrease per MMBtu in natural gas prices and $1.00 decrease per Bbl in oil and NGLs prices.

All derivative instruments, other than those that meet the normal purchase and normal sales exception, are recorded at fair market value in accordance with U.S. GAAP and are included in our consolidated balance sheets as assets or liabilities. The fair values of our derivative instruments are adjusted for non -performance risk. Because we do not designate these derivatives as accounting hedges, they do not receive hedge accounting treatment; all mark -to -market gains or losses, as well as cash receipts or payments on settled derivative instruments, are recognized in our statements of operations. We present the total of realized and unrealized gains or losses on commodity derivatives in our operating revenues as "Commodity derivative fair value gains."

Mark -to -market adjustments of derivative instruments produce earnings volatility but have no cash flow impact relative to changes in market prices until the derivative contracts are settled. We expect continued volatility in the fair value of our derivative instruments. Our cash flow is only impacted when the associated derivative instrument contract is settled by making or receiving a payment to or from the counterparty. At December 31, 2013 and 2014 , the estimated fair value of our commodity derivative instruments was a net asset of $ 860 million and $ 1.6 billion, respectively, comprised of current and noncurrent assets and current liabilities. None of these commodity derivative instruments were entered into for trading or speculative purposes.

By removing price volatility from a portion of our expected natural gas production through December 2020, we have mitigated, but not eliminated, the potential effects of changing prices on our operating cash flow for those periods. While mitigating negative effects of falling commodity prices, these derivative contracts also limit the benefits we would receive from increases in commodity prices above the hedge prices.

Counterparty and Customer Credit Risk

Our principal exposures to credit risk are through receivables resulting from commodity derivatives contracts ($ 1.6 billion at December 31, 2014), the sale of our oil and gas production ($ 192 million at December 31, 2014) which we market to energy companies, end users and refineries, and joint interest receivables ($116 million at December 31, 2014).

By using derivative instruments that are not traded on an exchange to hedge exposures to changes in commodity prices, we expose ourselves to the credit risk of our counterparties. Credit risk is the potential failure of the counterparty to perform under the terms of the derivative contract. When the fair value of a derivative contract is positive, the counterparty is expected to owe us, which creates credit risk. To minimize the credit risk in derivative instruments, it is our policy to enter into derivative contracts only with counterparties that are creditworthy financial institutions deemed by management as competent and competitive market makers. The creditworthiness of our counterparties is subject to periodic review. We have economic hedges in place with ten different counterparties, all of which are lenders under our Credit Facility. The fair value of our commodity derivative contracts of approximately $ 1.6 billion at December 31, 2014 includes the following values by bank counterparty: Credit Suisse — $268 million; Barclays — $257 million; JP Morgan — $253 million; BNP Paribas — $233 million; Citigroup — $231 million; Wells Fargo — $211 million; Scotiabank — $77 million; Fifth Third Bank — $31 million; Toronto Dominion Bank — $28 million; Bank of Montreal — $4 million. The credit ratings of certain of these banks were downgraded in recent years because of the sovereign debt crisis in Europe. The estimated fair value of our commodity derivative assets has been risk adjusted using a discount rate based upon the respective published credit default swap rates (if available, or if not available, a discount rate based on the applicable Reuters bond rating) at December 31 , 2014 for each of the European and American banks . We believe that all of these institutions currently are acceptable credit risks. Other than as provided by our revolving credit facility, we are not required to provide credit support or collateral to any of our counterparties under our derivative contracts, nor are they required to provide credit support to us. As of December 31, 2014 , we did not have past –due receivables from, or payables to, any of the counterparties to our derivative contracts.

We are also subject to credit risk due to concentration of our receivables from several significant customers for sales of natural gas. We, generally, do not require our customers to post collateral. The inability or failure of our significant customers to meet their obligations to us or their insolvency or liquidation may adversely affect our financial results.

Joint interest receivables arise from billing entities who own partial interest in the wells we operate. These entities participate in our wells primarily based on their ownership in leased properties on which we wish to drill. We can do very little to choose who participates in our wells.

Interest Rate Risks

Our primary exposure to interest rate risk results from outstanding borrowings under our Credit Facility and Water Facility , and the Midstream Facility of our subsidiary, Antero Midstream. Each of these credit facilities has a floating interest rate. The average annual interest rate incurred on this indebtedness for the year ended December 31, 2014 was approximately 1.99%. A 1.0% increase in each of the applicable average interest rates for the year ended December 31, 2014 would have resulted in an estimated $11 million increase in interest expense for that period.

Item 8. Financial Statements and Supplementary Data

The Report of Independent Registered Public Accounting Firm, Consolidated Financial Statements and supplementary financial data required for this Item are set forth beginning on page F –1 of this report and are incorporated herein by reference.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

Not applicable.

Item 9B. Other Information

Disclosure Pursuant to Section 13(r) of the Exchange Act

Pursuant to Section 13(r) of the Securities Exchange Act of 1934, we, Antero Resources Corporation , may be required to disclose in our annual and quarterly reports to the Securities and Exchange Commission (the "SEC"), whether we or any of our "affiliates" knowingly engaged in certain activities, transactions or dealings relating to Iran or with certain individuals or entities targeted by US economic sanctions. Disclosure is generally required even where the activities, transactions or dealings were conducted in compliance with applicable law. Because the SEC defines the term "affiliate" broadly, it includes any entity under common "control" with us (and the term "control" is also construed broadly by the SEC).

The description of the activities below has been provided to us by Warburg Pincus LLC ("WP"), affiliates of which: (i) beneficially own more than 10% of our outstanding common stock and/or are members of our board of directors and (ii) beneficially own more than 10% of the equity interests of, and have the right to designate members of the board of directors of, Endurance International Group ("EIG") and Santander Asset Management Investment Holdings Limited ("SAMIH"). EIG and SAMIH may therefore be deemed to be under common "control" with us ; however, this statement is not meant to be an admission that common control exists.

The disclosure below relates solely to activities conducted by EIG and SAMIH and its non-U.S. affiliates that may be deemed to be under common "control" with us . The disclosure does not relate to any activities conducted by Antero Resources Corporation or by WP and does not involve our or WP's management. Neither us nor WP has had any involvement in or control over the disclosed activities of SAMIH, and neither us nor WP has independently verified or participated in the preparation of the disclosure. Neither us nor WP is representing as to the accuracy or completeness of the disclosure nor do we or WP undertake any obligation to correct or update it.

As to EIG

We understand that EIG's affiliates intend to disclose in their next annual or quarterly SEC report that:

> "On July 2, 2013, the billing information for a subscriber account, or the Subscriber Account, was updated to include Seyed Mahmoud Mohaddes, or Mohaddes. On September 16, 2013, the Office of Foreign Assets Control, or OFAC, designated Mohaddes as a Specially Designated National, or SDN, pursuant to 31 C.F.R. Part 560.304. On or around September 26, 2014, during a routine compliance scan of new and existing subscriber accounts, EIG discovered that Mohaddes, a SDN, was named as an account contact for the Subscriber Account. EIG promptly suspended the Subscriber Account, locked the domain name IOCUKLTD.COM, which was registered to the Subscriber Account, and reported the domain name to OFAC as potentially the property of a SDN subject to blocking pursuant to Executive Order 13599. Since September 16, 2013, when Mohaddes was added to the SDN list, charges in the total amount of $120.35 were made to the Subscriber Account for web hosting and domain privacy services. EIG has ceased billing for the Subscriber Account. To date, EIG has not received any correspondence from OFAC regarding this matter.
>
> On July 10, 2014, OFAC designated each of Stars Group Holding, or Stars, and Teleserve Plus SAL, or Teleserve, as SDNs under Executive Order 13224, and their property became subject to blocking pursuant to the Global Terrorism Sanctions Regulations, 31 C.F.R. Part 594. On July 15, 2014, as part of EIG's compliance review processes, EIG discovered that the domain names associated with each of Stars, STARSCOM.NET, and Teleserve, TELESERVEPLUS.COM, or collectively, the Stars/Teleserve Domain Names, were registered through EIG's platform. EIG immediately took steps to suspend and lock the Stars/Teleserve Domain Names to prevent them from being transferred or resolving to a website, and EIG promptly reported the Domain Names as potentially blocked property to OFAC. EIG did not generate any revenue from the Stars/Teleserve Domain Names between when they were added to the SDN list on July 10, 2014 and when EIG discovered that they were registered through EIG's platform on July 15, 2014. To date, EIG has not received any correspondence from OFAC regarding the matter.
>
> On July 15, 2014 during a compliance scan of all domain names on one of our platforms, EIG identified the domain name KAHANETZADAK.COM, or the Domain Name, which was listed as an 'also known as,' or AKA, of the entity Kahane Chai which operates as the American Friends of the United Yeshiva. Kahane Chai was designated as a SDN on November 2, 2001 pursuant to Executive Order 13224. Because the Domain Name was transferred into a

PART III

Item 10. Directors, Executive Officers, and Corporate Governance

Pursuant to General Instruction G(3) to Form 10-K, we incorporate by reference into this Item the information to be disclosed in our definitive proxy statement for our 2015 Annual Meeting of Stockholders.

Directors and Executive Officers

The following table sets forth names, ages and titles of our directors and executive officers as of December 31, 2014.

Name	Age	Title
Paul M. Rady	61	Chairman of the Board, Director and Chief Executive Officer
Glen C. Warren, Jr.	58	Director, President, Chief Financial Officer and Secretary
Kevin J. Kilstrom	60	Vice President – Production
Alvyn A. Schopp	56	Chief Administrative Officer and Regional Vice President
Ward D. McNeilly	64	Vice President – Reserves, Planning and Midstream
Peter R. Kagan	46	Director
W. Howard Keenan, Jr.	64	Director
Christopher R. Manning	47	Director
Richard W. Connor	65	Director
Robert J. Clark	69	Director
Benjamin A. Hardesty	65	Director
James R. Levy	38	Director

Set forth below is the description of the backgrounds of our directors and executive officers.

Paul M. Rady has served as Chief Executive Officer and Chairman of the Board of Directors since May 2004. Mr. Rady also served as Chief Executive Officer and Chairman of the Board of Directors of our predecessor company, Antero Resources Corporation, from its founding in 2002 to its ultimate sale to XTO Energy, Inc. in April 2005. Mr. Rady also serves as Chairman of the Board of Directors of the general partner of Antero Midstream Partners LP. Prior to Antero Resources Corporation, Mr. Rady served as President, CEO and Chairman of Pennaco Energy from 1998 until its sale to Marathon in early 2001. Prior to Pennaco, Mr. Rady was with Barrett Resources from 1990 until 1998 where he initially was recruited as Chief Geologist in 1990, then served as Exploration Manager, EVP Exploration, President, COO and Director and ultimately CEO. Mr. Rady began his career with Amoco where he served 10 years as a geologist focused on the Rockies and Mid-Continent. Mr. Rady holds a B.A. in Geology from Western State College of Colorado and M.Sc. in Geology from Western Washington University.

Mr. Rady's significant experience as a chief executive of oil and gas companies, together with his training as a geologist and broad industry knowledge, enable Mr. Rady to provide the board with executive counsel on a full range of business, strategic and professional matters.

Glen C. Warren, Jr. has served as President, Chief Financial Officer and Secretary and as a director since May 2004. Mr. Warren also served as President and Chief Financial Officer and as a director of our predecessor company, Antero Resources Corporation, from its founding in 2002 to its ultimate sale to XTO Energy, Inc. in April 2005. Mr. Warren also serves on the Board of Directors of the general partner of Antero Midstream Partners LP. Prior to Antero Resources Corporation, Mr. Warren served as EVP, CFO and Director of Pennaco Energy from 1998 until its sale to Marathon in early 2001. Mr. Warren spent 10 years as a natural resources investment banker focused on equity and debt financing and M&A advisory with Lehman Brothers, Dillons Read & Co. Inc. and Kidder, Peabody & Co. Mr. Warren began his career as a landman in the Gulf Coast region with Amoco, where he spent six years. Mr. Warren holds a B.A. from the University of Mississippi, a J.D. from the University of Mississippi School of Law and an M.B.A. from the Anderson School of Management at U.C.L.A.

PART IV

Item 15. Exhibits and Financial Statement Schedules

(a)(1) and (a)(2) Financial Statements and Financial Statement Schedules

The consolidated financial statements are listed on the Index to Financial Statements to this report beginning on page F-1.

(a)(3) Exhibits.

Exhibit Number	Description of Exhibit
2.1*	Purchase and Sale Agreement, dated June 1, 2012, between Antero Resources Corporation and Vanguard Permian, LLC (incorporated by reference to Exhibit 2.1 to Current Report on Form 8-K (Commission File No. 333-164876) filed on July 5, 2012).
2.2	Purchase and Sale Agreement by and among Antero Resources Piceance LLC, Antero Resources Pipeline LLC and Ursa Resources Group II LLC, dated as of November 1, 2012 (incorporated by reference to Exhibit 2.1 to Current Report on Form 8-K (Commission File No. 333-164876) filed on November 6, 2012).
3.1	Amended and Restated Certificate of Incorporation of Antero Resources Corporation (incorporated by reference to Exhibit 3.1 to Current Report on Form 8-K (Commission File No. 001-36120) filed on October 17, 2013).
3.2	Amended and Restated Bylaws of Antero Resources Corporation (incorporated by reference to Exhibit 3.2 to Current Report on Form 8-K (Commission File No. 001-36120) filed on October 17, 2013).
4.1	Indenture related to the 7.25% Senior Notes due 2019, dated as of August 11, 2011, by and among Antero Resources Finance Corporation, the several guarantors named therein and Wells Fargo Bank, National Association, as trustee (incorporated by reference to Exhibit 4.1 to Current Report on Form 8-K (Commission File No. 333-164876) filed on August 4, 2011).
4.2	Form of 7.25% Senior Note due 2019 (incorporated by reference to Exhibit 4.2 to Current Report on Form 8-K (Commission File No. 333-164876) filed on August 1, 2011).
4.3	First Supplemental Indenture related to the 7.25% Senior Notes due 2019, dated as of November 12, 2012, by and among Antero Resources Finance Corporation, the several guarantors named therein and Wells Fargo Bank, National Association, as trustee (incorporated by reference to Exhibit 4.3 to Annual Report on Form 10-K (Commission File No. 001-36120) filed on February 27, 2014).
4.4	Second Supplemental Indenture related to the 7.25% Senior Notes due 2019, dated as of October 16, 2013, by and among Antero Resources Finance Corporation, the several guarantors named therein and Wells Fargo Bank, National Association, as trustee (incorporated by reference to Exhibit 4.4 to Annual Report on Form 10-K (Commission File No. 001-36120) filed on February 27, 2014).
4.5	Third Supplemental Indenture related to the 7.25% Senior Notes due 2019, dated as of October 21, 2013, by and among Antero Resources Finance Corporation, the several guarantors named therein and Wells Fargo Bank, National Association, as trustee (incorporated by reference to Exhibit 4.5 to Annual Report on Form 10-K (Commission File No. 001-36120) filed on February 27, 2014).
4.6	Fourth Supplemental Indenture related to the 7.25% Senior Notes due 2019, dated as of December 31, 2013, by and among Antero Resources Finance Corporation, the several guarantors named therein and Wells Fargo Bank, National Association, as trustee (incorporated by reference to Exhibit 4.6 to Annual Report on Form 10-K (Commission File No. 001-36120) filed on February 27, 2014).
4.7	Fifth Supplemental Indenture related to the 7.25% Senior Notes due 2019, dated as of March 18, 2014, by and among Antero Resources Corporation, the several guarantors named therein and Wells Fargo Bank, National Association, as trustee (incorporated by reference to Exhibit 4.1 to Quarterly Report on Form 10-Q (Commission File No. 001-36120) filed on May 7, 2014).

4.21	Registration Rights Agreement, dated as of October 16, 2013, by and among Antero Resources Corporation and the owners of the membership interests in Antero Resources Investment LLC (incorporated by reference to Exhibit 10.1 to Current Report on Form 8-K (Commission File No. 001-36120) filed on October 17, 2013).
4.22	Indenture related to the 5.125% Senior Notes due 2022, dated as of May 6, 2014, by and among Antero Resources Corporation, the several guarantors named therein and Wells Fargo Bank, National Association, as trustee (incorporated by reference to Exhibit 4.1 to Current Report on Form 8-K (Commission File No. 001-36120) filed on May 8, 2014).
4.23	Form of 5.125% Senior Note due 2022 (incorporated by reference to Exhibit 4.2 to Current Report on Form 8-K (Commission File No. 001-36120) filed on May 8, 2014).
4.24	First Supplemental Indenture related to the 5.125% Senior Notes due 2022, dated as of November 24, 2014, by and among Antero Resources Corporation, the several guarantors named therein and Wells Fargo Bank, National Association, as trustee (incorporated by reference to Exhibit 4.3 to Antero Resource Corporation's Registration Statement on Form S-4 (Commission File No. 333-200605) filed on November 26, 2014).
4.25	Registration Rights Agreement related to the 5.125% Senior Notes due 2022, dated as of May 6, 2014, by and among Antero Resources Corporation and the other parties named therein and J.P. Morgan Securities LLC as representative for the initial purchasers named therein (incorporated by reference to Exhibit 4.3 to Current Report on Form 8-K (Commission File No. 001-36120) filed on May 8, 2014).
4.26	Registration Rights Agreement related to the 5.125% Senior Notes due 2022, dated as of September 18, 2014, by and among Antero Resources Corporation and the other parties named therein and J.P. Morgan Securities LLC as representative for the initial purchasers named therein (incorporated by reference to Exhibit 4.3 to Current Report on Form 8-K (Commission File No. 001-36120) filed on September 24, 2014).
10.1	Contribution Agreement, dated as of October 16, 2013, by and between Antero Resources Corporation and Antero Resources Midstream LLC (incorporated by reference to Exhibit 10.2 to Current Report on Form 8-K (Commission File No. 001-36120) filed on October 17, 2013).
10.2	Form of Indemnification Agreement (incorporated by reference to Exhibit 10.15 to Amendment No. 3 to Antero Resources Corporation's Registration Statement on Form S-1/A (Commission File No. 333-189284), filed on September 24, 2013).
10.3	Agreement and Plan of Merger dated as of October 16, 2013 by and among Antero Resources Corporation, Antero Resources LLC and Antero Resources Investment LLC (incorporated by reference to Exhibit 10.1 to Current Report on Form 8-K (Commission File No. 333-164876) filed on October 17, 2013).
10.4	Antero Resources Corporation Long-Term Incentive Plan, effective as of October 1, 2013 (incorporated by reference to Exhibit 4.3 to the Company's Registration Statement on Form S-8 (Commission File No. 001- 36120) filed on October 11, 2013).
10.5	Limited Liability Company Agreement of Antero Resources Midstream LLC (incorporated by reference to Exhibit 10.4 to Current Report on Form 8-K (Commission File No. 001-36120) filed on October 17, 2013).
10.6	Fourth Amended And Restated Credit Agreement dated as of November 4, 2010 among Antero Resources Corporation, Antero Resources Piceance Corporation, Antero Resources Pipeline Corporation and Antero Resources Appalachian Corporation, as Borrowers, certain subsidiaries of Borrowers, as Guarantors, the Lenders party thereto, JPMorgan Chase Bank, N.A., as Administrative Agent, Wells Fargo Bank, N.A., as Syndication Agent, Bank of Scotland Plc, Union Bank, N.A., Credit Agricole Corporate and Investment Bank, BNP Paribas and Deutsche Bank Trust Company Americas, as Co-Documentation Agents and J.P. Morgan Securities LLC and Wells Fargo Securities, LLC, as Joint Lead Arrangers and Joint Bookrunners (incorporated by reference to Exhibit 10.1 to Current Report on Form 8-K (Commission File No. 333-164876) filed on November 8, 2010).
10.7	First Amendment to the Fourth Amended And Restated Credit Agreement, dated as of May 12, 2011, among Antero Resources Corporation, Antero Resources Piceance Corporation, Antero Resources Pipeline Corporation and Antero Resources Appalachian Corporation, as Borrowers, certain subsidiaries of Borrowers, as Guarantors, the Lenders party thereto and JPMorgan Chase Bank, N.A., as Administrative Agent (incorporated by reference to Exhibit 10.1 to Quarterly Report on Form 10-Q (Commission File No. 333-164876) filed on May 16, 2011).

10.30	Form of Phantom Unit Grant Notice and Phantom Unit Agreement under the Antero Midstream Partners LP Long-Term Incentive Plan (incorporated by reference to Exhibit 4.4 to Midstream Partners' Registration Statement on Form S-8 (Commission File No. 001-36719) filed on November 12, 2014).
10.31	Form of Restricted Unit Grant Notice and Restricted Unit Agreement under the Antero Midstream Partners LP Long-Term Incentive Plan (incorporated by reference to Exhibit 4.4 to Midstream Partners' Registration Statement on Form S-8 (Commission File No. 001-36719) filed on November 12, 2014).
10.32	Letter Agreement dated June 29, 2012 by and among Antero Resources Corporation, Antero Resources Piceance Corporation, Antero Resources Pipeline Corporation, Antero Resources Appalachian Corporation and JPMorgan Chase Bank N.A., as administrative agent for the lenders, to reduce the borrowing base and lender commitments under the Fourth Amended and Restated Credit Agreement dated as of November 4, 2010 (incorporated by reference to Exhibit 10.1 to Current Report on Form 8-K (Commission File No. 333-164876) filed on July 5, 2012).
10.33	Letter Agreement dated November 19, 2012 by and among Antero Resources Arkoma LLC, Antero Resources Piceance LLC, Antero Resources Pipeline LLC, and Antero Resources Appalachian Corporation and JPMorgan Chase Bank N.A., as administrative agent for the lenders, to reduce the borrowing base and lender commitments under the Fourth Amended and Restated Credit Agreement dated as of November 4, 2010 (incorporated by reference to Exhibit 10.1 to Current Report on Form 8-K (Commission File No. 333-164876) filed on December 10, 2012).
10.34	Letter Agreement dated December 7, 2012 by and among Antero Resources Arkoma LLC, Antero Resources Piceance LLC, Antero Resources Pipeline LLC, and Antero Resources Appalachian Corporation and JPMorgan Chase Bank N.A., as administrative agent for the lenders, to reduce the borrowing base and lender commitments under the Fourth Amended and Restated Credit Agreement dated as of November 4, 2010 (incorporated by reference to Exhibit 10.2 to Current Report on Form 8-K (Commission File No. 333-164876) filed on December 10, 2012).
10.35	Letter Agreement dated February 4, 2013 by and among Antero Resources Arkoma LLC, Antero Resources Piceance LLC, Antero Resources Pipeline LLC, and Antero Resources Appalachian Corporation and JPMorgan Chase Bank, N.A., as administrative agent for the lenders, to reduce the borrowing base and lender commitments under the Fourth Amended and Restated Credit Agreement dated as of November 4, 2010 (incorporated by reference to Exhibit 10.2 to Current Report on Form 8-K (Commission File No. 333-164876) filed on February 4, 2013).
12.1*	Computation of Ratio of Earnings to Fixed Charges.
21.1*	Subsidiaries of Antero Resources Corporation.
23.1*	Consent of KPMG, LLP.
23.2*	Consent of DeGolyer and MacNaughton.
31.1*	Certification of the Company's Chief Executive Officer Pursuant to Section 302 of the Sarbanes Oxley Act of 2002 (18 U.S.C. Section 7241).
31.2*	Certification of the Company's Chief Financial Officer Pursuant to Section 302 of the Sarbanes Oxley Act of 2002 (18 U.S.C. Section 7241).
32.1*	Certification of the Company's Chief Executive Officer Pursuant to Section 906 of the Sarbanes Oxley Act of 2002 (18 U.S.C. Section 1350).
32.2*	Certification of the Company's Chief Financial Officer Pursuant to Section 906 of the Sarbanes Oxley Act of 2002 (18 U.S.C. Section 1350).
99.1*	Report of DeGolyer and MacNaughton, dated as of January 19, 2015, for proved reserves as of December 31, 2014.
99.2	Report of DeGolyer and MacNaughton, dated as of January 15, 2014, for proved reserves as of December 31, 2013 (incorporated by reference to Exhibit 99.2 to Current Report on Form 8-K (Commission File No. 001-36120) filed on February 7, 2013).
99.3	Report of DeGolyer and MacNaughton for proved reserves as of December 31, 2012 relating to Marcellus and Upper Devonian resources in the Appalachian Basin (incorporated by reference to Exhibit 99.1 to Amendment No. 2 to Antero Resources Corporation's Registration Statement on Form S-1/A (Commission File No. 333-189284), filed on August 30, 2013).

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

ANTERO RESOURCES CORPORATION

By: /s/ GLEN C. WARREN, JR.
Glen C. Warren, Jr.
President, Chief Financial Officer and Secretary

Date: February 25, 2015

Table of Contents

INDEX TO FINANCIAL STATEMENTS

	Page
Audited Historical Consolidated Financial Statements as of December 31, 2013 and 2014 and for the Years Ended December 31, 2012, 2013 and 2014	
Reports of Independent Registered Public Accounting Firm	F – 2
Consolidated Balance Sheets	F – 4
Consolidated Statements of Operations and Comprehensive Income (Loss)	F – 5
Consolidated Statement of Equity	F – 6
Consolidated Statements of Cash Flows	F – 7
Notes to Consolidated Financial Statements	F – 8

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors and Stockholders
Antero Resources Corporation

We have audited Antero Resources Corporation's internal control over financial reporting as of December 31, 2014, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Antero Resources Corporation's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Annual Report on Internal Control Over Financial Reporting within *Item 9A. Controls and Procedures*. Our responsibility is to express an opinion on Antero Resources Corporation's internal control over financial reporting based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that the transactions are recorded as necessary to permit preparation of financial statements in accordance with general accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In our opinion, Antero Resources Corporation maintained, in all material respects, effective internal control over financial reporting as of December 31, 2014, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheets of Antero Resources Corporation and subsidiaries as of December 31, 2013 and 2014, and the related consolidated statements of operations and comprehensive income (loss), equity, and cash flows for each of the years in the three-year period ended December 31, 2014, and our report dated February 25, 2015 expressed an unqualified opinion on those consolidated financial statements.

/s/ KPMG LLP

Denver, Colorado
February 25, 2015

ANTERO RESOURCES CORPORATION

Consolidated Statements of Cash Flows

Years ended December 31, 2012, 2013, and 2014

(In thousands)

	2012	2013	2014
Cash flows from operating activities:			
Net income (loss) including noncontrolling interest	$ (285,069)	(18,930)	675,835
Adjustment to reconcile net income to net cash provided by operating activities:			
Depletion, depreciation, amortization, and accretion	102,127	234,941	479,167
Impairment of unproved properties	12,070	10,928	15,198
Derivative fair value gain	(179,546)	(491,689)	(868,201)
Cash receipts for settled derivatives	178,491	163,970	135,714
Deferred income tax expense	106,229	190,210	445,672
Gain on sale of assets	(291,190)	—	(40,000)
Equity-based compensation expense	—	365,280	112,252
Loss on early extinguishment of debt	—	42,567	20,386
Loss (gain) on sale of discontinued operations	795,945	(8,506)	(3,564)
Depletion, depreciation, amortization, and impairment of unproved properties—discontinued operations	90,098	—	—
Derivative fair value gains—discontinued operations	(46,358)	—	—
Cash receipts for settled derivatives—discontinued operations	92,166	—	—
Deferred income tax benefit (expense)—discontinued operations	(272,553)	3,249	1,354
Other	4,960	1,173	6,430
Changes in assets and liabilities:			
Accounts receivable	3,511	(9,314)	(45,593)
Accrued revenue	(10,683)	(50,156)	(94,733)
Other current assets	(6,882)	19,543	(2,891)
Accounts payable	(2,117)	1,039	(11,710)
Accrued liabilities	14,790	26,801	83,923
Revenue distributions payable	11,268	50,552	85,763
Other	11,000	3,447	1,078
Net cash provided by operating activities	332,255	534,707	998,121
Cash flows used in investing activities:			
Additions to proved properties	(10,254)	(15,300)	(64,066)
Additions to unproved properties	(687,403)	(440,825)	(727,427)
Drilling and completion costs	(836,350)	(1,615,965)	(2,477,150)
Additions to fresh water distribution systems	(2,801)	(203,790)	(196,675)
Additions to gathering systems and facilities	(142,294)	(389,453)	(558,037)
Additions to other property and equipment	(3,447)	(6,240)	(13,218)
Decrease in notes receivable	4,889	4,555	2,667
Change in other assets	(3,707)	(6,374)	(5,749)
Proceeds from asset sales	1,217,876	—	—
Net cash used in investing activities	(463,491)	(2,673,592)	(4,039,650)
Cash flows from financing activities:			
Issuance of common stock	—	1,578,573	—
Issuance of common units in Antero Midstream Partners LP	—	—	1,087,224
Issuance of senior notes	300,000	1,231,750	1,102,500
Repayment of senior notes	—	(690,000)	(260,000)
Borrowings (repayments) on bank credit facility, net	(148,000)	71,000	1,442,000
Make-whole premium on debt extinguished	—	(33,041)	(17,383)
Payments of deferred financing costs	(5,926)	(20,899)	(31,543)
Other	808	—	(2,777)
Net cash provided by financing activities	146,882	2,137,383	3,320,021
Net increase (decrease) in cash and cash equivalents	15,646	(1,502)	228,492
Cash and cash equivalents, beginning of period	3,343	18,989	17,487
Cash and cash equivalents, end of period	$ 18,989	17,487	245,979
Supplemental disclosure of cash flow information:			
Cash paid during the period for interest	$ 90,122	117,832	163,055
Supplemental disclosure of noncash investing activities:			
Increase in accounts payable for additions to property and equipment	$ 72,881	188,123	181,591

See accompanying notes to consolidated financial statements.

ANTERO RESOURCES CORPORATION

Notes to Consolidated Financial Statements

Years Ended December 31, 2012, 2013, and 2014

(1) Organization

(a) Business and Organization

Antero Resources Corporation (by itself referred to as "Antero") and its consolidated subsidiaries (collectively referred to as the "Company") are engaged in the exploitation, development, and acquisition of natural gas, natural gas liquids ("NGLs") and oil properties in the Appalachian Basin in West Virginia, Ohio, and Pennsylvania. The Company targets large, repeatable resource plays where horizontal drilling and advanced fracture stimulation technologies provide the means to economically develop and produce natural gas, NGLs, and oil from unconventional formations. The Company has fresh water distribution operations in the Appalachian Basin, as well as gathering and compression operations through its consolidated subsidiary, Antero Midstream Partners LP (referred to as "Antero Midstream"), a publicly-traded limited partnership. During 2012, the Company sold its Oklahoma Arkoma Basin properties and its Colorado Piceance Basin properties. The Company's corporate headquarters are in Denver, Colorado.

(b) Corporate Reorganization and Initial Public Offering

Prior to October 16, 2013, the Company's predecessor, Antero Resources LLC, filed reports with the Securities and Exchange Commission. Antero Resources LLC was formed in October 2009 by members of the Company's management team and its sponsor investors. Antero Resources LLC owned 100% of the outstanding shares of Antero Resources Appalachian Corporation, which was formed in March 2008 and renamed Antero Resources Corporation in June 2013. In connection with an initial public offering ("IPO") completed on October 16, 2013, all of the ownership interests in Antero Resources LLC were exchanged for similar interests in a newly formed limited liability company, Antero Resources Investment LLC ("Antero Investment"), and Antero Resources LLC was merged into Antero Resources Corporation. As a result of this reorganization, Antero Investment owned 100% of the issued and outstanding 224,375,000 shares of common stock of Antero Resources Corporation prior to the IPO.

On October 16, 2013, Antero Resources Corporation issued 37,674,659 additional shares of its common stock at $44.00 per share in the IPO resulting in proceeds to the Company, net of underwriter discounts and expenses of the offering, of approximately $1.6 billion.

(c) Equity-based Compensation Charge in Connection with the Reorganization

In connection with its formation in October 2009, Antero Resources LLC issued profits interests to Antero Resources Employee Holdings LLC ("Employee Holdings"), which is owned solely by certain of the Company's officers and employees. These profits interests provide for the participation in distributions upon liquidation events meeting certain requisite financial return thresholds. In turn, Employee Holdings issued membership interests to certain of the Company's officers and employees. The Employee Holdings interests in Antero Resources LLC were exchanged for similar interests in Antero Investment in connection with the corporate reorganization on October 16, 2013.

The limited liability company agreement of Antero Investment provides a mechanism that demonstrates how the shares of the Company's common stock will be allocated among the members of Antero Investment, including Employee Holdings. As a result of the adoption of the Antero Investment Limited Liability Company agreement, the satisfaction of all performance and service conditions relative to the profits interests awards held by Employee Holdings in Antero Investment became probable. Accordingly, the Company recognized approximately $ 449 million of equity-based compensation expense for the vested profits interests through December 31, 2014 and will recognize approximately $37 million over the remaining service period. Equity-based compensation expense for the profits interests during the years ended December 31, 2013 and 2014 was $365.0 million and $83.6 million, respectively. Because consideration for the profits interests awards is deemed given by Antero Investment, the charge to equity-based compensation expense is accounted for as a capital contribution by Antero Investment to the Company and credited to additional paid-in capital. All available profits interest awards were made prior to the date of the IPO, and no additional profits interest awards will be made.

(d) Antero Midstream Partners LP

In 2013, the Company formed a subsidiary, Antero Resources Midstream LLC ("ARM"). The Company owned all of the membership interests in ARM other than a special membership interest that was indirectly owned by Antero Investment. On November 10, 2014, ARM was converted to Antero Midstream, a limited partnership, in connection with its initial public offering (the "Antero Midstream IPO") of 46,000,000 common units representing limited partner interests at a price of $25.00 per common unit. At

the closing of the Antero Midstream IPO, the Company contributed its gathering and compression assets to Midstream Operating LLC (referred to as "Midstream Operating"), a wholly-owned subsidiary of Antero Midstream, and the ownership of Midstream Operating was contributed to Antero Midstream. Upon completion of the Antero Midstream IPO, the public owned approximately 30.3% of the outstanding limited partner interests in Antero Midstream, and the Company and its affiliates owned the remaining approximately 69.7% limited partner interests. Antero Resources Midstream Management LLC (referred to as "Midstream Management"), a wholly-owned subsidiary of Antero Investment, owns the general partnership interest in Antero Midstream, which allows Midstream Management to manage the business and affairs of Antero Midstream. Midstream Management also holds the incentive distribution rights in Antero Midstream. Antero Midstream is an unrestricted subsidiary as defined by Antero Resources Corporation's bank credit facility and senior notes indentures and, as such, Antero Midstream is not a guarantor of Antero's obligations, and Antero is not a guarantor of Antero Midstream's obligations.

In conjunction with the closing of the Antero Midstream IPO, the following events occurred:

- Antero and Antero Midstream entered into a services agreement, pursuant to which Antero agreed to provide administrative, management, and other services to Antero Midstream and its subsidiaries in exchange for reimbursement of its direct expenses and an allocation of its indirect expenses attributable to the provision of such services.
- Antero Midstream and its subsidiary entered into a new revolving credit facility (the "Midstream Facility") with a syndicate of lenders. The Midstream Facility provides for lender commitments of $1.0 billion which may be used to fund the operations of Antero Midstream. The Midstream Facility also provides for a letter of credit sublimit of $150 million. Antero is not a guarantor of the obligations of Antero Midstream under the Midstream Facility.
- Antero and Antero Midstream entered into a 20 -year gas gathering and compression agreement. Pursuant to the agreement, Antero agreed to dedicate all of its current and future acreage in West Virginia, Ohio, and Pennsylvania to Antero Midstream for gathering and compression services, so long as production is not otherwise subject to a pre-existing dedication to third-party gathering systems. Antero Midstream is entitled to receive specific fees for the services it provides to Antero, each of which are subject to price adjustments based on the consumer price index. In addition, if Antero acquires any gathering facilities, it is required to offer such gathering facilities to Antero Midstream at Antero's cost. Antero Midstream also has an option to gather and compress natural gas produced by Antero on any acreage it acquires in the future outside of West Virginia, Ohio, and Pennsylvania on the same terms and conditions.
- Antero Midstream granted a total of 2,361,440 phantom units to employees and officers of Antero. Additionally, Antero Midstream granted a total of 20,000 restricted units to its directors. See additional information relating to the recognition of expense under these awards in note 7.

The gross proceeds to Antero Midstream from its IPO were approximately $1.2 billion. After subtracting underwriting discounts and offering expenses of approximately $63 million, net proceeds received by Antero Midstream from the sale of 46,000,000 Common Units were approximately $1.1 billion. Antero Midstream used approximately $843 million of the net proceeds to repay assumed indebtedness from Antero and reimburse Antero for certain capital expenditures incurred. Antero Midstream retained $250 million of the net proceeds for general partnership purposes.

(2) Summary of Significant Accounting Policies

(a) Basis of Presentation

The accompanying consolidated financial statements of the Company have been prepared in accordance with accounting principles generally accepted in the United States ("GAAP"). In the opinion of management, the accompanying consolidated financial statements include all adjustments (consisting of normal and recurring accruals) considered necessary to present fairly the Company's financial position as of December 31, 2013 and 2014, and the results of its operations and its cash flows for the years ended December 31, 2012, 2013, and 2014. The Company has no items of other comprehensive income or loss; therefore, its net income or loss is identical to its comprehensive income or loss.

(q) Fair Value Measures

FASB ASC Topic 820, *Fair Value Measurements and Disclosures* , clarifies the definition of fair value, establishes a framework for measuring fair value, and expands disclosures about fair value measurements. This guidance also relates to all nonfinancial assets and liabilities that are not recognized or disclosed on a recurring basis (e.g., those measured at fair value in a business combination, the initial recognition of asset retirement obligations, and impairments of proved oil and gas properties, and other long-lived assets). The fair value is the price that the Company estimates would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. A fair value hierarchy is used to prioritize inputs to valuation techniques used to estimate fair value. An asset or liability subject to the fair value requirements is categorized within the hierarchy based on the lowest level of input that is significant to the fair value measurement. The Company's assessment of the significance of a particular input to the fair value measurement in its entirety requires judgment and considers factors specific to the asset or liability. The highest priority (Level 1) is given to unadjusted quoted market prices in active markets for identical assets or liabilities, and the lowest priority (Level 3) is given to unobservable inputs. Level 2 inputs are data, other than quoted prices included within Level 1, which are observable for the asset or liability, either directly or indirectly. Instruments which are valued using Level 2 inputs include non-exchange traded derivatives such as over-the-counter commodity price swaps and basis swaps. Valuation models used to measure fair value of these instruments consider various Level 2 inputs including (i) quoted forward prices for commodities, (ii) time value, (iii) quoted forward interest rates, (iv) current market prices and contractual prices for the underlying instruments, (v) risk of nonperformance by the Company and the counterparty, and (vi) other relevant economic measures.

(r) Industry Segment and Geographic Information

Management has evaluated how the Company is organized and managed and has identified the following segments: (1) the exploration, development, and production of natural gas, NGLs, and oil, (2) gathering and compression, (3) fresh water distribution, and (4) marketing of excess firm transportation capacity. The Company identified marketing of excess firm transportation capacity as a new operating segment in 2014. Prior to 2013, the Company did not have any reportable segments.

All of the Company's assets are located in the United States and all of its revenues are attributable to customers located in the United States.

(s) Marketing Revenues and Expenses

In 2014, the Company commenced activities to purchase and sell third-party natural gas and NGLs, and to market its excess firm transportation capacity in order to utilize this excess capacity. Marketing revenues include sales of purchased third-party gas and NGLs, as well as revenues from the release of firm transportation capacity to others. Marketing expenses include the cost of purchased third-party natural gas and NGLs. The Company classifies firm transportation costs related to capacity contracted for in advance of having sufficient production and infrastructure to fully utilize the capacity (excess capacity) as marketing expenses since it is marketing this excess capacity to third parties. Firm transportation for which the Company has sufficient production capacity (even though it may not use the transportation capacity because of alternative delivery points with more favorable pricing) is considered unutilized capacity. The costs of unutilized capacity are charged to transportation expense.

(t) Earnings (loss) per common share

Earnings (loss) per common share for 2014 was calculated based on the weighted average number of shares outstanding of 262,053,868 shares. Earnings per common share—assuming dilution for 2014 was calculated based on the diluted weighted average number of shares outstanding of 262,068,106 shares, including 14,238 dilutive shares attributable to non-vested restricted stock and restricted stock unit awards. For the year ended December 31, 2014, 1,444,023 non-vested shares of restricted stock and restricted stock unit awards and 72,592 stock options were anti-dilutive and therefore excluded from the calculation of diluted earnings per share.

Earnings (loss) per common share and earnings (loss) per common share—assuming dilution for each of the two years ended December 31, 2013 were calculated as if the shares issued in the Corporate Reorganization and IPO described in Note 1 were outstanding for the entire period.

ANTERO RESOURCES CORPORATION

Notes to Consolidated Financial Statements (Continued)

Years Ended December 31, 2012, 2013, and 2014

(3) Sale of Piceance and Arkoma Properties—Discontinued Operations

In 2012, the Company sold its Piceance Basin assets in Colorado and its Arkoma Basin assets in Oklahoma. Total proceeds from the sales, including liquidation of related hedge positions, were approximately $843 million and pre-tax losses on the asset sales of approximately $796 million were recorded in 2012. Pre-tax losses were adjusted downward in 2013 and 2014 by $8.5 million and $3.6 million for the resolution of certain liabilities recorded at the time of the sales and settlement of final contractual purchase price adjustments.

Results of operations and the loss on the sale of the Piceance Basin and Arkoma Basin assets are shown as discontinued operations on the accompanying Consolidated Statement of Operations and Comprehensive Income (Loss) and are comprised of the following (in thousands):

	Year ended December 31,		
	2012	2013	2014
Sales of oil, natural gas, and natural gas liquids	$ 125,396	—	—
Commodity derivative fair value gains	46,358	—	—
Revenues	171,754	—	—
Operating expenses	158,707	—	—
Loss (gain) on sale of assets	795,945	(8,506)	(3,564)
Total expenses	954,652	(8,506)	(3,564)
Income (loss) from discontinued operations before income taxes	(782,898)	8,506	3,564
Income tax (expense) benefit	272,553	(3,249)	(1,354)
Net income (loss) from discontinued operations	$(510,345)	5,257	2,210

(4) Sale of Appalachian Gathering Assets

On March 26, 2012, the Company closed the sale of a portion of its Marcellus Shale gathering system assets in West Virginia along with exclusive rights to gather the Company's gas for a 20 year period within an area of dedication ("AOD") to a joint venture owned by Crestwood Midstream Partners and Crestwood Holdings Partners LLC (together "Crestwood") for $375 million (subject to customary purchase price adjustments). The sale included approximately 25 miles of low pressure pipeline systems and gathering rights on 104,000 net acres held by the Company within a 250,000 acre AOD and had an effective date of January 1, 2012. Because the Company did not retain the substantial risks and rewards of ownership associated with the gathering rights and systems transferred to Crestwood, it recognized a gain on the sale of the gathering system and gathering rights of approximately $291 million in 2012. Crestwood is obligated to incur all future capital costs to build out gathering systems and compression facilities within the AOD to connect the Company's wells as it executes its drilling program, and has assumed the various risks and rewards of the system build-out and operations. Other third-party producers also have access to the Crestwood systems. During the first seven years of the contract, the Company is committed to deliver minimum annual volumes into the gathering systems, with certain carryback and carryforward adjustments for overages or deficiencies.

Under the terms of the contract, the Company could earn additional proceeds of up to $40 million if certain volume thresholds were met by December 31, 2014. The volume thresholds were fully met during 2014 and as such, the Company recorded an additional $40 million of gain on the sale of assets in 2014 and a receivable from Crestwood for a like amount.

ANTERO RESOURCES CORPORATION

Notes to Consolidated Financial Statements (Continued)

Years Ended December 31, 2012, 2013, and 2014

In connection with the Antero Midstream IPO, Midstream Management adopted the Antero Midstream Partners LP Long-Term Incentive Plan (the "Midstream Plan"), pursuant to which non-employee directors of Antero Midstream's general partner and certain officers, employees, and consultants of Antero Midstream's general partner and its affiliates (which include Antero) are eligible to receive awards representing ownership interests in Antero Midstream. An aggregate of 10,000,000 common units may be delivered pursuant to awards under the Midstream Plan, subject to customary adjustments. A total of 7,618,560 common units are available for future grant under the Midstream Plan as of December 31, 2014.

The Company's equity-based compensation expense is as follows for the year ended December 31, 2014 (in thousands):

	2013	2014
Profits interests awards (see note 1)	$364,957	$83,615
Restricted stock awards	219	25,624
Stock options	104	504
Antero Midstream Partners phantom and restricted unit awards	—	2,360
Common stock issued to directors in lieu of cash compensation	—	152
Total expense	$365,280	112,252

Restricted Stock

Restricted stock and restricted stock unit awards vest subject to the satisfaction of service requirements. Expense related to each restricted stock and restricted stock unit award is recognized on a straight-line basis over the requisite service period of the entire award, less awards expected to be forfeited. The grant date fair values of these awards are determined based on the closing price of the Company's common stock on the date of the grant. A summary of restricted stock and restricted stock unit awards activity during the year ended December 31, 2014 is as follows:

	Number of shares	Weighted average grant date fair value	Aggregate intrinsic value (in thousands)
Total awarded and unvested, December 31, 2013	45,093	$ 54.27	$ 2,861
Granted	1,970,587	$ 64.75	
Vested	(21,825)	$ 57.06	
Forfeited	(10,182)	$ 58.55	
Total awarded and unvested—December 31, 2014	1,983,673	$ 64.71	$ 80,497

Intrinsic values are based on the closing price of the Company's stock on the referenced dates. Unamortized expense of $103.8 million at December 31, 2014 is expected to be recognized over approximately 3.3 years.

Stock Options

Stock options granted under the Plan to date vest over periods from one to four years and have a maximum contractual life of 10 years. Expense related to stock options is recognized on a straight-line basis over the requisite service period, less awards expected

ANTERO RESOURCES CORPORATION

Notes to Consolidated Financial Statements (Continued)

Years Ended December 31, 2012, 2013, and 2014

Antero Midstream Partners Phantom and Restricted Unit Awards

On November 12, 2014, Antero Midstream granted 20,000 restricted units to the directors of Antero Midstream and 2,361,440 phantom units Antero's employees and officers. The restricted units and phantom units vest subject to the satisfaction of service requirements, upon the completion of which common units in Antero Midstream are delivered to the holder of the restricted units or phantom units. These restricted and phantom units are treated, for accounting purposes, as if Antero Midstream distributed the units to Antero. Antero recognizes compensation expense as the units are granted to employees, and a portion of the expense is allocated to Antero Midstream. These restricted units and phantom units are recognized as compensation expense within the Company's consolidated statements of operations deemed distributions to Antero Resources Corporation by Antero Midstream. Expense related to each restricted unit and phantom unit award is recognized on a straight-line basis over the requisite service period of the entire award. The grant date fair values of these awards are determined based on the closing price of Antero Midstream's common units on the date of grant. A summary of restricted unit and phantom unit awards activity during the year ended December 31, 2014 is as follows:

	Number of units	Weighted average grant date fair value	Aggregate intrinsic value (In thousands)
Total awarded and unvested, December 31, 2013	—	$ —	
Granted	2,381,440	$ 29.00	
Vested	—	$ —	
Forfeited	—	$ —	
Total awarded and unvested—December 31, 2014	2,381,440	$ 29.00	$ 63,490

Intrinsic values are based on the closing price of Antero Midstream's common units on the referenced dates. Unamortized expense of $66.7 million at December 31, 2014 is expected to be recognized over a weighted average period of approximately 3.8 years.

(8) Financial Instruments

The carrying values of accounts receivable and accounts payable at December 31, 2013 and 2014 approximated market value because of their short-term nature. The carrying values of the amounts outstanding under the Credit Facility and Water Facility at December 31, 2013 and 2014 approximated fair value because the variable interest rates are reflective of current market conditions.

Based on Level 2 market data inputs, the fair value of the Company's senior notes was approximately $1.9 billion at December 31, 2013 and $2.5 billion at December 31, 2014.

See note 9 for information regarding the fair value of derivative financial instruments.

(9) Derivative Instruments

(a) Commodity Derivatives

The Company periodically enters into natural gas, NGLs, and oil derivative contracts with counterparties to hedge the price risk associated with a portion of its production. These derivatives are not held for trading purposes. To the extent that changes occur in the market prices of natural gas, NGLs, and oil, the Company is exposed to market risk on these open contracts. This market risk exposure is generally offset by the change in market prices of natural gas, NGLs, and oil recognized upon the ultimate sale of the Company's production.

For the years ended December 31, 2012, 2013, and 2014, the Company was party to various natural gas, NGLs, and oil fixed price swap contracts. When actual commodity prices exceed the fixed price provided by the swap contracts, the Company pays the excess to the counterparty; when actual commodity prices are below the contractually provided fixed price, the Company receives the difference from the counterparty. In addition, the Company has entered into basis swap contracts in order to hedge the difference between the NYMEX index price and a local index price. When the actual differential exceeds the fixed price provided by the basis

swap contract, the Company receives the difference from the counterparty; when the differential is less than the fixed price provided by the basis swap contract, the Company pays the difference to the counterparty. The Company's natural gas, NGLs, oil, and basis swaps have not been designated as hedges for accounting purposes; therefore, all gains and losses were recognized in the Company's statements of operations.

As of December 31, 2014, the Company's fixed price natural gas, NGLs, and oil swap positions from January 1, 2015 through December 31, 2020 were as follows (abbreviations in the table refer to the index to which the swap position is tied:

Commodity derivative assets	$887,034	(26,254)	860,780	$1,621,665	(29,114)	1,592,551
Commodity derivative liabilities	$ (646)	—	(646)	$ —	—	—

ANTERO RESOURCES CORPORATION

Notes to Consolidated Financial Statements (Continued)

Years Ended December 31, 2012, 2013, and 2014

Deferred income taxes reflect the impact of temporary differences between assets and liabilities for financial reporting purposes and such amounts as measured by tax laws. The tax effect of the temporary differences giving rise to net deferred tax assets and liabilities at December 31, 2013 and 2014 is as follows (in thousands):

	2013	2014
Deferred tax assets:		
Net operating loss carryforwards	$ 449,961	431,681
Minimum tax credit carryforward	11,000	11,000
Equity-based compensation	—	10,032
Other	5,373	12,785
Total deferred tax assets	466,334	465,498
Valuation allowance	(26,759)	(26,639)
Net deferred tax assets	439,575	438,859
Deferred tax liabilities:		
Unrealized gains on derivative instruments	328,534	601,859
Oil and gas properties	458,812	600,050
Investment in Antero Midstream Partners LP	—	31,746
Total deferred tax liabilities	787,346	1,233,655
Net deferred tax liabilities	$(347,771)	(794,796)

In assessing the realizability of deferred tax assets, management considers whether some portion or all of the deferred tax assets will be realized based on a more likely than not standard of judgment. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences become deductible. Management considers the scheduled reversal of deferred tax liabilities, projected future taxable income, and tax planning strategies in making this assessment. Based upon the projections of future taxable income over the periods in which the deferred tax assets are deductible, management believes that the Company will not realize the benefits of certain of these deductible differences and has recorded a valuation allowance of approximately $27 million at December 31, 2013 and 2014, which is primarily related to capital loss carryforwards and certain state NOL carryforwards related to states in which the Company no longer operates. The amount of the deferred tax asset considered realizable could be reduced in the near term if estimates of future taxable income during the carryforward period are revised.

The calculation of the Company's tax liabilities involves uncertainties in the application of complex tax laws and regulations. The Company gives financial statement recognition to those tax positions that it believes are more-likely than-not to be sustained upon examination by the Internal Revenue Service or state revenue authorities. The financial statements include unrecognized benefits at December 31, 2014 of $ 11 million that, if recognized, would result in a reduction of nonourrent income taxes payable (included in other long-term liabilities) and an increase in noncurrent deferred tax liabilities. No impect to the Company's 2014 effeotive tax rate would result. As of December 31, 2014, interest of $0.8 million has been accrued on unrecognized tax benefits. A reconciliation of beginning and ending amount of unrecognized tax benefits is as follows:

	2014
Balance at beginning of year	$11,000
Revised estimate of unrecognized tax position	—
Balance at end of year	$11,000

As of December 31, 2014, the Company's corporate subsidiaries have U.S. Federal and state net operating loss carryforwards (NOLs) of $1.1 billion and $1.0 billion, rospeotively, which expire at various dates from 2024 to 2034.

The tax years 2011 through 2014 remain open to examination by the U.S. Internal Revenue Service. The Company and its subsidiaries file tax returns with various state taxing authorities; these returns remain open to examination for tax years 2010 through 2014. During 2014, the tax returns of Antero Resources Finance Corporation (which was merged with the Antero Resources Corporation in December 2013) were examined by the Internal Revenue Service for its tax years 2011 and 2012. There were no adjustments to these tax returns as a result of the examination. The Company's state tax returns are being examined by West Virginia

taxing authorities for tax years 2010 through 2013. The Company does not expect any material adjustments to tax liabilities will result from the examination.

(11) Commitments

The following is a schedule of future minimum payments for firm transportation agreements, drilling and compression facility obligations, and leases that have remaining lease terms in excess of one year as of December 31, 2014 (in millions).

	Firm transportation (a)	Gas processing, gathering and compression (b)	Drilling rigs and frac services (c)	Office and equipment (d)	Total
Year ending December 31:					
2015	$ 316	336	212	9	873
2016	593	232	161	9	1,000
2017	800	245	96	8	1,149
2018	867	244	—	6	1,117
2019	939	193	—	4	1,136
Thereafter	10,375	1,040	—	11	11,427
Total	$ 13,891	2,295	469	47	16,702

(a) Firm Transportation

The Company has entered into firm transportation agreements with various pipelines in order to facilitate the delivery of its production to market. These contracts commit the Company to transport minimum daily natural gas or NGLs volumes at negotiated rates, or pay for any deficiencies at specified reservation fee rates. The amounts in this table represent minimum daily volumes at the reservation fee rate. The values in the table represent the gross amounts that the Company is committed to pay; however, the Company will record in the consolidated financial statements its proportionate share of costs based on its working interest.

(b) Gas Processing and Compression Service Commitments

The Company has entered into various long-term gas processing agreements for certain of its production that will allow it to realize the value of its NGLs. The minimum payment obligations under the agreements are presented in the table.

The Company has various compressor service agreements with third parties that provide for payments based on volumes compressed and have minimum payment obligations which are presented in the table.

The values in the table represent the gross amounts that the Company is committed to pay; however, the Company will record in the consolidated financial statements its proportionate share of costs based on its working interest.

(c) Drilling Rig Service Commitments

The Company has obligations under agreements with service providers to procure drilling rigs and compression and frac services. The values in the table represent the gross amounts that the Company is committed to pay; however, the Company will record in the consolidated financial statements its proportionate share of costs based on its working interest.

(d) Office and Equipment Leases

The Company leases various office space and equipment, as well as field equipment, under operating lease arrangements. Rental expense under operating leases was $1.1 million, $1.8 million, and $10.2 million for the years ended December 31, 2012, 2013, and 2014, respectively.

ANTERO RESOURCES CORPORATION

Notes to Consolidated Financial Statements (Continued)

Years Ended December 31, 2012, 2013, and 2014

(12) Contingencies

The Company is party to various legal proceedings and claims in the ordinary course of its business. The Company believes that certain of these matters will be covered by insurance and that the outcome of other matters will not have a material adverse effect on the Company's consolidated financial position, results of operations, or liquidity.

(13) Segment Information

See note 2(r) for a description of the Company's determination of its reportable segments for 2014. Marketing of excess firm transportation capacity began in the second quarter of 2014, and was subsequently determined to be a new reportable segment. Prior to 2013, the Company's gathering and compression and fresh water distribution operations were immaterial and were considered ancillary to the Company's exploration and production activities.

Operating segments are evaluated based on their contribution to consolidated results, which is determined by their operating income. General and administrative expenses are allocated to the gathering and compression and fresh water distribution segments based on estimates of labor and overhead expenditures on those activities. General and administrative expenses related to the marketing segment are not allocated because they are immaterial. Other income, income taxes, and interest expense are primarily managed on a consolidated basis. Intersegment sales are at market value. Segment accounting policies are the same as those described in note 2 to the consolidated financial statements.

The operating results and assets of the Company's reportable segments were as follows for the years ended December 31, 2013 and 2014:

	Exploration and production	Gathering and compression	Fresh water distribution	Elimination of intersegment transactions	Consolidated total
2013:					
Sales and revenues:					
Third-party	$ 1,313,134	—	—	—	1,313,134
Intersegment	—	22,363	35,871	(58,234)	—
	$ 1,313,134	22,363	35,871	(58,234)	1,313,134
Operating expenses:					
Lease operating	$ 9,439	—	3,843	(3,843)	9,439
Gathering, compression, processing, and transportation	238,712	2,079	—	(22,363)	218,428
Depletion, depreciation, and amortization	219,757	11,346	2,773	—	233,876
General and administrative expense	391,373	23,124	10,941	—	425,438
Other operating expenses	82,787	—	1,959	—	84,746
Total	942,068	36,549	19,516	(26,206)	971,927
Operating income (loss)	$ 371,066	(14,186)	16,355	(32,028)	341,207
Segment assets	$ 5,859,933	561,855	230,247	(38,454)	6,613,581
Capital expenditures for segment assets	$ 2,110,358	389,453	203,790	(32,028)	2,671,573

ANTERO RESOURCES CORPORATION

Notes to Consolidated Financial Statements (Continued)

Years Ended December 31, 2012, 2013, and 2014
Condensed Consolidating Balance Sheet
December 31, 2014
(In thousands)

	Parent	Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Eliminations	Consolidated
Assets					
Current assets:					
Cash and cash equivalents	$ 15,787	—	230,192	—	245,979
Accounts receivable, net	116,203	—	—	—	116,203
Intercompany receivables	1,380	—	17,646	(19,026)	—
Accrued revenue	191,558	—	—	—	191,558
Derivative instruments	692,554	—	—	—	692,554
Other	5,348	1	518	(1)	5,866
Total current assets	1,022,830	1	248,356	(19,027)	1,252,160
Property and equipment:					
Natural gas properties, at cost (successful efforts method):					
Unproved properties	2,060,936	—	—	—	2,060,936
Proved properties	6,515,221	—	—	—	6,515,221
Fresh water distribution systems	421,012	—	—	—	421,012
Gathering systems and facilities	16,432	—	1,180,707	—	1,197,239
Other property and equipment	37,687	—	—	—	37,687
	9,051,388	—	1,180,707	—	10,232,095
Less accumulated depletion, depreciation, and amortization	(828,533)	—	(51,110)	—	(879,643)
Property and equipment, net	8,222,855	—	1,129,597	—	9,352,452
Derivative instruments	899,997	—	—	—	899,997
Investments in subsidiaries	137,423	—	—	(137,423)	—
Other assets, net	51,718	—	17,168	—	68,886
Total assets	$ 10,334,823	1	1,395,121	(156,450)	11,573,495
Liabilities and Equity					
Current liabilities:					
Accounts payable	$ 485,628	—	45,936	—	531,564
Intercompany payable	17,646	—	1,380	(19,026)	—
Accrued liabilities	163,268	—	5,346	—	168,614
Revenue distributions payable	182,352	—	—	—	182,352
Deferred income tax liability	260,373	—	—	—	260,373
Other	12,203	—	—	(1)	12,202
Total current liabilities	1,121,470	—	52,662	(19,027)	1,155,105
Long-term liabilities:					
Long-term debt	4,247,550	115,000	—	—	4,362,550
Deferred income tax liability	534,423	—	—	—	534,423
Other long-term liabilities	47,587	—	—	—	47,587
Total liabilities	5,951,030	115,000	52,662	(19,027)	6,099,665
Equity:					
Stockholders' equity:					
Parent net investment	—	(114,999)	—	114,999	—
Partners' capital	—	—	1,342,459	(1,342,459)	—
Common stock	2,621	—	—	—	2,621
Additional paid-in capital	3,513,725	—	—	—	3,513,725
Accumulated earnings	867,447	—	—	—	867,447
Total stockholders' equity	4,383,793	(114,999)	1,342,459	(1,227,460)	4,383,793
Noncontrolling interest in consolidated subsidiary	—	—	—	1,090,037	1,090,037
Total equity	4,383,793	(114,999)	1,342,459	(137,423)	5,473,830
Total liabilities and equity	$ 10,334,823	1	1,395,121	(156,450)	11,573,495

ANTERO RESOURCES CORPORATION

Notes to Consolidated Financial Statements (Continued)

Years Ended December 31, 2012, 2013, and 2014

Condensed Consolidating Statement of Operations and Comprehensive Income
Year ended December 31, 2014
(In thousands)

	Parent	Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Eliminations	Consolidated
Revenue:					
Natural gas sales	$ 1,301,349	—	—	—	1,301,349
Natural gas liquids sales	328,323	—	—	—	328,323
Oil sales	107,080	—	—	—	107,080
Gathering, compression, and water distribution	20,284	—	25,178	(23,387)	22,075
Marketing	53,604	—	—	—	53,604
Commodity derivative fair value gains	868,201	—	—	—	868,201
Gain on sale of gathering system	40,000	—	—	—	40,000
Fee income	143	—	—	(143)	—
Total revenue	2,718,984	—	25,178	(23,530)	2,720,632
Operating expenses:					
Lease operating	29,341	—	—	—	29,341
Gathering, compression, processing, and transportation	480,367	—	4,460	(23,414)	461,413
Production and ad valorem taxes	85,945	—	1,973	—	87,918
Marketing	103,435	—	—	—	103,435
Exploration	27,893	—	—	—	27,893
Impairment of unproved properties	15,198	—	—	—	15,198
Depletion, depreciation, and amortization	471,372	—	6,524	—	477,896
Accretion of asset retirement obligations	1,471	—	178	—	1,649
General and administrative	212,316	—	4,333	(116)	216,533
Total operating expenses	1,427,138	—	17,290	(23,530)	1,420,898
Operating income	1,291,846	—	7,888	—	1,299,734
Other income (expense):					
Interest	(159,585)	—	(466)	—	(160,051)
Loss on early extinguishment of debt	(20,386)	—	—	—	(20,386)
Equity in net income of subsidiaries	5,174	—	—	(5,174)	—
Total other expenses	(174,797)	—	(466)	(5,174)	(180,437)
Income from continuing operations before income taxes and discontinued operations	1,117,049	—	7,422	(5,174)	1,119,297
Provision for income tax expense	(445,672)	—	—	—	(445,672)
Income from continuing operations	671,377	—	7,422	(5,174)	673,625
Discontinued operations:					
Income from sale of discontinued operations, net of income taxes	2,210	—	—	—	2,210
Net income and comprehensive income including noncontrolling interest	673,587	—	7,422	(5,174)	675,835
Net income and comprehensive income attributable to noncontrolling interest	—	—	—	2,248	2,248
Net income and comprehensive income attributable to Antero Resources Corporation	$ 673,587	—	7,422	(7,422)	673,587

ANTERO RESOURCES CORPORATION

Notes to Consolidated Financial Statements (Continued)

Years Ended December 31, 2012, 2013, and 2014

(15) Quarterly Financial Information (Unaudited)

The Company's quarterly consolidated financial information for the years ended December 31, 2013 and 2014 is summarized in the following table (in thousands, except per share amounts). The Company's quarterly operating results are affected by the volatility of commodity prices and the resulting effect on our production revenues and the fair value of commodity derivatives.

	First quarter	Second quarter	Third quarter	Fourth quarter
Year Ended December 31, 2013:				
Total operating revenues	$ 61,454	$387,144	$384,522	$ 480,014
Total operating expenses	109,923	138,758	161,914	561,332
Operating income (loss)	(48,469)	248,386	222,608	(81,318)
Income (loss) from continuing operations	(47,997)	131,193	117,794	(225,177)
Income from discontinued operations	—	—	3,100	2,157
Net income (loss) and comprehensive income (loss)	(47,997)	131,193	120,894	(223,020)
Earnings (loss) per common share:				
Continuing operations	$ (0.18)	$ 0.50	$ 0.45	$ (0.86)
Discontinued operations	—	—	0.01	0.01
Net income (loss)	$ (0.18)	$ 0.50	$ 0.46	$ (0.85)
Earnings (loss) per common share—diluted:				
Continuing operations	$ (0.18)	$ 0.50	$ 0.45	$ (0.86)
Discontinued operations	—	—	0.01	0.01
Net income (loss)	$ (0.18)	$ 0.50	$ 0.46	$ (0.85)

	First quarter	Second quarter	Third quarter	Fourth quarter
Year Ended December 31, 2014:				
Total operating revenues	$ 164,981	$311,338	$762,490	$1,481,823
Total operating expenses	269,060	316,641	381,091	454,106
Operating income (loss)	(104,079)	(5,303)	381,399	1,027,717
Income (loss) from continuing operations	(94,759)	(44,495)	203,909	608,970
Income from discontinued operations	—	2,210	—	—
Net income (loss) and comprehensive income (loss)	(94,759)	(42,285)	203,909	608,970
Net income attributable to noncontrolling interest	—	—	—	2,248
Net income (loss) attributable to Antero Resources Corporation	(94,759)	(42,285)	203,909	606,722
Earnings (loss) per common share:				
Continuing operations	$ (0.36)	$ (0.17)	$ 0.78	$ 2.31
Discontinued operations	—	0.01	—	—
Net income (loss)	$ (0.36)	$ (0.16)	$ 0.78	$ 2.31
Earnings (loss) per common share—diluted:				
Continuing operations	$ (0.36)	$ (0.17)	$ 0.78	$ 2.31
Discontinued operations	—	0.01	—	—
Net income (loss)	$ (0.36)	$ (0.16)	$ 0.78	$ 2.31

(16) Supplemental Information on Oil and Gas Producing Activities (Unaudited)

The following is supplemental information regarding the Company's consolidated oil and gas producing activities. The amounts shown include the Company's net working interests in all of its oil and gas properties.

ANTERO RESOURCES CORPORATION

Notes to Consolidated Financial Statements (Continued)

Years Ended December 31, 2012, 2013, and 2014

(a) Capitalized Costs Relating to Oil and Gas Producing Activities

	Year ended December 31,	
	2013	2014
	(In thousands)	
Proved properties	$ 3,621,672	$ 6,515,221
Unproved properties	1,513,136	2,060,936
	5,134,808	8,576,157
Accumulated depreciation and depletion	(383,921)	(802,665)
Net capitalized costs	$ 4,750,887	$ 7,773,492

(b) Costs Incurred in Certain Oil and Gas Activities

	Year ended December 31,		
	2012	2013	2014
Acquisition costs:			
Proved property	$ 10,254	$ 15,300	$ 64,066
Unproved property	687,403	440,825	777,422
Development costs	678,276	780,583	1,536,193
Exploration costs	158,074	835,382	940,957
Total costs incurred	$1,534,007	$2,072,090	$3,318,638

(c) Results of Operations (Including Discontinued Operations) for Oil and Gas Producing Activities

	Year ended December 31,		
	2012	2013	2014
Revenues	$ 390,378	$ 821,445	$1,736,752
Operating expenses:			
Production expenses	185,503	278,348	578,672
Exploration expenses	15,339	22,272	27,893
Depreciation and depletion	181,664	219,830	418,744
Impairment of unproved properties	13,032	10,928	15,198
Results of operations before income tax expense (benefit)	(5,162)	290,067	696,245
Income tax (expense) benefit	2,008	(110,805)	(263,126)
Results of operations	$ (3,154)	$ 179,262	$ 433,119

(d) Oil and Gas Reserves

The following table sets forth the net quantities of proved reserves and proved developed reserves during the periods indicated. This information includes the oil and gas segment's royalty and net working interest share of the reserves in oil and gas properties. Net proved oil and gas reserves for the year ended December 31, 2012, 2013, and 2014 were prepared by the Company's reserve engineers and audited by DeGolyer and MacNaughton (D&M) utilizing data compiled by the Company. There are many uncertainties inherent in estimating proved reserve quantities, and projecting future production rates and timing of future development costs. In addition, reserve estimates of new discoveries are more imprecise than those of properties with a production history. Accordingly, these estimates are subject to change as additional information becomes available. All reserves are located in the United States.

Proved reserves are the estimated quantities of crude oil, condensate, and natural gas that geological and engineering data demonstrate with reasonable certainty to be recoverable in future years from known oil and gas reservoirs under existing economic and operating conditions at the end of the respective years. Proved developed reserves are those reserves expected to be recovered through existing wells with existing equipment and operating methods. The Company estimates proved reserves using average prices received for the previous 12 months.

ANTERO RESOURCES CORPORATION

Notes to Consolidated Financial Statements (Continued)

Years Ended December 31, 2012, 2013, and 2014

Proved undeveloped reserves include drilling locations that are more than one offset location away from productive wells and are reasonably certain of containing proved reserves and which are scheduled to be drilled within five years under the Company's development plans. The Company's development plans for drilling scheduled over the next five years are subject to many uncertainties and variables, including availability of capital; future oil and gas prices; and cash flows from operations, future drilling costs, demand for natural gas, and other economic factors.

	Natural gas (Bcf)	NGLs (MMBbl)	Oil and condensate (MMBbl)	Equivalents (Bcfe)
Proved reserves:				
December 31, 2011	3,931	164	17	5,017
Revisions	198	4	— [a]	222
Extensions, discoveries and other additions	1,242	115	3	1,951
Production	(87)	— [a]	— [a]	(87)
Sale of reserves in place	(1,590)	(80)	(17)	(2,174)
December 31, 2012	3,694	203	3	4,929
Revisions	152	(140)	— [a]	(788)
Extensions, discoveries and other additions	3,084	76	7	3,682
Production	(177)	(2)	— [a]	(191)
December 31, 2013	6,753	137	10	7,632
Revisions	(1,025)	(6)	— [a]	(1,054)
Extensions, discoveries and other additions	5,095	206	19	6,444
Purchases	29	—	—	29
Production	(317)	(7)	(1)	(368)
December 31, 2014	10,535	330	28	12,683

(a) Less than 1.0.

	Natural gas (Bcf)	NGLs (MMBbl)	Oil and condensate (MMBbl)	Equivalents (Bcfe)
Proved developed reserves:				
December 31, 2012	828	36	1	1,047
December 31, 2013	1,818	33	2	2,022
December 31, 2014	3,285	80	6	3,803
Proved undeveloped reserves:				
December 31, 2012	2,866	167	2	3,822
December 31, 2013	4,936	105	8	5,610
December 31, 2014	7,250	250	22	8,880

Significant items included in the categories of proved developed and undeveloped reserve changes for the years 2010, 2011, and 2012 in the above table include the following:

- 2012—Extensions, discoveries, and other additions during 2012 of 1,951 Bcfe were added through the drilling in the Marcellus and Utica Shales, including the addition of 709 Bcfe attributable to NGLs and oil. Downward price revisions resulted in a reduction of proved reserves of 102 Bcfe. Performance revisions increased proved reserves by 324 Bcfe. Sales of proved reserves of 2,174 Bcfe are the result of the sale of the Company's Arkoma and Piceance Basin properties.
- 2013—Extensions, discoveries, and other additions during 2013 of 3,682 Bcfe were added through exploratory and developmental drilling in the Marcellus and Utica Shales. Downward revisions of 788 Bcfe resulted from changing the underlying production assumption used to estimate reserves to ethane rejection at December 31, 2013 from ethane

recovery at December 31, 2012 as well as the reclassification of certain wells to the probable reserves category in 2013 because they are no longer expected to be drilled within five years of initial booking.

- 2014— Extensions, discoveries, and other additions during 2014 of 6,444 Bcfe were added through exploratory and developmental drilling in the Marcellus and Utica Shales. Purchases of 29 Bcfe relate to 5 horizontal producing wells acquired as part of our leasehold acquisition efforts. Upward performance revisions of 361 Bcfe relate to improved well performance from shorter stage length completions. Downward revisions of 1,417 Bcfe due were due to the reclassification of 191 dry gas locations to the probable category because they are no longer expected to be drilled within five years of initial booking. Upward price revisions of 2 Bcfe were due to increases in the reference price for natural gas, partially offset by decreases in the reference prices for NGLs and oil.

The following table sets forth the standardized measure of the discounted future net cash flows attributable to the Company's proved reserves. Future cash inflows were computed by applying historical 12 month unweighted first day of the month average prices. Future prices actually received may materially differ from current prices or the prices used in the standardized measure.

Future production and development costs represent the estimated future expenditures (based on current costs) to be incurred in developing and producing the proved reserves, assuming continuation of existing economic conditions. Future income tax expenses were computed by applying statutory income tax rates to the difference between pretax net cash flows relating to the Company's proved reserves and the tax basis of proved oil and gas properties. In addition, the effects of available net operating loss carryforwards and alternative minimum tax credits were used in computing future income tax expense. The resulting annual net cash inflows were then discounted using a 10% annual rate.

	Year ended December 31,		
(In millions)	2012	2013	2014
Future cash inflows	$ 12,151	$ 30,113	$ 63,632
Future production costs	(1,660)	(5,967)	(21,722)
Future development costs	(3,270)	(5,349)	(8,212)
Future net cash flows before income tax	7,221	18,797	33,698
Future income tax expense	(1,603)	(5,308)	(10,726)
Future net cash flows	5,618	13,489	22,972
10% annual discount for estimated timing of cash flows	(4,017)	(8,979)	(15,337)
Standardized measure of discounted future net cash flows	$ 1,601	$ 4,510	$ 7,635

The 12 –month weighted average prices used to estimate the Company's total equivalent reserves were as follows (per Mcfe):

December 31, 2012	$ 2.78
December 31, 2013	$ 3.95
December 31, 2014	$ 5.02

Exhibit 10.28

ANTERO RESOURCES CORPORATION
LONG-TERM INCENTIVE PLAN

RESTRICTED STOCK UNIT GRANT NOTICE

Pursuant to the tarms and conditions of the Antaro Resources Corporation Long-Term Incentive Plan, as amended from tima to tima (the " Plan "), Antero Resources Corporation (the " Company ") hereby grants to tha individual listed below (" you " or the " Participant ") the number of Restricted Stock Units (the " RSUs ") set forth below. This award of RSUs (this " Award ") is subject to the terms and conditions set forth herein snd in the Restricted Stock Unit Agreement attached hereto as Exhibit A (the " Agreament ") and tha Plan, each of which ia incorporated herein by referanca. Capitalized terms used but not dafined herein shall have the meanings set forth in the Plan.

Participant:	[_____]
Date of Grant:	[_____], 20___
Total Numbar of Restricted Stock Units:	[_____]
Vesting Commancement Date:	[_____], 20___
Vesting Schedule:	Subject to tha Agreament, the Plsn and the other terms and conditions set forth herein, 25% of the RSUs (rounded to the nearest whola number of RSUs, axcept in tha case of the final veating date) shall vest on each of the first, second, third and fourth anniversaries of tha Vaating Commencement Date identified above so long as you remain continuously employed by the Company from the Date of Grant through each such anniversary date. Notwithstanding anything in the preceding sentence to the contrary, the RSUs granted hereunder shall immediataly become fully vested if Employee's employment with the Company terminatea by reason of Employaa'a disability (within the meaning of section 22(e)(3) of the Coda) or death so long ss Employee remains continuoualy employed by the Company from the Date of Grant through the date of such tarmination.

By your signature below, you agrea to be bound by the terms and conditions of the Plan, the Agreement and thia Restricted Stock Unit Grant Notice (this " Grant Notice "). You acknowledge that you have reviewed the Agreement, the Plan and this Grant Notice in their antirety and fully understand all provisions of the Agreement, tha Plan and this Grant Notice. You herehy agraa to accept as binding, conclusiva and final all decisions or interpretations of the Committae regarding any questions or datarminations arising under the Agreement, the Plan or thia Grant Notice. This Grant Notice may be executed in one or more counterparts (including portable document format (.pdf) snd facsimile counterparts), each of which shall be deemed to be an original, but all of which together shall constitute one and the same sgreement.

[Remainder of Page Intentionally Blank;
Signature Psge Follows]

EXHIBIT A

RESTRICTED STOCK UNIT AGREEMENT

This Restricted Stock Unit Agreement (this " Agreement ") is made as of the Date of Grant set forth in the Grant Notice to which this Agreement is attached by and between Antero Resources Corporation, a Delaware corporation (the " Company "), and [_____] (" Employee ").Capitalized terms used but not specifically defined herein shall have the meanings specified in the Plan or the Grant Notice.

1. Award . In consideration of Employee's past and/or continued employment with, or service to, the Company or a Subsidiary and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, effective as of the Date of Grant set forth in the Grant Notice (the " Date of Grant "), the Company hereby grants to Employee the number of RSUs set forth in the Grant Notice on the terms and conditions set forth in the Grant Notice, this Agreement and the Plan, which is incorporated herein by refarence as a part of this Agreement.In the event of any inconsistency between the Plan and this Agreement, the terms of the Plan shall control. To the extent vested, each RSU represents the right to receive one share of Common Stock, subject to the terms and conditions set forth in the Grant Notice, this Agreement and the Plan. Unless and until the RSUs have become vested in the manner set forth in the Grant Notice, Employee will have no right to receive any Common Stock or other payments in respect of the RSUs. Prior to settlement of this Award, the RSUs and this Award represent an unsecured obligation of the Company, payable only from the general assets of the Company.

2. Vesting of RSUs . The RSUs shall vest in accordance with the vesting schedule set forth in the Grant Notice. Unless and until the RSUs have vested in accordance with such vesting schedule, Employee will have no right to receive any dividends or other distribution with respect to the RSUs. In the event of the termination of Employee's employment prior to the vesting of all of the RSUs (but after giving effect to any accelerated vesting pursuant to the Grant Notice), any unvested RSUs (and all rights arising from such RSUs and from being a holdar thereof) will terminate automatically without any further action by the Company and will be forfeited without further notice and at no cost to the Company.

3. Settlement of RSUs . As soon as administratively practicable following the vesting of RSUs pursuant to Section 2 , but in no event later than 30 days aftar such vesting date, the Company shall delivar to Employee (or Employee's permitted transfaree, if applicable) a number of shares of Common Stock equal to the number of RSUs subject to this Award that become vested on the applicable vesting date and cash equal to any DERs credited with respect to such vested RSUs or, at the discretion of the Committee, shares of Common Stock having a Fair Market Value equal to such DERs as of the applicable vesting date. Any fractional RSU that becomes vested hereunder shall be rounded down at the time shares of Common Stock are issued in settlement of such RSU. No fractional shares of Common Stock, nor the cash value of any fractional shares of Common Stock, will be issuable or payable to Employee pursuant to this Agreement. All shares of Common Stock issued hereunder shall be delivered eithar by delivering one or more certificates for such shares to Employee or by entering such shares in book-entry form, as determined by the Committee in its sole discretion. The value of shares of Common Stock shall not bear any interest owing to the passage of time. Neithar this Section 3 nor any action taken pursuant to or in accordance with this Agreement shall be construed to create a trust or a funded or secured obligation of any kind.

4. Dividend Equivalent Rights . Each RSU subject to this Award is hereby granted in tandem with a corresponding Dividend Equivalent (" DER "), whioh DER shall remain outstanding from the Date of Grant until the earlier of the settlement or forfeiture of the RSU to which it corresponds. Each vested DER shall entitle Employee to receive payments, subject to and in accordance with this Agreement, in an amount equal to any dividends paid by the Company in respect of the shares of Common Stock underlying the RSUs to which such DER relates. The Company shall esteblish, with respeot to each RSU, a separate DER bookkeeping account for suoh RSU (a " DER Account "), which shall be credited (without interest) on the applicable dividend payment dates with an amount equal to any dividends paid during the period that such RSU remains outstanding with respect to the shares of Common Stock underlying the RSU to which such DER relates. Upon the vesting of an RSU, the DER (and the DER Account) with respect to such vested RSU shall also become vested. Similarly, upon the forfeiture of an RSU, the DER (and the DER Account) with respect to such forfeited RSU shall also be forfeited. DERs shall not entitle Employee to any payments relating to dividends paid after the earlier to occur of the applicable RSU settlement date or the forfeiture of the RSU underlying such DER.

5. Rights as Stockholder . Neither Employee nor any person claiming under or through Employee shell have any of the rights or privileges of a holder of shares of Common Stock in respect of any shares that may become deliverable hereunder unless and until certificates representing such shares have been issued or recorded in book entry form on the records of the Company or its transfer agents or registrars, and delivered in certificate or book entry form to Employee or any person claiming undar or through Employee.

6. Tax Withholding . To the extent that the receipt or vesting of the RSUs results in compensation income or wages to Employee for federal, state, local or foreign tax purposes, Employee shall deliver to the Company or to any Affiliate nominated by the

or a continued service relationship with, the Company or any such Affiliate, or any other entity, or affect in sny way the right of the Company or any such Affiliate, or any other entity to terminate such employment at any time. Unless otherwise provided in a written employment agreement or by applicable law, Employee's employment by the Company, or any such Affiliate, or any other entity shall be on an at-will bssis, and the employment relationship may be terminated at any time by either Employee or the Company, or any such Affiliate, or other entity for any reason whatsoever, with or without cauae or notice. Any question as to whether and when there has been a termination of such employment, and the cause of sueh termination, shall be determined by the Committee or its delegate, and such determination shall be final, conclusive and binding for all purposes.

(b) The grant of the RSUs is a one-time benefit and does not create any contractual or other right to receive a grant of Awards or benefits in lieu of Awards in the future. Future plans will be at the sole discretion of the Company.

12. Notices. Any notices or other communications provided for in this Agreement shall be suffieient if in writing. In the case of Employee, such noticea or communications shall be effectively delivered if hand delivered to Employee at Employee's principal place of employment or if sent by registered or certified mail to Employee at the last address Employee has filad with the Company. In the case of the Company, such notices or communications shall be effectively delivered if sent by registered or certified mail to the Company at ita principal executive offices.

13. Agreement to Furnish Information. Employee agrees to furnish to the Company all information requested by the Company to enable it to comply with any reporting or other requirement imposed upon the Company by or under any applicable statute or regulation.

14. Entire Agreement; Amendment. This Agreement constitutes the entire agreement of the parties with regard to the subject matter hereof, and contains all the covenants, promises, representations, warranties and agreements between the parties with respect to the RSUs granted hereby; provided, however, that the terms of this Agreement shall not modify and shall be subject to the terms and conditiona of any employment and/or severanee agreement between the Company (or an Affiliate or other entity) and Employee in effect as of the date a determination is to be made under this Agreement. Without limiting the scope of the preceding sentence, except as provided therein, all prior underatandings and agreements, if any, among the parties hereto ralating to the subjact matter hereof are hereby null and void and of no further force and effect. The Committee may, in ita sole diacretion, amend this Agreement from time to time in any manner that is not inconsistent with the Plan; provided, however, that exeept as otherwise provided in the Plan or this Agreement, any sueh amendment that materially reduces the righta of Employee shall be effeotive only if it is in writing and signed by both Employee and an authorized officer of the Company.

15. Governing Law. This Agreement shall be governed by, and eonstrued in accordance with, the laws of the State of Delaware, without regard to conflicts of law prineiples thereof.

16. Successors and Assigns. The Company may assign any of ita righta under this Agreement without Employea's consent. This Agreement will be binding upon and inure to the benefit of the successors and assigna of the Company. Subject to the restrictions on transfer set forth herein and in the Plan, this Agreement will be binding upon Employee and Employee's beneficiaries, executora, administrators and the person(a) to whom the RSUs may be transferred by will or the laws of descent or distribution.

17. Clawback. Notwithstanding any provision in this Agreemont, the Grant Notice or the Plan to the eontrary, to the extent required by (a) applicable law, including, without limitation, the requirements of the Dodd-Frank Wall Street Reform and Consumer Protection Aot of 2010, any Securities and Exchange Commission rule or any applicable securitiaa exehange listing standards and/or (b) any policy that may be adopted or amended by the Board from time to time, all sharea of Common Stock iaaued hereunder shall be subject to forfeiture, repurchase, recoupmant and/or cancellatlon to the extent necessary to comply with such law(s) and/or policy.

18. Counterparts. The Grant Notice may be executed in one or more counterparts, each of which shall be deemed an original and all of which together shall conatitute one instrument. Delivery of an executed counterpart of the Grant Notice by facsimile or pdf attachment to electronic mail shall be affective as delivery of a manually executed counterpart of the Grant Notice.

19. Severability. If a court of competent jurisdiction determines that any provision of this Agreement is invalid or unenforceable, then the invalidity or unenforceability of such provision shall not affect the validity or enforceability of any other provision of this Agreement, and all other provisions shall remain in full force and effeot.

20. Code Section 409A. None of the RSUs, DERs or any amounts payable pursuant to this Agreement are intended to constitute or provide for a daferral of compensation that is subject to Section 409A of the Code and the Treasury regulations and other interpretive guidance issued thereunder (collectively, " Seotion 409A "). Nevertheless, to tha extent that the Committee determines that the RSUs or DERs may not be exempt from Seotion 409A , then, if Employee is deemed to be a "specified employee" within the meaning of Section 409A , as determined by the Committee, at a time when Employee becomea eligible for settlement of the RSUs

Exhibit 12.1

ANTERO RESOURCES CORPORATION
COMPUTATION OF RATIO OF EARNINGS TO FIXED CHARGES
(in thousands)

	2010	2011	2012	2013	2014
Pre-tax income (loss) from continuing operations	$ 1,155	$456,485	$346,505	$162,023	$ 1,117,049
Fixed Charges	56,736	74,743	97,877	137,343	163,458
Total adjusted earnings available for payment of fixed charges	$ 57,891	$531,228	$444,382	$299,366	$ 1,280,507
Fixed Charges					
Interest expense, including amortization of debt-related expenses	$ 56,463	$ 74,404	$ 97,510	$136,617	$ 160,051
Rental expense representative of interest factor	273	339	367	726	3,407
Total fixed charges	$ 56,736	$ 74,743	$ 97,877	$137,343	$ 163,458
Ratio of earnings to fixed charges	1.02 X	7.11 X	4.54 X	2.18 X	7.83 X

Exhibit 23.1

Consent of Independent Registered Public Accounting Firm

The Board of Directors
Antero Resources Corporation:

We consent to the incorporation by reference in the registration statement (No. 333-195879) on Form S-3 and registration statement (No. 333-191693) on Form S-8 of Antero Resources Corporation of our report s dated Februar y 25, 2015, with respect to the consolidated balance sheets of Antero Resources Corporation as of December 31, 2013 and 2014, and the related consolidated statements of operations and comprehensive income (loss), equity, and cash flows for each of the years in the three-year period ended December 31, 2014, and the effectiveness of internal control over financial reporting as of December 31, 2014, which reports appear in the December 31, 2014 annual report on Form 10-K of Antero Resources Corporation.

/s/ KPMG LLP
Denver, Colorado

February 25, 201 5

Exhibit 31.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER
PURSUANT TO RULE 13A-14(A) AND RULE 15D-14(A)
OF THE SECURITIES EXCHANGE ACT OF 1934, AS AMENDED

I, Paul M. Rady, Chairman and Chief Executive Officer of Antero Resources Corporation, certify that:

1. I have reviewed this Annual Report on Form 10-K for the year ended December 31, 2014 of Antero Resources Corporation (the "registrant");

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared; and

   b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles; and

   c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting.

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 25, 2015

/s/ Paul M. Rady
Paul M. Rady
Chief Executive Officer

Exhibit 32.1

CERTIFICATION OF
CHIEF EXECUTIVE OFFICER
OF ANTERO RESOURCES CORPORATION
PURSUANT TO 18 U.S.C. SECTION 1350

In connaction with this Annual Report on Form 10-K of Antero Resources Corporation for tha year ended December 31, 2014, I, Paul M. Rady, Chief Executive Officer of Antero Resources Corporation, hereby certify pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of tha Sarbanas-Oxley Act of 2002, that to my knowledge:

1. This Annual Report on Form 10-K for the year ended December 31, 2014 fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

2. The information contained in this Annual Report on Form 10-K for the year ended December 31, 2014 fairly presents, in all material respects, the financial condition and results of operations of Antero Resources Corporation for the periods presented therein.

Date: February 25, 2015

/s/ Paul M. Rady
Paul M. Rady
Chief Executive Officer

Exhibit 99.1

DeGolyer and MacNaughton
5001 Spring Valley Road
Suite 800 East
Dallas, Texas 75244
January 19, 2015

Antero Resources Corporation
1615 Wynkoop Street
Denver, Colorado 80202

Ladies and Gentlemen:

Pursuant to your request, we have conducted an audit of the estimates of the net proved crude oil, condensate, natural gas liquids (NGL), and natural gas reserves and present worth, as of December 31, 2014, prepared by the engineering staff of Antero Resources Corporation (Antero) for working and royalty interests in Ohio, Pennsylvania, and West Virginia that Antero has represented it owns. This evaluation was completed on January 19 , 2015. Antero has represented to us that these properties account for approximately 99.90 percent on a million cubic feet equivalent basis of Antero's net proved reserves as of December 31, 2014, and that the net proved reserves estimates have been prepared in accordance with the reserves definitions of Rules 4–10(a) (1)–(32) of Regulation S–X of the Securities and Exchange Commission (SEC) of the United States. We have reviewed information provided to us by Antero that it represents to be Antero's estimates of the net reserves, as of December 31, 2014, for the same properties as those which we evaluated. This report was prepared in accordance with guidelines specified in Item 1202 (a)(8) of Regulation S-K and is to be used for inclusion in certain SEC filings by Antero.

Reserves estimates inoluded herein are expressed as net reserves as represented by Antero. Gross reserves are defined as the total estimated petroleum to be produced from these properties after December 31, 2014. Net reserves are defined as that portion of the gross reserves attributable to the interests owned by Antero after deducting all interests owned by others. NGL have been estimated for certain properties and are based on the NGL yields provided by Antero.

Petroleum reserves estimated by Antero and by us are classified as proved and are judged to be economically producible in future years from known reservoirs under existing economic and operating conditions and assuming continuation of current regulatory practices using conventional production methods and equipment.

In the course of our audit of the estimates of net proved reserves prepared by Antero, we have participated in reviews and discussions with Antero involving Antero's methodologies and procedures and we are in concurrence with the methodologies and procedures used by Antero.

Gas quantities estimated herein are expressed as sales gas. Sales gas is defined as that portion of the total gas to be delivered into a gas pipeline for sale after separation, processing, fuel use, and flare. Gas reserves are expressed at a temperature base of 60 degrees Fahrenheit (°F) and at the legal pressure base of the state in which the interest is located. Condensate reserves estimated herein are those to be recovered by conventional lease separation. NGL reserves are those attributed to the leasehold interests according to processing agreements.

Definition of Reserves

Petroleum reserves estimated by Antero included in this report are classified as proved. Only proved reserves have been evaluated for this report. Reserves classifications used in this report are in accordance with the reserves definitions of Rules 4–10(a) (1)–(32) of Regulation S–X of the SEC. Reservea are judged to be economically producible in future years from known reservoirs under existing economic and operating conditions and assuming continuation of current regulatory practices using conventional production methods and equipment. In the analyses of production-decline curves, reserves were estimated only to the limit of economic rates of production under existing economic and operating conditions using prices and costs consistent with the effective date of this report, including consideration of changes in existing prices provided only by contractual arrangements but not including escalations based upon future conditions. The petroleum reserves are classifie d as follows:

reservoir, or other evidence using reliable technology establishes the reasonable certainty of the engineering analysis on which the project or program was based; and (B) The project has been approved for development by all necessary parties and entities, including governmental entities.

(v) Existing economic conditions include prices and costs at which economic producibility from a reservoir is to be determined. The price shall be the average price during the 12 –month period prior to the ending date of the period covered by the report, determined as an unweighted arithmetic average of the first-day-of-the-month price for each month within such period, unless prices are defined by contractual arrangements, excluding escalations based upon future conditions.

Developed oil and gas reserves – Developed oil and gas reserves are reserves of any category that can be expected to be recovered:

(i) Through existing wells with existing equipment and operating methods or in which the cost of the required equipment is relatively minor compared to the cost of a new well; and

(ii) Through installed extraction equipment and infrastructure operational at the time of the reserves estimate if the extraction is by means not involving a well.

Undeveloped oil and gas reserves – Undeveloped oil and gas reserves are reserves of any category that are expected to be recovered from new wells on undrilled acreage, or from existing wells where a relatively major expenditure is required for recompletion.

(i) Reserves on undrilled acreage shall be limited to those directly offsetting development spacing areas that are reasonably certain of production when drilled, unless evidence using reliable technology exists that establishes reasonable certainty of economic producibility at greater distances.

(ii) Undrilled locations can be classified as having undeveloped reserves only if a development plan has been adopted indicating that they are

unless prices are defined by contractual arrangements. The gas prices were calculated for each property using differentials and heating value adjustments furnished by Antero to the aggregated price of $4.07 per million British thermal units and held constant thereafter. The resulting volume- weighted average price was $4.39 per thousand cubic feet. The indexes and prices, expressed in dollars per million British thermal units ($MMBtu), are shown in the table below.

Index	Average Natural Gas Price ($/MMBtu)
NYMEX	4.41
Columbia Gas Transmission Appalachia	4.37
Texas Eastern Transmission M-2	3.33
Chicago City Gates	4.76
Dominion Transmission Appalachia	3.28

Operating Expenses and Capital Costs

Operating expenses and capital costs, based on information provided by Antero, were used in estimating future costs required to operate the properties. In certain cases, future costs, either higher or lower than existing costs, may have been used because of anticipated changes in operating conditions. Abandonment costs were included for all properties. These costs were not escalated for inflation.

While the oil and gas industry may be subject to regulatory changes from time to time that could affect an industry participant's ability to recover its oil and gas reserves, we are not aware of any such governmental actions which would restrict the recovery of the December 31, 2014, estimated oil and gas reserves .

Antero has represented that estimated net proved reserves and present worth at 10 percent attributable to the reviewed properties are based on the definitions of proved reserves of the SEC. Antero has represent ed that its estimates of the net proved reserves and present worth attributable to these properties, which represent 99.90 percent of Antero's total proved reserves on a net equivalent basis, are as follows, expressed in

(4), (8), and 1203(a) of Regulation S–K of the Securities and Exchange Commission; provided, however, that (i) future income tax expenses have not been taken into account in estimating the future net revenue and present worth values set forth herein and (ii) estimates of the proved developed and proved undeveloped reserves are not presented at the beginning of the year.

To the extent the above-enumerated rules, regulations, and statements require determinations of an accounting or legal nature, we, as engineers, are necesaarily unable to expresa an opinion as to whether the above-described information is in accordance therewith or sufficient therefor.

In comparing the detailed net proved reserves estimates prepared by us and by Antero of the properties audited, we have found differences, both positive and negative , resulting in an aggregate difference of 1.2 percent for the Marcellus and Upper Devonian properties and an aggregate difference of 0 .7 percent for the Utica properties when compared on the basis of net gas equivalent. It is our opinion that there is no material difference between the net proved reserves estimates prepared by Antero and those prepared by us for those properties we audited. In comparing the detailed present worth at 10 percent estimates prepared by us and by Antero of the properties audited, we have found differences, both positive and negative, resulting in an aggregate difference of 0 .3 percent for the Marcellus and Upper Devonian properties and an aggregate difference of 4.6 percent for the Utica properties when compared on the basis of present worth at 10 percent. It is our opinion that there is no material difference between the present worth at 10 percent estimates prepared by Antero and those prepared by us for those properties we audited.

CERTIFICATE of QUALIFICATION

I, Gregory K. Graves, Petroleum Engineer with DeGolyer and MacNaughton, 5001 Spring Valley Road, Suite 800 East, Dallas, Texas, 75244 U.S.A., hereby certify:

1. Thst I am a Senior Vice President with DeGolyer and MacNaughton, which company did prepare the letter report sddressed to Antero dated
   January 19 , 2015, and that I, as Senior Vice President, was responsible for the preparation of this letter report.

2. That I attended the University of Texas at Austin, and thst I graduated with a Bachelor of Science degree in Petroleum Engineering in the year 1984; that I am a Registered Professional Engineer in the State of Texas; that I am a member of the International Society of Petroleum Engineers and the Society of Petroleum Evaluation Engineers ; and that I have in excess of 30 years of experience in oil and gas reservoir studies and reserves evaluations.

/s/ Gregory K. Graves, P.E.

Gregory K. Graves, P.E.
Senior Vice President
DeGolyer and MacNaughton

Craig Griffith

From: Nancy Sitton <nancy.sitton@altusgroup.com>
Sent: Tuesday, November 24, 2015 3:25 PM
To: Craig Griffith
Subject: FW: Antero Operating Expenses
Attachments: Well Example Calculations.xlsx; Antero Resource Company Operating Expenses 2014.xlsx

I forgot to include you on this, sorry!

Nancy Sitton, CPA
Manager, State & Local Tax and Advisory, Altus Group US Inc.
D: 410.568.0771 T: 410.568.0800 ext 3771 M: 703.999.3780 F: 410.568.0801
910 Ridgebrook Road, Suite 200, Sparks, Maryland, 21152 USA



This message, and the documents attached hereto, are intended only for the addressees and may contain privileged or confidential information. Any unauthorized disclosure is strictly prohibited. If you have received this message in error, please notify us immediately so that we may correct our internal records. Please then delete the original message. Thank you.

From: Nancy Sitton
Sent: Tuesday, November 24, 2015 12:57 PM
To: Hoover, Cindi R; Estep, Yvonne H; jeff.a.amburgey@wv.gov
Cc: Kirsten Evans
Subject: Antero Operating Expenses

Jeff, Cindi, and Yvonne,
Thank you again for taking the time to meet with Kirsten and I yesterday to discuss Antero.

As requested, attached please find the electronic version of the value calculation where 75% of operating expenses were declined consistent with the revenue. I have also attached an updated listing of operating expenses by well; It includes only the horizontal Marcellus wells and I have added the fixed portion of expenses (25%) in column J.

Please let us know if you have any questions or if we can provide any additional information.

Have a wonderful Thanksgiving!

Thank you,
Nancy

Nancy Sitton, CPA
Manager, State & Local Tax and Advisory, Altus Group US Inc.

D: 410.568.0771 T: 410.568.0800 ext 3771 M: 703.999.3780 F: 410.568.0801
910 Ridgebrook Road, Suite 200, Sparks, Maryland, 21152 USA



Antero Resourc poration
7/1/15 West Virginia Oil and Gas Producer/ Operator Return
Actual Operating Expenses for West Virginia

			2014 Calendar Year			2014 Calendar Year Except Year 1 Wells Adjusted to Actual Expenses for First 12 Months (Note 1)				
Well Code	NRA Account #	API #	LOE Expenses	Gathering, Processing, and Transportation Expenses	Total Operating Expenses	LOE Expenses	Gathering, Processing, and Transportation Expenses	Total Operating Expenses	Fixed Portion of Operating Expenses (25%)	Well Type
40307	09-0120146079	47-017-06079	43,900	1,385,002	1,428,901	43,900	1,385,002	1,428,901	357,225	Marcellus, Horizontal
40306	09-0120146083	47-017-06083	46,372	1,464,200	1,510,572	46,372	1,464,200	1,510,572	377,643	Marcellus, Horizontal
40400	09-0120156169	47-017-06169	171,177	1,822,217	1,993,393	171,177	1,822,217	1,993,393	498,348	Marcellus, Horizontal
40437	09-0120156170	47-017-06170	167,169	1,954,910	2,122,079	167,169	1,954,910	2,122,079	530,520	Marcellus, Horizontal
40414	09-0120156187	47-017-06187	49,670	1,563,122	1,612,792	49,670	1,563,122	1,612,792	403,198	Marcellus, Horizontal
40416	09-0120156188	47-017-06188	62,096	1,707,644	1,769,740	62,096	1,707,644	1,769,740	442,435	Marcellus, Horizontal
40415	09-0120156189	47-017-06189	51,259	1,631,653	1,682,912	51,259	1,631,653	1,682,912	420,728	Marcellus, Horizontal
40410	09-0120166141	47-017-06141	17,147	2,070,963	2,088,110	55,077	3,031,927	3,087,004	771,751	Marcellus, Horizontal
40409	09-0120166142	47-017-06142	26,987	1,880,555	1,907,542	81,408	2,558,400	2,639,808	659,952	Marcellus, Horizontal
40435	09-0120166190	47-017-06190	10,600	1,255,862	1,266,463	25,116	1,982,207	2,007,323	501,831	Marcellus, Horizontal
40499	09-0120166191	47-017-06191	16,755	1,044,192	1,060,948	31,618	1,664,015	1,695,633	423,908	Marcellus, Horizontal
40497	09-0120166192	47-017-06192	10,539	937,423	947,962	26,393	1,697,765	1,724,158	431,039	Marcellus, Horizontal
40498	09-0120166193	47-017-06193	981,449	356,144	1,337,593	1,003,255	1,464,413	2,467,669	616,917	Marcellus, Horizontal
40475	09-0120166201	47-017-06201	28,771	2,235,909	2,264,679	63,710	3,047,524	3,111,233	777,808	Marcellus, Horizontal
40438	09-0120166206	47-017-06206	5,382	650,663	656,046	135,791	1,905,829	2,041,620	510,405	Marcellus, Horizontal
40490	09-0120166207	47-017-06207	23,150	2,146,258	2,169,409	51,770	3,014,478	3,066,249	766,562	Marcellus, Horizontal
40981	09-0120166211	47-017-06211	99,173	3,144,354	3,243,528	102,481	3,292,323	3,394,803	848,701	Marcellus, Horizontal
40982	09-0120166212	47-017-06212	(59,781)	1,028,705	968,924	18,350	2,332,444	2,350,793	587,698	Marcellus, Horizontal
40980	09-0120166213	47-017-06213	358	997,362	997,720	115,972	2,466,222	2,582,194	645,549	Marcellus, Horizontal
40447	09-0120166266	47-017-06266	126	1,008,992	1,009,118	120,989	2,898,560	3,019,549	754,887	Marcellus, Horizontal
40448	09-0120166272	47-017-06272	75,667	2,954,918	3,030,585	87,313	3,098,684	3,185,996	796,499	Marcellus, Horizontal
40466	09-0120166275	47-017-06275	85,816	3,401,705	3,487,521	88,596	3,701,405	3,790,001	947,500	Marcellus, Horizontal
40550	09-0120166289	47-017-06289	338	546,412	546,750	29,226	1,674,923	1,704,149	426,037	Marcellus, Horizontal
40506	09-0120166292	47-017-06292	406	403,884	404,290	12,915	1,373,630	1,386,545	346,636	Marcellus, Horizontal
40549	09-0120166293	47-017-06293	338	511,200	511,538	14,542	1,501,515	1,516,057	379,014	Marcellus, Horizontal
40551	09-0120166294	47-017-06294	406	478,030	478,436	11,773	1,580,413	1,592,186	398,047	Marcellus, Horizontal
40619	09-0120166359	47-017-06359	303	862,274	862,577	54,167	2,015,148	2,069,315	517,329	Marcellus, Horizontal
40620	09-0120166402	47-017-06402	303	894,658	894,960	53,520	2,625,979	2,679,498	669,875	Marcellus, Horizontal
40621	09-0120166430	47-017-06430	145	167,191	167,336	97,942	1,462,585	1,560,526	390,132	Marcellus, Horizontal
40622	09-0120166431	47-017-06431	144	121,998	122,142	100,785	1,553,125	1,653,910	413,477	Marcellus, Horizontal
40623	09-0120166432	47-017-06432	144	73,767	73,911	111,617	1,486,448	1,598,065	399,516	Marcellus, Horizontal
40303	09-0320146080	47-017-06080	56,892	598,166	655,058	56,892	598,166	655,058	163,765	Marcellus, Horizontal
40312	09-0320146080	47-017-06086	67,180	916,495	983,675	67,180	916,495	983,675	245,919	Marcellus, Horizontal
40305	09-0320146085	47-017-06085	56,189	395,282	451,471	56,189	395,282	451,471	112,868	Marcellus, Horizontal
40304	09-0320156084	47-017-06084	73,144	615,331	688,475	73,144	615,331	688,475	172,119	Marcellus, Horizontal
40361	09-0320156128	47-017-06128	52,852	1,316,362	1,369,214	52,852	1,316,362	1,369,214	342,304	Marcellus, Horizontal
40362	09-0320156129	47-017-06129	59,405	1,262,500	1,321,905	59,405	1,262,500	1,321,905	330,476	Marcellus, Horizontal
40387	09-0320156163	47-017-06163	49,017	1,043,003	1,092,020	49,017	1,043,003	1,092,020	273,005	Marcellus, Horizontal
40386	09-0320156166	47-017-06166	56,673	992,362	1,049,034	56,673	992,362	1,049,034	262,259	Marcellus, Horizontal

Antero Resources Corporation
7/1/15 West Virginia Oil and Gas Producer/ Operator Return
Actual Operating Expenses for West Virginia

			2014 Calendar Year			2014 Calendar Year Except Year 1 Wells Adjusted to Actual Expenses for First 12 Months (Note 1)				
Well Code	NRA Account #	API #	LOE Expenses	Gathering, Processing, and Transportation Expenses	Total Operating Expenses	LOE Expenses	Gathering, Processing, and Transportation Expenses	Total Operating Expenses	Fixed Portion of Operating Expenses (25%)	Well Type
40992	09-0420166210	47-017-06210	76,932	1,166,500	1,243,432	125,288	1,737,895	1,863,183	465,796	Marcellus, Horizontal
40464	09-0420166219	47-017-06219	49,167	2,083,128	2,132,295	51,300	2,173,427	2,224,727	556,182	Marcellus, Horizontal
40512	09-0420166226	47-017-06226	50,382	1,496,090	1,546,472	103,186	2,205,539	2,308,724	577,181	Marcellus, Horizontal
40453	09-0420166227	47-017-06227	29,277	2,468,771	2,498,048	35,122	3,022,365	3,057,488	764,372	Marcellus, Horizontal
40454	09-0420166230	47-017-06230	25,972	2,300,434	2,326,406	35,572	2,814,923	2,850,494	712,624	Marcellus, Horizontal
40515	09-0420166245	47-017-06245	49,017	1,415,044	1,464,061	104,182	2,263,563	2,367,745	591,936	Marcellus, Horizontal
40543	09-0420166278	47-017-06278	20,217	1,633,393	1,653,610	54,337	2,525,754	2,580,091	645,023	Marcellus, Horizontal
40494	09-0420166279	47-017-06279	17,663	1,646,196	1,663,859	47,222	2,371,818	2,419,040	604,760	Marcellus, Horizontal
40544	09-0420166280	47-017-06280	15,351	1,468,062	1,483,413	40,754	2,264,077	2,304,831	576,208	Marcellus, Horizontal
40536	09-0420166369	47-017-06369	1,214	336,806	338,020	153,169	2,351,655	2,504,823	626,206	Marcellus, Horizontal
40540	09-0420166377	47-017-06377	49,074	1,309,179	1,358,254	97,202	2,393,005	2,490,208	622,552	Marcellus, Horizontal
40585	09-0420166422	47-017-06422	238	270,922	271,161	78,473	2,857,540	2,936,013	734,003	Marcellus, Horizontal
40598	09-0420166433	47-017-06433	232	372,169	372,400	79,621	2,262,266	2,341,887	585,472	Marcellus, Horizontal
40599	09-0420166434	47-017-06434	(2,249)	287,605	285,356	77,072	2,808,461	2,885,533	721,383	Marcellus, Horizontal
40586	09-0420166435	47-017-06435	239	399,734	399,972	72,947	2,556,324	2,629,271	657,318	Marcellus, Horizontal
40600	09-0420166450	47-017-06450	1,140	10,927	12,067	112,761	3,103,033	3,215,794	803,948	Marcellus, Horizontal
40257	09-0520145962	47-017-05962	77,584	519,878	597,462	77,584	519,878	597,462	149,366	Marcellus, Horizontal
40275	09-0520145962	47-017-06026	65,089	528,513	593,602	65,089	528,513	593,602	148,400	Marcellus, Horizontal
40277	09-0520146027	47-017-06027	49,228	709,379	758,607	49,228	709,379	758,607	189,652	Marcellus, Horizontal
40276	09-0520146028	47-017-06028	59,183	711,934	771,117	59,183	711,934	771,117	192,779	Marcellus, Horizontal
40269	09-0520146044	47-017-06044	61,469	475,889	537,359	61,469	475,889	537,359	134,340	Marcellus, Horizontal
40270	09-0520146045	47-017-06045	53,145	414,257	467,402	53,145	414,257	467,402	116,850	Marcellus, Horizontal
40271	09-0520146046	47-017-06046	38,966	521,392	560,358	38,966	521,392	560,358	140,090	Marcellus, Horizontal
40373	09-0520156117	47-017-06117	115,502	959,151	1,074,654	115,502	959,151	1,074,654	268,663	Marcellus, Horizontal
40376	09-0520156118	47-017-06118	94,416	761,600	856,017	94,416	761,600	856,017	214,004	Marcellus, Horizontal
40375	09-0520156120	47-017-06120	98,422	625,256	723,677	98,422	625,256	723,677	180,919	Marcellus, Horizontal
40374	09-0520156121	47-017-06121	97,634	689,711	787,346	97,634	689,711	787,346	196,836	Marcellus, Horizontal
40969	09-0520166119	47-017-06119	25,574	1,440,872	1,466,446	36,160	1,982,641	2,018,801	504,700	Marcellus, Horizontal
40970	09-0520166134	47-017-06134	32,543	1,351,750	1,384,293	41,245	1,807,988	1,849,233	462,308	Marcellus, Horizontal
40971	09-0520166148	47-017-06148	33,013	1,679,712	1,712,725	41,768	2,197,192	2,238,960	559,740	Marcellus, Horizontal
40341	09-0620146096	47-017-06096	84,226	1,009,155	1,093,381	84,226	1,009,155	1,093,381	273,345	Marcellus, Horizontal
40320	09-0620146099	47-017-06099	69,972	780,029	850,002	69,972	780,029	850,002	212,500	Marcellus, Horizontal
40313	09-0620156076	47-017-06076	85,438	1,140,971	1,226,409	85,438	1,140,971	1,226,409	306,602	Marcellus, Horizontal
40318	09-0620156081	47-017-06081	78,783	1,040,849	1,119,632	78,783	1,040,849	1,119,632	279,908	Marcellus, Horizontal
40319	09-0620156082	47-017-06082	79,080	1,318,343	1,397,424	79,080	1,318,343	1,397,424	349,356	Marcellus, Horizontal
40348	09-0620156094	47-017-06094	77,414	1,119,974	1,197,388	77,414	1,119,974	1,197,388	299,347	Marcellus, Horizontal
40328	09-0620156095	47-017-06095	70,619	794,489	865,109	70,619	794,489	865,109	216,277	Marcellus, Horizontal
40311	09-0620156097	47-017-06097	117,274	977,100	1,094,374	117,274	977,100	1,094,374	273,594	Marcellus, Horizontal
40343	09-0620156098	47-017-06098	108,723	1,106,401	1,215,124	108,723	1,106,401	1,215,124	303,781	Marcellus, Horizontal

Antero Resourc. poration
7/1/15 West Virginia Oil and Gas Producer/ Operator Return
Actual Operating Expenses for West Virginia

			2014 Calendar Year			2014 Calendar Year Except Year 1 Wells Adjusted to Actual Expenses for First 12 Months (Note 1)				
Well Code	NRA Account #	API #	LOE Expenses	Gathering, Processing, and Transportation Expenses	Total Operating Expenses	LOE Expenses	Gathering, Processing, and Transportation Expenses	Total Operating Expenses	Fixed Portion of Operating Expenses (25%)	Well Type
40553	09-0820166318	47-017-06318	7,855	1,055,720	1,063,575	40,022	1,633,138	1,673,159	418,290	Marcellus, Horizontal
40239	17-0120145553	47-033-05553	30,368	667,962	698,330	30,368	667,962	698,330	174,583	Marcellus, Horizontal
40120	17-0720115222	47-033-05222	16,849	418,049	434,898	16,849	418,049	434,898	108,725	Marcellus, Horizontal
40137	17-0720115305	47-033-05305	27,118	324,286	351,404	27,118	324,286	351,404	87,851	Marcellus, Horizontal
40139	17-0720125339	47-033-05339	27,251	377,438	404,689	27,251	377,438	404,689	101,172	Marcellus, Horizontal
40164	17-0720125357	47-033-05357	34,345	304,982	339,327	34,345	304,982	339,327	84,832	Marcellus, Horizontal
40140	17-0720125357	47-033-05358	31,896	229,800	261,697	31,896	229,800	261,697	65,424	Marcellus, Horizontal
40152	17-0720125363	47-033-05363	51,269	656,575	707,843	51,269	656,575	707,843	176,961	Marcellus, Horizontal
40185	17-0720135427	47-033-05427	17,854	380,946	398,800	17,854	380,946	398,800	99,700	Marcellus, Horizontal
40183	17-0720135428	47-033-05428	16,101	424,752	440,853	16,101	424,752	440,853	110,213	Marcellus, Horizontal
40147	17-0720135429	47-033-05429	19,233	310,782	330,015	19,233	310,782	330,015	82,504	Marcellus, Horizontal
40170	17-0720135430	47-033-05430	27,888	361,012	388,899	27,888	361,012	388,899	97,225	Marcellus, Horizontal
40151	17-0720135439	47-033-05439	28,679	503,893	532,572	28,679	503,893	532,572	133,143	Marcellus, Horizontal
40172	17-0720135440	47-033-05440	27,555	472,734	500,288	27,555	472,734	500,288	125,072	Marcellus, Horizontal
40191	17-0720135450	47-033-05450	48,794	558,567	607,360	48,794	558,567	607,360	151,840	Marcellus, Horizontal
40190	17-0720135451	47-033-05451	60,473	682,044	742,517	60,473	682,044	742,517	185,629	Marcellus, Horizontal
40199	17-0720135472	47-033-05472	50,958	774,495	825,453	50,958	774,495	825,453	206,363	Marcellus, Horizontal
40198	17-0720135473	47-033-05473	34,566	650,493	685,060	34,566	650,493	685,060	171,265	Marcellus, Horizontal
40220	17-0720135477	47-033-05477	28,747	514,483	543,230	28,747	514,483	543,230	135,808	Marcellus, Horizontal
40221	17-0720135499	47-033-05499	27,244	569,966	597,210	27,244	569,966	597,210	149,302	Marcellus, Horizontal
40236	17-0720135506	47-033-05506	54,504	463,860	518,364	54,504	463,860	518,364	129,591	Marcellus, Horizontal
40194	17-0720135550	47-033-05550	55,585	182,929	238,514	55,585	182,929	238,514	59,628	Marcellus, Horizontal
40143	17-0720145362	47-033-05362	56,997	492,776	549,774	56,997	492,776	549,774	137,443	Marcellus, Horizontal
40232	17-0720145470	47-033-05470	42,276	902,966	945,241	42,276	902,966	945,241	236,310	Marcellus, Horizontal
40230	17-0720145518	47-033-05518	26,513	602,290	628,803	26,513	602,290	628,803	157,201	Marcellus, Horizontal
40231	17-0720145519	47-033-05519	15,785	671,860	687,645	15,785	671,860	687,645	171,911	Marcellus, Horizontal
40249	17-0720145538	47-033-05538	35,315	705,685	741,001	35,315	705,685	741,001	185,250	Marcellus, Horizontal
40250	17-0720145538	47-033-05539	28,123	675,567	703,690	28,123	675,567	703,690	175,922	Marcellus, Horizontal
40160	17-0720145549	47-033-05549	40,712	1,076,237	1,116,949	40,712	1,076,237	1,116,949	279,237	Marcellus, Horizontal
40159	17-0720145549	47-033-05581	60,173	571,824	631,997	60,173	571,824	631,997	157,999	Marcellus, Horizontal
40157	17-0720145551	47-033-05551	60,783	689,605	750,388	60,783	689,605	750,388	187,597	Marcellus, Horizontal
40196	17-0720145558	47-033-05558	44,554	684,888	729,442	44,554	684,888	729,442	182,361	Marcellus, Horizontal
40219	17-0720145558	47-033-05561	47,790	835,749	883,539	47,790	835,749	883,539	220,885	Marcellus, Horizontal
40113	17-0720145595	47-033-05595	20,613	643,148	663,761	20,613	643,148	663,761	165,940	Marcellus, Horizontal
40195	17-0720145603	47-033-05603	31,952	528,712	560,664	31,952	528,712	560,664	140,166	Marcellus, Horizontal
40296	17-0720145604	47-033-05604	25,588	446,645	472,234	25,588	446,645	472,234	118,058	Marcellus, Horizontal
40181	17-0920135445	47-033-05445	36,711	438,114	474,825	36,711	438,114	474,825	118,706	Marcellus, Horizontal
40253	17-0920145520	47-033-05520	27,254	672,354	699,608	27,254	672,354	699,608	174,902	Marcellus, Horizontal
40254	17-0920145520	47-033-05546	23,498	605,814	629,312	23,498	605,814	629,312	157,328	Marcellus, Horizontal

Antero Resource Corporation
7/1/15 West Virginia Oil and Gas Producer/ Operator Return
Actual Operating Expenses for West Virginia

			2014 Calendar Year			2014 Calendar Year Except Year 1 Wells Adjusted to Actual Expenses for First 12 Months (Note 1)				
Well Code	NRA Account #	API #	LOE Expenses	Gathering, Processing, and Transportation Expenses	Total Operating Expenses	LOE Expenses	Gathering, Processing, and Transportation Expenses	Total Operating Expenses	Fixed Portion of Operating Expenses (25%)	Well Type
40176	17-1820155674	47-033-05674	32,879	645,491	678,370	32,879	645,491	678,370	169,593	Marcellus, Horizontal
40177	17-1820155675	47-033-05675	33,060	644,125	677,185	33,060	644,125	677,185	169,296	Marcellus, Horizontal
40979	17-1820155698	47-033-05698	51,626	2,474,391	2,526,017	51,626	2,474,391	2,526,017	631,504	Marcellus, Horizontal
40412	17-1820155730	47-033-05730	188,516	2,195,945	2,384,461	188,516	2,195,945	2,384,461	596,115	Marcellus, Horizontal
40413	17-1820155731	47-033-05731	190,746	2,197,828	2,388,574	190,746	2,197,828	2,388,574	597,143	Marcellus, Horizontal
40976	17-1820165686	47-033-05686	50,123	2,199,344	2,249,467	54,758	2,286,498	2,341,255	585,314	Marcellus, Horizontal
40977	17-1820165699	47-033-05699	54,005	2,145,183	2,199,188	54,105	2,181,080	2,235,186	558,796	Marcellus, Horizontal
40978	17-1820165701	47-033-05701	49,604	2,024,958	2,074,562	49,750	2,071,103	2,120,852	530,213	Marcellus, Horizontal
40470	17-1820165721	47-033-05721	3,160	1,291,287	1,294,446	108,641	2,138,789	2,247,430	561,857	Marcellus, Horizontal
40469	17-1820165722	47-033-05722	30,954	1,154,358	1,185,312	129,815	1,856,812	1,986,627	496,657	Marcellus, Horizontal
40467	17-1820165723	47-033-05723	46,424	1,980,944	2,027,368	55,505	2,422,361	2,477,866	619,467	Marcellus, Horizontal
40468	17-1820165738	47-033-05738	72,498	2,335,161	2,407,658	93,976	2,987,984	3,081,960	770,490	Marcellus, Horizontal
40101	17-2020115198	47-033-05199	35,681	69,687	105,368	35,681	69,687	105,368	26,342	Marcellus, Horizontal
40205	17-2020135465	47-033-05465	27,682	467,428	495,111	27,682	467,428	495,111	123,778	Marcellus, Horizontal
40206	17-2020135466	47-033-05466	26,895	540,910	567,805	26,895	540,910	567,805	141,951	Marcellus, Horizontal
40207	17-2020135467	47-033-05467	27,140	457,196	484,336	27,140	457,196	484,336	121,084	Marcellus, Horizontal
40208	17-2020135484	47-033-05484	27,771	483,947	511,718	27,771	483,947	511,718	127,929	Marcellus, Horizontal
40209	17-2020135485	47-033-05485	22,222	358,342	380,564	22,222	358,342	380,564	95,141	Marcellus, Horizontal
40210	17-2020135486	47-033-05486	21,804	542,074	563,878	21,804	542,074	563,878	140,969	Marcellus, Horizontal
40248	17-2020135491	47-033-05491	19,211	360,659	379,870	19,211	360,659	379,870	94,968	Marcellus, Horizontal
40225	17-2020135492	47-033-05492	15,512	312,003	327,514	15,512	312,003	327,514	81,879	Marcellus, Horizontal
40226	17-2020135493	47-033-05493	15,435	291,793	307,228	15,435	291,793	307,228	76,807	Marcellus, Horizontal
40227	17-2020135494	47-033-05484	25,924	612,517	638,441	25,924	612,517	638,441	159,610	Marcellus, Horizontal
40274	17-2020135494	47-033-05580	51,258	1,097,165	1,148,424	51,258	1,097,165	1,148,424	287,106	Marcellus, Horizontal
40217	17-2020135502	47-033-05502	10,735	644,581	655,316	10,735	644,581	655,316	163,829	Marcellus, Horizontal
40218	17-2020135503	47-033-05503	14,265	544,030	558,295	14,265	544,030	558,295	139,574	Marcellus, Horizontal
40240	17-2020135554	47-033-05554	36,215	707,092	743,308	36,215	707,092	743,308	185,827	Marcellus, Horizontal
40216	17-2020145501	47-033-05501	13,385	160,417	173,802	13,385	160,417	173,802	43,451	Marcellus, Horizontal
40259	17-2020145559	47-033-05560	26,735	1,111,241	1,137,976	26,735	1,111,241	1,137,976	284,494	Marcellus, Horizontal
40260	17-2020145576	47-033-05576	15,061	502,265	517,325	15,061	502,265	517,325	129,331	Marcellus, Horizontal
40261	17-2020145577	47-033-05577	15,046	496,689	511,735	15,046	496,689	511,735	127,934	Marcellus, Horizontal
40292	17-2020145582	47-033-05582	44,025	571,285	615,310	44,025	571,285	615,310	153,827	Marcellus, Horizontal
40293	17-2020145583	47-033-05583	43,923	614,958	658,881	43,923	614,958	658,881	164,720	Marcellus, Horizontal
40285	17-2020145584	47-033-05584	53,914	757,753	811,666	53,914	757,753	811,666	202,917	Marcellus, Horizontal
40286	17-2020145585	47-033-05585	41,665	819,883	861,548	41,665	819,883	861,548	215,387	Marcellus, Horizontal
40278	17-2020145586	47-033-05586	106,621	824,394	931,015	106,621	824,394	931,015	232,754	Marcellus, Horizontal
40291	17-2020145590	47-033-05590	99,662	535,580	635,243	99,662	535,580	635,243	158,811	Marcellus, Horizontal
40288	17-2020145591	47-033-05591	16,717	619,835	636,553	16,717	619,835	636,553	159,138	Marcellus, Horizontal
40262	17-2020145592	47-033-05592	43,096	754,555	797,651	43,096	754,555	797,651	199,413	Marcellus, Horizontal

Antero Resource ,oration
7/1/15 West Virginia Oil and Gas Producer/ Operator Return
Actual Operating Expenses for West Virginia

			2014 Calendar Year			2014 Calendar Year Except Year 1 Wells Adjusted to Actual Expenses for First 12 Months (Note 1)				
Well Code	NRA Account #	API #	LOE Expenses	Gathering, Processing, and Transportation Expenses	Total Operating Expenses	LOE Expenses	Gathering, Processing, and Transportation Expenses	Total Operating Expenses	Fixed Portion of Operating Expenses (25%)	Well Type
40957	17-2020155691	47-033-05691	185,684	1,004,452	1,190,136	185,684	1,004,452	1,190,136	297,534	Marcellus, Horizontal
40956	17-2020155693	47-033-05693	202,015	1,094,091	1,296,106	202,015	1,094,091	1,296,106	324,027	Marcellus, Horizontal
40997	17-2020165624	47-033-05624	67,361	1,023,236	1,090,597	87,310	1,338,068	1,425,378	356,344	Marcellus, Horizontal
40998	17-2020165630	47-033-05630	44,004	896,648	940,652	61,023	1,180,348	1,241,371	310,343	Marcellus, Horizontal
40999	17-2020165643	47-033-05643	40,185	1,460,234	1,500,419	56,888	1,899,189	1,956,077	489,019	Marcellus, Horizontal
40994	17-2020165654	47-033-05654	50,211	973,224	1,023,435	69,791	1,367,199	1,436,990	359,247	Marcellus, Horizontal
40442	17-2020165679	47-033-05679	35,128	1,343,047	1,378,175	62,464	2,155,413	2,217,877	554,469	Marcellus, Horizontal
40441	17-2020165680	47-033-05680	43,950	1,488,362	1,532,313	76,607	2,453,999	2,530,606	632,651	Marcellus, Horizontal
40967	17-2020165695	47-033-05695	72,052	1,360,158	1,432,210	86,958	1,824,391	1,911,349	477,837	Marcellus, Horizontal
40968	17-2020165696	47-033-05696	71,312	1,780,009	1,851,321	87,107	2,425,956	2,513,063	628,266	Marcellus, Horizontal
40990	17-2020165700	47-033-05700	95,356	1,778,020	1,873,376	110,072	2,494,401	2,604,473	651,118	Marcellus, Horizontal
40418	17-2020165704	47-033-05704	32,851	2,156,558	2,189,409	33,090	2,194,629	2,227,719	556,930	Marcellus, Horizontal
40419	17-2020165705	47-033-05705	15,462	2,262,339	2,277,801	15,541	2,331,009	2,346,549	586,637	Marcellus, Horizontal
40420	17-2020165708	47-033-05708	27,024	2,555,973	2,582,997	27,842	2,638,571	2,666,414	666,603	Marcellus, Horizontal
40421	17-2020165710	47-033-05710	28,387	3,143,527	3,171,914	29,969	3,300,947	3,330,916	832,729	Marcellus, Horizontal
40495	17-2020165724	47-033-05724	23,117	2,171,750	2,194,867	27,325	2,925,835	2,953,161	738,290	Marcellus, Horizontal
40993	43-0320150036	47-085-10036	86,480	1,969,602	2,056,081	86,480	1,969,602	2,056,081	514,020	Marcellus, Horizontal
40324	43-0320159963	47-085-09963	88,738	1,199,246	1,287,983	88,738	1,199,246	1,287,983	321,996	Marcellus, Horizontal
40459	43-0320160027	47-085-10027	5,452	1,156,904	1,162,356	117,654	3,388,142	3,505,796	876,449	Marcellus, Horizontal
40644	43-0320160028	47-085-10028	529	556,978	557,507	113,769	2,403,414	2,517,183	629,296	Marcellus, Horizontal
40554	43-0320160029	47-085-10029	989	899,884	900,873	89,817	3,004,082	3,093,899	773,475	Marcellus, Horizontal
40642	43-0320160060	47-085-10060	(377)	1,486,428	1,486,051	60,129	3,222,316	3,282,445	820,611	Marcellus, Horizontal
45573	43-0320160062	47-085-10062	232	1,357,903	1,358,135	152,449	4,536,691	4,689,140	1,172,285	Marcellus, Horizontal
45568	43-0320160063	47-085-10063	7,638	711,750	719,388	181,972	3,732,776	3,914,748	978,687	Marcellus, Horizontal
40643	43-0320160088	47-085-10088	(5,107)	1,656,090	1,650,983	62,038	3,581,070	3,643,108	910,777	Marcellus, Horizontal
40308	43-1020149960	47-085-09960	90,681	1,089,871	1,180,552	90,681	1,089,871	1,180,552	295,138	Marcellus, Horizontal
40958	43-1020150002	47-085-10002	90,495	835,558	926,053	90,495	835,558	926,053	231,513	Marcellus, Horizontal
40431	43-1020150023	47-085-10023	244,393	2,471,277	2,715,671	244,393	2,471,277	2,715,671	678,918	Marcellus, Horizontal
40371	43-1020159961	47-085-09961	93,090	785,373	878,464	93,090	785,373	878,464	219,616	Marcellus, Horizontal
40379	43-1020159964	47-085-09964	112,254	1,149,777	1,262,031	112,254	1,149,777	1,262,031	315,508	Marcellus, Horizontal
40380	43-1020159966	47-085-09966	108,482	991,486	1,099,968	108,482	991,486	1,099,968	274,992	Marcellus, Horizontal
40393	43-1020159970	47-085-09970	142,363	2,238,442	2,380,806	142,363	2,238,442	2,380,806	595,201	Marcellus, Horizontal
40363	43-1020159978	47-085-09978	106,515	643,279	749,794	106,515	643,279	749,794	187,449	Marcellus, Horizontal
40972	43-1020160005	47-085-10005	10,919	2,153,699	2,164,618	123,164	3,725,598	3,848,762	962,191	Marcellus, Horizontal
40538	43-1020160017	47-085-10017	231,014	1,551,702	1,782,716	279,922	2,070,417	2,350,339	587,585	Marcellus, Horizontal
40537	43-1020160019	47-085-10019	83,452	1,847,122	1,930,574	134,004	2,584,269	2,718,273	679,568	Marcellus, Horizontal
40687	43-1020160045	47-085-10045	1,140	10,092	11,232	399,057	3,752,266	4,151,323	1,037,831	Marcellus, Horizontal
40510	43-1020160046	47-085-10046	371	137,807	138,178	369,606	3,751,282	4,120,888	1,030,222	Marcellus, Horizontal
40654	43-1020169996	47-085-09996	11,180	934,998	946,179	99,358	2,091,265	2,190,624	547,656	Marcellus, Horizontal

EXHIBIT
7

Note > The wells below are horizontal Marcellus wells but the values reflect the State's operating expense variables for vertical Marcellus instead. We are requesting that the values be updated to reflect the State's variables for horizontal Marcellus wells.

PRODUCER	CY	ACCOUNT	RTN FIL	WELLS	API	GWIVPTD	OWIVPTD	TOTAL	OPERATOR
ANTERO RESOURCES CORPORATION	9	320156255	Y	1	6255	4,483,139	20,071	4,503,210	CONNIE UNIT 1H 40443
ANTERO RESOURCES CORPORATION	17	720115222	Y	1	5222	2,572,425	-	2,572,425	MORRISON
ANTERO RESOURCES CORPORATION	17	1820135389	Y	1	5389	3,307,985	-	3,307,985	TETRICK UNIT 2H
ANTERO RESOURCES CORPORATION	17	1820135392	Y	1	5392	3,880,335	-	3,880,335	TETRICK UNIT 1H
ANTERO RESOURCES CORPORATION	17	1820135437	Y	1	5437	4,356,173	-	4,356,173	SOUTH RICE O 1H UNIT
ANTERO RESOURCES CORPORATION	17	720135450	Y	1	5450	3,692,834	-	3,692,834	REYNOLDS 2 H UNIT
ANTERO RESOURCES CORPORATION	17	720135451	Y	1	5451	4,430,561	-	4,430,561	REYNOLDS 1H UNIT
ANTERO RESOURCES CORPORATION	17	2020135465	Y	1	5465	3,065,453	-	3,065,453	WAGNER 1H UNIT
ANTERO RESOURCES CORPORATION	17	2020135466	Y	1	5466	3,261,444	-	3,261,444	WAGNER 2H UNIT
ANTERO RESOURCES CORPORATION	17	2020135467	Y	1	5467	3,287,549	-	3,287,549	WAGNER 3H UNIT
ANTERO RESOURCES CORPORATION	17	2020135484	Y	1	5484	3,151,213	-	3,151,213	YATES 1H UNIT
ANTERO RESOURCES CORPORATION	17	2020135485	Y	1	5485	2,280,985	-	2,280,985	YATES 2H UNIT
ANTERO RESOURCES CORPORATION	17	2020135486	Y	1	5486	3,658,730	-	3,658,730	YATES 3H UNIT
ANTERO RESOURCES CORPORATION	17	2020135491	Y	1	5491	2,425,403	-	2,425,403	POST 1H UNIT
ANTERO RESOURCES CORPORATION	17	2020135492	Y	1	5492	2,032,794	-	2,032,794	POST 2H UNIT
ANTERO RESOURCES CORPORATION	17	2020135493	Y	1	5493	1,866,843	-	1,866,843	POST 3H UNIT
ANTERO RESOURCES CORPORATION	17	2020135502	Y	1	5502	4,866,371	-	4,866,371	SCOTT 2H UNIT
ANTERO RESOURCES CORPORATION	17	2020135503	Y	1	5503	3,600,927	-	3,600,927	SCOTT UNIT 3H
ANTERO RESOURCES CORPORATION	17	1820135507	Y	1	5507	4,828,328	-	4,828,328	POSEY 1H UNIT
ANTERO RESOURCES CORPORATION	17	1820135533	Y	1	5533	4,091,389	-	4,091,389	BICE NORTH 1H
ANTERO RESOURCES CORPORATION	17	2020155631	Y	1	5631	8,365,317	-	8,365,317	GEORGE UKNIT 1H (40330)

Craig Griffith

From: Nancy Sitton <nancy.sitton@altusgroup.com>
Sent: Thursday, March 03, 2016 4:47 PM
To: Hoover, Cindi R
Cc: Jan Mudrinich (mudrinichj@yahoo.com); Craig Griffith; Kirsten Evans; Elizabeth Burg
Subject: Antero WV Operating Expenses
Attachments: Antero Resources Op Exp Support 3.3.16.zip

Hi Cindi,
Attached please find the information listed below related to Antero's WV operating expenses, which was requested during our last discussion:

1. Sampling of amounts paid by Antero Resources to third parties for gathering, compression, and transportation – We have provided copies of 18 invoices (totaling $42.8M) and the corresponding detail from Antero's revenue clearing account. All 3rd party gathering and transportation invoices are entered into the revenue clearing account. The expenses are allocated to the wells based on production and compressor station (this is done outside of the software due to size of calculation). The expenses are then entered into the software at a well level via a journal entry (and the clearing account is offset).
2. Sampling of amounts paid by Antero MidStream to third parties - We have provided a sampling of the gathering and compression operating expense detail, which includes invoice #, vendor name, and invoice description. Due to the immateriality of these expenses compared to the third party gathering and compression, copies of actual invoices were not pulled.
3. Proof of point of sale – We have provided 4 transaction confirmations from 3 different purchasing companies and a summary of the terms in Excel. All have Antero Resources as the seller and the delivery point is at third party sales meter locations. All operating expenses provided are related to activities that occur prior to this point of sale.

We still owe you support for the processing expenses (MarkWest) and plan to provide that in the next week or two. Once we send this over, we would like to schedule a time to discuss the information provided.

Also, it was confirmed that Antero's wells in Ritchie and Tyler Counties are not serviced by third party gatherers (only Antero Midstream). This is consistent with your observation that no third party gatherers filed returns to those counties.

Please let me know if you have any questions.

Thank you,
Nancy

Nancy Sitton, CPA
Manager, State & Local Tax and Advisory, Altus Group US Inc.

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Antero Resources Gt
Sampling of Invoices — ...Midstream Related to WV Operating Expenses

Corporation Name	Account	Account Name	Tax Date	Acct Date	Src Date	Value	Invoice #	Vendor Name	Description	Property Name
Antero Resources Midstream LLC	510.605	COMP OPERATING EXPENSE	12/2/2014	11/1/2014	10/13/2014	18,781.48	75148	BARON FILTRATION COMPANY INC	11-AP-1473 180 PCS FOR INLET COALESCER, CLINICAL HELIX GAS CARTRIDGES FOR CARBON FILETER, FUEL GAS FILTERS	WHITE OAK PH II COMPRESSOR STN
Antero Resources Midstream LLC	510.605	COMP OPERATING EXPENSE	10/9/2014	10/1/2014	9/25/2014	16,518.98	74698	BARON FILTRATION COMPANY INC	10-AP-480 FILTERS AND CARTRIDGES	NEW MILTON COMPRESSOR STNTION
Antero Resources Midstream LLC	511.705	GATH OPERATING EXPENSE	11/6/2014	11/1/2014	8/29/2014	77,162.20	18909	CORE ENVIRONMENTAL SERVICES, INC	11-AP-52 8/1-29/2014 - ENVIRONMENTAL SERVICES	BOBCAT TO EQT HP LATERAL
Antero Resources Midstream LLC	511.705	GATH OPERATING EXPENSE	11/12/2014	11/1/2014	8/30/2014	181,798.49	73975	DAWOOD ENGINEERING INC	11-AP-706 7/20 - 8/30/2014 - ENGINEERING MATERIALS REVIEW, HYDROSTATIC TESTING PLANS, JOB BOOK DOCUMENTATION.	BOBCAT TO EQT HP LATERAL
Antero Resources Midstream LLC	511.705	GATH OPERATING EXPENSE	11/10/2014	11/1/2014	9/13/2014	49,457.90	29116	DAWOOD ENGINEERING INC	11-AP-423 8/31 - 9/13/2014 - AS BUILT SURVEY, CONSTRUCTION WRAP UP, OTHER ITEMS REQUESTED BY CHIEF INSPECTOR,	BOBCAT TO EQT HP LATERAL
Antero Resources Midstream LLC	511.705	GATH OPERATING EXPENSE	12/4/2014	11/1/2014	9/30/2014	49,457.90	29116	DAWOOD ENGINEERING INC	11-AR-8 8/31 - 9/13/2014 - AS BUILT SURVEY, CONSTRUCTION WRAP UP, OTHER ITEMS REQUESTED BY CHIEF INSPECTOR,	BOBCAT TO EQT HP LATERAL
Antero Resources Midstream LLC	511.705	GATH OPERATING EXPENSE	10/27/2014	10/1/2014	8/30/2014	190,717.50	15814	DOSS ENTERPRISES LLC	10-AP-1671 8/24-30/2014 - WORKED THE ROAD AND PUSH THE MULCH UP, WATERLINE TEST REQUESTED BY BROADHEAD, WATERIN	BOBCAT TO EQT HP LATERAL
Antero Resources Midstream LLC	510.605	COMP OPERATING EXPENSE	9/16/2014	9/1/2014	8/31/2014	147,087.19	1529	EJ ENERGY SERVICES	09-AP-1287 AUGUST 2014 MONTHLY COMPENSATION FOR CONTRACT SERVICES	WHITE OAK PH II COMPRESSOR STN
Antero Resources Midstream LLC	510.605	COMP OPERATING EXPENSE	8/15/2014	9/1/2014	7/31/2014	127,985.75	1507	EJ ENERGY SERVICES	09-AP-1342 JULY 2014 MONTHLY COMPENSATION FOR CONTRACT SERVICES	WHITE OAK PH II COMPRESSOR STN
Antero Resources Midstream LLC	510.605	COMP OPERATING EXPENSE	7/30/2014	7/1/2014	4/25/2014	101,160.05	1328	EJ ENERGY SERVICES	07-AP-1697 GLYCOL, COMPRESSOR OIL, GAS DETECTOR CALIBRATION, OIL SEPARATOR ASSEMBLY	WHITE OAK PH II COMPRESSOR STN
Antero Resources Midstream LLC	510.605	COMP OPERATING EXPENSE	7/15/2014	7/1/2014	6/30/2014	69,825.75	1455	EJ ENERGY SERVICES	07-AP-1005 JUNE 2014 MONTHLY COMPENSATION FEE	WHITE OAK PH II COMPRESSOR STN
Antero Resources Midstream LLC	510.605	COMP OPERATING EXPENSE	7/15/2014	7/1/2014	5/28/2014	37,400.65	1357A	EJ ENERGY SERVICES	07-AP-1001 FEBRUARY 2014 MONTHLY COMPENSATION FEE	WHITE OAK PH II COMPRESSOR STN
Antero Resources Midstream LLC	510.605	COMP OPERATING EXPENSE	7/15/2014	7/1/2014	5/22/2014	35,205.23	1375	EJ ENERGY SERVICES	07-AP-1002 STANDARD MAINTENANCE SERVICE; REPLACE CELLS IN BATTERY PACKS, ANNUAL VRU MAINTENANCE	WHITE OAK PH II COMPRESSOR STN
Antero Resources Midstream LLC	510.605	COMP OPERATING EXPENSE	11/20/2014	11/1/2014	9/30/2014	34,415.00	1610	EJ ENERGY SERVICES	11-AP-460 SEPTEMBER 2014 MONTHLY COMPENSATION FEE FOR CONTRACT SERVICES	WHITE OAK PH II COMPRESSOR STN
Antero Resources Midstream LLC	510.605	COMP OPERATING EXPENSE	9/30/2014	9/1/2014	8/15/2014	8,815.00	AR8572014	ENERGY LAND AND MINERAL INC	09-AP-2287 SET CATWALK LADDER, REPAIR LANDEMHAND-RAILS, FUSE/BUSBY GAS LINE, SEED, MULCH 8/11-8/15	NEW MILTON COMPRESSOR STATION
Antero Resources Midstream LLC	510.605	COMP OPERATING EXPENSE	12/2/2014	11/1/2014	8/19/2014	9,195.32	4578	GREEN ELECTRICAL CONTRACTORS, LLC	11-AP-1488 COMPLETE TANK BATTERY -INSTALL 6 TANKS	WHITE OAK PH II COMPRESSOR STN
Antero Resources Midstream LLC	511.705	GATH OPERATING EXPENSE	9/8/2014	9/1/2014	6/23/2014	8,271.45	4057	GREEN ELECTRICAL CONTRACTORS, LLC	09-AP-439 GROUNDING AND BONDING NEW INSTALL WITH INSPECTION	NEW MILTON LATERAL
Antero Resources Midstream LLC	510.605	COMP OPERATING EXPENSE	11/24/2014	11/1/2014	11/8/2014	7,920.00	388471 167	HALL DRILLING LLC	11-AP-1115 HAULING/DISPOSAL FEE FOR PRODUCED WATER	WHITE OAK PH II COMPRESSOR STN
Antero Resources Midstream LLC	510.605	COMP OPERATING EXPENSE	12/30/2014	11/1/2014	9/30/2014	48,698.72	7764	H.PEASE & RENTALS LLC	11-AP-969 SEPT 2014 MONTHLY RENTAL FOR AIR COMPRESSOR/GENERATOR/TELEHANDLER AND FUEL	WHITE OAK PH II COMPRESSOR STN
Antero Resources Midstream LLC	510.605	COMP OPERATING EXPENSE	1/5/2015	12/1/2014	11/30/2014	42,398.48	7289	H.PEASE & RENTALS LLC	12-AP-2525 NOVEMBER 2014 GENERATOR, POWERED AIR HEATER RENTALS PLUS FUELD	NEW MILTON COMPRESSOR STATION
Antero Resources Midstream LLC	510.605	COMP OPERATING EXPENSE	10/17/2014	10/1/2014	7/31/2014	57,815.26	1601	H.PEASE & RENTALS LLC	10-AP-1057 GENERATOR RENTAL/FUEL - 6/27/14 TO 7/31/14	WHITE OAK PH II COMPRESSOR STN
Antero Resources Midstream LLC	510.605	COMP OPERATING EXPENSE	11/24/2014	11/1/2014	10/31/2014	26,148.37	1819	H.PEASE & RENTALS LLC	11-AP-1304 OCTOBER 2014 GENERATOR, TELEHANDLER RENTALS AND FUEL	WHITE OAK PH II COMPRESSOR STN
Antero Resources Midstream LLC	510.605	COMP OPERATING EXPENSE	12/23/2014	12/1/2014	11/30/2014	25,988.46	7114	H.PEASE & RENTALS LLC	12-AP-1858 NOVEMBER 2014 GENERATOR AND TELEHANDLER RENTAL PLUS FUEL, ATS WITH UNLIMITED USAGE	WHITE OAK PH II COMPRESSOR STN
Antero Resources Midstream LLC	510.605	COMP OPERATING EXPENSE	12/3/2014	12/1/2014	10/30/2014	19,116.51	1917	H.PEASE & RENTALS LLC	12-AP-8 OCTOBER 2017 AIR 400 CFM AND AIR 1000 CFM COMPRESSOR RENTALS, GENERATOR RENTAL, FUEL	WHITE OAK PH II COMPRESSOR STN
Antero Resources Midstream LLC	510.605	COMP OPERATING EXPENSE	9/30/2014	9/1/2014	7/31/2014	10,694.88	1601	H.PEASE & RENTALS LLC	09-AP-2096 7/20/14 TO 7/31/14 GENERATOR AND MAN LIFT RENTAL	WHITE OAK PH II COMPRESSOR STN
Antero Resources Midstream LLC	510.605	COMP OPERATING EXPENSE	1/5/2015	12/1/2014	11/30/2014	10,459.55	7113	H.PEASE & RENTALS LLC	12-AP-2308 NOVEMBER 2014 AIR COMPRESS RENTAL PLUS FUEL	WHITE OAK PH II COMPRESSOR STN
Antero Resources Midstream LLC	510.605	COMP OPERATING EXPENSE	1/5/2015	12/1/2014	11/18/2014	9,879.75	7113	H.PEASE & RENTALS LLC	12-AP-2309 11/1/14 TO 11/18/14 GENERATOR RENTAL AND FUEL; MAN LIFT RENTAL	WHITE OAK PH II COMPRESSOR STN
Antero Resources Midstream LLC	510.605	COMP OPERATING EXPENSE	12/4/2014	12/1/2014	9/14/2014	7,564.92	9228	HAUHNA VENTURES LLC	12-AP-158 9/1/14 TO 9/14/14 SENIOR PROJECT MANAGER, ELECTRICAL ENGINEER, PURCHASING AGENT, ELECTRIC INSPECTOR	NEW MILTON COMPRESSOR STATION
Antero Resources Midstream LLC	510.605	COMP OPERATING EXPENSE	9/26/2014	9/1/2014	8/20/2014	31,926.00	8201164	PETROLEUM PRODUCTS, LLC	09-AP-1610 CSO COMPRESSOR OIL 35 LP BUL	WHITE OAK PH II COMPRESSOR STN
Antero Resources Midstream LLC	510.605	COMP OPERATING EXPENSE	11/26/2014	11/1/2014	10/27/2014	18,932.07	81068168	PETROLEUM PRODUCTS, LLC	11-AP-1186 CSO COMPRESSOR OIL 35 LP BUL	WHITE OAK PH II COMPRESSOR STN
Antero Resources Midstream LLC	510.605	COMP OPERATING EXPENSE	11/4/2014	11/1/2014	9/10/2014	15,810.00	81059307	PETROLEUM PRODUCTS, LLC	11-AP-14 1700 GAL. CSO PACEMAKER - 1640 BUL	WHITE OAK PH II COMPRESSOR STN
Antero Resources Midstream LLC	510.605	COMP OPERATING EXPENSE	11/24/2014	11/1/2014	10/14/2014	11,295.90	81068598	PETROLEUM PRODUCTS, LLC	11-AP-1150 CSO PACEMAKER 660 1640 BUL	WHITE OAK PH II COMPRESSOR STN
Antero Resources Midstream LLC	510.605	COMP OPERATING EXPENSE	11/10/2014	11/1/2014	9/29/2014	9,418.17	81046786	PETROLEUM PRODUCTS, LLC	11-AP-388 CSO COMPRESSOR OIL 35 LP BUL	NEW MILTON COMPRESSOR STATION
Antero Resources Midstream LLC	510.605	COMP OPERATING EXPENSE	10/27/2014	10/1/2014	9/30/2014	42,367.50	2486	PRO ACTIVE SERVICES LLC	10-AP-1681 WHITE OAK STATION - OPERATOR HOURS 9/1/14 - 9/30/14	WHITE OAK PH II COMPRESSOR STN
Antero Resources Midstream LLC	510.605	COMP OPERATING EXPENSE	11/24/2014	11/1/2014	10/31/2014	30,206.50	2485	PRO ACTIVE SERVICES LLC	11-AP-1318 OCTOBER 2014 COMPRESSOR OPERATIONS	WHITE OAK PH II COMPRESSOR STN
Antero Resources Midstream LLC	510.605	COMP OPERATING EXPENSE	10/27/2014	10/1/2014	8/31/2014	25,496.00	2382	PRO ACTIVE SERVICES LLC	10-AP-1626 AUGUST 2014 OPERATOR HOURS - 12 HR COVERAGE	WHITE OAK PH II COMPRESSOR STN
Antero Resources Midstream LLC	510.605	COMP OPERATING EXPENSE	12/2/2014	11/1/2014	9/30/2014	38,537.75	2488	PRO ACTIVE SERVICES LLC	11-AP-1454 SEPTEMBER 2014 OPERATOR HOURS PLUS 4 HOURS SUPERVISION	NEW MILTON COMPRESSOR STATION
Antero Resources Midstream LLC	510.605	COMP OPERATING EXPENSE	10/27/2014	10/1/2014	8/31/2014	37,646.00	2396	PRO ACTIVE SERVICES LLC	10-AP-1629 AUGUST 2014 OPERATOR HOURS - 28 HRS, PLUS TIME FOR STARTUP AND MISC REPAIR	NEW MILTON COMPRESSOR STATION
Antero Resources Midstream LLC	510.605	COMP OPERATING EXPENSE	12/2/2014	11/1/2014	10/31/2014	7,560.00	2485	PRO ACTIVE SERVICES LLC	11-AP-1528 10/1/14 TO 10/31/14 COMPRESSOR OPERATIONS	NEW MILTON COMPRESSOR STATION
Antero Resources Midstream LLC	511.705	GATH OPERATING EXPENSE	10/27/2014	10/1/2014	9/30/2014	13,000.00	7667	ROBEY EXCAVATING, LLC	10-AP-1590 9/1-30/2014 - MONTHLY RENTAL ON PC-210 EXCAVATOR, PIPE LIFTER AND 8",12",18",28" PADS	BOBCAT TO EQT HP LATERAL
Antero Resources Midstream LLC	511.705	GATH OPERATING EXPENSE	12/2/2014	11/1/2014	10/5/2014	13,000.00	7833	ROBEY EXCAVATING, LLC	11-AP-409 10/1/2014 - MONTHLY RENTAL ON PC-210 EXCAVATOR;PIPE LIFTERS8",12",18" AND 28" PADS	BOBCAT TO EQT HP LATERAL
Antero Resources Midstream LLC	510.605	COMP OPERATING EXPENSE	10/1/2014	10/1/2014	8/4/2014	75,625.00	5085	TECHNICAL COMPLIANCE SOLUTIONS LLC	10-AP-29 STATE AND EPA COMPLIANCE TESTING FOR EMISSIONS	WHITE OAK PH II COMPRESSOR STN
Antero Resources Midstream LLC	510.605	COMP OPERATING EXPENSE	11/24/2014	11/1/2014	11/12/2014	48,500.00	5148	TECHNICAL COMPLIANCE SOLUTIONS LLC	11-AP-1141 CATALYST ELEMENTS FOR UNITS 5 AND 6	WHITE OAK PH II COMPRESSOR STN
Antero Resources Midstream LLC	510.605	COMP OPERATING EXPENSE	10/1/2014	10/1/2014	9/25/2014	26,519.94	5085	TECHNICAL COMPLIANCE SOLUTIONS LLC	10-AP-30 SIX CATALYST ELEMENTS FOR UNIT 3 LABOR TO INSTALL	WHITE OAK PH II COMPRESSOR STN
Antero Resources Midstream LLC	510.605	COMP OPERATING EXPENSE	10/27/2014	10/1/2014	10/24/2014	17,195.05	5135	TECHNICAL COMPLIANCE SOLUTIONS LLC	10-AP-1636 10/20/14 TO 10/24/14 INSTALL CATALYST HOUSING, RETEST EMISSIONS, REPLACE FUEL REGULATORS	WHITE OAK PH II COMPRESSOR STN
Antero Resources Midstream LLC	510.605	COMP OPERATING EXPENSE	12/15/2014	12/1/2014	12/2/2014	11,977.28	5178	TECHNICAL COMPLIANCE SOLUTIONS LLC	12-AP-1208 COMPLETE STATE COMPLIANCE TEST, RETEST AFTER ADJUSTMENTS	WHITE OAK PH II COMPRESSOR STN
Antero Resources Midstream LLC	510.605	COMP OPERATING EXPENSE	8/22/2014	8/1/2014	7/28/2014	9,750.44	9298	TECHNICAL COMPLIANCE SOLUTIONS LLC	08-AP-948 WORK ON EMIT CATALYST, RUN NEW WEI NUMBER FOR FUEL BTU	WHITE OAK PH II COMPRESSOR STN
Antero Resources Midstream LLC	511.705	GATH OPERATING EXPENSE	1/2/2015	12/1/2014	10/15/2014	29,884.00	2857	TRIPLE H ENTERPRISES	12-AP-2155 9/16/14 TO 10/2/14 INSTALL FENCE AND GATE (MARY FARR)	WHITE OAK PIPELINE
Antero Resources Midstream LLC	511.705	GATH OPERATING EXPENSE	12/30/2014	12/1/2014	8/22/2014	9,945.50	2815	TRIPLE H ENTERPRISES	12-AP-2062 8/8/14 TO 8/22/14 REMOVE FENCE/GATE, INSTALL FENCE/GATES AT POWELL/MYERS	WHITE OAK PIPELINE
						3,808,088.52				

EXHIBIT
9

MTN G&C	$2.2M
Total Fees	**$17.2M**

The amount booked to Antero's revenue clearing account was based on the NGL value less total fees (net), which is shown by compressor in rows 4-9 of the attached excel file (-$8.6M). This amount was offset by clearing the $2.2M MTN invoice and the $10.8M MW payment (rows 2-3), and the gross NGL revenue ($25.9M) and total fees ($17.9M) were then entered into the software at a well level via a journal entry (this is done outside of the software due to size of calculation). The NGL revenue reported to the State reflects the full NGL value per the Sherwood settlement statements. The processing expenses reported to the State also reflect the total fees per the Sherwood settlement statements.

Craig Griffith will be in contact to schedule a meeting with the group to discuss the information provided.

Please let me know if you have any questions.

Thank you,
Nancy

Nancy Sitton, CPA
Manager, State & Local Tax and Advisory, Altus Group US Inc.
D: 410.568.0771 T: 410.568.0800 ext 3771 M: 703.999.3780 F: 410.568.0801
910 Ridgebrook Road, Suite 200, Sparks, Maryland, 21152 USA



This message, and the documents attached hereto, are intended only for the addressee and may contain privileged or confidential information. Any unauthorized disclosure is strictly prohibited. If you have received this message in error, please notify us immediately so that we may correct our internal records. Please then delete the original message. Thank you.

From: Nancy Sitton
Sent: Thursday, March 03, 2016 4:54 PM
To: 'Hoover, Cindi R'
Cc: Jan Mudrinich (mudrinichj@yahoo.com); Craig Griffith; Kirsten Evans; Elizabeth Burg
Subject: FW: Antero WV Operating Expenses

Cindi,
I just received notification that the email below was not delivered to you. That may be due to the zip file I attached.

I have attached the excel files and transaction confirmation PDFs mentioned below and will send the third party invoices in a separate email.

Thanks,
Nancy

Nancy Sitton, CPA
Manager, State & Local Tax and Advisory, Altus Group US Inc.
D: 410.568.0771 T: 410.568.0800 ext 3771 M: 703.999.3780 F: 410.568.0801
910 Ridgebrook Road, Suite 200, Sparks, Maryland, 21152 USA



This message, and the documents attached hereto, are intended only for the addressee and may contain privileged or confidential

Corporation Name	Account	Account Name	Txn Date	Acct Date	Svc Date	Value	Ref	Invoice #	Description
Antero Resources Corporation	223.015	PLANT CLEARING ACCT	3/10/2015	2/1/2015	12/31/2014	(2,209,339)	Dec. 2014	02-GJ-253	02-GJ-253 CLEAR MOUNTAINEER INVOICE -DECEMBER 14 SHERWOOD
Antero Resources Corporation	223.015	PLANT CLEARING ACCT	3/10/2015	2/1/2015	12/31/2014	10,887,211	Dec. 2014	02-GJ-253	02-GJ-253 CLEAR MARKWEST INVOICE - DECEMBER 2014 SHERWOOD
Antero Resources Corporation	223.015	PLANT CLEARING ACCT	3/10/2015	2/1/2015	12/31/2014	35,084	Dec. 2014	02-GJ-253	02-GJ-253 DECEMBER 2014 FEES PAID TO MARKWEST & MOUNTAINEER
Antero Resources Corporation	223.015	PLANT CLEARING ACCT	3/10/2015	2/1/2015	12/31/2014	(943,862)	Dec. 2014	02-GJ-253	02-GJ-253 DECEMBER 2014 MIDPOINT & NEW MILTON COMP STMT
Antero Resources Corporation	223.015	PLANT CLEARING ACCT	3/10/2015	2/1/2015	12/31/2014	(40,619)	Dec. 2014	02-GJ-253	02-GJ-253 DECEMBER 2014 NGL INCOME NOT DISTRIBUTED TO
Antero Resources Corporation	223.015	PLANT CLEARING ACCT	3/10/2015	2/1/2015	12/31/2014	(1,096,382)	Dec. 2014	02-GJ-253	02-GJ-253 DECEMBER 2014 SHERWOOD, PENNINGTON & VICTORIA
Antero Resources Corporation	223.015	PLANT CLEARING ACCT	3/10/2015	2/1/2015	12/31/2014	(6,183,281)	Dec. 2014	02-GJ-253	02-GJ-253 DECEMBER 2014 WHITE OAK, WEST UNION COMP
Antero Resources Corporation	223.015	PLANT CLEARING ACCT	3/10/2015	2/1/2015	12/31/2014	(448,815)	Dec. 2014	02-GJ-253	02-GJ-253 DECEMBER 2014 ZINNIA,BANNER, MORGAN, PERKINS
Antero Resources Corporation	223.015	PLANT CLEARING ACCT	4/6/2015	3/1/2015	1/31/2015	(2,496,073)	Jan. 2015	03-GJ-221	03-GJ-221 CLEAR MOUNTAINEER INVOICE -JANUARY 2015 SHERWOOD
Antero Resources Corporation	223.015	PLANT CLEARING ACCT	4/6/2015	3/1/2015	1/31/2015	6,398,270	Jan. 2015	03-GJ-221	03-GJ-221 CLEAR MARKWEST INVOICE - JANUARY 2015 SHERWOOD
Antero Resources Corporation	223.015	PLANT CLEARING ACCT	4/6/2015	3/1/2015	1/31/2015	35,197	Jan. 2015	03-GJ-221	03-GJ-221 JANUARY 2015 FEES PAID TO MARKWEST & MOUNTAINEER
Antero Resources Corporation	223.015	PLANT CLEARING ACCT	4/6/2015	3/1/2015	1/31/2015	(919,447)	Jan. 2015	03-GJ-221	03-GJ-221 JANUARY 2015 MIDPOINT & NEW MILTON COMP STMT
Antero Resources Corporation	223.015	PLANT CLEARING ACCT	4/6/2015	3/1/2015	1/31/2015	(16,733)	Jan. 2015	03-GJ-221	03-GJ-221 JANUARY 2015 NGL INCOME NOT DISTRIBUTED TO
Antero Resources Corporation	223.015	PLANT CLEARING ACCT	4/6/2015	3/1/2015	1/31/2015	(1,156,474)	Jan. 2015	03-GJ-221	03-GJ-221 JANUARY 2015 SHERWOOD, PENNINGTON & VICTORIA
Antero Resources Corporation	223.015	PLANT CLEARING ACCT	4/6/2015	3/1/2015	1/31/2015	(6,353,502)	Jan. 2015	03-GJ-221	03-GJ-221 JANUARY 2015 WHITE OAK, WEST UNION COMP
Antero Resources Corporation	223.015	PLANT CLEARING ACCT	4/6/2015	3/1/2015	1/31/2015	(407,269)	Jan. 2015	03-GJ-221	03-GJ-221 JANUARY 2015 ZINNIA,BANNER, MORGAN, PERKINS

Dec. 2014 NGL Value less Total Fees (8,677,872)

Jan. 2015 NGL Value less Total Fees (8,902,197) Note > See adjustment on bottom of page 1 of PDF attachment

Craig Griffith

From: Nancy Sitton <nancy.sitton@aitusgroup.com>
Sent: Tuesday, June 14, 2016 4:33 PM
To: 'Hoover, Cindi R'
Cc: 'Jan Mudrinich (mudrinichj@yahoo.com)'; Craig Griffith; Kirsten Evans; Elizabeth Burg
Subject: Antero Operating Expenses
Attachments: Antero Resource Company Operating Expenses 2014 - June 2016.xlsx

Cindi,
Attached please find the requested revenue and operating expense breakdown by well for the appealed wells (see first tab). Natural gas and NGL revenue for the 2014 calendar year has been provided in columns E and F. The NGL revenue reflects the full value of the NGLs based on the MarkWest settlement statements reviewed at our last meeting. Half of the appealed wells do not have NGL revenue (those are mostly located in Harrison County). The gathering, processing, and transportation expenses have been provided in columns J-L. The processing expense reflects the MarkWest fees that are not related to gathering and compression. Although Antero assigns all processing fees to the NGLs for reporting purposes, the processing at the Sherwood facility is necessary in order for the natural gas to meet the quality and measurement standards of the transporters that is required for sale.

Operating expenses as a percentage of revenue are provided in tab 2. For wells with 2+ years of production, operating expenses as a percentage of revenue is consistently 22% when comparing LOE, gathering, and transportation expenses (excluding processing) to gas revenue (excluding NGLs). This is consistent with the State's operating expense variable (20% of revenue) if the cap of $150,000 were not applied.

The wells should be valued based on their future income stream. While future income related to natural gas can be reasonably estimated, this is not the case for NGLs because profitability fluctuates dramatically from year to year due to the volatility in NGL product prices. NGL revenue for the 2014 calendar year was $263M, which was reported to be compliant with the State's filing instructions. However, in 2015, the NGLs were not profitable overall due to changes in product prices. Accordingly, we do not think it is appropriate to include the NGL revenue in the State's valuation template. Also, the combination of reporting NGLs (increasing revenue) and applying an operating cap further skews and understates the amount of operating expenses applied.

As previously discussed, there are many flaws in the State's discounted cash flow template that cause the current value to not fair market value, including:

- The operating expense cap understates actual operating expenses, especially in first few years of production. Operating expense per the State's variables was $55M (compared to actual operating expenses of $385M), or 3% of revenue.
- NGLs should not be included in reported revenue because profitability in the current year is not an indicator of future income stream and it results in further operating expenses being further understated, as noted above.
- The amount of operating expense calculated is assumed for the remainder of the well's life. This does not take into account that certain expenses are variable and will decrease as production decreases.

Antero's appealed value reflects actual operating expenses (including processing), of which 75% of expenses have been declined consistently with the revenue (which includes NGLs). Please note that applying an operating expense variable of 22% of revenue excluding NGLs (with no cap) in the State's existing template would get to a comparable answer.

Please let us know when you have availability to discuss further. We are available Thurs. 6/16, Mon. 6/20 (before 2:30), Wed. 6/22, and Thurs. 6/23.

Thank you,
Nancy

Antero Resources Corporat
7/1/15 West Virginia Oil and ... educer/ Operator Return
Actual Operating Expenses for West Virginia

				2014 Calendar Year													2014 Calendar Year Except Year 1 Wells Adjusted to Actual Expenses for First 12 Months (Note 1)				
				Gas	NGLs			Gas	Gas	Gas	NGLs		Gas	NGLs	Total						
Well Code	NRA Account #	API #	Production Start Year	Total Gas Receipts	Total NGL Receipts	Total Oil Receipts	Total Reported Receipts	LOE Expenses	Gathering and Compression Expenses	Transportation Expenses	Processing Expenses (Note 3)	Total Operating Expenses	OpEx as % of Revenue	OpEx as % of Revenue	OpEx as % of Revenue	LOE Expenses	Gathering, Processing, and Transportation Expenses	Total Operating Expenses	Fixed Portion of Operating Expenses (25%)	Well Type
40467	08-0420166167	47-017-06167	2013	7,457,439	1,720,904	536	9,178,879	24,077	1,076,847	249,439	860,468	2,157,830	18%	98%	22%	24,688	2,211,958	2,236,647	559,162	Marcellus, Horizontal
40608	08-0420166181	47-017-06181	2013	996,233	-	858	997,186	(191)	159,080	44,413	-	203,302	20%	n/a	20%	70,190	1,758,195	1,828,485	457,121	Marcellus, Horizontal
40607	08-0420166182	47-017-06182	2013	1,451,404	5,821	857	1,458,081	309	234,482	64,585	2,598	302,507	20%	44%	20%	69,835	2,103,228	2,173,063	543,266	Marcellus, Horizontal
40455	08-0420166188	47-017-06188	2013	6,278,068	1,530,586	1,577	7,807,241	15,987	1,014,088	292,501	731,693	1,994,245	20%	48%	26%	24,359	2,401,536	2,490,895	667,724	Marcellus, Horizontal
40981	08-0420166710	47-017-06710	2014	3,772,788	688,744	595	4,460,033	76,932	650,999	351,518	364,644	1,248,492	19%	95%	28%	195,288	1,787,885	1,803,193	465,796	Marcellus, Horizontal
40964	08-0420166719	47-017-06719	2014	7,179,293	1,075,772	447	8,255,501	48,157	1,051,685	348,473	782,960	2,132,295	19%	98%	26%	53,300	2,173,427	2,214,727	536,182	Marcellus, Horizontal
40543	08-0420166726	47-017-06726	2014	4,838,962	845,384	619	5,684,767	58,302	841,517	192,307	452,366	1,546,473	19%	55%	17%	108,188	2,305,589	2,308,724	577,181	Marcellus, Horizontal
40455	08-0420166727	47-017-06727	2014	7,802,679	1,911,155	1,670	9,715,504	29,277	1,265,547	299,679	903,531	2,498,048	20%	47%	19%	35,122	3,022,365	3,057,488	764,372	Marcellus, Horizontal
40454	08-0420166730	47-017-06730	2013	7,342,129	1,726,589	1,649	9,070,361	25,972	1,184,965	276,341	849,218	2,336,496	20%	49%	20%	35,572	2,814,855	2,850,498	712,624	Marcellus, Horizontal
40515	08-0420166745	47-017-06745	2014	4,552,308	775,915	421	5,328,644	48,017	888,141	167,817	426,286	1,484,061	20%	55%	27%	104,182	2,263,563	2,367,745	591,936	Marcellus, Horizontal
40548	08-0420166778	47-017-06778	2013	4,673,356	1,435,896	2,787	6,105,719	20,217	842,867	188,250	592,280	1,653,610	22%	42%	27%	54,337	2,525,794	2,580,091	645,023	Marcellus, Horizontal
40484	08-0420166779	47-017-06779	2013	4,880,985	1,368,760	3,108	6,197,853	17,864	848,286	189,613	592,297	1,669,859	22%	44%	27%	47,222	2,371,818	2,418,040	604,510	Marcellus, Horizontal
40544	08-0420166780	47-017-06780	2013	4,239,586	1,276,071	2,852	5,518,510	15,351	758,675	178,711	582,676	1,535,413	22%	45%	27%	40,754	2,264,077	2,304,831	576,208	Marcellus, Horizontal
40536	08-0420166788	47-017-06788	2014	1,593,169	17,513	15	1,610,698	1,214	256,309	69,692	10,811	338,026	21%	62%	21%	159,189	2,351,835	2,504,823	626,206	Marcellus, Horizontal
40540	08-0420166877	47-017-06877	2014	3,654,174	873,758	1,844	4,529,876	48,074	708,461	171,397	480,823	1,408,754	19%	55%	31%	97,202	2,373,005	2,470,208	617,552	Marcellus, Horizontal
40535	08-0420166472	47-017-06472	2014	1,329,790	-	4,322	1,334,112	338	213,888	59,734	-	273,961	20%	n/a	20%	78,479	2,857,540	2,936,019	734,005	Marcellus, Horizontal
40508	08-0420166483	47-017-06483	2014	1,916,799	36,710	15	1,953,524	232	278,339	77,900	20,886	377,408	18%	17%	19%	79,521	2,262,266	2,341,887	585,472	Marcellus, Horizontal
40509	08-0420166484	47-017-06484	2014	1,406,616	-	6,698	1,413,254	(1,348)	234,907	62,688	-	295,958	20%	n/a	20%	77,872	2,808,481	2,885,533	721,383	Marcellus, Horizontal
40586	08-0420166485	47-017-06485	2014	1,802,718	40,407	94	1,843,159	739	288,905	83,488	72,365	385,571	21%	55%	22%	72,947	2,556,324	2,629,271	657,318	Marcellus, Horizontal
40600	08-0420166450	47-017-06450	2013	52,162	-	1	52,168	1,140	8,825	2,322	-	12,087	25%	n/a	23%	112,761	3,103,038	3,215,794	803,948	Marcellus, Horizontal
40257	08-0520145962	47-017-05962	2012	1,771,513	-	-	1,771,513	77,584	335,278	184,600	-	597,462	22%	n/a	22%	77,584	519,078	597,462	149,366	Marcellus, Horizontal
40275	08-0520145962	47-017-06026	2012	2,826,975	-	-	2,826,975	65,089	398,688	188,825	-	588,602	22%	n/a	21%	65,089	526,513	589,602	148,400	Marcellus, Horizontal
40277	08-0520146027	47-017-06027	2012	3,825,471	-	-	3,825,471	48,228	456,658	252,771	-	758,657	20%	n/a	20%	48,228	709,379	758,607	189,651	Marcellus, Horizontal
40275	08-0520146028	47-017-06028	2013	3,816,032	-	-	3,816,032	59,188	456,681	255,348	-	771,157	20%	n/a	20%	58,183	713,534	771,117	192,779	Marcellus, Horizontal
40268	08-0520146046	47-017-06044	2013	2,528,151	-	-	2,528,151	61,488	338,647	167,242	-	567,359	19%	n/a	21%	61,469	475,889	567,358	134,340	Marcellus, Horizontal
40270	08-0520146045	47-017-06045	2013	2,185,109	-	-	2,185,109	53,145	269,080	145,197	-	467,402	32%	n/a	21%	53,145	414,257	467,402	116,850	Marcellus, Horizontal
40271	08-0520146046	47-017-06046	2012	2,752,806	-	-	2,752,806	38,966	337,847	180,544	-	582,358	29%	n/a	29%	38,966	521,992	560,958	140,090	Marcellus, Horizontal
40273	08-0520156117	47-017-06117	2013	5,068,806	-	-	5,068,806	115,582	620,888	338,283	-	1,074,854	22%	n/a	21%	115,582	959,151	1,074,854	268,663	Marcellus, Horizontal
40276	08-0520156118	47-017-06118	2013	4,047,086	-	-	4,047,086	94,416	482,148	268,457	-	854,017	21%	n/a	22%	94,416	781,600	856,017	214,004	Marcellus, Horizontal
40275	08-0520156120	47-017-06120	2013	3,323,931	-	-	3,323,931	98,422	465,068	220,196	-	723,677	22%	n/a	22%	98,422	625,256	723,677	180,919	Marcellus, Horizontal
40274	08-0520156121	47-017-06121	2013	3,678,799	-	-	3,678,799	97,834	448,490	249,281	-	787,944	22%	n/a	21%	97,834	689,711	787,946	196,836	Marcellus, Horizontal
40365	08-0520166119	47-017-06119	2013	7,360,098	-	-	7,360,098	75,574	951,691	438,241	-	1,465,446	20%	n/a	29%	96,180	1,987,641	2,018,831	504,708	Marcellus, Horizontal
40870	08-0520166134	47-017-06134	2013	6,954,098	-	-	6,954,098	93,543	891,159	460,643	-	1,384,295	20%	n/a	20%	41,245	1,807,988	1,849,233	462,308	Marcellus, Horizontal
40971	08-0520166148	47-017-06148	2014	8,596,180	-	-	8,596,180	93,019	1,130,364	389,548	-	1,712,773	20%	n/a	29%	41,769	2,197,192	2,238,960	559,740	Marcellus, Horizontal
40341	08-0520148086	47-017-06086	2013	3,284,057	1,259,757	9,152	4,552,966	84,228	494,889	115,182	398,304	1,092,581	27%	32%	19%	84,218	1,009,155	1,080,382	273,345	Marcellus, Horizontal
40320	08-0520146099	47-017-06099	2013	2,564,297	928,581	6,306	3,499,254	68,972	384,435	92,624	305,001	850,032	21%	33%	24%	69,572	780,029	850,032	212,508	Marcellus, Horizontal
40315	08-0520156076	47-017-06076	2013	3,621,172	1,994,216	75,845	5,250,982	85,489	550,407	130,876	459,587	1,226,408	21%	30%	20%	85,488	1,140,971	1,226,408	306,667	Marcellus, Horizontal
40318	08-0520156081	47-017-06081	2013	3,272,395	1,421,309	104,038	4,797,742	78,788	502,361	119,407	419,081	1,119,632	21%	29%	24%	78,788	1,040,846	1,119,632	279,908	Marcellus, Horizontal
40319	08-0520156082	47-017-06082	2013	4,140,490	1,852,776	148,933	6,158,198	78,080	685,148	150,288	532,886	1,397,404	21%	29%	20%	78,080	1,319,543	1,397,624	349,356	Marcellus, Horizontal
40348	08-0520156084	47-017-06084	2013	3,364,742	1,684,416	111,748	5,160,906	77,414	513,333	134,419	482,442	1,197,388	21%	29%	24%	77,414	1,119,974	1,197,388	299,347	Marcellus, Horizontal
40338	08-0520156095	47-017-06095	2013	2,500,138	1,181,784	53,784	3,733,681	70,619	376,880	91,888	526,294	865,108	21%	28%	20%	70,819	794,488	865,109	216,277	Marcellus, Horizontal
40311	08-0520156097	47-017-06097	2013	3,182,858	1,185,085	8,919	4,376,862	117,724	480,886	111,908	383,995	1,094,514	22%	32%	25%	117,724	977,100	1,094,824	273,594	Marcellus, Horizontal
40341	08-0520156098	47-017-06098	2013	3,588,752	1,810,486	10,229	4,414,416	108,728	548,028	127,624	436,648	1,215,124	22%	35%	25%	108,773	1,106,401	1,215,124	303,781	Marcellus, Horizontal
40350	08-0520156100	47-017-06100	2013	4,473,294	1,521,337	32,737	6,007,348	138,029	634,855	158,282	536,204	1,477,361	21%	35%	25%	138,029	1,339,339	1,477,361	369,340	Marcellus, Horizontal
40531	08-0520156102	47-017-06102	2013	4,851,369	1,948,717	75,597	6,875,723	252,915	726,471	172,644	603,913	1,755,943	24%	31%	28%	252,915	1,503,028	1,755,943	438,986	Marcellus, Horizontal
40547	08-0520156109	47-017-06109	2013	2,368,174	990,722	88,588	3,445,483	79,031	367,589	87,153	302,678	835,451	22%	31%	25%	79,031	752,420	835,451	208,365	Marcellus, Horizontal
40549	08-0520156104	47-017-06104	2013	4,568,530	1,956,189	88,172	6,644,072	190,707	680,093	162,678	577,278	1,559,792	22%	30%	24%	190,707	1,429,025	1,552,732	388,433	Marcellus, Horizontal
40320	08-0520156126	47-017-06126	2013	3,494,508	1,494,927	94,908	5,084,363	78,186	538,298	127,030	446,728	1,188,140	21%	30%	24%	78,186	1,110,054	1,188,240	297,060	Marcellus, Horizontal
40353	08-0520156153	47-017-06153	2013	6,691,728	2,585,865	86,854	9,144,246	88,518	988,130	232,721	807,177	2,117,582	20%	35%	23%	88,518	2,028,063	2,117,582	529,395	Marcellus, Horizontal
40422	08-0520156156	47-017-06156	2013	3,260,135	1,099,844	17,547	4,377,526	73,728	598,997	127,852	384,175	1,082,151	23%	37%	25%	71,728	1,011,023	1,082,151	270,538	Marcellus, Horizontal
40426	08-0520156157	47-017-06157	2013	7,272,609	3,088,206	76,126	10,536,942	88,655	1,128,664	284,899	827,625	2,329,977	29%	20%	22%	88,655	2,310,523	2,399,177	599,794	Marcellus, Horizontal
40964	08-0520156179	47-017-06179	2013	7,951,128	3,081,287	16,787	10,029,182	84,502	795,446	170,291	548,571	1,598,809	19%	35%	18%	94,502	1,504,308	1,598,809	399,702	Marcellus, Horizontal
40428	08-0520156165	47-017-06165	2014	7,880,447	3,667,619	204,734	12,168,280	155,382	1,185,187	284,457	1,845,020	3,470,104	20%	20%	29%	159,992	2,588,814	2,748,807	687,052	Marcellus, Horizontal
40965	08-0520166174	47-017-06174	2014	8,229,489	1,571,796	17,108	9,818,492	70,804	892,085	182,425	603,370	1,687,682	13%	38%	17%	77,788	1,830,583	1,908,381	477,095	Marcellus, Horizontal
40473	08-0520166138	47-017-06138	2014	3,692,445	1,304,528	3,035	5,000,004	56,040	688,641	163,566	488,188	1,396,436	19%	38%	27%	59,005	2,013,248	2,072,253	518,063	Marcellus, Horizontal
40474	08-0520166240	47-017-06240	2013	3,761,005	1,305,080	12,800	5,078,787	72,703	692,916	162,629	500,008	1,368,258	23%	38%	27%	51,144	1,989,682	2,050,827	512,707	Marcellus, Horizontal
40471	08-0520166243	47-017-06243	2013	3,710,081	1,298,734	52,901	5,058,717	93,386	708,949	177,607	485,378	1,380,119	24%	36%	27%	46,417	2,252,498	2,298,915	574,729	Marcellus, Horizontal
40472	08-0520166244	47-017-06244	2013	3,365,793	1,300,378	10,977	4,676,881	8,578	580,778	143,794	434,172	1,154,804	22%	35%	25%	99,815	1,734,907	1,834,722	458,680	Marcellus, Horizontal
40469	08-0520166261	47-017-06261	2014	3,595,201	1,754,322	23,304	5,781,227	33,180	727,141	180,288	558,298	1,498,904	23%	32%	26%	50,924	2,211,083	2,262,008	565,502	Marcellus, Horizontal
40452	08-0520166265	47-017-06265	2014	3,858,508	1,465,068	33,776	5,431,847	73,884	718,737	174,197	529,724	1,496,523	29%	36%	27%	54,949	2,132,973	2,188,921	547,408	Marcellus, Horizontal
40531	08-0520166295	47-017-06295	2013	4,370,116	1,748,521	94,100	6,252,888	70,088	794,348	195,618	595,511	1,807,964	23%	33%	28%	55,235	2,414,147	2,469,382	617,345	Marcellus, Horizontal
40542	08-0520166296	47-017-06296	2014	5,298,999	2,022,442	62,561	7,385,002	83,624	958,589	252,196	720,088	1,926,887	23%	35%	20%	44,799	2,793,853	2,838,668	709,667	Marcellus, Horizontal
40546	08-0520166311	47-017-06311	2013	1,341,572	27,680	5,484	1,374,686	985	198,512	61,902	12,405	787,824	19%	45%	20%	93,462	1,862,155	1,955,617	488,904	Marcellus, Horizontal
40533	08-0520166313	47-017-06313	2014	366,306	-	302	366,608	371	52,948	16,363	-	69,673	13%	n/a	19%	196,281	802,795	998,576	249,644	Marcellus, Horizontal
40531	08-0520166330	47-017-06330	2014	537,162	-	444	537,605	371	77,859	23,996	-	102,206	18%	n/a	19%	185,888	894,815	1,134,703	296,176	Marcellus, Horizontal
40534	08-0520166321	47-017-06321	2014	583,485	-	544	584,029	737	86,620	26,687	-	113,569	18%	n/a	22%	186,936	798,030	985,966	246,492	Marcellus, Horizontal
40545	08-0520166333	47-017-06333	2013	1,708,642	178,453	8,065	1,895,130	308	263,688	86,681	79,934	430,578	22%	45%	20%	89,214	2,134,793	2,223,907	555,977	Marcellus, Horizontal
40578	08-0520156084	47-017-06334	2014	2,083,180	361,629	50,379	2,445,189	330	325,919	130,545	145,468	582,234	21%	40%	20%	109,675	2,174,870	2,284,545	571,136	Marcellus, Horizontal
40531	08-0520166358	47-017-06358	2014	7,952,108	1,826,958	16,880	9,796,354	78,053	895,037	372,807	588,934	1,844,250	13%	36%	17%	80,000	1,772,469	1,842,870	460,667	Marcellus, Horizontal
40547	08-0520166362	47-017-06362	2014	1,195,386	48,514	5,713	1,249,614	330	174,306	56,137	21,578	252,354	19%	44%	20%	95,222	1,708,232	1,804,453	451,113	Marcellus, Horizontal
40548	08-0520166386	47-017-06386	2014	1,758,524	288,485	6,645	2,053,654	330	273,193	91,774	109,662	474,758	21%	41%	24%	88,112	1,921,968	2,010,080	502,520	Marcellus, Horizontal
40703	08-0520166404	47-017-06404	2014	199,586	-	148	199,733	0	27,366	8,805	-	36,775	19%	n/a	18%	143,848	2,127,679	2,271,527	567,880	Marcellus, Horizontal
40564	08-0520166419	47-017-06419	2014	153,657	-	2	153,658	158	23,209	6,752	-	30,218	20%	n/a	20%	61,786	1,746,152	1,807,438	456,859	Marcellus, Horizontal
40543	08-0520166429	47-017-06429	2014	545,298	-	5	545,304	158	84,228	24,280	-	108,666	20%	n/a	20%	79,871	2,257,033	2,336,904	584,226	Marcellus, Horizontal

Antero Resources Corpora
7/1/15 West Virginia Oil an. ducer/ Operator Retain
Actual Operating Expenses for West Virginia

				2014 Calendar Year												2014 Calendar Year Except Year 1 Wells Adjusted to Actual Expenses for First 12 Months (Note 1)				
				Gas	NGLs			Gas	Gas	Gas	NGLs		Gas	NGLs	Total					
Well Code	NRA Account #	API #	Production Start Year	Total Gas Receipts	Total NGL Receipts	Total Oil Receipts	Total Reported Receipts	LOE Expenses	Gathering and Compression Expenses	Transportation Expenses	Processing Expenses (Note 2)	Total Operating Expenses	OpEx as % of Revenue	OpEx as % of Revenue	OpEx as % of Revenue	LOE Expenses	Gathering, Processing, and Transportation Expenses	Total Operating Expenses	Fixed Portion of Operating Expenses (20%)	Well Type
40163	17-182018 5391	47-033-05391	2013	3,132,638	-	-	3,132,638	49,559	592,413	271,947	-	713,919	28%	n/a	23%	49,559	664,360	713,919	178,480	Marcellus, Horizontal
40153	17-182018 5392	47-033-05392	2011	2,457,730	-	-	2,457,730	49,617	387,251	211,600	-	558,463	23%	n/a	23%	49,617	508,851	558,463	139,616	Marcellus, Horizontal
40245	17-182018 5437	47-033-05437	2013	2,590,931	-	-	2,590,931	78,643	350,434	226,787	-	655,859	29%	n/a	25%	78,643	577,215	655,859	163,965	Marcellus, Horizontal
41239	17-182018 5453	47-033-05453	2011	2,493,176	-	-	2,493,176	15,846	156,021	-	-	171,866	7%	n/a	7%	15,846	156,021	171,866	42,967	Marcellus, Horizontal
40246	17-182018 5507	47-033-05507	2011	2,856,381	-	-	2,856,381	76,825	580,548	250,413	-	688,981	24%	n/a	24%	76,825	613,156	689,981	172,495	Marcellus, Horizontal
40272	17-182018 5538	47-033-05538	2012	2,957,304	-	-	2,957,304	68,956	288,191	207,349	-	564,496	24%	n/a	24%	68,956	500,540	564,496	141,124	Marcellus, Horizontal
40162	17-182018 5580	47-033-05580	2012	3,216,581	-	-	3,216,581	60,327	387,988	275,485	-	723,759	28%	n/a	28%	60,327	663,428	723,753	180,938	Marcellus, Horizontal
40215	17-182018 5588	47-033-05588	2011	3,678,783	-	-	3,678,783	46,526	440,614	287,552	-	824,692	22%	n/a	22%	46,526	778,166	824,692	206,173	Marcellus, Horizontal
40213	17-182018 5589	47-033-05589	2012	3,533,977	-	-	3,533,977	50,584	495,308	322,535	-	828,426	25%	n/a	23%	50,584	777,841	828,426	207,108	Marcellus, Horizontal
40214	17-182018 5601	47-033-05601	2012	4,139,887	-	-	4,139,887	46,180	514,236	376,394	-	936,810	23%	n/a	22%	46,180	890,630	936,810	234,203	Marcellus, Horizontal
40870	17-182018 5602	47-033-05602	2013	2,983,251	-	-	2,983,251	148,262	341,864	272,849	-	762,975	28%	n/a	26%	149,262	614,713	763,975	190,994	Marcellus, Horizontal
40868	17-182018 5619	47-033-05619	2013	3,570,249	-	-	3,570,249	117,341	425,759	330,186	-	872,285	34%	n/a	34%	117,341	755,644	872,985	218,246	Marcellus, Horizontal
40176	17-182018 5674	47-033-05674	2013	3,165,987	-	-	3,165,987	92,879	373,122	272,369	-	678,370	22%	n/a	22%	93,879	645,491	678,370	169,592	Marcellus, Horizontal
40177	17-182018 5675	47-033-05675	2013	3,158,845	-	-	3,158,845	99,040	372,138	271,927	-	677,185	21%	n/a	21%	93,040	644,125	677,185	169,296	Marcellus, Horizontal
40979	17-182018 5698	47-033-05698	2013	8,854,704	2,923,291	8,102	10,687,097	51,626	1,773,880	297,228	905,183	2,526,017	19%	45%	24%	51,626	2,474,391	2,526,017	631,504	Marcellus, Horizontal
40412	17-182015 5780	47-033-05780	2012	10,588,632	-	-	10,588,632	188,516	1,795,883	902,084	-	2,384,483	22%	n/a	22%	188,516	2,195,945	2,384,461	596,115	Marcellus, Horizontal
40412	17-182015 5781	47-033-05781	2013	30,651,299	-	-	30,651,299	190,746	1,788,134	909,714	-	2,388,578	22%	n/a	22%	190,746	2,197,828	2,388,574	597,143	Marcellus, Horizontal
40976	17-182015 5686	47-033-05686	2014	8,121,826	1,551,827	6,896	9,680,546	58,729	1,165,344	771,965	702,045	2,248,467	18%	49%	23%	54,758	2,286,498	2,341,255	585,314	Marcellus, Horizontal
40977	17-182015 5689	47-033-05533	2014	7,244,789	1,650,465	7,570	8,895,717	54,105	1,191,248	762,636	751,266	2,198,105	24%	46%	22%	54,105	2,181,080	2,235,186	558,796	Marcellus, Horizontal
40978	17-182015 5721	47-033-05701	2014	7,170,361	1,639,649	7,546	8,797,557	49,804	1,044,658	741,824	738,434	2,074,562	19%	46%	24%	49,750	2,071,108	2,120,852	530,213	Marcellus, Horizontal
40470	17-182015 5721	47-033-05721	2013	4,288,611	506,168	79	4,875,854	9,360	893,836	142,290	907,385	1,294,446	29%	22%	27%	108,641	2,138,799	2,247,420	561,857	Marcellus, Horizontal
40469	17-182015 5722	47-033-05722	2014	4,220,369	857,214	97	4,577,679	30,954	783,712	169,616	723,090	1,185,312	29%	85%	26%	129,815	1,956,822	1,886,637	466,657	Marcellus, Horizontal
40467	17-182015 5723	47-033-05723	2014	7,511,402	773,640	15,233	8,700,275	49,424	1,240,087	281,095	457,832	2,027,568	20%	59%	23%	55,505	2,422,361	2,477,866	619,467	Marcellus, Horizontal
40468	17-182015 5738	47-033-05738	2014	8,508,274	979,298	24,908	9,501,572	72,488	1,458,864	323,584	552,708	2,407,658	29%	56%	25%	99,978	2,987,986	3,087,964	770,490	Marcellus, Horizontal
40101	17-202015 5148	47-033-05148	2009	307,369	-	-	307,369	35,681	42,193	27,484	-	105,358	34%	n/a	34%	35,681	69,887	105,568	26,342	Marcellus, Horizontal
40205	17-202015 5465	47-033-05465	2011	2,717,108	-	-	2,717,108	27,682	289,448	208,979	-	485,111	22%	n/a	22%	27,682	467,428	495,111	123,778	Marcellus, Horizontal
40206	17-202015 5466	47-033-05466	2011	2,593,595	-	-	2,593,595	26,895	300,790	240,180	-	567,805	22%	n/a	22%	26,895	540,910	567,805	141,951	Marcellus, Horizontal
40207	17-202015 5467	47-033-05467	2011	2,151,808	-	-	2,151,808	27,140	258,915	208,273	-	484,336	22%	n/a	23%	27,140	457,196	484,336	121,084	Marcellus, Horizontal
40208	17-202015 5484	47-033-05484	2012	2,258,440	-	-	2,258,440	27,771	265,846	217,096	-	511,718	23%	n/a	25%	27,771	483,947	511,718	127,929	Marcellus, Horizontal
40209	17-202015 5485	47-033-05485	2011	1,886,526	-	-	1,886,526	22,722	198,181	168,161	-	380,564	23%	n/a	22%	22,722	358,142	380,564	95,141	Marcellus, Horizontal
40210	17-202015 5486	47-033-05586	2011	2,527,700	-	-	2,527,700	21,804	298,316	243,757	-	563,878	22%	n/a	22%	21,804	542,074	563,878	140,969	Marcellus, Horizontal
40248	17-202015 5481	47-033-05481	2011	1,681,166	-	-	1,681,166	19,233	194,734	161,885	-	376,870	22%	n/a	22%	19,233	360,658	379,870	94,968	Marcellus, Horizontal
40225	17-202015 5482	47-033-05482	2012	1,405,130	-	-	1,405,130	15,513	171,484	140,589	-	327,514	22%	n/a	22%	15,513	312,000	327,514	81,879	Marcellus, Horizontal
40226	17-202015 5483	47-033-05483	2011	1,371,348	-	-	1,371,348	15,485	160,879	138,829	-	307,228	22%	n/a	22%	15,485	291,743	307,228	76,807	Marcellus, Horizontal
40227	17-202015 5494	47-033-05494	2011	2,818,248	-	-	2,818,248	25,924	343,050	269,467	-	638,443	23%	n/a	23%	25,924	612,517	638,441	159,610	Marcellus, Horizontal
40234	17-202015 5494	47-033-05581	2011	5,127,633	-	-	5,127,633	51,258	618,276	478,888	-	1,148,424	22%	n/a	22%	93,258	1,097,165	1,148,424	287,106	Marcellus, Horizontal
40237	17-202015 5500	47-033-05502	2013	3,082,120	-	-	3,082,120	10,735	358,809	285,861	-	655,316	22%	n/a	22%	10,735	644,581	655,316	163,829	Marcellus, Horizontal
40218	17-202015 5505	47-033-05505	2011	2,555,405	-	-	2,555,405	14,265	300,888	249,152	-	558,285	22%	n/a	22%	14,265	544,030	558,285	139,574	Marcellus, Horizontal
40240	17-202015 5554	47-033-05554	2013	3,306,595	-	-	3,306,595	36,215	586,880	310,201	-	743,308	22%	n/a	22%	36,215	707,092	743,308	185,827	Marcellus, Horizontal
40218	17-202015 5503	47-033-05503	2011	754,418	-	-	754,418	13,385	88,884	71,753	-	173,802	22%	n/a	23%	13,385	160,417	173,802	43,451	Marcellus, Horizontal
40259	17-202015 5559	47-033-05580	2011	5,213,215	-	-	5,213,215	28,735	618,723	488,119	-	1,137,976	22%	n/a	22%	26,735	1,111,241	1,137,976	284,494	Marcellus, Horizontal
40260	17-202015 5576	47-033-05576	2013	2,959,927	-	-	2,959,927	15,081	277,147	225,118	-	617,325	22%	n/a	22%	15,081	502,265	517,325	129,331	Marcellus, Horizontal
40261	17-202015 5577	47-033-05577	2012	2,315,852	-	-	2,315,852	15,046	276,655	220,034	-	511,735	22%	n/a	22%	15,046	496,689	511,735	127,934	Marcellus, Horizontal
40252	17-202015 5582	47-033-05582	2011	2,723,963	-	-	2,723,963	44,025	314,775	256,510	-	615,310	29%	n/a	19%	44,025	571,285	615,310	153,827	Marcellus, Horizontal
40253	17-202015 5583	47-033-05583	2011	2,952,599	-	-	2,952,599	43,929	339,713	275,345	-	658,883	22%	n/a	22%	43,903	614,958	658,883	164,720	Marcellus, Horizontal
40285	17-202015 5584	47-033-05584	2013	3,687,972	-	-	3,687,972	58,914	413,073	338,730	-	811,666	22%	n/a	22%	53,914	757,753	811,666	202,917	Marcellus, Horizontal
40286	17-202015 5585	47-033-05585	2012	3,856,898	-	-	3,856,898	41,885	452,816	367,068	-	861,548	22%	n/a	22%	41,885	819,883	861,548	215,387	Marcellus, Horizontal
40279	17-202015 5586	47-033-05586	2013	3,910,287	-	-	3,910,287	106,621	462,863	381,582	-	951,015	34%	n/a	24%	106,621	824,994	931,015	232,754	Marcellus, Horizontal
40291	17-202015 5590	47-033-05590	2011	2,541,398	-	-	2,541,398	88,642	288,488	286,147	-	645,248	25%	n/a	23%	89,662	535,580	625,243	156,311	Marcellus, Horizontal
40288	17-202015 5591	47-033-05591	2013	2,933,681	-	-	2,933,681	16,717	362,628	277,207	-	656,553	22%	n/a	22%	16,717	619,835	636,553	159,138	Marcellus, Horizontal
40262	17-202015 5592	47-033-05592	2013	3,597,959	-	-	3,597,959	43,086	488,356	318,199	-	797,651	22%	n/a	22%	43,096	754,555	797,651	199,413	Marcellus, Horizontal
40294	17-202015 5593	47-033-05593	2011	2,706,063	-	-	2,706,063	24,644	331,547	259,950	-	606,192	22%	n/a	22%	24,644	581,488	606,132	151,533	Marcellus, Horizontal
40295	17-202015 5594	47-033-05594	2012	2,487,717	-	-	2,487,717	17,775	280,627	235,681	-	544,002	22%	n/a	22%	17,775	526,277	544,002	136,001	Marcellus, Horizontal
40315	17-202015 5621	47-033-05621	2011	5,386,100	-	-	5,386,100	33,805	694,801	902,172	-	1,170,782	22%	n/a	22%	33,805	1,136,974	1,170,782	292,696	Marcellus, Horizontal
40242	17-202015 5629	47-033-05629	2013	5,874,784	-	-	5,874,784	71,444	885,995	546,807	-	1,254,177	21%	n/a	22%	71,444	1,252,853	1,254,177	313,569	Marcellus, Horizontal
40280	17-202015 5632	47-033-05632	2012	3,620,573	-	-	3,620,573	108,023	483,780	539,557	-	907,860	25%	n/a	28%	108,023	801,337	907,360	226,840	Marcellus, Horizontal
43821	17-202015 5638	47-033-05638	2013	3,547,130	-	-	3,547,130	34,675	695,767	515,317	-	1,206,759	22%	n/a	22%	34,695	1,172,084	1,206,759	301,690	Marcellus, Horizontal
40809	17-202015 5688	47-033-05688	2013	3,140,510	-	-	3,140,510	28,715	350,172	277,168	-	656,051	22%	n/a	21%	28,715	627,336	656,051	164,013	Marcellus, Horizontal
40810	17-202015 5689	47-033-05689	2013	2,888,610	-	-	2,888,610	22,842	343,680	276,116	-	642,589	22%	n/a	22%	22,842	619,747	642,589	160,647	Marcellus, Horizontal
40816	17-202015 5617	47-033-05617	2013	4,374,547	-	-	4,374,547	78,338	506,062	487,848	-	981,248	28%	n/a	22%	78,338	911,908	981,248	245,312	Marcellus, Horizontal
40817	17-202015 5615	47-033-05615	2013	4,106,359	-	-	4,106,359	73,304	474,458	382,539	-	930,301	29%	n/a	29%	73,304	856,997	930,301	232,550	Marcellus, Horizontal
40801	17-202015 5616	47-033-05616	2013	6,804,074	-	-	6,804,074	75,192	778,739	534,781	-	1,338,086	21%	n/a	19%	25,192	1,313,954	1,338,086	334,771	Marcellus, Horizontal
40359	17-202015 5637	47-033-05637	2013	3,156,407	-	-	3,156,407	114,046	364,680	288,125	-	766,851	34%	n/a	24%	114,046	652,804	766,851	191,713	Marcellus, Horizontal
40279	17-202015 5618	47-033-05618	2013	2,689,501	-	-	2,689,501	88,805	501,633	257,928	-	678,856	28%	n/a	25%	99,905	579,551	679,456	169,864	Marcellus, Horizontal
40356	17-202015 5622	47-033-05622	2013	2,175,645	182,007	401	2,358,143	46,150	301,581	73,796	38,873	540,179	20%	24%	23%	46,150	494,029	540,179	135,045	Marcellus, Horizontal
40926	17-202015 5623	47-033-05623	2013	2,521,058	138,804	630	2,660,292	47,539	388,642	34,909	72,488	574,578	30%	52%	22%	47,809	637,049	574,978	143,745	Marcellus, Horizontal
40590	17-202015 5631	47-033-05631	2013	5,635,146	-	-	5,635,146	101,888	715,078	523,042	-	1,340,008	34%	n/a	34%	101,888	1,238,115	1,340,008	335,002	Marcellus, Horizontal
40123	17-202015 5636	47-033-05636	2013	5,043,574	-	-	5,043,574	75,467	578,329	465,285	-	1,117,080	22%	n/a	22%	75,467	1,041,614	1,117,080	279,270	Marcellus, Horizontal
40322	17-202015 5627	47-033-05627	2013	4,748,394	-	-	4,748,394	114,217	545,728	449,174	-	1,109,120	29%	n/a	23%	114,217	988,909	1,109,120	275,780	Marcellus, Horizontal
40351	17-202015 5639	47-033-05639	2013	2,700,080	-	-	2,700,080	28,829	530,626	353,987	-	895,498	22%	n/a	22%	28,829	576,613	605,435	151,359	Marcellus, Horizontal
40345	17-202015 5640	47-033-05640	2013	3,100,126	-	-	3,100,126	26,672	588,854	290,982	-	687,258	22%	n/a	22%	26,672	660,186	687,058	171,764	Marcellus, Horizontal
40346	17-202015 5641	47-033-05642	2013	3,008,188	-	-	3,008,188	27,236	552,847	280,817	-	660,920	22%	n/a	22%	27,236	633,684	660,920	165,230	Marcellus, Horizontal
40355	17-202015 5646	47-033-05646	2013	4,168,756	-	-	4,168,756	30,550	481,568	386,617	-	898,736	22%	n/a	22%	30,550	868,185	898,736	224,684	Marcellus, Horizontal
40364	17-202015 5647	47-033-05647	2013	3,298,781	-	-	3,298,781	30,073	323,043	305,121	-	708,237	22%	n/a	22%	30,073	678,164	708,237	177,059	Marcellus, Horizontal

Antero Resources Corporation
7/1/15 West Virginia Oil and ... oducer/ Operator Return
Actual Operating Expenses for West Virginia

				2014 Calendar Year												2014 Calendar Year Except Year 1 Wells Adjusted to Actual Expenses for First 12 Months (Note 1)				
				Gas	NGLs			Gas	Gas	Gas	NGLs		Gas	NGLs	Total					
Well Code	NRA Account #	API #	Production Start Year	Total Gas Receipts	Total NGL Receipts	Total Oil Receipts	Total Reported Receipts	LOE Expenses	Gathering and Compression Expenses	Transportation Expenses	Processing Expenses (Note 2)	Total Operating Expenses	OpEx as % of Revenue	OpEx as % of Revenue	OpEx as % of Revenue	LOE Expenses	Gathering, Processing, and Transportation Expenses	Total Operating Expenses	Fixed Portion of Operating Expenses (MPL)	Well Type
Note 2 :> Antero associates all processing fees with the NGLs for reporting purposes, but the processing is also necessary in order for the natural gas to meet the quality and measurement standards of the transporters that is required for sale.																				

EXHIBIT
11

ALTUS GROUP US INC.

Fair Market Value Assessment - Antero Resources Corp.

Table of Contents

Valuation as of July 1, 2015

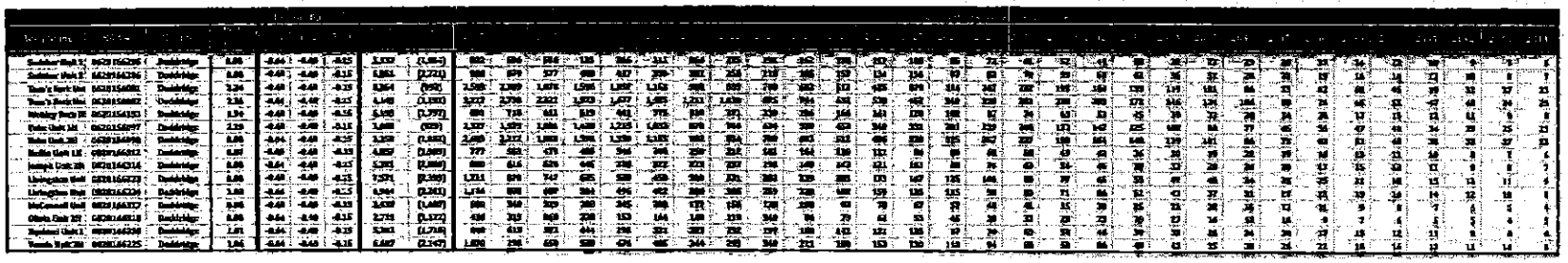
Reference #	Exhibit Description
Exhibit 1	FMV Conclusion
Exhibit 2	FMV Detail
Exhibit 3	FMV Comparison
Exhibit 4	Discount Rate Derivation

ALTUS GROUP US INC. Exhibit 2

Fair Market Value Assessment - Antero Resources Corp.

PDP Detail

Valuation as of July 1, 2015



Notes to Exhibit

(1) Well age represents the period of time from first production to the Valuation Date and is used to determining the effective decline rate for years 1-3 of production.

(2) Decline rates based on an analysis of historical oil and gas production volumes, type curves, and the reservoir characteristics specific to each formation target. Data obtained from DrillingInfo.

(3) Gross unescalated (BFIT) revenue represents product revenue available to both royalty and working interest owners. Data is based on 2014 and 2015 estimates provided by Antero.

(4) Future estimated royalty payments were calculated on the difference between net working interest revenue and gross working interest revenue. Implied royalty rates ranged between 9.0% and 21.0%. Implied royalty rates were corroborated using market royalty rates for each county as published in the June/July 2015 Lease Price Report.

(5) Net working interest cashflow represents 100% of product revenue available to all working interest owners after royalty payments.

(6) Fixed operating expense represents those costs whereby all working interest owners incurred on a per well basis and do not vary with production levels. Items included in this category include insurance premiums for workers compensation, general and excess liability, property and pollution insurance as well as other field level overhead costs.

(7) Variable operating expense represents those ordinary expenses related to the maintenance and production of hydrocarbons and crude oil shared amongst all working interest holders. This category of expenses includes fuel, power/gas, transportation, and processing expenses, as well as chemical treatment.

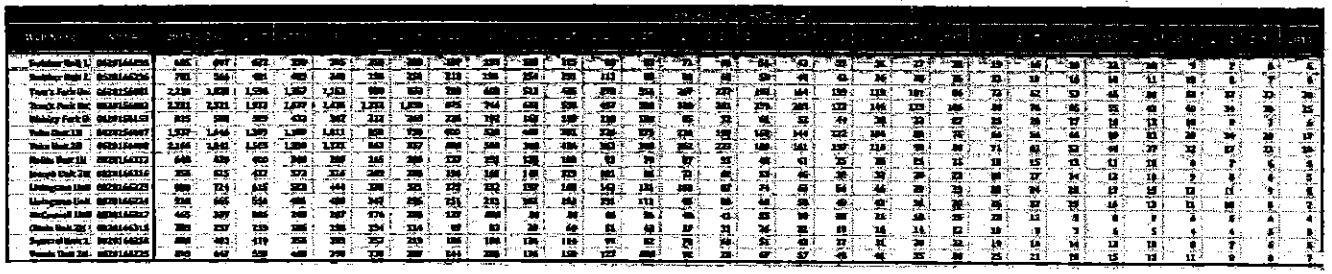
ALTUS GROUP US INC

Exhibit 2

Fair Market Value Ask

Well Detail

Valuation as of July 1, 2015



Notes to Exhibit:

(A) Well age represents the period of time from first production as the Valuation Date and is used to determining the effective decline rate for years 1-3 of projection.

(B) Decline rates based on an analysis of historical oil and gas production volumes, type curves, and the reservoir characteristics specific to each formation target. Data obtained from IHSMarkit.

(C) Gross annualized (BFIT) revenue represents product revenue available to both royalty and working interest owners. Base is based on 2014 and 2015 actuals as provided by Asterra.

(D) Future estimated royalty payments were calculated as the difference between net working interest revenue and gross working interest revenue. Implied royalty rates were calculated using matched royalty rates for each county as published in the June/July 2015 Lands U.S. Lease Price Report.

(E) Net working interest revenue represents 100% of product revenue available to all working interest owners after royalty burden payment.

(F) Fixed operating expense represents those costs classified as well operating interest payments that are fixed in nature and do not vary with production levels. Items included in this category include insurance premiums for workers compensation, general and excess liability, property, and pollution insurance overall applies field level overhead costs.

(G) Variable operating expense represents those ordinary expenses related to the maintenance and production of natural gas and crude oil shared amongst all working interest holders. This category of expenses includes fuel loss, gathering, compression, and processing expenses, as well as transportation expenses.

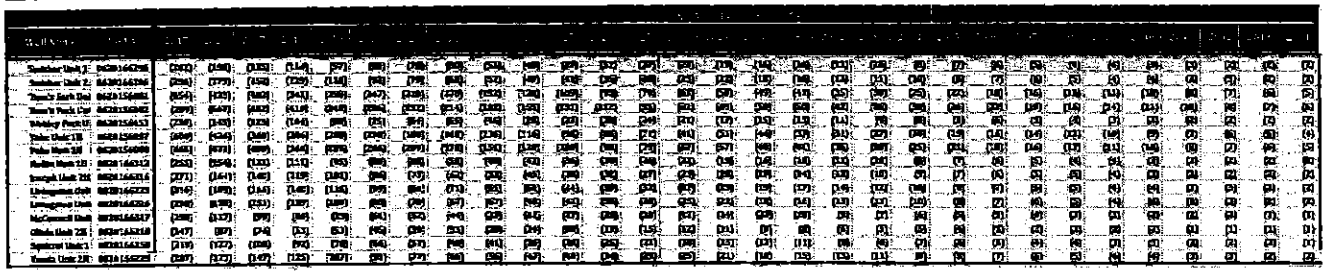
ALTUS GROUP US I

Exhibit 3

Base Market Value ASR

PMM Retail

Valuation as of July 1, 2021



Notes to Exhibit

(1) Well age represents the period of time from first production to the Valuation Date and is used in determining the effective decline rate for years 1-3 of production.

(2) Decline rates based on an analysis of historical well and gas production volumes, type curves, and the reservoir characteristics specific to each formation target. Data obtained from IHSMarkit.

(3) Gross annualized (1/1/1) revenue represents product revenue available to both royalty and working interest owners. Data is based on 2014 and 2015 actuals as provided by Aetera.

(4) Future estimated royalty payments were calculated on the difference between net working interest revenue and gross working interest revenue. Implied royalty rates ranged between 9.0% and 21.0%. Implied royalty rates were corroborated using market royalty rates for each county as published in the June/July 2015 Lytle U.S. Lease Price Report.

(5) Net working interest revenue represents 100% of product revenue available to all working interest owners after royalty owner payout.

(6) Fixed operating expense represents those costs incurred by all working interest owners that are fixed in nature and do not vary with production levels. Items included in this category include premiums for workers compensation insurance, general and excess liability insurance, property, and pollution insurance premiums and other field level overhead items.

(7) Variable operating expense represents those ordinary expenses related to the maintenance and production of natural gas and crude oil, shared amongst all working interest holders. This category of expenses includes fuel use, gathering, transportation, and processing charges, as well as transportation expense.

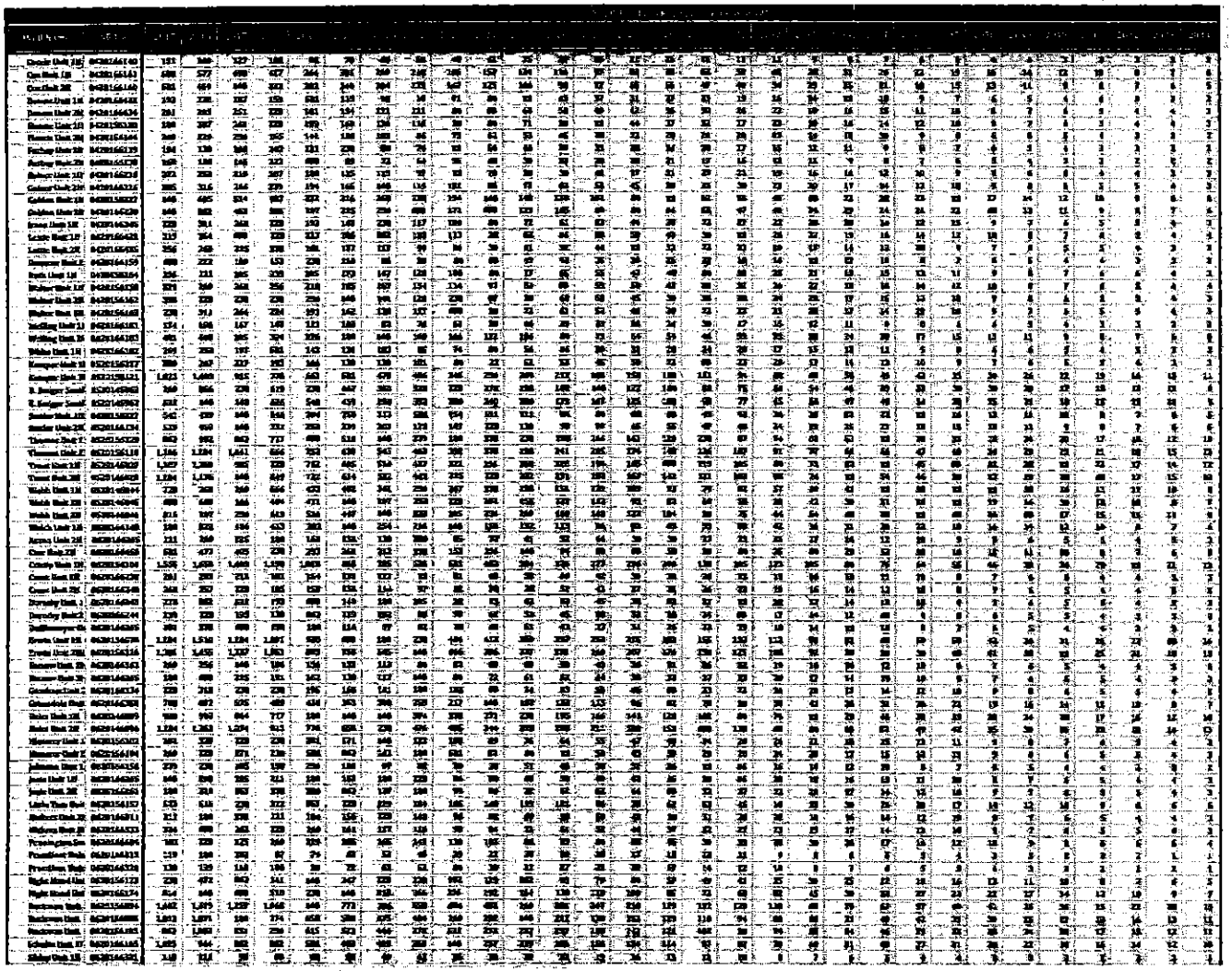
ALTUS GROUP US INC

Exhibit 2

Fair Market Value Adjustment

2009 Detail

Valuation as of July 1, 2016



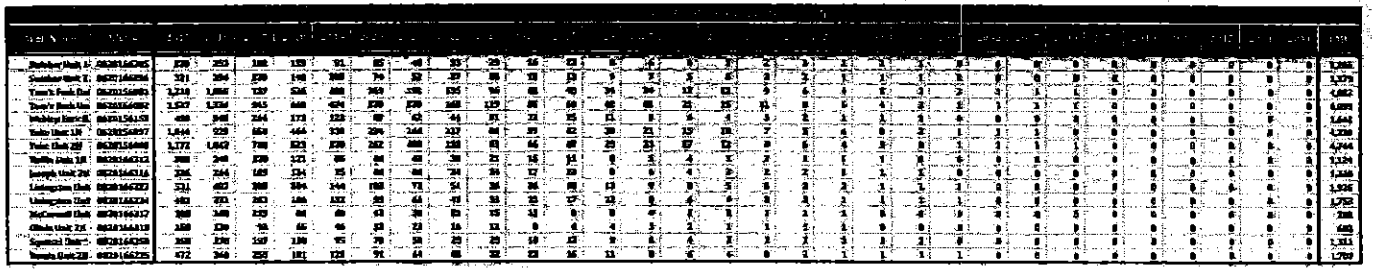
ALTIS GROUP LTD [1]

Exhibit 2

Fair Market Value ARC

PDP Blend

Valuation as of July 1, 2017



Notes to Exhibit

[1] Well age represents the period of time from first production to the Valuation Date and is used in determining the effective decline rate for years 1-3 of production.

[2] Decline rates based on an analysis of historic oil and gas production volumes, type curves, and the respective characteristics specific to each formation target. Data obtained from DrillingInfo.

[3] Gross operational (B/D's) revenue represents product revenue attributable to both royalty and working interest owners. Data is based on 2014 and 2015 actuals as provided by Antero.

[4] Income estimated royalty payments were calculated as the difference between net working interest revenue and gross working interest revenue. Implied royalty rates ranged between 9.0% and 21.0%. Implied royalty rates were corroborated using market royalty transfer rates recently published in the June/July 2017 Table 0.5, Lease Price Report.

[5] Net working interest revenue represents 100% of product revenue available to all working interest owners after royalty owner payment.

[6] Fixed operating expense represents those costs shared by all working interest owners that are fixed in relation and do not vary with production levels. Items included in this category include gross burden for workers compensation, insurance, general and excess liability insurance, property, and pollution insurance premiums, and other field level overhead items.

[7] Variable operating expense represents those ordinary expenses related to the maintenance and production of natural gas and crude oil shared amongst all working interest holders. This category of expenses includes fuel loss, gathering, compression, and processing expenses, as well as transportation expenses.

ALTUS GROUP US INC. Exhibit 3

Fair Market Value Assessment - Antero Resources Corp. (USD in Thousands)

FMV Comparison - Antero Resources Corp.

Valuation as of July 1, 2015

HEI

Fair Market Value Summary

					Utah		West Virginia	
Well Name	NRA #	County	Well Type	Target Interval	FMV	% of Total	State Estimate	% of Total
Gavin Unit 2H	0320166302	Doddridge	Horizontal	Marcellus	1,815,142	0.62%	4,295,658	0.53%
Heflin Unit 2H	0320166301	Doddridge	Horizontal	Marcellus	2,596,422	1.03%	7,814,769	0.96%
Holden Unit 1H	0320166202	Doddridge	Horizontal	Marcellus	1,751,248	0.60%	2,866,947	0.35%
Holden Unit 2H	0320166203	Doddridge	Horizontal	Marcellus	1,748,025	0.60%	3,129,853	0.39%
Hoskinson Unit 1H	0320166399	Doddridge	Horizontal	Marcellus	1,562,853	0.54%	4,190,853	0.52%
Koch Unit 2H	0320166267	Doddridge	Horizontal	Marcellus	1,262,881	0.43%	4,692,092	0.58%
Langfitt Unit 1H	0320156721	Doddridge	Horizontal	Marcellus	898,678	0.31%	6,233,333	0.77%
Langfitt Unit 2H	0320156204	Doddridge	Horizontal	Marcellus	1,643,701	0.56%	12,644,394	1.56%
Leatherman Unit 1H	0320156084	Doddridge	Horizontal	Marcellus	2,716,111	0.93%	2,913,742	0.36%
Leatherman Unit 2H	0320146085	Doddridge	Horizontal	Marcellus	1,920,682	0.66%	1,786,996	0.22%
McConnell Unit 2H	0320166263	Doddridge	Horizontal	Marcellus	1,015,979	0.35%	3,670,030	0.45%
Mishka Unit 1H	0320166259	Doddridge	Horizontal	Marcellus	953,763	0.33%	3,497,561	0.43%
Moore Unit 1H	0320156128	Doddridge	Horizontal	Marcellus	5,578,039	1.91%	7,229,313	0.89%
Moore Unit 2H	0320156129	Doddridge	Horizontal	Marcellus	5,408,225	1.85%	6,970,568	0.86%
Mt Salem Revival Unit 1H	0320166269	Doddridge	Horizontal	Marcellus	1,138,696	0.39%	4,197,070	0.52%
Mt Salem Revival Unit 2H	0320166268	Doddridge	Horizontal	Marcellus	1,334,300	0.46%	5,141,077	0.63%
Neely Unit 1H	0320146080	Doddridge	Horizontal	Marcellus	3,899,068	1.34%	Included in well value below	
Neely Unit 2H	0320146080	Doddridge	Horizontal	Marcellus	2,730,092	0.94%	8,301,350	1.02%
Vanscoy Unit 1H	0320166262	Doddridge	Horizontal	Marcellus	940,491	0.32%	2,496,618	0.31%
Vanscoy Unit 2H	0320166264	Doddridge	Horizontal	Marcellus	759,146	0.26%	1,746,470	0.21%
Arters Unit 1H	0420166450	Doddridge	Horizontal	Marcellus	1,283,011	0.44%	4,060,435	0.50%
Belton Unit 1H	0420166278	Doddridge	Horizontal	Marcellus	1,182,604	0.41%	4,486,173	0.55%
Bowen Unit 1H	0420166219	Doddridge	Horizontal	Marcellus	2,490,316	0.85%	5,060,815	0.62%
Bowen Unit 2H	0420166167	Doddridge	Horizontal	Marcellus	2,584,682	0.89%	5,194,760	0.64%
Carole Unit 1H	0420166279	Doddridge	Horizontal	Marcellus	1,200,405	0.41%	4,259,952	0.52%
Carole Unit 2H	0420166280	Doddridge	Horizontal	Marcellus	1,090,006	0.37%	4,022,100	0.50%
Caswell Unit 1H	0420166369	Doddridge	Horizontal	Marcellus	842,168	0.29%	3,517,667	0.43%
Caswell Unit 2H	0420166377	Doddridge	Horizontal	Marcellus	857,407	0.29%	3,889,299	0.48%
Cecele Unit 1H	0420166140	Doddridge	Horizontal	Marcellus	526,955	0.18%	1,982,013	0.24%
Cox Unit 1H	0420166161	Doddridge	Horizontal	Marcellus	2,097,639	0.72%	3,687,036	0.45%
Cox Unit 2H	0420166160	Doddridge	Horizontal	Marcellus	1,672,198	0.57%	2,823,339	0.35%
Downs Unit 1H	0420166433	Doddridge	Horizontal	Marcellus	748,980	0.26%	3,481,157	0.43%
Downs Unit 2H	0420166434	Doddridge	Horizontal	Marcellus	1,007,552	0.35%	4,232,482	0.52%
Flossie Unit 1H	0420156180	Doddridge	Horizontal	Marcellus	1,107,272	0.38%	8,517,794	1.05%
Flossie Unit 2H	0420156144	Doddridge	Horizontal	Marcellus	824,059	0.28%	6,007,620	0.74%
Furbey Unit 1H	0420166139	Doddridge	Horizontal	Marcellus	691,791	0.24%	2,886,929	0.36%
Furbey Unit 2H	0420166138	Doddridge	Horizontal	Marcellus	596,757	0.20%	2,316,600	0.29%
Gainer Unit 1H	0420166216	Doddridge	Horizontal	Marcellus	921,114	0.32%	2,955,082	0.36%
Gainer Unit 2H	0420166226	Doddridge	Horizontal	Marcellus	1,130,519	0.39%	3,898,202	0.48%
Golden Unit 1H	0420166227	Doddridge	Horizontal	Marcellus	2,179,308	0.75%	6,175,259	0.76%
Golden Unit 2H	0420166230	Doddridge	Horizontal	Marcellus	1,917,744	0.66%	5,606,271	0.69%
Irons Unit 1H	0420166245	Doddridge	Horizontal	Marcellus	1,105,851	0.38%	3,898,621	0.48%
Lemie Unit 1H	0420166422	Doddridge	Horizontal	Marcellus	1,213,714	0.42%	4,463,959	0.55%

Fair Market Value Assessment - Antero Resources Corp. (USD in Thousands)

FMV Comparison - Antero Resources Corp.

Valuation as of July 1, 2015

HEI

Fair Market Value Summary [1]

Well Name	NRA #	County	Well Type	Target Interval	Utah FMV	Utah % of Total	West Virginia State Estimate	West Virginia % of Total
Josie Unit 2H	0820166261	Doddridge	Horizontal	Marcellus	1,106,709	0.38%	4,443,178	0.55%
Little Tom Unit 1H	0820156157	Doddridge	Horizontal	Marcellus	1,866,401	0.64%	13,684,181	1.68%
Nickers Unit 2H	0820166311	Doddridge	Horizontal	Marcellus	1,064,049	0.36%	3,166,719	0.39%
Nickers Unit 3H	0820166333	Doddridge	Horizontal	Marcellus	1,099,811	0.38%	3,769,273	0.46%
Pennington South Unit 1I	0820166404	Doddridge	Horizontal	Marcellus	1,324,844	0.45%	3,366,284	0.41%
Proudfoot Unit 1H	0820166313	Doddridge	Horizontal	Marcellus	422,999	0.15%	785,677	0.10%
Proudfoot Unit 2H	0820166320	Doddridge	Horizontal	Marcellus	487,667	0.17%	1,115,805	0.14%
Right Hand Unit 1H	0820156173	Doddridge	Horizontal	Marcellus	1,722,720	0.59%	12,434,011	1.53%
Right Hand Unit 2H	0820166174	Doddridge	Horizontal	Marcellus	2,583,944	0.89%	5,280,092	0.65%
Ruckman Unit 1H	0820156094	Doddridge	Horizontal	Marcellus	5,134,514	1.76%	6,382,595	0.79%
Ruckman Unit 2H	0820156095	Doddridge	Horizontal	Marcellus	3,714,788	1.27%	4,387,999	0.54%
Ruckman Unit 3H	0820156103	Doddridge	Horizontal	Marcellus	3,471,578	1.19%	3,997,917	0.49%
Schulte Unit 1H	0820166165	Doddridge	Horizontal	Marcellus	3,441,849	1.18%	6,703,062	0.82%
Sibley Unit 1R	0820166321	Doddridge	Horizontal	Marcellus	390,383	0.13%	804,762	0.10%
Swisher Unit 1H	0820166295	Doddridge	Horizontal	Marcellus	1,205,975	0.41%	4,604,731	0.57%
Swisher Unit 2H	0820166296	Doddridge	Horizontal	Marcellus	1,378,861	0.47%	5,333,832	0.66%
Tom's Fork Unit 1H	0820156081	Doddridge	Horizontal	Marcellus	4,882,076	1.67%	5,910,178	0.73%
Tom's Fork Unit 2H	0820156082	Doddridge	Horizontal	Marcellus	6,099,213	2.09%	7,813,171	0.96%
Wehley Fork Unit 1H	0820156153	Doddridge	Horizontal	Marcellus	1,641,889	0.56%	11,755,804	1.45%
Yoke Unit 1H	0820156097	Doddridge	Horizontal	Marcellus	4,228,953	1.45%	5,173,861	0.64%
Yoke Unit 2H	0820156098	Doddridge	Horizontal	Marcellus	4,744,343	1.63%	5,911,420	0.73%
Heflin Unit 1H	0820166312	Doddridge	Horizontal	Marcellus	1,123,536	0.39%	4,926,286	0.61%
Joseph Unit 2H	0820166316	Doddridge	Horizontal	Marcellus	1,248,947	0.43%	5,056,696	0.62%
Livingston Unit 1H	0820166223	Doddridge	Horizontal	Marcellus	1,924,786	0.66%	6,445,714	0.79%
Livingston Unit 2H	0820166224	Doddridge	Horizontal	Marcellus	1,752,829	0.60%	5,939,274	0.73%
McConnell Unit 1H	0820166317	Doddridge	Horizontal	Marcellus	782,784	0.27%	3,095,523	0.38%
Olivia Unit 2H	0820166318	Doddridge	Horizontal	Marcellus	602,213	0.21%	2,244,619	0.28%
Squirrel Unit 1H	0820166258	Doddridge	Horizontal	Marcellus	1,311,146	0.45%	4,346,533	0.53%
Vonda Unit 2H	0820166225	Doddridge	Horizontal	Marcellus	1,707,480	0.59%	5,641,465	0.69%
					$ 291,700,028	100.00%	$ 812,541,283	100.00%

Notes to Exhibit

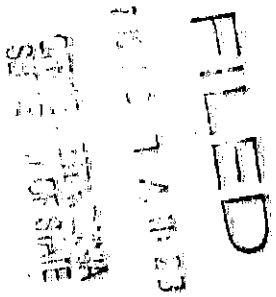
[1] Individual well data provided by Client.

[2] For further detail on the development of the FMV for each individual well, please refer to Exhibit 3.

EXHIBIT
12

OIL AND GAS PROPERTIES ANALYSIS

Tax Year 2016



August 27, 2015
Mark W. Matkovich
State Tax Commissioner
Department of Revenue

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.

	2014	2013	2012	
Inflation Rate	-0.760%	-1.500%	-1.700%	
Safe Rate	0.033%	0.056%	0.088%	
Composite Risk Rate	14.388%	14.834%	14.608%	
Non Liquidity Rate	0.088%	0.074%	0.088%	
Managament Rate	0.500%	0.500%	0.500%	
Property Tax Rate	1.314%	1.314%	1.326%	
Total	15.564%	15.080%	14.908%	
	50.000%	33.333%	16.667%	
	7.782%	5.027%	2.484%	15.293%

Capitalization Rate Rounded to: **15.30%**

MULTIPLIERS FOR 15.3% MID-YEAR LIFE (ANNUALLY)

YEAR		YEAR	
1	0.831261	21	0.054013
2	0.807711	22	0.046846
3	0.700530	23	0.040626
4	0.607672	24	0.035238
5	0.526948	25	0.030562
6	0.457024	26	0.026507
7	0.396575	27	0.022989
8	0.343780	28	0.019938
9	0.298151	29	0.017293
10	0.258598	30	0.014998
11	0.224281	31	0.013008
12	0.194519	32	0.011282
13	0.168707	33	0.009785
14	0.146320	34	0.008486
15	0.126904	35	0.007360
16	0.110064	36	0.006384
17	0.095459	37	0.005536
18	0.082782	38	0.004802
19	0.071808	39	0.004165
20	0.062277	40	0.003612

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	Ravencliff	-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: 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 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	-0.16	-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	Tranton/Deeper *	-0.39	-0.23	-0.13
110	Marcellus	-0.46	-0.29	-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 Rate 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-Flier	-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: 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.

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

HORIZONTAL WELLS (OTHER THAN MARCELLUS)

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

Minimum Working Interest Appraisal = $500 per well

Flat Rate Royalty Multiplier = 5.75

OIL & GAS RESERVE RATES FOR TY 2018			
COUNTY	CO #	DISTRICT #	TY2018 $/AC
BARBOUR	1	1	$50.00
		2	$1.00
		3	$50.00
		4	$50.00
		5	$50.00
		6	$1.00
		7	$50.00
		8	$50.00
		9	$50.00
		10	$50.00
		11	$50.00
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	$1.00
		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	$25.00
		4	$25.00
		5	$1.00
		6	$1.00
		7	$1.00
		8	$1.00

OIL & GAS RESERVE RATES FOR TY 2016			
COUNTY	CO #	DISTRICT #	TY2016 $/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	$10.00
		4	$1.00
		5	$10.00
GREENBRIER	13	1	$1.00
		2	$1.00
		3	$10.00
		4	$10.00
		5	$1.00
		6	$10.00
		7	$10.00
		8	$10.00
		9	$10.00
		10	$1.00
		11	$10.00
		12	$1.00
		13	$1.00
		14	$1.00
		16	$1.00
		16	$10.00
		17	$1.00
		18	$10.00
HAMPSHIRE	14	1	$1.00
		2	$1.00
		3	$1.00
		4	$1.00
		5	$5.00
		6	$1.00
		7	$5.00
		8	$1.00
		9	$5.00
		10	$1.00
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 2016			
COUNTY	CO #	DISTRICT #	TY2016 $/AC
KANAWHA	20	1	$30.00
		2	$30.00
		3	$30.00
		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	$30.00
		16	$30.00
		17	$1.00
		18	$1.00
		19	$30.00
		20	$1.00
		21	$1.00
		22	$1.00
		23	$30.00
		24	$30.00
		25	$30.00
		26	$1.00
		27	$1.00
		28	$30.00
		29	$1.00
		30	$1.00
		31	$1.00
LEWIS	21	1	$30.00
		2	$30.00
		3	$30.00
		4	$30.00
		5	$1.00
		6	$30.00
		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 2016			
COUNTY	CO #	DISTRICT #	TY2016 $/AC
MASON	28	1	$25.00
		2	$25.00
		3	$25.00
		4	$25.00
		5	$25.00
		6	$25.00
		7	$1.00
		8	$1.00
		9	$1.00
		10	$25.00
		11	$1.00
		12	$1.00
		13	$1.00
		14	$25.00
		15	$25.00
		16	$25.00
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	25	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 2016			
COUNTY	CO #	DISTRICT #	TY2016 $/AC
MONROE	32	1	$1.00
		2	$1.00
		3	$1.00
		4	$10.00
		5	$10.00
		6	$1.00
		7	$10.00
		8	$1.00
		9	$10.00
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	$15.00
		6	$1.00
		7	$15.00
		8	$1.00
		9	$15.00
OHIO	35	1	$1.00
		2	$35.00
		3	$35.00
		4	$35.00
		5	$35.00
		6	$35.00
		7	$1.00
		8	$35.00
		9	$35.00
		10	$35.00
PENDLETON	36	1	$1.00
		2	$10.00
		3	$1.00
		4	$1.00
		5	$1.00
		6	$1.00
		7	$10.00

OIL & GAS RESERVE RATES FOR TY 2016			
COUNTY	CO #	DISTRICT #	TY2016 $/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	$1.00
		10	$20.00
		11	$20.00
		12	$1.00
		13	$1.00
		14	$1.00
		15	$1.00
		16	$20.00
		17	$1.00
		18	$1.00
RITCHIE	43	1	$40.00
		2	$1.00
		3	$40.00
		4	$1.00
		5	$40.00
		6	$1.00
		7	$40.00
		8	$1.00
		9	$1.00
		10	$40.00

OIL & GAS RESERVE RATES FOR TY 2016			
COUNTY	CO #	DISTRICT #	TY2016 $/AC
TYLER	48	1	$55.00
		2	$55.00
		3	$1.00
		4	$55.00
		5	$55.00
		6	$55.00
		7	$1.00
		8	$1.00
		9	$1.00
		10	$55.00
UPSHUR	49	1	$50.00
		2	$50.00
		3	$1.00
		4	$50.00
		5	$50.00
		6	$50.00
		7	$50.00
WAYNE	50	1	$20.00
		2	$20.00
		3	$20.00
		4	$1.00
		5	$1.00
		5	$1.00
		7	$1.00
		8	$20.00
		9	$20.00
		10	$20.00
		11	$1.00
		12	$20.00
WEBSTER	51	1	$1.00
		2	$1.00
		3	$1.00
		4	$15.00
		5	$15.00
		6	$15.00
		7	$1.00

MANAGED TIMBER
PROPERTY ANALYSIS

Tax Year 2016

August 27, 2015
Mark W. Matkovich
State Tax Commissioner
Department of Revenue

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
2014	1.6410	26.67%	0.4377
2013	1.1725	13.33%	0.1563
2012	0.7608	6.67%	0.0507
2011	1.5225	20.00%	0.3045
2010	1.9275	33.33%	0.6424

1.592 %

B. **Nonliquidity Rate**

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

Year	Rate	W/A %	W/A Rate
2014	0.0883	33.33%	0.0294
2013	0.0733	26.67%	0.0196
2012	0.1292	20.00%	0.0258
2011	0.1617	13.33%	0.0242
2010	0.3200	6.67%	0.0213

0.120 %

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

Year	Rate	W/A %	W/A Rate
2014	1.8992	33.33%	0.5663
2013	2.2758	26.67%	0.6070
2012	2.1600	20.00%	0.4320
2011	2.3883	13.33%	0.3184
2010	2.3233	6.67%	0.1550

2.079 %

D. **Management Factor of 0.5%**

0.500 %

E. **Property Tax Component**

(60% of Class II Rate)

Year	Rate	W/A %	W/A Rate
2014	0.714	33.33%	0.2380
2013	0.705	26.67%	0.1665
2012	0.714	20.00%	0.1426
2011	0.705	13.33%	0.0944
2010	0.708	6.67%	0.0472

0.711 %

F. **Inflation Rate:**

(Bureau of Labor Statistics)

Year	Rate	W/A %	W/A Rate
2014	0.760	33.33%	0.2533
2013	1.500	26.67%	0.4001
2012	1.700	13.33%	0.2266
2011	3.000	6.67%	0.2001
2010	1.500	20.00%	0.3000

(1.360) %

TOTAL REQUIRED RATE OF RETURN (REAL)	3.822 %
LESS: PROPERTY TAX COMPONENT	(0.711)
TOTAL DISCOUNT COMPONENT	2.911 %

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
2014	1.6410	26.67%	0.4377
2013	1.1725	13.33%	0.1563
2012	0.7606	6.67%	0.0507
2011	1.5225	20.00%	0.3046
2010	1.9275	33.33%	0.6424

1.592 %

B. **Nonliquidity Rate**

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

Year	Rate	W/A %	W/A Rate
2014	0.0883	33.33%	0.0294
2013	0.0733	26.67%	0.0196
2012	0.1292	20.00%	0.0258
2011	0.1817	13.33%	0.0242
2010	0.3200	6.67%	0.0213

0.120 %

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

Year	Rate	W/A %	W/A Rate
2014	1.6992	33.33%	0.5665
2013	2.2758	26.67%	0.6070
2012	2.1600	20.00%	0.4320
2011	2.3883	13.33%	0.3184
2010	2.3233	6.67%	0.1550

2.078 %

D. **Management Factor of 0.5%**

0.500 %

E. **Property Tax Component**

(80% of Blended III&IV Rates)

Year	Rate	W/A %	W/A Rate
2014	1.314	33.33%	0.4380
2013	1.314	26.67%	0.3504
2012	1.328	20.00%	0.2652
2011	1.326	13.33%	0.1768
2010	1.314	6.67%	0.0876

1.318 %

F. **Inflation Rate:**

(Bureau of Labor Statistics)

Year	Rate	W/A %	W/A Rate
2014	0.760	33.33%	0.2533
2013	1.500	26.67%	0.4001
2012	1.700	13.33%	0.2266
2011	3.000	6.67%	0.2001
2010	1.500	20.00%	0.3000

(1.380) %

TOTAL REQUIRED RATE OF RETURN (REAL)	4.229 %
LESS: PROPERTY TAX COMPONENT	(1.310)
TOTAL DISCOUNT COMPONENT	2.911 %

West Virginia Wgt/Avg Managed Timberland Stumpage Prices

REGION 1 - Sawtimber

Year	Volume	$/MBF	W/A%	$/MBF
2014	12,182.06	176.34	33.33%	58.78
2013	19,017.77	177.45	26.67%	47.32
2012	12,828.18	186.56	20.00%	37.31
2011	11,195.24	144.89	13.33%	19.32
2010	15,157.85	173.82	6.67%	11.57
	70,180.80			174.30

REGION 1 - Pulpwood *

Year	Volume	$/CORD	W/A%	$/CORD
2014	464.40	5.40	33.33%	1.80
2013	6,102.20	2.96	26.67%	0.79
2012	48,387.00	8.42	20.00%	1.28
2011	48.10	9.67	13.33%	1.29
2010	1,859.30	6.90	6.67%	0.46
	53,861.00			5.62

REGION 2 - Sawtimber

Year	Volume	$/MBF	W/A%	$/MBF
2014	22,001.60	162.47	33.33%	80.82
2013	25,896.88	177.79	26.67%	47.41
2012	28,840.98	149.01	20.00%	29.80
2011	12,839.41	166.28	13.33%	20.83
2010	56,676.40	163.96	6.67%	10.93
	142,784.44			169.80

REGION 2 - Pulpwood

Year	Volume	$/CORD	W/A%	$/CORD
2014	2,168.10	5.04	33.33%	1.68
2013	119,279.40	12.83	26.67%	3.42
2012	22,647.40	2.86	20.00%	0.57
2011	5,235.20	6.76	13.33%	0.90
2010	23,291.90	4.15	6.67%	0.28
	172,622.00			6.85

REGION 3 - Sawtimber

Year	Volume	$/MBF	W/A%	$/MBF
2014	91,487.44	280.62	33.33%	93.81
2013	161,397.70	275.63	26.67%	73.50
2012	111,920.80	201.87	20.00%	40.31
2011	102,218.30	201.45	13.33%	26.86
2010	145,592.20	211.21	6.67%	14.08
	612,596.24			248.28

REGION 3 - Pulpwood

Year	Volume	$/CORD	W/A%	$/CORD
2014	170,736.30	3.57	33.33%	1.19
2013	153,197.40	7.76	26.67%	2.07
2012	183,132.80	6.39	20.00%	1.28
2011	159,040.70	7.34	13.33%	0.98
2010	123,858.50	9.34	6.67%	0.62
	789,985.50			6.14

COAL PROPERTIES ANALYSIS

Tax Year 2016

August 27, 2015
Mark W. Matkovich
State Tax Commissioner
Department of Revenue

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-1I, 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 CY2014 FOR TY2015 APPLICATION

GRAND SUMMARY ALL SOURCES 2014	STEAM SPOT	STEAM TERM	MET	
PSC	$53.55	$55.85		
FERC	$55.77	$52.56		
Coal Market Publication		$57.61	(Platts-CAPP-CBX)	
Active Return Summary		$56.38	52.7 MM tons	$103.35 7.6 MM Tons

STATE STEAM PRICE (SPOT Market)	$60.35 FERC & PSC, 3 YR AVE
STATE MET PRICE	$103.35 Active Return

	Spot Sales	Term Sales	Total
2014 WVPSC Tons reported in millions	2,170,351	15,503,554	17,674,208

COAL TY2016 ROYALTY RATES	2014 1YR		2013 2YR		2012 3YR		2011 4YR		2010 5YR	
	%S	%D	%S	%D	%S	%O	%S	%D	%S	%O
TOTAL RECORDS	1,447	805	1,384	599	1,808	2,756	1,877	2,241	2,448	3,197
SUM of PERCENT	8,869.07	4,695.25	8,087.34	3,313.93	11,861.85	14,883.03	5,924.26	11,161.06	14,406.71	18,405.76
STRAIGHT AVERAGE	6.13	5.19	5.97	5.53	6.23	5.32	5.32	4.96	5.89	6.13
MEDIAN	6.00	5.00	5.00	5.00	6.00	5.13	6.00	5.00	5.22	6.00
WEIGHTED AVERAGE(by Mines)	6.84	5.49	6.86	5.84	6.45	6.25	6.27	6.72	6.24	5.66
TENTATIVE RATE DEEP (%)	5.50									
TENTATIVE RATE SURFACE (%)	6.50									

ROYALTY RATE CALCULATIONS						
Steam Coal/ Deep Mine	$60.35	per ton X	5.50%	=	$3.50	per ton
Metallurgical Coal/ Deep Mine	$103.35	per ton X	6.50%	=	$5.99	per ton
Steam Coal/ Surface Mine	$60.35	per ton X	5.50%	=	$3.82	per ton
Metallurgical Coal/ Surface Mine	$103.35	per ton X	6.50%	=	$6.71	per ton

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 biennial (every other year) 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 the Market Interest Factor, the Market Minability Factor, the Use Conflict Factor and the Environmental Factor have been revised for Tax Year 2015. 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 >= 20 Then TransFactor = 20

If Trans_Ct < 20 And Trans_Ct >= 10 Then TransFactor = 40

Else TransFactor = 80

Market Minability Factor
This is the relationship between property location and mining, through time. Determining feature is count of mines within the radius.
Radius = 2.5 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 < 5 Then WellFactor = 0

WellDensity >= 5 And WellDensity < 10 Then WellFactor = 20

WellDensity >= 10 And WellDensity < 20 Then WellFactor = 40

WellDensity > 20 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 <=10 and Null Then EnvFactor = 0

Envrate >10 and Envrate <= 30 Then EnvFactor = 20

Envrate > 30 and Envrate < 60 Then EnvFactor = 40

Envrate >= 60 Then EnvFactor = 80

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.

Safe Rate 90 day Treasury Bills

			Safe Rate
January	December	2014	0.033%
January	December	2013	0.056%
January	December	2012	0.066%

Risk Rate Interest differential between Loan Rate and 90 day Treasury Bills

Loan Rate*		Debt Risk Rate
2014	5.25%	5.217%
2013	5.25%	5.192%
2012	5.25%	5.184%

*Prime plus 2%

Equity Differential between Equity Rates and 90 day Treasury Bills

Equity Rate**		Equity Risk Rate
2014	[11.75%/(1-.30)]-0.033	16.753%
2013	[11.75%/(1-.30)]-0.056	16.726%
2012	[11.75%/(1-.30)]-0.066	16.700%

** *Value Line Investment Survey Analysis*

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

	Equity Rate	Debt Rate	Composite Risk
2014	10.052%	2.087%	12.139%
2013	10.037%	2.077%	12.114%
2012	10.020%	2.066%	12.086%

Note: Debt Equity Ratio Debt 40% Equity 60%

Non Liquidity Rate Interest differential between 90 day Treasury Bills and a 1 year Treasury Bill which reflects a reasonable time necessary to sell active property.

			1yr T Bill	90 d T Bill	Non Liquidity Rate
January	December	2014	0.121%	0.033%	0.088%
January	December	2013	0.132%	0.058%	0.074%
January	December	2012	0.175%	0.085%	0.089%

Management Rate Charges for the management of investment portfolios.

Fixed Rate (by Rule) 0.500%

Inflation Rate

January	December	2014	0.750%
January	December	2013	1.500%
January	December	2012	1.700%

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

January	December	2014	60% of 2.190 =	1.314%
January	December	2013	60% of 2.190 =	1.314%
January	December	2012	60% of 2.210 =	1.326%

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.

	2014	2013	2012
Inflation Rate	-0.750%	-1.500%	-1.700%
Safe Rate	0.033%	0.056%	0.066%
Composite Risk Rate	12.139%	12.114%	12.086%
Non Liquidity Rate	0.088%	0.074%	0.089%
Management Rate	0.500%	0.500%	0.500%
Property Tax Rate	1.314%	1.314%	1.325%
Total	13.314%	12.560%	12.387%

Three Yr Average: 12.754% Rounded to: 12.80%

CAPITALIZATION RATE - 12.80%

MULTIPLIERS:		%		%
	1YR	0.942	9YR	5.491
	2YR	1.775	10YR	5.809
	3YR	2.515	11YR	6.092
	4YR	3.172	12YR	6.342
	5YR	3.764	13YR	6.564
	6YR	4.289	14YR	5.761
	7YR	4.727	15YR	5.935
	8YR	5.132		

STATE OF WEST VIRGINIA

Department of Revenue
State Tax Department

Earl Ray Tomblin
Governor

Mark W. Matkovich
State Tax Commissioner

June 30, 2016

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

Dear Secretary Tennant:

Attached are tentative natural resource property valuation variables for the 2017 Tax Year that have been developed by the State Tax Department for use in appraising coal, oil, natural gas, managed timberland and other natural resource properties for ad valorem tax purposes.

The State Tax Department will accept written public comments on all variables until August 1, 2016. Final valuation variables will be filed on or before September 1, 2016.

Public comments concerning the attached variables should be forwarded to the following address:

West Virginia State Tax Department
Property Tax Division
Attention: Jeff Amburgey
P. O. Box 2389
Charleston, West Virginia 25328-2389

Sincerely,

Mark W. Matkovich
State Tax Commissioner

MWM/ja/j

Attachment

OIL AND GAS **TY 2017**

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	2016	0.053%

Risk Rate (Interest differential between Loan Rate and 3-Month Constant Maturity Interest Rates)

Loan Rate*		Risk Rate
2016	5.260%	5.207%

*Prime plus 2%

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

Equity Rate**	Risk Rate
2016 [12.25%/(1-.37)]-0.053%	19.391%

** *Value Line Investment Survey Analysis*

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

	Equity Rate	Debt Rate		Composite Risk	
2016	12.8042%	1.822%		15.166%	***
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.

			1yr T Bill	90 day T Bill	Non Liquidity Rate
January	December	2016	0.322%	0.053%	0.269%

Management Rate Charges for the management of investment portfolios.

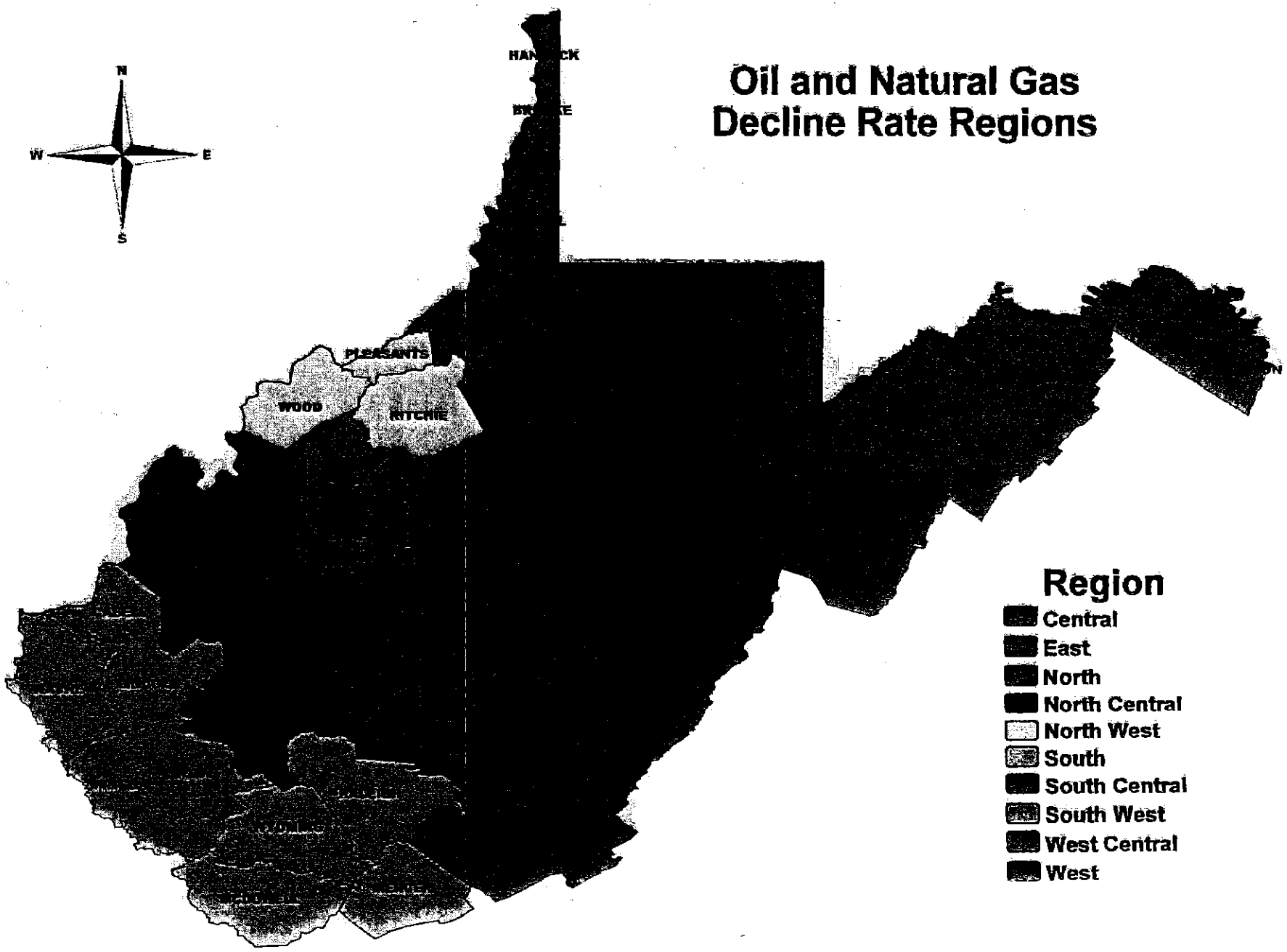
Fixed Rate (by Rule) 0.600%

Property Tax Rate Sixty percent (60%) of State average Class III property tax rate

2016	60% of 2.19	1.314%

Inflation Rate

January	December	2016	0.730%


Oil and Natural Gas
Decline Rate Regions
N
W
E
S
PLEASANTS
WOOD
RITCHIE
Region
Central
East
North
North Central
North West
South
South Central
South West
West Central
West

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	Huntervilie	-0.31	-0.31	-0.14
40	Fox, Haverty	-0.36	-0.21	-0.15
93	4th Sand	-0.42	-0.32	-0.06
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
111	Utica*	-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 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
16	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	-0.18	-0.11
34	Elk, Benson, Riley	-0.42	-0.27	-0.08
37	Elk, Alexender,Benson	-0.49	-0.23	-0.08
38	Elk, Alexander,Benson +	-0.38	-0.20	-0.12
40	Fox, Heverty	-0.46	-0.16	-0.08
50	Rhineetreet	-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	Belltown	-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, Belltown, 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	-0.80	-0.35	-0.17
76	Fox +	-0.46	-0.16	-0.09
77	Haverty, Elk, Benson (No Alexander)	-0.35	-0.18	-0.16
78	Haverty	-0.45	-0.16	-0.15
79	Riley	-0.44	-0.22	-0.10
80	Speechley	-0.30	-0.16	-0.09
81	Alexender, Benson, Speechley	-0.39	-0.24	-0.10
82	Haverty, Elk, Alexender	-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 +	-0.28	-0.15	-0.13
90	Gordon, Injun All	-0.41	-0.23	-0.23
91	Squew	-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	-0.28	-0.07
95	Injun/Weir	-0.51	-0.26	-0.09
96	Maxton	-0.70	-0.27	-0.08
97	Coalbed Methene (Vertical)	-0.23	-0.08	-0.05
98	Coelbed Methene (Horizontal)	-0.05	-0.05	-0.32
109	Trenton/Deeper *	-0.38	-0.21	-0.11
110	Marcellus	-0.59	-0.29	-0.23
111	Utica**	-0.59	-0.29	-0.23
9	Exception (Medien)	-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: 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, Ravencliff	-0.29	-0.29	-0.17
25	Berea +	-0.37	-0.12	-0.08
26	Ravencliff	-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, Ravencliff	-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
111	Utica*	-0.36	-0.19	-0.09
9	Exception (Median)	-0.36	-0.19	-0.09
10	Non-Filer	-0.23	-0.08	-0.05

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	-0.38	-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
111	Utica*	-0.38	-0.22	-0.10
9	Exception (Median)	-0.38	-0.22	-0.10
10	Non-Filer	-0.18	-0.11	-0.04

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
111	Utica*	-0.35	-0.20	-0.09
9	Exception (Median)	-0.35	-0.20	-0.09
10	Non-Filer	-0.08	-0.08	-0.03

Home Use Only Wells: Appraised at $500 per well

Industrial Use Only Wells:* MCF usage X $ 2.62/MCF
BBL usage X $48.66/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 as well as regional data. The 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 2017			
COUNTY	CO #	DISTRICT #	TY2017 $/AC
CABELL	6	1	$26.00
		2	$1.00
		3	$26.00
		4	$26.00
		5	$1.00
		6	$1.00
		7	$1.00
		8	$26.00
		9	$1.00
		10	$26.00
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	$90.00
		2	$90.00
		3	$90.00
		4	$90.00
		5	$90.00
		6	$90.00
		7	$90.00
		8	$90.00
		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 2017			
COUNTY	CO #	DISTRICT #	TY2017 $/AC
HARDY	16	1	$1.00
		2	$1.00
		3	$1.00
		4	$1.00
		5	$1.00
		6	$1.00
HARRISON	17	1	$90.00
		2	$1.00
		3	$1.00
		4	$1.00
		5	$90.00
		6	$1.00
		7	$90.00
		8	$1.00
		9	$90.00
		10	$1.00
		11	$90.00
		12	$90.00
		13	$1.00
		14	$90.00
		15	$90.00
		16	$1.00
		17	$1.00
		18	$90.00
		19	$1.00
		20	$90.00
		21	$1.00
JACKSON	18	1	$40.00
		2	$40.00
		3	$1.00
		4	$40.00
		5	$1.00
		6	$40.00
		7	$40.00
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 2017			
COUNTY	CO #	DISTRICT #	TY2017 $/AC
LOGAN	23	1	$15.00
		2	$15.00
		3	$15.00
		4	$15.00
		5	$1.00
		6	$1.00
		7	$1.00
		8	$15.00
		9	$1.00
MARION	24	1	$1.00
		2	$90.00
		3	$1.00
		4	$1.00
		5	$1.00
		6	$1.00
		7	$1.00
		8	$1.00
		9	$90.00
		10	$1.00
		11	$90.00
		12	$90.00
		13	$1.00
		14	$1.00
		15	$1.00
		16	$90.00
		17	$1.00
		18	$90.00
		19	$90.00
		20	$1.00
		21	$1.00
		22	$1.00
MARSHALL	25	1	$1.00
		2	$1.00
		3	$100.00
		4	$100.00
		5	$100.00
		6	$1.00
		7	$100.00
		8	$1.00
		9	$100.00
		10	$1.00
		11	$1.00
		12	$100.00
		13	$100.00
		14	$100.00
		15	$100.00
		16	$1.00

OIL & GAS RESERVE RATES FOR TY 2017			
COUNTY	CO #	DISTRICT #	TY2017 $/AC
MINERAL	29	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
		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	$30.00
		2	$1.00
		3	$30.00
		4	$30.00
		5	$30.00
		6	$1.00
		7	$30.00
		8	$30.00
		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	$30.00
		19	$1.00

OIL & GAS RESERVE RATES FOR TY 2017			
COUNTY	CO #	DISTRICT #	TY2017 $/AC
PLEASANTS	37	1	$45.00
		2	$45.00
		3	$45.00
		4	$45.00
		5	$45.00
		6	$1.00
		7	$45.00
		9	$45.00
POCAHONTAS	38	1	$1.00
		2	$1.00
		3	$1.00
		4	$1.00
		5	$1.00
		6	$1.00
		7	$1.00
		8	$1.00
PRESTON	39	1	$30.00
		2	$30.00
		3	$30.00
		4	$30.00
		5	$30.00
		6	$30.00
		7	$1.00
		8	$30.00
		9	$1.00
		10	$30.00
		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	$25.00
		2	$25.00
		3	$1.00
		4	$25.00
		5	$1.00
		6	$1.00
		7	$1.00
		8	$25.00
		9	$1.00
		10	$25.00
		11	$25.00
		12	$25.00
		13	$1.00

OIL & GAS RESERVE RATES FOR TY 2017			
COUNTY	CO #	DISTRICT #	TY2017 $/AC
ROANE	44	1	$35.00
		2	$35.00
		3	$35.00
		4	$35.00
		5	$1.00
		6	$35.00
		7	$35.00
		8	$1.00
		9	$35.00
SUMMERS	46	1	$1.00
		2	$1.00
		3	$1.00
		4	$1.00
		5	$10.00
		6	$1.00
		7	$1.00
TAYLOR	48	1	$1.00
		2	$1.00
		3	$90.00
		4	$90.00
		5	$90.00
		6	$90.00
		7	$90.00
TUCKER	47	1	$20.00
		2	$20.00
		3	$1.00
		4	$1.00
		5	$20.00
		6	$1.00
		7	$1.00
		8	$1.00
		9	$20.00
		10	$1.00
		11	$20.00
		12	$1.00

OIL & GAS RESERVE RATES FOR TY 2017			
COUNTY	CO #	DISTRICT #	TY2017 $/AC
WETZEL	52	1	$80.00
		2	$90.00
		3	$90.00
		4	$90.00
		5	$90.00
		6	$1.00
		7	$1.00
		8	$90.00
		9	$1.00
		10	$1.00
		11	$1.00
		12	$90.00
		13	$1.00
WIRT	53	1	$35.00
		2	$35.00
		3	$35.00
		4	$1.00
		5	$35.00
		6	$35.00
		7	$35.00
		8	$35.00
WOOD	54	1	$40.00
		2	$40.00
		3	$40.00
		4	$40.00
		5	$1.00
		6	$40.00
		7	$40.00
		8	$40.00
		9	$40.00
		10	$1.00
		11	$40.00
		12	$40.00
		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
		9	$1.00
		9	$1.00
		10	$20.00

MANAGED TIMBERLAND APPRAISAL RATES
TAX YEAR 2017

(based on market 2011-2015)

Rates Per Acre

Class II Parcels

	Grade 1	Grade 2	Grade 3
Region 1	$205	$140	$50
Region 2	$200	$140	$50
Region 3	$265	$175	$50
Region 4	$270	$185	$55
Region 5	$205	$140	$50

Class III/IV Parcels

	Grade 1	Grade 2	Grade 3
Region 1	$225	$150	$75
Region 2	$225	$150	$75
Region 3	$240	$165	$75
Region 4	$245	$165	$75
Region 5	$225	$150	$75

Region 1 = Brooke, Cabell, Hancock, Jackson, Marshall, Mason, Ohio, Pleasants, Putnam, Tyler, Watzel, 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 / Grades	35 yrs.	45 yrs.	55 yrs.	80 yrs.		Total
1 - Site Index 75 or more	4.6 cords 1.5 Mbf	-- --	2.6 cords 4.4 Mbf	3.3 cords 8.6 Mbf		10.5 cords 14.5 Mbf
2 - Site Index 65 - 75	3.3 cords 1.0 Mbf	-- --	7.0 cords 3.2 Mbf	4.6 cords 5.5 Mbf		14.9 cords 9.7 Mbf
3 - Site Index less than 65	-- --	3.1 cords 0.8 Mbf	-- --	15.4 cords 3.7 Mbf		18.5 cords 4.5 Mbf

Stumpage Prices:

	Sawtimber	Pulpwood
Stumpage Price Adjustment Factor	0.00%	1.88%

SAWTIMBER	Current	1.0000 $/MBF at age	1.0000 $/MBF at age	1.0000 $/MBF at age	1.0000 $/MBF at age
Region	$/MBF	35	45	55	80
Region 1	181.34	181.34	181.34	181.34	181.34
Region 2	172.92	172.92	172.92	172.92	172.92
Region 3	239.28	239.28	239.28	239.28	239.28
Region 4	235.49	235.49	235.49	235.49	235.49
Region 5	190.59	190.59	190.59	190.59	190.59

PULPWOOD:		1.8998 $/cd at age	2.2818 $/cd at age	2.7407 $/cd at age	4.3339 $/cd at age
Region	$/Cord	35	45	55	80
Region 1	8.64	18.23	19.49	23.41	37.02
Region 2	8.73	12.79	15.38	18.46	29.19
Region 3	5.13	9.75	11.71	14.07	22.24
Region 4	8.10	16.39	18.49	22.21	35.12
Region 5	8.77	10.98	13.16	15.81	25.00

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	(6.8% * (1-.35))	4.23%
Effective WV Severance Tax Rate	(1.5% * (1-.35)	0.98%

Yield (Volumes) (80 year rotation)

Timberland Productivity Grades	Site Index	Yield - MBF	Yield - Cords
Grade I	75 or more	14.6	10.5
Grade II	65-74	9.7	14.9
Grade III	less than 65	4.8	18.8

Stumpage Prices:

	Sawtimber	Pulpwood
Stumpage Price Adjustment Factor	0.00%	1.85%

SAWTIMBER:	Current				
		1.0000	1.0000	1.0000	1.0000
Region	$/MBF	$/MBF at age 38	$/MBF at age 45	$/MBF at age 55	$/MBF at age 80
Region 1	181.34	181.34	181.34	181.34	181.34
Region 2	172.92	172.92	172.92	172.92	172.92
Region 3	239.25	239.25	239.25	239.25	239.25
Region 4	235.49	235.49	235.49	235.49	235.49
Region 5	190.59	190.59	190.59	190.59	190.59

PULPWOOD:					
		1.8998	2.2816	2.7407	4.3339
Region	$/Cord	$/cd at age 38	$/cd at age 45	$/cd at age 55	$/cd at age 80
Region 1	8.64	16.23	19.49	23.41	37.02
Region 2	6.73	12.79	15.36	18.45	29.18
Region 3	5.13	9.75	11.71	14.07	22.24
Region 4	8.10	15.39	18.49	22.21	35.12
Region 5	5.77	10.96	13.16	15.81	25.00

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	(1.5% * (1-.35)	0.98%

Yield (Volumes) (80 yeer 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 then 65	4.5	15.5

REGION 4 - Sawtimber

Year	Volume	$/MBF	W/A%	$/MBF
2015	6,644.42	223.42	33.33%	74.47
2014	8,020.80	303.89	26.67%	81.04
2013	12,820.20	211.47	20.00%	42.29
2012	4,806.73	199.47	13.33%	26.60
2011	16,517.51	178.40	6.67%	11.88
	44,811.76			235.48

REGION 4 - Pulpwood

Year	Volume	$/CORD	W/A%	$/CORD
2015	6,137.40	7.22	33.33%	2.41
2014	7,765.20	8.16	26.67%	2.18
2013	15,488.60	8.32	20.00%	1.66
2012	7,362.20	9.61	13.33%	1.28
2011	21,074.10	6.64	6.67%	0.58
	57,847.50			8.10

REGION 5 - Sawtimber

Year	Volume	$/MBF	W/A%	$/MBF
2015	37,714.40	160.16	33.33%	53.36
2014	21,861.40	266.95	26.67%	70.92
2013	31,859.00	198.20	20.00%	39.64
2012	10,867.05	136.83	13.33%	18.45
2011	24,760.43	122.43	6.67%	8.16
	128,862.28			190.69

REGION 5 - Pulpwood

Year	Volume	$/CORD	W/A%	$/CORD
2015	2,889.50	4.05	33.33%	1.36
2014	10,191.40	6.19	26.67%	1.66
2013	18,292.50	7.13	20.00%	1.43
2012	8,266.30	6.93	13.33%	0.92
2011	8,432.30	8.26	6.67%	0.42
	48,102.10			5.77

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 Bonds-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 1I.

Safe Rate 60 day Treasury Bills

			Safe Rate
January	December	2015	0.053%
January	December	2014	0.033%
January	December	2013	0.066%

Risk Rate Interest differential between Loan Rate and 90 day Treasury Bills

Loan Rate*		Debt Risk Rate
2015	5.26%	5.207%
2014	5.25%	6.217%
2013	5.25%	6.192%

*Prime plus 2%

Equity Differential between Equity Rates and 60 day Treasury Bills

Equity Rate**		Equity Risk Rate
2015	[14.75%/(1-.30)]-0.053	21.036%
2014	[15.50%/(1-.30)]-0.033	22.110%
2013	[13.25%/(1-.30)]-0.056	18.871%

** *Value Line Investment Survey Analysis*

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

	Equity Rate	Debt Rate	Composite Risk
2015	13.675%	1.822%	15.497%
2014	15.477%	1.565%	17.042%
2013	11.322%	2.077%	13.398%

Note: Debt Equity Ratio Debt 35% Equity 65%

Non Liquidity Rate Interest differential between a 90 day Treasury Bill and a 1 year Treasury Bill which reflects a reasonable time necessary to sell active property.

			1yr T Bill	90 d T Bill	Non Liquidity Rate
January	December	2015	0.322%	0.053%	0.269%
January	December	2014	0.121%	0.033%	0.088%
January	December	2013	0.132%	0.066%	0.074%

Management Rate Charges for the management of investment portfolios.

Fixed Rate (by Rule) 0.500%

Inflation Rate

January	December	2015	0.730%
January	December	2014	0.760%
January	December	2013	1.500%

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

	2015	2014	2013
Inflation Rate	-0.730%	-0.760%	-1.500%
Safe Rate	0.053%	0.033%	0.056%
Composite Risk Rate	15.497%	17.042%	13.398%
Non Liquidity Rate	0.288%	0.088%	0.074%
Management Rate	0.500%	0.500%	0.500%
Total	15.589%	16.903%	12.631%

Three Yr Average: 15.008 Rounded to: **15.00%**

CAPITALIZATION RATE - 15.0%			
MULTIPLIERS:	%		%
1YR	0.933	9YR	6.117
2YR	1.743	10YR	6.382
3YR	2.448	11YR	5.613
4YR	3.082	12YR	5.613
5YR	3.565	13YR	5.987
8YR	4.058	14YR	6.139
7YR	4.482	15YR	6.271
8YR	4.812		

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.

OTHER MINED MINERAL PROPERTY ANALYSIS

Tax Year 2017

June 30, 2016
Mark W. Matkovich
State Tax Commissioner
Department of Revenue

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	TY2017 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**

OIL AND GAS PROPERTIES ANALYSIS

Tax Year 2017

September 1, 2016
Mark W. Matkovich
State Tax Commissioner
Department of Revenue

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.

	2015	2014	2013	
Inflation Rate	-0.730%	-0.780%	-1.600%	
Safe Rate	0.053%	0.033%	0.056%	
Composite Risk Rate	15.156%	14.368%	14.634%	
Non Liquidity Rate	0.269%	0.055%	0.074%	
Management Rate	0.500%	0.500%	0.500%	
Property Tax Rate	1.314%	1.314%	1.314%	
Total	16.692%	16.564%	15.080%	
	50.000%	33.333%	16.667%	
	8.298%	6.166%	2.613%	16.897%

Capitalization Rate Rounded to: 16.00%

MULTIPLIERS FOR 16.0% MID-YEAR LIFE (ANNUALLY)

YEAR		YEAR	
1	0.826477	21	0.047710
2	0.800411	22	0.041129
3	0.690009	23	0.035456
4	0.594835	24	0.030568
5	0.512789	25	0.026350
6	0.442060	26	0.022715
7	0.381086	27	0.019582
8	0.328622	28	0.016881
9	0.283209	29	0.014553
10	0.244148	30	0.012546
11	0.210470	31	0.010815
12	0.181440	32	0.009323
13	0.156414	33	0.008037
14	0.134840	34	0.006929
15	0.116241	35	0.005973
16	0.100208	36	0.005148
17	0.086385	37	0.004438
18	0.074471	38	0.003827
19	0.064199	39	0.003298
20	0.055344	40	0.002844

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, Bailtown+	-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	Ravencliff	-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-Flier	-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: 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	Alexender, Benson, Riley	-0.26	-0.16	-0.15
15	Benson, Riley	-0.18	-0.16	-0.06
93	4th Send	-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
111	Utica*	-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 West				
North West: Pleasants, Ritchie, Wood				
Code	Formation	Year 1	Year 2	Year 3 +
2	Huron, Rhinestrsst	-0.41	-0.26	-0.07
4	Huron	-0.42	-0.24	-0.14
5	Huron, Shales above Huron	-0.38	-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	-0.06	-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, Belltown, 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	-0.06
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	-0.46	-0.29	-0.23
111	Utica**	-0.46	-0.29	-0.23
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.

**New Formation(s) involved in recent production. These will be valued with the Marcellus 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 Ratee 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, Rhineatreet	-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.

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.

GAS

- % Working Interest Expenses for Typical Producing Well	=	45%
- 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/UTICA

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

- % Working Interest Expenses for Horizontal Producing Well	=	20%
- Maximum Operating Expenses	=	$175,000

HORIZONTAL WELLS (OTHER THAN MARCELLUS/UTICA AND COAL BED METHANE)

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

Minimum Working Interest Appraisal = $500 per well

Flat Rate Royalty Multiplier = 5.75

OIL & GAS RESERVE RATES FOR TY 2017			
COUNTY	CO #	DISTRICT #	TY2017 $/AC
BARBOUR	1	1	$80.00
		2	$1.00
		3	$80.00
		4	$60.00
		5	$80.00
		6	$1.00
		7	$80.00
		8	$60.00
		9	$80.00
		10	$60.00
		11	$80.00
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	$1.00
		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	$100.00
		4	$100.00
		5	$1.00
		6	$1.00
		7	$1.00
		8	$1.00

OIL & GAS RESERVE RATES FOR TY 2017			
COUNTY	CO #	DISTRICT #	TY2017 $/AC
GILMER	11	1	$26.00
		2	$26.00
		3	$26.00
		4	$1.00
		5	$1.00
		6	$25.00
GRANT	12	1	$1.00
		2	$1.00
		3	$1.00
		4	$1.00
		5	$1.00
GREENBRIER	13	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
		11	$1.00
		12	$1.00
		13	$1.00
		14	$1.00
		15	$1.00
		16	$1.00
		17	$1.00
		18	$1.00
HAMPSHIRE	14	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
HANCOCK	15	1	$26.00
		2	$1.00
		3	$26.00
		4	$26.00
		5	$1.00
		6	$1.00

OIL & GAS RESERVE RATES FOR TY 2017			
COUNTY	CO #	DISTRICT #	TY2017 $/AC
KANAWHA	20	1	$30.00
		2	$1.00
		3	$30.00
		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
		12	$1.00
		14	$1.00
		15	$30.00
		16	$20.00
		17	$1.00
		18	$1.00
		19	$30.00
		20	$1.00
		21	$1.00
		22	$1.00
		23	$20.00
		24	$30.00
		25	$20.00
		26	$1.00
		27	$1.00
		28	$20.00
		29	$1.00
		30	$1.00
		31	$1.00
LEWIS	21	1	$35.00
		2	$35.00
		2	$25.00
		4	$35.00
		5	$1.00
		6	$35.00
		7	$1.00
		8	$1.00
		9	$1.00
LINCOLN	22	1	$25.00
		2	$25.00
		3	$1.00
		4	$25.00
		5	$25.00
		6	$25.00
		7	$25.00
		8	$25.00
		9	$25.00
		10	$1.00

OIL & GAS RESERVE RATES FOR TY 2017			
COUNTY	CO #	DISTRICT #	TY2017 $/AC
MASON	26	1	$1.00
		2	$20.00
		3	$20.00
		4	$20.00
		5	$20.00
		6	$25.00
		7	$1.00
		8	$1.00
		9	$1.00
		10	$20.00
		11	$1.00
		12	$1.00
		13	$1.00
		14	$20.00
		10	$20.00
		16	$25.00
MC DOWELL	27	1	$20.00
		2	$1.00
		3	$20.00
		4	$20.00
		0	$1.00
		6	$20.00
		7	$1.00
		8	$1.00
		6	$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
		6	$1.00
		6	$10.00
		7	$1.00
		6	$1.00
		8	$10.00
		10	$1.00
		11	$15.00

OIL & GAS RESERVE RATES FOR TY 2017			
COUNTY	CO #	DISTRICT #	TY2017 $/AC
MONROE	32	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
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	$1.00
		2	$16.00
		3	$16.00
		4	$16.00
		5	$1.00
		6	$1.00
		7	$16.00
		8	$1.00
		9	$1.00
OHIO	35	1	$1.00
		2	$1.00
		3	$100.00
		4	$100.00
		5	$1.00
		6	$100.00
		7	$1.00
		8	$1.00
		9	$1.00
		10	$1.00
PENDLETON	36	1	$1.00
		2	$10.00
		3	$1.00
		4	$1.00
		5	$1.00
		6	$1.00
		7	$10.00

OIL & GAS RESERVE RATES FOR TY 2017			
COUNTY	CO #	DISTRICT #	TY2017 $/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	$1.00
		10	$20.00
		11	$20.00
		12	$1.00
		13	$1.00
		14	$1.00
		15	$1.00
		16	$20.00
		17	$1.00
		18	$1.00
RITCHIE	43	1	$70.00
		2	$1.00
		3	$70.00
		4	$1.00
		5	$70.00
		6	$1.00
		7	$70.00
		8	$1.00
		9	$1.00
		10	$70.00

OIL & GAS RESERVE RATES FOR TY 2017			
COUNTY	CO #	DISTRICT #	TY2017 $/AC
TYLER	49	1	$90.00
		2	$90.00
		3	$1.00
		4	$90.00
		5	$90.00
		6	$90.00
		7	$1.00
		9	$1.00
		9	$1.00
		10	$90.00
UPSHUR	49	1	$70.00
		2	$70.00
		3	$1.00
		4	$70.00
		5	$70.00
		6	$70.00
		7	$70.00
WAYNE	50	1	$20.00
		2	$20.00
		3	$1.00
		4	$1.00
		5	$1.00
		6	$1.00
		7	$1.00
		9	$20.00
		9	$20.00
		10	$20.00
		11	$1.00
		12	$20.00
WEBSTER	51	1	$1.00
		2	$1.00
		3	$1.00
		4	$15.00
		5	$15.00
		9	$15.00
		7	$1.00

MANAGED TIMBER
PROPERTY ANALYSIS

Tax Year 2017

September 1, 2016
Mark W. Matkovich
State Tax Commissioner
Department of Revenue

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
2015	1.5292	26.67%	0.4078
2014	1.6410	33.33%	0.5466
2013	1.1725	13.33%	0.1563
2012	0.7608	6.67%	0.0507
2011	1.6225	20.00%	0.3045

1.468 %

B. **Nonliquidity Rate**

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

Year	Rate	W/A %	W/A Rate
2015	0.2683	33.33%	0.0894
2014	0.0883	26.67%	0.0236
2013	0.0735	20.00%	0.0147
2012	0.1292	13.33%	0.0172
2011	0.1817	6.67%	0.0121

0.157 %

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

Year	Rate	W/A %	W/A Rate
2015	1.3117	13.33%	0.1748
2014	1.6992	26.67%	0.4532
2013	2.2768	20.00%	0.4552
2012	2.1600	33.33%	0.7199
2011	2.3583	6.67%	0.1598

1.962 %

D. **Management Factor of 0.5%**

0.500 %

E. **Property Tax Component**

(60% of Class II Rate)

Year	Rate	W/A %	W/A Rate
2015	0.714	33.33%	0.2380
2014	0.714	26.67%	0.1904
2013	0.708	20.00%	0.1416
2012	0.714	13.33%	0.0952
2011	0.708	6.67%	0.0472

0.712 %

F. **Inflation Rate:**

(Bureau of Labor Statistics)

Year	Rate	W/A %	W/A Rate
2015	0.730	33.33%	0.2433
2014	0.760	26.67%	0.2027
2013	1.500	20.00%	0.3000
2012	1.700	13.33%	0.2266
2011	3.000	6.67%	0.2001

(1.173) %

TOTAL REQUIRED RATE OF RETURN (REAL)	3.625 %
LESS: PROPERTY TAX COMPONENT	(0.712)
TOTAL DISCOUNT COMPONENT	2.913 %

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
2015	1.5262	26.67%	0.4076
2014	1.6410	33.33%	0.5466
2013	1.1725	13.33%	0.1563
2012	0.7806	6.67%	0.0507
2011	1.5225	20.00%	0.3045

1.466 %

B. **Nonliquidity Rate**
(12 Month T-Bills vs. 3 Month T-Bills)

Year	Rate	W/A %	W/A Rate
2015	0.2663	33.33%	0.0894
2014	0.0663	26.67%	0.0236
2013	0.0733	20.00%	0.0147
2012	0.1292	13.33%	0.0172
2011	0.1617	6.67%	0.0121

0.167 %

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

Year	Rate	W/A %	W/A Rate
2015	1.3117	13.33%	0.1746
2014	1.8692	26.67%	0.4832
2013	2.2755	20.00%	0.4662
2012	2.1600	33.33%	0.7166
2011	2.3883	6.67%	0.1563

1.662 %

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
2015	1.314	33.33%	0.4380
2014	1.314	26.67%	0.3804
2013	1.314	20.00%	0.2628
2012	1.326	13.33%	0.1768
2011	1.326	6.67%	0.0884

1.316 %

F. **Inflation Rate:**
(Bureau of Labor Statistics)

Year	Rate	W/A %	W/A Rate
2015	0.730	33.33%	0.2433
2014	0.760	26.67%	0.2027
2013	1.600	20.00%	0.3000
2012	1.700	13.33%	0.2266
2011	3.000	6.67%	0.2001

(1.173) %

TOTAL REQUIRED RATE OF RETURN (REAL)	4.229 %
LESS: PROPERTY TAX COMPONENT	(1.316)
TOTAL DISCOUNT COMPONENT	2.913 %

West Virginia Wgt/Avg Managed Timberland Stumpage Prices

REGION 1 - Sawtimber

Year	Volume	$/MBF	W/A%	$/MBF
2015	12,561.60	192.85	33.33%	64.28
2014	12,162.06	176.34	26.67%	47.02
2013	19,017.77	177.45	20.00%	35.49
2012	12,820.15	186.58	13.33%	24.87
2011	11,165.24	144.89	6.67%	6.66
	67,565.02			181.34

REGION 1 - Pulpwood

Year	Volume	$/CORD	W/A%	$/CORD
2015	7,215.60	15.03	33.33%	5.01
2014	464.40	5.40	26.67%	1.44
2013	6,102.20	2.99	20.00%	0.59
2012	45,387.00	6.42	13.33%	0.86
2011	46.10	6.67	6.67%	0.84
	59,220.60			8.54

REGION 2 - Sawtimber

Year	Volume	$/MBF	W/A%	$/MBF
2015	28,467.66	175.28	33.33%	58.42
2014	22,001.80	162.47	26.67%	45.66
2013	25,696.85	177.79	20.00%	35.56
2012	25,640.98	149.01	13.33%	19.87
2011	12,639.41	156.29	6.67%	10.42
	112,666.69			172.92

REGION 2 - Pulpwood

Year	Volume	$/CORD	W/A%	$/CORD
2015	42,653.30	5.97	33.33%	1.99
2014	2,186.10	5.04	26.67%	1.34
2013	119,279.40	12.83	20.00%	2.57
2012	22,647.40	2.68	13.33%	0.35
2011	5,236.20	6.75	6.67%	0.45
	192,193.40			6.73

REGION 3 - Sawtimber

Year	Volume	$/MBF	W/A%	$/MBF
2015	136,997.80	207.12	33.33%	69.04
2014	91,467.44	280.52	26.67%	74.81
2013	161,397.70	276.63	20.00%	55.13
2012	111,920.60	201.57	13.33%	26.85
2011	102,216.30	201.45	6.67%	13.43
	602,671.84			239.26

REGION 3 - Pulpwood

Year	Volume	$/CORD	W/A%	$/CORD
2015	154,607.30	3.85	33.33%	1.28
2014	170,736.30	3.57	26.67%	0.66
2013	163,167.40	7.78	20.00%	1.56
2012	153,132.60	6.36	13.39%	0.85
2011	159,040.70	7.34	6.67%	0.46
	851,014.30			5.13

COAL PROPERTIES ANALYSIS

Tax Year 2017

September 1, 2016
Mark W. Matkovich
State Tax Commissioner
Department of Revenue

COAL

P ·nd Royalty Rate Analysis
' /elopment 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 tr...action information provided by county producers, assessors, tax auditors, and by individual lessors/lessees involved in the specific transaction. The prices for mined coal, as per 110-CSR 1I, 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 CY2015 FOR TY2017 APPLICATION

GRAND SUMMARY ALL SOURCES 201	STEAM SPOT	STEAM TERM		MET	
PSC	$54.62	$54.03			
FERC	$51.10	$60.61			
Active Return Summary		$62.05	52.1 MM tons	$74.60	23.6 MM Tons
Coal Market Publication (Platts)		$46.09	CAPP (12/1.67) Barge		
		$46.65	PGH - (13/3) Rail		
				$87.54	Low Vol HCC

STATE STEAM PRICE (SPOT Market)	$56.15 FERC & PSC, 3 YR AVE
STATE MET PRICE	$74.60 Active Return, 1 YR

	Spot Sales	Term Sales	Total
2015 WVPSC Tons reported in millions	6,112,303	13,291,866	19,404,169

COAL TY2017 ROYALTY RATES	2015 1YR		2014 2YR		2013 3YR		2012 4YR		2011 5YR	
	%S	%D	%S	%D	%S	%D	%S	%D	%S	%D
TOTAL RECORDS	447	452	1,447	605	1,354	569	1,606	2,756	1,677	2,241
SUM of PERCENT	2904.55	2327.95	6,868.07	4,895.25	6,087.34	3,313.93	11,661.66	14,653.03	6,824.25	11,161.05
STRAIGHT AVERAGE	6.50	5.15	6.13	5.19	5.97	6.53	6.23	5.32	5.32	4.99
MEDIAN	6.00	5.00	6.00	6.00	5.00	5.00	6.00	5.13	5.00	5.00
WEIGHTED AVERAGE(by Minesc)	6.60	5.10	6.64	5.49	6.68	5.64	6.46	5.25	5.27	5.72
TENTATIVE RATE DEEP (%)	6.69									
TENTATIVE RATE SURFACE (%)	6.61									

R\ /Y RATE CALCULATIONS

Steam Coal/ Deep Mine	$56.15	per ton X	6.66%	=	$3.31	per ton
Metallurgical Coal/ Deep Mine	$74.60	per ton X	5.69%	=	$4.24	per ton
Steam Coal/ Surface Mine	$56.15	per ton X	6.61%	=	$3.64	per ton
Metallurgical Coal/ Surface Mine	$74.60	per ton X	6.61%	=	$4.93	per ton

The above Legislative Rule was modified during the 2005 Legislative Session requiring biennial (every other year) 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 the Market Interest Factor, the Market Mineability Factor, the Use Conflict Factor and the Environmental Factor have been revised for Tax Year 2015. 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 >= 20 Then TransFactor = 20

If Trans_Ct < 20 And Trans_Ct >= 10 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 = 2.5 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 < 5 Then WellFactor = 0

WellDensity >= 5 And WellDensity < 10 Then WellFactor = 20

WellDensity >= 10 And WellDensity < 20 Then WellFactor = 40

WellDensity > 20 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 <=20 or Null Then EnvFactor = 0

Envrate >20 and Envrate <= 40 Then EnvFactor = 20

Envrate > 40 and Envrate < 80 Then EnvFactor = 40

Envrate >= 80 Then EnvFactor = 80

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.

Safe Rate 90 day Treasury Bills

			Safe Rate
January	December	2015	0.053%
January	December	2014	0.033%
January	December	2013	0.056%

Risk Rate Interest differential between Loan Rate and 90 day Treasury Bills

Loan Rate*		Debt Risk Rate
2015	5.25%	5.207%
2014	5.25%	5.217%
2013	5.25%	5.192%

*Prime plus 2%

Equity Differential between Equity Rates and 90 day Treasury Bills

Equity Rate**		Equity Risk Rate
2015	[11.75%/(1-.30)]-0.053	16.733%
2013	[11.75%/(1-.30)]-0.033	16.753%
2012	[11.76%/(1-.30)]-0.056	16.726%

** *Value Line Investment Survey Analysis*

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

	Equity Rate	Debt Rate	Composite Risk
2015	10.040%	2.083%	12.123%
2014	10.052%	2.087%	12.139%
2013	10.037%	2.077%	12.114%

Note: Debt Equity Ratio Debt 40% Equity 60%

Non Liquidity Rate Interest differential between 90 day Treasury Bills and a 1 year Treasury Bill which reflects a reasonable time necessary to sell active property.

			1yr T Bill	90 d T Bill	Non Liquidity Rate
January	December	2015	0.322%	0.053%	0.269%
January	December	2014	0.121%	0.033%	0.088%
January	December	2013	0.132%	0.058%	0.074%

Management Rate Charges for the management of investment portfolios.

Fixed Rate (by Rule) 0.500%

Inflation Rate

January	December	2015	0.730%
January	December	2014	0.750%
January	December	2013	1.500%

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

January	December	2015	60% of 2.190 =	1.314%
January	December	2014	60% of 2.190 =	1.314%
January	December	2013	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.

	2015	2014	2013
Inflation Rate	-0.730%	-0.750%	-1.500%
Safe Rate	0.053%	0.033%	0.056%
Composite Risk Rate	12.123%	12.139%	12.114%
Non Liquidity Rate	0.269%	0.088%	0.074%
Management Rate	0.500%	0.500%	0.500%
Property Tax Rate	1.314%	1.314%	1.314%
Total	13.529%	13.314%	12.550%

Three Yr Average: 13.134% Rounded to: **13.10%**

CAPITALIZATION RATE - 13.10%

MULTIPLIERS:	%		%
1YR	0.940	9YR	5.437
2YR	1.772	10YR	5.748
3YR	2.507	11YR	6.022
4YR	3.157	12YR	6.265
5YR	3.731	13YR	6.480
6YR	4.240	14YR	6.669
7YR	4.689	15YR	6.837
8YR	5.086		

EXHIBIT
13

30% of gross revenues with a cap of $6,000 and for oil wells at 35% with a cap of $5,750. In the last 10 years natural gas and oil prices have been extremely volatile. That volatility resulted in the dramatic changes in allowable expenses under the current valuation procedures. Those allowable expenses are not reflective of actual operating expenses.

By way of demonstration, the following is a table of published index prices for Appalachian gas delivered to the two primary pipelines in West Virginia, Columbia Gas Transmission and Dominion Transmission, Inc., showing average annual gas prices and the allowable expense per mcf of produced gas utilizing the State Tax Department's proposed expense allowance:

	Columbia		Dominion *	
Year	Index $/Mcf	Exp @ 30%	Index $/Mcf	Exp @ 30%
2007	$7.1242	$2.1373	$7.2200	$2.1660
2008	$9.3858	$2.8158	$9.5292	$2.8588
2009	$4.1758	$1.2528	$4.2692	$1.2808
2010	$4.5267	$1.3580	$4.5867	$1.3760
2011	$4.1367	$1.2410	$4.1983	$1.2595
2012	$2.7933	$0.8380	$2.7850	$0.8355
2013	$3.6525	$1.0958	$2.8867	$0.8660
2014	$4.3650	$1.3095	$2.7383	$0.8215
2015	$2.5533	$0.7660	$0.8842	$0.2653

(* Note: *The Dominion index prices for 2013, 2014 and 2015 reflect deductions for "Gateway Firm", which most producers delivering to Dominion are obligated to pay.)*

In years of peak prices (2007, 2008) excessive expenses were not a factor, due to the $5,000 expense cap. However, as prices have cratered, the 30% methodology does not reflect actual operating expense. Whenever expenses are understated, appraised and assessed values are overstated, resulting in unfair property tax assessments.

To further demonstrate that the 30% expensed methodology is not appropriate, suppose a producer has two very similar wells that each produce 10 mcf/day, with one well delivering gas to Columbia and the other well delivering gas to Dominion, subject to Gateway transportation expenses. Using the proposed methodology, allowable expenses would be determined as follows:

	Columbia	Dominion
Mcf/Day	10	10
Days/Year	365	365
Annual Mcf	3650	3650
Gas Price - 2015	$2.5533	$0.8842
Total Revenues	$9,319.67	$3,227.21
30% Expenses	$2,795.90	$968.16

It is simply impossible to operate <u>any</u> oil and gas well in West Virginia for $968 per year (or $80 per month). It would be extremely difficult to operate a well for $2,795.90 per year ($233 per month) unless the well produced no fluid and required very minimal maintenance. These expenses do not reflect real costs, and, therefore, cannot be used to determine "true and actual vale" as required under West Virginia Code §11-3-1(a). The propoeed methodology is flawed, and will result in inconsistent and incorrect calculations of expenses, and inaccurate appraised values.

Costs to operators for such things as wages, health insurance expenses, gasoline for trucks, etc., have dramatically increased since 2007. However, in 2007 and 2008 a well making 10 mcf/day would have

- Conventional Oil wells be allowed a minimum of $7,500 per year operating costs and also be able to submit actual operating costs for flush production years.

The State Tax Department needs to recognize that during these times of historic low natural gas commodity prices (the lowest in history, when adjusted for inflation), many wells in the State will be operating at a loss until prices recover. Considering recent market conditions, it could be argued that such wells are a liability, not an income producing asset, and have no "true and actual value". Whenever it can be shown that actual allowable expenses exceed production revenues net of royalties, IOGAWV suggests that such wells should be valued at the Minimum Working Interest Appraisal Rate of $500 (as stated in the 2017 valuation variables).

IOGAWV appreciates the opportunity to file comments on this important matter and looks forward to the response.

Respectfully,

IOGA OF WEST VIRGINIA

Donald B. Nestor, Member
Finance and Taxation Committee

While revenue has been declining for the industry's producers, operating expenses have not. By calculating an allowance for operating expense using the same variables as when gas was at a higher rate per MCF, the State is significantly understating actual operating expenses for the working interest portion of the tax calculation.

It also appears the State's maximum operating expense allowance fails to acknowledge all expenses needed to get natural gas to a salable state. Allowable expenses should not only include lease operating expenses, but also gathering, compression, processing, and transportation charges. The processing charges are especially prevalent for the Marcellus wells where wet gas needs to be processed before it can be sold for distribution, and are incurred, on average, at 17% of revenue. Compression can be upwards of 30% of revenue, depending on whether a company is vertically integrated or otherwise owns its own system.

The data collected from WVONGA members related to operating expense as a percentage of revenue, and average expenditure per well has been aggregated below for your consideration:

Well Type	State Working Interest Expense Allowance	Average WVONGA Participant Operating Expense as % of Revenue
Marcellus/Utica, Horizontal Wells	20%	38%
Typical Producing Wells	30%	41%

Well Type	Allowed Expense	WVONGA Average of Actual Expense
Marcellus/Utica, Horizontal Wells	$150,000	$720,000

In the State's calculation, the expense allowance and the maximum work together to determine the appropriate operating expense allowance to use in the discounted cash flow calculation. Unless the State addresses both of these variables, the values assigned to the gas wells for the 2017 tax year will be grossly overstated.

Additionally, WVONGA requests that the State revise the operating expense calculation for wells where both oil and gas are produced. When wells reach the maximum operating expense allowances for oil and gas, the State applies a weighted average approach to the maximum operating expense allowance.

spreadsheet shows that the expense percentages and caps on expenses have, except in the case of horizontal wells, remained the same since tax year 2009. Beginning with tax year 2014, Marcellus and Utica horizontal wells have been treated differently than vertically drilled wells. However, even these numbers are unrealistically low.

WVONGA and its members believe that the allowable expenses and the caps on expenses set forth in the tentative 2017 natural resource variables for oil and natural gas properties are unrealistically low and, unless appropriately adjusted, will result in oil and gas wells being over valued for 2017 ad valorem property taxation in violation of the "Equal and Uniform" taxation clause in Article X, § 1 of the Constitution.

We appreciate the opportunity to comment on the tentative variables. This response is intended to work with the State toward a more reasonable mass appraisal of gas producing properties for property tax purposes, but should not deny Taxpayers from being afforded an opportunity to further work with the State based on their individual facts and circumstances. We respectfully request the right to seasonably supplement the response with other information that may be of benefit to the Department and would be happy to discuss the issues with you at your convenience. Please do not hesitate to contact me if you have any questions about these comments or wish to discuss them.

Respectfully submitted,

Spilman Thomas and Battle, PLLC

Dale W. Steager
Counsel for WVONGA

DWS/ljr
Enclosure

cc: Kevin Ellis, Chairman of WVONGA's Board of Director

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EXHIBIT
14

1993	2.03	1.75	2.00	2.06	2.18	1.98	1.99	2.04	2.09	2.02	2.03	2.15
1994	1.93	1.85	1.93	1.91	2.00	1.80	1.81	1.83	1.78	1.70	1.75	1.85
1995	1.62	1.46	1.47	1.52	1.55	1.58	1.43	1.43	1.52	1.54	1.61	1.84
1996	2.05	1.89	1.95	2.08	2.01	2.08	2.25	2.10	1.85	1.94	2.50	3.26
1997	3.40	2.49	1.79	1.81	2.00	2.08	2.00	2.08	2.33	2.68	2.92	2.28
1998	1.96	1.96	2.06	2.16	2.04	1.91	2.09	1.82	1.70	1.86	1.94	1.95
1999	1.85	1.77	1.70	1.90	2.17	2.14	2.20	2.51	2.62	2.52	2.68	2.24
2000	2.60	2.73	2.66	2.86	3.04	3.77	3.84	3.73	4.26	4.58	4.40	5.77
2001	6.82	5.08	4.37	4.52	4.36	3.79	3.35	3.33	2.93	2.78	3.41	3.42
2002	2.50	2.19	2.40	2.94	2.94	2.96	2.92	2.76	2.97	3.24	3.59	3.96
2003	4.43	5.05	6.96	4.47	4.77	5.41	5.08	4.46	4.59	4.32	4.26	4.76
2004	5.21	5.02	5.12	5.03	5.40	5.82	5.62	5.52	5.06	5.43	6.21	6.01
2005	5.80	5.73	5.95	6.57	6.25	6.09	6.71	6.48	8.99	10.33	9.89	9.08
2006	8.01	6.85	6.43	6.37	6.23	5.77	5.91	6.55	6.06	5.09	6.71	6.76
2007	5.70	6.80	6.65	6.26	6.75	6.62	6.21	5.76	5.30	5.78	6.46	6.87
2008	7.38	8.02	8.63	8.87	9.96	10.36	10.79	8.21	6.71	5.64	5.23	5.94
2009	4.60	3.70	3.38	3.18	3.23	3.38	3.45	3.37	2.98	3.83	4.20	4.66
2010	5.69	5.30	4.70	4.10	4.24	4.27	4.44	4.38	3.83	4.05	4.12	4.68
2011	4.37	4.34	3.95	4.05	4.13	4.20	4.27	4.20	3.82	3.62	3.35	3.14
2012	2.89	2.46	2.25	1.89	1.94	2.54	2.59	2.86	2.71	3.03	3.35	3.35
2013	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2014	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2016	NA	NA	NA	NA	NA	NA						

. = No Data Reported; -- = Not Applicable; NA = Not Available; W = Withheld to avoid disclosure of individual company data.

Release Date: 8/31/2016
Next Release Date: 9/30/2016

Referring Pages:

- Natural Gas Wellhead Price
- U.S. Natural Gas Prices
- Natural Gas Wellhead Price

Antero Resource. tion
Tax Year 7/1/15-6/ . . .
Doddridge County, WV

Antero Resources Corporation
Tax Year 2016 West Virginia Ad Valorem Value Comparison

Account #	# of Wells	API #	API # for Second Well (if applicable)	Property Description	State Appraised Value	Taxpayer Appraised Value	Taxpayer Appealed Value	Value Removing Operating Expense Cap of $150k Max
0520145962	2	017-05962	017-06026	R SWIGER UNIT 1H & 2H ST	6,879,302	6,023,338	5,293,555	5,391,839
0520146027	1	017-06027		TROUT UNIT 1H	5,027,390	4,032,273	3,794,809	3,705,828
0520146028	1	017-06028		TROUT UNIT 2H	5,012,932	4,086,916	3,747,935	3,696,684
0520146044	1	017-06044		WEBB UNIT 1H ST	3,062,621	2,669,979	2,421,476	2,453,913
0520146045	1	017-06045		WEBB UNIT 2H	2,543,999	2,327,050	2,085,196	2,120,943
0520146046	1	017-06046		WEBB UNIT 3H	3,402,339	2,978,189	2,701,207	2,671,970
0620156076	1	017-06076		ERWIN UNIT 1H 40313	6,529,501	5,346,792	4,206,511	4,622,309
0120146079	1	017-06079		VALENTINE UNIT 2H	7,135,887	1,045,248	4,297,382	4,969,794
0320146080	2	017-06080	017-06086	NEELY UNIT 1H & 2H	8,301,350	6,629,160	5,545,132	6,281,695
0620156081	1	017-06081		TOMS FORK UNIT 1H 40318	5,910,178	4,882,076	3,854,190	4,217,144
0620156082	1	017-06082		TOMS FORK UNIT 2H 40319	7,813,171	6,099,217	5,091,155	5,400,650
0120146083	1	017-06083		VALENTINE UNIT 1H	7,699,314	1,090,851	4,528,122	5,277,467
0320156084	1	017-06084		LEATHERMAN UNIT 1H 40304	2,913,742	2,716,111	1,973,258	2,350,018
0320146085	1	017-06085		LEATHERMAN UNIT 2H	1,786,996	1,920,682	1,362,056	1,621,626
0620156094	1	017-06094		BUCKMAN UNIT 1H 40348	6,382,595	5,134,514	4,127,058	4,513,429
0620156095	1	017-06095		BUCKMAN UNIT 2H 40328	4,387,999	3,714,788	2,988,462	3,274,955
0620146096	1	017-06096		HEIRS UNIT 2H	5,429,383	4,378,962	3,460,649	3,953,123
0620156097	1	017-06097		YOKE UNIT 1H	5,173,861	4,228,952	3,217,167	3,794,403
0620156098	1	017-06098		YOKE UNIT 2H 40343	5,911,420	4,744,343	3,643,476	4,260,345
0620146099	1	017-06099		HEIRS UNIT 1H	3,981,827	3,436,400	2,637,257	3,037,937
0620156100	1	017-06100		CRISLIP UNIT 1H 40350	7,369,039	5,739,826	4,428,996	5,179,185
0620156102	1	017-06102		HINTERER UNIT 1H 40327	8,891,208	1,183,014	5,228,175	6,111,292
0620156103	1	017-06103		BUCKMAN UNIT 3H 40347	3,997,917	3,471,578	2,692,863	3,009,282
0620156104	1	017-06104		HINTERER UNIT 2H 40349	8,565,439	1,156,975	5,394,487	5,900,777
0520156117	1	017-06117		KEMPER UNIT 1H 40379	6,258,595	968,626	4,318,920	4,484,402
0520156118	1	017-06118		THOMAS UNIT 2H 40376	4,871,647	4,255,122	3,494,469	3,607,340
0520166119	1	017-06119		STATLER UNIT 1H (40969)	4,592,643	1,743,372	2,012,298	3,387,178
0520156120	1	017-06120		THOMAS UNIT 1H 40375	3,858,182	3,445,828	2,820,679	2,962,754
0520156121	1	017-06121		KEMPER UNIT 2H 40374	4,317,040	3,741,057	3,116,850	3,254,653
0620156126	1	017-06126		ERWIN UNIT 2HA 40329	6,299,293	5,053,015	4,070,702	4,468,285
0320156128	1	017-06128		MOORE UNIT 1H 40361	7,728,313	5,578,039	4,550,984	5,088,840
0320156129	1	017-06129		MOORE UNIT 2H 40362	6,970,568	5,408,225	4,415,285	4,929,584
0520166134	1	017-06134		STATLER UNIT 2H (40970)	4,205,560	1,658,141	1,901,466	3,144,010
0420166138	1	017-06138		FURBEY UNIT 2H (40458)	2,316,600	596,757	585,228	1,945,988
0420166139	1	017-06139		FURBEY UNIT 1H (40457)	2,886,929	691,791	641,645	2,309,837
0420166140	1	017-06140		CECILE UNIT 1H (40402)	1,982,012	526,955	529,421	1,731,066
0120166141	1	017-06141		PIGGOTT UNIT 2H (40410)	6,053,786	1,769,400	1,872,775	4,209,298
0120166142	1	017-06142		PIGGOTT UNIT 1H (40409)	5,256,212	1,542,396	1,715,775	3,688,634
0420156143	1	017-06143		WALTER UNIT 3H 40383	8,381,189	1,111,202	5,081,823	5,814,644
0420156144	1	017-06144		FLOSSIE UNIT 2H 40408	6,007,620	824,058	3,984,522	4,324,717
0520166148	1	017-06148		WELCH UNIT 1H (40971)	5,313,494	2,082,422	2,347,175	3,838,560
0620156153	1	017-06153		WEBLEY FORK UNIT 1H 40953	11,755,804	1,641,889	7,130,050	7,916,386
0620156156	1	017-06156		JOHNSON UNIT 1H 40422	5,150,657	786,614	3,222,276	3,778,014
0620156157	1	017-06157		LITTLETOM UNIT 1H 40426	13,684,181	1,866,401	8,312,497	9,122,597
0420156158	1	017-06158		WALTER UNIT 1H 40398	9,719,279	1,269,072	5,891,498	6,659,325
0420166159	1	017-06159		ONEACRE UNIT 2H (40445)	2,453,578	722,992	399,250	2,034,412
0420166160	1	017-06160		COX UNIT 2H (40463)	2,829,398	1,622,198	1,473,425	2,271,160
0420166161	1	017-06161		COX UNIT 1H (40403)	3,687,036	2,097,639	1,639,410	2,817,957
0420156162	1	017-06162		WALTER UNIT 2H 40399	8,654,123	1,138,914	5,104,633	5,990,137
0320156163	1	017-06163		EMILY UNIT 2H 40387	5,626,684	4,458,241	3,659,986	4,076,852
0420156164	1	017-06164		RUTH UNIT 1 40367	9,155,260	1,188,684	5,567,835	6,300,535
0620166165	1	017-06165		SCHULTE UNIT 1H (40428)	6,703,062	3,441,849	2,861,462	4,669,660
0320156166	1	017-06166		EMILY UNIT 1H 40386	5,242,986	4,311,027	3,388,398	3,830,725
0420166167	1	017-06167		BOWEN UNIT 2H (40461)	5,194,760	2,584,682	2,245,910	3,764,303

Antero Resources tion
Tax Year 7/1/15-6/...
Doddridge County, WV

Account #	# of Wells	API #	API # for Second Well (if applicable)	Property Description	State Appraised Value	Taxpayer Appraised Value	Taxpayer Appealed Value	Value Removing Operating Expense Cap of $150k Max
0120166207	1	017-06207		SHALE UNIT 2H (40490)	5,503,056	1,674,151	1,452,511	3,860,180
0420166210	1	017-06210		GAINER UNIT 1H (40992)	2,955,087	921,114	843,416	2,354,719
0120166211	1	017-06211		NERO UNIT 1H 40981	12,476,783	6,277,149	7,137,994	8,218,306
0120166212	1	017-06212		NERO UNIT 2H (40982)	4,517,294	1,188,613	1,519,176	3,303,934
0120166213	1	017-06213		VONDA UNIT 1H (40980)	4,600,222	1,250,481	1,304,458	3,341,182
0420166219	1	017-06219		BOWEN UNIT 1H (40464)	5,060,815	2,490,316	2,144,428	3,680,667
0320166220	1	017-06220		COSTLOW UNIT 2H (40450)	6,287,663	1,530,319	1,586,097	4,382,316
0320156221	1	017-06221		LANGFITT UNIT 1H 40984	6,293,333	898,678	4,217,109	4,462,478
0820166223	1	017-06223		LIVINGSTON UNIT 1H (40488	6,445,714	1,924,786	1,618,857	4,420,406
0820166224	1	017-06224		LIVINGSTON UNIT 2H (40487	5,939,274	1,752,827	1,393,918	4,147,175
0820166225	1	017-06225		VONDA UNIT 1H (40492)	5,641,465	1,707,480	1,837,839	3,970,509
0420166226	1	017-06226		GAINER UNIT 1H (40512)	3,898,202	1,130,519	1,082,835	2,950,794
0420166227	1	017-06227		GOLDEN UNIT 1H (40453)	6,175,259	2,179,308	2,036,041	4,376,438
0420166230	1	017-06230		GOLDEN UNIT 2H (40454)	5,606,271	1,917,744	1,821,310	4,021,088
0620166238	1	017-06238		CROSS UNIT 1H (40473)	3,431,454	892,803	980,964	2,656,054
0620166240	1	017-06240		CROSS UNIT 1H (40474)	3,460,180	913,642	1,025,107	2,672,205
0620166243	1	017-06243		DOROTHY UNIT 1H (40471)	4,036,508	943,452	1,197,440	3,027,555
0620166244	1	017-06244		DOROTHY UNIT 2H (40472)	3,273,397	814,575	1,130,027	2,554,332
0420166245	1	017-06245		IRONS UNIT 1H (40515)	3,888,621	1,105,852	1,017,350	2,944,818
0320166246	1	017-06246		DUFF UNIT 1H (40513)	6,520,906	1,632,315	2,012,760	4,529,823
0320166247	1	017-06247		DUFF UNIT 2H (40520)	7,255,820	1,746,241	2,013,864	4,990,737
0320156255	1	017-06255		CONNIE UNIT 1H 40443	4,017,754	679,339	2,645,538	3,057,897
0320156256	1	017-06256		CONNIE UNIT 2H 40444	3,865,670	671,792	2,627,777	2,961,087
0820166258	1	017-06258		SQUIRREL UNIT 1H (40489)	4,346,533	1,311,146	1,301,651	3,155,949
0320166259	1	017-06259		MISHKA UNIT 1H (40519)	3,497,561	953,763	1,029,623	2,666,457
0320156260	1	017-06260		GASKINS UNIT 1H 40479	15,250,815	2,130,218	9,659,450	9,872,984
0620166261	1	017-06261		JOSIE UNIT 2H (40493)	4,443,178	1,106,709	1,576,432	3,288,056
0320166262	1	017-06262		VANSCOY UNIT 1H (40562)	2,496,618	940,491	828,432	2,061,285
0320166263	1	017-06263		MCCONNELL UNIT 2H (405600	3,670,030	1,015,979	1,073,391	2,802,591
0320166264	1	017-06264		VANSCOY UNIT 2H (40563)	1,746,470	759,146	788,466	1,578,285
0620166265	1	017-06265		JOSIE UNIT 1H (40452)	4,185,441	1,044,386	1,451,153	3,124,254
0120166266	1	017-06266		MARKS UNIT 1H (40447)	4,759,692	1,344,727	975,914	3,438,566
0320166267	1	017-06267		KOCH UNIT 1H (40516)	4,692,092	1,262,881	1,356,898	3,431,707
0320166268	1	017-06268		MT SALEM REVIVAL UNIT 1H	5,141,077	1,334,300	1,607,009	3,713,524
0320166269	1	017-06268		MT SALEM REVIVAL UNIT 1H	4,197,070	1,138,696	1,181,819	3,121,069
0120166272	1	017-06272		MASH UNIT 1H (40448)	7,663,644	3,385,113	3,081,402	5,185,285
0120166275	1	017-06275		MASH UNIT 2H (40466)	8,907,293	3,954,191	3,342,824	5,936,896
0420166278	1	017-06278		BELTON UNIT 1H (40543)	4,486,173	1,182,604	1,235,745	3,319,739
0420166279	1	017-06279		CAROLE UNIT 1H (40494)	4,259,952	1,200,405	1,240,092	3,177,543
0420156280	1	017-06280		CAROLE UNIT 2H (40544)	4,022,100	1,090,006	1,182,363	3,028,168
0320156281	1	017-06281		GAVIN UNIT 1H (40482)	3,393,454	1,416,086	1,203,598	2,622,754
0120166289	1	017-06289		PIKE UNIT 1H (40550)	2,349,024	790,457	530,324	1,902,612
0120166292	1	017-06292		LEGGETT UNIT 1 H (40506)	2,225,218	761,731	763,600	1,821,771
0120166293	1	017-06293		LEGGETT UNIT 2H (40549)	1,981,551	686,979	458,739	1,695,621
0120166294	1	017-06294		PIKE UNIT 2H (405510	2,250,753	800,209	578,594	1,861,193
0620166295	1	017-06295		SWISHER UNIT 1H (40531)	4,604,731	1,205,975	1,455,102	3,375,794
0620166296	1	017-06296		SWISHER UNIT 2H (40542)	5,333,832	1,378,861	1,609,681	3,838,454
0320166301	1	017-06301		HEFLIN UNIT 2H (40501)	7,814,769	2,996,422	3,088,457	5,363,914
0320166302	1	017-06302		GAVIN UNIT 2H (40483)	4,295,658	1,815,142	1,464,171	3,190,024
0620166311	1	017-06311		NICKERS UNIT 1H (40546)	3,166,719	1,064,049	903,967	2,485,884
0820166312	1	017-06312		HEFLIN UNIT 1H (40484)	4,926,286	1,123,536	1,435,020	3,581,377
0620166313	1	017-06313		PROUDFOOT UNIT 1H (40533)	785,677	422,999	113,995	938,577
0820166316	1	017-06316		JOSEPH UNIT 2H (40552)	5,056,696	1,248,947	1,333,114	3,662,189
0820166317	1	017-06312		MCCONNELL UNIT 1H (40561)	3,095,523	782,784	671,799	2,428,867
0820166318	1	017-06318		OLIVIA UNIT 2H (40553	2,244,619	602,213	507,016	1,886,755
0620166320	1	017-06320		PROUDFOOT UNIT 1H (40611)	1,115,805	487,667	180,518	1,163,425
0620166321	1	017-06321		SIBLEY UNIT 1H (40534)	804,762	390,383	135,586	952,083

EXHIBIT
16

OEP Production Report
2014 Calendar Year Production
Horizontal Wells Only

YEAR	2014
Horizontal Well Indicator	Horizontal
COUNTY	(All)

Row Labels	Count of API	Sum of GAS_PRODUCTION_TOTAL	Average Production per API	% of Marcellus Production	Average Operating Expense Per Well
ANTERO RESOURCES	368	345,878,516	952,831	40%	648,000
EQT PRODUCTION COMPANY	551	145,652,455	264,342		
CHESAPEAKE APPALACHIA, L.L.C.	277	114,600,768	413,721		
NOBLE ENERGY, INC.	85	43,979,201	517,402		
STONE ENERGY CORPORATION	101	42,090,183	416,784		
CONSOL/CNX ENTITIES	59	30,040,501	509,161	13%	317,000
JAY-BEE OIL & GAS	35	27,616,160	789,033		
HG ENERGY, LLC	20	27,172,252	936,974		
GASTAR EXPLORATION USA, INC.	69	20,248,091	293,451		
PDC MOUNTAINEER LLC	29	19,242,703	663,541		
XTO ENERGY, INC.	30	13,778,145	382,726		
TRIAD HUNTER, LLC	38	13,294,052	349,843		
STATOIL USA ONSHORE PROPERTIES, INC.	14	11,058,763	789,912		
TRIANA ENERGY, LLC	11	3,522,600	320,236		
CHEVRON APPALACHIA, LLC	16	3,411,110	189,506		
MOUNTAINEER ENTITIES	2	1,937,889	968,945		
NORTHEAST NATURAL ENERGY LLC	1	1,677,673	1,677,673		
WACO OIL & GAS CO INC	10	1,666,892	168,689		
HARO ROCK EXPLORATION, INC.	53	1,284,924	24,233		
MOUNTAIN V OIL & GAS, INC.	5	658,991	131,798		
TENASKA RESOURCES, LLC	5	423,229	84,646		
ENERPLUS RESOURCES (USA) CORPORATION	3	387,460	129,153		
ENERGY CORPORATION OF AMERICA	17	290,561	17,092		
EXCO RESOURCES (PA), LLC	12	204,097	17,008		
NYTIS EXPLORATION COMPANY, LLC	11	196,952	17,908		
CABOT OIL & GAS CORPORATION	16	109,228	6,068		
VIKING INTERNATIONAL RESOURCES CO. INC	3	84,807	28,121		
NORTHSTAR ENERGY CORPORATION	2	27,780	13,890		
BUCKEYE OIL PRODUCING CO	2	21,420	10,710		
HORIZON ENERGY CORPORATION	2	13,742	6,071		
HAUGHT ENERGY CORPORATION	3	12,908	4,301		
RESERVE OIL & GAS, INC.	2	9,440	4,720		
ALLIANCE PETROLEUM CORPORATION	11	8,501	780		
DURST OIL & GAS CO., INC.	1	6,528	6,528		
TEXAS KEYSTONE INC	1	5,008	5,008		
STALNAKER ENERGY CORPORATION	2	4,507	2,254		
TAPO ENERGY, INC.	1	4,446	4,446		
ABARTA OIL & GAS COMPANY	1	4,201	4,201		
ENERVEST OPERATING L. L. C.	6	4,123	687		
YOST HERITAGE INC.	1	3,797	3,797		
CUNNINGHAM ENERGY, LLC	3	3,780	1,260		
QUALITY NATURAL GAS, LLC	1	3,729	3,729		
TERM ENERGY CORP.	1	2,652	2,652		
LIPPIZAN PETROLEUM, INC.	2	1,971	986		
P & C OIL & GAS, INC.	1	1,686	1,686		
BRC OPERATING COMPANY, LLC	7	-	-		
BASE PETROLEUM, INC.	1	-	-		
DIVERSIFIED RESOURCES, INC.	1	-	-		
EXCO RESOURCES (WV), INC.	3	-	-		
Grand Total	1,910	870,849,037			

TX Dept. Extract - top 3 producing wells. Rec. Date

PRODUCER	CY	ACCOUNT	API	TY2016 MCF	TY2016 WI$	TY2015 MCF	TY2015 WI$	TY2014 MCF	TY2014 WI$
	09	0320156194	6194	1764436	11670006	229584	454961		
OIL				5751	399137	517	38541		
	09	0320156260	6260	1539854	9111730	18502	39536		
OIL				8386	576703	3	212		
	09	0620156157	6157	1649081	8711743	1330607	2728540		
				893	63397	560	42520		
	09	0320156205	6205	1510108	8308911	123506	261092		
				4047	296147	177	13750		
	09	0320156204	6204	1844994	8133463	21435	46680		
				287	18885	4	264		

31 DAYS TY2015	TY2017 MCF	TY2017 WI$
	1331615	2615079
	3257	101341
31 DAYS	1312280	2515921
	5019	153729
184 DAYS	1148768	2135561
	363	11610
31 DAYS	1165200	2265971
	1595	48863
	856552	1620017
	437	13898

[redacted]

09	0420156164	$	9,155,260
09	0420156180	$	8,517,794

[redacted]

09	0520146027	$	5,027,390
09	0520146028	$	5,012,932

[redacted]

09	0520146046	$	3,402,339

[redacted]

09	0620146096	$	5,423,383
09	0620146099	$	3,981,627
09	0620156076	$	6,529,501
09	0620156081	$	5,910,178
09	0620156082	$	7,813,171
09	0620156094	$	6,382,595
09	0620156095	$	4,387,999
09	0620156097	$	5,173,861
09	0620156098	$	5,911,420
09	0620156100	$	7,369,039
09	0620156102	$	8,891,208
09	0620156103	$	3,997,917
09	0620156104	$	8,565,439
09	0620156126	$	6,299,293
09	0620156153	$	11,755,804
09	0620156156	$	5,150,657
09	0620156157	$	13,684,181
09	0620156173	$	12,434,011
09	0320166202	$	2,866,947
09	0320166203	$	3,129,853
09	0320166220	$	6,287,663
09	0320166246	$	6,520,906
09	0320166247	$	7,255,820
09	0320166259	$	3,497,561
09	0320166262	$	2,496,618
09	0320166263	$	3,670,030
09	0320166264	$	1,746,470
09	0320166267	$	4,692,092
09	0320166268	$	5,141,077
09	0320166269	$	4,197,070
09	[redacted]		
09	0320166301	$	7,814,769
09	[redacted]		
09	0320166399	$	4,190,853

09	0620166366	$	3,375,790
09	0620166404	$	3,366,284
09	0620166419	$	2,218,652
09	0620166429	$	3,120,122
09	0620166453	$	6,106,282
09	0820166223	$	6,445,714
09	0820166224	$	5,939,274
09	0820166225	$	5,641,465
09	0820166258	$	4,346,533
09	0820166312	$	4,926,286
09	[redacted]		
09	0820166317	$	3,095,523
09	0820166318	$	2,244,619

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

OCT 12, 2016
05:09 PM

NR105: 2

ACCOUNT:0120146079 RESOURCE:OG OWNER:ANTERO RESOURCES CORPORATI LOCATION:VALENTINE UNIT 2H

STATUS:Z API#:06079 DATE:08/17/2013 DAYS:365 BBLS: 1983.000 MCFS: 903591 RCPTS: 5926231 GWI: 4684926 OWI: 132846

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 EXPENSE: 0.2 150000 150000 150000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 OL EXPENSE: 0.2 5750 5750 5750

SETTLED YEARS: 2 GS EXPENSE: 0.2 150000 150000 150000

	GAS WORKING INTEREST			GAS ROYALTY INTEREST			OIL WORKING INTEREST			OIL ROYALTY INTEREST		
	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR
1	2,787,531	2,641,667	2,460,161	641,347	597,281	0.931	79,043	78,885	73,465	18,186	16,937	0.931
2	2,146,399	2,000,535	1,615,854	493,837	398,878	0.808	60,863	60,705	49,032	14,003	11,311	0.808
3	1,652,727	1,506,863	1,055,603	380,255	266,380	0.701	46,865	46,706	32,719	10,783	7,554	0.701
4	1,272,600	1,126,736	684,573	292,796	177,895	0.608	36,086	35,927	21,828	8,303	5,044	0.608
5	979,902	834,038	439,495	225,453	118,802	0.527	27,786	27,628	14,558	6,393	3,369	0.527
6	754,524	608,661	278,172	173,599	79,339	0.457	21,395	21,237	9,706	4,923	2,250	0.457
7	580,984	435,120	172,472	133,671	52,984	0.396	16,474	16,316	6,467	3,790	1,502	0.396
8	447,358	301,494	103,647	102,927	35,384	0.344	12,685	12,527	4,306	2,919	1,003	0.344
9	344,465	198,601	59,215	79,254	23,630	0.298	9,768	9,609	2,865	2,247	670	0.298
10	265,238	119,374	30,870	61,025	15,781	0.259	7,521	7,363	1,904	1,730	447	0.259
11	204,233	58,370	13,091	46,989	10,539	0.224	5,791	5,633	1,263	1,332	299	0.224
12	157,260	11,396	2,217	36,182	7,038	0.195	4,459	4,301	837	1,026	200	0.195
13	121,090	0	0	27,860	0	0.169	3,434	3,275	553	790	133	0.169
14							2,644	2,485	364	608	89	0.146
15							2,036	1,877	238	468	59	0.127
16							1,568	1,409	155	361	40	0.110
17							1,207	1,048	100	278	27	0.095
18							929	771	64	214	18	0.083
19							716	557	40	165	12	0.072
20							551	392	24	127	8	0.062
21							424	266	14	98	5	0.054
22							327	168	8	75	4	0.047
23							252	93	4	58	2	0.041
24							194	35	1	45	2	0.035
25							149	0	0	34	0	0.031
TOTAL:			6,915,371		1,783,930				220,516		50,984	
OL EXPENSE:	159		159	159								
GS EXPENSE:	145864		145864	145864								

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

OCT 12, 2016
05:09 PM

NR105: 4

ACCOUNT:0120156169 RESOURCE:OG OWNER:ANTERO RESOURCES CORPORATI LOCATION:SEABORN UNIT 1H 40400

STATUS:Z API#:06169 DATE:09/01/2013 DAYS:365 BBLS: 8469.000 MCFS: 1141378 RCPTS: 8354500 GWI: 6383412 OWI: 569416

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 EXPENSE: 0.2 150000 150000 150000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 GS EXPENSE: 0.2 150000 150000 150000

SETTLED YEARS: 2 OL EXPENSE: 0.2 5750 5750 5750

	GAS WORKING INTEREST			GAS ROYALTY INTEREST			OIL WORKING INTEREST			OIL ROYALTY INTEREST		
	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR
1	3,798,130	3,660,415	3,408,911	765,693	713,083	0.931	338,803	338,332	315,085	68,302	63,609	0.931
2	2,924,560	2,786,845	2,250,965	589,584	476,213	0.808	260,878	260,407	210,334	52,592	42,479	0.808
3	2,251,911	2,114,196	1,481,058	453,979	318,026	0.701	200,876	200,405	140,390	40,496	28,369	0.701
4	1,733,972	1,596,256	969,841	349,564	212,385	0.608	154,675	154,204	93,690	31,182	18,945	0.608
5	1,335,158	1,197,443	630,990	269,164	141,836	0.527	119,099	118,628	62,511	24,010	12,652	0.527
6	1,028,072	890,356	406,914	207,257	94,721	0.457	91,707	91,236	41,697	18,488	8,449	0.457
7	791,615	653,900	259,192	159,588	63,257	0.396	70,614	70,143	27,803	14,236	5,643	0.396
8	609,544	471,828	162,205	122,882	42,245	0.344	54,373	53,902	18,530	10,961	3,768	0.344
9	469,349	331,633	98,880	94,619	28,212	0.298	41,867	41,396	12,343	8,440	2,517	0.298
10	361,399	223,683	57,844	72,857	18,841	0.259	32,238	31,767	8,215	6,499	1,681	0.259
11	278,277	140,561	31,525	56,100	12,582	0.224	24,823	24,352	5,462	5,004	1,122	0.224
12	214,273	76,558	14,892	43,197	8,403	0.195	19,114	18,643	3,626	3,853	750	0.195
13	164,990	27,275	4,601	33,262	5,611	0.169	14,718	14,247	2,404	2,967	501	0.169
14	127,043	0	0	25,611	0	0.146	11,333	10,862	1,589	2,285	334	0.146
15							8,726	8,255	1,048	1,759	223	0.127
16							6,719	6,248	688	1,355	149	0.110
17							5,174	4,703	449	1,043	100	0.095
18							3,984	3,513	291	803	66	0.083
19							3,067	2,597	186	618	44	0.072
20							2,362	1,891	118	476	30	0.062
21							1,819	1,348	73	367	20	0.054
22							1,400	929	44	282	13	0.047
23							1,078	607	25	217	9	0.041
24							830	359	13	167	6	0.035
25							639	168	5	129	4	0.031
26							492	21	1	99	3	0.027
27							379	0	0	76	0	0.023
TOTAL:			9,777,818		2,135,415				946,617		191,486	
GS EXPENSE:	137715		137715	137715								
OL EXPENSE:	471		471	471								

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

OCT 12, 2016
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NR105:. 6

ACCOUNT:0120156187 RESOURCE:OG OWNER:ANTERO RESOURCES CORPORATI LOCATION:DOTSON UNIT 1H 40414

STATUS:Z API#:06187 DATE:08/01/2013 DAYS:365 BBLS: 1761.000 MCFS: 1026262 RCPTS: 6661490 GWI: 5342991 OWI: 120983

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 EXPENSE: 0.2 150000 150000 150000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 GS EXPENSE: 0.2 150000 150000 150000

SETTLED YEARS: 2 OL EXPENSE: 0.2 5750 5750 5750

	GAS WORKING INTEREST			GAS ROYALTY INTEREST			OIL WORKING INTEREST			OIL ROYALTY INTEEEST		
	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR
1	3,179,080	3,032,401	2,824,048	696,746	648,873	0.931	71,985	71,858	66,920	15,776	14,692	0.931
2	2,447,891	2,301,213	1,858,715	536,494	433,332	0.808	55,428	55,301	44,667	12,148	9,812	0.808
3	1,884,876	1,738,198	1,217,660	413,100	289,389	0.701	42,680	42,553	29,809	9,354	6,553	0.701
4	1,451,355	1,304,676	792,685	318,087	193,261	0.608	32,863	32,736	19,890	7,202	4,376	0.608
5	1,117,543	970,864	511,595	244,927	129,064	0.527	25,305	25,178	13,267	5,546	2,922	0.527
6	860,508	713,830	326,237	188,594	86,192	0.457	19,485	19,357	8,847	4,270	1,952	0.457
7	662,591	515,913	204,496	145,217	57,561	0.396	15,003	14,876	5,896	3,288	1,303	0.396
8	510,195	363,517	124,970	111,817	38,441	0.344	11,553	11,425	3,928	2,532	870	0.344
9	392,850	246,172	73,399	86,099	25,671	0.298	8,895	8,768	2,614	1,950	581	0.298
10	302,495	155,816	40,293	66,297	17,144	0.259	6,849	6,722	1,738	1,501	388	0.259
11	232,921	86,242	19,343	51,048	11,449	0.224	5,274	5,147	1,154	1,156	259	0.224
12	179,349	32,670	6,355	39,307	7,646	0.195	4,061	3,934	765	890	173	0.195
13	138,099	0	0	30,267	0	0.169	3,127	3,000	506	685	116	0.169
14							2,408	2,280	334	528	77	0.146
15							1,854	1,727	219	406	52	0.127
16							1,428	1,300	143	313	34	0.110
17							1,099	972	93	241	23	0.095
18							846	719	60	186	15	0.083
19							652	524	38	143	10	0.072
20							502	375	23	110	7	0.062
21							386	259	14	85	5	0.054
22							298	170	8	65	3	0.047
23							229	102	4	50	2	0.041
24							176	49	2	39	1	0.035
25							136	9	0	30	1	0.031
26							105	0	0	23	0	0.027
TOTAL:			7,999,795		1,938,023				200,940		44,229	
GS EXPENSE:	146679		146679	146679								
OL EXPENSE:	127		127	127								

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

OCT 12, 2016
05:09 PM

NR105: 8

ACCOUNT:0120156189 RESOURCE:OG OWNER:ANTERO RESOURCES CORPORATI LOCATION:DOTSON UNIT 2H 40415

STATUS:Z API#:06189 DATE:08/01/2013 DAYS:365 BBLS: 1108.000 MCFS: 1071135 RCPTS: 6946460 GWI: 5621901 OWI: 75814

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 EXPENSE: 0.2 150000 150000 150000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 GS EXPENSE: 0.2 150000 150000 150000

SETTLED YEARS: 2 OL EXPENSE: 0.2 5750 5750 5750

	GAS WORKING INTEREST			GAS ROYALTY INTEREST			OIL WORKING INTEREST			OIL ROYALTY INTEREST		
	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR
1	3,345,031	3,197,027	2,977,362	733,117	682,745	0.931	45,109	45,033	41,939	9,887	9,207	0.931
2	2,575,674	2,427,670	1,960,856	564,500	455,953	0.808	34,734	34,658	27,993	7,613	6,149	0.808
3	1,983,269	1,835,265	1,285,658	434,665	304,496	0.701	26,745	26,669	18,682	5,862	4,106	0.701
4	1,527,117	1,379,113	837,910	334,692	203,349	0.608	20,594	20,517	12,466	4,514	2,742	0.608
5	1,175,880	1,027,876	541,637	257,713	135,801	0.527	15,857	15,781	8,316	3,475	1,831	0.527
6	905,428	757,424	346,161	198,439	90,691	0.457	12,210	12,134	5,545	2,676	1,223	0.457
7	697,179	549,175	217,681	152,798	60,566	0.396	9,402	9,325	3,696	2,061	817	0.396
8	536,828	388,824	133,670	117,654	40,447	0.344	7,239	7,163	2,462	1,587	545	0.344
9	413,358	265,354	79,118	90,594	27,012	0.298	5,574	5,498	1,639	1,222	364	0.298
10	318,285	170,281	44,034	69,757	18,039	0.259	4,292	4,216	1,090	941	243	0.259
11	245,080	97,076	21,772	53,713	12,047	0.224	3,305	3,229	724	724	162	0.224
12	188,711	40,707	7,918	41,359	8,045	0.195	2,545	2,468	480	558	108	0.195
13	145,308	0	0	31,847	0	0.169	1,960	1,883	318	429	72	0.169
14							1,509	1,432	210	331	48	0.146
15							1,162	1,085	138	255	32	0.127
16							895	818	90	196	22	0.110
17							689	612	58	151	14	0.095
18							530	454	38	116	10	0.083
19							408	332	24	90	6	0.072
20							314	238	15	69	4	0.062
21							242	166	9	53	3	0.054
22							186	110	5	41	2	0.047
23							144	67	3	31	1	0.041
24							111	34	1	24	1	0.035
25							85	9	0	19	1	0.031
26							66	0	0	14	0	0.027
TOTAL:			8,453,778		2,039,191				125,942		27,717	
GS EXPENSE:	148004		148004	148004								
OL EXPENSE:	77		77	77								

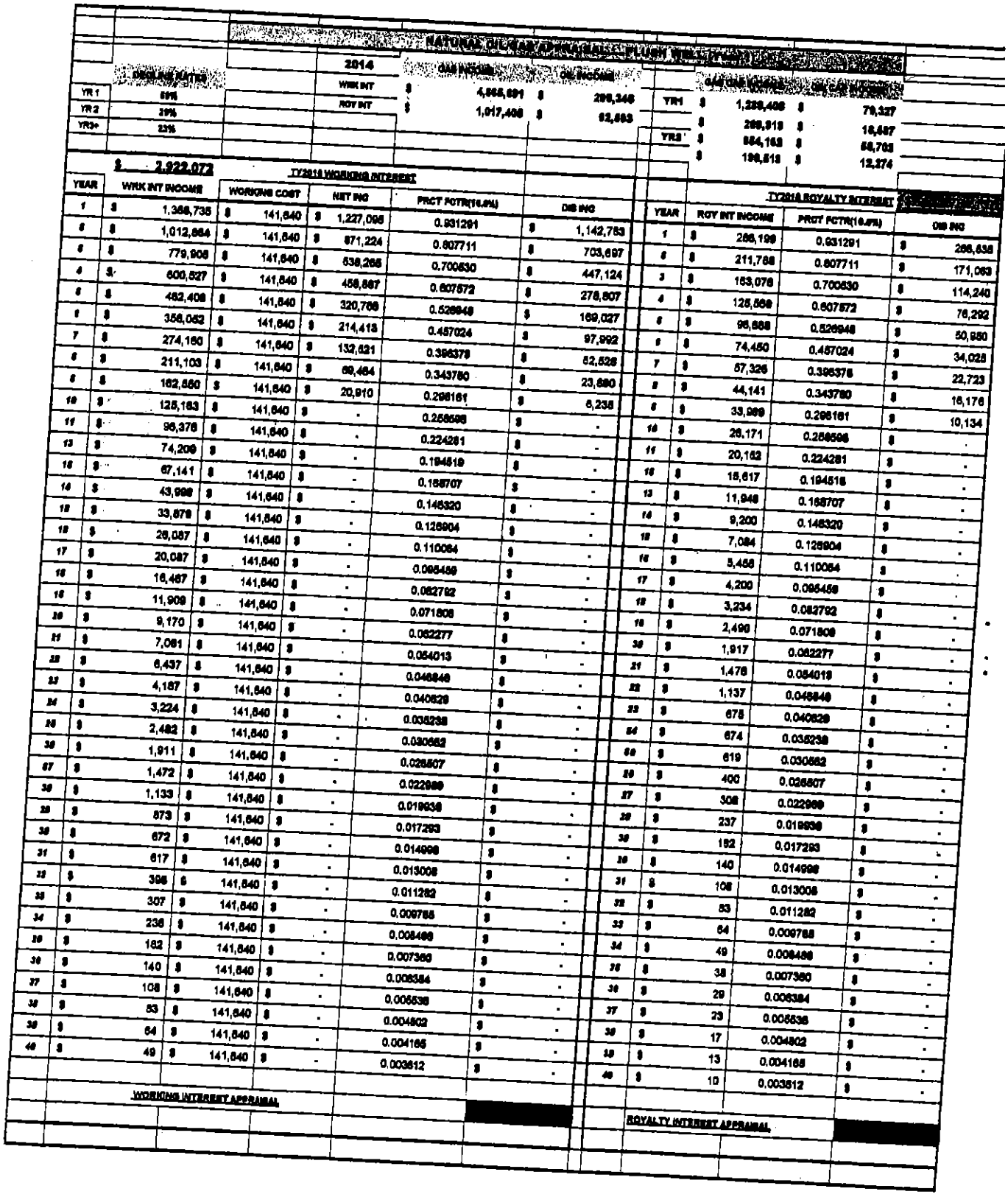
				2014									
				WRK INT	$	8,028,422	$	425,503	YR1	$	2,127,532	$	113,553
				ROY INT	$	1,396,289	$	7,399		$	367,396	$	1,961
YR 1	26%								YR2	$	1,574,374	$	84,029
YR 2	20%									$	271,661	$	1,451
YR3+	23%												

	$ 8,288,212	TY2018 WORKING INTEREST						TY2018 ROYALTY INTEREST			
YEAR	WRK INT INCOME	WORKING COST	NET INC	PROT FCTR(16.9%)	DIS INC		YEAR	ROY INT INCOME	PROT FCTR(16.9%)	DIS INC	
1	$ 2,241,085	$ 142,691	$ 2,098,394	0.931291	$ 1,954,215		1	$ 369,327	0.931291	$ 343,951	
2	$ 1,658,403	$ 142,691	$ 1,515,712	0.807711	$ 1,224,267		2	$ 273,302	0.807711	$ 220,748	
3	$ 1,276,970	$ 142,691	$ 1,134,279	0.700530	$ 794,667		3	$ 210,443	0.700530	$ 147,421	
4	$ 983,267	$ 142,691	$ 840,576	0.607872	$ 510,711		4	$ 162,041	0.607872	$ 98,481	
5	$ 757,115	$ 142,691	$ 614,426	0.526948	$ 323,770		5	$ 124,771	0.526948	$ 65,748	
6	$ 582,979	$ 142,691	$ 440,288	0.457024	$ 201,222		6	$ 96,074	0.457024	$ 43,908	
7	$ 448,894	$ 142,691	$ 306,203	0.396378	$ 121,372		7	$ 73,977	0.396378	$ 29,323	
8	$ 345,648	$ 142,691	$ 202,957	0.343780	$ 69,773		8	$ 56,962	0.343780	$ 19,582	
9	$ 266,149	$ 142,691	$ 123,458	0.298161	$ 36,810		9	$ 43,851	0.298161	$ 13,078	
10	$ 204,935	$ 142,691	$ 62,244	0.258568	$ 16,096		10	$ 33,773	0.258568	$ 8,734	
11	$ 157,800	$ 142,691	$ 15,109	0.224281	$ 3,389		11	$ 26,006	0.224281	$ 5,832	
12	$ 121,508	$ 142,691	$ -	0.194519	$ -		12	$ 20,024	0.194519	$ -	
13	$ 93,560	$ 142,691	$ -	0.168707	$ -		13	$ 15,418	0.168707	$ -	
14	$ 72,041	$ 142,691	$ -	0.146320	$ -		14	$ 11,872	0.146320	$ -	
15	$ 55,471	$ 142,691	$ -	0.126904	$ -		15	$ 9,142	0.126904	$ -	
16	$ 42,713	$ 142,691	$ -	0.110064	$ -		16	$ 7,039	0.110064	$ -	
17	$ 32,889	$ 142,691	$ -	0.095459	$ -		17	$ 5,420	0.095459	$ -	
18	$ 25,328	$ 142,691	$ -	0.082792	$ -		18	$ 4,173	0.082792	$ -	
19	$ 19,500	$ 142,691	$ -	0.071808	$ -		19	$ 3,214	0.071808	$ -	
20	$ 15,015	$ 142,691	$ -	0.062277	$ -		20	$ 2,474	0.062277	$ -	
21	$ 11,561	$ 142,691	$ -	0.054013	$ -		21	$ 1,905	0.054013	$ -	
22	$ 8,902	$ 142,691	$ -	0.046846	$ -		22	$ 1,467	0.046846	$ -	
23	$ 6,855	$ 142,691	$ -	0.040629	$ -		23	$ 1,130	0.040629	$ -	
24	$ 5,278	$ 142,691	$ -	0.035238	$ -		24	$ 870	0.035238	$ -	
25	$ 4,064	$ 142,691	$ -	0.030562	$ -		25	$ 670	0.030562	$ -	
26	$ 3,129	$ 142,691	$ -	0.026507	$ -		26	$ 516	0.026507	$ -	
27	$ 2,410	$ 142,691	$ -	0.022989	$ -		27	$ 397	0.022989	$ -	
28	$ 1,856	$ 142,691	$ -	0.019939	$ -		28	$ 306	0.019939	$ -	
29	$ 1,429	$ 142,691	$ -	0.017293	$ -		29	$ 236	0.017293	$ -	
30	$ 1,100	$ 142,691	$ -	0.014998	$ -		30	$ 181	0.014998	$ -	
31	$ 847	$ 142,691	$ -	0.013006	$ -		31	$ 140	0.013006	$ -	
32	$ 652	$ 142,691	$ -	0.011282	$ -		32	$ 107	0.011282	$ -	
33	$ 502	$ 142,691	$ -	0.009785	$ -		33	$ 83	0.009785	$ -	
34	$ 387	$ 142,691	$ -	0.008486	$ -		34	$ 64	0.008486	$ -	
35	$ 298	$ 142,691	$ -	0.007360	$ -		35	$ 49	0.007360	$ -	
36	$ 229	$ 142,691	$ -	0.006384	$ -		36	$ 38	0.006384	$ -	
37	$ 177	$ 142,691	$ -	0.005536	$ -		37	$ 29	0.005536	$ -	
38	$ 136	$ 142,691	$ -	0.004802	$ -		38	$ 22	0.004802	$ -	
39	$ 105	$ 142,691	$ -	0.004166	$ -		39	$ 17	0.004156	$ -	
40	$ 81	$ 142,691	$ -	0.003612	$ -		40	$ 13	0.003612	$ -	

WORKING INTEREST APPRAISAL

ROYALTY INTEREST APPRAISAL

09 0120166142



NATIONAL OIL/GAS APPRAISAL - FLUSH WELL

DECLINE RATES	
YR 1	59%
YR 2	29%
YR3+	23%

2014

	GAS INCOME	OIL INCOME
WRK INT	$ 4,855,691	$ 286,346
ROY INT	$ 1,017,406	$ 62,563

	GAS INCOME	OIL INCOME
YR1	$ 1,289,406	$ 79,327
	$ 269,919	$ 16,607
YR3	$ 864,163	$ 53,703
	$ 196,513	$ 12,274

$ 2,922,072

TY2018 WORKING INTEREST

YEAR	WRK INT INCOME	WORKING COST	NET INC	PROT FCTR(16.9%)	DIS INC
1	$ 1,368,735	$ 141,840	$ 1,227,095	0.931291	$ 1,142,753
2	$ 1,012,564	$ 141,840	$ 871,224	0.807711	$ 703,697
3	$ 779,908	$ 141,840	$ 638,268	0.700630	$ 447,124
4	$ 600,527	$ 141,840	$ 458,687	0.607572	$ 278,607
5	$ 462,408	$ 141,840	$ 320,768	0.526948	$ 169,027
6	$ 356,053	$ 141,840	$ 214,413	0.457024	$ 97,992
7	$ 274,160	$ 141,840	$ 132,621	0.396378	$ 52,528
8	$ 211,103	$ 141,840	$ 69,464	0.343780	$ 23,880
9	$ 162,550	$ 141,840	$ 20,910	0.298161	$ 6,235
10	$ 125,183	$ 141,840	$ -	0.258598	$ -
11	$ 96,376	$ 141,840	$ -	0.224281	$ -
12	$ 74,209	$ 141,840	$ -	0.194519	$ -
13	$ 57,141	$ 141,840	$ -	0.168707	$ -
14	$ 43,998	$ 141,840	$ -	0.146320	$ -
15	$ 33,879	$ 141,840	$ -	0.126904	$ -
16	$ 26,087	$ 141,840	$ -	0.110064	$ -
17	$ 20,087	$ 141,840	$ -	0.095459	$ -
18	$ 16,467	$ 141,840	$ -	0.082792	$ -
19	$ 11,909	$ 141,840	$ -	0.071808	$ -
20	$ 9,170	$ 141,840	$ -	0.062277	$ -
21	$ 7,061	$ 141,840	$ -	0.054013	$ -
22	$ 6,437	$ 141,840	$ -	0.046846	$ -
23	$ 4,187	$ 141,840	$ -	0.040629	$ -
24	$ 3,224	$ 141,840	$ -	0.035238	$ -
25	$ 2,482	$ 141,840	$ -	0.030562	$ -
26	$ 1,911	$ 141,840	$ -	0.026507	$ -
27	$ 1,472	$ 141,840	$ -	0.022989	$ -
28	$ 1,133	$ 141,840	$ -	0.019936	$ -
29	$ 873	$ 141,840	$ -	0.017293	$ -
30	$ 672	$ 141,840	$ -	0.014998	$ -
31	$ 517	$ 141,840	$ -	0.013008	$ -
32	$ 398	$ 141,840	$ -	0.011282	$ -
33	$ 307	$ 141,840	$ -	0.009785	$ -
34	$ 236	$ 141,840	$ -	0.008486	$ -
35	$ 182	$ 141,840	$ -	0.007360	$ -
36	$ 140	$ 141,840	$ -	0.006384	$ -
37	$ 108	$ 141,840	$ -	0.005536	$ -
38	$ 83	$ 141,840	$ -	0.004802	$ -
39	$ 64	$ 141,840	$ -	0.004165	$ -
40	$ 49	$ 141,840	$ -	0.003612	$ -

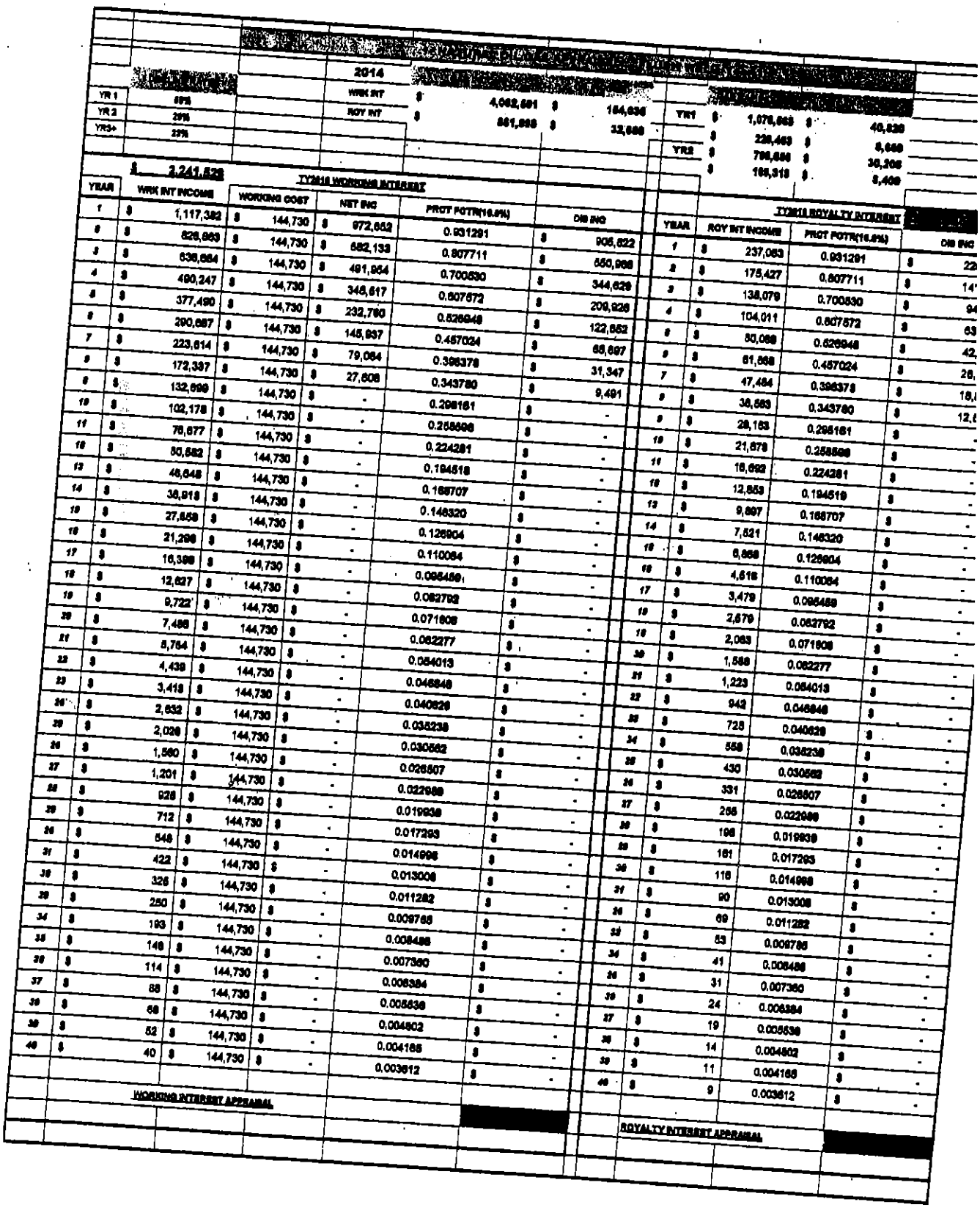
WORKING INTEREST APPRAISAL

TY2018 ROYALTY INTEREST

YEAR	ROY INT INCOME	PROT FCTR(16.9%)	DIS INC
1	$ 266,199	0.931291	$ 266,638
2	$ 211,788	0.807711	$ 171,063
3	$ 163,076	0.700630	$ 114,240
4	$ 125,569	0.607572	$ 76,292
5	$ 96,868	0.526948	$ 50,950
6	$ 74,450	0.457024	$ 34,028
7	$ 57,326	0.396378	$ 22,723
8	$ 44,141	0.343780	$ 16,176
9	$ 33,999	0.298161	$ 10,134
10	$ 26,171	0.258598	$ -
11	$ 20,152	0.224281	$ -
12	$ 15,517	0.194519	$ -
13	$ 11,948	0.168707	$ -
14	$ 9,200	0.146320	$ -
15	$ 7,084	0.126904	$ -
16	$ 5,456	0.110064	$ -
17	$ 4,200	0.095459	$ -
18	$ 3,234	0.082792	$ -
19	$ 2,490	0.071808	$ -
20	$ 1,917	0.062277	$ -
21	$ 1,476	0.054013	$ -
22	$ 1,137	0.046846	$ -
23	$ 875	0.040629	$ -
24	$ 674	0.035238	$ -
25	$ 519	0.030562	$ -
26	$ 400	0.026507	$ -
27	$ 308	0.022989	$ -
28	$ 237	0.019936	$ -
29	$ 182	0.017293	$ -
30	$ 140	0.014998	$ -
31	$ 108	0.013008	$ -
32	$ 83	0.011282	$ -
33	$ 64	0.009785	$ -
34	$ 49	0.008486	$ -
35	$ 38	0.007360	$ -
36	$ 29	0.006384	$ -
37	$ 23	0.005536	$ -
38	$ 17	0.004802	$ -
39	$ 13	0.004165	$ -
40	$ 10	0.003612	$ -

ROYALTY INTEREST APPRAISAL

09 01201661911



			2014											
YR 1	69%		WRK INT	$	4,062,591	$	164,636		YR1	$	1,076,568	$	40,639	
YR 2	29%		ROY INT	$	861,868	$	32,666			$	228,463	$	8,668	
YR3+	25%								YR2	$	796,686	$	30,206	
										$	165,313	$	6,409	

	$ 3,241,526	TY2018 WORKING INTEREST				
YEAR	WRK INT INCOME	WORKING COST	NET INC	PROT FOTR(16.6%)	DIS INC	
1	$ 1,117,382	$ 144,730	$ 972,652	0.931291	$ 905,822	
2	$ 826,863	$ 144,730	$ 682,133	0.807711	$ 550,998	
3	$ 636,564	$ 144,730	$ 491,834	0.700530	$ 344,629	
4	$ 490,247	$ 144,730	$ 345,517	0.607572	$ 209,926	
5	$ 377,490	$ 144,730	$ 232,760	0.526948	$ 122,652	
6	$ 290,687	$ 144,730	$ 145,957	0.457024	$ 66,697	
7	$ 223,814	$ 144,730	$ 79,084	0.396378	$ 31,347	
8	$ 172,337	$ 144,730	$ 27,608	0.343760	$ 9,491	
9	$ 132,699	$ 144,730	$ -	0.298161	$ -	
10	$ 102,178	$ 144,730	$ -	0.258566	$ -	
11	$ 78,677	$ 144,730	$ -	0.224281	$ -	
12	$ 60,582	$ 144,730	$ -	0.194519	$ -	
13	$ 46,648	$ 144,730	$ -	0.168707	$ -	
14	$ 35,918	$ 144,730	$ -	0.146320	$ -	
15	$ 27,658	$ 144,730	$ -	0.126904	$ -	
16	$ 21,298	$ 144,730	$ -	0.110084	$ -	
17	$ 16,399	$ 144,730	$ -	0.095459	$ -	
18	$ 12,627	$ 144,730	$ -	0.082792	$ -	
19	$ 9,722	$ 144,730	$ -	0.071808	$ -	
20	$ 7,486	$ 144,730	$ -	0.062277	$ -	
21	$ 5,764	$ 144,730	$ -	0.054013	$ -	
22	$ 4,439	$ 144,730	$ -	0.046846	$ -	
23	$ 3,418	$ 144,730	$ -	0.040626	$ -	
24	$ 2,632	$ 144,730	$ -	0.035238	$ -	
25	$ 2,026	$ 144,730	$ -	0.030562	$ -	
26	$ 1,560	$ 144,730	$ -	0.026507	$ -	
27	$ 1,201	$ 144,730	$ -	0.022989	$ -	
28	$ 925	$ 144,730	$ -	0.019939	$ -	
29	$ 712	$ 144,730	$ -	0.017293	$ -	
30	$ 548	$ 144,730	$ -	0.014996	$ -	
31	$ 422	$ 144,730	$ -	0.013008	$ -	
32	$ 326	$ 144,730	$ -	0.011282	$ -	
33	$ 250	$ 144,730	$ -	0.009786	$ -	
34	$ 193	$ 144,730	$ -	0.008488	$ -	
35	$ 149	$ 144,730	$ -	0.007360	$ -	
36	$ 114	$ 144,730	$ -	0.006384	$ -	
37	$ 88	$ 144,730	$ -	0.005538	$ -	
38	$ 68	$ 144,730	$ -	0.004802	$ -	
39	$ 52	$ 144,730	$ -	0.004166	$ -	
40	$ 40	$ 144,730	$ -	0.003612	$ -	

WORKING INTEREST APPRAISAL

	TY2018 ROYALTY INTEREST		
YEAR	ROY INT INCOME	PROT FOTR(16.6%)	DIS INC
1	$ 237,063	0.931291	$ 22
2	$ 175,427	0.807711	$ 14
3	$ 135,079	0.700530	$ 94
4	$ 104,011	0.607572	$ 63
5	$ 80,068	0.526948	$ 42
6	$ 61,668	0.457024	$ 28
7	$ 47,484	0.396378	$ 18
8	$ 36,563	0.343760	$ 12
9	$ 28,163	0.298161	$ -
10	$ 21,679	0.258566	$ -
11	$ 16,692	0.224281	$ -
12	$ 12,853	0.194519	$ -
13	$ 9,897	0.168707	$ -
14	$ 7,621	0.146320	$ -
15	$ 5,868	0.126904	$ -
16	$ 4,518	0.110084	$ -
17	$ 3,479	0.095459	$ -
18	$ 2,679	0.082792	$ -
19	$ 2,063	0.071808	$ -
20	$ 1,588	0.062277	$ -
21	$ 1,223	0.054013	$ -
22	$ 942	0.046846	$ -
23	$ 725	0.040626	$ -
24	$ 558	0.035238	$ -
25	$ 430	0.030562	$ -
26	$ 331	0.026507	$ -
27	$ 255	0.022989	$ -
28	$ 196	0.019939	$ -
29	$ 151	0.017293	$ -
30	$ 116	0.014996	$ -
31	$ 90	0.013008	$ -
32	$ 69	0.011282	$ -
33	$ 53	0.009786	$ -
34	$ 41	0.008488	$ -
35	$ 31	0.007360	$ -
36	$ 24	0.006384	$ -
37	$ 19	0.005538	$ -
38	$ 14	0.004802	$ -
39	$ 11	0.004166	$ -
40	$ 9	0.003612	$ -

ROYALTY INTEREST APPRAISAL

09 01201606193

				2014										
				WRK INT	$	5,361,129	$	516,730	YR1	$	1,428,647	$	84,728	
YR 1	80%			ROY INT	$	1,116,853	$	66,237		$	298,566	$	17,655	
YR 2	20%								YR2	$	1,067,198	$	52,699	
YR3+	20%									$	216,018	$	12,969	
	$ 3,306,298		TY2014 WORKING INTEREST									TY2014 ROYALTY INTEREST		
YEAR	WRK INT INCOME		WORKING COST	NET INC		PROT FCTR(16.6%)		DIS INC	YEAR		ROY INT INCOME	PROT FCTR(16.6%)		DIS INC
1	$ 1,613,378	$	141,924	$ 1,371,451		0.931291	$	1,277,220	1	$	313,619	0.931291	$	291,977
2	$ 1,119,896	$	141,924	$ 977,974		0.807711	$	789,920	2	$	232,004	0.807711	$	187,382
3	$ 862,321	$	141,924	$ 720,397		0.700530	$	504,660	3	$	176,643	0.700530	$	123,746
4	$ 663,987	$	141,924	$ 522,063		0.607572	$	317,191	4	$	137,556	0.607572	$	83,576
5	$ 511,270	$	141,924	$ 369,346		0.526948	$	194,626	5	$	105,917	0.526948	$	55,819
6	$ 393,678	$	141,924	$ 251,754		0.457024	$	115,058	6	$	81,556	0.457024	$	37,273
7	$ 303,132	$	141,924	$ 161,208		0.396378	$	63,899	7	$	62,796	0.396378	$	24,892
8	$ 233,412	$	141,924	$ 91,488		0.343780	$	31,452	8	$	48,356	0.343780	$	16,623
9	$ 179,727	$	141,924	$ 37,803		0.298161	$	11,271	9	$	37,233	0.298161	$	11,101
10	$ 138,390	$	141,924	$ -		0.258598	$	-	10	$	28,670	0.258598	$	-
11	$ 106,560	$	141,924	$ -		0.224281	$	-	11	$	22,078	0.224281	$	-
12	$ 82,051	$	141,924	$ -		0.194519	$	-	12	$	16,998	0.194519	$	-
13	$ 63,180	$	141,924	$ -		0.168707	$	-	13	$	13,089	0.168707	$	-
14	$ 48,648	$	141,924	$ -		0.146320	$	-	14	$	10,075	0.146320	$	-
15	$ 37,456	$	141,924	$ -		0.126904	$	-	15	$	7,760	0.126904	$	-
16	$ 28,844	$	141,924	$ -		0.110064	$	-	16	$	5,975	0.110064	$	-
17	$ 22,210	$	141,924	$ -		0.095459	$	-	17	$	4,601	0.095459	$	-
18	$ 17,101	$	141,924	$ -		0.082792	$	-	18	$	3,543	0.082792	$	-
19	$ 13,168	$	141,924	$ -		0.071808	$	-	19	$	2,728	0.071808	$	-
20	$ 10,139	$	141,924	$ -		0.062277	$	-	20	$	2,101	0.062277	$	-
21	$ 7,807	$	141,924	$ -		0.054013	$	-	21	$	1,617	0.054013	$	-
22	$ 6,012	$	141,924	$ -		0.046846	$	-	22	$	1,246	0.046846	$	-
23	$ 4,629	$	141,924	$ -		0.040629	$	-	23	$	959	0.040629	$	-
24	$ 3,564	$	141,924	$ -		0.035238	$	-	24	$	738	0.035238	$	-
25	$ 2,745	$	141,924	$ -		0.030562	$	-	25	$	569	0.030562	$	-
26	$ 2,113	$	141,924	$ -		0.026507	$	-	26	$	438	0.026507	$	-
27	$ 1,627	$	141,924	$ -		0.022986	$	-	27	$	337	0.022986	$	-
28	$ 1,253	$	141,924	$ -		0.019939	$	-	28	$	260	0.019939	$	-
29	$ 965	$	141,924	$ -		0.017293	$	-	29	$	200	0.017293	$	-
30	$ 743	$	141,924	$ -		0.014996	$	-	30	$	154	0.014996	$	-
31	$ 572	$	141,924	$ -		0.013008	$	-	31	$	119	0.013008	$	-
32	$ 440	$	141,924	$ -		0.011282	$	-	32	$	91	0.011282	$	-
33	$ 339	$	141,924	$ -		0.009785	$	-	33	$	70	0.009785	$	-
34	$ 261	$	141,924	$ -		0.008486	$	-	34	$	54	0.008486	$	-
35	$ 201	$	141,924	$ -		0.007360	$	-	35	$	42	0.007360	$	-
36	$ 155	$	141,924	$ -		0.006384	$	-	36	$	32	0.006384	$	-
37	$ 119	$	141,924	$ -		0.005538	$	-	37	$	25	0.005538	$	-
38	$ 92	$	141,924	$ -		0.004802	$	-	38	$	19	0.004802	$	-
39	$ 71	$	141,924	$ -		0.004166	$	-	39	$	15	0.004166	$	-
40	$ 54	$	141,924	$ -		0.003612	$	-	40	$	11	0.003612	$	-
	WORKING INTEREST APPRAISAL									ROYALTY INTEREST APPRAISAL				

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	DECLINE RATES
YR 1	55%
YR 2	29%
YR3+	29%

2014	GAS INCOME	OIL INCOME
WRK INT	$ 15,154,736	$ 385,155
ROY INT	$ 3,438,256	$ 72,664

	GAS CAP INCOME	OIL CAP INCOME
YR1	$ 4,811,069	$ 101,836
	$ 911,136	$ 19,229
YR2	$ 3,560,143	$ 75,137
	$ 574,236	$ 14,236

$ 12,478,783 — TY2016 WORKING INTEREST

YEAR	WRK INT INCOME	WORKING COST	NET INC	PROT FCTR(16.0%)	DIS INC
1	$ 4,912,540	$ 147,019	$ 4,765,521	0.931291	$ 4,438,087
2	$ 3,635,279	$ 147,019	$ 3,488,261	0.807711	$ 2,817,607
3	$ 2,799,165	$ 147,019	$ 2,652,146	0.700530	$ 1,857,909
4	$ 2,155,387	$ 147,019	$ 2,008,368	0.607572	$ 1,220,310
5	$ 1,659,628	$ 147,019	$ 1,512,608	0.526948	$ 797,088
6	$ 1,277,911	$ 147,019	$ 1,130,893	0.457024	$ 516,846
7	$ 983,992	$ 147,019	$ 836,973	0.396373	$ 331,758
8	$ 757,674	$ 147,019	$ 610,655	0.343780	$ 209,931
9	$ 583,409	$ 147,019	$ 436,390	0.298161	$ 130,116
10	$ 449,226	$ 147,019	$ 302,208	0.258598	$ 78,149
11	$ 345,903	$ 147,019	$ 198,884	0.224281	$ 44,606
12	$ 266,346	$ 147,019	$ 119,327	0.194519	$ 23,211
13	$ 205,086	$ 147,019	$ 58,067	0.168707	$ 9,796
14	$ 157,916	$ 147,019	$ 10,896	0.146320	$ 1,595
15	$ 121,598	$ 147,019	$ -	0.126904	$ -
16	$ 93,628	$ 147,019	$ -	0.110064	$ -
17	$ 72,094	$ 147,019	$ -	0.095458	$ -
18	$ 55,512	$ 147,019	$ -	0.082792	$ -
19	$ 42,744	$ 147,019	$ -	0.071808	$ -
20	$ 32,913	$ 147,019	$ -	0.062277	$ -
21	$ 25,343	$ 147,019	$ -	0.054013	$ -
22	$ 19,514	$ 147,019	$ -	0.046848	$ -
23	$ 15,026	$ 147,019	$ -	0.040629	$ -
24	$ 11,570	$ 147,019	$ -	0.035238	$ -
25	$ 8,909	$ 147,019	$ -	0.030562	$ -
26	$ 6,860	$ 147,019	$ -	0.026507	$ -
27	$ 5,282	$ 147,019	$ -	0.022989	$ -
28	$ 4,067	$ 147,019	$ -	0.019936	$ -
29	$ 3,132	$ 147,019	$ -	0.017293	$ -
30	$ 2,411	$ 147,019	$ -	0.014998	$ -
31	$ 1,857	$ 147,019	$ -	0.013008	$ -
32	$ 1,430	$ 147,019	$ -	0.011282	$ -
33	$ 1,101	$ 147,019	$ -	0.009785	$ -
34	$ 848	$ 147,019	$ -	0.008486	$ -
35	$ 653	$ 147,019	$ -	0.007360	$ -
36	$ 503	$ 147,019	$ -	0.006384	$ -
37	$ 387	$ 147,019	$ -	0.005536	$ -
38	$ 298	$ 147,019	$ -	0.004802	$ -
39	$ 229	$ 147,019	$ -	0.004166	$ -
40	$ 177	$ 147,019	$ -	0.003612	$ -

WORKING INTEREST APPRAISAL

TY2016 ROYALTY INTEREST

YEAR	ROY INT INCOME	PROT FCTR(16.0%)	DIS INC
1	$ 930,356	0.931291	$ 866,435
2	$ 688,456	0.807711	$ 556,061
3	$ 530,119	0.700530	$ 371,364
4	$ 408,191	0.607572	$ 248,006
5	$ 314,307	0.526948	$ 165,624
6	$ 242,017	0.457024	$ 110,607
7	$ 186,353	0.396373	$ 73,868
8	$ 143,462	0.343780	$ 49,330
9	$ 110,469	0.298161	$ 32,943
10	$ 85,076	0.258598	$ 22,000
11	$ 65,509	0.224281	$ 14,692
12	$ 50,442	0.194519	$ 9,812
13	$ 38,846	0.168707	$ 6,553
14	$ 29,907	0.146320	$ 4,375
15	$ 23,028	0.126904	$ -
16	$ 17,732	0.110064	$ -
17	$ 13,653	0.095458	$ -
18	$ 10,513	0.082792	$ -
19	$ 8,095	0.071808	$ -
20	$ 6,233	0.062277	$ -
21	$ 4,800	0.054013	$ -
22	$ 3,696	0.046848	$ -
23	$ 2,846	0.040629	$ -
24	$ 2,191	0.035238	$ -
25	$ 1,687	0.030562	$ -
26	$ 1,299	0.026507	$ -
27	$ 1,000	0.022989	$ -
28	$ 770	0.019936	$ -
29	$ 593	0.017293	$ -
30	$ 457	0.014998	$ -
31	$ 352	0.013008	$ -
32	$ 271	0.011282	$ -
33	$ 208	0.009785	$ -
34	$ 161	0.008486	$ -
35	$ 124	0.007360	$ -
36	$ 95	0.006384	$ -
37	$ 73	0.005536	$ -
38	$ 56	0.004802	$ -
39	$ 43	0.004166	$ -
40	$ 33	0.003612	$ -

ROYALTY INTEREST APPRAISAL

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				2014										
				WRK INT	$	7,336,306	$	228,432	YR1	$	1,944,094	$	39,739	
YR 1	69%			ROY INT	$	1,428,656	$	43,901		$	378,663	$	11,634	
YR 2	29%								YR2	$	1,428,656	$	44,207	
YR3+	29%									$	286,188	$	9,009	
	$ 4,600,222	TY2015 WORKING INTEREST								TY2015 ROYALTY INTEREST				
YEAR	WRK INT INCOME	WORKING COST	NET INC	PROT FCTR(16.5%)	DIS INC				YEAR	ROY INT INCOME	PROT FCTR(16.5%)	DIS INC		
1	$ 2,003,634	$ 145,700	$ 1,858,134	0.931291	$ 1,730,463				1	$ 390,227	0.931291	$ 363,416		
2	$ 1,482,837	$ 145,700	$ 1,337,137	0.807711	$ 1,080,020				2	$ 288,788	0.807711	$ 233,241		
3	$ 1,141,784	$ 145,700	$ 996,085	0.700530	$ 697,787				3	$ 222,381	0.700530	$ 155,784		
4	$ 879,174	$ 145,700	$ 733,474	0.607572	$ 445,639				4	$ 171,211	0.607572	$ 104,023		
5	$ 676,964	$ 145,700	$ 531,264	0.526948	$ 279,949				5	$ 131,832	0.526948	$ 69,459		
6	$ 521,262	$ 145,700	$ 378,563	0.457024	$ 171,541				6	$ 101,511	0.457024	$ 46,393		
7	$ 401,372	$ 145,700	$ 255,672	0.396378	$ 101,343				7	$ 78,163	0.396378	$ 30,982		
8	$ 309,055	$ 145,700	$ 163,357	0.343780	$ 56,159				8	$ 60,186	0.343780	$ 20,691		
9	$ 237,973	$ 145,700	$ 92,274	0.298161	$ 27,512				9	$ 46,343	0.298161	$ 13,818		
10	$ 183,240	$ 145,700	$ 37,540	0.258598	$ 9,708				10	$ 35,684	0.258598	$ 9,228		
11	$ 141,094	$ 145,700	$ -	0.224281	$ -				11	$ 27,477	0.224281	$ -		
12	$ 108,643	$ 145,700	$ -	0.194519	$ -				12	$ 21,157	0.194519	$ -		
13	$ 83,655	$ 145,700	$ -	0.168707	$ -				13	$ 16,291	0.168707	$ -		
14	$ 64,414	$ 145,700	$ -	0.146320	$ -				14	$ 12,544	0.146320	$ -		
15	$ 49,599	$ 145,700	$ -	0.126904	$ -				15	$ 9,659	0.126904	$ -		
16	$ 38,191	$ 145,700	$ -	0.110064	$ -				16	$ 7,437	0.110064	$ -		
17	$ 29,407	$ 145,700	$ -	0.095459	$ -				17	$ 5,727	0.095459	$ -		
18	$ 22,644	$ 145,700	$ -	0.082792	$ -				18	$ 4,410	0.082792	$ -		
19	$ 17,436	$ 145,700	$ -	0.071806	$ -				19	$ 3,396	0.071806	$ -		
20	$ 13,426	$ 145,700	$ -	0.062277	$ -				20	$ 2,614	0.062277	$ -		
21	$ 10,338	$ 145,700	$ -	0.054013	$ -				21	$ 2,013	0.054013	$ -		
22	$ 7,960	$ 145,700	$ -	0.046846	$ -				22	$ 1,550	0.046846	$ -		
23	$ 6,129	$ 145,700	$ -	0.040629	$ -				23	$ 1,194	0.040629	$ -		
24	$ 4,719	$ 145,700	$ -	0.035236	$ -				24	$ 919	0.035236	$ -		
25	$ 3,634	$ 145,700	$ -	0.030562	$ -				25	$ 708	0.030562	$ -		
26	$ 2,798	$ 145,700	$ -	0.026507	$ -				26	$ 545	0.026507	$ -		
27	$ 2,155	$ 145,700	$ -	0.022999	$ -				27	$ 420	0.022999	$ -		
28	$ 1,659	$ 145,700	$ -	0.019939	$ -				28	$ 323	0.019939	$ -		
29	$ 1,277	$ 145,700	$ -	0.017293	$ -				29	$ 249	0.017293	$ -		
30	$ 984	$ 145,700	$ -	0.014998	$ -				30	$ 192	0.014998	$ -		
31	$ 757	$ 145,700	$ -	0.013008	$ -				31	$ 147	0.013008	$ -		
32	$ 583	$ 145,700	$ -	0.011282	$ -				32	$ 114	0.011282	$ -		
33	$ 449	$ 145,700	$ -	0.009786	$ -				33	$ 87	0.009786	$ -		
34	$ 346	$ 145,700	$ -	0.008486	$ -				34	$ 67	0.008486	$ -		
35	$ 266	$ 145,700	$ -	0.007360	$ -				35	$ 52	0.007360	$ -		
36	$ 205	$ 145,700	$ -	0.006384	$ -				36	$ 40	0.006384	$ -		
37	$ 158	$ 145,700	$ -	0.005536	$ -				37	$ 31	0.005536	$ -		
38	$ 122	$ 145,700	$ -	0.004802	$ -				38	$ 24	0.004802	$ -		
39	$ 94	$ 145,700	$ -	0.004165	$ -				39	$ 18	0.004165	$ -		
40	$ 72	$ 145,700	$ -	0.003612	$ -				40	$ 14	0.003612	$ -		
	WORKING INTEREST APPRAISAL									ROYALTY INTEREST APPRAISAL				

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				2014									
				WRK INT	$	11,238,068	$	878,449	YR1	$	2,978,067	$	183,662
YR 1	39%			ROY INT	$	2,272,361	$	117,189		$	602,149	$	31,047
YR 2	29%								YR3	$	2,203,786	$	113,639
YR3+	22%									$	445,599	$	22,976

	$ 7,661,644	TY2016 WORKING INTEREST						TY2016 ROYALTY INTEREST			
YEAR	WRK INT INCOME	WORKING COST	NET INC	PROT FCTR(16.0%)	DIS INC		YEAR	ROY INT INCOME	PROT FCTR(16.0%)	DIS INC	
1	$ 3,131,639	$ 142,927	$ 2,988,712	0.931291	$ 2,783,350		1	$ 533,198	0.931291	$ 589,890	
2	$ 2,817,413	$ 142,927	$ 2,174,486	0.807711	$ 1,756,356		2	$ 468,566	0.807711	$ 378,465	
3	$ 1,784,408	$ 142,927	$ 1,641,481	0.700630	$ 1,149,909		3	$ 360,795	0.700630	$ 252,748	
4	$ 1,373,994	$ 142,927	$ 1,231,067	0.607572	$ 747,982		4	$ 277,812	0.607572	$ 168,791	
5	$ 1,057,075	$ 142,927	$ 915,048	0.526948	$ 482,163		5	$ 213,918	0.526948	$ 112,722	
6	$ 814,641	$ 142,927	$ 671,714	0.457024	$ 306,989		6	$ 164,715	0.457024	$ 75,279	
7	$ 627,274	$ 142,927	$ 484,347	0.396378	$ 191,964		7	$ 126,831	0.396378	$ 50,273	
8	$ 483,001	$ 142,927	$ 340,074	0.343780	$ 116,910		8	$ 97,659	0.343780	$ 33,573	
9	$ 371,911	$ 142,927	$ 228,983	0.298161	$ 68,274		9	$ 75,196	0.298161	$ 22,421	
10	$ 286,371	$ 142,927	$ 142,444	0.258598	$ 37,094		10	$ 57,902	0.258598	$ 14,973	
11	$ 220,506	$ 142,927	$ 77,578	0.224281	$ 17,399		11	$ 44,588	0.224281	$ 10,000	
12	$ 169,789	$ 142,927	$ 26,862	0.194519	$ 5,226		12	$ 34,330	0.194519	$ 6,678	
13	$ 130,738	$ 142,927	$ -	0.168707	$ -		13	$ 26,434	0.168707	$ -	
14	$ 100,668	$ 142,927	$ -	0.146320	$ -		14	$ 20,354	0.146320	$ -	
15	$ 77,514	$ 142,927	$ -	0.126904	$ -		15	$ 15,675	0.126904	$ -	
16	$ 59,686	$ 142,927	$ -	0.110064	$ -		16	$ 12,068	0.110064	$ -	
17	$ 45,956	$ 142,927	$ -	0.095458	$ -		17	$ 9,293	0.095458	$ -	
18	$ 35,386	$ 142,927	$ -	0.082792	$ -		18	$ 7,155	0.082792	$ -	
19	$ 27,249	$ 142,927	$ -	0.071808	$ -		19	$ 5,510	0.071808	$ -	
20	$ 20,981	$ 142,927	$ -	0.062277	$ -		20	$ 4,242	0.062277	$ -	
21	$ 16,155	$ 142,927	$ -	0.054013	$ -		21	$ 3,267	0.054013	$ -	
22	$ 12,440	$ 142,927	$ -	0.046846	$ -		22	$ 2,516	0.046846	$ -	
23	$ 9,579	$ 142,927	$ -	0.040629	$ -		23	$ 1,937	0.040629	$ -	
24	$ 7,376	$ 142,927	$ -	0.035238	$ -		24	$ 1,491	0.035238	$ -	
25	$ 5,679	$ 142,927	$ -	0.030562	$ -		25	$ 1,148	0.030562	$ -	
26	$ 4,373	$ 142,927	$ -	0.026507	$ -		26	$ 884	0.026507	$ -	
27	$ 3,367	$ 142,927	$ -	0.022988	$ -		27	$ 681	0.022988	$ -	
28	$ 2,593	$ 142,927	$ -	0.019939	$ -		28	$ 524	0.019939	$ -	
29	$ 1,996	$ 142,927	$ -	0.017293	$ -		29	$ 404	0.017293	$ -	
30	$ 1,537	$ 142,927	$ -	0.014998	$ -		30	$ 311	0.014998	$ -	
31	$ 1,184	$ 142,927	$ -	0.013008	$ -		31	$ 239	0.013008	$ -	
32	$ 911	$ 142,927	$ -	0.011282	$ -		32	$ 184	0.011282	$ -	
33	$ 702	$ 142,927	$ -	0.009785	$ -		33	$ 142	0.009785	$ -	
34	$ 540	$ 142,927	$ -	0.008486	$ -		34	$ 109	0.008486	$ -	
35	$ 416	$ 142,927	$ -	0.007360	$ -		35	$ 84	0.007360	$ -	
36	$ 320	$ 142,927	$ -	0.006384	$ -		36	$ 65	0.006384	$ -	
37	$ 247	$ 142,927	$ -	0.005536	$ -		37	$ 50	0.005536	$ -	
38	$ 190	$ 142,927	$ -	0.004802	$ -		38	$ 38	0.004802	$ -	
39	$ 146	$ 142,927	$ -	0.004165	$ -		39	$ 30	0.004165	$ -	
40	$ 113	$ 142,927	$ -	0.003612	$ -		40	$ 23	0.003612	$ -	

WORKING INTEREST APPRAISAL

ROYALTY INTEREST APPRAISAL

09 0120166272

					2014								
					WRK INT	$	4,066,632	$	251,439				
YR 1	59%				ROY INT	$	656,463	$	62,648				
YR 2	59%												
YR3+	23%												
	$ 2,349,024				TY2016 WORKING INTEREST								
YEAR	WRK INT INCOME		WORKING COST		NET INC		PROT FCTR(10.0%)		DIS INC				
1	$ 1,152,769	$	141,662	$	1,011,107		0.931291	$	941,635				
2	$ 853,049	$	141,662	$	711,387		0.807711	$	574,595				
3	$ 656,849	$	141,662	$	515,185		0.700530	$	360,903				
4	$ 505,773	$	141,662	$	364,111		0.607572	$	221,223				
5	$ 389,445	$	141,662	$	247,783		0.526949	$	130,569				
6	$ 299,875	$	141,662	$	158,210		0.457024	$	72,306				
7	$ 230,902	$	141,662	$	89,240		0.396378	$	35,373				
8	$ 177,794	$	141,662	$	36,132		0.343780	$	12,422				
9	$ 136,902	$	141,662	$	-		0.298181	$	-				
10	$ 105,414	$	141,662	$	-		0.258598	$	-				
11	$ 81,169	$	141,662	$	-		0.224281	$	-				
12	$ 62,500	$	141,662	$	-		0.194519	$	-				
13	$ 48,128	$	141,662	$	-		0.168707	$	-				
14	$ 37,058	$	141,662	$	-		0.146320	$	-				
15	$ 28,533	$	141,662	$	-		0.126904	$	-				
16	$ 21,971	$	141,662	$	-		0.110054	$	-				
17	$ 16,917	$	141,662	$	-		0.095456	$	-				
18	$ 13,026	$	141,662	$	-		0.082792	$	-				
19	$ 10,030	$	141,662	$	-		0.071808	$	-				
20	$ 7,723	$	141,662	$	-		0.062277	$	-				
21	$ 5,947	$	141,662	$	-		0.054018	$	-				
22	$ 4,578	$	141,662	$	-		0.046846	$	-				
23	$ 3,526	$	141,662	$	-		0.040629	$	-				
24	$ 2,715	$	141,662	$	-		0.035238	$	-				
25	$ 2,091	$	141,662	$	-		0.030562	$	-				
26	$ 1,610	$	141,662	$	-		0.026507	$	-				
27	$ 1,239	$	141,662	$	-		0.022989	$	-				
28	$ 954	$	141,662	$	-		0.019939	$	-				
29	$ 735	$	141,662	$	-		0.017293	$	-				
30	$ 566	$	141,662	$	-		0.014998	$	-				
31	$ 436	$	141,662	$	-		0.013008	$	-				
32	$ 336	$	141,662	$	-		0.011282	$	-				
33	$ 258	$	141,662	$	-		0.009786	$	-				
34	$ 199	$	141,662	$	-		0.008488	$	-				
35	$ 153	$	141,662	$	-		0.007360	$	-				
36	$ 118	$	141,662	$	-		0.006384	$	-				
37	$ 91	$	141,662	$	-		0.005536	$	-				
38	$ 70	$	141,662	$	-		0.004802	$	-				
39	$ 54	$	141,662	$	-		0.004166	$	-				
40	$ 41	$	141,662	$	-		0.003612	$	-				
	WORKING INTEREST APPRAISAL												

YR1	$	1,096,137	$	66,631									
	$	226,963	$	13,634									
YR2	$	603,742	$	49,307									
	$	167,952	$	10,308									
					TY2016 ROYALTY INTEREST								
YEAR	ROY INT INCOME			PROT FCTR(10.0%)		DIS INC							
1	$ 240,866			0.931291	$	224,335							
2	$ 178,256			0.807711	$	143,979							
3	$ 137,257			0.700530	$	96,153							
4	$ 105,698			0.607572	$	64,213							
5	$ 81,380			0.526949	$	42,883							
6	$ 62,662			0.457024	$	28,639							
7	$ 48,250			0.396378	$	19,128							
8	$ 37,153			0.343780	$	12,772							
9	$ 28,607			0.298181	$	-							
10	$ 22,028			0.258598	$	-							
11	$ 16,961			0.224281	$	-							
12	$ 13,060			0.194519	$	-							
13	$ 10,056			0.168707	$	-							
14	$ 7,743			0.146320	$	-							
15	$ 5,962			0.126904	$	-							
16	$ 4,591			0.110054	$	-							
17	$ 3,536			0.095456	$	-							
18	$ 2,722			0.082792	$	-							
19	$ 2,096			0.071808	$	-							
20	$ 1,614			0.062277	$	-							
21	$ 1,243			0.054018	$	-							
22	$ 957			0.046846	$	-							
23	$ 737			0.040629	$	-							
24	$ 567			0.035238	$	-							
25	$ 437			0.030562	$	-							
26	$ 336			0.026507	$	-							
27	$ 259			0.022989	$	-							
28	$ 199			0.019939	$	-							
29	$ 154			0.017293	$	-							
30	$ 118			0.014998	$	-							
31	$ 91			0.013008	$	-							
32	$ 70			0.011282	$	-							
33	$ 54			0.009786	$	-							
34	$ 42			0.008488	$	-							
35	$ 32			0.007360	$	-							
36	$ 25			0.006384	$	-							
37	$ 19			0.005536	$	-							
38	$ 15			0.004802	$	-							
39	$ 11			0.004166	$	-							
40	$ 9			0.003612	$	-							
	ROYALTY INTEREST APPRAISAL												

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			2014									
YR 1	50%		WRK INT	$	3,710,969	$	133,725	YR1	$	969,127	$	35,439
YR 2	29%		ROY INT	$	853,007	$	31,622		$	833,007	$	8,433
YR3+	23%							YR3	$	727,862	$	26,234
									$	173,168	$	6,346

$ 1,981,881

TY2018 WORKING INTEREST

YEAR	WRK INT INCOME	WORKING COST	NET INC	PROT FCTR(18.5%)	DIS INC
1	$ 1,018,755	$ 144,982	$ 873,753	0.931291	$ 813,746
2	$ 753,886	$ 144,982	$ 608,904	0.807711	$ 491,618
3	$ 580,492	$ 144,982	$ 435,510	0.700530	$ 305,088
4	$ 446,979	$ 144,982	$ 301,997	0.607572	$ 183,486
5	$ 344,174	$ 144,982	$ 199,192	0.526948	$ 104,964
6	$ 265,014	$ 144,982	$ 120,032	0.457024	$ 54,867
7	$ 204,081	$ 144,982	$ 59,078	0.396378	$ 23,417
8	$ 157,127	$ 144,982	$ 12,146	0.343780	$ 4,175
9	$ 120,986	$ 144,982	$ -	0.298161	$ -
10	$ 93,180	$ 144,982	$ -	0.258599	$ -
11	$ 71,734	$ 144,982	$ -	0.224261	$ -
12	$ 55,238	$ 144,982	$ -	0.194519	$ -
13	$ 42,531	$ 144,982	$ -	0.168707	$ -
14	$ 32,749	$ 144,982	$ -	0.146320	$ -
15	$ 25,217	$ 144,982	$ -	0.126904	$ -
16	$ 19,417	$ 144,982	$ -	0.110084	$ -
17	$ 14,951	$ 144,982	$ -	0.095459	$ -
18	$ 11,512	$ 144,982	$ -	0.082792	$ -
19	$ 8,864	$ 144,982	$ -	0.071808	$ -
20	$ 6,826	$ 144,982	$ -	0.062277	$ -
21	$ 5,256	$ 144,982	$ -	0.054018	$ -
22	$ 4,047	$ 144,982	$ -	0.046848	$ -
23	$ 3,116	$ 144,982	$ -	0.040629	$ -
24	$ 2,398	$ 144,982	$ -	0.035238	$ -
25	$ 1,846	$ 144,982	$ -	0.030562	$ -
26	$ 1,423	$ 144,982	$ -	0.026507	$ -
27	$ 1,096	$ 144,982	$ -	0.022998	$ -
28	$ 843	$ 144,982	$ -	0.019939	$ -
29	$ 649	$ 144,982	$ -	0.017293	$ -
30	$ 500	$ 144,982	$ -	0.014998	$ -
31	$ 385	$ 144,982	$ -	0.013008	$ -
32	$ 297	$ 144,982	$ -	0.011282	$ -
33	$ 228	$ 144,982	$ -	0.009785	$ -
34	$ 176	$ 144,982	$ -	0.008486	$ -
35	$ 135	$ 144,982	$ -	0.007360	$ -
36	$ 104	$ 144,982	$ -	0.006384	$ -
37	$ 80	$ 144,982	$ -	0.005536	$ -
38	$ 62	$ 144,982	$ -	0.004802	$ -
39	$ 48	$ 144,982	$ -	0.004166	$ -
40	$ 37	$ 144,982	$ -	0.003612	$ -

WORKING INTEREST APPRAISAL

TY2018 ROYALTY INTEREST

YEAR	ROY INT INCOME	PROT FCTR(18.5%)	DIS INC
1	$ 242,430	0.931291	$ 225,773
2	$ 179,396	0.807711	$ 144,902
3	$ 138,139	0.700530	$ 96,769
4	$ 106,365	0.607572	$ 64,624
5	$ 81,901	0.526948	$ 43,155
6	$ 63,064	0.457024	$ 28,822
7	$ 48,568	0.396378	$ 19,248
8	$ 37,391	0.343780	$ 12,854
9	$ 28,791	0.298161	$ -
10	$ 22,169	0.258599	$ -
11	$ 17,070	0.224261	$ -
12	$ 13,144	0.194519	$ -
13	$ 10,121	0.168707	$ -
14	$ 7,793	0.146320	$ -
15	$ 6,001	0.126904	$ -
16	$ 4,620	0.110084	$ -
17	$ 3,558	0.095459	$ -
18	$ 2,739	0.082792	$ -
19	$ 2,109	0.071808	$ -
20	$ 1,624	0.062277	$ -
21	$ 1,251	0.054018	$ -
22	$ 963	0.046848	$ -
23	$ 742	0.040629	$ -
24	$ 571	0.035238	$ -
25	$ 440	0.030562	$ -
26	$ 339	0.026507	$ -
27	$ 261	0.022998	$ -
28	$ 201	0.019939	$ -
29	$ 155	0.017293	$ -
30	$ 119	0.014998	$ -
31	$ 92	0.013008	$ -
32	$ 71	0.011282	$ -
33	$ 54	0.009785	$ -
34	$ 42	0.008486	$ -
35	$ 32	0.007360	$ -
36	$ 25	0.006384	$ -
37	$ 19	0.005536	$ -
38	$ 15	0.004802	$ -
39	$ 11	0.004166	$ -
40	$ 9	0.003612	$ -

ROYALTY INTEREST APPRAISAL

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				2014									
			WRK INT	$	6,643,141	$	56,557	YR1	$	1,601,432	$	15,597
YR 1	39%		ROY INT	$	1,259,919	$	12,004		$	341,629	$	3,383
YR 2	29%							YR2	$	1,185,066	$	11,753
YR3+	23%								$	262,963	$	2,611

	$ 3,548,006	TY2016 WORKING INTEREST				
YEAR	WRK INT INCOME	WORKING COST	NET INC	PROT FCTR(16.0%)	DIS INC	
1	$ 1,817,329	$ 148,562	$ 1,468,747	0.931291	$ 1,367,831	
2	$ 1,196,823	$ 148,562	$ 1,048,241	0.807711	$ 846,676	
3	$ 921,564	$ 148,562	$ 772,972	0.700530	$ 541,490	
4	$ 709,597	$ 148,562	$ 561,014	0.607572	$ 340,857	
5	$ 546,389	$ 148,562	$ 397,807	0.526948	$ 209,624	
6	$ 420,720	$ 148,562	$ 272,138	0.457024	$ 124,373	
7	$ 323,964	$ 148,562	$ 176,372	0.396378	$ 69,914	
8	$ 249,445	$ 148,562	$ 100,883	0.343780	$ 34,678	
9	$ 192,072	$ 148,562	$ 43,490	0.298181	$ 12,967	
10	$ 147,896	$ 148,562	$ -	0.258598	$ -	
11	$ 113,880	$ 148,562	$ -	0.224281	$ -	
12	$ 87,667	$ 148,562	$ -	0.194519	$ -	
13	$ 67,519	$ 148,562	$ -	0.168707	$ -	
14	$ 51,990	$ 148,562	$ -	0.146320	$ -	
15	$ 40,032	$ 148,562	$ -	0.126904	$ -	
16	$ 30,825	$ 148,562	$ -	0.110064	$ -	
17	$ 23,735	$ 148,562	$ -	0.095459	$ -	
18	$ 18,276	$ 148,562	$ -	0.082792	$ -	
19	$ 14,073	$ 148,562	$ -	0.071806	$ -	
20	$ 10,836	$ 148,562	$ -	0.062277	$ -	
21	$ 8,344	$ 148,562	$ -	0.054013	$ -	
22	$ 6,426	$ 148,562	$ -	0.046846	$ -	
23	$ 4,947	$ 148,562	$ -	0.040629	$ -	
24	$ 3,809	$ 148,562	$ -	0.035238	$ -	
25	$ 2,933	$ 148,562	$ -	0.030552	$ -	
26	$ 2,258	$ 148,562	$ -	0.026507	$ -	
27	$ 1,739	$ 148,562	$ -	0.022988	$ -	
28	$ 1,339	$ 148,562	$ -	0.019938	$ -	
29	$ 1,031	$ 148,562	$ -	0.017293	$ -	
30	$ 794	$ 148,562	$ -	0.014998	$ -	
31	$ 611	$ 148,562	$ -	0.013008	$ -	
32	$ 471	$ 148,562	$ -	0.011282	$ -	
33	$ 362	$ 148,562	$ -	0.009785	$ -	
34	$ 279	$ 148,562	$ -	0.008486	$ -	
35	$ 215	$ 148,562	$ -	0.007360	$ -	
36	$ 166	$ 148,562	$ -	0.006384	$ -	
37	$ 127	$ 148,562	$ -	0.005536	$ -	
38	$ 98	$ 148,562	$ -	0.004802	$ -	
39	$ 76	$ 148,562	$ -	0.004165	$ -	
40	$ 58	$ 148,562	$ -	0.003612	$ -	

WORKING INTEREST APPRAISAL

	TY2016 ROYALTY INTEREST		
YEAR	ROY INT INCOME	PROT FCTR(16.0%)	DIS INC
1	$ 345,222	0.931291	$ 321,502
2	$ 255,464	0.807711	$ 206,341
3	$ 198,707	0.700530	$ 137,799
4	$ 151,466	0.607572	$ 92,026
5	$ 116,628	0.526948	$ 61,457
6	$ 89,903	0.457024	$ 41,042
7	$ 69,149	0.396378	$ 27,409
8	$ 53,244	0.343780	$ 18,304
9	$ 40,996	0.298181	$ 12,224
10	$ 31,569	0.258598	$ -
11	$ 24,308	0.224281	$ -
12	$ 18,717	0.194519	$ -
13	$ 14,412	0.168707	$ -
14	$ 11,097	0.146320	$ -
15	$ 8,545	0.126904	$ -
16	$ 6,580	0.110064	$ -
17	$ 5,066	0.095459	$ -
18	$ 3,901	0.082792	$ -
19	$ 3,004	0.071806	$ -
20	$ 2,313	0.062277	$ -
21	$ 1,781	0.054013	$ -
22	$ 1,371	0.046846	$ -
23	$ 1,056	0.040629	$ -
24	$ 813	0.035238	$ -
25	$ 626	0.030552	$ -
26	$ 482	0.026507	$ -
27	$ 371	0.022988	$ -
28	$ 286	0.019938	$ -
29	$ 220	0.017293	$ -
30	$ 169	0.014998	$ -
31	$ 130	0.013008	$ -
32	$ 100	0.011282	$ -
33	$ 77	0.009785	$ -
34	$ 60	0.008486	$ -
35	$ 46	0.007360	$ -
36	$ 35	0.006384	$ -
37	$ 27	0.005536	$ -
38	$ 21	0.004802	$ -
39	$ 16	0.004165	$ -
40	$ 12	0.003612	$ -

ROYALTY INTEREST APPRAISAL

09 01201663 59

				2014									
				WRK INT	$	4,308,408	$	84,373	YR1	$	1,141,186	$	14,409
				ROY INT	$	537,369	$	10,573		$	221,906	$	2,902
YR 1	19%								YR2	$	648,467	$	10,563
YR 2	29%									$	164,210	$	2,973
YR3+	25%												
	$ 2,328,272		TY2016 WORKING INTEREST								TY2016 ROYALTY INTEREST		
YEAR	WRK INT INCOME		WORKING COST	NET INC		PRCT FDTR(16.5%)		DIS INC	YEAR		ROY INT INCOME	PRCT FDTR(18.5%)	DIS INC
1	$ 1,156,607	$	148,201	$ 1,007,406		0.931291	$	938,158	1	$	224,708	0.931291	$ 209,268
2	$ 858,149	$	148,201	$ 709,948		0.807711	$	571,009	2	$	166,284	0.807711	$ 134,306
3	$ 658,485	$	148,201	$ 510,283		0.700530	$	357,455	3	$	128,038	0.700530	$ 89,695
4	$ 507,018	$	148,201	$ 358,817		0.607572	$	218,007	4	$	99,590	0.607572	$ 59,900
5	$ 390,404	$	148,201	$ 242,202		0.526948	$	127,629	5	$	75,914	0.526948	$ 40,008
6	$ 300,611	$	148,201	$ 152,410		0.457024	$	69,656	6	$	58,454	0.457024	$ 26,716
7	$ 231,470	$	148,201	$ 83,269		0.396378	$	33,009	7	$	45,009	0.396378	$ 17,841
8	$ 178,232	$	148,201	$ 30,031		0.343780	$	10,324	8	$	34,667	0.343780	$ 11,914
9	$ 137,239	$	148,201	$ -		0.298161	$	-	9	$	26,686	0.298161	$ -
10	$ 105,674	$	148,201	$ -		0.258598	$	-	10	$	20,548	0.258598	$ -
11	$ 81,369	$	148,201	$ -		0.224281	$	-	11	$	18,822	0.224281	$ -
12	$ 62,654	$	148,201	$ -		0.194519	$	-	12	$	12,183	0.194519	$ -
13	$ 48,244	$	148,201	$ -		0.168707	$	-	13	$	9,381	0.168707	$ -
14	$ 37,148	$	148,201	$ -		0.146320	$	-	14	$	7,223	0.146320	$ -
15	$ 28,604	$	148,201	$ -		0.126904	$	-	15	$	5,562	0.126904	$ -
16	$ 22,026	$	148,201	$ -		0.110064	$	-	16	$	4,283	0.110064	$ -
17	$ 16,959	$	148,201	$ -		0.095459	$	-	17	$	3,298	0.095459	$ -
18	$ 13,059	$	148,201	$ -		0.082792	$	-	18	$	2,539	0.082792	$ -
19	$ 10,055	$	148,201	$ -		0.071808	$	-	19	$	1,955	0.071808	$ -
20	$ 7,742	$	148,201	$ -		0.062277	$	-	20	$	1,506	0.062277	$ -
21	$ 5,962	$	148,201	$ -		0.054013	$	-	21	$	1,159	0.054013	$ -
22	$ 4,590	$	148,201	$ -		0.046846	$	-	22	$	893	0.046846	$ -
23	$ 3,535	$	148,201	$ -		0.040629	$	-	23	$	687	0.040629	$ -
24	$ 2,722	$	148,201	$ -		0.035236	$	-	24	$	529	0.035236	$ -
25	$ 2,096	$	148,201	$ -		0.030562	$	-	25	$	406	0.030562	$ -
26	$ 1,614	$	148,201	$ -		0.026507	$	-	26	$	314	0.026507	$ -
27	$ 1,243	$	148,201	$ -		0.022989	$	-	27	$	242	0.022989	$ -
28	$ 957	$	148,201	$ -		0.019939	$	-	28	$	186	0.019939	$ -
29	$ 737	$	148,201	$ -		0.017293	$	-	29	$	143	0.017293	$ -
30	$ 567	$	148,201	$ -		0.014998	$	-	30	$	110	0.014998	$ -
31	$ 437	$	148,201	$ -		0.013008	$	-	31	$	85	0.013008	$ -
32	$ 336	$	148,201	$ -		0.011282	$	-	32	$	66	0.011282	$ -
33	$ 259	$	148,201	$ -		0.009786	$	-	33	$	50	0.009786	$ -
34	$ 199	$	148,201	$ -		0.008486	$	-	34	$	39	0.008486	$ -
35	$ 154	$	148,201	$ -		0.007360	$	-	35	$	30	0.007360	$ -
36	$ 119	$	148,201	$ -		0.006384	$	-	36	$	23	0.006384	$ -
37	$ 91	$	148,201	$ -		0.005536	$	-	37	$	18	0.005536	$ -
38	$ 70	$	148,201	$ -		0.004802	$	-	38	$	14	0.004802	$ -
39	$ 54	$	148,201	$ -		0.004166	$	-	39	$	10	0.004166	$ -
40	$ 42	$	148,201	$ -		0.003612	$	-	40	$	8	0.003612	$ -
	WORKING INTEREST APPRAISAL									ROYALTY INTEREST APPRAISAL			

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				2014									
				WRK INT	$	4,256,297	$	46,789	YR1	$	1,127,919	$	19,929
YR 1	60%			ROY INT	$	727,268	$	8,337		$	192,726	$	2,209
YR 2	25%								YR2	$	834,569	$	9,568
YR3+	25%									$	142,617	$	1,635

	$ 2,256,791	TY2016 WORKING INTEREST						TY2016 ROYALTY INTEREST			
YEAR	WRK INT INCOME	WORKING COST	NET INC	PROT FCTR(16.0%)	DIS INC		YEAR	ROY INT INCOME	PROT FCTR(16.0%)	DIS INC	
1	$ 1,140,648	$ 148,365	$ 992,483	0.931291	$ 924,290		1	$ 194,935	0.931291	$ 181,542	
2	$ 844,227	$ 148,365	$ 695,862	0.807711	$ 562,065		2	$ 144,253	0.807711	$ 116,514	
3	$ 650,055	$ 148,365	$ 501,690	0.700530	$ 351,449		3	$ 111,074	0.700530	$ 77,811	
4	$ 500,542	$ 148,365	$ 352,177	0.607572	$ 213,973		4	$ 85,527	0.607572	$ 51,964	
5	$ 385,418	$ 148,365	$ 237,052	0.526648	$ 124,914		5	$ 65,856	0.526648	$ 34,703	
6	$ 296,772	$ 148,365	$ 148,406	0.467024	$ 87,825		6	$ 50,709	0.467024	$ 23,175	
7	$ 228,514	$ 148,365	$ 80,149	0.396378	$ 31,769		7	$ 39,046	0.396378	$ 18,477	
8	$ 176,956	$ 148,365	$ 27,591	0.343780	$ 9,485		8	$ 30,095	0.343780	$ 10,338	
9	$ 135,486	$ 148,365	$ -	0.298151	$ -		9	$ 23,160	0.298151	$ -	
10	$ 104,324	$ 148,365	$ -	0.258599	$ -		10	$ 17,826	0.258599	$ -	
11	$ 80,330	$ 148,365	$ -	0.224281	$ -		11	$ 13,726	0.224281	$ -	
12	$ 61,854	$ 148,365	$ -	0.194519	$ -		12	$ 10,569	0.194519	$ -	
13	$ 47,627	$ 148,365	$ -	0.168707	$ -		13	$ 8,136	0.168707	$ -	
14	$ 36,673	$ 148,365	$ -	0.146320	$ -		14	$ 6,266	0.146320	$ -	
15	$ 28,238	$ 148,365	$ -	0.126904	$ -		15	$ 4,825	0.126904	$ -	
16	$ 21,744	$ 148,365	$ -	0.110064	$ -		16	$ 3,715	0.110064	$ -	
17	$ 16,742	$ 148,365	$ -	0.095459	$ -		17	$ 2,861	0.095459	$ -	
18	$ 12,892	$ 148,365	$ -	0.082792	$ -		18	$ 2,203	0.082792	$ -	
19	$ 9,927	$ 148,365	$ -	0.071808	$ -		19	$ 1,696	0.071808	$ -	
20	$ 7,644	$ 148,365	$ -	0.062277	$ -		20	$ 1,306	0.062277	$ -	
21	$ 5,885	$ 148,365	$ -	0.054013	$ -		21	$ 1,006	0.054013	$ -	
22	$ 4,532	$ 148,365	$ -	0.046846	$ -		22	$ 774	0.046846	$ -	
23	$ 3,490	$ 148,365	$ -	0.040629	$ -		23	$ 596	0.040629	$ -	
24	$ 2,687	$ 148,365	$ -	0.035236	$ -		24	$ 459	0.035236	$ -	
25	$ 2,069	$ 148,365	$ -	0.030562	$ -		25	$ 354	0.030562	$ -	
26	$ 1,593	$ 148,365	$ -	0.026507	$ -		26	$ 272	0.026507	$ -	
27	$ 1,227	$ 148,365	$ -	0.022989	$ -		27	$ 210	0.022989	$ -	
28	$ 945	$ 148,365	$ -	0.019939	$ -		28	$ 161	0.019939	$ -	
29	$ 727	$ 148,365	$ -	0.017293	$ -		29	$ 124	0.017293	$ -	
30	$ 560	$ 148,365	$ -	0.014998	$ -		30	$ 96	0.014998	$ -	
31	$ 431	$ 148,365	$ -	0.013008	$ -		31	$ 74	0.013008	$ -	
32	$ 332	$ 148,365	$ -	0.011282	$ -		32	$ 57	0.011282	$ -	
33	$ 256	$ 148,365	$ -	0.009785	$ -		33	$ 44	0.009785	$ -	
34	$ 197	$ 148,365	$ -	0.008486	$ -		34	$ 34	0.008486	$ -	
35	$ 152	$ 148,365	$ -	0.007360	$ -		35	$ 26	0.007360	$ -	
36	$ 117	$ 148,365	$ -	0.006384	$ -		36	$ 20	0.006384	$ -	
37	$ 90	$ 148,365	$ -	0.005536	$ -		37	$ 16	0.005536	$ -	
38	$ 69	$ 148,365	$ -	0.004802	$ -		38	$ 12	0.004802	$ -	
39	$ 53	$ 148,365	$ -	0.004166	$ -		39	$ 9	0.004166	$ -	
40	$ 41	$ 148,365	$ -	0.003612	$ -		40	$ 7	0.003612	$ -	

WORKING INTEREST APPRAISAL

ROYALTY INTEREST APPRAISAL

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OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 35

ACCOUNT:0300520002 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:DAVIS #1

STATUS:A API#:01695 DATE:05/30/1973 DAYS:365 BBLS: MCFS: 292 RCPTS: 1400 GWI: 1137 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.360 0.160 0.130 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 42

	GAS WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR	OIL WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR
1	915	641	597	212	197	0.931						
2	796	522	421	184	149	0.808						
3	693	418	293	160	112	0.701						
4	603	328	199	139	85	0.608						
5	524	250	132	121	64	0.527						
6	456	182	83	106	48	0.457						
7	397	122	48	92	36	0.396						
8	345	71	24	80	27	0.344						
9	300	26	8	69	21	0.298						
10	261	0	0	60	0	0.259						
TOTAL:			1,806		740							
EXPENSE:	275		275	275								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 37

ACCOUNT:0300520007 RESOORCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:CLARENCE POWELL #1

STATUS:A API#:01756 DATE:01/13/1974 DAYS:365 BBLS: MCFS: 1 RCPTS: 356 GWI: 0 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.360 0.160 0.130 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 41

	GAS WORKING INTEREST			GAS ROYALTY INTEREST			OIL WORKING INTEREST			OIL ROYALTY INTEREST		
	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOOUNT INCOME	FACTOR
TOTAL:												

EXPENSE: 0

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 39

ACCOUNT:0300735001 RESOURCE:GS OWNER:ANTERO RESODRCES CORPORATI LOCATION:ALAVADORE SMITH #1

STATUS:A API#:00170 DATE:10/21/1946 DAYS:365 BBLS: MCFS: 1892 RCPTS: 6863 GWI: 6005 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.410 0.140 0.120 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 69

	GAS WORKING INTEREST GROSS INCOME	NET INCOME	DISCODNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR	OIL WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR
1	4,924	3,447	3,210	704	655	0.931						
2	4,333	2,856	2,307	619	500	0.808						
3	3,813	2,336	1,636	545	382	0.701						
4	3,356	1,878	1,141	479	291	0.608						
5	2,953	1,476	778	422	222	0.527						
6	2,599	1,121	512	371	170	0.457						
7	2,287	810	321	327	130	0.396						
8	2,012	535	184	288	99	0.344						
9	1,771	294	88	253	75	0.298						
10	1,558	81	21	223	58	0.259						
11	1,371	0	0	196	0	0.224						
TOTAL:			10,198		2,582							
EXPENSE:	1477		1477	1477								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 41

ACCOUNT:0300735004 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:M V UNDERWOOD #1

STATUS:A API#:02778 DATE:10/15/1956 DAYS:365 BBLS: MCFS: 298 RCPTS: 1473 GWI: 1289 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.410 0.140 0.120 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 59

	GAS WORKING INTEREST			GAS ROYALTY INTEREST			OIL WORKING INTEREST			OIL ROYALTY INTEREST		
	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR
1	1,057	740	689	151	141	0.931						
2	930	613	495	133	107	0.808						
3	819	501	351	117	82	0.701						
4	720	403	245	103	62	0.608						
5	634	317	167	90	48	0.527						
6	558	241	110	80	36	0.457						
7	491	174	69	70	28	0.396						
8	432	115	39	62	21	0.344						
9	380	63	19	54	16	0.298						
10	335	17	5	48	12	0.259						
11	294	0	0	42	0	0.224						
TOTAL:			2,189		554							
EXPENSE:	317		317	317								

OCT 12, 2016
05:09 PM

'OOOORIDGE' COUNTY, WV
YIELO CAP MODEL REPORT FOR - 2016

NR105: 43

ACCOUNT:0316164971 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:EOND #1

STATUS:A API#:04971 OATE:08/29/2005 OAYS:365 EELS: MCFS: 1980 RCPTS: 10293 GWI: 8330 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.380 0.210 0.110 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USEO:
CAP RATE: 15.300 OECLINE RATE:
WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 10

	GAS WORKING INTEREST GROSS INCOME	NET 1NCOME	O1SCOUNT INCOME	GAS ROYALTY INTERREST GROSS INCOME	DISCOUNT INCOME	FACTOR	OIL WORKING INTEREST GROSS INCOME	NET INCOME	OISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	D1SCOUNT 1NCOME	FACTOR
1	6,956	4,869	4,534	1,639	1,526	0.931						
2	6,190	4,104	3,315	1,459	1,178	0.808						
3	5,509	3,423	2,398	1,298	910	0.701						
4	4,903	2,817	1,711	1,156	702	0.608						
5	4,364	2,277	1,200	1,028	542	0.527						
6	3,884	1,797	821	915	418	0.457						
7	3,457	1,370	543	815	323	0.396						
8	3,077	990	340	725	249	0.344						
9	2,738	651	194	645	192	0.298						
10	2,437	350	91	574	149	0.259						
11	2,169	82	18	511	115	0.224						
12	1,930	0	0	455	0	0.195						
TOTAL:			15,166		6,304							
EXPENSE:	2087		2087	2087								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 45

ACCOUNT:0317171706 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:DAVIS 6

STATUS:A API#:01706 DATE:12/15/1972 DAYS:365 BBLS: MCFS: 20 RCPTS: 89 GWI: 0 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.360 0.160 0.130 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 43

	GAS WORKING INTEREST			GAS ROYALTY INTEREST			OIL WORKING INTEREST			OIL ROYALTY INTEREST		
	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR
TOTAL:												

EXPENSE: 0

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 47

ACCOUNT:0318185307 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:LEATHERMAN 1

STATUS:A API#:05307 DATE:06/01/2007 DAYS:365 BBLS: MCFS: 1364 RCPTS: 6644 GWI: 5541 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.410 0.140 0.120 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 8

	GAS WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR	OIL WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR
1	4,544	3,181	2,962	904	842	0.931						
2	3,998	2,635	2,129	796	643	0.808						
3	3,519	2,155	1,510	700	491	0.701						
4	3,096	1,733	1,053	616	374	0.608						
5	2,725	1,362	718	542	286	0.527						
6	2,398	1,035	473	477	218	0.457						
7	2,110	747	296	420	166	0.396						
8	1,857	494	170	370	127	0.344						
9	1,634	271	81	325	97	0.298						
10	1,438	75	19	286	74	0.259						
11	1,265	0	0	252	0	0.224						
TOTAL:			9,410		3,319							
EXPENSE:	1363		1363	1363								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 49

ACCOUNT:0318185470 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:DAVIS H B 2

STATUS:A API#:05470 DATE:01/01/2008 DAYS:365 EBLS: MCFS: 1072 RCPTS: 6761 GWI: 5426 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.310 0.170 0.120 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 7

	GAS WORKING INTEREST			GAS ROYALTY INTEREST			OIL WORKING INTEREST			OIL ROYALTY INTEREST		
	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR
1	4,449	3,115	2,901	1,095	1,019	0.931						
2	3,915	2,581	2,084	963	778	0.808						
3	3,446	2,111	1,479	848	594	0.701						
4	3,032	1,697	1,031	746	453	0.608						
5	2,668	1,333	703	656	346	0.527						
6	2,348	1,013	463	578	264	0.457						
7	2,066	731	290	508	202	0.396						
8	1,818	484	166	447	154	0.344						
9	1,600	265	79	394	117	0.298						
10	1,408	73	19	346	90	0.259						
11	1,239	0	0	305	0	0.224						
TOTAL:			9,215		4,017							
EXPENSE:	1335		1335	1335								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 51

ACCOUNT:0320104585 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:UNDERWOOD 1

STATUS:M API#:04585 DATE:10/08/2008 DAYS:365 BBLS: MCFS: 15501 RCPTS: 123455 GWI: 105803 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 EXPENSE: 0.3 30000 30000 30000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 30000 30000 30000

SETTLED YEARS: 7

	GAS WORKING INTEREST GROSS INCOME	GAS WORKING INTEREST NET INCOME	GAS WORKING INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	GAS ROYALTY INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST FACTOR	OIL WORKING INTEREST GROSS INCOME	OIL WORKING INTEREST NET INCOME	OIL WORKING INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	OIL ROYALTY INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST FACTOR
1	69,301	48,511	45,178	11,562	10,768	0.931						
2	53,362	32,571	26,308	8,903	7,191	0.808						
3	41,089	20,298	14,220	6,855	4,802	0.701						
4	31,638	10,848	6,591	5,278	3,207	0.608						
5	24,361	3,571	1,882	4,064	2,142	0.527						
6	18,758	0	0	3,130	0	0.457						
TOTAL:			94,178		28,110							
EXPENSE:	20790		20790	20790								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COONTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 53

ACCOUNT:0320105657 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:ROMINGER 1

STATUS:M API#:05657 DATE:05/23/2008 DAYS:365 BBLS: MCFS: 12247 RCPTS: 73817 GWI: 62283 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 EXPENSE: 0.3 30000 30000 30000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 30000 30000 30000

SETTLED YEARS: 7

	GAS WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR	OIL WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR
1	40,795	28,557	26,595	7,555	7,036	0.931						
2	31,412	19,174	15,487	5,817	4,699	0.808						
3	24,188	11,949	8,371	4,479	3,138	0.701						
4	18,624	6,386	3,880	3,449	2,096	0.608						
5	14,341	2,102	1,108	2,656	1,399	0.527						
6	11,042	0	0	2,045	0	0.457						
TOTAL:			55,440		18,367							
EXPENSE:	12239		12239	12239								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 55

ACCOUNT:0320115585 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:NEWLON 1

STATUS:M API#:05585 DATE:01/29/2009 DAYS:365 BBLS: MCFS: 13190 RCPTS: 83980 GWI: 70859 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 EXPENSE: 0.3 30000 30000 30000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 30000 30000 30000

SETTLED YEARS: 6

	GAS WORKING INTEREST GROSS INCOME	GAS WORKING INTEREST NET INCOME	GAS WORKING INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	GAS ROYALTY INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST FACTOR	OIL WORKING INTEREST GROSS INCOME	OIL WORKING INTEREST NET INCOME	OIL WORKING INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	OIL ROYALTY INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST FACTOR
1	46,413	32,489	30,257	8,594	8,004	0.931						
2	35,738	21,814	17,619	6,618	5,345	0.808						
3	27,518	13,594	9,523	5,096	3,570	0.701						
4	21,189	7,265	4,414	3,924	2,384	0.608						
5	16,315	2,392	1,260	3,021	1,592	0.527						
6	12,563	0	0	2,326	0	0.457						
TOTAL:			63,073		20,894							
EXPENSE:	13924		13924	13924								

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

OCT 12, 2016
05:09 PM

NR105: 57

ACCOUNT:0320115604 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:VANSCOY 1

STATUS:M API#:05604 DATE:04/25/2009 DAYS:365 EBLS: MCFS: 8643 RCPTS: 71447 GWI: 60284 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 EXPENSE: 0.3 30000 30000 30000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 30000 30000 30000

SETTLED YEARS: 6

	GAS WORKING INTEREST GROSS INCOME	GAS WORKING INTEREST NET INCOME	GAS WORKING INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	GAS ROYALTY INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST FACTOR	OIL WORKING INTEREST GROSS INCOME	OIL WORKING INTEREST NET INCOME	OIL WORKING INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	OIL ROYALTY INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST FACTOR
1	39,486	27,640	25,741	7,312	6,809	0.931						
2	30,404	18,558	14,990	5,630	4,547	0.808						
3	23,411	11,565	8,102	4,335	3,037	0.701						
4	18,027	6,181	3,755	3,338	2,028	0.608						
5	13,881	2,035	1,072	2,570	1,354	0.527						
6	10,688	0	0	1,979	0	0.457						
TOTAL:			53,660		17,776							
EXPENSE:	11846		11846	11846								

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

OCT 12, 2016
05:09 PM

NR105: 59

ACCOUNT:0320115609 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:FRUM 1

STATUS:M API#:05609 DATE:07/01/2009 DAYS:365 BBLS: MCFS: 20211 RCPTS: 126440 GWI: 106696 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 EXPENSE: 0.3 30000 30000 30000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 30000 30000 30000

SETTLED YEARS: 6

	GAS WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR	OIL WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR
1	69,886	48,920	45,559	12,932	12,044	0.931						
2	53,812	32,846	26,530	9,958	8,043	0.808						
3	41,435	20,470	14,340	7,668	5,371	0.701						
4	31,905	10,939	6,647	5,904	3,587	0.608						
5	24,567	3,601	1,898	4,546	2,396	0.527						
6	18,917	0	0	3,500	0	0.457						
TOTAL:			94,973		31,441							
EXPENSE:	20966		20966	20966								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 61

ACCOUNT:0320115647 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:CHESS 1

STATUS:M API#:05647 DATE:04/06/2009 DAYS:365 BBLS: MCFS: 5865 RCPTS: 68540 GWI: 58099 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 EXPENSE: 0.3 30000 30000 30000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 30000 30000 30000

SETTLED YEARS: 6

	GAS WORKING INTEREST GROSS INCOME	GAS WORKING INTEREST NET INCOME	GAS WORKING INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	GAS ROYALTY INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST FACTOR	OIL WORKING INTEREST GROSS INCOME	OIL WORKING INTEREST NET INCOME	OIL WORKING INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	OIL ROYALTY INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST FACTOR
1	38,055	26,638	24,808	6,839	6,369	0.931						
2	29,302	17,886	14,447	5,266	4,253	0.808						
3	22,563	11,146	7,808	4,055	2,840	0.701						
4	17,373	5,957	3,619	3,122	1,897	0.608						
5	13,377	1,961	1,033	2,404	1,267	0.527						
6	10,301	0	0	1,851	0	0.457						
TOTAL:			51,715		16,627							
EXPENSE:	11416		11416	11416								

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

OCT 12, 2016
05:09 PM

NR105: 63

ACCOUNT:0320115669 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:M WELCH 1

STATUS:M API#:05669 DATE:11/20/2009 DAYS:365 BBLS: MCFS: 8709 RCPTS: 74868 GWI: 63170 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 EXPENSE: 0.3 30000 30000 30000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 30000 30000 30000

SETTLED YEARS: 6

	GAS WORKING INTEREST GROSS INCOME	GAS WORKING INTEREST NET INCOME	GAS WORKING INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	GAS ROYALTY INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST FACTOR	OIL WORKING INTEREST GROSS INCOME	OIL WORKING INTEREST NET INCOME	OIL WORKING INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	OIL ROYALTY INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST FACTOR
1	41,376	28,963	26,973	7,662	7,136	0.931						
2	31,860	19,447	15,707	5,900	4,765	0.808						
3	24,532	12,119	8,490	4,543	3,182	0.701						
4	18,890	6,477	3,935	3,498	2,125	0.608						
5	14,545	2,132	1,124	2,693	1,419	0.527						
6	11,200	0	0	2,074	0	0.457						
TOTAL:			56,229		18,628							
EXPENSE:	12413		12413	12413								

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

OCT 12, 2016
05:09 PM

NR105: 65

ACCOUNT:0320115691 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:MALONEY 1

STATUS:M API#:05691 DATE:10/15/2009 DAYS:365 BBLS: MCFS: 27418 RCPTS: 162130 GWI: 136798 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 EXPENSE: 0.3 30000 30000 30000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 30000 30000 30000

SETTLED YEARS: 6

	GAS WORKING INTEREST GROSS INCOME	GAS WORKING INTEREST NET INCOME	GAS WORKING INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	GAS ROYALTY INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST FACTOR	OIL WORKING INTEREST GROSS INCOME	OIL WORKING INTEREST NET INCOME	OIL WORKING INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	OIL ROYALTY INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST FACTOR
1	89,603	62,722	58,412	16,592	15,452	0.931						
2	68,994	42,113	34,015	12,776	10,319	0.808						
3	53,125	26,245	18,385	9,838	6,892	0.701						
4	40,907	14,026	8,522	7,575	4,602	0.608						
5	31,498	4,617	2,433	5,833	3,074	0.527						
6	24,254	0	0	4,491	0	0.457						
TOTAL:			121,768		40,339							
EXPENSE:	26881		26881	26881								

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

OCT 12, 2016
05:09 PM

NR105: 67

ACCOUNT:0320115774 RESOURCE:GS OWNEE:ANTERO RESOURCES CORPORATI LOCATION:HICKMAN/FORD 1

STATUS:M API#:05774 DATE:08/21/2009 DAYS:365 BBLS: MCFS: 12878 RCPTS: 95510 GWI: 80587 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 EXPENSE: 0.3 30000 30000 30000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 30000 30000 30000

SETTLED YEARS: 6

	GAS WORKING INTEREST			GAS ROYALTY INTEREST			OIL WORKING INTEREST			OIL ROYALTY INTEREST		
	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR
1	52,784	36,949	34,410	9,775	9,103	0.931						
2	40,644	24,809	20,038	7,526	6,079	0.808						
3	31,296	15,461	10,831	5,795	4,060	0.701						
4	24,098	8,263	5,020	4,462	2,711	0.608						
5	18,555	2,720	1,433	3,436	1,811	0.527						
6	14,288	0	0	2,646	0	0.457						
TOTAL:			71,733		23,764							
EXPENSE:	15835		15835	15835								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 69

ACCOUNT:0320115777 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:VANSCOY 2

STATUS:M API#:05777 DATE:03/05/2009 DAYS:365 BBLS: MCFS: 12987 RCPTS: 104588 GWI: 88246 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 EXPENSE: 0.3 30000 30000 30000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 30000 30000 30000

SETTLED YEARS: 6

	GAS WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR	OIL WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR
1	57,801	40,461	37,681	10,704	9,969	0.931						
2	44,507	27,167	21,943	8,242	6,657	0.808						
3	34,270	16,930	11,860	6,346	4,446	0.701						
4	26,388	9,048	5,497	4,887	2,969	0.608						
5	20,319	2,979	1,570	3,763	1,983	0.527						
6	15,646	0	0	2,897	0	0.457						
TOTAL:			78,550		26,023							
EXPENSE:	17340		17340	17340								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 71

ACCOUNT:0320115814 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:D POWELL 7

STATUS:M API#:05814 DATE:05/01/2009 DAYS:365 BBLS: MCFS: 4966 RCPTS: 44977 GWI: 37780 ONI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 EXPENSE: 0.3 30000 30000 30000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 30000 30000 30000

SETTLED YEARS: 6

	GAS WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR	OIL WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR
1	24,746	17,322	16,132	4,714	4,390	0.931						
2	19,054	11,631	9,394	3,630	2,932	0.808						
3	14,672	7,248	5,077	2,795	1,958	0.701						
4	11,297	3,874	2,353	2,152	1,308	0.608						
5	8,699	1,275	672	1,657	873	0.527						
6	6,698	0	0	1,276	0	0.457						
TOTAL:			33,629		11,461							
EXPENSE:	7424		7424	7424								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 73

ACCOUNT:0320115839 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:J F ESTALACK 1

STATUS:M API#:05839 DATE:10/29/2009 DAYS:365 BELS: MCFS: 19165 RCPTS: 132428 GWI: 111736 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 EXPENSE: 0.3 30000 30000 30000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 30000 30000 30000

SETTLED YEARS: 6

	GAS WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR	OIL WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR
1	73,187	51,231	47,711	13,553	12,622	0.931						
2	56,354	34,398	27,784	10,436	8,429	0.808						
3	43,393	21,436	15,017	8,036	5,629	0.701						
4	33,412	11,456	6,960	6,188	3,759	0.608						
5	25,727	3,771	1,987	4,764	2,511	0.527						
6	19,810	0	0	3,669	0	0.457						
TOTAL:			99,459		32,951							
EXPENSE:	21956		21956	21956								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 75

ACCOUNT:0320115858 RESOURCE:OG OWNER:ANTERO RESOURCES CORPORATI LOCATION:E CONNELLY 3

STATUS:A API#:05858 DATE:08/09/2009 DAYS:365 BBLS: 71.000 MCFS: 21209 RCPTS: 122039 GWI: 95945 OWI: 7026

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.380 0.210 0.110 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: 0.380 0.210 0.110 WELLLIFE:99 GS EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 6 OL EXPENSE: 0.3 5750 5750 5750

	GAS WORKING INTEREST			GAS ROYALTY INTEREST			OIL WORKING INTEREST			OIL ROYALTY INTEREST		
	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR
1	80,114	75,455	70,271	14,835	13,816	0.931	5,867	5,474	5,098	1,086	1,012	0.931
2	71,302	66,643	53,828	13,204	10,665	0.808	5,221	4,829	3,900	967	781	0.808
3	63,458	58,800	41,191	11,751	8,232	0.701	4,647	4,255	2,981	860	603	0.701
4	56,478	51,819	31,484	10,459	6,354	0.608	4,136	3,744	2,274	766	465	0.608
5	50,265	45,607	24,032	9,308	4,905	0.527	3,681	3,289	1,733	682	359	0.527
6	44,736	40,077	18,316	8,284	3,786	0.457	3,276	2,884	1,318	607	277	0.457
7	39,815	35,156	13,935	7,373	2,922	0.396	2,916	2,523	1,000	540	214	0.396
8	35,436	30,777	10,580	6,562	2,256	0.344	2,595	2,203	757	481	165	0.344
9	31,538	26,879	8,014	5,840	1,741	0.298	2,309	1,917	572	428	128	0.298
10	28,068	23,410	6,054	5,198	1,344	0.259	2,055	1,663	430	381	98	0.259
11	24,981	20,322	4,558	4,626	1,038	0.224	1,829	1,437	322	339	76	0.224
12	22,233	17,574	3,419	4,117	801	0.195	1,628	1,236	240	301	59	0.195
13	19,787	15,129	2,552	3,664	618	0.169	1,449	1,057	178	268	45	0.169
14	17,611	12,952	1,895	3,261	477	0.146	1,290	897	131	239	35	0.146
15	15,674	11,015	1,398	2,902	368	0.127	1,148	755	96	213	27	0.127
16	13,950	9,291	1,023	2,583	284	0.110	1,022	629	69	189	21	0.110
17	12,415	7,756	740	2,299	219	0.095	909	517	49	168	16	0.095
18	11,049	6,391	529	2,046	169	0.083	809	417	35	150	12	0.083
19	9,834	5,175	372	1,821	131	0.072	720	328	24	133	10	0.072
20	8,752	4,093	255	1,621	101	0.062	641	249	15	119	7	0.062
21	7,789	3,131	169	1,442	78	0.054	570	178	10	106	6	0.054
22	6,933	2,274	107	1,284	60	0.047	508	115	5	94	4	0.047
23	6,170	1,511	61	1,143	46	0.041	452	59	2	84	3	0.041
24	5,491	833	29	1,017	36	0.035	402	10	0	74	3	0.035
25	4,887	228	7	905	28	0.031	358	0	0	66	0	0.031
26	4,350	0	0	805	0	0.027						
TOTAL:			294,819		60,477				21,242		4,426	
GS EXPENSE:	4659		4659	4659								
OL EXPENSE:	392		392	392								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 77

ACCOUNT:0320125761 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:MAYLES ONA & MAGGIE SHAUGHNESSY 3

STATUS:M API#:05761 DATE:04/01/2010 DAYS:365 BBLS: MCFS: 13523 RCPTS: 88830 GWI: 77726 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 EXPENSE: 0.3 30000 30000 30000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 30000 30000 30000

SETTLED YEARS: 5

	GAS WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR	OIL WORKING INTERST GROSS INCOME	NET INCOME	DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR
1	50,911	35,637	33,189	7,273	6,773	0.931						
2	39,201	23,928	19,327	5,600	4,523	0.808						
3	30,185	14,912	10,446	4,312	3,021	0.701						
4	23,242	7,969	4,842	3,320	2,017	0.608						
5	17,897	2,623	1,382	2,557	1,347	0.527						
6	13,780	0	0	1,969	0	0.457						
TOTAL:			69,186		17,682							
EXPENSE:	15273		15273	15273								

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

OCT 12, 2016
05:09 PM

NR105: 79

ACCOUNT:0320146080 RESOURCE:OG OWNER:ANTERO RESOURCES CORPORATI LOCATION:NEELY UNIT 1H & 2H

STATUS:Z API#:06080 DATE:12/30/2012 DAYS:365 BBLS: 111.000 MCPS: 466182 RCPTS: 2585123 GWI: 2172845 OWI: 7947

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 EXPENSE: 0.2 150000 150000 150000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 GS EXPENSE: 0.2 150000 150000 150000

SETTLED YEARS: 3 OL EXPENSE: 0.2 5750 5750 5750

	GAS WORKING INTEREST			GAS ROYALTY INTEREST			OIL WORKING INTEREST			OIL ROYALTY INTEREST		
	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR
1	1,423,213	1,273,760	1,186,241	263,872	245,742	0.931	5.205	5,184	4,828	965	899	0.931
2	1,095,874	946,421	764,435	203,181	164,112	0.808	4,008	3,987	3,220	743	600	0.808
3	843,823	694,370	486,427	156,450	109,598	0.701	3,086	3,065	2,147	572	401	0.701
4	649,744	500,291	303,963	120,466	73,192	0.608	2,376	2,355	1,431	440	268	0.608
5	500,303	350,849	184,879	92,759	48,879	0.527	1,830	1,809	953	339	179	0.527
6	385,233	235,780	107,757	71,424	32,643	0.457	1,409	1,388	634	261	119	0.457
7	296,630	147,176	58,337	54,997	21,800	0.396	1,085	1,064	422	201	80	0.396
8	228,405	78,951	27,142	42,348	14,558	0.344	835	814	280	155	53	0.344
9	175,872	26,418	7,877	32,608	9,722	0.298	643	622	186	119	36	0.298
10	135,421	0	0	25,108	0	0.259	495	474	123	92	24	0.259
11							381	360	81	71	16	0.224
12							294	273	53	54	11	0.195
13							226	205	35	42	7	0.169
14							174	153	22	32	5	0.146
15							134	113	14	25	3	0.127
16							103	82	9	19	2	0.110
17							79	59	6	15	1	0.095
18							61	40	3	11	1	0.083
19							47	26	2	9	1	0.072
20							36	15	1	7	0	0.062
21							28	7	0	5	0	0.054
22							22	1	0	4	0	0.047
23							17	0	0	3	0	0.041
TOTAL:			3,127,058		720,245				14,451		2,705	
GS EXPENSE:	149453		149453	149453								
OL EXPENSE:	21		21	21								

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

OCT 12, 2016
05:09 PM

NR105: 81

ACCOUNT:0320146085 RESOURCE:OG OWNER:ANTERO RESOURCES CORPORATI LOCATION:LEATHERMAN UNIT 2H

STATUS:Z API#:06085 DATE:12/24/2012 DAYS:365 BBLS: 134.000 MCFS: 309414 RCPTS: 1662281 GWI: 1407994 OWI: 8213

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 EXPENSE: 0.2 150000 150000 150000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 GS EXPENSE: 0.2 150000 150000 150000

SETTLED YEARS: 3 OL EXPENSE: 0.2 5750 5750 5750

	GAS WORKING INTEREST GROSS INCOME	GAS WORKING INTEREST NET INCOME	GAS WORKING INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	GAS ROYALTY INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST FACTOR	OIL WORKING INTEREST GROSS INCOME	OIL WORKING INTEREST NET INCOME	OIL WORKING INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	OIL ROYALTY INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST FACTOR
1	922,236	773,106	719,987	160,244	149,234	0.931	5,380	5,346	4,979	935	870	0.931
2	710,122	560,992	453,119	123,388	99,662	0.808	4,142	4,109	3,319	720	581	0.808
3	546,794	397,664	278,575	95,009	66,556	0.701	3,190	3,156	2,211	554	388	0.701
4	421,031	271,901	165,199	73,157	44,448	0.608	2,456	2,423	1,472	427	259	0.608
5	324,194	175,064	92,250	56,331	29,683	0.527	1,891	1,858	979	329	173	0.527
6	249,629	100,499	45,931	43,375	19,823	0.457	1,456	1,423	650	253	116	0.457
7	192,215	43,085	17,078	33,398	13,238	0.396	1,121	1,088	431	195	77	0.396
8	148,005	0	0	25,717	0	0.344	863	830	285	150	52	0.344
9							665	631	188	116	34	0.298
10							512	479	124	89	23	0.259
11							394	361	81	68	15	0.224
12							303	270	53	53	10	0.195
13							234	200	34	41	7	0.169
14							180	147	21	31	5	0.146
15							139	105	13	24	3	0.127
16							107	73	8	19	2	0.110
17							82	49	5	14	1	0.095
18							63	30	2	11	1	0.083
19							49	15	1	8	1	0.072
20							38	4	0	7	0	0.062
21							29	0	0	5	0	0.054
TOTAL:			1,772,139		422,644				14,857		2,620	
GS EXPENSE:	149130		149130	149130								
OL EXPENSE:	33		33	33								

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

OCT 12, 2016
05:09 PM

NR105: 83

ACCOUNT:0320156128 RESOURCE:OG OWNER:ANTERO RESOURCES CORPORATI LOCATION:MOORE UNIT 1H 40361

STATUS:Z API#:06128 DATE:06/01/2013 DAYS:365 BBLS: 194.000 MCFS: 965857 RCPTS: 5896014 GWI: 4873023 OWI: 13836

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 EXPENSE: 0.2 150000 150000 150000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIPE:99 GS EXPENSE: 0.2 150000 150000 150000

SETTLED YEARS: 2 OL EXPENSE: 0.2 5750 5750 5750

	GAS WORKING INTEREST			GAS ROYALTY 1NTEREST			OIL WORK1NG INTEREST			OIL ROYALTY INTEREST		
	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR
1	2,899,449	2,749,873	2,560,932	598,747	557,608	0.931	8,232	8,216	7,652	1,700	1,583	0.931
2	2,232,575	2,083,000	1,682,462	461,035	372,383	0.808	6,339	6,323	5,107	1,309	1,057	0.808
3	1,719,083	1,569,508	1,099,487	354,997	248,686	0.701	4,881	4,865	3,408	1,008	706	0.701
4	1,323,694	1,174,119	713,362	273,348	166,079	0.608	3,758	3,742	2,274	776	472	0.608
5	1,019,244	869,669	458,270	2I0,478	110,911	0.527	2,894	2,878	1,516	598	315	0.527
6	784,818	635,243	290,321	162,068	74,069	0.457	2,228	2,212	1,011	460	210	0.457
7	604,310	454,735	180,247	124,792	49,465	0.396	1,716	1,700	674	354	140	0.396
8	465,319	315,743	108,546	96,090	33,034	0.344	1,321	1,305	449	273	94	0.344
9	358,295	208,720	62,232	73,989	22,061	0.298	1,017	1,001	298	210	63	0.298
10	275,887	126,312	32,664	56,972	14,733	0.259	783	767	198	162	42	0.259
11	212,433	62,858	14,098	43,868	9,839	0.224	603	587	132	125	28	0.224
12	163,574	13,998	2,723	33,779	6,57I	0.195	464	448	87	96	I9	0.195
13	125,952	0	0	26,010	0	0.169	358	341	58	74	12	0.169
14							275	259	38	57	8	0.146
15							212	196	25	44	6	0.127
16							163	147	16	34	4	0.110
17							126	109	10	26	2	0.095
18							97	81	7	20	2	0.083
19							75	58	4	15	1	0.072
20							57	41	3	12	1	0.062
21							44	28	2	9	0	0.054
22							34	18	1	7	0	0.047
23							26	10	0	5	0	0.041
24							20	4	0	4	0	0.035
25							16	0	0	3	0	0.031
TOTAL:			7,205,345		1,665,438				22,968		4,766	
GS EXPENSE:	149575		149575	149575								
OL EXPENSE:	16		16	16								

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPOET FOR - 2016

OCT 12, 2016
05:09 PM

NR105: 85

ACCOUNT:0320156163 RESOURCE:OG OWNER:ANTERO RESOURCES CORPORATI LOCATION:EMILY UNIT 2H 40387

STATUS:Z API#:06163 DATE:06/01/2013 DAYS:365 BBLS: 214.000 MCFS: 771242 RCPTS: 4694047 GWI: 3901621 OWI: 14840

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 NELLLIFE:99 EXPENSE: 0.2 150000 150000 150000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 GS EXPENSE: 0.2 150000 150000 150000

SETTLED YEARS: 2 OL EXPENSE: 0.2 5750 5750 5750

	GAS WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR	OIL WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR
1	2,321,464	2,172,033	2,022,795	460,911	429,242	0.931	8,830	8,808	8,203	1,753	1,632	0.931
2	1,787,528	1,638,096	1,323,108	354,901	286,658	0.808	6,799	6,777	5,474	1,350	1,090	0.808
3	1,376,396	1,226,965	859,526	273,274	191,437	0.701	5,235	5,213	3,652	1,039	728	0.701
4	1,059,825	910,394	553,130	210,421	127,846	0.608	4,031	4,009	2,436	800	486	0.608
5	816,065	666,634	351,281	162,024	85,378	0.527	3,104	3,082	1,624	616	325	0.527
6	628,370	478,939	218,886	124,759	57,018	0.457	2,390	2,368	1,082	474	217	0.457
7	483,845	334,414	132,554	96,064	38,078	0.396	1,840	1,819	721	365	145	0.396
8	372,561	223,129	76,707	73,969	25,429	0.344	1,417	1,395	480	281	97	0.344
9	286,872	137,440	40,979	56,956	16,982	0.298	1,091	1,069	319	217	65	0.298
10	220,891	71,460	18,479	43,856	11,341	0.259	840	818	212	167	43	0.259
11	170,086	20,655	4,632	33,769	7,574	0.224	647	625	140	128	29	0.224
12	130,966	0	0	26,002	0	0.195	498	476	93	99	19	0.195
13							384	362	61	76	13	0.169
14							295	274	40	59	9	0.146
15							227	206	26	45	6	0.127
16							175	153	17	35	4	0.110
17							135	113	11	27	3	0.095
18							104	82	7	21	2	0.083
19							80	58	4	16	1	0.072
20							62	40	2	12	1	0.062
21							47	26	1	9	1	0.054
22							36	15	1	7	0	0.047
23							28	6	0	6	0	0.041
24							22	0	0	4	0	0.035
TOTAL:			5,602,078		1,276,982				24,606		4,914	
GS EXPENSE:	149432		149432	149432								
OL EXPENSE:	22		22	22								

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

OCT 12, 2016
05:09 PM

NR105: 87

ACCOUNT:0320156194 RESOURCE:OG OWNER:ANTERO RESOURCES CORPORATI LOCATION:COSTLOW UNIT 1H 40440

STATUS:Z API#:06194 UATE:12/01/2013 DAYS:365 EELS: 5751.000 MCFS: 1764436 RCPTS: 14007767 GWI: 11670006 OWI: 399137

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 EXPENSE: 0.2 150000 150000 150000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 GS EXPENSE: 0.2 150000 150000 150000

SETTLED YEARS: 2 OL EXPENSE: 0.2 5750 5750 5750

	GAS WORKING INTEREST			GAS ROYALTY INTEREST			OIL WORKING INTEREST			OIL ROYALTY INTEREST		
	GROSS INCOME	NET INCOME	DISCODNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR
1	6,943,654	6,798,614	6,331,488	1,115,335	1,038,701	0.931	237,487	237,296	220,992	38,147	35,526	0.931
2	5,346,613	5,201,574	4,201,368	858,808	693,668	0.808	182,865	182,674	147,548	29,373	23,725	0.808
3	4,116,892	3,971,853	2,782,402	661,282	463,248	0.701	140,806	140,616	98,505	22,617	15,844	0.701
4	3,170,007	3,024,968	1,837,886	509,187	309,368	0.608	108,420	108,230	65,758	17,415	10,581	0.608
5	2,440,905	2,295,866	1,209,802	392,074	206,603	0.527	83,484	83,294	43,891	13,410	7,066	0.527
6	1,879,497	1,734,458	792,689	301,897	137,974	0.457	64,282	64,092	29,292	10,325	4,719	0.457
7	1,447,213	1,302,173	516,153	232,461	92,142	0.396	49,498	49,307	19,544	7,951	3,151	0.396
8	1,114,354	969,314	333,231	178,995	61,535	0.344	38,113	37,923	13,037	6,122	2,105	0.344
9	858,052	713,013	212,593	137,826	41,094	0.298	29,347	29,157	8,693	4,714	1,406	0.298
10	660,700	515,661	133,348	106,126	27,444	0.259	22,597	22,407	5,794	3,630	939	0.259
11	508,739	363,700	81,571	81,717	18,328	0.224	17,400	17,210	3,860	2,795	627	0.224
12	391,729	246,690	47,986	62,922	12,240	0.195	13,398	13,208	2,569	2,152	419	0.195
13	301,632	156,592	26,418	48,450	8,174	0.169	10,316	10,126	1,708	1,657	280	0.169
14	232,256	87,217	12,762	37,307	5,459	0.146	7,944	7,753	1,134	1,276	187	0.146
15	178,837	33,798	4,289	28,726	3,645	0.127	6,117	5,926	752	982	125	0.127
16	137,705	0	0	22,119	0	0.110	4,710	4,520	497	757	83	0.110
17							3,627	3,436	328	583	56	0.095
18							2,792	2,602	215	449	37	0.083
19							2,150	1,960	141	345	25	0.072
20							1,656	1,465	91	266	17	0.062
21							1,275	1,085	59	205	11	0.054
22							982	791	37	158	7	0.047
23							756	566	23	121	5	0.041
24							582	392	14	93	3	0.035
25							448	258	8	72	2	0.031
26							345	155	4	55	1	0.027
27							266	76	2	43	1	0.023
28							205	14	0	33	1	0.020
29							158	0	0	25	0	0.017
TOTAL:			18,523,985		3,119,622				664,499		106,947	
GS EXPENSE:	145039		145039	145039								
OL EXPENSE:	190		190	190								

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

OCT 12, 2016
05:09 PM

NR105: 89

ACCOUNT:0320156205 RESOURCE:OG OWNER:ANTERO RESOURCES CORPORATI LOCATION:GASKINS UNIT 2H 40446

STATUS:Z API#:06205 DATE:12/01/2013 DAYS:365 EELS: 4047.000 MCFS: 1510108 RCPTS: 10098206 GWI: 8308911 OWI: 296147

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 EXPENSE: 0.2 150000 150000 150000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 GS EXPENSE: 0.2 150000 150000 150000

SETTLED YEARS: 2 OL EXPENSE: 0.2 5750 5750 5750

	GAS WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR	OIL WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR
1	4,943,802	4,798,964	4,469,232	857,848	798,906	0.931	176,207	176,010	163,916	30,575	28,474	0.931
2	3,806,728	3,661,890	2,957,749	660,543	533,528	0.808	135,680	135,482	109,430	23,543	19,016	0.808
3	2,931,180	2,786,343	1,951,917	508,618	356,302	0.701	104,473	104,276	73,048	18,128	12,699	0.701
4	2,257,009	2,112,171	1,283,296	391,636	237,947	0.608	80,445	80,247	48,756	13,959	8,481	0.608
5	1,737,897	1,593,059	839,459	301,560	158,906	0.527	61,942	61,744	32,536	10,748	5,664	0.527
6	1,338,181	1,193,343	545,386	232,201	106,121	0.457	47,696	47,498	21,708	8,276	3,782	0.457
7	1,030,399	885,561	351,017	178,795	70,870	0.396	36,726	36,528	14,479	6,373	2,526	0.396
8	793,407	648,570	222,965	137,672	47,329	0.344	28,279	28,081	9,654	4,907	1,687	0.344
9	610,924	466,086	138,969	106,007	31,607	0.298	21,775	21,577	6,433	3,778	1,127	0.298
10	470,411	325,573	84,192	81,626	21,108	0.259	16,766	16,569	4,285	2,909	752	0.259
11	362,217	217,379	48,754	62,852	14,096	0.224	12,910	12,712	2,851	2,240	502	0.224
12	278,907	134,069	26,079	48,396	9,414	0.195	9,941	9,743	1,895	1,725	336	0.195
13	214,758	69,921	11,796	37,265	6,287	0.169	7,654	7,457	1,258	1,328	224	0.169
14	165,364	20,526	3,003	28,694	4,198	0.146	5,894	5,696	833	1,023	150	0.146
15	127,330	0	0	22,094	0	0.127	4,538	4,340	551	787	100	0.127
16							3,495	3,297	363	606	67	0.110
17							2,691	2,493	238	467	45	0.095
18							2,072	1,874	155	360	30	0.083
19							1,595	1,397	100	277	20	0.072
20							1,228	1,031	64	213	13	0.062
21							946	748	40	164	9	0.054
22							728	530	25	126	6	0.047
23							561	363	15	97	4	0.041
24							432	234	8	75	3	0.035
25							333	135	4	58	2	0.031
26							256	58	2	44	1	0.027
27							197	0	0	34	0	0.023
TOTAL:			12,933,815		2,396,620				492,647		85,718	
GS EXPENSE:	144838		144838	144838								
OL EXPENSE:	198		198	198								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 91

ACCOUNT:0320156255 RESOURCE:OG OWNER:ANTERO RESOURCES CORPORATI LOCATION:CONNIE UNIT 1H 40443

STATUS:Z API#:06255 DATE:10/04/2013 DAYS:365 BBLS: 180.000 MCFS: 708283 RCPTS: 3597329 GWI: 2926537 OWI: 11010

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 EXPENSE: 0.2 150000 150000 150000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 GS EXPENSE: 0.2 150000 150000 150000

SETTLED YEARS: 2 OL EXPENSE: 0.2 5750 5750 5750

	GAS WORKING INTEREST			GAS ROYALTY INTEREST			OIL WORKING INTEREST			OIL ROYALTY INTEREST		
	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR
1	1,741,290	1,591,852	1,482,477	391,099	364,227	0.931	6,551	6,529	6,081	1,471	1,370	0.931
2	1,340,793	1,191,355	962,271	301,146	243,239	0.808	5,044	5,023	4,057	1,133	915	0.808
3	1,032,411	882,973	618,549	231,883	162,441	0.701	3,884	3,863	2,706	872	611	0.701
4	794,956	645,518	392,199	178,550	108,482	0.608	2,991	2,969	1,804	672	408	0.608
5	612,116	462,678	243,807	137,483	72,446	0.527	2,303	2,281	1,202	517	273	0.527
6	471,329	321,892	147,112	105,862	48,381	0.457	1,773	1,752	801	398	182	0.457
7	362,924	213,486	84,621	81,514	32,310	0.396	1,365	1,344	533	307	122	0.396
8	279,451	130,013	44,696	62,766	21,578	0.344	1,051	1,030	354	236	81	0.344
9	215,177	65,740	19,601	48,330	14,410	0.298	810	788	235	182	54	0.298
10	165,687	16,249	4,202	37,214	9,623	0.259	623	602	156	140	36	0.259
11	127,579	0	0	28,655	0	0.224	480	458	103	108	24	0.224
12							370	348	68	83	16	0.195
13							285	263	44	64	11	0.169
14							219	198	29	49	7	0.146
15							169	147	19	38	5	0.127
16							130	108	12	29	3	0.110
17							100	78	7	22	2	0.095
18							77	55	5	17	1	0.083
19							59	38	3	13	1	0.072
20							46	24	2	10	1	0.062
21							35	14	1	8	0	0.054
22							27	6	0	6	0	0.047
23							21	0	0	5	0	0.041
TOTAL:			3,999,535		1,077,137				18,219		4,125	
GS EXPENSE:	149438		149438	149438								
OL EXPENSE:	22		22	22								

OCT 12, 2016
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'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR10S: 93

ACCOUNT:0320156260 RESOURCE:OG OWNER:ANTERO RESOURCES CORPORATI LOCATION:GASKINS UNIT 1H 40479

STATUS:Z API#:06260 DATE:12/01/2013 DAYS:365 BBLS: 8386.000 MCFS: 1539854 RCPTS: 11369569 GWI: 9111730 OWI: 576703

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 EXPENSE: 0.2 150000 150000 150000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 GS EXPENSE: 0.2 150000 150000 150000

SETTLED YEARS: 2 OL EXPENSE: 0.2 5750 5750 5750

	GAS WORKING INTEREST			GAS ROYALTY INTEREST			OIL WORKING INTEREST			OIL ROYALTY INTEREST		
	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR
1	5,421,479	5,280,408	4,917,597	940,735	876,098	0.931	343,138	342,796	319,243	59,541	55,450	0.931
2	4,174,539	4,033,468	3,257,876	724,366	585,078	0.808	264,216	263,874	213,134	45,847	37,031	0.808
3	3,214,395	3,073,324	2,152,956	557,762	390,729	0.701	203,447	203,104	142,281	35,302	24,730	0.701
4	2,475,084	2,334,013	1,418,081	429,477	260,938	0.608	156,654	156,312	94,971	27,182	16,515	0.608
5	1,905,815	1,764,744	929,928	330,697	174,260	0.527	120,624	120,281	63,382	20,930	11,029	0.527
6	1,467,477	1,326,406	606,199	254,637	116,375	0.457	92,880	92,538	42,292	16,116	7,366	0.457
7	1,129,958	988,886	391,973	196,070	77,718	0.396	71,518	71,175	28,212	12,410	4,919	0.396
8	870,067	728,996	250,614	150,974	51,902	0.344	55,069	54,726	18,814	9,555	3,285	0.344
9	669,952	528,881	157,692	116,250	34,661	0.298	42,403	42,061	12,541	7,358	2,194	0.298
10	515,863	374,792	96,920	89,513	23,148	0.259	32,650	32,308	8,355	5,665	1,465	0.259
11	397,214	256,143	57,448	68,925	15,458	0.224	25,141	24,798	5,562	4,362	978	0.224
12	305,855	164,784	32,054	53,072	10,324	0.195	19,358	19,016	3,699	3,359	653	0.195
13	235,508	94,437	15,932	40,865	6,894	0.169	14,906	14,564	2,457	2,586	436	0.169
14	181,342	40,270	5,892	31,466	4,604	0.146	11,478	11,135	1,629	1,992	291	0.146
15	139,633	0	0	24,229	0	0.127	8,838	8,495	1,078	1,534	195	0.127
16							6,805	6,463	711	1,181	130	0.110
17							5,240	4,898	468	909	87	0.095
18							4,035	3,692	306	700	58	0.083
19							3,107	2,764	199	539	39	0.072
20							2,392	2,050	128	415	26	0.062
21							1,842	1,500	81	320	17	0.054
22							1,418	1,076	50	246	12	0.047
23							1,092	750	30	190	8	0.041
24							841	499	18	146	5	0.035
25							648	305	9	112	3	0.031
26							499	156	4	87	2	0.027
27							384	42	1	67	2	0.023
28							296	0	0	51	0	0.020
TOTAL:			14,291,161		2,628,187				959,654		166,926	
GS EXPENSE:	141071		141071	141071								
OL EXPENSE:	342		342	342								

DECLINE RATES	
YR 1	58%
YR 2	29%
YR3+	23%

2014	GAS INCOME	OIL INCOME
WRK INT	$ 6,503,148	$ 14,135
ROY INT	$ 907,138	$ 2,330

	GAS CAP INCOME	OIL CAP INCOME
YR1	$ 1,466,334	$ 3,769
	$ 240,382	$ 620
YR2	$ 1,079,167	$ 2,782
	$ 177,899	$ 458

$ 3,129,553

TY2016 WORKING INTEREST

YEAR	WRK INT INCOME	WORKING COST	NET INC	PROT FCTR(16.8%)	DIS INC
1	$ 1,462,093	$ 149,629	$ 1,312,464	0.931291	$ 1,222,269
2	$ 1,061,948	$ 149,629	$ 932,319	0.807711	$ 753,045
3	$ 833,100	$ 149,629	$ 683,471	0.700530	$ 478,792
4	$ 641,487	$ 149,629	$ 491,858	0.607872	$ 298,839
5	$ 493,946	$ 149,629	$ 344,318	0.526948	$ 181,437
6	$ 380,338	$ 149,629	$ 230,709	0.457024	$ 105,439
7	$ 292,860	$ 149,629	$ 143,231	0.396378	$ 56,774
8	$ 225,502	$ 149,629	$ 75,873	0.343780	$ 26,084
9	$ 173,637	$ 149,629	$ 24,008	0.298161	$ 7,158
10	$ 133,700	$ 149,629	$ -	0.258598	$ -
11	$ 102,949	$ 149,629	$ -	0.224261	$ -
12	$ 79,271	$ 149,629	$ -	0.194519	$ -
13	$ 61,039	$ 149,629	$ -	0.168707	$ -
14	$ 47,000	$ 149,629	$ -	0.146320	$ -
15	$ 36,190	$ 149,629	$ -	0.126904	$ -
16	$ 27,866	$ 149,629	$ -	0.110064	$ -
17	$ 21,457	$ 149,629	$ -	0.095459	$ -
18	$ 16,522	$ 149,629	$ -	0.082792	$ -
19	$ 12,722	$ 149,629	$ -	0.071808	$ -
20	$ 9,796	$ 149,629	$ -	0.062277	$ -
21	$ 7,543	$ 149,629	$ -	0.054013	$ -
22	$ 5,808	$ 149,629	$ -	0.046846	$ -
23	$ 4,472	$ 149,629	$ -	0.040629	$ -
24	$ 3,444	$ 149,629	$ -	0.035236	$ -
25	$ 2,652	$ 149,629	$ -	0.030562	$ -
26	$ 2,042	$ 149,629	$ -	0.026507	$ -
27	$ 1,572	$ 149,629	$ -	0.022989	$ -
28	$ 1,211	$ 149,629	$ -	0.019939	$ -
29	$ 932	$ 149,629	$ -	0.017293	$ -
30	$ 718	$ 149,629	$ -	0.014998	$ -
31	$ 553	$ 149,629	$ -	0.013008	$ -
32	$ 426	$ 149,629	$ -	0.011282	$ -
33	$ 328	$ 149,629	$ -	0.009785	$ -
34	$ 252	$ 149,629	$ -	0.008486	$ -
35	$ 194	$ 149,629	$ -	0.007360	$ -
36	$ 150	$ 149,629	$ -	0.006384	$ -
37	$ 115	$ 149,629	$ -	0.005536	$ -
38	$ 89	$ 149,629	$ -	0.004802	$ -
39	$ 68	$ 149,629	$ -	0.004165	$ -
40	$ 53	$ 149,629	$ -	0.003612	$ -

WORKING INTEREST APPRAISAL

TY2016 ROYALTY INTEREST

YEAR	ROY INT INCOME	PROT FCTR(16.8%)	DIS INC
1	$ 241,011	0.931291	$ 224,462
2	$ 176,348	0.807711	$ 144,064
3	$ 137,329	0.700530	$ 98,202
4	$ 105,743	0.607872	$ 64,248
5	$ 81,422	0.526948	$ 42,905
6	$ 62,696	0.457024	$ 28,653
7	$ 48,276	0.396378	$ 19,135
8	$ 37,172	0.343780	$ 12,779
9	$ 28,622	0.298161	$ 8,534
10	$ 22,039	0.258598	$ -
11	$ 16,970	0.224261	$ -
12	$ 13,067	0.194519	$ -
13	$ 10,062	0.168707	$ -
14	$ 7,747	0.146320	$ -
15	$ 5,966	0.126904	$ -
16	$ 4,593	0.110064	$ -
17	$ 3,537	0.095459	$ -
18	$ 2,723	0.082792	$ -
19	$ 2,097	0.071808	$ -
20	$ 1,616	0.062277	$ -
21	$ 1,243	0.054013	$ -
22	$ 957	0.046846	$ -
23	$ 737	0.040629	$ -
24	$ 568	0.035236	$ -
25	$ 437	0.030562	$ -
26	$ 337	0.026507	$ -
27	$ 259	0.022989	$ -
28	$ 200	0.019939	$ -
29	$ 154	0.017293	$ -
30	$ 118	0.014998	$ -
31	$ 91	0.013008	$ -
32	$ 70	0.011282	$ -
33	$ 54	0.009785	$ -
34	$ 42	0.008486	$ -
35	$ 32	0.007360	$ -
36	$ 25	0.006384	$ -
37	$ 19	0.005536	$ -
38	$ 15	0.004802	$ -
39	$ 11	0.004165	$ -
40	$ 9	0.003612	$ -

ROYALTY INTEREST APPRAISAL

09-03201466203

				2014										
	DECLINE RATE			WRK INT	$	5,950,908	$	296,020		YR1	$	2,537,007	$	76,977
YR 1	59%			ROY INT	$	1,871,434	$	47,064			$	418,438	$	12,472
YR 2	29%									YR2	$	1,581,395	$	58,443
YR3+	23%										$	306,156	$	9,228

	$ 5,820,908	TY2015 WORKING INTEREST						TY2015 ROYALTY INTEREST				
YEAR	WRK INT INCOME	WORKING COST	NET INC	PROT POTR(16.0%)	DIS INC		YEAR	ROY INT INCOME	PROT POTR(16.0%)	DIS INC		
1	$ 2,718,983	$ 145,805	$ 2,570,178	0.931291	$ 2,393,584		1	$ 428,902	0.931291	$ 399,439		
2	$ 2,009,528	$ 145,805	$ 1,864,022	0.807711	$ 1,505,591		2	$ 317,387	0.807711	$ 256,357		
3	$ 1,547,567	$ 145,805	$ 1,401,762	0.700530	$ 981,976		3	$ 244,386	0.700530	$ 171,201		
4	$ 1,191,627	$ 145,805	$ 1,045,821	0.607572	$ 635,412		4	$ 188,179	0.607572	$ 114,332		
5	$ 917,553	$ 145,805	$ 771,747	0.526948	$ 406,671		5	$ 144,866	0.526948	$ 76,354		
6	$ 706,516	$ 145,805	$ 560,710	0.457024	$ 256,266		6	$ 111,671	0.457024	$ 50,991		
7	$ 544,017	$ 145,805	$ 398,212	0.396378	$ 157,842		7	$ 85,910	0.396378	$ 34,053		
8	$ 418,893	$ 145,805	$ 273,088	0.343780	$ 93,882		8	$ 66,161	0.343780	$ 22,741		
9	$ 322,548	$ 145,805	$ 176,742	0.298161	$ 52,698		9	$ 50,936	0.298161	$ 15,187		
10	$ 248,362	$ 145,805	$ 102,556	0.258566	$ 26,521		10	$ 39,221	0.258566	$ 10,142		
11	$ 191,239	$ 145,805	$ 45,433	0.224261	$ 10,190		11	$ 30,200	0.224261	$ 6,773		
12	$ 147,254	$ 145,805	$ 1,448	0.194519	$ 282		12	$ 23,254	0.194519	$ 4,523		
13	$ 113,388	$ 145,805	$ -	0.168707	$ -		13	$ 17,906	0.168707	$ -		
14	$ 87,307	$ 145,805	$ -	0.146320	$ -		14	$ 13,787	0.146320	$ -		
15	$ 67,228	$ 145,805	$ -	0.126904	$ -		15	$ 10,616	0.126904	$ -		
16	$ 51,764	$ 145,805	$ -	0.110064	$ -		16	$ 8,174	0.110064	$ -		
17	$ 39,858	$ 145,805	$ -	0.095459	$ -		17	$ 6,294	0.095459	$ -		
18	$ 30,691	$ 145,805	$ -	0.082792	$ -		18	$ 4,847	0.082792	$ -		
19	$ 23,632	$ 145,805	$ -	0.071805	$ -		19	$ 3,732	0.071805	$ -		
20	$ 18,197	$ 145,805	$ -	0.062277	$ -		20	$ 2,874	0.062277	$ -		
21	$ 14,011	$ 145,805	$ -	0.054013	$ -		21	$ 2,213	0.054013	$ -		
22	$ 10,789	$ 145,805	$ -	0.046846	$ -		22	$ 1,704	0.046846	$ -		
23	$ 8,307	$ 145,805	$ -	0.040629	$ -		23	$ 1,312	0.040629	$ -		
24	$ 6,397	$ 145,805	$ -	0.035238	$ -		24	$ 1,010	0.035238	$ -		
25	$ 4,926	$ 145,805	$ -	0.030562	$ -		25	$ 778	0.030562	$ -		
26	$ 3,793	$ 145,805	$ -	0.026507	$ -		26	$ 599	0.026507	$ -		
27	$ 2,920	$ 145,805	$ -	0.022989	$ -		27	$ 461	0.022989	$ -		
28	$ 2,249	$ 145,805	$ -	0.019939	$ -		28	$ 355	0.019939	$ -		
29	$ 1,731	$ 145,805	$ -	0.017293	$ -		29	$ 273	0.017293	$ -		
30	$ 1,333	$ 145,805	$ -	0.014998	$ -		30	$ 211	0.014998	$ -		
31	$ 1,027	$ 145,805	$ -	0.013008	$ -		31	$ 162	0.013008	$ -		
32	$ 790	$ 145,805	$ -	0.011282	$ -		32	$ 125	0.011282	$ -		
33	$ 609	$ 145,805	$ -	0.009786	$ -		33	$ 96	0.009786	$ -		
34	$ 469	$ 145,805	$ -	0.008486	$ -		34	$ 74	0.008486	$ -		
35	$ 361	$ 145,805	$ -	0.007360	$ -		35	$ 57	0.007360	$ -		
36	$ 278	$ 145,805	$ -	0.006384	$ -		36	$ 44	0.006384	$ -		
37	$ 214	$ 145,805	$ -	0.005536	$ -		37	$ 34	0.005536	$ -		
38	$ 165	$ 145,805	$ -	0.004802	$ -		38	$ 26	0.004802	$ -		
39	$ 127	$ 145,805	$ -	0.004166	$ -		39	$ 20	0.004166	$ -		
40	$ 98	$ 145,805	$ -	0.003612	$ -		40	$ 16	0.003612	$ -		

WORKING INTEREST APPRAISAL

ROYALTY INTEREST APPRAISAL

09-0320166246

NATURAL DECLINE APPRAISAL - FLUSH WELL (YR#1)

DECLINE RATES	
YR 1	35%
YR 2	29%
YR3+	23%

2014	GAS INCOME	OIL INCOME
WRK INT	$ 5,663,559	$ 134,326
ROY INT	$ 967,328	$ 21,954

	GAS CAP INCOME	OIL CAP INCOME
YR1	$ 1,658,143	$ 39,756
	$ 253,692	$ 5,818
YR3	$ 1,153,766	$ 26,456
	$ 197,732	$ 4,306

$ 3,497,661

TY2016 WORKING INTEREST

YEAR	WRK INT INCOME	WORKING COST	NET INC	PROT FCTR(15.0%)	DIS INC
1	$ 1,594,809	$ 146,766	$ 1,448,133	0.931291	$ 1,348,633
2	$ 1,180,225	$ 146,766	$ 1,033,459	0.807711	$ 834,736
3	$ 906,773	$ 146,766	$ 762,007	0.700530	$ 533,809
4	$ 699,756	$ 146,766	$ 552,990	0.607572	$ 335,961
5	$ 538,812	$ 146,766	$ 392,046	0.526948	$ 206,588
6	$ 414,885	$ 146,766	$ 268,119	0.457024	$ 122,537
7	$ 319,462	$ 146,766	$ 172,696	0.396378	$ 68,463
8	$ 245,985	$ 146,766	$ 99,219	0.343760	$ 34,110
9	$ 189,409	$ 146,766	$ 42,643	0.298161	$ 12,714
10	$ 146,845	$ 146,766	$ -	0.258598	$ -
11	$ 112,300	$ 146,766	$ -	0.224261	$ -
12	$ 86,471	$ 146,766	$ -	0.194519	$ -
13	$ 66,589	$ 146,766	$ -	0.168707	$ -
14	$ 51,269	$ 146,766	$ -	0.146320	$ -
15	$ 39,477	$ 146,766	$ -	0.126904	$ -
16	$ 30,397	$ 146,766	$ -	0.110064	$ -
17	$ 23,406	$ 146,766	$ -	0.095459	$ -
18	$ 18,023	$ 146,766	$ -	0.082792	$ -
19	$ 13,877	$ 146,766	$ -	0.071808	$ -
20	$ 10,686	$ 146,766	$ -	0.062277	$ -
21	$ 8,228	$ 146,766	$ -	0.054013	$ -
22	$ 6,336	$ 146,766	$ -	0.046846	$ -
23	$ 4,876	$ 146,766	$ -	0.040629	$ -
24	$ 3,756	$ 146,766	$ -	0.035236	$ -
25	$ 2,892	$ 146,766	$ -	0.030562	$ -
26	$ 2,227	$ 146,766	$ -	0.026507	$ -
27	$ 1,715	$ 146,766	$ -	0.022988	$ -
28	$ 1,320	$ 146,766	$ -	0.019939	$ -
29	$ 1,017	$ 146,766	$ -	0.017293	$ -
30	$ 783	$ 146,766	$ -	0.014998	$ -
31	$ 603	$ 146,766	$ -	0.013008	$ -
32	$ 464	$ 146,766	$ -	0.011282	$ -
33	$ 357	$ 146,766	$ -	0.009786	$ -
34	$ 276	$ 146,766	$ -	0.008486	$ -
35	$ 212	$ 146,766	$ -	0.007360	$ -
36	$ 163	$ 146,766	$ -	0.006384	$ -
37	$ 126	$ 146,766	$ -	0.005536	$ -
38	$ 97	$ 146,766	$ -	0.004802	$ -
39	$ 74	$ 146,766	$ -	0.004166	$ -
40	$ 57	$ 146,766	$ -	0.003612	$ -

WORKING INTEREST APPRAISAL

TY2016 ROYALTY INTEREST

YEAR	ROY INT INCOME	PROT FCTR(15.0%)	DIS INC
1	$ 259,610	0.931291	$ 241,679
2	$ 192,037	0.807711	$ 155,111
3	$ 147,569	0.700530	$ 103,366
4	$ 113,959	0.607572	$ 69,177
5	$ 87,671	0.526948	$ 46,196
6	$ 67,507	0.457024	$ 30,852
7	$ 51,980	0.396378	$ 20,604
8	$ 40,028	0.343760	$ 13,760
9	$ 30,819	0.298161	$ 9,189
10	$ 23,731	0.258598	$ -
11	$ 18,273	0.224261	$ -
12	$ 14,070	0.194519	$ -
13	$ 10,834	0.168707	$ -
14	$ 8,342	0.146320	$ -
15	$ 6,423	0.126904	$ -
16	$ 4,946	0.110064	$ -
17	$ 3,808	0.095459	$ -
18	$ 2,932	0.082792	$ -
19	$ 2,258	0.071808	$ -
20	$ 1,739	0.062277	$ -
21	$ 1,338	0.054013	$ -
22	$ 1,031	0.046846	$ -
23	$ 794	0.040629	$ -
24	$ 611	0.035236	$ -
25	$ 471	0.030562	$ -
26	$ 362	0.026507	$ -
27	$ 279	0.022988	$ -
28	$ 215	0.019939	$ -
29	$ 166	0.017293	$ -
30	$ 127	0.014998	$ -
31	$ 98	0.013008	$ -
32	$ 76	0.011282	$ -
33	$ 58	0.009786	$ -
34	$ 46	0.008486	$ -
35	$ 34	0.007360	$ -
36	$ 27	0.006384	$ -
37	$ 20	0.005536	$ -
38	$ 16	0.004802	$ -
39	$ 12	0.004166	$ -
40	$ 9	0.003612	$ -

ROYALTY INTEREST APPRAISAL

09-03201662S9

NATURAL GAS & OIL APPRAISAL - CLICK WELL (Year 1)

	DECLINE RATE
YR 1	35%
YR 2	29%
YR3+	23%

2014	GAS INCOME	OIL INCOME
WRK INT	$ 6,291,599	$ 20,238
ROY INT	$ 1,147,543	$ 3,710

	GAS CAP INCOME	OIL CAP INCOME
YR1	$ 1,668,405	$ 5,367
	$ 304,296	$ 983
YR2	$ 1,227,559	$ 3,966
	$ 226,111	$ 729

$ 3,870,030

TY2016 WORKING INTEREST

YEAR	WRK INT INCOME	WORKING COST	NET INC	PROT FCTR(16.5%)	DIS INC
1	$ 1,664,788	$ 149,536	$ 1,515,231	0.931291	$ 1,411,121
2	$ 1,231,927	$ 149,536	$ 1,082,392	0.807711	$ 874,260
3	$ 948,584	$ 149,536	$ 799,049	0.700830	$ 559,757
4	$ 730,410	$ 149,536	$ 580,874	0.607572	$ 352,923
5	$ 562,416	$ 149,536	$ 412,880	0.526948	$ 217,566
6	$ 433,060	$ 149,536	$ 283,525	0.457024	$ 129,576
7	$ 333,456	$ 149,536	$ 183,921	0.396378	$ 72,902
8	$ 256,761	$ 149,536	$ 107,226	0.343760	$ 36,852
9	$ 197,706	$ 149,536	$ 48,171	0.298161	$ 14,363
10	$ 152,234	$ 149,536	$ 2,698	0.258596	$ 698
11	$ 117,220	$ 149,536	$ -	0.224291	$ -
12	$ 90,269	$ 149,536	$ -	0.194519	$ -
13	$ 69,500	$ 149,536	$ -	0.168707	$ -
14	$ 53,516	$ 149,536	$ -	0.146320	$ -
15	$ 41,206	$ 149,536	$ -	0.126904	$ -
16	$ 31,729	$ 149,536	$ -	0.110064	$ -
17	$ 24,431	$ 149,536	$ -	0.095459	$ -
18	$ 18,812	$ 149,536	$ -	0.082792	$ -
19	$ 14,486	$ 149,536	$ -	0.071808	$ -
20	$ 11,154	$ 149,536	$ -	0.062277	$ -
21	$ 8,588	$ 149,536	$ -	0.054013	$ -
22	$ 6,613	$ 149,536	$ -	0.046846	$ -
23	$ 5,092	$ 149,536	$ -	0.040629	$ -
24	$ 3,921	$ 149,536	$ -	0.035238	$ -
25	$ 3,019	$ 149,536	$ -	0.030562	$ -
26	$ 2,325	$ 149,536	$ -	0.026507	$ -
27	$ 1,790	$ 149,536	$ -	0.022989	$ -
28	$ 1,378	$ 149,536	$ -	0.019939	$ -
29	$ 1,061	$ 149,536	$ -	0.017293	$ -
30	$ 817	$ 149,536	$ -	0.014998	$ -
31	$ 629	$ 149,536	$ -	0.013008	$ -
32	$ 485	$ 149,536	$ -	0.011282	$ -
33	$ 373	$ 149,536	$ -	0.009785	$ -
34	$ 287	$ 149,536	$ -	0.008486	$ -
35	$ 221	$ 149,536	$ -	0.007360	$ -
36	$ 170	$ 149,536	$ -	0.006384	$ -
37	$ 131	$ 149,536	$ -	0.005536	$ -
38	$ 101	$ 149,536	$ -	0.004802	$ -
39	$ 78	$ 149,536	$ -	0.004166	$ -
40	$ 60	$ 149,536	$ -	0.003612	$ -

WORKING INTEREST APPRAISAL

TY2016 ROYALTY INTEREST

YEAR	ROY INT INCOME	PROT FCTR(16.5%)	DIS INC
1	$ 305,188	0.931291	$ 284,219
2	$ 226,839	0.807711	$ 182,413
3	$ 173,898	0.700830	$ 121,819
4	$ 133,900	0.607572	$ 81,354
5	$ 103,103	0.526948	$ 54,330
6	$ 79,389	0.457024	$ 36,283
7	$ 61,130	0.396378	$ 24,230
8	$ 47,070	0.343760	$ 16,182
9	$ 36,244	0.298161	$ 10,806
10	$ 27,906	0.258596	$ 7,217
11	$ 21,489	0.224291	$ -
12	$ 16,546	0.194519	$ -
13	$ 12,741	0.168707	$ -
14	$ 9,810	0.146320	$ -
15	$ 7,554	0.126904	$ -
16	$ 5,817	0.110064	$ -
17	$ 4,479	0.095459	$ -
18	$ 3,449	0.082792	$ -
19	$ 2,656	0.071808	$ -
20	$ 2,045	0.062277	$ -
21	$ 1,574	0.054013	$ -
22	$ 1,212	0.046846	$ -
23	$ 933	0.040629	$ -
24	$ 719	0.035238	$ -
25	$ 553	0.030562	$ -
26	$ 426	0.026507	$ -
27	$ 328	0.022989	$ -
28	$ 253	0.019939	$ -
29	$ 195	0.017293	$ -
30	$ 150	0.014998	$ -
31	$ 116	0.013008	$ -
32	$ 89	0.011282	$ -
33	$ 68	0.009785	$ -
34	$ 53	0.008486	$ -
35	$ 41	0.007360	$ -
36	$ 31	0.006384	$ -
37	$ 24	0.005536	$ -
38	$ 19	0.004802	$ -
39	$ 14	0.004166	$ -
40	$ 11	0.003612	$ -

ROYALTY INTEREST APPRAISAL

09-032016062b3

NATURAL GAS/OIL APPRAISAL - FLUSH WELL (Year 1)

DECLINE RATES	
YR 1	69%
YR 2	29%
YR3+	23%

2014	GAS INCOME	OIL INCOME
WRK INT	$ 7,632,508	$ 79,426
ROY INT	$ 1,401,230	$ 14,583

	GAS CAP INCOME	OIL CAP INCOME
YR1	$ 2,022,518	$ 21,048
	$ 371,362	$ 3,864
YR8	$ 1,486,738	$ 15,476
	$ 274,891	$ 2,860

$ 4,682,092

TY2018 WORKING INTEREST

YEAR	WRK INT INCOME	WORKING COST	NET INC	PROT FCTR(16.5%)	DIS INC
1	$ 2,043,663	$ 148,514	$ 1,895,149	0.931291	$ 1,764,936
2	$ 1,519,311	$ 148,514	$ 1,363,797	0.807711	$ 1,101,553
3	$ 1,164,479	$ 148,514	$ 1,015,965	0.700530	$ 711,714
4	$ 896,649	$ 148,514	$ 748,138	0.607572	$ 454,546
5	$ 690,420	$ 148,514	$ 541,905	0.526948	$ 285,568
6	$ 531,623	$ 148,514	$ 383,109	0.457024	$ 175,090
7	$ 409,360	$ 148,514	$ 260,836	0.396379	$ 103,369
8	$ 315,199	$ 148,514	$ 166,685	0.343780	$ 57,303
9	$ 242,704	$ 148,514	$ 94,189	0.298181	$ 28,084
10	$ 186,882	$ 148,514	$ 38,367	0.258586	$ 9,922
11	$ 143,899	$ 148,514	$ -	0.224281	$ -
12	$ 110,802	$ 148,514	$ -	0.194519	$ -
13	$ 85,315	$ 148,514	$ -	0.168707	$ -
14	$ 65,695	$ 148,514	$ -	0.146320	$ -
15	$ 50,585	$ 148,514	$ -	0.126904	$ -
16	$ 38,950	$ 148,514	$ -	0.110064	$ -
17	$ 29,992	$ 148,514	$ -	0.095469	$ -
18	$ 23,094	$ 148,514	$ -	0.082792	$ -
19	$ 17,782	$ 148,514	$ -	0.071806	$ -
20	$ 13,692	$ 148,514	$ -	0.062277	$ -
21	$ 10,543	$ 148,514	$ -	0.054013	$ -
22	$ 8,116	$ 148,514	$ -	0.046846	$ -
23	$ 6,251	$ 148,514	$ -	0.040629	$ -
24	$ 4,813	$ 148,514	$ -	0.035238	$ -
25	$ 3,706	$ 148,514	$ -	0.030562	$ -
26	$ 2,854	$ 148,514	$ -	0.026507	$ -
27	$ 2,197	$ 148,514	$ -	0.022989	$ -
28	$ 1,692	$ 148,514	$ -	0.019939	$ -
29	$ 1,303	$ 148,514	$ -	0.017293	$ -
30	$ 1,003	$ 148,514	$ -	0.014998	$ -
31	$ 773	$ 148,514	$ -	0.013008	$ -
32	$ 595	$ 148,514	$ -	0.011282	$ -
33	$ 458	$ 148,514	$ -	0.009786	$ -
34	$ 353	$ 148,514	$ -	0.008488	$ -
35	$ 272	$ 148,514	$ -	0.007360	$ -
36	$ 209	$ 148,514	$ -	0.006384	$ -
37	$ 161	$ 148,514	$ -	0.005536	$ -
38	$ 124	$ 148,514	$ -	0.004802	$ -
39	$ 95	$ 148,514	$ -	0.004165	$ -
40	$ 74	$ 148,514	$ -	0.003613	$ -

WORKING INTEREST APPRAISAL

TY2018 ROYALTY INTEREST

YEAR	ROY INT INCOME	PROT FCTR(16.5%)	DIS INC
1	$ 378,217	0.931291	$ 349,436
2	$ 277,661	0.807711	$ 224,269
3	$ 213,799	0.700530	$ 149,772
4	$ 164,625	0.607572	$ 100,022
5	$ 126,761	0.526948	$ 66,797
6	$ 97,606	0.457024	$ 44,606
7	$ 75,157	0.396379	$ 29,790
8	$ 57,871	0.343780	$ 19,898
9	$ 44,560	0.298181	$ 13,286
10	$ 34,319	0.258586	$ 8,873
11	$ 26,420	0.224281	$ -
12	$ 20,343	0.194519	$ -
13	$ 15,664	0.168707	$ -
14	$ 12,062	0.146320	$ -
15	$ 9,287	0.126904	$ -
16	$ 7,151	0.110064	$ -
17	$ 5,506	0.095469	$ -
18	$ 4,240	0.082792	$ -
19	$ 3,266	0.071806	$ -
20	$ 2,514	0.062277	$ -
21	$ 1,936	0.054013	$ -
22	$ 1,490	0.046846	$ -
23	$ 1,149	0.040629	$ -
24	$ 884	0.035238	$ -
25	$ 680	0.030562	$ -
26	$ 524	0.026507	$ -
27	$ 403	0.022989	$ -
28	$ 311	0.019939	$ -
29	$ 239	0.017293	$ -
30	$ 184	0.014998	$ -
31	$ 142	0.013008	$ -
32	$ 109	0.011282	$ -
33	$ 84	0.009786	$ -
34	$ 65	0.008488	$ -
35	$ 50	0.007360	$ -
36	$ 38	0.006384	$ -
37	$ 30	0.005536	$ -
38	$ 23	0.004802	$ -
39	$ 18	0.004165	$ -
40	$ 13	0.003612	$ -

ROYALTY INTEREST APPRAISAL

09-03201062267

NATURAL GAS APPRAISAL - PUSH WELL #1

	DECLINE RATES
YR 1	69%
YR 2	29%
YR3+	23%

2014	GAS INCOME	OIL INCOME
WRK INT	$ 6,836,288	$ 78,900
ROY INT	$ 1,246,443	$ 13,868

	GAS CAP INCOME	OIL CAP INCOME
YR1	$ 1,836,808	$ 20,114
	$ 331,102	$ 3,621
YR2	$ 1,360,796	$ 14,884
	$ 248,018	$ 2,699

$ 4,187,070

TY2016 WORKING INTEREST

YEAR	WRK INT INCOME	WORKING COST	NET INC	PRCT FCTR(15.0%)	DIS INC
1	$ 1,859,019	$ 148,439	$ 1,710,579	0.931291	$ 1,593,047
2	$ 1,375,674	$ 148,439	$ 1,227,236	0.807711	$ 991,251
3	$ 1,059,269	$ 148,439	$ 910,830	0.700530	$ 638,063
4	$ 815,637	$ 148,439	$ 667,198	0.607572	$ 405,371
5	$ 628,041	$ 148,439	$ 479,601	0.526948	$ 252,725
6	$ 483,591	$ 148,439	$ 335,152	0.457024	$ 153,173
7	$ 372,365	$ 148,439	$ 223,926	0.396378	$ 88,759
8	$ 286,721	$ 148,439	$ 138,282	0.343760	$ 47,539
9	$ 220,775	$ 148,439	$ 72,336	0.298161	$ 21,568
10	$ 185,997	$ 148,439	$ 21,558	0.258598	$ 5,575
11	$ 130,598	$ 148,439	$ -	0.224281	$ -
12	$ 100,791	$ 148,439	$ -	0.194519	$ -
13	$ 77,609	$ 148,439	$ -	0.168707	$ -
14	$ 59,758	$ 148,439	$ -	0.146320	$ -
15	$ 46,016	$ 148,439	$ -	0.126904	$ -
16	$ 35,431	$ 148,439	$ -	0.110064	$ -
17	$ 27,282	$ 148,439	$ -	0.095459	$ -
18	$ 21,007	$ 148,439	$ -	0.082792	$ -
19	$ 16,176	$ 148,439	$ -	0.071809	$ -
20	$ 12,455	$ 148,439	$ -	0.062277	$ -
21	$ 9,590	$ 148,439	$ -	0.054013	$ -
22	$ 7,386	$ 148,439	$ -	0.046846	$ -
23	$ 5,688	$ 148,439	$ -	0.040629	$ -
24	$ 4,378	$ 148,439	$ -	0.035238	$ -
25	$ 3,371	$ 148,439	$ -	0.030562	$ -
26	$ 2,596	$ 148,439	$ -	0.026507	$ -
27	$ 1,999	$ 148,439	$ -	0.022988	$ -
28	$ 1,539	$ 148,439	$ -	0.019938	$ -
29	$ 1,185	$ 148,439	$ -	0.017293	$ -
30	$ 913	$ 148,439	$ -	0.014998	$ -
31	$ 703	$ 148,439	$ -	0.013008	$ -
32	$ 541	$ 148,439	$ -	0.011282	$ -
33	$ 417	$ 148,439	$ -	0.009785	$ -
34	$ 321	$ 148,439	$ -	0.008486	$ -
35	$ 247	$ 148,439	$ -	0.007360	$ -
36	$ 190	$ 148,439	$ -	0.006384	$ -
37	$ 146	$ 148,439	$ -	0.005536	$ -
38	$ 113	$ 148,439	$ -	0.004802	$ -
39	$ 87	$ 148,439	$ -	0.004166	$ -
40	$ 67	$ 148,439	$ -	0.003612	$ -

WORKING INTEREST APPRAISAL

TY2016 ROYALTY INTEREST

YEAR	ROY INT INCOME	PRCT FCTR(16.0%)	DIS INC
1	$ 334,724	0.931291	$ 311,725
2	$ 247,699	0.807711	$ 200,067
3	$ 190,728	0.700530	$ 133,609
4	$ 146,856	0.607572	$ 89,227
5	$ 113,061	0.526948	$ 59,588
6	$ 87,073	0.457024	$ 39,794
7	$ 67,048	0.396378	$ 26,576
8	$ 51,626	0.343760	$ 17,748
9	$ 39,751	0.298161	$ 11,552
10	$ 30,609	0.258598	$ 7,915
11	$ 23,569	0.224281	$ -
12	$ 18,148	0.194519	$ -
13	$ 13,974	0.168707	$ -
14	$ 10,760	0.146320	$ -
15	$ 8,286	0.126904	$ -
16	$ 6,380	0.110064	$ -
17	$ 4,912	0.095459	$ -
18	$ 3,782	0.082792	$ -
19	$ 2,912	0.071809	$ -
20	$ 2,243	0.062277	$ -
21	$ 1,727	0.054013	$ -
22	$ 1,330	0.046846	$ -
23	$ 1,024	0.040629	$ -
24	$ 788	0.035238	$ -
25	$ 607	0.030562	$ -
26	$ 467	0.026507	$ -
27	$ 360	0.022988	$ -
28	$ 277	0.019938	$ -
29	$ 213	0.017293	$ -
30	$ 164	0.014998	$ -
31	$ 127	0.013008	$ -
32	$ 97	0.011282	$ -
33	$ 75	0.009785	$ -
34	$ 58	0.008486	$ -
35	$ 44	0.007360	$ -
36	$ 34	0.006384	$ -
37	$ 26	0.005536	$ -
38	$ 20	0.004802	$ -
39	$ 16	0.004166	$ -
40	$ 12	0.003612	$ -

ROYALTY INTEREST APPRAISAL

09-03201662G9

				2014	GAS INCOME		OIL INCOME				GAS CAP INCOME		OIL CAP INCOME	
	DECLINE RATES			WRK INT	$ 11,903,692		$ 155,109			YR1	$ 3,194,978		$ 43,754	
YR 1	69%			ROY INT	$ 2,382,628		$ 32,789				$ 625,079		$ 8,484	
YR 2	29%									YR3	$ 2,334,914		$ 32,378	
YR3+	23%										$ 463,293		$ 6,426	
	$ 7,814,789		TY2015 WORKING INTEREST								TY2015 ROYALTY INTEREST			
YEAR	WRK INT INCOME		WORKING COST	NET INC	PRCT FCTR(16.0%)		DIS INC			YEAR	ROY INT INCOME		PRCT FCTR(16.0%)	DIS INC
1	$ 3,195,232		$ 148,027	$ 3,060,205	0.931291		$ 2,840,629			1	$ 634,754		0.931291	$ 591,141
2	$ 2,366,682		$ 148,027	$ 2,218,655	0.807711		$ 1,792,040			2	$ 469,715		0.807711	$ 379,398
3	$ 1,822,383		$ 148,027	$ 1,674,329	0.700530		$ 1,172,915			3	$ 361,683		0.700530	$ 253,370
4	$ 1,403,211		$ 148,027	$ 1,255,158	0.607572		$ 762,519			4	$ 278,496		0.607572	$ 169,206
5	$ 1,080,473		$ 148,027	$ 932,446	0.526948		$ 491,351			5	$ 214,442		0.526948	$ 113,000
6	$ 831,964		$ 148,027	$ 683,938	0.457024		$ 312,575			6	$ 165,120		0.457024	$ 75,464
7	$ 640,512		$ 148,027	$ 492,586	0.396378		$ 195,250			7	$ 127,143		0.396378	$ 50,396
8	$ 493,272		$ 148,027	$ 345,245	0.343780		$ 118,668			8	$ 97,900		0.343780	$ 33,656
9	$ 379,519		$ 148,027	$ 231,792	0.298151		$ 69,111			9	$ 75,383		0.298151	$ 22,478
10	$ 292,481		$ 148,027	$ 144,454	0.258598		$ 37,360			10	$ 58,045		0.258598	$ 15,010
11	$ 225,195		$ 148,027	$ 77,168	0.224291		$ 17,307			11	$ 44,694		0.224291	$ 10,024
12	$ 173,400		$ 148,027	$ 25,373	0.194619		$ 4,938			12	$ 34,419		0.194619	$ 6,694
13	$ 133,515		$ 148,027	$ -	0.168707		$ -			13	$ 26,499		0.168707	$ -
14	$ 102,809		$ 148,027	$ -	0.146320		$ -			14	$ 20,404		0.146320	$ -
15	$ 79,163		$ 148,027	$ -	0.126904		$ -			15	$ 15,711		0.126904	$ -
16	$ 60,955		$ 148,027	$ -	0.110064		$ -			16	$ 12,098		0.110064	$ -
17	$ 46,936		$ 148,027	$ -	0.095459		$ -			17	$ 9,315		0.095459	$ -
18	$ 36,140		$ 148,027	$ -	0.082792		$ -			18	$ 7,173		0.082792	$ -
19	$ 27,828		$ 148,027	$ -	0.071808		$ -			19	$ 5,523		0.071808	$ -
20	$ 21,428		$ 148,027	$ -	0.062277		$ -			20	$ 4,253		0.062277	$ -
21	$ 16,499		$ 148,027	$ -	0.054013		$ -			21	$ 3,275		0.054013	$ -
22	$ 12,704		$ 148,027	$ -	0.046846		$ -			22	$ 2,521		0.046846	$ -
23	$ 9,782		$ 148,027	$ -	0.040629		$ -			23	$ 1,942		0.040629	$ -
24	$ 7,532		$ 148,027	$ -	0.035238		$ -			24	$ 1,495		0.035238	$ -
25	$ 5,800		$ 148,027	$ -	0.030562		$ -			25	$ 1,151		0.030562	$ -
26	$ 4,466		$ 148,027	$ -	0.026507		$ -			26	$ 886		0.026507	$ -
27	$ 3,439		$ 148,027	$ -	0.022989		$ -			27	$ 683		0.022989	$ -
28	$ 2,648		$ 148,027	$ -	0.019939		$ -			28	$ 526		0.019939	$ -
29	$ 2,039		$ 148,027	$ -	0.017293		$ -			29	$ 405		0.017293	$ -
30	$ 1,570		$ 148,027	$ -	0.014998		$ -			30	$ 312		0.014998	$ -
31	$ 1,209		$ 148,027	$ -	0.013008		$ -			31	$ 240		0.013008	$ -
32	$ 931		$ 148,027	$ -	0.011282		$ -			32	$ 185		0.011282	$ -
33	$ 717		$ 148,027	$ -	0.009785		$ -			33	$ 142		0.009785	$ -
34	$ 552		$ 148,027	$ -	0.008486		$ -			34	$ 110		0.008486	$ -
35	$ 425		$ 148,027	$ -	0.007360		$ -			35	$ 84		0.007360	$ -
36	$ 327		$ 148,027	$ -	0.006384		$ -			36	$ 65		0.006384	$ -
37	$ 252		$ 148,027	$ -	0.005536		$ -			37	$ 50		0.005536	$ -
38	$ 194		$ 148,027	$ -	0.004802		$ -			38	$ 39		0.004802	$ -
39	$ 149		$ 148,027	$ -	0.004166		$ -			39	$ 30		0.004166	$ -
40	$ 115		$ 148,027	$ -	0.003612		$ -			40	$ 23		0.003612	$ -
	WORKING INTEREST APPRAISAL										ROYALTY INTEREST APPRAISAL			

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				2014	GAS INCOME		OIL INCOME			GAS CAP INCOME		OIL CAP INCOME		
	DECLINE RATES			WRK INT	$	6,656,904	$	139,536	YR1	$	1,817,066	$	37,004	
YR 1	59%			ROY INT	$	1,146,727	$	23,418		$	304,666	$	6,206	
YR 2	28%								YR2	$	1,344,639	$	27,389	
YR3+	23%									$	226,478	$	4,612	
	$ 4,190,883		TY2018 WORKING INTEREST								TY2018 ROYALTY INTEREST			
YEAR	WRK INT INCOME	WORKING COST	NET INC	PRCT FCTR(16.0%)	DIS INC				YEAR	ROY INT INCOME	PRCT FCTR(16.0%)	DIS INC		
1	$ 1,854,084	$ 147,121	$ 1,706,963	0.931291	$ 1,589,579				1	$ 310,901	0.931291	$ 289,539		
2	$ 1,272,022	$ 147,121	$ 1,224,901	0.807711	$ 989,366				2	$ 230,087	0.807711	$ 185,828		
3	$ 1,056,457	$ 147,121	$ 909,336	0.700830	$ 637,017				3	$ 177,151	0.700830	$ 124,100		
4	$ 813,472	$ 147,121	$ 666,351	0.607572	$ 404,856				4	$ 136,407	0.607572	$ 82,877		
5	$ 626,273	$ 147,121	$ 479,252	0.526948	$ 252,541				5	$ 105,033	0.526948	$ 55,347		
6	$ 482,307	$ 147,121	$ 335,188	0.457024	$ 153,188				6	$ 80,876	0.457024	$ 36,962		
7	$ 371,277	$ 147,121	$ 224,268	0.296378	$ 66,890				7	$ 62,274	0.296378	$ 24,664		
8	$ 285,963	$ 147,121	$ 138,839	0.343780	$ 47,730				8	$ 47,951	0.343780	$ 16,486		
9	$ 220,189	$ 147,121	$ 73,068	0.298151	$ 21,788				9	$ 36,922	0.298151	$ 11,009		
10	$ 169,546	$ 147,121	$ 22,425	0.258598	$ 5,799				10	$ 28,430	0.258598	$ 7,352		
11	$ 130,550	$ 147,121	$ -	0.224281	$ -				11	$ 21,891	0.224281	$ -		
12	$ 100,524	$ 147,121	$ -	0.194519	$ -				12	$ 16,856	0.194519	$ -		
13	$ 77,403	$ 147,121	$ -	0.168707	$ -				13	$ 12,979	0.168707	$ -		
14	$ 59,600	$ 147,121	$ -	0.146320	$ -				14	$ 9,994	0.146320	$ -		
15	$ 45,892	$ 147,121	$ -	0.126904	$ -				15	$ 7,695	0.126904	$ -		
16	$ 35,337	$ 147,121	$ -	0.110064	$ -				16	$ 5,925	0.110064	$ -		
17	$ 27,210	$ 147,121	$ -	0.095459	$ -				17	$ 4,563	0.095459	$ -		
18	$ 20,951	$ 147,121	$ -	0.082792	$ -				18	$ 2,513	0.082792	$ -		
19	$ 16,133	$ 147,121	$ -	0.071806	$ -				19	$ 2,705	0.071806	$ -		
20	$ 12,422	$ 147,121	$ -	0.062277	$ -				20	$ 2,083	0.062277	$ -		
21	$ 9,566	$ 147,121	$ -	0.054013	$ -				21	$ 1,604	0.054013	$ -		
22	$ 7,366	$ 147,121	$ -	0.046846	$ -				22	$ 1,235	0.046846	$ -		
23	$ 5,671	$ 147,121	$ -	0.040629	$ -				23	$ 951	0.040629	$ -		
24	$ 4,367	$ 147,121	$ -	0.035238	$ -				24	$ 732	0.035238	$ -		
25	$ 3,362	$ 147,121	$ -	0.030562	$ -				25	$ 564	0.030562	$ -		
26	$ 2,589	$ 147,121	$ -	0.026507	$ -				26	$ 434	0.026507	$ -		
27	$ 1,994	$ 147,121	$ -	0.022989	$ -				27	$ 334	0.022989	$ -		
28	$ 1,536	$ 147,121	$ -	0.019939	$ -				28	$ 257	0.019939	$ -		
29	$ 1,182	$ 147,121	$ -	0.017293	$ -				29	$ 198	0.017293	$ -		
30	$ 910	$ 147,121	$ -	0.014998	$ -				30	$ 153	0.014998	$ -		
31	$ 701	$ 147,121	$ -	0.013008	$ -				31	$ 118	0.013008	$ -		
32	$ 540	$ 147,121	$ -	0.011282	$ -				32	$ 90	0.011282	$ -		
33	$ 416	$ 147,121	$ -	0.009786	$ -				33	$ 70	0.009786	$ -		
34	$ 320	$ 147,121	$ -	0.008486	$ -				34	$ 54	0.008486	$ -		
35	$ 246	$ 147,121	$ -	0.007360	$ -				35	$ 41	0.007360	$ -		
36	$ 190	$ 147,121	$ -	0.006384	$ -				36	$ 32	0.006384	$ -		
37	$ 146	$ 147,121	$ -	0.005536	$ -				37	$ 24	0.005536	$ -		
38	$ 112	$ 147,121	$ -	0.004802	$ -				38	$ 19	0.004802	$ -		
39	$ 87	$ 147,121	$ -	0.004166	$ -				39	$ 15	0.004166	$ -		
40	$ 67	$ 147,121	$ -	0.003612	$ -				40	$ 11	0.003612	$ -		
	WORKING INTEREST APPRAISAL									ROYALTY INTEREST APPRAISAL				

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OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 111

ACCOUNT:0400875001 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:COX #1

STATUS:A API#:03131 DATE:08/19/1982 DAYS:365 BBLS: MCFS: 3302 RCPTS: 7545 GWI: 6299 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.310 0.170 0.120 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 33

	GAS WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR	OIL WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR
1	5,165	3,616	3,367	1,022	952	0.931						
2	4,545	2,996	2,420	899	726	0.808						
3	4,000	2,450	1,717	791	554	0.701						
4	3,520	1,970	1,197	696	423	0.608						
5	3,098	1,548	816	613	323	0.527						
6	2,726	1,176	538	539	246	0.457						
7	2,399	849	337	474	188	0.396						
8	2,111	561	193	418	144	0.344						
9	1,858	308	92	367	110	0.298						
10	1,635	85	22	323	84	0.259						
11	1,439	0	0	285	0	0.224						
TOTAL:			10,697		3,749							
EXPENSE:	1550		1550	1550								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 113

ACCOUNT:0420156143 RESOURCE:OG OWNER:ANTERO RESOURCES CORPORATI LOCATION:WALTER UN1T 3H 40383

STATUS:Z API#:06143 DATE:09/01/2013 DAYS:365 BELS: 206.000 MCFS: 1320496 RCPTS: 6882336 GWI: 5569226 OWI: 14354

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 EXPENSE: 0.2 150000 150000 150000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 GS EXPENSE: 0.2 150000 150000 150000

SETTLED YEARS: 2 OL EXPENSE: 0.2 5750 5750 5750

	GAS WORKING INTEREST			GAS ROYALTY INTEREST			OIL WORKING INTEREST			OIL ROYALTY INTEREST		
	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR
1	3,313,689	3,164,075	2,946,675	770,612	717,664	0.931	8,541	8,526	7,940	2,147	2,000	0.931
2	2,551,541	2,401,927	1,940,062	593,372	479,273	0.808	6,576	6,562	5,300	1,653	1,336	0.808
3	1,964,686	1,815,072	1,271,512	456,896	320,069	0.701	5,064	5,049	3,537	1,273	892	0.701
4	1,512,809	1,363,194	828,239	351,810	213,750	0.608	3,899	3,884	2,360	980	596	0.608
5	1,164,863	1,015,248	534,983	270,894	142,747	0.527	3,002	2,988	1,574	755	398	0.527
6	896,944	747,330	341,548	208,588	95,330	0.457	2,312	2,297	1,050	581	266	0.457
7	690,647	541,033	214,453	160,613	63,663	0.396	1,780	1,765	700	448	177	0.396
8	531,798	382,184	131,387	123,672	42,516	0.344	1,371	1,356	466	345	118	0.344
9	409,485	259,870	77,483	95,227	28,393	0.298	1,055	1,041	310	265	79	0.298
10	315,303	165,689	42,846	73,325	18,962	0.259	813	798	206	204	53	0.259
11	242,783	93,169	20,896	56,460	12,663	0.224	626	611	137	157	35	0.224
12	186,943	37,329	7,261	43,474	8,457	0.195	482	467	91	121	24	0.195
13	143,946	0	0	33,475	0	0.169	371	356	60	93	16	0.169
14							286	271	40	72	11	0.146
15							220	205	26	55	7	0.127
16							169	155	17	43	5	0.110
17							130	116	11	33	3	0.095
18							100	86	7	25	2	0.083
19							77	63	4	19	1	0.072
20							60	45	3	15	1	0.062
21							46	31	2	12	1	0.054
22							35	21	1	9	0	0.047
23							27	12	1	7	0	0.041
24							21	6	0	5	0	0.035
25							16	1	0	4	0	0.031
26							12	0	0	3	0	0.027
TOTAL:			8,357,346		2,143,487				23,843		6,020	
GS EXPENSE:	149614		149614	149614								
OL EXPENSE:	15		15	15								

OCT 12, 2016
05:09 PM

'DOOORIDGE' COUNTY, WV
YIELO CAP MOOEL REPORT FOR - 2016

NR105: 115

ACCOUNT:0420156158

RESOURCE:OG OWNER:ANTERO RESOURCES CORPORATI LOCATION:WALTER UNIT 1H 40398

STATUS:Z API#:06158 DATE:09/01/2013 OAYS:365 EELS: 117.000 MCFS: 1461629 RCPTS: 7877933 GWI: 6383091 OWI: 8142

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 EXPENSE: 0.2 150000 150000 150000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 GS EXPENSE: 0.2 150000 150000 150000

SETTLEO YEARS: 2 OL EXPENSE: 0.2 5750 5750 5750

	GAS WORKING INTEREST			GAS ROYALTY INTEREST			OIL WORKING INTEREST			OIL ROYALTY INTEREST		
	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR
1	3,797,939	3,648,130	3,397,471	883,460	822,758	0.931	4,844	4,837	4,505	1,127	1,050	0.931
2	2,924,413	2,774,604	2,241,078	680,264	549,457	0.808	3,730	3,723	3,007	868	701	0.808
3	2,251,798	2,101,989	1,472,507	523,803	366,940	0.701	2,872	2,865	2,007	668	468	0.701
4	1,733,885	1,584,076	962,440	403,328	245,051	0.608	2,212	2,204	1,339	514	313	0.608
5	1,335,091	1,185,282	624,582	310,563	163,651	0.527	1,703	1,696	894	396	209	0.527
6	1,028,020	878,211	401,364	239,133	109,290	0.457	1,311	1,304	596	305	139	0.457
7	791,576	641,767	254,382	184,133	72,986	0.396	1,010	1,002	397	235	93	0.396
8	609,513	459,704	158,037	141,782	48,742	0.344	777	770	265	181	62	0.344
9	469,325	319,516	95,267	109,172	32,551	0.298	599	591	176	139	42	0.298
10	361,380	211,571	54,712	84,063	21,738	0.259	461	454	117	107	28	0.259
11	278,263	128,454	28,810	64,728	14,517	0.224	355	348	78	83	19	0.224
12	214,262	64,453	12,537	49,841	9,695	0.195	273	266	52	64	12	0.195
13	164,982	15,173	2,560	38,377	6,475	0.169	210	203	34	49	8	0.169
14	127,036	0	0	29,551	0	0.146	162	155	23	38	6	0.146
15							125	117	15	29	4	0.127
16							96	89	10	22	2	0.110
17							74	67	6	17	2	0.095
18							57	50	4	13	1	0.083
19							44	37	3	10	1	0.072
20							34	26	2	8	0	0.062
21							26	19	1	6	0	0.054
22							20	13	1	5	0	0.047
23							15	8	0	4	0	0.041
24							12	5	0	3	0	0.035
25							9	2	0	2	0	0.031
26							7	0	0	2	0	0.027
TOTAL:			9,705,747		2,463,850				13,532		3,159	
GS EXPENSE:	149809		149809	149809								
OL EXPENSE:	7		7	7								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 117

ACCOUNT:0420156164 RESOURCE:OG OWNER:ANTERO RESOURCES CORPORATI LOCATION:RUTH UNIT 1 40397

STATUS:Z API#:06164 DATE:08/01/2013 DAYS:365 BBLS: 242.000 MCFS: 1437225 RCPTS: 7306532 GWI: 6033285 OWI: 17201

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 EXPENSE: 0.2 150000 150000 150000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 GS EXPENSE: 0.2 150000 150000 150000

SETTLED YEARS: 2 OL EXPENSE: 0.2 5750 5750 5750

	GAS WORKING INTEREST			GAS ROYALTY INTEREST			OIL WORKING INTEREST			OIL ROYALTY INTEREST		
	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR
1	3,589,805	3,440,231	3,203,856	745,223	694,019	0.931	10,235	10,218	9,516	2,125	1,979	0.931
2	2,764,150	2,614,576	2,111,822	573,821	463,482	0.808	7,881	7,864	6,352	1,636	1,321	0.808
3	2,128,395	1,978,822	1,386,224	441,842	309,524	0.701	6,068	6,052	4,239	1,260	883	0.701
4	1,638,864	1,489,291	904,851	340,219	206,707	0.608	4,672	4,656	2,829	970	589	0.608
5	1,261,925	1,112,352	586,152	261,968	138,044	0.527	3,598	3,581	1,887	747	394	0.527
6	971,683	822,109	375,724	201,716	92,189	0.457	2,770	2,754	1,259	575	263	0.457
7	748,196	598,622	237,281	155,321	61,566	0.396	2,133	2,117	839	443	176	0.396
8	576,111	426,537	146,635	119,597	41,115	0.344	1,643	1,626	559	341	117	0.344
9	443,605	294,032	87,669	92,090	27,458	0.298	1,265	1,248	372	263	78	0.298
10	341,576	192,002	49,651	70,909	18,337	0.259	974	957	248	202	52	0.259
11	263,014	113,440	25,442	54,600	12,246	0.224	750	734	165	156	35	0.224
12	202,520	52,947	10,299	42,042	8,178	0.195	577	561	109	120	23	0.195
13	155,941	6,367	1,074	32,372	5,461	0.169	445	428	72	92	16	0.169
14	120,074	0	0	24,927	0	0.146	342	326	48	71	10	0.146
15							264	247	31	55	7	0.127
16							203	187	21	42	5	0.110
17							156	140	13	32	3	0.095
18							120	104	9	25	2	0.083
19							93	76	5	19	1	0.072
20							71	55	3	15	1	0.062
21							55	39	2	11	1	0.054
22							42	26	1	9	0	0.047
23							33	16	1	7	0	0.041
24							25	9	0	5	0	0.035
25							19	3	0	4	0	0.031
26							15	0	0	3	0	0.027
TOTAL:			9,126,679		2,078,326				28,581		5,957	
GS EXPENSE:	149574		149574	149574								
OL EXPENSE:	16		16	16								

				2014	GAS INCOME		OIL INCOME			GAS CAP INCOME		OIL CAP INCOME		
	DECLINE RATES			WRK INT	$	4,342,799	$	6,406	YR1	$	1,163,489	$	1,696	
YR 1	38%			ROY INT	$	772,004	$	1,138		$	204,881	$	301	
YR 2	29%								YR2	$	853,852	$	1,256	
YR3+	23%									$	181,399	$	223	

	$ 2,316,800	TY2016 WORKING INTEREST						TY2016 ROYALTY INTEREST			
YEAR	WRK INT INCOME	WORKING COST	NET INC	PROT FCTR(16.0%)	DIS INC		YEAR	ROY INT INCOME	PROT FCTR(16.0%)	DIS INC	
1	$ 1,188,167	$ 149,768	$ 1,008,399	0.931291	$ 938,319		1	$ 204,882	0.931291	$ 190,806	
2	$ 854,836	$ 149,768	$ 705,068	0.807711	$ 569,477		2	$ 161,613	0.807711	$ 122,456	
3	$ 656,298	$ 149,768	$ 506,437	0.700530	$ 358,176		3	$ 116,742	0.700530	$ 81,761	
4	$ 506,834	$ 149,768	$ 357,046	0.607572	$ 216,931		4	$ 89,591	0.607572	$ 54,616	
5	$ 390,262	$ 149,768	$ 240,474	0.526948	$ 126,717		5	$ 69,216	0.526948	$ 36,473	
6	$ 300,502	$ 149,768	$ 150,714	0.457024	$ 68,880		6	$ 53,296	0.457024	$ 24,358	
7	$ 231,366	$ 149,768	$ 81,598	0.396378	$ 32,344		7	$ 41,036	0.396378	$ 16,267	
8	$ 175,167	$ 149,768	$ 25,379	0.343780	$ 9,766		8	$ 31,699	0.343780	$ 10,863	
9	$ 137,189	$ 149,768	$ -	0.298161	$ -		9	$ 24,332	0.298161	$ -	
10	$ 105,636	$ 149,768	$ -	0.258596	$ -		10	$ 18,736	0.258596	$ -	
11	$ 81,339	$ 149,768	$ -	0.224281	$ -		11	$ 14,426	0.224281	$ -	
12	$ 62,631	$ 149,768	$ -	0.194519	$ -		12	$ 11,108	0.194519	$ -	
13	$ 48,228	$ 149,768	$ -	0.168707	$ -		13	$ 8,553	0.168707	$ -	
14	$ 37,134	$ 149,768	$ -	0.146320	$ -		14	$ 6,586	0.146320	$ -	
15	$ 28,593	$ 149,768	$ -	0.126904	$ -		15	$ 5,071	0.126904	$ -	
16	$ 22,017	$ 149,768	$ -	0.110064	$ -		16	$ 3,906	0.110064	$ -	
17	$ 16,953	$ 149,768	$ -	0.095459	$ -		17	$ 3,007	0.095459	$ -	
18	$ 13,054	$ 149,768	$ -	0.082792	$ -		18	$ 2,316	0.082792	$ -	
19	$ 10,051	$ 149,768	$ -	0.071808	$ -		19	$ 1,783	0.071808	$ -	
20	$ 7,740	$ 149,768	$ -	0.062277	$ -		20	$ 1,373	0.062277	$ -	
21	$ 5,958	$ 149,768	$ -	0.054013	$ -		21	$ 1,057	0.054013	$ -	
22	$ 4,589	$ 149,768	$ -	0.046846	$ -		22	$ 814	0.046846	$ -	
23	$ 3,533	$ 149,768	$ -	0.040629	$ -		23	$ 627	0.040629	$ -	
24	$ 2,721	$ 149,768	$ -	0.035236	$ -		24	$ 483	0.035236	$ -	
25	$ 2,095	$ 149,768	$ -	0.030562	$ -		25	$ 372	0.030562	$ -	
26	$ 1,613	$ 149,768	$ -	0.026507	$ -		26	$ 286	0.026507	$ -	
27	$ 1,242	$ 149,768	$ -	0.022988	$ -		27	$ 220	0.022988	$ -	
28	$ 956	$ 149,768	$ -	0.019939	$ -		28	$ 170	0.019939	$ -	
29	$ 736	$ 149,768	$ -	0.017293	$ -		29	$ 131	0.017298	$ -	
30	$ 567	$ 149,768	$ -	0.014998	$ -		30	$ 101	0.014998	$ -	
31	$ 437	$ 149,768	$ -	0.013008	$ -		31	$ 77	0.013008	$ -	
32	$ 336	$ 149,768	$ -	0.011282	$ -		32	$ 60	0.011282	$ -	
33	$ 259	$ 149,768	$ -	0.009786	$ -		33	$ 46	0.009786	$ -	
34	$ 199	$ 149,768	$ -	0.008486	$ -		34	$ 35	0.008486	$ -	
35	$ 153	$ 149,768	$ -	0.007360	$ -		35	$ 27	0.007360	$ -	
36	$ 118	$ 149,768	$ -	0.006384	$ -		36	$ 21	0.006384	$ -	
37	$ 91	$ 149,768	$ -	0.005536	$ -		37	$ 16	0.005536	$ -	
38	$ 70	$ 149,768	$ -	0.004802	$ -		38	$ 12	0.004802	$ -	
39	$ 54	$ 149,768	$ -	0.004166	$ -		39	$ 10	0.004166	$ -	
40	$ 42	$ 149,768	$ -	0.003612	$ -		40	$ 7	0.003612	$ -	

WORKING INTEREST APPRAISAL

ROYALTY INTEREST APPRAISAL

09-04201666138

	DECLINE RATE
YR 1	85%
YR 2	29%
YR3+	23%

2016	GAS INCOME	OIL INCOME
WRK INT	$ 3,671,786	$ 6,137
ROY INT	$ 555,113	$ 577

	GAS CAP INCOME	OIL CAP INCOME
YR1	$ 1,026,023	$ 1,626
	$ 146,676	$ 233
YR3	$ 758,267	$ 1,203
	$ 108,466	$ 172

$ 1,892,012

TY2016 WORKING INTEREST

YEAR	WRK INT INCOME	WORKING COST	NET INC	PROT FCTR(16.0%)	DIS INC
1	$ 1,027,550	$ 149,772	$ 877,879	0.931291	$ 817,560
2	$ 760,461	$ 149,772	$ 610,689	0.807711	$ 493,260
3	$ 585,555	$ 149,772	$ 435,783	0.700530	$ 305,279
4	$ 450,877	$ 149,772	$ 301,106	0.607572	$ 182,943
5	$ 347,178	$ 149,772	$ 197,404	0.526948	$ 104,021
6	$ 267,328	$ 149,772	$ 117,553	0.457024	$ 53,725
7	$ 205,840	$ 149,772	$ 56,069	0.396378	$ 22,224
8	$ 158,497	$ 149,772	$ 8,726	0.343780	$ 3,000
9	$ 122,043	$ 149,772	$ -	0.298161	$ -
10	$ 93,973	$ 149,772	$ -	0.258596	$ -
11	$ 72,358	$ 149,772	$ -	0.224281	$ -
12	$ 55,717	$ 149,772	$ -	0.194519	$ -
13	$ 42,902	$ 149,772	$ -	0.168707	$ -
14	$ 33,034	$ 149,772	$ -	0.146320	$ -
15	$ 25,436	$ 149,772	$ -	0.126904	$ -
16	$ 19,585	$ 149,772	$ -	0.110054	$ -
17	$ 15,081	$ 149,772	$ -	0.095459	$ -
18	$ 11,613	$ 149,772	$ -	0.082792	$ -
19	$ 8,942	$ 149,772	$ -	0.071806	$ -
20	$ 6,885	$ 149,772	$ -	0.062277	$ -
21	$ 5,302	$ 149,772	$ -	0.054013	$ -
22	$ 4,082	$ 149,772	$ -	0.046846	$ -
23	$ 3,143	$ 149,772	$ -	0.040629	$ -
24	$ 2,420	$ 149,772	$ -	0.035238	$ -
25	$ 1,864	$ 149,772	$ -	0.030562	$ -
26	$ 1,436	$ 149,772	$ -	0.026507	$ -
27	$ 1,106	$ 149,772	$ -	0.022989	$ -
28	$ 851	$ 149,772	$ -	0.019939	$ -
29	$ 655	$ 149,772	$ -	0.017293	$ -
30	$ 504	$ 149,772	$ -	0.014998	$ -
31	$ 388	$ 149,772	$ -	0.013008	$ -
32	$ 299	$ 149,772	$ -	0.011282	$ -
33	$ 230	$ 149,772	$ -	0.009785	$ -
34	$ 177	$ 149,772	$ -	0.008488	$ -
35	$ 137	$ 149,772	$ -	0.007360	$ -
36	$ 105	$ 149,772	$ -	0.006384	$ -
37	$ 81	$ 149,772	$ -	0.005536	$ -
38	$ 62	$ 149,772	$ -	0.004802	$ -
39	$ 48	$ 149,772	$ -	0.004165	$ -
40	$ 37	$ 149,772	$ -	0.003612	$ -

WORKING INTEREST APPRAISAL

TY2016 ROYALTY INTEREST

YEAR	ROY INT INCOME	PROT FCTR(16.0%)	DIS INC
1	$ 146,807	0.931291	$ 136,720
2	$ 108,637	0.807711	$ 87,748
3	$ 83,651	0.700530	$ 58,600
4	$ 64,411	0.607572	$ 39,134
5	$ 49,597	0.526948	$ 26,136
6	$ 38,189	0.457024	$ 17,453
7	$ 29,406	0.396378	$ 11,656
8	$ 22,642	0.343780	$ 7,784
9	$ 17,435	0.298161	$ -
10	$ 13,425	0.258596	$ -
11	$ 10,337	0.224281	$ -
12	$ 7,960	0.194519	$ -
13	$ 6,129	0.168707	$ -
14	$ 4,719	0.146320	$ -
15	$ 3,634	0.126904	$ -
16	$ 2,798	0.110054	$ -
17	$ 2,154	0.095459	$ -
18	$ 1,659	0.082792	$ -
19	$ 1,277	0.071806	$ -
20	$ 984	0.062277	$ -
21	$ 757	0.054013	$ -
22	$ 583	0.046846	$ -
23	$ 449	0.040629	$ -
24	$ 346	0.035238	$ -
25	$ 266	0.030562	$ -
26	$ 205	0.026507	$ -
27	$ 158	0.022989	$ -
28	$ 122	0.019939	$ -
29	$ 94	0.017293	$ -
30	$ 72	0.014998	$ -
31	$ 56	0.013008	$ -
32	$ 43	0.011282	$ -
33	$ 33	0.009785	$ -
34	$ 25	0.008488	$ -
35	$ 20	0.007360	$ -
36	$ 15	0.006384	$ -
37	$ 12	0.005536	$ -
38	$ 9	0.004802	$ -
39	$ 7	0.004165	$ -
40	$ 5	0.003612	$ -

ROYALTY INTEREST APPRAISAL

09-042016614O

NATURAL GAS ANNUAL DECLINE WELL (CASE)

	DISCOUNT RATE		2014	GAS INCOME	OIL INCOME		GAS CAP INCOME	OIL CAP INCOME
			WRK INT	$ 6,064,256	$ 687	YR1	$ 1,347,328	$ 153
YR 1	69%		ROY INT	$ 948,123	$ 128		$ 250,466	$ 34
YR 2	20%					YR2	$ 997,021	$ 135
YR3+	23%						$ 166,338	$ 25

	$ 2,823,338	TY2016 WORKING INTEREST				TY2016 ROYALTY INTEREST			
YEAR	WRK INT INCOME	WORKING COST	NET INC	PRST FCTR(16.0%)	DIS INC	YEAR	ROY INT INCOME	PRST FCTR(16.0%)	DIS INC
1	$ 1,347,508	$ 149,981	$ 1,197,528	0.931291	$ 1,115,247	1	$ 250,492	0.931291	$ 233,260
2	$ 997,155	$ 149,981	$ 847,176	0.857711	$ 584,273	2	$ 185,364	0.807711	$ 149,720
3	$ 757,810	$ 149,981	$ 617,830	0.700630	$ 433,806	3	$ 142,730	0.700630	$ 99,987
4	$ 591,214	$ 149,981	$ 441,233	0.607672	$ 268,081	4	$ 109,902	0.607672	$ 66,773
5	$ 455,235	$ 149,981	$ 305,254	0.529948	$ 160,853	5	$ 84,625	0.529948	$ 44,593
6	$ 350,631	$ 149,981	$ 200,650	0.457024	$ 91,656	6	$ 65,161	0.457024	$ 29,765
7	$ 269,909	$ 149,981	$ 119,928	0.396375	$ 47,537	7	$ 65,174	0.396378	$ 19,566
8	$ 207,830	$ 149,981	$ 57,849	0.343780	$ 19,887	8	$ 38,634	0.343765	$ 13,282
9	$ 160,029	$ 149,981	$ 10,048	0.298161	$ 2,996	9	$ 29,748	0.298161	$ 8,870
10	$ 123,222	$ 149,981	$ -	0.258596	$ -	10	$ 22,906	0.258596	$ -
11	$ 94,881	$ 149,981	$ -	0.224281	$ -	11	$ 17,638	0.224281	$ -
12	$ 73,058	$ 149,981	$ -	0.194519	$ -	12	$ 13,581	0.194519	$ -
13	$ 56,256	$ 149,981	$ -	0.168707	$ -	13	$ 10,457	0.168707	$ -
14	$ 43,316	$ 149,981	$ -	0.146320	$ -	14	$ 8,052	0.146320	$ -
15	$ 33,354	$ 149,981	$ -	0.126904	$ -	15	$ 6,200	0.126904	$ -
16	$ 25,682	$ 149,981	$ -	0.110064	$ -	16	$ 4,774	0.110064	$ -
17	$ 19,776	$ 149,981	$ -	0.095469	$ -	17	$ 3,678	0.095469	$ -
18	$ 15,227	$ 149,981	$ -	0.082792	$ -	18	$ 2,831	0.082792	$ -
19	$ 11,725	$ 149,981	$ -	0.071808	$ -	19	$ 2,165	0.071808	$ -
20	$ 9,028	$ 149,981	$ -	0.062277	$ -	20	$ 1,678	0.062277	$ -
21	$ 6,952	$ 149,981	$ -	0.054013	$ -	21	$ 1,292	0.054013	$ -
22	$ 5,353	$ 149,981	$ -	0.046846	$ -	22	$ 995	0.046846	$ -
23	$ 4,122	$ 149,981	$ -	0.040629	$ -	23	$ 766	0.040629	$ -
24	$ 3,174	$ 149,981	$ -	0.035236	$ -	24	$ 590	0.035236	$ -
25	$ 2,444	$ 149,981	$ -	0.030562	$ -	25	$ 454	0.030562	$ -
26	$ 1,882	$ 149,981	$ -	0.026507	$ -	26	$ 365	0.026507	$ -
27	$ 1,449	$ 149,981	$ -	0.022999	$ -	27	$ 269	0.022999	$ -
28	$ 1,115	$ 149,981	$ -	0.019939	$ -	28	$ 207	0.019939	$ -
29	$ 859	$ 149,981	$ -	0.017293	$ -	29	$ 165	0.017293	$ -
30	$ 661	$ 149,981	$ -	0.014998	$ -	30	$ 123	0.014998	$ -
31	$ 509	$ 149,981	$ -	0.013008	$ -	31	$ 95	0.013008	$ -
32	$ 392	$ 149,981	$ -	0.011282	$ -	32	$ 73	0.011282	$ -
33	$ 302	$ 149,981	$ -	0.009785	$ -	33	$ 56	0.009785	$ -
34	$ 233	$ 149,981	$ -	0.008486	$ -	34	$ 43	0.008486	$ -
35	$ 179	$ 149,981	$ -	0.007360	$ -	35	$ 33	0.007360	$ -
36	$ 138	$ 149,981	$ -	0.006384	$ -	36	$ 26	0.006384	$ -
37	$ 106	$ 149,981	$ -	0.005536	$ -	37	$ 20	0.005536	$ -
38	$ 82	$ 149,981	$ -	0.004802	$ -	38	$ 15	0.004802	$ -
39	$ 63	$ 149,981	$ -	0.004165	$ -	39	$ 12	0.004165	$ -
40	$ 48	$ 149,981	$ -	0.003612	$ -	40	$ 9	0.003612	$ -

WORKING INTEREST APPRAISAL

ROYALTY INTEREST APPRAISAL

09-042016616O

				2014	GAS INCOME		OIL INCOME			GAS CAP INCOME		OIL CAP INCOME	
	DECLINE RATE			WRK INT	$	5,427,239	$	446	YR1	$	2,233,219	$	119
YR 1	69%			ROY INT	$	1,356,861	$	99		$	449,699	$	24
YR 2	29%								YR2	$	1,662,662	$	87
YR3+	13%									$	332,779	$	19

	$ 5,194,740	TY2016 WORKING INTEREST				
YEAR	WRK INT INCOME	WORKING COST	NET INC	PROT FCTR(16.0%)	DIS INC	
1	$ 2,233,337	$ 149,992	$ 2,083,344	0.931291	$ 1,940,200	
2	$ 1,652,569	$ 149,992	$ 1,502,577	0.807711	$ 1,213,728	
3	$ 1,272,555	$ 149,992	$ 1,122,563	0.700530	$ 786,369	
4	$ 979,867	$ 149,992	$ 829,875	0.607872	$ 504,209	
5	$ 754,498	$ 149,992	$ 604,506	0.526848	$ 318,543	
6	$ 580,963	$ 149,992	$ 430,971	0.457024	$ 196,964	
7	$ 447,342	$ 149,992	$ 297,349	0.396376	$ 117,863	
8	$ 344,453	$ 149,992	$ 194,461	0.343780	$ 66,852	
9	$ 265,229	$ 149,992	$ 115,237	0.298161	$ 34,368	
10	$ 204,226	$ 149,992	$ 54,234	0.258596	$ 14,025	
11	$ 157,254	$ 149,992	$ 7,262	0.224281	$ 1,629	
12	$ 121,066	$ 149,992	$ -	0.194519	$ -	
13	$ 93,236	$ 149,992	$ -	0.168707	$ -	
14	$ 71,792	$ 149,992	$ -	0.146320	$ -	
15	$ 55,269	$ 149,992	$ -	0.126904	$ -	
16	$ 42,556	$ 149,992	$ -	0.110064	$ -	
17	$ 32,775	$ 149,992	$ -	0.095459	$ -	
18	$ 25,237	$ 149,992	$ -	0.082792	$ -	
19	$ 19,432	$ 149,992	$ -	0.071806	$ -	
20	$ 14,963	$ 149,992	$ -	0.062277	$ -	
21	$ 11,522	$ 149,992	$ -	0.054016	$ -	
22	$ 8,872	$ 149,992	$ -	0.046846	$ -	
23	$ 6,831	$ 149,992	$ -	0.040629	$ -	
24	$ 5,260	$ 149,992	$ -	0.035238	$ -	
25	$ 4,050	$ 149,992	$ -	0.030562	$ -	
26	$ 3,119	$ 149,992	$ -	0.026507	$ -	
27	$ 2,401	$ 149,992	$ -	0.022989	$ -	
28	$ 1,849	$ 149,992	$ -	0.019939	$ -	
29	$ 1,424	$ 149,992	$ -	0.017293	$ -	
30	$ 1,096	$ 149,992	$ -	0.014998	$ -	
31	$ 844	$ 149,992	$ -	0.013008	$ -	
32	$ 650	$ 149,992	$ -	0.011282	$ -	
33	$ 500	$ 149,992	$ -	0.009785	$ -	
34	$ 385	$ 149,992	$ -	0.008486	$ -	
35	$ 297	$ 149,992	$ -	0.007360	$ -	
36	$ 228	$ 149,992	$ -	0.006384	$ -	
37	$ 176	$ 149,992	$ -	0.005536	$ -	
38	$ 135	$ 149,992	$ -	0.004802	$ -	
39	$ 104	$ 149,992	$ -	0.004165	$ -	
40	$ 80	$ 149,992	$ -	0.003612	$ -	

WORKING INTEREST APPRAISAL

	TY2016 ROYALTY INTEREST		
YEAR	ROY INT INCOME	PROT FCTR(16.0%)	DIS INC
1	$ 449,719	0.931291	$ 418,819
2	$ 332,792	0.807711	$ 268,800
3	$ 256,250	0.700530	$ 179,511
4	$ 197,312	0.607872	$ 119,951
5	$ 151,930	0.526848	$ 80,059
6	$ 116,966	0.457024	$ 53,466
7	$ 90,060	0.396376	$ 35,706
8	$ 69,361	0.343780	$ 23,846
9	$ 53,408	0.298161	$ 15,924
10	$ 41,124	0.258596	$ 10,636
11	$ 31,666	0.224281	$ 7,102
12	$ 24,389	0.194519	$ -
13	$ 18,778	0.168707	$ -
14	$ 14,456	0.146320	$ -
15	$ 11,131	0.126904	$ -
16	$ 8,571	0.110064	$ -
17	$ 6,600	0.095459	$ -
18	$ 5,082	0.082792	$ -
19	$ 3,913	0.071806	$ -
20	$ 3,013	0.062277	$ -
21	$ 2,320	0.054016	$ -
22	$ 1,786	0.046846	$ -
23	$ 1,376	0.040629	$ -
24	$ 1,059	0.035238	$ -
25	$ 816	0.030562	$ -
26	$ 628	0.026507	$ -
27	$ 484	0.022989	$ -
28	$ 372	0.019939	$ -
29	$ 287	0.017293	$ -
30	$ 221	0.014998	$ -
31	$ 170	0.013008	$ -
32	$ 131	0.011282	$ -
33	$ 101	0.009785	$ -
34	$ 78	0.008486	$ -
35	$ 60	0.007360	$ -
36	$ 46	0.006384	$ -
37	$ 35	0.005536	$ -
38	$ 27	0.004802	$ -
39	$ 21	0.004165	$ -
40	$ 16	0.003613	$ -

ROYALTY INTEREST APPRAISAL

09-042016661167

				2014	GAS INCOME	OIL INCOME			GAS CAP INCOME	OIL CAP INCOME			
	Decline Rates			WRK INT	$ 6,761,616	$ 799		YR1	$ 1,611,008	$ 211			
YR 1	89%			ROY INT	$ 1,080,899	$ 147			$ 278,482	$ 39			
YR 2	29%							YR2	$ 1,118,148	$ 156			
YR3+	23%								$ 206,081	$ 29			
	$ 3,268,724		TY2016 WORKING INTEREST						TY2016 ROYALTY INTEREST				
YEAR	WRK INT INCOME		WORKING COST	NET INC	PRCT FCTR(16.0%)	DIS INC		YEAR	ROY INT INCOME	PRCT FCTR(16.0%)	DIS INC		
1	$ 1,611,219		$ 149,960	$ 1,361,239	0.921291	$ 1,267,709		1	$ 278,527	0.931291	$ 259,390		
2	$ 1,118,302		$ 149,960	$ 968,322	0.807711	$ 782,124		2	$ 206,110	0.807711	$ 166,477		
3	$ 861,092		$ 149,960	$ 711,113	0.700530	$ 498,165		3	$ 158,708	0.700530	$ 111,177		
4	$ 663,041		$ 149,960	$ 513,081	0.607572	$ 311,722		4	$ 122,203	0.607572	$ 74,247		
5	$ 510,542		$ 149,960	$ 360,582	0.526948	$ 189,997		5	$ 94,098	0.526948	$ 49,584		
6	$ 393,117		$ 149,960	$ 243,127	0.457024	$ 111,120		6	$ 72,454	0.457024	$ 33,112		
7	$ 302,700		$ 149,960	$ 152,720	0.396378	$ 60,536		7	$ 55,790	0.396378	$ 22,114		
8	$ 233,079		$ 149,960	$ 83,099	0.343760	$ 28,556		8	$ 42,958	0.343760	$ 14,768		
9	$ 179,471		$ 149,960	$ 29,491	0.298161	$ 8,793		9	$ 33,078	0.298161	$ 9,862		
10	$ 138,198		$ 149,960	$ -	0.258596	$ -		10	$ 25,470	0.258596	$ -		
11	$ 106,406		$ 149,960	$ -	0.224261	$ -		11	$ 19,612	0.224261	$ -		
12	$ 81,934		$ 149,960	$ -	0.194519	$ -		12	$ 15,101	0.194519	$ -		
13	$ 63,089		$ 149,960	$ -	0.168707	$ -		13	$ 11,628	0.168707	$ -		
14	$ 48,579		$ 149,960	$ -	0.146320	$ -		14	$ 8,953	0.146320	$ -		
15	$ 37,406		$ 149,960	$ -	0.126904	$ -		15	$ 6,894	0.126904	$ -		
16	$ 28,802		$ 149,960	$ -	0.110064	$ -		16	$ 5,308	0.110064	$ -		
17	$ 22,178		$ 149,960	$ -	0.095469	$ -		17	$ 4,086	0.095469	$ -		
18	$ 17,077		$ 149,960	$ -	0.082792	$ -		18	$ 3,147	0.082792	$ -		
19	$ 13,149		$ 149,960	$ -	0.071806	$ -		19	$ 2,423	0.071806	$ -		
20	$ 10,126		$ 149,960	$ -	0.062277	$ -		20	$ 1,866	0.062277	$ -		
21	$ 7,798		$ 149,960	$ -	0.054013	$ -		21	$ 1,437	0.054013	$ -		
22	$ 6,003		$ 149,960	$ -	0.046846	$ -		22	$ 1,106	0.046846	$ -		
23	$ 4,622		$ 149,960	$ -	0.040629	$ -		23	$ 852	0.040629	$ -		
24	$ 3,559		$ 149,960	$ -	0.035238	$ -		24	$ 656	0.035238	$ -		
25	$ 2,741		$ 149,960	$ -	0.030562	$ -		25	$ 505	0.030562	$ -		
26	$ 2,110		$ 149,960	$ -	0.026507	$ -		26	$ 389	0.026507	$ -		
27	$ 1,626		$ 149,960	$ -	0.022988	$ -		27	$ 299	0.022988	$ -		
28	$ 1,251		$ 149,960	$ -	0.019939	$ -		28	$ 231	0.019939	$ -		
29	$ 963		$ 149,960	$ -	0.017293	$ -		29	$ 175	0.017293	$ -		
30	$ 742		$ 149,960	$ -	0.014998	$ -		30	$ 137	0.014998	$ -		
31	$ 571		$ 149,960	$ -	0.013008	$ -		31	$ 106	0.013008	$ -		
32	$ 440		$ 149,960	$ -	0.011282	$ -		32	$ 81	0.011282	$ -		
33	$ 339		$ 149,960	$ -	0.009785	$ -		33	$ 62	0.009785	$ -		
34	$ 261		$ 149,960	$ -	0.008486	$ -		34	$ 48	0.008486	$ -		
35	$ 201		$ 149,960	$ -	0.007360	$ -		35	$ 37	0.007360	$ -		
36	$ 155		$ 149,960	$ -	0.006384	$ -		36	$ 28	0.006384	$ -		
37	$ 119		$ 149,960	$ -	0.005536	$ -		37	$ 22	0.005536	$ -		
38	$ 92		$ 149,960	$ -	0.004802	$ -		38	$ 17	0.004802	$ -		
39	$ 71		$ 149,960	$ -	0.004166	$ -		39	$ 12	0.004166	$ -		
40	$ 54		$ 149,960	$ -	0.003612	$ -		40	$ 10	0.003612	$ -		
	WORKING INTEREST APPRAISAL								ROYALTY INTEREST APPRAISAL				

09-042016606182

				2014	GAS INCOME		OIL INCOME			GAS CAP INCOME		OIL CAP INCOME	
				WRK INT	$	5,271,469	$	466	YR1	$	1,394,537	$	122
YR 1	55%			ROY INT	$	851,597	$	75		$	225,400	$	20
YR 2	25%								YR2	$	1,033,734	$	90
YR3+	25%									$	166,919	$	15

$ 2,985,082 — TY2015 WORKING INTEREST

YEAR	WRK INT INCOME	WORKING COST	NET INC	PROT FCTR(16.0%)	DIS INC
1	$ 1,397,059	$ 149,987	$ 1,247,071	0.931291	$ 1,161,386
2	$ 1,033,824	$ 149,987	$ 883,836	0.807711	$ 713,884
3	$ 796,044	$ 149,987	$ 646,057	0.700830	$ 452,682
4	$ 612,954	$ 149,987	$ 462,967	0.607872	$ 281,366
5	$ 471,976	$ 149,987	$ 321,987	0.526948	$ 169,670
6	$ 363,420	$ 149,987	$ 213,433	0.457024	$ 97,544
7	$ 279,634	$ 149,987	$ 129,648	0.396378	$ 51,466
8	$ 215,472	$ 149,987	$ 65,486	0.343780	$ 22,512
9	$ 165,913	$ 149,987	$ 15,926	0.298161	$ 4,749
10	$ 127,753	$ 149,987	$ -	0.258598	$ -
11	$ 98,370	$ 149,987	$ -	0.224281	$ -
12	$ 75,745	$ 149,987	$ -	0.194519	$ -
13	$ 58,324	$ 149,987	$ -	0.168707	$ -
14	$ 44,909	$ 149,987	$ -	0.146320	$ -
15	$ 34,580	$ 149,987	$ -	0.126904	$ -
16	$ 26,627	$ 149,987	$ -	0.110064	$ -
17	$ 20,503	$ 149,987	$ -	0.095459	$ -
18	$ 15,787	$ 149,987	$ -	0.082792	$ -
19	$ 12,156	$ 149,987	$ -	0.071809	$ -
20	$ 9,360	$ 149,987	$ -	0.062277	$ -
21	$ 7,207	$ 149,987	$ -	0.054013	$ -
22	$ 5,550	$ 149,987	$ -	0.046846	$ -
23	$ 4,273	$ 149,987	$ -	0.040629	$ -
24	$ 3,290	$ 149,987	$ -	0.035236	$ -
25	$ 2,534	$ 149,987	$ -	0.030562	$ -
26	$ 1,951	$ 149,987	$ -	0.026507	$ -
27	$ 1,502	$ 149,987	$ -	0.022989	$ -
28	$ 1,157	$ 149,987	$ -	0.019939	$ -
29	$ 891	$ 149,987	$ -	0.017293	$ -
30	$ 686	$ 149,987	$ -	0.014998	$ -
31	$ 528	$ 149,987	$ -	0.013009	$ -
32	$ 407	$ 149,987	$ -	0.011282	$ -
33	$ 313	$ 149,987	$ -	0.009785	$ -
34	$ 241	$ 149,987	$ -	0.008486	$ -
35	$ 185	$ 149,987	$ -	0.007360	$ -
36	$ 143	$ 149,987	$ -	0.006384	$ -
37	$ 110	$ 149,987	$ -	0.005536	$ -
38	$ 85	$ 149,987	$ -	0.004802	$ -
39	$ 65	$ 149,987	$ -	0.004165	$ -
40	$ 50	$ 149,987	$ -	0.003612	$ -

WORKING INTEREST APPRAISAL

TY2015 ROYALTY INTEREST

YEAR	ROY INT INCOME	PROT FCTR(16.0%)	DIS INC
1	$ 226,420	0.931291	$ 212,726
2	$ 169,031	0.807711	$ 136,526
3	$ 130,164	0.700830	$ 91,177
4	$ 100,218	0.607872	$ 60,890
5	$ 77,166	0.526948	$ 40,654
6	$ 59,419	0.457024	$ 27,166
7	$ 45,753	0.396378	$ 18,135
8	$ 35,230	0.343780	$ 12,111
9	$ 27,127	0.298161	$ 8,088
10	$ 20,888	0.258598	$ -
11	$ 16,084	0.224281	$ -
12	$ 12,384	0.194519	$ -
13	$ 9,536	0.168707	$ -
14	$ 7,343	0.146320	$ -
15	$ 5,654	0.126904	$ -
16	$ 4,353	0.110064	$ -
17	$ 3,352	0.095459	$ -
18	$ 2,581	0.082792	$ -
19	$ 1,988	0.071809	$ -
20	$ 1,530	0.062277	$ -
21	$ 1,178	0.054013	$ -
22	$ 907	0.046846	$ -
23	$ 699	0.040629	$ -
24	$ 538	0.035236	$ -
25	$ 414	0.030562	$ -
26	$ 319	0.026507	$ -
27	$ 246	0.022989	$ -
28	$ 189	0.019939	$ -
29	$ 146	0.017293	$ -
30	$ 112	0.014998	$ -
31	$ 86	0.013009	$ -
32	$ 66	0.011282	$ -
33	$ 51	0.009785	$ -
34	$ 39	0.008486	$ -
35	$ 30	0.007360	$ -
36	$ 23	0.006384	$ -
37	$ 18	0.005536	$ -
38	$ 14	0.004802	$ -
39	$ 11	0.004165	$ -
40	$ 8	0.003612	$ -

ROYALTY INTEREST APPRAISAL

09-04201664210

DECLINE RATE	
YR 1	50%
YR 2	20%
YR3+	15%

2014	GAS INCOME	OIL INCOME
WRK INT	$ 5,505,906	$ 533
ROY INT	$ 1,066,071	$ 57

	GAS CAP INCOME	OIL CAP INCOME
YR1	$ 1,750,568	$ 141
	$ 259,218	$ 23
YR2	$ 1,295,413	$ 105
	$ 211,802	$ 17

$ 3,888,202 — TY2018 WORKING INTEREST

YEAR	WRK INT INCOME	WORKING COST	NET INC	PROT FCTR(18.6%)	DIS INC
1	$ 1,750,705	$ 149,988	$ 1,600,715	0.931291	$ 1,490,734
2	$ 1,295,523	$ 149,988	$ 1,145,534	0.807711	$ 925,281
3	$ 997,562	$ 149,988	$ 847,564	0.700530	$ 593,744
4	$ 788,115	$ 149,988	$ 638,127	0.607572	$ 375,557
5	$ 591,449	$ 149,988	$ 441,460	0.526948	$ 232,627
6	$ 455,415	$ 149,988	$ 305,427	0.457024	$ 139,596
7	$ 350,570	$ 149,988	$ 200,582	0.396376	$ 79,548
8	$ 270,015	$ 149,988	$ 120,028	0.343780	$ 41,263
9	$ 207,912	$ 149,988	$ 57,924	0.298151	$ 17,271
10	$ 160,092	$ 149,988	$ 10,104	0.258596	$ 2,613
11	$ 123,271	$ 149,988	$ -	0.224281	$ -
12	$ 94,919	$ 149,988	$ -	0.194519	$ -
13	$ 73,087	$ 149,988	$ -	0.168707	$ -
14	$ 56,277	$ 149,988	$ -	0.146320	$ -
15	$ 43,334	$ 149,988	$ -	0.126904	$ -
16	$ 33,367	$ 149,988	$ -	0.110064	$ -
17	$ 25,692	$ 149,988	$ -	0.095459	$ -
18	$ 19,783	$ 149,988	$ -	0.082792	$ -
19	$ 15,233	$ 149,988	$ -	0.071808	$ -
20	$ 11,729	$ 149,988	$ -	0.062277	$ -
21	$ 9,032	$ 149,988	$ -	0.054013	$ -
22	$ 5,954	$ 149,988	$ -	0.046846	$ -
23	$ 5,355	$ 149,988	$ -	0.040629	$ -
24	$ 4,123	$ 149,988	$ -	0.035238	$ -
25	$ 3,175	$ 149,988	$ -	0.030562	$ -
26	$ 2,445	$ 149,988	$ -	0.026507	$ -
27	$ 1,882	$ 149,988	$ -	0.022988	$ -
28	$ 1,449	$ 149,988	$ -	0.019939	$ -
29	$ 1,116	$ 149,988	$ -	0.017293	$ -
30	$ 859	$ 149,988	$ -	0.014998	$ -
31	$ 662	$ 149,988	$ -	0.013008	$ -
32	$ 510	$ 149,988	$ -	0.011282	$ -
33	$ 392	$ 149,988	$ -	0.009785	$ -
34	$ 302	$ 149,988	$ -	0.008486	$ -
35	$ 233	$ 149,988	$ -	0.007360	$ -
36	$ 179	$ 149,988	$ -	0.006384	$ -
37	$ 138	$ 149,988	$ -	0.005536	$ -
38	$ 106	$ 149,988	$ -	0.004802	$ -
39	$ 83	$ 149,988	$ -	0.004165	$ -
40	$ 63	$ 149,988	$ -	0.003612	$ -

WORKING INTEREST APPRAISAL

TY2018 ROYALTY INTEREST

YEAR	ROY INT INCOME	PROT FCTR(18.6%)	DIS INC
1	$ 286,242	0.931291	$ 266,574
2	$ 211,819	0.807711	$ 171,099
3	$ 163,101	0.700530	$ 114,257
4	$ 128,587	0.607572	$ 78,103
5	$ 96,702	0.526948	$ 50,957
6	$ 74,481	0.457024	$ 34,030
7	$ 57,338	0.396376	$ 22,726
8	$ 44,148	0.343780	$ 15,177
9	$ 33,994	0.298151	$ 10,136
10	$ 26,178	0.258596	$ 6,769
11	$ 20,155	0.224281	$ -
12	$ 15,519	0.194519	$ -
13	$ 11,950	0.168707	$ -
14	$ 9,201	0.146320	$ -
15	$ 7,085	0.126904	$ -
16	$ 5,456	0.110064	$ -
17	$ 4,201	0.095459	$ -
18	$ 3,236	0.082792	$ -
19	$ 2,491	0.071808	$ -
20	$ 1,918	0.062277	$ -
21	$ 1,477	0.054013	$ -
22	$ 1,137	0.046846	$ -
23	$ 876	0.040629	$ -
24	$ 674	0.035238	$ -
25	$ 519	0.030562	$ -
26	$ 400	0.026507	$ -
27	$ 308	0.022988	$ -
28	$ 237	0.019939	$ -
29	$ 182	0.017293	$ -
30	$ 141	0.014998	$ -
31	$ 108	0.013008	$ -
32	$ 83	0.011282	$ -
33	$ 64	0.009785	$ -
34	$ 49	0.008486	$ -
35	$ 38	0.007360	$ -
36	$ 29	0.006384	$ -
37	$ 23	0.005536	$ -
38	$ 17	0.004802	$ -
39	$ 13	0.004165	$ -
40	$ 10	0.003612	$ -

ROYALTY INTEREST APPRAISAL

09-04201662260

				2014	GAS INCOME	OIL INCOME			GAS CAP INCOME	OIL CAP INCOME			
	DECLINE RATES			WRK INT	$ 9,001,543	$ 1,382		YR1	$ 2,386,414	$ 366			
YR 1	39%			ROY INT	$ 1,707,786	$ 262			$ 452,826	$ 69			
YR 2	29%							YR2	$ 1,798,206	$ 271			
YR3+	23%								$ 334,892	$ 51			
	$ 8,606,271	TY2016 WORKING INTEREST						TY2016 ROYALTY INTEREST					
YEAR	WRK INT INCOME	WORKING COST	NET INC	PROT FCTR(16.0%)	DIS INC			YEAR	ROY INT INCOME	PROT FCTR(16.0%)	DIS INC		
1	$ 2,385,780	$ 149,978	$ 2,235,802	0.931291	$ 2,082,183			1	$ 452,826	0.931291	$ 421,626		
2	$ 1,765,477	$ 149,978	$ 1,615,499	0.807711	$ 1,304,867			2	$ 334,945	0.807711	$ 270,537		
3	$ 1,359,418	$ 149,978	$ 1,209,440	0.700530	$ 847,249			3	$ 257,906	0.700530	$ 180,671		
4	$ 1,046,752	$ 149,978	$ 896,774	0.607872	$ 544,555			4	$ 198,589	0.607872	$ 120,658		
5	$ 805,999	$ 149,978	$ 656,021	0.526948	$ 345,589			5	$ 152,913	0.526948	$ 80,577		
6	$ 620,619	$ 149,978	$ 470,641	0.457024	$ 215,094			6	$ 117,743	0.457024	$ 53,811		
7	$ 477,877	$ 149,978	$ 327,899	0.396378	$ 129,972			7	$ 90,662	0.396378	$ 35,936		
8	$ 367,965	$ 149,978	$ 217,987	0.343780	$ 74,940			8	$ 69,810	0.343780	$ 23,999		
9	$ 283,333	$ 149,978	$ 133,355	0.298181	$ 39,781			9	$ 53,753	0.298181	$ 16,027		
10	$ 218,188	$ 149,978	$ 68,199	0.258598	$ 17,633			10	$ 41,390	0.258598	$ 10,703		
11	$ 167,988	$ 149,978	$ 18,010	0.224261	$ 4,039			11	$ 31,870	0.224261	$ 7,148		
12	$ 129,351	$ 149,978	$ -	0.194519	$ -			12	$ 24,540	0.194519	$ -		
13	$ 99,600	$ 149,978	$ -	0.168707	$ -			13	$ 18,898	0.168707	$ -		
14	$ 76,692	$ 149,978	$ -	0.146320	$ -			14	$ 14,550	0.146320	$ -		
15	$ 59,063	$ 149,978	$ -	0.126904	$ -			15	$ 11,203	0.126904	$ -		
16	$ 45,471	$ 149,978	$ -	0.110064	$ -			16	$ 8,627	0.110064	$ -		
17	$ 35,012	$ 149,978	$ -	0.095459	$ -			17	$ 6,643	0.095459	$ -		
18	$ 26,960	$ 149,978	$ -	0.082793	$ -			18	$ 5,116	0.082793	$ -		
19	$ 20,759	$ 149,978	$ -	0.071808	$ -			19	$ 3,938	0.071808	$ -		
20	$ 15,984	$ 149,978	$ -	0.062277	$ -			20	$ 3,033	0.062277	$ -		
21	$ 12,308	$ 149,978	$ -	0.054015	$ -			21	$ 2,335	0.054015	$ -		
22	$ 9,477	$ 149,978	$ -	0.046846	$ -			22	$ 1,798	0.046846	$ -		
23	$ 7,297	$ 149,978	$ -	0.040629	$ -			23	$ 1,384	0.040629	$ -		
24	$ 5,619	$ 149,978	$ -	0.035236	$ -			24	$ 1,066	0.035236	$ -		
25	$ 4,327	$ 149,978	$ -	0.030562	$ -			25	$ 821	0.030562	$ -		
26	$ 3,331	$ 149,978	$ -	0.026507	$ -			26	$ 632	0.026507	$ -		
27	$ 2,565	$ 149,978	$ -	0.022989	$ -			27	$ 487	0.022989	$ -		
28	$ 1,978	$ 149,978	$ -	0.019939	$ -			28	$ 378	0.019939	$ -		
29	$ 1,521	$ 149,978	$ -	0.017293	$ -			29	$ 290	0.017293	$ -		
30	$ 1,171	$ 149,978	$ -	0.014998	$ -			30	$ 222	0.014998	$ -		
31	$ 902	$ 149,978	$ -	0.013008	$ -			31	$ 171	0.013008	$ -		
32	$ 694	$ 149,978	$ -	0.011282	$ -			32	$ 132	0.011282	$ -		
33	$ 535	$ 149,978	$ -	0.009786	$ -			33	$ 101	0.009786	$ -		
34	$ 412	$ 149,978	$ -	0.008486	$ -			34	$ 78	0.008486	$ -		
35	$ 317	$ 149,978	$ -	0.007360	$ -			35	$ 60	0.007360	$ -		
36	$ 244	$ 149,978	$ -	0.006384	$ -			36	$ 46	0.006384	$ -		
37	$ 188	$ 149,978	$ -	0.005536	$ -			37	$ 36	0.005536	$ -		
38	$ 145	$ 149,978	$ -	0.004802	$ -			38	$ 27	0.004802	$ -		
39	$ 111	$ 149,978	$ -	0.004166	$ -			39	$ 21	0.004166	$ -		
40	$ 86	$ 149,978	$ -	0.003612	$ -			40	$ 16	0.003612	$ -		
	WORKING INTEREST APPRAISAL								ROYALTY INTEREST APPRAISAL				

09-042016623O

			2014	GAS INCOME	OIL INCOME
	DECLINE RATE		WRK INT	$ 7,430,906	$ 2,323
YR 1	50%		ROY INT	$ 1,422,797	$ 445
YR 2	29%				
YR3+	23%				

	GAS CAP INCOME	OIL CAP INCOME
YR1	$ 1,966,162	$ 615
	$ 377,041	$ 118
YR2	$ 1,467,186	$ 459
	$ 279,019	$ 87

$ 4,488,173 — TY2016 WORKING INTEREST

YEAR	WRK INT INCOME	WORKING COST	NET INC	PROT FCTR(16.5%)	DIS INC
1	$ 1,966,778	$ 149,955	$ 1,816,823	0.921291	$ 1,694,784
2	$ 1,457,636	$ 149,955	$ 1,307,681	0.807711	$ 1,056,228
3	$ 1,122,379	$ 149,955	$ 972,424	0.700630	$ 681,212
4	$ 864,232	$ 149,955	$ 714,277	0.607572	$ 433,975
5	$ 665,459	$ 149,955	$ 515,504	0.526948	$ 271,644
6	$ 512,403	$ 149,955	$ 362,448	0.457024	$ 165,648
7	$ 394,550	$ 149,955	$ 244,595	0.396378	$ 96,952
8	$ 303,804	$ 149,955	$ 153,849	0.343780	$ 52,890
9	$ 233,929	$ 149,955	$ 83,974	0.298161	$ 25,038
10	$ 180,126	$ 149,955	$ 30,170	0.258596	$ 7,802
11	$ 138,596	$ 149,955	$ -	0.224281	$ -
12	$ 106,796	$ 149,955	$ -	0.194519	$ -
13	$ 82,233	$ 149,955	$ -	0.168707	$ -
14	$ 63,320	$ 149,955	$ -	0.146320	$ -
15	$ 48,766	$ 149,955	$ -	0.126904	$ -
16	$ 37,542	$ 149,955	$ -	0.110064	$ -
17	$ 28,907	$ 149,955	$ -	0.095459	$ -
18	$ 22,259	$ 149,955	$ -	0.082792	$ -
19	$ 17,139	$ 149,955	$ -	0.071806	$ -
20	$ 13,197	$ 149,955	$ -	0.062277	$ -
21	$ 10,162	$ 149,955	$ -	0.054013	$ -
22	$ 7,825	$ 149,955	$ -	0.046846	$ -
23	$ 6,026	$ 149,955	$ -	0.040629	$ -
24	$ 4,639	$ 149,955	$ -	0.035238	$ -
25	$ 3,572	$ 149,955	$ -	0.030562	$ -
26	$ 2,751	$ 149,955	$ -	0.026507	$ -
27	$ 2,118	$ 149,955	$ -	0.022988	$ -
28	$ 1,631	$ 149,955	$ -	0.019939	$ -
29	$ 1,256	$ 149,955	$ -	0.017293	$ -
30	$ 967	$ 149,955	$ -	0.014998	$ -
31	$ 745	$ 149,955	$ -	0.013008	$ -
32	$ 573	$ 149,955	$ -	0.011282	$ -
33	$ 441	$ 149,955	$ -	0.009786	$ -
34	$ 340	$ 149,955	$ -	0.008486	$ -
35	$ 262	$ 149,955	$ -	0.007360	$ -
36	$ 202	$ 149,955	$ -	0.006384	$ -
37	$ 155	$ 149,955	$ -	0.005536	$ -
38	$ 119	$ 149,955	$ -	0.004802	$ -
39	$ 92	$ 149,955	$ -	0.004166	$ -
40	$ 71	$ 149,955	$ -	0.003612	$ -

WORKING INTEREST APPRAISAL

TY2016 ROYALTY INTEREST

YEAR	ROY INT INCOME	PROT FCTR(16.5%)	DIS INC
1	$ 377,159	0.921291	$ 351,249
2	$ 279,098	0.807711	$ 225,430
3	$ 214,966	0.700630	$ 150,649
4	$ 165,477	0.607572	$ 100,539
5	$ 127,417	0.526948	$ 67,142
6	$ 98,111	0.457024	$ 44,839
7	$ 75,548	0.396378	$ 29,946
8	$ 58,170	0.343780	$ 19,998
9	$ 44,791	0.298161	$ 13,355
10	$ 34,489	0.258596	$ 8,919
11	$ 26,557	0.224281	$ -
12	$ 20,449	0.194519	$ -
13	$ 15,745	0.168707	$ -
14	$ 12,124	0.146320	$ -
15	$ 9,338	0.126904	$ -
16	$ 7,188	0.110064	$ -
17	$ 5,535	0.095459	$ -
18	$ 4,262	0.082792	$ -
19	$ 3,282	0.071806	$ -
20	$ 2,527	0.062277	$ -
21	$ 1,946	0.054013	$ -
22	$ 1,498	0.046846	$ -
23	$ 1,154	0.040629	$ -
24	$ 888	0.035238	$ -
25	$ 684	0.030562	$ -
26	$ 527	0.026507	$ -
27	$ 406	0.022988	$ -
28	$ 312	0.019939	$ -
29	$ 240	0.017293	$ -
30	$ 185	0.014998	$ -
31	$ 143	0.013008	$ -
32	$ 110	0.011282	$ -
33	$ 85	0.009786	$ -
34	$ 65	0.008486	$ -
35	$ 50	0.007360	$ -
36	$ 39	0.006384	$ -
37	$ 30	0.005536	$ -
38	$ 23	0.004802	$ -
39	$ 18	0.004166	$ -
40	$ 14	0.003612	$ -

ROYALTY INTEREST APPRAISAL

09-042016627B

				2014	GAS INCOME	OIL INCOME			GAS CAP INCOME	OIL CAP INCOME				
				WRK INT	$ 5,775,001	$ 2,956		YR1	$ 1,796,170	$ 933				
YR 1	99%			ROY INT	$ 1,256,048	$ 459			$ 343,197	$ 121				
YR 2	29%							YR2	$ 1,329,168	$ 479				
YR3+	23%								$ 253,949	$ 89				
	$ 4,022,100			TY2016 WORKING INTEREST							TY2016 ROYALTY INTEREST			
YEAR	WRK INT INCOME	WORKING COST	NET INC	PROT FCTR(15.0%)	DIS INC			YEAR	ROY INT INCOME	PROT FCTR(15.0%)	DIS INC			
1	$ 1,796,805	$ 149,949	$ 1,646,856	0.931291	$ 1,533,702			1	$ 343,306	0.931291	$ 319,720			
2	$ 1,329,536	$ 149,949	$ 1,179,587	0.807711	$ 952,648			2	$ 254,048	0.807711	$ 205,197			
3	$ 1,023,820	$ 149,949	$ 873,871	0.700530	$ 612,173			3	$ 195,617	0.700530	$ 137,036			
4	$ 788,341	$ 149,949	$ 533,392	0.607572	$ 387,869			4	$ 150,628	0.607572	$ 91,616			
5	$ 607,023	$ 149,949	$ 457,074	0.526948	$ 240,854			5	$ 116,961	0.526948	$ 61,116			
6	$ 467,407	$ 149,949	$ 317,458	0.457024	$ 145,069			6	$ 89,306	0.457024	$ 40,816			
7	$ 359,904	$ 149,949	$ 209,955	0.396378	$ 83,221			7	$ 68,765	0.396378	$ 27,257			
8	$ 277,126	$ 149,949	$ 127,177	0.343780	$ 43,721			8	$ 52,949	0.343780	$ 18,203			
9	$ 213,387	$ 149,949	$ 63,438	0.298161	$ 18,916			9	$ 40,771	0.298161	$ 12,155			
10	$ 164,308	$ 149,949	$ 14,359	0.258596	$ 3,713			10	$ 31,394	0.258596	$ 8,118			
11	$ 126,617	$ 149,949	$ -	0.224251	$ -			11	$ 24,173	0.224251	$ -			
12	$ 97,476	$ 149,949	$ -	0.194519	$ -			12	$ 18,613	0.194519	$ -			
13	$ 75,012	$ 149,949	$ -	0.168707	$ -			13	$ 14,332	0.168707	$ -			
14	$ 57,758	$ 149,949	$ -	0.146320	$ -			14	$ 11,036	0.146320	$ -			
15	$ 44,476	$ 149,949	$ -	0.126904	$ -			15	$ 8,498	0.126904	$ -			
16	$ 34,248	$ 149,949	$ -	0.110064	$ -			16	$ 6,543	0.110064	$ -			
17	$ 26,369	$ 149,949	$ -	0.095469	$ -			17	$ 5,038	0.095469	$ -			
18	$ 20,304	$ 149,949	$ -	0.082792	$ -			18	$ 3,879	0.082792	$ -			
19	$ 15,634	$ 149,949	$ -	0.071808	$ -			19	$ 2,987	0.071808	$ -			
20	$ 12,038	$ 149,949	$ -	0.062277	$ -			20	$ 2,300	0.062277	$ -			
21	$ 9,270	$ 149,949	$ -	0.054018	$ -			21	$ 1,771	0.054018	$ -			
22	$ 7,138	$ 149,949	$ -	0.046846	$ -			22	$ 1,364	0.046846	$ -			
23	$ 5,496	$ 149,949	$ -	0.040629	$ -			23	$ 1,050	0.040629	$ -			
24	$ 4,232	$ 149,949	$ -	0.035236	$ -			24	$ 809	0.035236	$ -			
25	$ 3,259	$ 149,949	$ -	0.030562	$ -			25	$ 623	0.030562	$ -			
26	$ 2,509	$ 149,949	$ -	0.026507	$ -			26	$ 479	0.026507	$ -			
27	$ 1,932	$ 149,949	$ -	0.022989	$ -			27	$ 369	0.022989	$ -			
28	$ 1,488	$ 149,949	$ -	0.019939	$ -			28	$ 284	0.019939	$ -			
29	$ 1,146	$ 149,949	$ -	0.017293	$ -			29	$ 219	0.017293	$ -			
30	$ 882	$ 149,949	$ -	0.014998	$ -			30	$ 169	0.014998	$ -			
31	$ 679	$ 149,949	$ -	0.013008	$ -			31	$ 130	0.013008	$ -			
32	$ 523	$ 149,949	$ -	0.011282	$ -			32	$ 100	0.011282	$ -			
33	$ 403	$ 149,949	$ -	0.009785	$ -			33	$ 77	0.009785	$ -			
34	$ 310	$ 149,949	$ -	0.008488	$ -			34	$ 59	0.008488	$ -			
35	$ 239	$ 149,949	$ -	0.007360	$ -			35	$ 46	0.007360	$ -			
36	$ 184	$ 149,949	$ -	0.006384	$ -			36	$ 35	0.006384	$ -			
37	$ 142	$ 149,949	$ -	0.005536	$ -			37	$ 27	0.005536	$ -			
38	$ 109	$ 149,949	$ -	0.004802	$ -			38	$ 21	0.004802	$ -			
39	$ 84	$ 149,949	$ -	0.004166	$ -			39	$ 16	0.004166	$ -			
40	$ 65	$ 149,949	$ -	0.003612	$ -			40	$ 12	0.003612	$ -			
	WORKING INTEREST APPRAISAL								ROYALTY INTEREST APPRAISAL					

09-04201166280

			2014	GAS INCOME	OIL INCOME
	PROD INT RATES		WRK INT	$ 2,889,290	$ 4,059
YR 1	39%		ROY INT	$ 1,047,914	$ 648
YR 2	29%				
YR3+	23%				

	GAS CAP INCOME	OIL CAP INCOME
YR1	$ 1,746,159	$ 1,076
	$ 277,667	$ 171
YR2	$ 1,282,188	$ 796
	$ 205,466	$ 127

$ 3,889,290

TY2018 WORKING INTEREST

YEAR	WRK INT INCOME	WORKING COST	NET INC	PRCT PCTR(16.9%)	DIS INC
1	$ 1,747,235	$ 149,911	$ 1,597,324	0.931291	$ 1,487,573
2	$ 1,292,954	$ 149,911	$ 1,143,043	0.807711	$ 923,248
3	$ 995,574	$ 149,911	$ 845,663	0.700530	$ 592,412
4	$ 766,592	$ 149,911	$ 615,681	0.607872	$ 374,278
5	$ 590,276	$ 149,911	$ 440,365	0.526948	$ 232,049
6	$ 454,513	$ 149,911	$ 304,601	0.457024	$ 139,210
7	$ 349,973	$ 149,911	$ 200,063	0.396378	$ 79,301
8	$ 269,481	$ 149,911	$ 119,569	0.343760	$ 41,106
9	$ 207,500	$ 149,911	$ 57,589	0.298181	$ 17,171
10	$ 159,778	$ 149,911	$ 9,864	0.258596	$ 2,551
11	$ 123,027	$ 149,911	$ -	0.224281	$ -
12	$ 94,731	$ 149,911	$ -	0.194519	$ -
13	$ 72,943	$ 149,911	$ -	0.168707	$ -
14	$ 56,166	$ 149,911	$ -	0.146320	$ -
15	$ 43,248	$ 149,911	$ -	0.126904	$ -
16	$ 33,301	$ 149,911	$ -	0.110064	$ -
17	$ 25,642	$ 149,911	$ -	0.095459	$ -
18	$ 19,744	$ 149,911	$ -	0.082792	$ -
19	$ 15,203	$ 149,911	$ -	0.071808	$ -
20	$ 11,708	$ 149,911	$ -	0.062277	$ -
21	$ 9,014	$ 149,911	$ -	0.054013	$ -
22	$ 6,941	$ 149,911	$ -	0.046846	$ -
23	$ 5,344	$ 149,911	$ -	0.040629	$ -
24	$ 4,116	$ 149,911	$ -	0.035239	$ -
25	$ 3,169	$ 149,911	$ -	0.030562	$ -
26	$ 2,440	$ 149,911	$ -	0.026507	$ -
27	$ 1,879	$ 149,911	$ -	0.022989	$ -
28	$ 1,447	$ 149,911	$ -	0.019939	$ -
29	$ 1,114	$ 149,911	$ -	0.017293	$ -
30	$ 858	$ 149,911	$ -	0.014998	$ -
31	$ 660	$ 149,911	$ -	0.013008	$ -
32	$ 509	$ 149,911	$ -	0.011282	$ -
33	$ 392	$ 149,911	$ -	0.009786	$ -
34	$ 301	$ 149,911	$ -	0.008486	$ -
35	$ 232	$ 149,911	$ -	0.007360	$ -
36	$ 179	$ 149,911	$ -	0.006384	$ -
37	$ 138	$ 149,911	$ -	0.005536	$ -
38	$ 106	$ 149,911	$ -	0.004802	$ -
39	$ 82	$ 149,911	$ -	0.004166	$ -
40	$ 63	$ 149,911	$ -	0.003612	$ -

WORKING INTEREST APPRAISAL

TY2018 ROYALTY INTEREST

YEAR	ROY INT INCOME	PRCT PCTR(16.9%)	DIS INC
1	$ 277,668	0.931291	$ 258,776
2	$ 205,523	0.807711	$ 166,084
3	$ 158,329	0.700530	$ 110,918
4	$ 121,914	0.607872	$ 74,071
5	$ 93,874	0.526948	$ 49,466
6	$ 72,283	0.457024	$ 33,035
7	$ 55,658	0.396378	$ 22,061
8	$ 42,856	0.343760	$ 14,733
9	$ 32,999	0.298181	$ 9,839
10	$ 25,410	0.258596	$ 6,571
11	$ 19,566	0.224281	$ -
12	$ 15,065	0.194519	$ -
13	$ 11,600	0.168707	$ -
14	$ 8,932	0.146320	$ -
15	$ 6,878	0.126904	$ -
16	$ 5,296	0.110064	$ -
17	$ 4,078	0.095459	$ -
18	$ 3,140	0.082792	$ -
19	$ 2,418	0.071808	$ -
20	$ 1,862	0.062277	$ -
21	$ 1,433	0.054013	$ -
22	$ 1,104	0.046846	$ -
23	$ 850	0.040629	$ -
24	$ 654	0.035239	$ -
25	$ 504	0.030562	$ -
26	$ 388	0.026507	$ -
27	$ 299	0.022989	$ -
28	$ 230	0.019939	$ -
29	$ 177	0.017293	$ -
30	$ 136	0.014998	$ -
31	$ 105	0.013008	$ -
32	$ 81	0.011282	$ -
33	$ 62	0.009786	$ -
34	$ 48	0.008486	$ -
35	$ 37	0.007360	$ -
36	$ 28	0.006384	$ -
37	$ 22	0.005536	$ -
38	$ 17	0.004802	$ -
39	$ 13	0.004166	$ -
40	$ 10	0.003612	$ -

ROYALTY INTEREST APPRAISAL

09-04201666377

				2014	GAS INCOME	OIL INCOME			GAS CAP INCOME	OIL CAP INCOME	
	DECLINE RATES			WRK INT	$ 6,017,338	$ 966		YR1	$ 1,894,884	$ 287	
YR 1	55%			ROY INT	$ 1,111,217	$ 179			$ 264,473	$ 47	
YR 2	25%							YR2	$ 1,180,008	$ 196	
YR3+	25%								$ 217,918	$ 36	
	$ 3,481,167		TY2015 WORKING INTEREST						TY2015 ROYALTY INTEREST		
YEAR	WRK INT INCOME	WORKING COST	NET INC	PROT FCTR(16.0%)	DIS INC		YEAR	ROY INT INCOME	PROT FCTR(16.0%)	DIS INC	
1	$ 1,584,951	$ 149,977	$ 1,444,974	0.931291	$ 1,345,598		1	$ 294,520	0.931291	$ 274,284	
2	$ 1,180,190	$ 149,977	$ 1,030,213	0.807711	$ 832,114		2	$ 217,945	0.807711	$ 176,036	
3	$ 908,745	$ 149,977	$ 758,769	0.700530	$ 531,541		3	$ 167,617	0.700530	$ 117,561	
4	$ 699,736	$ 149,977	$ 549,758	0.607572	$ 334,017		4	$ 129,219	0.607572	$ 78,510	
5	$ 536,795	$ 149,977	$ 386,818	0.526948	$ 204,867		5	$ 99,498	0.526948	$ 52,431	
6	$ 414,873	$ 149,977	$ 264,896	0.457024	$ 121,064		6	$ 76,614	0.457024	$ 35,015	
7	$ 319,452	$ 149,977	$ 169,476	0.396378	$ 67,176		7	$ 58,993	0.396378	$ 23,384	
8	$ 248,978	$ 149,977	$ 99,001	0.343780	$ 33,003		8	$ 45,428	0.343780	$ 15,616	
9	$ 189,403	$ 149,977	$ 39,426	0.298161	$ 11,755		9	$ 34,977	0.298161	$ 10,429	
10	$ 145,840	$ 149,977	$ -	0.258598	$ -		10	$ 26,932	0.258598	$ -	
11	$ 112,297	$ 149,977	$ -	0.224281	$ -		11	$ 20,736	0.224281	$ -	
12	$ 86,469	$ 149,977	$ -	0.194519	$ -		12	$ 15,966	0.194519	$ -	
13	$ 66,581	$ 149,977	$ -	0.168707	$ -		13	$ 12,296	0.168707	$ -	
14	$ 51,267	$ 149,977	$ -	0.146320	$ -		14	$ 9,467	0.146320	$ -	
15	$ 39,476	$ 149,977	$ -	0.126904	$ -		15	$ 7,290	0.126904	$ -	
16	$ 30,396	$ 149,977	$ -	0.110064	$ -		16	$ 5,613	0.110064	$ -	
17	$ 23,406	$ 149,977	$ -	0.095459	$ -		17	$ 4,322	0.095459	$ -	
18	$ 18,022	$ 149,977	$ -	0.082792	$ -		18	$ 3,328	0.082792	$ -	
19	$ 13,877	$ 149,977	$ -	0.071808	$ -		19	$ 2,563	0.071808	$ -	
20	$ 10,686	$ 149,977	$ -	0.062277	$ -		20	$ 1,973	0.062277	$ -	
21	$ 8,228	$ 149,977	$ -	0.054013	$ -		21	$ 1,519	0.054013	$ -	
22	$ 6,336	$ 149,977	$ -	0.046846	$ -		22	$ 1,170	0.046846	$ -	
23	$ 4,878	$ 149,977	$ -	0.040629	$ -		23	$ 901	0.040629	$ -	
24	$ 3,756	$ 149,977	$ -	0.035238	$ -		24	$ 694	0.035238	$ -	
25	$ 2,892	$ 149,977	$ -	0.030562	$ -		25	$ 534	0.030562	$ -	
26	$ 2,227	$ 149,977	$ -	0.026507	$ -		26	$ 411	0.026507	$ -	
27	$ 1,715	$ 149,977	$ -	0.022989	$ -		27	$ 317	0.022989	$ -	
28	$ 1,320	$ 149,977	$ -	0.019939	$ -		28	$ 244	0.019939	$ -	
29	$ 1,017	$ 149,977	$ -	0.017293	$ -		29	$ 188	0.017293	$ -	
30	$ 783	$ 149,977	$ -	0.014998	$ -		30	$ 145	0.014998	$ -	
31	$ 603	$ 149,977	$ -	0.013008	$ -		31	$ 111	0.013008	$ -	
32	$ 464	$ 149,977	$ -	0.011282	$ -		32	$ 86	0.011282	$ -	
33	$ 357	$ 149,977	$ -	0.009785	$ -		33	$ 66	0.009785	$ -	
34	$ 275	$ 149,977	$ -	0.008486	$ -		34	$ 51	0.008486	$ -	
35	$ 212	$ 149,977	$ -	0.007360	$ -		35	$ 39	0.007360	$ -	
36	$ 163	$ 149,977	$ -	0.006384	$ -		36	$ 30	0.006384	$ -	
37	$ 126	$ 149,977	$ -	0.005536	$ -		37	$ 23	0.005536	$ -	
38	$ 97	$ 149,977	$ -	0.004802	$ -		38	$ 18	0.004802	$ -	
39	$ 74	$ 149,977	$ -	0.004165	$ -		39	$ 14	0.004165	$ -	
40	$ 57	$ 149,977	$ -	0.003612	$ -		40	$ 11	0.003612	$ -	
	WORKING INTEREST APPRAISAL							ROYALTY INTEREST APPRAISAL			

09-042016d433

DECLINE RATES	
YR 1	69%
YR 2	29%
YR3+	23%

2014	GAS INCOME	OIL INCOME
WRK INT	$ 5,497,067	$ 1,062
ROY INT	$ 1,194,677	$ 193

	GAS CAP INCOME	OIL CAP INCOME
YR1	$ 1,774,725	$ 287
	$ 319,889	$ 51
YR2	$ 1,313,286	$ 212
	$ 234,279	$ 38

$ 3,963,473

TY2018 WORKING INTEREST

YEAR	WRK INT INCOME	WORKING COST	NET INC	PROT FCTR(16.6%)	DIS INC
1	$ 1,775,009	$ 149,977	$ 1,625,033	0.931291	$ 1,513,378
2	$ 1,313,507	$ 149,977	$ 1,163,530	0.807711	$ 939,798
3	$ 1,011,400	$ 149,977	$ 861,424	0.700530	$ 603,453
4	$ 778,778	$ 149,977	$ 628,802	0.607572	$ 382,042
5	$ 599,569	$ 149,977	$ 449,593	0.526948	$ 236,959
6	$ 461,738	$ 149,977	$ 311,761	0.457024	$ 142,482
7	$ 355,538	$ 149,977	$ 205,561	0.396376	$ 81,490
8	$ 273,764	$ 149,977	$ 123,786	0.343760	$ 42,556
9	$ 210,799	$ 149,977	$ 60,822	0.296161	$ 18,155
10	$ 162,316	$ 149,977	$ 12,338	0.256598	$ 3,191
11	$ 124,982	$ 149,977	$ -	0.224261	$ -
12	$ 96,239	$ 149,977	$ -	0.194519	$ -
13	$ 74,102	$ 149,977	$ -	0.168707	$ -
14	$ 57,069	$ 149,977	$ -	0.145320	$ -
15	$ 43,936	$ 149,977	$ -	0.126904	$ -
16	$ 33,830	$ 149,977	$ -	0.110084	$ -
17	$ 26,049	$ 149,977	$ -	0.095459	$ -
18	$ 20,058	$ 149,977	$ -	0.082792	$ -
19	$ 15,445	$ 149,977	$ -	0.071808	$ -
20	$ 11,892	$ 149,977	$ -	0.062277	$ -
21	$ 9,157	$ 149,977	$ -	0.054013	$ -
22	$ 7,051	$ 149,977	$ -	0.046846	$ -
23	$ 5,429	$ 149,977	$ -	0.040629	$ -
24	$ 4,181	$ 149,977	$ -	0.035238	$ -
25	$ 3,219	$ 149,977	$ -	0.030562	$ -
26	$ 2,479	$ 149,977	$ -	0.026507	$ -
27	$ 1,909	$ 149,977	$ -	0.022988	$ -
28	$ 1,470	$ 149,977	$ -	0.019939	$ -
29	$ 1,132	$ 149,977	$ -	0.017293	$ -
30	$ 871	$ 149,977	$ -	0.014998	$ -
31	$ 671	$ 149,977	$ -	0.013008	$ -
32	$ 517	$ 149,977	$ -	0.011282	$ -
33	$ 398	$ 149,977	$ -	0.009785	$ -
34	$ 306	$ 149,977	$ -	0.008486	$ -
35	$ 236	$ 149,977	$ -	0.007360	$ -
36	$ 182	$ 149,977	$ -	0.006384	$ -
37	$ 140	$ 149,977	$ -	0.005536	$ -
38	$ 108	$ 149,977	$ -	0.004802	$ -
39	$ 83	$ 149,977	$ -	0.004165	$ -
40	$ 64	$ 149,977	$ -	0.003612	$ -

WORKING INTEREST APPRAISAL

TY2018 ROYALTY INTEREST

YEAR	ROY INT INCOME	PROT FCTR(16.6%)	DIS INC
1	$ 318,641	0.931291	$ 294,684
2	$ 234,314	0.807711	$ 189,258
3	$ 150,422	0.700530	$ 126,391
4	$ 138,928	0.607572	$ 84,407
5	$ 106,972	0.526948	$ 56,369
6	$ 82,368	0.457024	$ 37,644
7	$ 63,424	0.396376	$ 25,140
8	$ 48,836	0.343760	$ 16,789
9	$ 37,604	0.296161	$ 11,212
10	$ 28,958	0.256598	$ 7,488
11	$ 22,295	0.224261	$ -
12	$ 17,167	0.194519	$ -
13	$ 13,219	0.168707	$ -
14	$ 10,179	0.145320	$ -
15	$ 7,838	0.126904	$ -
16	$ 6,035	0.110084	$ -
17	$ 4,647	0.095459	$ -
18	$ 3,578	0.082792	$ -
19	$ 2,755	0.071808	$ -
20	$ 2,121	0.062277	$ -
21	$ 1,634	0.054013	$ -
22	$ 1,258	0.046846	$ -
23	$ 969	0.040629	$ -
24	$ 746	0.035238	$ -
25	$ 574	0.030562	$ -
26	$ 442	0.026507	$ -
27	$ 340	0.022988	$ -
28	$ 262	0.019939	$ -
29	$ 202	0.017293	$ -
30	$ 155	0.014998	$ -
31	$ 120	0.013008	$ -
32	$ 92	0.011282	$ -
33	$ 71	0.009785	$ -
34	$ 55	0.008486	$ -
35	$ 42	0.007360	$ -
36	$ 32	0.006384	$ -
37	$ 25	0.005536	$ -
38	$ 19	0.004802	$ -
39	$ 15	0.004165	$ -
40	$ 11	0.003612	$ -

ROYALTY INTEREST APPRAISAL

09-04201662435

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT POR - 2016

NR105: 145

ACCOUNT:0500520003 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:DOWNS #1

STATUS:A API#:01713 DATE:12/11/1973 DAYS:365 BBLS: MCFS: 24 RCPTS: 4562 GWI: 3992 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.360 0.160 0.130 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 42

	GAS WORKING INTEREST			GAS ROYALTY INTEREST			OIL WORKING INTEREST			OIL ROYALTY INTEREST		
	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR
1	3,214	2,249	2,095	459	427	0.931						
2	2,796	1,832	1,480	399	322	0.808						
3	2,432	1,468	1,029	347	243	0.701						
4	2,116	1,152	700	302	184	0.608						
5	1,841	877	462	263	139	0.527						
6	1,602	638	291	229	105	0.457						
7	1,393	429	170	199	79	0.396						
8	1,212	248	85	173	60	0.344						
9	1,055	91	27	151	45	0.298						
10	918	0	0	131	0	0.259						
TOTAL:			6,339		1,603							
EXPENSE:	964		964	964								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 147

ACCODNT:0500520010 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:E SECKMAN #2

STATUS:A API#:01752 DATE:07/06/1973 DAYS:365 BBLS: MCFS: 1361 RCPTS: 5669 GWI: 4466 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.360 0.160 0.130 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 42

	GAS WORKING INTEREST			GAS ROYALTY INTEREST			OIL WORKING INTEREST			OIL ROYALTY INTEREST		
	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCODNT INCOME	FACTOR
1	3,595	2,517	2,344	968	902	0.931						
2	3,128	2,049	1,655	843	681	0.808						
3	2,721	1,643	1,151	733	513	0.701						
4	2,367	1,289	783	638	387	0.608						
5	2,060	981	517	555	292	0.527						
6	1,792	713	326	483	221	0.457						
7	1,559	480	190	420	166	0.396						
8	1,356	278	95	365	126	0.344						
9	1,180	101	30	318	95	0.298						
10	1,027	0	0	277	0	0.259						
TOTAL:			7,092		3,383							
EXPENSE:	1079		1079	1079								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NE105: 149

ACCOUNT:0500875002 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:DUDLEY 1

STATUS:A API#:03143 DATE:10/20/1982 DAYS:365 BBLS: MCFS: 2248 RCPTS: 7215 GWI: 5835 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.310 0.170 0.120 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 33

	GAS WORKING INTEREST			GAS ROYALTY INTEREST			OIL WORKING INTEREST			OIL ROYALTY INTEREST		
	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GEOSS INCOME	DISCOUNT INCOME	FACTOR	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOE
1	4,785	3,349	3,119	1,132	1,054	0.931						
2	4,211	2,775	2,242	996	804	0.808						
3	3,705	2,270	1,590	876	614	0.701						
4	3,261	1,825	1,109	771	469	0.608						
5	2,869	1,434	756	679	358	0.527						
6	2,525	1,090	498	597	273	0.457						
7	2,222	787	312	526	208	0.396						
8	1,955	520	179	462	159	0.344						
9	1,721	285	85	407	121	0.298						
10	1,514	79	20	358	93	0.259						
11	1,333	0	0	315	0	0.224						
TOTAL:			9,909		4,152							
EXPENSE:	1435		1435	1435								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 151

ACCOUNT:0500875004 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:S ESTLACK #1

STATUS:A API#:03126 DATE:08/05/1982 DAYS:365 EELS: MCFS: 923 RCPTS: 3360 GWI: 2932 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.310 0.170 0.120 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE:
WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 33

	GAS WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR	OIL WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR
1	2,404	1,683	1,567	351	327	0.931						
2	2,116	1,394	1,126	309	249	0.808						
3	1,862	1,141	799	272	190	0.701						
4	1,638	917	557	239	145	0.608						
5	1,442	721	380	210	111	0.527						
6	1,269	548	250	185	85	0.457						
7	1,117	395	157	163	65	0.396						
8	983	261	90	143	49	0.344						
9	865	143	43	126	38	0.298						
10	761	40	10	111	29	0.259						
11	670	0	0	98	0	0.224						
TOTAL:			4,979		1,288							
EXPENSE:	721		721	721								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 153

ACCOUNT:0500875006 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:WILSON #1

STATUS:A API#:03193 DATE:09/01/1984 DAYS:365 BBLS: MCFS: 1547 RCPTS: 5098 GWI: 4236 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.310 0.170 0.120 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 31

	GAS WORKING INTEREST			GAS ROYALTY INTEREST			OIL WORKING INTEREST			OIL ROYALTY INTEREST		
	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR
1	3,474	2,431	2,264	707	658	0.931						
2	3,057	2,015	1,627	622	502	0.808						
3	2,690	1,648	1,154	547	383	0.701						
4	2,367	1,325	805	482	293	0.608						
5	2,083	1,041	549	424	223	0.527						
6	1,833	791	362	373	170	0.457						
7	1,613	571	226	328	130	0.396						
8	1,420	377	130	289	99	0.344						
9	1,249	207	62	254	76	0.298						
10	1,099	57	15	224	58	0.259						
11	967	0	0	197	0	0.224						
TOTAL:			7,194		2,594							
EXPENSE:	1042		1042	1042								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 155

ACCOUNT:0514144704 RESODRCE:GS OWNER:ANTERO RESODRCES CORPORATI LOCATION:SADLER #5

STATUS:A API#:04704 DATE:10/01/2003 DAYS:365 BBLS: MCFS: 1252 RCPTS: 8892 GWI: 7603 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.310 0.170 0.120 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 12

	GAS WORKING INTEREST GROSS INCOME	GAS WORKING INTEREST NET INCOME	GAS WORKING INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	GAS ROYALTY INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST FACTOR	OIL WORKING INTEREST GROSS INCOME	OIL WORKING INTEREST NET INCOME	OIL WORKING INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	OIL ROYALTY INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST FACTOR
1	6,234	4,364	4,064	1,057	984	0.931						
2	5,486	3,616	2,921	930	751	0.808						
3	4,828	2,958	2,072	819	573	0.701						
4	4,249	2,378	1,445	720	438	0.608						
5	3,739	1,868	985	634	334	0.527						
6	3,290	1,420	649	558	255	0.457						
7	2,895	1,025	406	491	195	0.396						
8	2,548	678	233	432	149	0.344						
9	2,242	372	111	380	113	0.298						
10	1,973	103	27	335	87	0.259						
11	1,736	0	0	294	0	0.224						
TOTAL:			12,912		3,879							
EXPENSE:	1870		1870	1870								

OCT 12, 2016
05:09 PM

'OODORIOGE' COUNTY, WV
YIELD CAP MOOEL REPORT FOR - 2016

NR105: 157

ACCOONT:0514144743 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:BOGGESS #3

STATUS:A API#:04743 OATE:09/01/2003 OAYS:365 BBLS: MCFS: 1958 RCPTS: 7826 GWI: 6692 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 OECLINE RATE: 0.310 0.170 0.120 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USEO:
CAP RATE: 15.300 OECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLEO YEARS: 12

	GAS WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR	OIL WORKING INTEREST GROSS INCOME	NET INCOME	OISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR
1	5,487	3,841	3,577	930	866	0.931						
2	4,829	3,183	2,571	818	661	0.808						
3	4,249	2,603	1,824	720	504	0.701						
4	3,740	2,093	1,272	634	385	0.608						
5	3,291	1,645	867	558	294	0.527						
6	2,896	1,250	571	491	224	0.457						
7	2,548	902	358	432	171	0.396						
8	2,243	596	205	380	131	0.344						
9	1,973	327	98	334	100	0.298						
10	1,737	90	23	294	76	0.259						
11	1,528	0	0	259	0	0.224						
TOTAL:			11,365		3,412							
EXPENSE:	1646		1646	1646								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 159

ACCOUNT:0515154831 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:VINCENT #2

STATOS:A API#:04831 DATE:10/01/2004 DAYS:365 BBLS: MCFS: 373 RCPTS: 9439 GWI: 7277 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.340 0.170 0.140 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 11

	GAS WORKING INTEREST			GAS ROYALTY INTEREST			OIL WORKING INTEREST			OIL ROYALTY INTEREST		
	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR
1	5,749	4,024	3,748	1,708	1,591	0.931						
2	4,944	3,219	2,600	1,469	1,186	0.808						
3	4,252	2,527	1,770	1,263	885	0.701						
4	3,657	1,932	1,174	1,086	660	0.608						
5	3,145	1,420	748	934	492	0.527						
6	2,704	980	448	803	367	0.457						
7	2,326	601	238	691	274	0.396						
8	2,000	276	95	594	204	0.344						
9	1,720	0	0	511	0	0.298						
TOTAL:			10,821		5,660							
EXPENSE:	1725		1725	1725								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 161

ACCOUNT:0515154843 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:EOGGESS #1

STATUS:A API#:04843 DATE:09/01/2004 DAYS:365 EELS: MCFS: 3073 RCPTS: 10731 GWI: 8370 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.310 0.170 0.120 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 11

	GAS WORKING INTEREST GROSS INCOME	GAS WORKING INTEREST NET INCOME	GAS WORKING INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	GAS ROYALTY INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST FACTOR	OIL WORKING INTEREST GROSS INCOME	OIL WORKING INTEREST NET INCOME	OIL WORKING INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	OIL ROYALTY INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST FACTOR
1	6,863	4,804	4,474	1,936	1,803	0.931						
2	6,040	3,981	3,215	1,704	1,376	0.808						
3	5,315	3,256	2,281	1,499	1,050	0.701						
4	4,677	2,618	1,591	1,319	802	0.608						
5	4,116	2,057	1,084	1,161	612	0.527						
6	3,622	1,563	714	1,022	467	0.457						
7	3,187	1,128	447	899	356	0.396						
8	2,805	746	256	791	272	0.344						
9	2,468	409	122	696	208	0.298						
10	2,172	113	29	613	158	0.259						
11	1,911	0	0	539	0	0.224						
TOTAL:			14,214		7,104							
EXPENSE:	2059		2059	2059								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 163

ACCOUNT:0515185420 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:BUNNELL 1

STATUS:A API#:05420 DATE:09/01/2007 DAYS:365 BBLS: MCFS: 287I RCPTS: 1865I GWI: 15482 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.4I0 0.I40 0.120 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 8

	GAS WORKING INTEREST GROSS INCOME	GAS WORKING INTEREST NET INCOME	GAS WORKING INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	GAS ROYALTY INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST DISCOUNT FACTOR	OIL WORKING INTEREST GROSS INCOME	OIL WORKING INTEREST NET INCOME	OIL WORKING INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	OIL ROYALTY INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST DISCOUNT FACTOR
1	12,695	8,887	8,276	2,599	2,420	0.931						
2	11,172	7,363	5,947	2,287	1,847	0.808						
3	9,83I	6,023	4,219	2,012	I,4I0	0.70I						
4	8,65I	4,843	2,942	I,77I	I,076	0.608						
5	7,613	3,805	2,005	I,558	82I	0.527						
6	6,700	2,89I	1,32I	I,371	627	0.457						
7	5,896	2,087	827	1,207	478	0.396						
8	5,I88	1,380	474	1,062	365	0.344						
9	4,566	757	226	935	279	0.298						
10	4,018	209	54	822	2I3	0.259						
11	3,536	0	0	724	0	0.224						
TOTAL:			26,292		9,535							
EXPENSE:	3809		3809	3809								

OCT 12, 2016
05:09 PM

'OODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 165

ACCOUNT:0516164951 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:VINCENT #3

STATUS:A API#:04951 DATE:10/01/2005 DAYS:365 BBLS: MCFS: 231 RCPTS: 4611 GWI: 3689 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.350 0.200 0.100 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 10

	GAS WORKING INTEREST GROSS INCOME	GAS WORKING INTEREST NET INCOME	GAS WORKING INTEREST OISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	GAS ROYALTY INTEREST OISCOUNT INCOME	GAS ROYALTY INTEREST FACTOR	OIL WORKING INTEREST GROSS INCOME	OIL WORKING INTEREST NET INCOME	OIL WORKING INTEREST OISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	OIL ROYALTY INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST FACTOR
1	3,136	2,195	2,044	784	730	0.931						
2	2,822	1,881	1,520	705	570	0.808						
3	2,540	1,599	1,120	635	445	0.701						
4	2,286	1,345	817	571	347	0.608						
5	2,057	1,117	588	514	271	0.527						
6	1,852	911	416	463	211	0.457						
7	1,666	726	288	416	165	0.396						
8	1,500	559	192	375	129	0.344						
9	1,350	409	122	337	101	0.298						
10	1,215	274	71	304	79	0.259						
11	1,093	153	34	273	61	0.224						
12	984	43	8	246	48	0.195						
13	886	0	0	221	0	0.169						
TOTAL:			7,221		3,156							
EXPENSE:	941		941	941								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 167

ACCOUNT:0517171714 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:DOWNES 2

STATUS:A API#:01714 DATE:01/01/1972 DAYS:365 BBLS: MCFS: 224 RCPTS: 2983 GWI: 2610 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.360 0.160 0.130 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 43

	GAS WORKING INTEREST GROSS INCOME	GAS WORKING INTEREST NET INCOME	GAS WORKING INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	GAS ROYALTY INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST FACTOR	OIL WORKING INTEREST GROSS INCOME	OIL WORKING INTEREST NET INCOME	OIL WORKING INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	OIL ROYALTY INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST FACTOR
1	2,101	1,471	1,370	300	280	0.931						
2	1,828	1,198	967	261	211	0.808						
3	1,590	960	672	227	159	0.701						
4	1,384	753	458	198	120	0.608						
5	1,204	573	302	172	91	0.527						
6	1,047	417	191	150	68	0.457						
7	911	281	111	130	52	0.396						
8	793	162	56	113	39	0.344						
9	690	59	18	99	29	0.298						
10	600	0	0	86	0	0.259						
TOTAL:			4,145		1,049							
EXPENSE:	630		630	630								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 169

ACCOUNT:0517174952 RESOORCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:VINCENT 4

STATUS:A API#:04952 DATE:09/22/2005 DAYS:365 BBLS: MCFS: 304 RCPTS: 6214 GWI: 4972 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.310 0.170 0.120 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 10

	GAS WORKING INTEREST GROSS INCOME	GAS WORKING INTEREST NET INCOME	GAS WORKING INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	GAS ROYALTY INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST FACTOR	OIL WORKING INTEREST GROSS INCOME	OIL WORKING INTEREST NET INCOME	OIL WORKING INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	OIL ROYALTY INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST FACTOR
1	4,077	2,854	2,658	1,018	948	0.931						
2	3,588	2,365	1,910	896	724	0.808						
3	3,157	1,934	1,355	789	552	0.701						
4	2,778	1,555	945	694	422	0.608						
5	2,445	1,222	644	611	322	0.527						
6	2,152	928	424	537	246	0.457						
7	1,893	670	266	473	187	0.396						
8	1,666	443	152	416	143	0.344						
9	1,466	243	72	366	109	0.298						
10	1,290	67	17	322	83	0.259						
11	1,135	0	0	284	0	0.224						
TOTAL:			8,444		3,737							
EXPENSE:	1223		1223	1223								

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

OCT 12, 2016
05:09 PM

NR105: 171

ACCOUNT:0518185004 RESOORCE:OG OWNER:ANTERO RESOURCES CORPORATI LOCATION:MCQUAID 1

STATUS:A API#:05004 DATE:09/01/2007 DAYS:365 BBLS: 65.000 MCFS: 32659 RCPTS: 92927 GWI: 74882 OWI: 3524

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.410 0.140 0.120 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: 0.410 0.140 0.120 WELLLIFE:99 GS EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 8 OL EXPENSE: 0.3 5750 5750 5750

	GAS WORKING INTEREST			GAS ROYALTY INTEREST			OIL WORKING INTEREST			OIL ROYALTY INTEREST		
	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR
1	61,403	56,628	52,737	11,372	10,590	0.931	2,890	2,631	2,450	535	499	0.931
2	54,035	49,260	39,788	10,007	8,083	0.808	2,543	2,284	1,845	471	381	0.808
3	47,551	42,775	29,965	8,806	6,169	0.701	2,238	1,979	1,387	415	290	0.701
4	41,845	37,069	22,522	7,750	4,708	0.608	1,969	1,711	1,039	365	222	0.608
5	36,823	32,048	16,888	6,820	3,594	0.527	1,733	1,474	777	321	169	0.527
6	32,404	27,629	12,627	6,001	2,743	0.457	1,525	1,267	579	283	129	0.457
7	28,516	23,741	9,410	5,281	2,093	0.396	1,342	1,084	429	249	99	0.396
8	25,094	20,319	6,985	4,647	1,598	0.344	1,181	923	317	219	75	0.344
9	22,083	17,307	5,160	4,090	1,219	0.298	1,039	781	233	193	57	0.298
10	19,433	14,658	3,790	3,599	931	0.259	915	656	170	169	44	0.259
11	17,101	12,326	2,764	3,167	710	0.224	805	546	123	149	33	0.224
12	15,049	10,273	1,998	2,787	542	0.195	708	450	87	131	26	0.195
13	13,243	8,468	1,429	2,453	414	0.169	623	365	62	115	19	0.169
14	11,654	6,878	1,006	2,158	316	0.146	548	290	42	102	15	0.146
15	10,255	5,480	695	1,899	241	0.127	483	224	28	89	11	0.127
16	9,025	4,249	468	1,671	184	0.110	425	166	18	79	9	0.110
17	7,942	3,166	302	1,471	140	0.095	374	115	11	69	7	0.095
18	6,989	2,213	183	1,294	107	0.083	329	70	6	61	5	0.083
19	6,150	1,375	99	1,139	82	0.072	289	31	2	54	4	0.072
20	5,412	637	40	1,002	62	0.062	255	0	0	47	0	0.062
21	4,763	0	0	882	0	0.054						
TOTAL:			208,858		44,527				9,606		2,094	
GS EXPENSE:	4775		4775	4775								
OL EXPENSE:	258		258	258								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 173

ACCOUNT:0518185324 RESOORCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:BOGGESS 4

STATUS:Z API#:05324 DATE:09/18/2007 DAYS:365 BBLS: MCFS: 2857 RCPTS: 10787 GWI: 8994 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 EXPENSE: 0.2 150000 150000 150000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.2 150000 150000 150000

SETTLED YEARS: 8

	GAS WORKING INTEREST GROSS INCOME	GAS WORKING INTEREST NET INCOME	GAS WORKING INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	GAS ROYALTY INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST FACTOR	OIL WORKING INTEREST GROSS INCOME	OIL WORKING INTEREST NET INCOME	OIL WORKING INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	OIL ROYALTY INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST FACTOR
1	5,891	4,713	4,389	1,174	1,094	0.931						
2	4,536	3,358	2,712	904	730	0.808						
3	3,493	2,315	1,621	696	488	0.701						
4	2,689	1,511	918	536	326	0.608						
5	2,071	893	470	413	218	0.527						
6	1,595	416	190	318	145	0.457						
7	1,228	50	20	245	97	0.396						
8	945	0	0	188	0	0.344						
TOTAL:			10,321		3,098							
EXPENSE:	1178		1178	1178								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 175

ACCOUNT:0518185403 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:ERAUN 1

STATUS:A API#:05403 DATE:08/01/2007 DAYS:365 EELS: MCFS: 1920 RCPTS: 12461 GWI: 10733 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.410 0.140 0.120 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 8

	GAS WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR	OIL WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR
1	8,801	6,161	5,737	1,417	1,320	0.931						
2	7,745	5,105	4,123	1,247	1,007	0.808						
3	6,816	4,175	2,925	1,097	769	0.701						
4	5,998	3,357	2,040	966	587	0.608						
5	5,278	2,638	1,390	850	448	0.527						
6	4,645	2,004	916	748	342	0.457						
7	4,087	1,447	574	658	261	0.396						
8	3,597	956	329	579	199	0.344						
9	3,165	525	156	510	152	0.298						
10	2,785	145	38	448	116	0.259						
11	2,451	0	0	395	0	0.224						
TOTAL:			18,227		5,199							
EXPENSE:	2640		2640	2640								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 177

ACCOUNT:0518185451 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:J W STARK 3

STATUS:A API#:05451 DATE:11/01/2007 DAYS:365 BBLS: MCFS: 2803 RCPTS: 13454 GWI: 11352 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.410 0.140 0.120 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 8

	GAS WORKING INTEREST GROSS INCOME	GAS WORKING INTEREST NET INCOME	GAS WORKING INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	GAS ROYALTY INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST FACTOR	OIL WORKING INTEREST GROSS INCOME	OIL WORKING INTEREST NET INCOME	OIL WORKING INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	OIL ROYALTY INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST FACTOR
1	9,309	6,516	6,068	1,724	1,605	0.931						
2	8,192	5,399	4,361	1,517	1,225	0.808						
3	7,209	4,416	3,094	1,335	935	0.701						
4	6,344	3,551	2,157	1,175	714	0.608						
5	5,582	2,790	1,470	1,034	545	0.527						
6	4,912	2,120	969	910	416	0.457						
7	4,323	1,530	607	800	317	0.396						
8	3,804	1,012	348	704	242	0.344						
9	3,348	555	166	620	185	0.298						
10	2,946	153	40	545	141	0.259						
11	2,592	0	0	480	0	0.224						
TOTAL:			19,279		6,325							
EXPENSE:	2793		2793	2793								

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

OCT 12, 2016
05:09 PM

NR105: 179

ACCOUNT:0518185499 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:HUTSON 1

STATUS:A API#:05499 DATE:12/01/2007 DAYS:365 BBLS: MCFS: 166 RCPTS: 3757 GWI: 3170 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.410 0.140 0.120 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 8

	GAS WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR	OIL WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR
1	2,599	1,820	1,695	481	448	0.931						
2	2,287	1,508	1,218	424	342	0.808						
3	2,013	1,233	864	373	261	0.701						
4	1,771	992	602	328	199	0.608						
5	1,559	779	411	289	152	0.527						
6	1,372	592	271	254	116	0.457						
7	1,207	427	169	224	89	0.396						
8	1,062	282	97	197	68	0.344						
9	935	155	46	173	52	0.298						
10	823	43	11	152	39	0.259						
11	724	0	0	134	0	0.224						
TOTAL:			5,383		1,766							
EXPENSE:	780		780	780								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 181

ACCOUNT:0520105005 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:MCQUAID 2

STATUS:A API#:05005 DATE:08/01/2007 DAYS:365 BBLS: MCFS: 1482 RCPTS: 5967 GWI: 5034 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.410 0.140 0.120 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 8

	GAS WORKING INTEREST GROSS INCOME	GAS WORKING INTEREST NET INCOME	GAS WORKING INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	GAS ROYALTY INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST FACTOR	OIL WORKING INTEREST GROSS INCOME	OIL WORKING INTEREST NET INCOME	OIL WORKING INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	OIL ROYALTY INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST FACTOR
1	4,128	2,890	2,691	765	712	0.931						
2	3,633	2,394	1,934	673	544	0.808						
3	3,197	1,958	1,372	592	415	0.701						
4	2,813	1,575	957	521	317	0.608						
5	2,475	1,237	652	459	242	0.527						
6	2,178	940	430	404	185	0.457						
7	1,917	679	269	355	141	0.396						
8	1,687	449	154	313	107	0.344						
9	1,485	246	73	275	82	0.298						
10	1,306	68	18	242	63	0.259						
11	1,150	0	0	213	0	0.224						
TOTAL:			8,549		2,807							
EXPENSE:	1238		1238	1238								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODRL REPORT FOR - 2016

NR105: 183

ACCOUNT:0520105286 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:HIGHLAND 4

STATUS:A API#:05286 DATE:07/01/2007 DAYS:365 BBLS: MCFS: 40 RCPTS: 1218 GWI: 1028 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.410 0.140 0.120 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 8

	GAS WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR	OIL WORKING INTEREST GROSS INCOME	NET INCOMR	DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR
1	843	590	550	156	145	0.931						
2	742	489	395	137	111	0.808						
3	653	400	280	121	85	0.701						
4	574	322	195	106	65	0.608						
5	506	253	133	93	49	0.527						
6	445	192	88	82	38	0.457						
7	391	139	55	72	29	0.396						
8	344	92	31	64	22	0.344						
9	303	50	15	56	17	0.298						
10	267	14	4	49	13	0.259						
11	235	0	0	43	0	0.224						
TOTAL:			1,746		572							
EXPENSE:	253		253	253								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 185

ACCOUNT:0520105330 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:HIGHLAND 17

STATUS:A API#:05330 DATE:08/01/2007 DAYS:365 BBLS: MCFS: 495 RCPTS: 4902 GWI: 4136 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.410 0.140 0.120 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 8

	GAS WORKING INTEREST GROSS INCOME	GAS WORKING INTEREST NET INCOME	GAS WORKING INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	GAS ROYALTY INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST FACTOR	OIL WORKING INTEREST GROSS INCOME	OIL WORKING INTEREST NET INCOME	OIL WORKING INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	OIL ROYALTY INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST FACTOR
1	3,392	2,374	2,211	628	585	0.931						
2	2,985	1,967	1,589	553	446	0.808						
3	2,626	1,609	1,127	486	341	0.701						
4	2,311	1,294	786	428	260	0.608						
5	2,034	1,016	536	377	198	0.527						
6	1,790	772	353	331	151	0.457						
7	1,575	558	221	292	116	0.396						
8	1,386	369	127	257	88	0.344						
9	1,220	202	60	226	67	0.298						
10	1,073	56	14	199	51	0.259						
11	945	0	0	175	0	0.224						
TOTAL:			7,024		2,305							
EXPENSE:	1017		1017	1017								

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

OCT 12, 2016
05:09 PM

NR105: 187

ACCOUNT:0520105332 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:HIGHLAND 19

STATOS:A API#:05332 OATE:07/01/2007 DAYS:365 BBLS: MCFS: 1484 RCPTS: 11117 GWI: 9380 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.310 0.170 0.120 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 8

	GAS WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR	OIL WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR
1	7,692	5,384	5,014	1,424	1,326	0.931						
2	6,769	4,461	3,603	1,253	1,012	0.808						
3	5,956	3,649	2,556	1,103	773	0.701						
4	5,242	2,934	1,783	971	590	0.608						
5	4,613	2,305	1,215	854	450	0.527						
6	4,059	1,752	801	752	344	0.457						
7	3,572	1,265	501	661	262	0.396						
8	3,143	836	287	582	200	0.344						
9	2,766	459	137	512	153	0.298						
10	2,434	127	33	451	117	0.259						
11	2,142	0	0	397	0	0.224						
TOTAL:			15,930		5,227							
EXPENSE:	2307		2307	2307								

OCT 12, 2016
05:09 PM

'DODDRIOGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 189

ACCOUNT:0520105402 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:BUNNELL 3

STATUS:M API#:05402 DATE:08/01/2007 DAYS:365 BBLS: MCFS: 20052 RCPTS: 138145 GWI: 114671 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 EXPENSE: 0.3 30000 30000 30000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 30000 30000 30000

SETTLED YEARS: 8

	GAS WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR	OIL WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR
1	75,110	52,577	48,964	15,375	14,319	0.931						
2	57,834	35,301	28,513	11,839	9,563	0.808						
3	44,532	22,000	15,411	9,116	6,386	0.701						
4	34,290	11,757	7,143	7,019	4,265	0.608						
5	26,403	3,870	2,040	5,405	2,848	0.527						
6	20,331	0	0	4,162	0	0.457						
TOTAL:			102,072		37,381							
EXPENSE:	22533		22533	22533								

OCT 12, 2016
05:09 PM

'OOODRIOGE' COUNTY, WV
YIELO CAP MOOEL REPORT FOR - 2016

NR105: 191

ACCOUNT:0520105449 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:STARK 1

STATOS:A API#:05449 OATE:11/01/2007 OAYS:365 BBLS: MCFS: 5326 RCPTS: 26936 GWI: 22728 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 OECLINE RATE: 0.310 0.170 0.120 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USEO:
CAP RATE: 15.300 OECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 8

	GAS WORKING INTEREST GROSS INCOME	NET INCOME	OISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR	OIL WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR
1	18,637	13,637	12,700	3,451	3,213	0.931						
2	16,401	11,401	9,208	3,036	2,453	0.808						
3	14,432	9,432	6,608	2,672	1,872	0.701						
4	12,701	7,701	4,679	2,351	1,429	0.608						
5	11,176	6,176	3,255	2,069	1,090	0.527						
6	9,835	4,835	2,210	1,821	832	0.457						
7	8,655	3,655	1,449	1,602	635	0.396						
8	7,616	2,616	899	1,410	485	0.344						
9	6,702	1,702	508	1,241	370	0.298						
10	5,898	898	232	1,092	282	0.259						
11	5,190	190	43	961	216	0.224						
12	4,568	0	0	846	0	0.195						
TOTAL:			41,790		12,877							
EXPENSE:	5000		5000	5000								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 193

ACCOUNT:0520105465 RESOURCE:OL OWNER:ANTERO RESOURCES CORPORATI LOCATION:COTTRILL 1

STATUS:A API#:05465 DATE:10/01/2007 DAYS:365 BBLS: 1149.000 MCFS: RCPTS: 12536 GWI: 7316 OWI: 3224

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.310 0.170 0.120 WELLLIFE:99 EXPENSE: 0.35 5750 5750 5750

RATES USED:
CAP RATE: 15.300 DECLINE RATE: 0.310 0.170 0.120 WELLLIFE:99 EXPENSE: 0.35 5750 5750 5750

SETTLED YEARS: 8

	GAS WORKING INTEREST			GAS ROYALTY INTEREST			OIL WORKING INTEREST			OIL ROYALTY INTEREST		
	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GRUSS INCOME	DISCOUNT INCOME	FACTOR	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR
1												
2							2,644	1,718	1,600	509	474	0.931
3							2,326	1,401	1,132	448	362	0.808
4							2,047	1,122	786	394	276	0.701
5							1,802	876	532	347	211	0.608
6							1,585	660	348	305	161	0.527
7							1,395	470	215	269	123	0.457
8							1,228	302	120	236	94	0.396
9							1,080	155	53	208	72	0.344
10							951	25	8	183	55	0.298
							837	0	0	161	0	0.259
TOTAL:									4,794		1,827	
EXPENSE:	925		925	925								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 195

ACCOUNT:0520105474 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:PIPPIN 1

STATUS:A API#:05474 DATE:01/03/2008 DAYS:365 BBLS: MCPS: 867 RCPTS: 7642 GWI: 6478 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.410 0.140 0.120 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 7

	GAS WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	PACTOR	OIL WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	PACTOR
1	5,312	3,718	3,463	954	889	0.931						
2	4,675	3,081	2,489	840	678	0.808						
3	4,114	2,520	1,765	739	518	0.701						
4	3,620	2,026	1,231	650	395	0.608						
5	3,186	1,592	839	572	302	0.527						
6	2,803	1,210	553	504	230	0.457						
7	2,467	873	346	443	176	0.396						
8	2,171	577	198	390	134	0.344						
9	1,910	317	94	343	102	0.298						
10	1,681	88	23	302	78	0.259						
11	1,479	0	0	266	0	0.224						
TOTAL:			11,001		3,502							
EXPENSE:	1594		1594	1594								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 197

ACCOUNT:0520105502 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:KILE A 1

STATUS:A API#:05502 DATE:01/31/2008 DAYS:365 EELS: MCFS: 5254 RCPTS: 22780 GWI: 19932 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.410 0.140 0.120 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 7

	GAS WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR	OIL WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR
1	16,344	11,441	10,655	2,335	2,175	0.931						
2	14,383	9,480	7,657	2,055	1,660	0.808						
3	12,657	7,754	5,432	1,809	1,267	0.701						
4	11,138	6,235	3,788	1,591	967	0.608						
5	9,802	4,898	2,581	1,401	738	0.527						
6	8,625	3,722	1,701	1,232	563	0.457						
7	7,590	2,687	1,065	1,085	430	0.396						
8	6,679	1,776	611	954	328	0.344						
9	5,878	975	291	840	250	0.298						
10	5,173	269	70	739	191	0.259						
11	4,552	0	0	650	0	0.224						
TOTAL:			33,850		8,569							
EXPENSE:	4903		4903	4903								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 199

ACCOUNT:0520105504 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:KILE A 3

STATUS:A API#:05504 DATE:01/24/2008 DAYS:365 BBLS: MCFS: 9326 RCPTS: 39813 GWI: 34836 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.410 0.140 0.120 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 7

	GAS WORKING INTEREST GROSS INCOME	GAS WORKING INTEREST NET INCOME	GAS WORKING INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	GAS ROYALTY INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST FACTOR	OIL WORKING INTEREST GROSS INCOME	OIL WORKING INTEREST NET INCOME	OIL WORKING INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	OIL ROYALTY INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST FACTOR
1	28,566	23,566	21,946	4,081	3,801	0.931						
2	25,138	20,138	16,265	3,591	2,901	0.808						
3	22,121	17,121	11,994	3,160	2,214	0.701						
4	19,467	14,467	8,790	2,781	1,690	0.608						
5	17,131	12,131	6,392	2,447	1,290	0.527						
6	15,075	10,075	4,604	2,154	984	0.457						
7	13,266	8,266	3,276	1,895	751	0.396						
8	11,674	6,674	2,294	1,668	573	0.344						
9	10,273	5,273	1,572	1,468	438	0.298						
10	9,040	4,040	1,045	1,292	334	0.259						
11	7,956	2,956	663	1,137	255	0.224						
12	7,001	2,001	389	1,000	195	0.195						
13	6,161	1,161	196	880	148	0.169						
14	5,421	421	62	775	113	0.146						
15	4,771	0	0	682	0	0.127						
TOTAL:			79,489		15,687							
EXPENSE:	5000		5000	5000								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 201

ACCOUNT:0520105512 RESOURCE:GS OWNER;ANTERO RESOURCES CORPORATI LOCATION:TATE 1

STATUS:A API#:5512 DATE:04/25/2008 DAYS:365 BBLS: MCFS: 34217 RCPTS: 93465 GWI: 78864 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.410 0.140 0.120 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE:
WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 7

	GAS WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR	OIL WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR
1	64,668	59,668	55,569	11,973	11,150	0.931						
2	56,908	51,908	41,927	10,536	8,510	0.808						
3	50,079	45,079	31,579	9,272	6,495	0.701						
4	44,070	39,070	23,738	8,159	4,957	0.608						
5	38,781	33,781	17,801	7,180	3,784	0.527						
6	34,128	29,128	13,312	6,318	2,888	0.457						
7	30,032	25,032	9,922	5,560	2,204	0.396						
8	26,428	21,428	7,367	4,893	1,682	0.344						
9	23,257	18,257	5,444	4,306	1,284	0.298						
10	20,466	15,466	3,999	3,789	980	0.259						
11	18,010	13,010	2,918	3,334	748	0.224						
12	15,849	10,849	2,110	2,934	571	0.195						
13	13,947	8,947	1,509	2,582	436	0.169						
14	12,273	7,273	1,064	2,272	332	0.146						
15	10,801	5,801	736	2,000	254	0.127						
16	9,505	4,505	496	1,760	194	0.110						
17	8,364	3,364	321	1,549	148	0.095						
18	7,360	2,360	195	1,363	113	0.083						
19	6,477	1,477	106	1,199	86	0.072						
20	5,700	700	44	1,055	66	0.062						
21	5,016	16	1	929	50	0.054						
22	4,414	0	0	817	0	0.047						
TOTAL:			220,159		46,930							
EXPENSE:	5000		5000	5000								

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

OCT 12, 2016
05:09 PM

NR105: 203

ACCOUNT:0520105545 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:BALLOUZ 1

STATUS:A API#:05545 DATE:07/11/2008 DAYS:365 BBLS: MCFS: 3536 RCPTS: 20465 GWI: 17906 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.410 0.140 0.120 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 7

	GAS WORKING INTEREST			GAS ROYALTY INTEREST			OIL WORKING INTEREST			OIL ROYALTY INTEREST		
	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR
1	14,683	10,278	9,572	2,098	1,954	0.931						
2	12,921	8,516	6,879	1,847	1,491	0.808						
3	11,370	6,966	4,880	1,625	1,138	0.701						
4	10,006	5,601	3,403	1,430	869	0.608						
5	8,805	4,400	2,319	1,258	663	0.527						
6	7,749	3,344	1,528	1,107	506	0.457						
7	6,819	2,414	957	974	386	0.396						
8	6,001	1,596	549	858	295	0.344						
9	5,280	876	261	755	225	0.298						
10	4,647	242	63	664	172	0.259						
11	4,089	0	0	584	0	0.224						
TOTAL:			30,409		7,700							
EXPENSE:	4405		4405	4405								

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

OCT 12, 2016
05:09 PM

NR105: 205

ACCOUNT:0520105635 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:P FORD 1

STATUS:A API#:05635 DATE:04/28/2008 DAYS:365 EELS: MCFS: 6588 RCPTS: 29350 GWI: 24457 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.410 0.140 0.120 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 7

	GAS WORKING INTEREST			GAS ROYALTY INTEREST			OIL WORKING INTEREST			OIL ROYALTY INTEREST		
	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCODNT INCOME	FACTOR
1	20,055	15,055	14,020	4,012	3,737	0.931						
2	17,648	12,648	10,216	3,531	2,852	0.808						
3	15,530	10,530	7,377	3,107	2,177	0.701						
4	13,667	8,667	5,266	2,734	1,661	0.608						
5	12,027	7,027	3,703	2,406	1,268	0.527						
6	10,584	5,584	2,552	2,117	968	0.457						
7	9,314	4,314	1,710	1,863	739	0.396						
8	8,196	3,196	1,099	1,640	564	0.344						
9	7,212	2,212	660	1,443	430	0.298						
10	6,347	1,347	348	1,270	328	0.259						
11	5,585	585	131	1,117	251	0.224						
12	4,915	0	0	983	0	0.195						
TOTAL:			47,081		14,973							
EXPENSE:	5000		5000	5000								

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

OCT 12, 2016
05:09 PM

NR105: 207

ACCOUNT:0520105646 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:TATE 2

STATUS:M API#:05646 DATE:06/21/2008 DAYS:365 BBLS: MCPS: 29721 RCPTS: 80648 GWI: 68045 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIPE:99 EXPENSE: 0.3 30000 30000 30000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIPE:99 EXPENSE: 0.3 30000 30000 30000

SETTLED YEARS: 7

	GAS WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	DISCODNT INCOME	FACTOR	OIL WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	DISCODNT INCOME	FACTOR
1	44,569	31,199	29,055	8,255	7,688	0.931						
2	34,318	20,948	16,920	6,356	5,134	0.808						
3	26,425	13,054	9,145	4,894	3,429	0.701						
4	20,347	6,977	4,239	3,769	2,290	0.608						
5	15,668	2,297	1,210	2,902	1,529	0.527						
6	12,064	0	0	2,234	0	0.457						
TOTAL:			60,569		20,069							
EXPENSE:	13371		13371	13371								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 209

ACCOUNT:0520115645 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:CHESS 2

STATUS:M API#:05645 DATE:05/01/2009 DAYS:365 BBLS: MCFS: 5685 RCPTS: 70338 GWI: 59622 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 EXPENSE: 0.3 30000 30000 30000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 30000 30000 30000

SETTLED YEARS: 6

	GAS WORKING INTEREST GROSS INCOME	GAS WORKING INTEREST NET INCOME	GAS WORKING INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	GAS ROYALTY INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST FACTOR	OIL WORKING INTEREST GROSS INCOME	OIL WORKING INTEREST NET INCOME	OIL WORKING INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	OIL ROYALTY INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST FACTOR
1	39,052	27,337	25,458	7,019	6,537	0.931						
2	30,070	18,355	14,825	5,405	4,365	0.808						
3	23,154	11,438	8,013	4,162	2,915	0.701						
4	17,829	6,113	3,714	3,204	1,947	0.608						
5	13,728	2,012	1,060	2,467	1,300	0.527						
6	10,571	0	0	1,900	0	0.457						
TOTAL:			53,071		17,064							
EXPENSE:	11716		11716	11716								

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

OCT 12, 2016
05:09 PM

NR105: 211

ACCOUNT:0520115865 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:W L ESTLACK 1

STATUS:M API#:05865 DATE:11/03/2009 DAYS:365 BBLS: MCFS: 5534 RCPTS: 119157 GWI: 100539 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 EXPENSE: 0.3 30000 30000 30000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 30000 30000 30000

SETTLED YEARS: 6

	GAS WORKING INTEREST			GAS ROYALTY INTEREST			OIL WORKING INTEREST			OIL ROYALTY INTEREST		
	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR
1	65,853	46,097	42,930	12,195	11,357	0.931						
2	50,707	30,951	24,999	9,390	7,584	0.808						
3	39,044	19,288	13,512	7,230	5,065	0.701						
4	30,064	10,308	6,263	5,567	3,383	0.608						
5	23,149	3,393	1,788	4,287	2,259	0.527						
6	17,825	0	0	3,301	0	0.457						
TOTAL:			89,492		29,648							
EXPENSE:	19756		19756	19756								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 213

ACCOUNT:0520135880 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:SWIGER 1

STATUS:A API#:05880 DATE:01/01/2011 DAYS:365 BBLS: MCFS: 198 RCPTS: 5573 GWI: 4877 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.380 0.210 0.110 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 4

	GAS WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR	OIL WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR
1	4,072	2,851	2,655	581	541	0.931						
2	3,624	2,403	1,941	517	418	0.808						
3	3,226	2,004	1,404	460	322	0.701						
4	2,871	1,649	1,002	410	249	0.608						
5	2,555	1,333	703	365	192	0.527						
6	2,274	1,052	481	325	148	0.457						
7	2,024	802	318	289	114	0.396						
8	1,801	580	199	257	88	0.344						
9	1,603	381	114	229	68	0.298						
10	1,427	205	53	204	53	0.259						
11	1,270	48	11	181	41	0.224						
12	1,130	0	0	161	0	0.195						
TOTAL:			8,879		2,235							
EXPENSE:	1222		1222	1222								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 215

ACCOUNT:0520145962 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:R SWIGER UNIT 1H & 2H ST

STATUS:Z API#:06026 DATE:06/29/2012 DAYS:365 BBLS: MCFS: 692879 RCPTS: 2826975 GWI: 2372512 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 EXPENSE: 0.2 150000 150000 150000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.2 150000 150000 150000

SETTLED YEARS: 3

	GAS WORKING INTEREST GROSS INCOME	GAS WORKING INTEREST NET INCOME	GAS WORKING INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	GAS ROYALTY INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST FACTOR	OIL WORKING INTEREST GROSS INCOME	OIL WORKING INTEREST NET INCOME	OIL WORKING INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	OIL ROYALTY INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST FACTOR
1	1,553,995	1,403,995	1,307,528	297,673	277,220	0.931						
2	1,196,576	1,046,576	845,331	229,208	185,134	0.808						
3	921,364	771,364	540,364	176,490	123,637	0.701						
4	709,450	559,450	339,906	135,898	82,568	0.608						
5	546,277	396,277	208,817	104,641	55,140	0.527						
6	420,633	270,633	123,686	80,574	36,824	0.457						
7	323,887	173,887	68,925	62,042	24,592	0.396						
8	249,393	99,393	34,169	47,772	16,423	0.344						
9	192,033	42,033	12,533	36,785	10,968	0.298						
10	147,865	0	0	28,324	0	0.259						
TOTAL:			3,481,259		812,507							
EXPENSE:	150000		150000	150000								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 217

ACCOUNT:0520146028 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:TROUT UNIT 2H

STATUS:Z API#:06028 DATE:12/13/2012 DAYS:365 BELS: MCFS: 947481 RCPTS: 3816032 GWI: 3221311 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 EXPENSE: 0.2 150000 150000 150000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.2 150000 150000 150000

SETTLED YEARS: 3

	GAS WORKING INTEREST			GAS ROYALTY INTEREST			OIL WORKING INTEREST			OIL ROYALTY INTEREST		
	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR
1	2,109,959	1,959,959	1,825,292	389,542	362,777	0.931						
2	1,624,668	I,474,668	1,191,106	299,948	242,271	0.808						
3	1,250,995	1,100,995	771,280	230,960	16I,794	0.70I						
4	963,266	813,266	494,118	177,839	108,050	0.608						
5	741,715	591,715	31I,803	I36,936	72,158	0.527						
6	571,120	421,120	192,462	105,441	48,189	0.457						
7	439,763	289,763	114,856	81,189	32,I82	0.396						
8	338,617	188,617	64,843	62,516	21,492	0.344						
9	260,735	110,735	33,017	48,I37	14,353	0.298						
10	200,766	50,766	13,I28	37,066	9,585	0.259						
11	154,590	4,590	1,029	28,541	6,401	0.224						
12	I19,034	0	0	2I,976	0	0.195						
TOTAL:			5,0I2,932		1,079,251							
EXPENSE:		150000	150000	150000								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 219

ACCOUNT:0520146044 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:WEBB UNIT 1H ST

STATUS:Z API#:06044 DATE:09/28/2012 DAYS:365 BBLS: MCFS: 628123 RCPTS: 2528151 GWI: 2138353 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 EXPENSE: 0.2 150000 150000 150000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.2 150000 150000 150000

SETTLED YEARS: 3

	GAS WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR	OIL WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR
1	1,400,621	1,250,621	1,164,692	255,318	237,775	0.931						
2	1,078,478	928,478	749,942	196,595	158,792	0.808						
3	830,428	680,428	476,660	151,378	106,045	0.701						
4	639,430	489,430	297,364	116,561	70,819	0.608						
5	492,361	342,361	180,406	89,752	47,295	0.527						
6	379,118	229,118	104,712	69,109	31,584	0.457						
7	291,921	141,921	56,254	53,214	21,093	0.396						
8	224,779	74,779	25,708	40,975	14,086	0.344						
9	173,080	23,080	6,882	31,551	9,407	0.298						
10	133,271	0	0	24,294	0	0.259						
TOTAL:			3,062,621		696,896							
EXPENSE:	150000		150000	150000								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 221

ACCOUNT:0520146046 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:WEBB UNIT 3H

STATDS:Z API#:06046 DATE:10/04/2012 DAYS:365 BBLS: MCFS: 693956 RCPTS: 2752806 GWI: 2328369 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 EXPENSE: 0.2 150000 150000 150000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.2 150000 150000 150000

SETTLED YEARS: 3

	GAS WORKING INTEREST GROSS INCOME	GAS WORKING INTEREST NET INCOME	GAS WORKING INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	GAS ROYALTY INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST FACTOR	OIL WORKING INTEREST GROSS INCOME	OIL WORKING INTEREST NET INCOME	OIL WORKING INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	OIL ROYALTY INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST FACTOR
1	1,525,082	1,375,082	1,280,601	278,006	258,905	0.931						
2	1,174,313	1,024,313	827,349	214,065	172,902	0.808						
3	904,221	754,221	528,354	164,830	115,468	0.701						
4	696,250	546,250	331,886	126,919	77,112	0.608						
5	536,113	386,113	203,461	97,728	51,497	0.527						
6	412,807	262,807	120,109	75,250	34,391	0.457						
7	317,861	167,861	66,536	57,943	22,967	0.396						
8	244,753	94,753	32,574	44,616	15,338	0.344						
9	188,460	38,460	11,467	34,354	10,243	0.298						
10	145,114	0	0	26,453	0	0.259						
TOTAL:			3,402,339		758,825							
EXPENSE:	150000		150000	150000								

OCT 12, 2016
05:09 PM

'DOOORIOGE' COUNTY, WV
YIELO CAP MODEL REPORT FOR - 2016

NR105: 223

ACCOUNT:0520156118 RESOORCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:THOMAS UNIT 2H 40376

STATUS:Z API#:06118 DATE:04/01/2013 DAYS:365 BBLS: MCFS: 1004543 RCPTS: 4047096 GWI: 3460443 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 EXPENSE: 0.2 150000 150000 150000

RATES USED:
CAP RATE: 15.300 OECLINE RATE: WELLLIFE:99 EXPENSE: 0.2 150000 150000 150000

SETTLED YEARS: 2

	GAS WORKING INTEREST			GAS ROYALTY INTEREST			OIL WORKING INTEREST			OIL ROYALTY INTEREST		
	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR	GROSS INCOME	NET INCOME	OISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR
1	2,058,964	1,908,964	1,777,801	349,059	325,075	0.931						
2	1,585,402	1,435,402	1,159,390	268,775	217,093	0.808						
3	1,220,760	1,070,760	750,099	206,957	144,979	0.701						
4	939,985	789,985	479,973	159,357	96,821	0.608						
5	723,788	573,788	302,357	122,705	64,659	0.527						
6	557,317	407,317	186,154	94,483	43,181	0.457						
7	429,134	279,134	110,643	72,752	28,837	0.396						
8	330,433	180,433	62,029	56,019	19,258	0.344						
9	254,434	104,434	31,138	43,134	12,861	0.298						
10	195,914	45,914	11,873	33,214	8,589	0.259						
11	150,854	854	191	25,574	5,736	0.224						
12	116,157	0	0	19,692	0	0.195						
TOTAL:			4,871,647		967,089							
EXPENSE:		150000	150000	150000								

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

OCT 12, 2016
05:09 PM

NR105: 225

ACCOUNT:0520156121 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:KEMPER UNIT 2H 40374

STATUS:Z API#:06121 DATE:04/01/2013 DAYS:365 BBLS: MCFS: 913255 RCPTS: 3678799 GWI: 3122118 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 EXPENSE: 0.2 150000 150000 150000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.2 150000 150000 150000

SETTLED YEARS: 2

	GAS WORKING INTEREST			GAS ROYALTY INTEREST			OIL WORKING INTEREST			OIL ROYALTY INTEREST		
	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR
1	1,857,660	1,707,660	1,590,329	331,225	308,467	0.931						
2	1,430,398	1,280,398	1,034,192	255,043	206,001	0.808						
3	1,101,407	951,407	666,489	196,383	137,572	0.701						
4	848,083	698,083	424,136	151,215	91,874	0.608						
5	653,024	503,024	265,068	116,436	61,356	0.527						
6	502,829	352,829	161,251	89,656	40,975	0.457						
7	387,178	237,178	94,012	69,035	27,364	0.396						
8	298,127	148,127	50,923	53,157	18,274	0.344						
9	229,558	79,558	23,721	40,931	12,204	0.298						
10	176,760	26,760	6,920	31,517	8,150	0.259						
11	136,105	0	0	24,268	0	0.224						
TOTAL:			4,317,040		912,237							
EXPENSE:	150000		150000	150000								

DECLINE RATE	
YR 1	69%
YR 2	59%
YR3+	53%

2014	GAS INCOME	OIL INCOME
WRK INT	$ 7,035,800	
ROY INT	$ 1,268,850	

	GAS CAP INCOME	OIL CAP INCOME
YR1	$ 1,855,282	$ -
	$ 336,518	$ -
YR2	$ 1,580,309	$ -
	$ 249,023	$ -

$ 4,208,550

TY2016 WORKING INTEREST

YEAR	WRK INT INCOME	WORKING COST	NET INC	PROT FCTR(16.6%)	DIS INC
1	$ 1,855,282	$ 150,000	$ 1,715,282	0.931291	$ 1,597,427
2	$ 1,380,309	$ 150,000	$ 1,230,309	0.807711	$ 993,734
3	$ 1,062,838	$ 150,000	$ 912,838	0.700530	$ 639,470
4	$ 818,385	$ 150,000	$ 668,385	0.607572	$ 406,092
5	$ 630,158	$ 150,000	$ 480,158	0.526948	$ 253,017
6	$ 485,220	$ 150,000	$ 335,220	0.457024	$ 153,204
7	$ 373,820	$ 150,000	$ 223,820	0.396378	$ 88,738
8	$ 287,887	$ 150,000	$ 137,887	0.343760	$ 47,394
9	$ 221,619	$ 150,000	$ 71,619	0.298161	$ 21,324
10	$ 170,570	$ 150,000	$ 20,570	0.258596	$ 5,319
11	$ 131,339	$ 150,000	$ -	0.224281	$ -
12	$ 101,131	$ 150,000	$ -	0.194519	$ -
13	$ 77,871	$ 150,000	$ -	0.168707	$ -
14	$ 59,960	$ 150,000	$ -	0.146320	$ -
15	$ 46,170	$ 150,000	$ -	0.126904	$ -
16	$ 35,551	$ 150,000	$ -	0.110064	$ -
17	$ 27,374	$ 150,000	$ -	0.095459	$ -
18	$ 21,078	$ 150,000	$ -	0.082792	$ -
19	$ 16,230	$ 150,000	$ -	0.071806	$ -
20	$ 12,497	$ 150,000	$ -	0.062277	$ -
21	$ 9,623	$ 150,000	$ -	0.054013	$ -
22	$ 7,410	$ 150,000	$ -	0.046846	$ -
23	$ 5,705	$ 150,000	$ -	0.040629	$ -
24	$ 4,393	$ 150,000	$ -	0.035238	$ -
25	$ 3,383	$ 150,000	$ -	0.030562	$ -
26	$ 2,605	$ 150,000	$ -	0.026507	$ -
27	$ 2,006	$ 150,000	$ -	0.022989	$ -
28	$ 1,544	$ 150,000	$ -	0.019939	$ -
29	$ 1,189	$ 150,000	$ -	0.017293	$ -
30	$ 916	$ 150,000	$ -	0.014998	$ -
31	$ 705	$ 150,000	$ -	0.013008	$ -
32	$ 543	$ 150,000	$ -	0.011282	$ -
33	$ 418	$ 150,000	$ -	0.009785	$ -
34	$ 322	$ 150,000	$ -	0.008486	$ -
35	$ 248	$ 150,000	$ -	0.007360	$ -
36	$ 191	$ 150,000	$ -	0.006384	$ -
37	$ 147	$ 150,000	$ -	0.005536	$ -
38	$ 113	$ 150,000	$ -	0.004802	$ -
39	$ 87	$ 150,000	$ -	0.004150	$ -
40	$ 67	$ 150,000	$ -	0.003612	$ -

WORKING INTEREST APPRAISAL

TY2016 ROYALTY INTEREST

YEAR	ROY INT INCOME	PROT FCTR(16.6%)	DIS INC
1	$ 336,518	0.931291	$ 313,396
2	$ 249,023	0.807711	$ 201,139
3	$ 191,748	0.700530	$ 134,325
4	$ 147,846	0.607572	$ 89,806
5	$ 113,887	0.526948	$ 59,907
6	$ 87,539	0.457024	$ 40,008
7	$ 67,405	0.396378	$ 26,718
8	$ 51,902	0.343760	$ 17,843
9	$ 39,966	0.298161	$ 11,916
10	$ 30,773	0.258596	$ 7,958
11	$ 23,695	0.224281	$ -
12	$ 18,245	0.194519	$ -
13	$ 14,049	0.168707	$ -
14	$ 10,818	0.146320	$ -
15	$ 8,330	0.126904	$ -
16	$ 6,414	0.110064	$ -
17	$ 4,939	0.095459	$ -
18	$ 3,803	0.082792	$ -
19	$ 2,928	0.071806	$ -
20	$ 2,255	0.062277	$ -
21	$ 1,736	0.054013	$ -
22	$ 1,337	0.046846	$ -
23	$ 1,029	0.040629	$ -
24	$ 793	0.035238	$ -
25	$ 610	0.030562	$ -
26	$ 470	0.026507	$ -
27	$ 362	0.022989	$ -
28	$ 279	0.019939	$ -
29	$ 215	0.017293	$ -
30	$ 150	0.014998	$ -
31	$ 127	0.013008	$ -
32	$ 98	0.011282	$ -
33	$ 75	0.009785	$ -
34	$ 58	0.008486	$ -
35	$ 45	0.007360	$ -
36	$ 34	0.006384	$ -
37	$ 27	0.005536	$ -
38	$ 20	0.004802	$ -
39	$ 15	0.004166	$ -
40	$ 12	0.003612	$ -

ROYALTY INTEREST APPRAISAL

09-05201661 34

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 229

ACCOUNT:0530003124 RESOURCE:GS OWNEE:ANTERO RESOURCES CORPORATI LOCATION:J CAMP 2

STATUS:A API#:03124 DATE:09/06/1982 DAYS:365 BBLS: MCFS: 224 RCPTS: 1214 GWI: 969 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.380 0.210 0.110 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 33

	GAS WORKING INTEREST			GAS ROYALTY INTEREST			OIL WORKING INTEREST			OIL ROYALTY INTEREST		
	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR
1	809	566	527	205	191	0.931						
2	720	477	386	182	147	0.808						
3	641	398	279	162	114	0.701						
4	570	328	199	144	88	0.608						
5	508	265	140	128	68	0.527						
6	452	209	96	114	52	0.457						
7	402	159	63	102	40	0.396						
8	358	115	40	90	31	0.344						
9	319	76	23	81	24	0.298						
10	283	41	11	72	19	0.259						
11	252	10	2	64	14	0.224						
12	225	0	0	57	0	0.195						
TOTAL:			1,764		787							
EXPENSE:	243		243	243								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 231

ACCOUNT:0580003147 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:B ESTLACK 2

STATUS:A API#:03147 DATE:10/19/1982 DAYS:365 BBLS: MCFS: 1 RCPTS: 67 GWI: 0 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.310 0.170 0.120 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 33

	GAS WORKING INTEREST			GAS ROYALTY INTEREST			OIL WORKING INTEREST			OIL ROYALTY INTEREST		
	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR
TOTAL:												

EXPENSE: 0

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

OCT 12, 2016
05:09 PM

NR105: 233

ACCOUNT:0580003173 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:ESTLACK S #4

STATUS:A API#:03173 DATE:11/06/1982 DAYS:365 BBLS: MCFS: 550 RCPTS: 2260 GWI: 1979 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.340 0.170 0.140 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 33

	GAS WORKING INTEREST			GAS ROYALTY INTEREST			OIL WORKING INTEREST			OIL ROYALTY INTEREST		
	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR
1	1,563	1,094	1,019	222	207	0.931						
2	1,345	876	707	191	154	0.808						
3	1,156	687	481	164	115	0.701						
4	994	525	319	141	86	0.608						
5	855	386	203	121	64	0.527						
6	735	266	122	104	48	0.457						
7	633	163	65	90	36	0.396						
8	544	75	26	77	27	0.344						
9	468	0	0	66	0	0.298						
TOTAL:			2,943		736							
EXPENSE:	469		469	469								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 235

ACCOUNT:0600735001 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:E PEARCY #1

STATUS:A API#:01401 DATE:08/31/1966 DAYS:365 EBLS: MCFS: 17 RCPTS: 1987 GWI: 129 OWI: 1485

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.360 0.160 0.130 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 49

	GAS WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR	OIL WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR
1	104	73	68	24	22	0.931						
2	90	59	48	21	17	0.808						
3	79	47	33	18	13	0.701						
4	68	37	23	16	10	0.608						
5	59	28	15	14	7	0.527						
6	52	21	9	12	6	0.457						
7	45	14	6	10	4	0.396						
8	39	8	3	9	3	0.344						
9	34	3	1	8	2	0.298						
10	30	0	0	7	0	0.259						
TOTAL:			205		84							
EXPENSE:	31		31	31								

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

OCT 12, 2016
05:09 PM

NR105: 237

ACCOUNT:0600735003 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:HURST JR #2

STATUS:A API#:00728 DATE:03/02/1962 DAYS:365 BBLS: MCFS: 230 RCPTS: 742 GWI: 400 OWI: 162

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.340 0.220 0.220 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 53

	GAS WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR	OIL WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR
1	268	188	175	86	80	0.931						
2	209	129	104	67	54	0.808						
3	163	83	58	52	37	0.701						
4	127	47	28	41	25	0.608						
5	99	19	10	32	17	0.527						
6	77	0	0	25	0	0.457						
TOTAL:			375		212							
XPENSE:	80		80	80								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 239

ACCOUNT:0600875002 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:COX "B" BATTEN #1

STATUS:A API#:03169 DATE:11/08/1982 DAYS:365 BBLS: MCFS: 1342 RCPTS: 4877 GWI: 4062 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.390 0.260 0.080 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: I5.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 33

	GAS WORKING INTEREST GROSS INCOME	GAS WORKING INTEREST NET INCOME	GAS WORKING INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	GAS ROYALTY INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST DISCOUNT FACTOR	OIL WORKING INTEREST GROSS INCOME	OIL WORKING INTEREST NET INCOME	OIL WORKING INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	OIL ROYALTY INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST DISCOUNT FACTOR
1	3,575	2,502	2,330	717	668	0.93I						
2	3,289	2,216	1,790	660	533	0.808						
3	3,026	1,953	1,368	607	425	0.701						
4	2,783	1,711	1,040	558	339	0.608						
5	2,561	1,488	784	514	271	0.527						
6	2,356	1,284	587	473	216	0.457						
7	2,167	1,095	434	435	172	0.396						
8	1,994	922	317	400	138	0.344						
9	I,835	762	227	368	110	0.298						
10	1,688	615	I59	339	88	0.259						
11	1,553	480	108	312	70	0.224						
12	1,429	356	69	287	56	0.195						
13	1,314	242	41	264	44	0.169						
14	1,209	137	20	243	35	0.146						
15	1,112	40	5	223	28	0.127						
16	1,023	0	0	205	0	0.110						
TOTAL:			9,279		3,193							
EXPENSE:	1072		1072	1072								

'OOODRIDGE' COONTY, WV
YIELO CAP MODEL REPORT FOR - 2016

OCT 12, 2016
05:09 PM

NR105: 241

ACCOUNT:0600930002 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:HA DOUGLAS 1A

STATUS:A API#:02648 DATE:01/01/1981 DAYS:365 BBLS: MCFS: 114 RCPTS: 6525 GWI: 5353 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.350 0.200 0.100 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 OECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 34

	GAS WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	OISCOUNT INCOME	FACTOR	OIL WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	OISCOUNT INCOME	FACTOR
1	4,550	3,185	2,966	996	928	0.931						
2	4,095	2,730	2,205	897	724	0.808						
3	3,686	2,321	1,626	807	565	0.701						
4	3,317	1,952	1,186	726	441	0.608						
5	2,985	1,620	854	654	344	0.527						
6	2,687	1,322	604	588	269	0.457						
7	2,418	1,053	417	529	210	0.396						
8	2,176	811	279	476	164	0.344						
9	1,959	594	177	429	128	0.298						
10	1,763	398	103	386	100	0.259						
11	1,587	221	50	347	78	0.224						
12	1,428	63	12	313	61	0.195						
13	1,285	0	0	281	0	0.169						
TOTAL:			10,479		4,012							
EXPENSE:	1365		1365	1365								

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

OCT 12, 2016
05:09 PM

NRIOS: 243

ACCOUNT:0600930004 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:NICHOLSON #2

STATUS:A API#:03347 DATE:01/01/1985 DAYS:365 BBLS: MCFS: 1800 RCPTS: 8581 GWI: 5458 OWI: 1585

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.350 0.200 0.100 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 30

	GAS WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR	OIL WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR
1	4,639	3,248	3,024	1,012	943	0.931						
2	4,175	2,784	2,248	911	736	0.808						
3	3,758	2,366	1,657	820	574	0.701						
4	3,382	1,990	1,209	738	448	0.608						
5	3,044	1,652	871	664	350	0.527						
6	2,739	1,348	616	598	273	0.457						
7	2,466	1,074	426	538	213	0.396						
8	2,219	827	284	484	166	0.344						
9	1,997	605	180	436	130	0.298						
10	1,797	406	105	392	101	0.259						
11	1,618	226	51	353	79	0.224						
12	1,456	64	12	318	62	0.195						
13	1,310	0	0	286	0	0.169						
TOTAL:			10,684		4,077							
XPENSE:	1392		1392	1392								

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

OCT 12, 2016
05:09 PM

NR105: 245

ACCOUNT:0600930007 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:WARNER #3

STATUS:A API#:03480 DATE:09/01/1986 DAYS:365 BBLS: MCFS: 180 RCPTS: 4360 GWI: 811 OWI: 2772

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.350 0.200 0.100 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 29

	GAS WORKING INTEREST			GAS ROYALTY INTEREST			OIL WORKING INTEREST			OIL ROYALTY INTEREST		
	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR
1	689	483	449	145	135	0.931						
2	620	414	334	131	106	0.808						
3	558	352	246	118	82	0.701						
4	503	296	180	106	64	0.608						
5	452	245	129	95	50	0.527						
6	407	200	92	86	39	0.457						
7	366	160	63	77	31	0.396						
8	330	123	42	70	24	0.344						
9	297	90	27	63	19	0.298						
10	267	60	16	56	15	0.259						
11	240	34	8	51	11	0.224						
12	216	10	2	46	9	0.195						
13	195	0	0	41	0	0.169						
TOTAL:			1,588		585							
EXPENSE:	207		207	207								

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

OCT 12, 2016
05:09 PM

NR105: 247

ACCOUNT:0610003177 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:R A DAVIS #3

STATUS:A API#:03177 DATE:11/21/1982 DAYS:365 BBLS: MCFS: 1015 RCPTS: 3552 GWI: 2980 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.390 0.260 0.080 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 33

	GAS WORKING INTEREST GROSS INCOME	GAS WORKING INTEREST NET INCOME	GAS WORKING INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	GAS ROYALTY INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST FACTOR	OIL WORKING INTEREST GROSS INCOME	OIL WORKING INTEREST NET INCOME	OIL WORKING INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	OIL ROYALTY INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST FACTOR
1	2,622	1,836	1,710	503	469	0.931						
2	2,413	1,626	1,313	463	374	0.808						
3	2,220	1,433	1,004	426	298	0.701						
4	2,042	1,255	763	392	238	0.608						
5	1,879	1,092	575	361	190	0.527						
6	1,728	942	430	332	152	0.457						
7	1,590	803	318	305	121	0.396						
8	1,463	676	232	281	97	0.344						
9	1,346	559	167	258	77	0.298						
10	1,238	451	117	238	61	0.259						
11	1,139	352	79	219	49	0.224						
12	1,048	261	51	201	39	0.195						
13	964	177	30	185	31	0.169						
14	887	100	15	170	25	0.146						
15	816	29	4	157	20	0.127						
16	751	0	0	144	0	0.110						
TOTAL:			6.808		2,241							
EXPENSE:	787		787	787								

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT POR - 2016

OCT 12, 2016
05:09 PM

NR105: 249

ACCOUNT:0616164485 RESOURCE:OG OWNER:ANTERO RESOURCES CORPORATI LOCATION:F F RANDOLPH 5

STATOS:A API#:04485 DATE:09/01/1998 DAYS:365 BBLS: 116.000 MCFS: 1691 RCPTS: 17235 GWI: 6165 OWI: 7972

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.380 0.210 0.110 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: 0.380 0.210 0.110 WELLLIFE:99 GS EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 17 OL EXPENSE: 0.3 5750 5750 5750

	GAS WORKING INTEREST			GAS ROYALTY INTEREST			OIL WORKING INTEREST			OIL ROYALTY INTEREST		
	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR
1	5,148	3,603	3,356	1,128	1,051	0.931	6,657	4,327	4,030	1,459	1,359	0.931
2	4,582	3,037	2,453	1,004	811	0.808	5,924	3,595	2,903	1,298	1,049	0.808
3	4,078	2,533	1,775	894	626	0.701	5,273	2,943	2,062	1,155	809	0.701
4	3,629	2,085	1,267	795	483	0.608	4,693	2,363	1,436	1,028	625	0.608
5	3,230	1,685	888	708	373	0.527	4,177	1,847	973	915	482	0.527
6	2,875	1,330	608	630	288	0.457	3,717	1,387	634	815	372	0.457
7	2,558	1,014	402	561	222	0.396	3,308	978	388	725	287	0.396
8	2,277	733	252	499	172	0.344	2,944	614	211	645	222	0.344
9	2,026	482	144	444	132	0.298	2,620	291	87	574	171	0.298
10	1,804	259	67	395	102	0.259	2,332	2	1	511	132	0.259
11	1,605	61	14	352	79	0.224	2,076	0	0	455	0	0.224
12	1,429	0	0	313	0	0.195						
TOTAL:			11,225		4,339				12,724		5,509	
GS EXPENSE:	1544		1544	1544								
OL EXPENSE:	2330		2330	2330								

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

OCT 12, 2016
05:09 PM

NR105: 251

ACCOUNT:0620105432 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:NICHOLSON 2

STATUS:A API#:05432 DATE:10/01/2007 DAYS:365 BBLS: MCFS: 3685 RCPTS: 19107 GWI: 16719 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.410 0.140 0.120 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 8

	GAS WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR	OIL WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR
1	13,710	9,597	8,937	1,958	1,824	0.931						
2	12,064	7,952	6,423	1,723	1,392	0.808						
3	10,617	6,504	4,556	1,516	1,062	0.701						
4	9,343	5,230	3,177	1,334	811	0.608						
5	8,222	4,109	2,165	1,174	619	0.527						
6	7,235	3,122	1,427	1,033	472	0.457						
7	6,367	2,254	893	909	360	0.396						
8	5,603	1,490	512	800	275	0.344						
9	4,930	818	244	704	210	0.298						
10	4,339	226	58	620	160	0.259						
11	3,818	0	0	545	0	0.224						
TOTAL:			28,393		7,185							
EXPENSE:	4113		4113	4113								

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

OCT 12, 2016
05:09 PM

NR10S: 253

ACCOUNT:0620145899 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:P MAXWELL HEIRS 1A

STATUS:A API#:05899 DATE:05/10/2010 DAYS:365 BBLS: MCFS: 13062 RCPTS: 155503 GWI: 129169 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.380 0.210 0.110 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 5

	GAS WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR	OIL WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR
1	107,856	102,856	95,789	21,989	20,478	0.931						
2	95,992	90,992	73,495	19,570	15,807	0.808						
3	85,433	80,433	56,346	17,417	12,201	0.701						
4	76,035	71,035	43,159	15,501	9,418	0.608						
5	67,671	62,671	33,025	13,796	7,270	0.527						
6	60,227	55,227	25,240	12,279	5,612	0.457						
7	53,602	48,602	19,265	10,928	4,332	0.396						
8	47,706	42,706	14,682	9,726	3,344	0.344						
9	42,459	37,459	11,169	8,656	2,581	0.298						
10	37,788	32,788	8,479	7,704	1,992	0.259						
11	33,631	28,631	6,421	6,857	1,538	0.224						
12	29,932	24,932	4,850	6,102	1,187	0.195						
13	26,639	21,639	3,651	5,431	916	0.169						
14	23,709	18,709	2,738	4,834	707	0.146						
15	21,101	16,101	2,043	4,302	546	0.127						
16	18,780	13,780	1,517	3,829	421	0.110						
17	16,714	11,714	1,118	3,408	325	0.095						
18	14,876	9,876	818	3,033	251	0.083						
19	13,239	8,239	592	2,699	194	0.072						
20	11,783	6,783	422	2,402	150	0.062						
21	10,487	5,487	296	2,138	115	0.054						
22	9,333	4,333	203	1,903	89	0.047						
23	8,307	3,307	134	1,693	69	0.041						
24	7,393	2,393	84	1,507	53	0.035						
25	6,580	1,580	48	1,341	41	0.031						
26	5,856	856	23	1,194	32	0.027						
27	5,212	212	5	1,063	24	0.023						
28	4,638	0	0	946	0	0.020						
TOTAL:			405,611		89,694							
XPENSE:	5000		5000	5000								

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

)CT 12, 2016
)5:09 PM

NR105: 255

\CCOUNT:0620146099 RESOURCE:OG OWNER:ANTERO RESOURCES CORPORATI LOCATION:HEIRS UNIT 1H

;TATUS:Z API#:06099 DATE:01/16/2013 DAYS:365 BBLS: 84.000 MCFS: 577086 RCPTS: 3499753 GWI: 2910634 OWI: 5780

;YSTEM RATES:
:AP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 EXPENSE: 0.2 150000 150000 150000

RATES USED:
:AP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 GS EXPENSE: 0.2 150000 150000 150000

;ETTLED YEARS: 2 OL EXPENSE: 0.2 5750 5750 5750

	GAS WORKING INTEREST			GAS ROYALTY INTEREST			OIL WORKING INTEREST			OIL ROYALTY INTEREST		
	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR
1	1,731,827	1,582,125	1,473,418	346,399	322,598	0.931	3,439	3,428	3,192	688	641	0.931
2	1,333,507	1,183,804	956,172	266,727	215,438	0.808	2,648	2,637	2,130	530	428	0.808
3	1,026,800	877,098	614,433	205,360	143,875	0.701	2,039	2,028	1,420	408	286	0.701
4	790,636	640,934	389,413	158,143	96,083	0.608	1,570	1,559	947	314	191	0.608
5	608,790	459,087	241,915	121,770	64,166	0.527	1,209	1,198	631	242	127	0.527
6	468,768	319,066	145,821	93,763	42,852	0.457	931	919	420	186	85	0.457
7	360,952	211,249	83,734	72,197	28,617	0.396	717	705	280	143	57	0.396
8	277,933	128,230	44,083	55,592	19,111	0.344	552	541	186	110	38	0.344
9	214,008	64,305	19,173	42,806	12,763	0.298	425	414	123	85	25	0.298
10	164,786	15,084	3,901	32,960	8,523	0.259	327	316	82	65	17	0.259
11	126,885	0	0	25,380	0	0.224	252	241	54	50	11	0.224
12							194	183	36	39	8	0.195
13							149	138	23	30	5	0.169
14							115	104	15	23	3	0.146
15							89	77	10	18	2	0.127
16							68	57	6	14	2	0.110
17							53	41	4	11	1	0.095
18							40	29	2	8	1	0.083
19							31	20	1	6	0	0.072
20							24	13	1	5	0	0.062
21							18	7	0	4	0	0.054
22							14	3	0	3	0	0.047
23							11	0	0	2	0	0.041
TOTAL:			3,972,063		954,028				9,564		1,928	
S EXPENSE:	149703		149703	149703								
L EXPENSE:	11		11	11								

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

)CT 12, 2016
)5:09 PM

NR105: 257

\CCOUNT:0620156081 RESOORCE:OG OWNER:ANTERO RESOORCES CORPORATI LOCATION:TOMS FORK UNIT 1H 40318

3TATUS:Z API#:06081 DATE:02/01/2013 DAYS:365 BBLS: 1187.000 MCFS: 739051 ECPTS: 4797743 GWI: 3990492 OWI: 88451

3YSTEM RATES:
:AP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 EXPENSE: 0.2 150000 150000 150000

RATES USED:
:AP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 GS EXPENSE: 0.2 150000 150000 150000

3ETTLED YEARS: 2 OL EXPENSE: 0.2 5750 5750 5750

	GAS WORKING INTEREST GROSS INCOME	GAS WORKING INTEREST NET INCOME	GAS WORKING INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	GAS ROYALTY INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST FACTOR	OIL WORKING INTEREST GROSS INCOME	OIL WORKING INTEREST NET INCOME	OIL WORKING INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	OIL ROYALTY INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST FACTOR
1	2,374,343	2,227,595	2,074,540	418,412	389,663	0.931	52,628	52,504	48,896	9,274	8,637	0.931
2	1,828,244	1,681,497	1,358,163	322,177	260,226	0.808	40,524	40,399	32,631	7,141	5,768	0.808
3	1,407,748	1,261,001	883,369	248,076	173,785	0.701	31,203	31,079	21,772	5,499	3,852	0.701
4	1,083,966	937,219	569,428	191,019	116,058	0.608	24,027	23,902	14,522	4,234	2,572	0.608
5	834,654	687,906	362,491	147,084	77,506	0.527	18,500	18,376	9,683	3,260	1,718	0.527
6	642,683	495,936	226,655	113,255	51,760	0.457	14,245	14,121	6,453	2,510	1,147	0.457
7	494,866	348,119	137,987	87,206	34,567	0.396	10,969	10,844	4,298	1,933	766	0.396
8	381,047	234,300	80,548	67,149	23,084	0.344	8,446	8,321	2,861	1,488	512	0.344
9	293,406	146,659	43,728	51,705	15,416	0.298	6,503	6,379	1,902	1,146	342	0.298
10	225,923	79,175	20,474	39,813	10,295	0.259	5,008	4,883	1,263	882	228	0.259
11	173,961	27,213	6,103	30,656	6,875	0.224	3,856	3,731	837	679	152	0.224
12	133,950	0	0	23,605	0	0.195	2,969	2,844	553	523	102	0.195
13							2,286	2,161	365	403	68	0.169
14							1,760	1,636	239	310	45	0.146
15							1,355	1,231	156	239	30	0.127
16							1,044	919	101	184	20	0.110
17							804	679	65	142	14	0.095
18							619	494	41	109	9	0.083
19							476	352	25	84	6	0.072
20							367	242	15	65	4	0.062
21							283	158	9	50	3	0.054
22							218	93	4	38	2	0.047
23							168	43	2	30	1	0.041
24							129	4	0	23	1	0.035
25							99	0	0	18	0	0.031
TOTAL:			5,763,485		1,159,236				146,693		26,000	

;S EXPENSE: 146747 146747 146747

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OCT 12, 2016
05:09 PM

'DOODRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 259

ACCOUNT:0620156094 RESOURCE:OG OWNER:ANTERO RESOURCES CORPORATI LOCATION:RUCKMAN UNIT 1H 40348

STATUS:Z API#:06094 DATE:04/01/2013 DAYS:365 BBLS: 1309.000 MCFS: 743022 RCPTS: 5160902 GWI: 4270943 OWI: 94520

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 EXPENSE: 0.2 150000 150000 150000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 GS EXPENSE: 0.2 150000 150000 150000

SETTLED YEARS: 2 OL EXPENSE: 0.2 5750 5750 5750

	GAS WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR	OIL WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR
1	2,541,211	2,394,459	2,229,938	463,039	431,224	0.931	56,239	56,115	52,259	10,248	9,544	0.931
2	1,956,733	1,809,980	1,461,941	356,540	287,981	0.808	43,304	43,180	34,877	7,891	6,373	0.808
3	1,506,684	1,359,932	952,673	274,536	192,320	0.701	33,344	33,220	23,271	6,076	4,256	0.701
4	1,160,147	1,013,394	615,710	211,392	128,436	0.608	25,675	25,551	15,524	4,678	2,842	0.608
5	893,313	746,561	393,399	162,772	85,772	0.527	19,770	19,645	10,352	3,602	1,898	0.527
6	687,851	541,099	247,295	125,335	57,281	0.457	15,223	15,098	6,900	2,774	1,268	0.457
7	529,645	382,893	151,770	96,508	38,253	0.396	11,722	11,597	4,597	2,136	847	0.396
8	407,827	261,075	89,752	74,311	25,547	0.344	9,026	8,901	3,060	1,645	565	0.344
9	314,027	167,274	49,875	57,219	17,061	0.298	6,950	6,825	2,035	1,266	378	0.298
10	241,801	95,048	24,579	44,059	11,393	0.259	5,351	5,227	1,352	975	252	0.259
11	186,186	39,434	8,844	33,925	7,609	0.224	4,120	3,996	896	751	168	0.224
12	143,364	0	0	26,123	0	0.195	3,173	3,048	593	578	112	0.195
13							2,443	2,319	391	445	75	0.169
14							1,881	1,757	257	343	50	0.146
15							1,448	1,324	168	264	33	0.127
16							1,115	991	109	203	22	0.110
17							859	734	70	156	15	0.095
18							661	537	44	120	10	0.083
19							509	385	28	93	7	0.072
20							392	268	17	71	4	0.062
21							302	177	10	55	3	0.054
22							232	108	5	42	2	0.047
23							179	54	2	33	1	0.041
24							138	13	0	25	1	0.035
25							106	0	0	19	0	0.031
TOTAL:			6,225,777		1,282,877				156,818		28,729	
S EXPENSE:	146752		146752	146752								
L EXPENSE:	124		124	124								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 261

ACCOUNT:0620156097 RESOURCE:OG OWNER:ANTERO RESOURCES CORPORATI LOCATION:YOKE UNIT 1H

STATUS:Z API#:06097 DATE:03/01/2013 DAYS:365 BBLS: 108.000 MCFS: 718988 RCPTS: 4376867 GWI: 3635279 OWI: 7423

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 EXPENSE: 0.2 150000 150000 150000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 GS EXPENSE: 0.2 150000 150000 150000

SETTLED YEARS: 2 OL EXPENSE: 0.2 5750 5750 5750

	GAS WORKING INTEREST			GAS ROYALTY INTEREST			OIL WORKING INTEREST			OIL ROYALTY INTEREST		
	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR
1	2,162,991	2,013,297	1,874,965	435,938	405,985	0.931	4,417	4,405	4,102	890	829	0.931
2	1,665,503	1,515,809	1,224,335	335,672	271,126	0.808	3,401	3,389	2,737	685	554	0.808
3	1,282,437	1,132,743	793,520	258,468	181,064	0.701	2,619	2,607	1,826	528	370	0.701
4	987,477	837,782	509,013	199,020	120,919	0.608	2,016	2,005	1,218	406	247	0.608
5	760,357	610,663	321,788	153,245	80,752	0.527	1,553	1,541	812	313	165	0.527
6	585,475	435,781	199,162	117,999	53,928	0.457	1,196	1,184	541	241	110	0.457
7	450,816	301,121	119,358	90,859	36,015	0.396	921	909	360	186	74	0.396
8	347,128	197,434	67,874	69,962	24,051	0.344	709	697	240	143	49	0.344
9	267,289	117,594	35,062	53,870	16,062	0.298	546	534	159	110	33	0.298
10	205,812	56,118	14,512	41,480	10,727	0.259	420	409	106	85	22	0.259
11	158,475	8,781	1,969	31,940	7,163	0.224	324	312	70	65	15	0.224
12	122,026	0	0	24,594	0	0.195	249	237	46	50	10	0.195
13							192	180	30	39	7	0.169
14							148	136	20	30	4	0.146
15							114	102	13	23	3	0.127
16							88	76	8	18	2	0.110
17							67	56	5	14	1	0.095
18							52	40	3	10	1	0.083
19							40	28	2	8	1	0.072
20							31	19	1	6	0	0.062
21							24	12	1	5	0	0.054
22							18	7	0	4	0	0.047
23							14	2	0	3	0	0.041
24							11	0	0	2	0	0.035
TOTAL:			5,161,559		1,207,794				12,302		2,495	
S EXPENSE:	149694		149694	149694								
L EXPENSE:	12		12	12								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 263

ACCOUNT:0620156100 RESOURCE:OG OWNER:ANTERO RESOURCES CORPORATI LOCATION:CRISLIP UNIT 1H 40350

STATUS:Z API#:06100 DATE:04/01/2013 DAYS:365 BBLS: 154.000 MCFS: 1010611 RCPTS: 6007248 GWI: 4961744 OWI: 10526

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 EXPENSE: 0.2 150000 150000 150000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 GS EXPENSE: 0.2 150000 150000 150000

SETTLED YEARS: 2 OL EXPENSE: 0.2 5750 5750 5750

	GAS WORKING INTEREST GROSS INCOME	GAS WORKING INTEREST NET INCOME	GAS WORKING INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	GAS ROYALTY INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST FACTOR	OIL WORKING INTEREST GROSS INCOME	OIL WORKING INTEREST NET INCOME	OIL WORKING INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	OIL ROYALTY INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST FACTOR
1	2,952,238	2,802,555	2,609,994	614,508	572,286	0.931	6,263	6,251	5,821	1,304	1,214	0.931
2	2,273,223	2,123,541	1,715,207	473,171	382,186	0.808	4,822	4,810	3,885	1,004	811	0.808
3	1,750,382	1,600,699	1,121,338	364,342	255,232	0.701	3,713	3,701	2,593	773	541	0.701
4	1,347,794	1,198,111	727,939	280,543	170,450	0.608	2,859	2,847	1,730	595	362	0.608
5	1,037,801	888,119	467,992	216,018	113,830	0.527	2,202	2,189	1,154	458	241	0.527
6	799,107	649,425	296,803	166,334	76,019	0.457	1,695	1,683	769	353	161	0.457
7	615,312	465,630	184,565	128,077	50,767	0.396	1,305	1,293	513	272	108	0.396
8	473,791	324,108	111,422	98,620	33,903	0.344	1,005	993	341	209	72	0.344
9	364,819	215,136	64,145	75,937	22,641	0.298	774	762	227	161	48	0.298
10	280,910	131,228	33,935	58,472	15,120	0.259	596	584	151	124	32	0.259
11	216,301	66,619	14,941	45,023	10,098	0.224	459	447	100	96	21	0.224
12	166,552	16,869	3,281	34,668	6,744	0.195	353	341	66	74	14	0.195
13	128,245	0	0	26,694	0	0.169	272	260	44	57	10	0.169
14							209	197	29	44	6	0.146
15							161	149	19	34	4	0.127
16							124	112	12	26	3	0.110
17							96	83	8	20	2	0.095
18							74	61	5	15	1	0.083
19							57	45	3	12	1	0.072
20							44	31	2	9	1	0.062
21							34	21	1	7	0	0.054
22							26	14	1	5	0	0.047
23							20	8	0	4	0	0.041
24							15	3	0	3	0	0.035
25							12	0	0	2	0	0.031
TOTAL:			7,351,564		1,709,277				17,475		3,655	
GS EXPENSE:	149682		149682	149682								
OL EXPENSE:	12		12	12								

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

OCT 12, 2016
05:09 PM

NR105: 265

ACCOUNT:0620156103 RESOURCE:OG OWNER:ANTERO RESOURCES COEPORATI LOCATION:RUCKMAN UNIT 3H 40347

STATUS:Z API#:06103 DATE:04/01/2013 DAYS:365 BBLS: 1139.000 MCFS: 534034 RCPTS: 3445482 GWI: 2841366 OWI: 73072

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 EXPENSE: 0.2 150000 150000 150000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 GS EXPENSE: 0.2 150000 150000 150000

SETTLED YEARS: 2 OL EXPENSE: 0.2 5750 5750 5750

	GAS WORKING INTEREST GROSS INCOME	GAS WORKING INTEREST NET INCOME	GAS WORKING INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	GAS ROYALTY INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST FACTOR	OIL WORKING INTEREST GROSS INCOME	OIL WORKING INTEREST NET INCOME	OIL WORKING INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST GEOSS INCOME	OIL ROYALTY INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST FACTOR
1	1,690,613	1,544,374	1,438,261	308,049	286,884	0.931	43,478	43,334	40,356	7,922	7,378	0.931
2	1,301,772	1,155,533	933,336	237,198	191,587	0.808	33,478	33,334	26,924	6,100	4,927	0.808
3	1,002,364	856,125	599,741	182,642	127,947	0.701	25,778	25,634	17,957	4,697	3,290	0.701
4	771,821	625,581	380,086	140,635	85,446	0.608	19,849	19,705	11,972	3,617	2,197	0.608
5	594,302	448,063	236,106	108,289	57,063	0.527	15,284	15,140	7,978	2,785	1,467	0.527
6	457,612	311,373	142,305	83,382	38,108	0.457	11,769	11,624	5,313	2,144	980	0.457
7	352,362	206,122	81,702	64,204	25,449	0.396	9,062	8,918	3,535	1,651	654	0.396
8	271,318	125,079	43,000	49,437	16,996	0.344	6,978	6,833	2,349	1,271	437	0.344
9	208,915	62,676	18,688	38,067	11,350	0.298	5,373	5,229	1,559	979	292	0.298
10	160,865	14,626	3,782	29,311	7,580	0.259	4,137	3,993	1,033	754	195	0.259
11	123,866	0	0	22,570	0	0.224	3,185	3,041	682	580	130	0.224
12							2,453	2,309	449	447	87	0.195
13							1,889	1,745	294	344	58	0.169
14							1,454	1,310	192	265	39	0.146
15							1,120	976	124	204	26	0.127
16							862	718	79	157	17	0.110
17							664	520	50	121	12	0.095
18							511	367	30	93	8	0.083
19							394	249	18	72	5	0.072
20							303	159	10	55	3	0.062
21							233	89	5	43	2	0.054
22							180	36	2	33	2	0.047
23							138	0	0	25	0	0.041
TOTAL:			3,877,007		848,408				120,910		22,207	
GS EXPENSE:	146239		146239	146239								
OL EXPENSE:	144		144	144								

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

OCT 12, 2016
05:09 PM

NR105: 267

ACCOUNT:0620156126 RESOURCE:OG OWNER:ANTERO RESOURCES CORPORATI LOCATION:BEWIN UNIT 2HA 40329

STATUS:Z API#:06126 DATE:03/01/2013 DAYS:365 BBLS: 1123.000 MCFS: 786694 RCPTS: 5083963 GWI: 4236713 OWI: 79904

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 EXPENSE: 0.2 150000 150000 150000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 GS EXPENSE: 0.2 150000 150000 150000

SETTLED YEARS: 2 OL EXPENSE: 0.2 5750 5750 5750

	GAS WORKING INTEREST			GAS ROYALTY INTEREST			OIL WORKING INTEREST			OIL ROYALTY INTEREST		
	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR
1	2,520,844	2,373,621	2,210,532	448,119	417,330	0.931	47,543	47,436	44,177	8,451	7,871	0.931
2	1,941,050	1,793,827	1,448,894	345,052	278,702	0.808	36,608	36,502	29,483	6,508	5,256	0.808
3	1,494,609	1,347,385	943,884	265,690	186,124	0.701	28,188	28,082	19,672	5,011	3,510	0.701
4	1,150,849	1,003,625	609,775	204,581	124,298	0.608	21,705	21,598	13,123	3,858	2,344	0.608
5	886,153	738,930	389,378	157,528	83,009	0.527	16,713	16,606	8,751	2,971	1,566	0.527
6	682,338	535,115	244,560	121,296	55,435	0.457	12,869	12,762	5,833	2,288	1,045	0.457
7	525,400	378,177	149,901	93,398	37,021	0.396	9,909	9,803	3,886	1,761	698	0.396
8	404,558	257,335	88,467	71,917	24,723	0.344	7,630	7,523	2,586	1,356	466	0.344
9	311,510	164,286	48,984	55,376	16,511	0.298	5,875	5,769	1,720	1,044	311	0.298
10	239,863	92,639	23,956	42,639	11,026	0.259	4,524	4,417	1,142	804	208	0.259
11	184,694	37,471	8,404	32,832	7,364	0.224	3,483	3,377	757	619	139	0.224
12	142,215	0	0	25,281	0	0.195	2,682	2,576	501	477	93	0.195
13							2,065	1,959	330	367	62	0.169
14							1,590	1,484	217	283	41	0.146
15							1,224	1,118	142	218	28	0.127
16							943	836	92	168	18	0.110
17							726	620	59	129	12	0.095
18							559	453	37	99	8	0.083
19							430	324	23	77	5	0.072
20							331	225	14	59	4	0.062
21							255	149	8	45	2	0.054
22							197	90	4	35	2	0.047
23							151	45	2	27	1	0.041
24							117	10	0	21	1	0.035
25							90	0	0	16	0	0.031
TOTAL:			6,166,733		1,241,543				132,560		23,693	
S EXPENSE:	147223		147223	147223								
L EXPENSE:	106		106	106								

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

OCT 12, 2016
05:09 PM

NR105: 269

ACCOUNT:0620156156 RESOURCE:OG OWNER:ANTERO RESOURCES CORPORATI LOCATION:JOHNSON UNIT 1H 40422

STATUS:Z API#:06156 DATE:08/01/2013 DAYS:365 EELS: 188.000 MCFS: 767103 RCPTS: 4312526 GWI: 3617613 OWI: 10556

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 EXPENSE: 0.2 150000 150000 150000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 GS EXPENSE: 0.2 150000 150000 150000

SETTLED YEARS: 2 OL EXPENSE: 0.2 5750 5750 5750

	GAS WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR	OIL WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR
1	2,152,480	2,002,916	1,865,298	406,008	378,111	0.931	6,281	6,264	5,834	1,185	1,103	0.931
2	1,657,409	1,507,846	1,217,904	312,626	252,511	0.808	4,836	4,820	3,893	912	737	0.808
3	1,276,205	1,126,642	789,246	240,722	168,633	0.701	3,724	3,707	2,597	702	492	0.701
4	982,678	833,114	506,177	185,356	112,617	0.608	2,867	2,851	1,732	541	329	0.608
5	756,662	607,099	319,909	142,724	75,208	0.527	2,208	2,191	1,155	416	219	0.527
6	582,630	433,066	197,922	109,898	50,226	0.457	1,700	1,683	769	321	147	0.457
7	448,625	299,061	118,541	84,621	33,542	0.396	1,309	1,292	512	247	98	0.396
8	345,441	195,878	67,339	65,158	22,400	0.344	1,008	991	341	190	65	0.344
9	265,990	116,426	34,714	50,172	14,959	0.298	776	759	226	146	44	0.298
10	204,812	55,249	14,287	38,632	9,990	0.259	598	581	150	113	29	0.259
11	157,705	8,142	1,826	29,747	6,672	0.224	460	443	99	87	19	0.224
12	121,433	0	0	22,905	0	0.195	354	338	66	67	13	0.195
13							273	256	43	51	9	0.169
14							210	193	28	40	6	0.146
15							162	145	18	31	4	0.127
16							125	108	12	23	3	0.110
17							96	79	8	18	2	0.095
18							74	57	5	14	1	0.083
19							57	40	3	11	1	0.072
20							44	27	2	8	1	0.062
21							34	17	1	6	0	0.054
22							26	9	0	5	0	0.047
23							20	3	0	4	0	0.041
24							15	0	0	3	0	0.035
TOTAL:			5,133,163		1,124,870				17,494		3,321	
S EXPENSE:	149564		149564	149564								
L EXPENSE:	17		17	17								

OCT 12, 2016
05:09 PM

'OODOR1OGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 271

ACCOUNT:0620156173 RESOORCE:OG OWNER:ANTERO RESOURCES CORPORATI LOCAT1ON:R1GHT HANO UNIT 1H 40964

STATOS:Z API#:06173 DATE:08/01/2013 OAYS:365 BBLS: 238.000 MCFS: 1646740 RCPTS: 10029182 GWI: 8012724 OWI: 13418

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLLIFE:99 EXPENSE: 0.2 150000 150000 150000

RATES USEO:
CAP RATE: 15.300 DECLINE RATE: 0.590 0.290 0.230 WELLL1FE:99 GS EXPENSE: 0.2 150000 150000 150000

SETTLED YEARS: 2 OL EXPENSE: 0.2 5750 5750 5750

	GAS WORK1NG 1NTEREST			GAS ROYALTY INTEREST			OIL WORK1NG 1NTEREST			O1L ROYALTY 1NTEREST		
	GROSS 1NCOME	NET INCOME	DISCOUNT INCOME	GROSS 1NCOME	OISCOUNT INCOME	FACTOR	GROSS INCOME	NET 1NCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR
1	4,767,571	4,617,822	4,300,536	1,189,816	1,108,065	0.931	7,984	7,974	7,426	1,993	1,856	0.931
2	3,671,030	3,521,280	2,844,177	916,158	739,991	0.808	6,147	6,138	4,958	1,534	1,239	0.808
3	2,826,693	2,676,943	1,875,279	705,442	494,183	0.701	4,734	4,724	3,309	1,181	828	0.701
4	2,176,553	2,026,804	1,231,429	543,190	330,027	0.608	3,645	3,635	2,209	910	553	0.608
5	1,675,946	1,526,197	804,226	418,257	220,399	0.527	2,807	2,797	1,474	700	369	0.527
6	1,290,479	1,140,729	521,341	322,058	147,188	0.457	2,161	2,151	983	539	247	0.457
7	993,668	843,919	334,511	247,984	98,296	0.396	1,664	1,654	656	415	165	0.396
8	765,125	615,375	211,554	190,948	65,644	0.344	1,281	1,272	437	320	110	0.344
9	589,146	439,397	131,011	147,030	43,839	0.298	987	977	291	246	73	0.298
10	453,642	303,893	78,586	113,213	29,276	0.259	760	750	194	190	49	0.259
11	349,305	199,555	44,756	87,174	19,551	0.224	585	575	129	146	33	0.224
12	268,965	119,215	23,190	67,124	13,057	0.195	450	441	86	112	22	0.195
13	207,103	57,354	9,676	51,685	8,720	0.169	347	337	57	87	15	0.169
14	159,469	9,720	1,422	39,798	5,823	0.146	267	257	38	67	10	0.146
15	122,791	0	0	30,644	0	0.127	206	196	25	51	7	0.127
16							158	149	16	40	4	0.110
17							122	112	11	30	3	0.095
18							94	84	7	23	2	0.083
19							72	63	5	18	1	0.072
20							56	46	3	14	1	0.062
21							43	33	2	11	1	0.054
22							33	23	1	8	0	0.047
23							25	16	1	6	0	0.041
24							20	10	0	5	0	0.035
25							15	5	0	4	0	0.031
26							12	2	0	3	0	0.027
27							9	0	0	2	0	0.023
TOTAL:			12,411,694		3,324,060				22,317		5,586	
S EXPENSE:	149749		149749	149749								
L EXPENSE:	10		10	10								

			2014	GAS INCOME	OIL INCOME
			WRK INT	$ 6,831,215	$ 14,004
YR 1	80%		ROY INT	$ 2,129,093	$ 3,486
YR 2	29%				
YR3+	23%				

	GAS CAP INCOME	OIL CAP INCOME
YR1	$ 1,280,772	$ 3,711
	$ 564,208	$ 926
YR2	$ 1,672,671	$ 2,748
	$ 417,918	$ 682

$ 5,280,092

TY2015 WORKING INTEREST

YEAR	WRK INT INCOME	WORKING COST	NET INC	PRCT FCTR(16.6%)	DIS INC
1	$ 2,264,463	$ 149,764	$ 2,114,719	0.931291	$ 1,969,419
2	$ 1,678,717	$ 149,764	$ 1,528,954	0.807711	$ 1,233,530
3	$ 1,290,302	$ 149,764	$ 1,140,538	0.700530	$ 798,982
4	$ 993,533	$ 149,764	$ 843,769	0.607572	$ 512,651
5	$ 765,020	$ 149,764	$ 615,257	0.526948	$ 324,206
6	$ 589,066	$ 149,764	$ 439,302	0.457024	$ 200,772
7	$ 453,581	$ 149,764	$ 303,817	0.396378	$ 120,426
8	$ 349,257	$ 149,764	$ 199,493	0.343780	$ 68,582
9	$ 268,928	$ 149,764	$ 119,164	0.298161	$ 35,530
10	$ 207,074	$ 149,764	$ 57,311	0.258598	$ 14,820
11	$ 159,447	$ 149,764	$ 9,684	0.224281	$ 2,172
12	$ 122,774	$ 149,764	$ -	0.194519	$ -
13	$ 94,536	$ 149,764	$ -	0.168707	$ -
14	$ 72,793	$ 149,764	$ -	0.146320	$ -
15	$ 56,051	$ 149,764	$ -	0.126904	$ -
16	$ 43,156	$ 149,764	$ -	0.110064	$ -
17	$ 33,232	$ 149,764	$ -	0.095459	$ -
18	$ 25,589	$ 149,764	$ -	0.082792	$ -
19	$ 19,703	$ 149,764	$ -	0.071808	$ -
20	$ 15,172	$ 149,764	$ -	0.062277	$ -
21	$ 11,682	$ 149,764	$ -	0.054013	$ -
22	$ 8,995	$ 149,764	$ -	0.046846	$ -
23	$ 6,926	$ 149,764	$ -	0.040629	$ -
24	$ 5,333	$ 149,764	$ -	0.035236	$ -
25	$ 4,107	$ 149,764	$ -	0.030562	$ -
26	$ 3,162	$ 149,764	$ -	0.026507	$ -
27	$ 2,435	$ 149,764	$ -	0.022989	$ -
28	$ 1,875	$ 149,764	$ -	0.019939	$ -
29	$ 1,444	$ 149,764	$ -	0.017293	$ -
30	$ 1,112	$ 149,764	$ -	0.014998	$ -
31	$ 856	$ 149,764	$ -	0.013008	$ -
32	$ 659	$ 149,764	$ -	0.011282	$ -
33	$ 507	$ 149,764	$ -	0.009785	$ -
34	$ 391	$ 149,764	$ -	0.008486	$ -
35	$ 301	$ 149,764	$ -	0.007360	$ -
36	$ 232	$ 149,764	$ -	0.006384	$ -
37	$ 178	$ 149,764	$ -	0.005536	$ -
38	$ 137	$ 149,764	$ -	0.004802	$ -
39	$ 106	$ 149,764	$ -	0.004166	$ -
40	$ 81	$ 149,764	$ -	0.003612	$ -

WORKING INTEREST APPRAISAL

TY2015 ROYALTY INTEREST

YEAR	ROY INT INCOME	PRCT FCTR(16.6%)	DIS INC
1	$ 585,136	0.931291	$ 526,309
2	$ 416,200	0.807711	$ 337,756
3	$ 322,014	0.700530	$ 225,561
4	$ 247,961	0.607572	$ 150,648
5	$ 190,922	0.526948	$ 100,606
6	$ 147,010	0.457024	$ 67,167
7	$ 113,198	0.396378	$ 44,869
8	$ 87,162	0.343780	$ 29,965
9	$ 67,118	0.298161	$ 20,011
10	$ 51,679	0.258598	$ 13,364
11	$ 39,792	0.224281	$ 8,926
12	$ 30,640	0.194519	$ -
13	$ 23,593	0.168707	$ -
14	$ 18,167	0.146320	$ -
15	$ 13,988	0.126904	$ -
16	$ 10,771	0.110064	$ -
17	$ 8,294	0.095459	$ -
18	$ 6,386	0.082792	$ -
19	$ 4,917	0.071808	$ -
20	$ 3,786	0.062277	$ -
21	$ 2,918	0.054013	$ -
22	$ 2,246	0.046846	$ -
23	$ 1,729	0.040629	$ -
24	$ 1,331	0.035236	$ -
25	$ 1,025	0.030562	$ -
26	$ 789	0.026507	$ -
27	$ 608	0.022989	$ -
28	$ 468	0.019939	$ -
29	$ 360	0.017293	$ -
30	$ 277	0.014998	$ -
31	$ 214	0.013008	$ -
32	$ 164	0.011282	$ -
33	$ 127	0.009785	$ -
34	$ 98	0.008486	$ -
35	$ 75	0.007360	$ -
36	$ 58	0.006384	$ -
37	$ 45	0.005536	$ -
38	$ 34	0.004802	$ -
39	$ 26	0.004166	$ -
40	$ 20	0.003612	$ -

ROYALTY INTEREST APPRAISAL

09-06201666174

[redacted]

[redacted]		2014	GAS INCOME	OIL INCOME
YR 1	59%	WRK INT	$ [illegible]	$ 10,901
YR 2	29%	ROY INT	$ 1,128,639	$ 2,044
YR3+	23%			

	GAS CAP INCOME	OIL CAP INCOME
YR1	$ 1,[illegible]	$ 2,[illegible]
	$ 298,374	$ 644
YR2	$ 1,171,878	$ 2,136
	$ 220,797	$ 403

$ 1,460,180

TY2015 WORKING INTEREST

YEAR	WRK INT INCOME	WORKING COST	NET INC	PROT FCTR(15.0%)	DIS INC
1	$ 1,586,507	$ 149,737	$ 1,436,779	0.931291	$ 1,338,061
2	$ 1,174,016	$ 149,737	$ 1,024,278	0.807711	$ 827,320
3	$ 903,992	$ 149,737	$ 754,254	0.700530	$ 528,378
4	$ 696,074	$ 149,737	$ 546,336	0.607672	$ 331,939
5	$ 535,977	$ 149,737	$ 386,239	0.526948	$ 203,528
6	$ 412,702	$ 149,737	$ 262,965	0.457024	$ 120,161
7	$ 317,761	$ 149,737	$ 168,043	0.396379	$ 66,609
8	$ 244,691	$ 149,737	$ 94,964	0.343780	$ 32,643
9	$ 188,412	$ 149,737	$ 38,676	0.298161	$ 11,531
10	$ 145,077	$ 149,737	$ -	0.258596	$ -
11	$ 111,710	$ 149,737	$ -	0.224281	$ -
12	$ 86,016	$ 149,737	$ -	0.194519	$ -
13	$ 66,233	$ 149,737	$ -	0.168707	$ -
14	$ 50,999	$ 149,737	$ -	0.146320	$ -
15	$ 39,269	$ 149,737	$ -	0.126904	$ -
16	$ 30,237	$ 149,737	$ -	0.110064	$ -
17	$ 23,283	$ 149,737	$ -	0.095459	$ -
18	$ 17,926	$ 149,737	$ -	0.082792	$ -
19	$ 13,804	$ 149,737	$ -	0.071808	$ -
20	$ 10,629	$ 149,737	$ -	0.062277	$ -
21	$ 8,185	$ 149,737	$ -	0.054013	$ -
22	$ 6,302	$ 149,737	$ -	0.046846	$ -
23	$ 4,853	$ 149,737	$ -	0.040629	$ -
24	$ 3,737	$ 149,737	$ -	0.035238	$ -
25	$ 2,877	$ 149,737	$ -	0.030562	$ -
26	$ 2,216	$ 149,737	$ -	0.026507	$ -
27	$ 1,706	$ 149,737	$ -	0.022989	$ -
28	$ 1,314	$ 149,737	$ -	0.019939	$ -
29	$ 1,011	$ 149,737	$ -	0.017293	$ -
30	$ 779	$ 149,737	$ -	0.014998	$ -
31	$ 600	$ 149,737	$ -	0.013008	$ -
32	$ 462	$ 149,737	$ -	0.011282	$ -
33	$ 356	$ 149,737	$ -	0.009785	$ -
34	$ 274	$ 149,737	$ -	0.008486	$ -
35	$ 211	$ 149,737	$ -	0.007360	$ -
36	$ 162	$ 149,737	$ -	0.006384	$ -
37	$ 125	$ 149,737	$ -	0.005536	$ -
38	$ 96	$ 149,737	$ -	0.004802	$ -
39	$ 74	$ 149,737	$ -	0.004165	$ -
40	$ 57	$ 149,737	$ -	0.003612	$ -

WORKING INTEREST APPRAISAL [redacted]

TY2015 ROYALTY INTEREST [redacted]

YEAR	ROY INT INCOME	PROT FCTR(15.0%)	DIS INC
1	$ 298,918	0.931291	$ 278,350
2	$ 221,199	0.807711	$ 178,665
3	$ 170,324	0.700530	$ 119,317
4	$ 131,149	0.607672	$ 79,693
5	$ 100,986	0.526948	$ 53,214
6	$ 77,755	0.457024	$ 35,537
7	$ 59,874	0.396379	$ 23,733
8	$ 46,103	0.343780	$ 15,849
9	$ 35,499	0.298161	$ 10,584
10	$ 27,334	0.258596	$ -
11	$ 21,049	0.224281	$ -
12	$ 16,207	0.194519	$ -
13	$ 12,479	0.168707	$ -
14	$ 9,609	0.146320	$ -
15	$ 7,399	0.126904	$ -
16	$ 5,697	0.110064	$ -
17	$ 4,387	0.095459	$ -
18	$ 3,378	0.082792	$ -
19	$ 2,601	0.071808	$ -
20	$ 2,003	0.062277	$ -
21	$ 1,542	0.054013	$ -
22	$ 1,187	0.046846	$ -
23	$ 914	0.040629	$ -
24	$ 704	0.035238	$ -
25	$ 542	0.030562	$ -
26	$ 417	0.026507	$ -
27	$ 321	0.022989	$ -
28	$ 247	0.019939	$ -
29	$ 191	0.017293	$ -
30	$ 147	0.014998	$ -
31	$ 113	0.013008	$ -
32	$ 87	0.011282	$ -
33	$ 67	0.009785	$ -
34	$ 52	0.008486	$ -
35	$ 40	0.007360	$ -
36	$ 31	0.006384	$ -
37	$ 24	0.005536	$ -
38	$ 18	0.004802	$ -
39	$ 14	0.004165	$ -
40	$ 11	0.003612	$ -

ROYALTY INTEREST APPRAISAL [redacted]

09-0620166240

				2014	GAS INCOME		OIL INCOME			GAS CAP INCOME		OIL CAP INCOME	
	DECLINE RATES			WRK INT	$	6,713,317	$	5,779	YR1	$	1,614,039	$	2,334
YR 1	55%			ROY INT	$	1,224,241	$	1,679		$	324,454	$	466
YR 2	29%								YR2	$	1,129,361	$	1,729
YR3+	23%									$	240,774	$	368
	$ 3,273,397		TY2016 WORKING INTEREST								TY2016 ROYALTY INTEREST		
YEAR	WRK INT INCOME	WORKING COST	NET INC	PROT FCTR(16.0%)	DIS INC				YEAR	ROY INT INCOME	PROT FCTR(16.0%)	DIS INC	
1	$ 1,516,363	$ 149,779	$ 1,366,574	0.931291	$ 1,272,676				1	$ 324,922	0.931291	$ 302,567	
2	$ 1,122,101	$ 149,779	$ 972,322	0.807711	$ 785,358				2	$ 240,442	0.807711	$ 194,208	
3	$ 864,013	$ 149,779	$ 714,239	0.700530	$ 500,348				3	$ 185,140	0.700530	$ 129,698	
4	$ 665,294	$ 149,779	$ 515,515	0.607672	$ 313,212				4	$ 142,568	0.607672	$ 86,614	
5	$ 512,276	$ 149,779	$ 362,497	0.526648	$ 191,017				5	$ 109,770	0.526648	$ 57,843	
6	$ 394,453	$ 149,779	$ 244,674	0.457024	$ 111,822				6	$ 84,523	0.457024	$ 38,629	
7	$ 303,729	$ 149,779	$ 153,950	0.396376	$ 61,022				7	$ 65,082	0.396376	$ 25,797	
8	$ 233,871	$ 149,779	$ 84,092	0.343760	$ 28,909				8	$ 50,114	0.343760	$ 17,228	
9	$ 180,081	$ 149,779	$ 30,302	0.298161	$ 9,035				9	$ 38,587	0.298161	$ 11,505	
10	$ 138,662	$ 149,779	$ -	0.258596	$ -				10	$ 29,712	0.258596	$ -	
11	$ 106,770	$ 149,779	$ -	0.224281	$ -				11	$ 22,879	0.224281	$ -	
12	$ 82,213	$ 149,779	$ -	0.194519	$ -				12	$ 17,616	0.194519	$ -	
13	$ 63,304	$ 149,779	$ -	0.168707	$ -				13	$ 13,566	0.168707	$ -	
14	$ 48,744	$ 149,779	$ -	0.146320	$ -				14	$ 10,445	0.146320	$ -	
15	$ 37,533	$ 149,779	$ -	0.126904	$ -				15	$ 8,042	0.126904	$ -	
16	$ 28,900	$ 149,779	$ -	0.110064	$ -				16	$ 6,193	0.110064	$ -	
17	$ 22,253	$ 149,779	$ -	0.095459	$ -				17	$ 4,768	0.095459	$ -	
18	$ 17,135	$ 149,779	$ -	0.082792	$ -				18	$ 3,672	0.082792	$ -	
19	$ 13,194	$ 149,779	$ -	0.071806	$ -				19	$ 2,827	0.071806	$ -	
20	$ 10,159	$ 149,779	$ -	0.062277	$ -				20	$ 2,177	0.062277	$ -	
21	$ 7,823	$ 149,779	$ -	0.054013	$ -				21	$ 1,676	0.054013	$ -	
22	$ 6,023	$ 149,779	$ -	0.046846	$ -				22	$ 1,291	0.046846	$ -	
23	$ 4,638	$ 149,779	$ -	0.040629	$ -				23	$ 994	0.040629	$ -	
24	$ 3,571	$ 149,779	$ -	0.035238	$ -				24	$ 765	0.035238	$ -	
25	$ 2,750	$ 149,779	$ -	0.030562	$ -				25	$ 589	0.030562	$ -	
26	$ 2,117	$ 149,779	$ -	0.026507	$ -				26	$ 454	0.026507	$ -	
27	$ 1,630	$ 149,779	$ -	0.022988	$ -				27	$ 349	0.022988	$ -	
28	$ 1,255	$ 149,779	$ -	0.019939	$ -				28	$ 269	0.019939	$ -	
29	$ 967	$ 149,779	$ -	0.017293	$ -				29	$ 207	0.017293	$ -	
30	$ 744	$ 149,779	$ -	0.014999	$ -				30	$ 159	0.014999	$ -	
31	$ 573	$ 149,779	$ -	0.013008	$ -				31	$ 123	0.013008	$ -	
32	$ 441	$ 149,779	$ -	0.011282	$ -				32	$ 96	0.011282	$ -	
33	$ 340	$ 149,779	$ -	0.009786	$ -				33	$ 73	0.009786	$ -	
34	$ 262	$ 149,779	$ -	0.008486	$ -				34	$ 56	0.008486	$ -	
35	$ 201	$ 149,779	$ -	0.007360	$ -				35	$ 43	0.007360	$ -	
36	$ 155	$ 149,779	$ -	0.006384	$ -				36	$ 33	0.006384	$ -	
37	$ 119	$ 149,779	$ -	0.005536	$ -				37	$ 26	0.005536	$ -	
38	$ 92	$ 149,779	$ -	0.004802	$ -				38	$ 20	0.004802	$ -	
39	$ 71	$ 149,779	$ -	0.004166	$ -				39	$ 15	0.004166	$ -	
40	$ 55	$ 149,779	$ -	0.003612	$ -				40	$ 12	0.003612	$ -	
	WORKING INTEREST APPRAISAL									ROYALTY INTEREST APPRAISAL			

09-06201666244

	DECLINE RATE
YR 1	95%
YR 2	25%
YR3+	23%

2014	GAS INCOME	OIL INCOME
WRK INT	$ 6,975,778	$ 30,068
ROY INT	$ 1,275,231	$ 5,501

	GAS CAP INCOME	OIL CAP INCOME
YR1	$ 1,648,540	$ 7,074
	$ 337,516	$ 1,448
YR2	$ 1,387,849	$ 5,906
	$ 280,073	$ 1,079

$ 4,188,441

TY2018 WORKING INTEREST

YEAR	WRK INT INCOME	WORKING COST	NET INC	PROT FCTR(18.5%)	DIS INC
1	$ 1,856,553	$ 149,380	$ 1,707,173	0.931291	$ 1,589,876
2	$ 1,373,880	$ 149,380	$ 1,224,499	0.807711	$ 989,017
3	$ 1,057,864	$ 149,380	$ 908,484	0.700530	$ 636,420
4	$ 814,556	$ 149,380	$ 665,176	0.607572	$ 404,142
5	$ 627,208	$ 149,380	$ 477,827	0.526948	$ 251,790
6	$ 482,950	$ 149,380	$ 333,569	0.457024	$ 152,449
7	$ 371,871	$ 149,380	$ 222,491	0.396378	$ 88,191
8	$ 286,341	$ 149,380	$ 136,961	0.343780	$ 47,084
9	$ 220,483	$ 149,380	$ 71,102	0.298161	$ 21,200
10	$ 169,772	$ 149,380	$ 20,391	0.258598	$ 5,273
11	$ 130,724	$ 149,380	$ -	0.224281	$ -
12	$ 100,656	$ 149,380	$ -	0.194518	$ -
13	$ 77,508	$ 149,380	$ -	0.168707	$ -
14	$ 59,680	$ 149,380	$ -	0.146320	$ -
15	$ 45,964	$ 149,380	$ -	0.126904	$ -
16	$ 35,384	$ 149,380	$ -	0.110064	$ -
17	$ 27,246	$ 149,380	$ -	0.095469	$ -
18	$ 20,979	$ 149,380	$ -	0.082792	$ -
19	$ 16,154	$ 149,380	$ -	0.071806	$ -
20	$ 12,439	$ 149,380	$ -	0.062277	$ -
21	$ 9,576	$ 149,380	$ -	0.054013	$ -
22	$ 7,375	$ 149,380	$ -	0.046846	$ -
23	$ 5,679	$ 149,380	$ -	0.040629	$ -
24	$ 4,373	$ 149,380	$ -	0.035236	$ -
25	$ 3,367	$ 149,380	$ -	0.030552	$ -
26	$ 2,592	$ 149,380	$ -	0.026507	$ -
27	$ 1,996	$ 149,380	$ -	0.022989	$ -
28	$ 1,537	$ 149,380	$ -	0.019939	$ -
29	$ 1,184	$ 149,380	$ -	0.017293	$ -
30	$ 911	$ 149,380	$ -	0.014998	$ -
31	$ 702	$ 149,380	$ -	0.013008	$ -
32	$ 540	$ 149,380	$ -	0.011282	$ -
33	$ 416	$ 149,380	$ -	0.009785	$ -
34	$ 320	$ 149,380	$ -	0.008486	$ -
35	$ 247	$ 149,380	$ -	0.007360	$ -
36	$ 190	$ 149,380	$ -	0.006384	$ -
37	$ 146	$ 149,380	$ -	0.005536	$ -
38	$ 113	$ 149,380	$ -	0.004802	$ -
39	$ 87	$ 149,380	$ -	0.004165	$ -
40	$ 67	$ 149,380	$ -	0.003612	$ -

WORKING INTEREST APPRAISAL

TY2018 ROYALTY INTEREST

YEAR	ROY INT INCOME	PROT FCTR(18.5%)	DIS INC
1	$ 339,394	0.931291	$ 316,076
2	$ 251,152	0.807711	$ 202,868
3	$ 193,387	0.700530	$ 135,473
4	$ 148,908	0.607572	$ 90,472
5	$ 114,669	0.526948	$ 60,419
6	$ 88,287	0.457024	$ 40,349
7	$ 67,991	0.396378	$ 26,949
8	$ 52,346	0.343780	$ 17,998
9	$ 40,308	0.298161	$ 12,016
10	$ 31,038	0.258598	$ 8,026
11	$ 23,897	0.224281	$ -
12	$ 18,401	0.194518	$ -
13	$ 14,169	0.168707	$ -
14	$ 10,910	0.146320	$ -
15	$ 8,401	0.126904	$ -
16	$ 6,469	0.110064	$ -
17	$ 4,981	0.095469	$ -
18	$ 3,835	0.082792	$ -
19	$ 2,953	0.071806	$ -
20	$ 2,274	0.062277	$ -
21	$ 1,751	0.054013	$ -
22	$ 1,348	0.046846	$ -
23	$ 1,038	0.040629	$ -
24	$ 799	0.035236	$ -
25	$ 616	0.030552	$ -
26	$ 474	0.026507	$ -
27	$ 365	0.022989	$ -
28	$ 281	0.019939	$ -
29	$ 216	0.017293	$ -
30	$ 167	0.014998	$ -
31	$ 128	0.013008	$ -
32	$ 99	0.011282	$ -
33	$ 76	0.009785	$ -
34	$ 59	0.008486	$ -
35	$ 45	0.007360	$ -
36	$ 35	0.006384	$ -
37	$ 27	0.005536	$ -
38	$ 21	0.004802	$ -
39	$ 16	0.004165	$ -
40	$ 12	0.003612	$ -

ROYALTY INTEREST APPRAISAL

09-062016d6265

				2014	GAS INCOME		OIL INCOME			GAS CAP INCOME		OIL CAP INCOME	
	DECLINE RATE			WRK INT	$	5,557,309	$	57,421	YR1	$	2,287,587	$	18,217
YR 1	59%			ROY INT	$	1,706,648	$	11,447		$	452,066	$	3,033
YR 2	25%								YR2	$	1,376,068	$	11,280
YR3+	13%									$	334,617	$	2,248

	$ 5,333,832	TY2016 WORKING INTEREST					TY2016 ROYALTY INTEREST			
YEAR	WRK INT INCOME	WORKING COST	NET INC	PROT FCTR(16.0%)	OIL INC	YEAR	ROY INT INCOME	PROT FCTR(16.0%)	OIL INC
1	$ 2,282,903	$ 149,039	$ 2,133,865	0.931291	$ 1,987,249	1	$ 458,063	0.931291	$ 423,616
2	$ 1,689,349	$ 149,039	$ 1,540,310	0.807711	$ 1,244,125	2	$ 336,762	0.807711	$ 272,039
3	$ 1,300,798	$ 149,039	$ 1,151,760	0.700530	$ 806,842	3	$ 259,309	0.700530	$ 181,662
4	$ 1,001,618	$ 149,039	$ 852,578	0.607572	$ 518,001	4	$ 199,666	0.607572	$ 121,311
5	$ 771,243	$ 149,039	$ 622,206	0.526948	$ 327,870	5	$ 153,743	0.526948	$ 81,014
6	$ 593,857	$ 149,039	$ 444,819	0.457024	$ 203,293	6	$ 118,382	0.457024	$ 54,102
7	$ 457,270	$ 149,039	$ 308,232	0.396376	$ 122,176	7	$ 91,154	0.396376	$ 36,131
8	$ 352,098	$ 149,039	$ 203,060	0.343780	$ 69,808	8	$ 70,169	0.343780	$ 24,129
9	$ 271,116	$ 149,039	$ 122,077	0.298161	$ 36,399	9	$ 54,045	0.298161	$ 16,114
10	$ 208,759	$ 149,039	$ 59,720	0.258598	$ 15,443	10	$ 41,615	0.258598	$ 10,761
11	$ 160,744	$ 149,039	$ 11,709	0.224281	$ 2,625	11	$ 32,043	0.224281	$ 7,187
12	$ 123,773	$ 149,039	$ -	0.194519	$ -	12	$ 24,673	0.194519	$ -
13	$ 95,305	$ 149,039	$ -	0.168707	$ -	13	$ 18,999	0.168707	$ -
14	$ 73,385	$ 149,039	$ -	0.146320	$ -	14	$ 14,629	0.146320	$ -
15	$ 56,507	$ 149,039	$ -	0.126904	$ -	15	$ 11,264	0.126904	$ -
16	$ 43,510	$ 149,039	$ -	0.110064	$ -	16	$ 8,673	0.110064	$ -
17	$ 33,503	$ 149,039	$ -	0.095459	$ -	17	$ 6,679	0.095459	$ -
18	$ 25,797	$ 149,039	$ -	0.082792	$ -	18	$ 5,142	0.082792	$ -
19	$ 19,864	$ 149,039	$ -	0.071806	$ -	19	$ 3,960	0.071806	$ -
20	$ 15,296	$ 149,039	$ -	0.062277	$ -	20	$ 3,049	0.062277	$ -
21	$ 11,777	$ 149,039	$ -	0.054013	$ -	21	$ 2,346	0.054013	$ -
22	$ 9,068	$ 149,039	$ -	0.046846	$ -	22	$ 1,806	0.046846	$ -
23	$ 6,983	$ 149,039	$ -	0.040629	$ -	23	$ 1,392	0.040629	$ -
24	$ 5,377	$ 149,039	$ -	0.035238	$ -	24	$ 1,072	0.035238	$ -
25	$ 4,140	$ 149,039	$ -	0.030562	$ -	25	$ 826	0.030562	$ -
26	$ 3,188	$ 149,039	$ -	0.026507	$ -	26	$ 636	0.026507	$ -
27	$ 2,455	$ 149,039	$ -	0.022989	$ -	27	$ 489	0.022989	$ -
28	$ 1,890	$ 149,039	$ -	0.019939	$ -	28	$ 377	0.019939	$ -
29	$ 1,455	$ 149,039	$ -	0.017293	$ -	29	$ 290	0.017293	$ -
30	$ 1,121	$ 149,039	$ -	0.014998	$ -	30	$ 223	0.014998	$ -
31	$ 863	$ 149,039	$ -	0.013008	$ -	31	$ 172	0.013008	$ -
32	$ 664	$ 149,039	$ -	0.011282	$ -	32	$ 132	0.011282	$ -
33	$ 512	$ 149,039	$ -	0.009785	$ -	33	$ 102	0.009785	$ -
34	$ 394	$ 149,039	$ -	0.008486	$ -	34	$ 79	0.008486	$ -
35	$ 303	$ 149,039	$ -	0.007360	$ -	35	$ 60	0.007360	$ -
36	$ 234	$ 149,039	$ -	0.006384	$ -	36	$ 47	0.006384	$ -
37	$ 180	$ 149,039	$ -	0.005536	$ -	37	$ 36	0.005536	$ -
38	$ 139	$ 149,039	$ -	0.004802	$ -	38	$ 28	0.004802	$ -
39	$ 107	$ 149,039	$ -	0.004165	$ -	39	$ 21	0.004165	$ -
40	$ 82	$ 149,039	$ -	0.003612	$ -	40	$ 16	0.003612	$ -

WORKING INTEREST APPRAISAL

ROYALTY INTEREST APPRAISAL

09-06201662960

				2014	GAS INCOME	OIL INCOME			GAS CAP INCOME	OIL CAP INCOME			
	WRK INTEREST			WRK INT	$ 2,109,614	$ 1,158		YR1	$ 524,184	$ 288			
YR 1	80%			ROY INT	$ 514,064	$ 279			$ 136,233	$ -72			
YR 2	20%							YR2	$ 411,930	$ 218			
YR3+	23%								$ 100,312	$ 53			
	$ 786,877		TY2016 WORKING INTEREST						TY2016 ROYALTY INTEREST				
YEAR	WRK INT INCOME	WORKING COST	NET INC	PROT FCTR(16.5%)	DIS INC			YEAR	ROY INT INCOME	PROT FCTR(16.5%)	DIS INC		
1	$ 586,956	$ 149,924	$ 437,030	0.931291	$ 379,084			1	$ 136,304	0.931291	$ 126,939		
2	$ 412,147	$ 149,924	$ 262,222	0.807711	$ 211,800			2	$ 100,866	0.807711	$ 81,470		
3	$ 317,353	$ 149,924	$ 167,428	0.700530	$ 117,289			3	$ 77,866	0.700530	$ 54,407		
4	$ 244,362	$ 149,924	$ 94,437	0.607572	$ 57,377			4	$ 59,803	0.607572	$ 36,334		
5	$ 188,158	$ 149,924	$ 38,234	0.526948	$ 20,147			5	$ 46,048	0.526948	$ 24,266		
6	$ 144,882	$ 149,924	$ -	0.457024	$ -			6	$ 35,457	0.457024	$ -		
7	$ 111,559	$ 149,924	$ -	0.396378	$ -			7	$ 27,302	0.396378	$ -		
8	$ 85,901	$ 149,924	$ -	0.343780	$ -			8	$ 21,022	0.343780	$ -		
9	$ 66,143	$ 149,924	$ -	0.298161	$ -			9	$ 16,187	0.298161	$ -		
10	$ 50,930	$ 149,924	$ -	0.258599	$ -			10	$ 12,464	0.258599	$ -		
11	$ 39,216	$ 149,924	$ -	0.224281	$ -			11	$ 9,597	0.224281	$ -		
12	$ 30,197	$ 149,924	$ -	0.194519	$ -			12	$ 7,390	0.194519	$ -		
13	$ 23,251	$ 149,924	$ -	0.168707	$ -			13	$ 5,690	0.168707	$ -		
14	$ 17,904	$ 149,924	$ -	0.146320	$ -			14	$ 4,382	0.146320	$ -		
15	$ 13,786	$ 149,924	$ -	0.126904	$ -			15	$ 3,374	0.126904	$ -		
16	$ 10,616	$ 149,924	$ -	0.110064	$ -			16	$ 2,598	0.110064	$ -		
17	$ 8,174	$ 149,924	$ -	0.095459	$ -			17	$ 2,000	0.095459	$ -		
18	$ 6,294	$ 149,924	$ -	0.082792	$ -			18	$ 1,540	0.082792	$ -		
19	$ 4,846	$ 149,924	$ -	0.071806	$ -			19	$ 1,186	0.071806	$ -		
20	$ 3,732	$ 149,924	$ -	0.062277	$ -			20	$ 913	0.062277	$ -		
21	$ 2,575	$ 149,924	$ -	0.054013	$ -			21	$ 703	0.054013	$ -		
22	$ 2,212	$ 149,924	$ -	0.046849	$ -			22	$ 541	0.046849	$ -		
23	$ 1,704	$ 149,924	$ -	0.040629	$ -			23	$ 417	0.040629	$ -		
24	$ 1,312	$ 149,924	$ -	0.035236	$ -			24	$ 321	0.035236	$ -		
25	$ 1,010	$ 149,924	$ -	0.030562	$ -			25	$ 247	0.030562	$ -		
26	$ 778	$ 149,924	$ -	0.026507	$ -			26	$ 190	0.026507	$ -		
27	$ 599	$ 149,924	$ -	0.022989	$ -			27	$ 147	0.022989	$ -		
28	$ 461	$ 149,924	$ -	0.019939	$ -			28	$ 113	0.019939	$ -		
29	$ 355	$ 149,924	$ -	0.017293	$ -			29	$ 87	0.017293	$ -		
30	$ 273	$ 149,924	$ -	0.014998	$ -			30	$ 67	0.014998	$ -		
31	$ 211	$ 149,924	$ -	0.013008	$ -			31	$ 52	0.013008	$ -		
32	$ 162	$ 149,924	$ -	0.011282	$ -			32	$ 40	0.011282	$ -		
33	$ 126	$ 149,924	$ -	0.009786	$ -			33	$ 31	0.009786	$ -		
34	$ 96	$ 149,924	$ -	0.008488	$ -			34	$ 24	0.008488	$ -		
35	$ 74	$ 149,924	$ -	0.007360	$ -			35	$ 18	0.007360	$ -		
36	$ 57	$ 149,924	$ -	0.006384	$ -			36	$ 14	0.006384	$ -		
37	$ 44	$ 149,924	$ -	0.005538	$ -			37	$ 11	0.005538	$ -		
38	$ 34	$ 149,924	$ -	0.004802	$ -			38	$ 8	0.004802	$ -		
39	$ 26	$ 149,924	$ -	0.004165	$ -			39	$ 6	0.004165	$ -		
40	$ 20	$ 149,924	$ -	0.003612	$ -			40	$ 5	0.003612	$ -		
	WORKING INTEREST APPRAISAL								ROYALTY INTEREST APPRAISAL				

09-06201606313

			2014	GAS INCOME	OIL INCOME
			WRK INT	$ 2,139,755	$ 1,397
YR 1	68%		ROY INT	$ 563,691	$ 368
YR 2	29%				
YR3+	23%				

	GAS GAS INCOME	OIL GAS INCOME
YR1	$ 564,691	$ 368
	$ 149,384	$ 98
YR2	$ 417,543	$ 249
	$ 110,529	$ 66

$ 504,782 — TY2014 WORKING INTEREST

YEAR	WRK INT INCOME	WORKING COST	NET INC	PROT FCTR(16.0%)	DIS INC
1	$ 564,384	$ 149,916	$ 415,069	0.931291	$ 386,550
2	$ 416,088	$ 149,916	$ 266,173	0.807711	$ 216,909
3	$ 321,928	$ 149,916	$ 172,013	0.700830	$ 120,560
4	$ 247,884	$ 149,916	$ 97,970	0.607672	$ 59,524
5	$ 190,871	$ 149,916	$ 40,955	0.526948	$ 21,582
6	$ 146,971	$ 149,916	$ -	0.457024	$ -
7	$ 113,167	$ 149,916	$ -	0.396378	$ -
8	$ 87,139	$ 149,916	$ -	0.343780	$ -
9	$ 67,097	$ 149,916	$ -	0.298161	$ -
10	$ 51,666	$ 149,916	$ -	0.258596	$ -
11	$ 39,782	$ 149,916	$ -	0.224281	$ -
12	$ 30,632	$ 149,916	$ -	0.194519	$ -
13	$ 23,587	$ 149,916	$ -	0.168707	$ -
14	$ 18,162	$ 149,916	$ -	0.146320	$ -
15	$ 13,985	$ 149,916	$ -	0.126904	$ -
16	$ 10,768	$ 149,916	$ -	0.110064	$ -
17	$ 8,291	$ 149,916	$ -	0.095459	$ -
18	$ 6,384	$ 149,916	$ -	0.082792	$ -
19	$ 4,916	$ 149,916	$ -	0.071806	$ -
20	$ 3,785	$ 149,916	$ -	0.062277	$ -
21	$ 2,916	$ 149,916	$ -	0.054015	$ -
22	$ 2,244	$ 149,916	$ -	0.046846	$ -
23	$ 1,728	$ 149,916	$ -	0.040629	$ -
24	$ 1,331	$ 149,916	$ -	0.035238	$ -
25	$ 1,025	$ 149,916	$ -	0.030562	$ -
26	$ 789	$ 149,916	$ -	0.026507	$ -
27	$ 607	$ 149,916	$ -	0.022988	$ -
28	$ 468	$ 149,916	$ -	0.019939	$ -
29	$ 360	$ 149,916	$ -	0.017293	$ -
30	$ 277	$ 149,916	$ -	0.014998	$ -
31	$ 214	$ 149,916	$ -	0.013008	$ -
32	$ 164	$ 149,916	$ -	0.011282	$ -
33	$ 127	$ 149,916	$ -	0.009786	$ -
34	$ 97	$ 149,916	$ -	0.008488	$ -
35	$ 75	$ 149,916	$ -	0.007360	$ -
36	$ 58	$ 149,916	$ -	0.006384	$ -
37	$ 45	$ 149,916	$ -	0.005536	$ -
38	$ 34	$ 149,916	$ -	0.004802	$ -
39	$ 26	$ 149,916	$ -	0.004166	$ -
40	$ 20	$ 149,916	$ -	0.003612	$ -

WORKING INTEREST APPRAISAL

TY2014 ROYALTY INTEREST

YEAR	ROY INT INCOME	PROT FCTR(16.0%)	DIS INC
1	$ 149,442	0.931291	$ 139,174
2	$ 110,587	0.807711	$ 89,323
3	$ 85,152	0.700830	$ 59,682
4	$ 65,667	0.607672	$ 39,897
5	$ 50,487	0.526948	$ 26,604
6	$ 38,876	0.457024	$ -
7	$ 29,934	0.396378	$ -
8	$ 23,049	0.343780	$ -
9	$ 17,748	0.298161	$ -
10	$ 13,666	0.258596	$ -
11	$ 10,523	0.224281	$ -
12	$ 8,102	0.194519	$ -
13	$ 6,239	0.168707	$ -
14	$ 4,804	0.146320	$ -
15	$ 3,699	0.126904	$ -
16	$ 2,848	0.110064	$ -
17	$ 2,193	0.095459	$ -
18	$ 1,689	0.082792	$ -
19	$ 1,300	0.071806	$ -
20	$ 1,001	0.062277	$ -
21	$ 771	0.054015	$ -
22	$ 594	0.046846	$ -
23	$ 457	0.040629	$ -
24	$ 352	0.035238	$ -
25	$ 271	0.030562	$ -
26	$ 209	0.026507	$ -
27	$ 161	0.022988	$ -
28	$ 124	0.019939	$ -
29	$ 96	0.017293	$ -
30	$ 73	0.014998	$ -
31	$ 56	0.013008	$ -
32	$ 43	0.011282	$ -
33	$ 33	0.009786	$ -
34	$ 25	0.008488	$ -
35	$ 20	0.007360	$ -
36	$ 15	0.006384	$ -
37	$ 12	0.005536	$ -
38	$ 9	0.004802	$ -
39	$ 7	0.004166	$ -
40	$ 5	0.003612	$ -

ROYALTY INTEREST APPRAISAL

09-06201606321

			2014	GAS INCOME	OIL INCOME		GAS CAP INCOME	OIL CAP INCOME
			WRK INT	$ 6,963,133	$ 58,449	YR1	$ 1,744,697	$ 17,545
YR 1	80%		ROY INT	$ 1,284,973	$ 11,613		$ 332,599	$ 3,139
YR 2	23%					YR2	$ 1,343,696	$ 12,634
YR3+	23%						$ 246,191	$ 2,319

	$ 4,198,348	TY2016 WORKING INTEREST						TY2016 ROYALTY INTEREST			
YEAR	WRK INT INCOME	WORKING COST	NET INC	PROT FCTR(16.6%)	DIS INC		YEAR	ROY INT INCOME	PROT FCTR(16.6%)	DIS INC	
1	$ 1,859,923	$ 148,555	$ 1,711,269	0.931291	$ 1,593,689		1	$ 336,700	0.931291	$ 312,634	
2	$ 1,376,343	$ 148,555	$ 1,227,688	0.807711	$ 991,617		2	$ 248,415	0.807711	$ 200,660	
3	$ 1,059,784	$ 148,555	$ 911,129	0.700530	$ 638,274		3	$ 191,282	0.700530	$ 133,999	
4	$ 816,034	$ 148,555	$ 667,379	0.607572	$ 405,481		4	$ 147,287	0.607572	$ 89,487	
5	$ 628,346	$ 148,555	$ 479,691	0.526948	$ 252,772		5	$ 113,411	0.526948	$ 59,762	
6	$ 483,827	$ 148,555	$ 335,172	0.457024	$ 153,161		6	$ 87,326	0.457024	$ 39,910	
7	$ 372,548	$ 148,555	$ 223,992	0.396378	$ 88,748		7	$ 67,241	0.396378	$ 26,653	
8	$ 286,891	$ 148,555	$ 138,206	0.343760	$ 47,512		8	$ 51,776	0.343760	$ 17,799	
9	$ 220,668	$ 148,555	$ 72,228	0.298161	$ 21,536		9	$ 39,857	0.298161	$ 11,887	
10	$ 170,060	$ 148,555	$ 21,426	0.258598	$ 5,540		10	$ 30,698	0.258598	$ 7,936	
11	$ 130,991	$ 148,555	$ -	0.224291	$ -		11	$ 23,637	0.224291	$ -	
12	$ 100,840	$ 148,555	$ -	0.194519	$ -		12	$ 18,201	0.194519	$ -	
13	$ 77,647	$ 148,555	$ -	0.168707	$ -		13	$ 14,015	0.168707	$ -	
14	$ 59,786	$ 148,555	$ -	0.146320	$ -		14	$ 10,791	0.146320	$ -	
15	$ 46,037	$ 148,555	$ -	0.126904	$ -		15	$ 8,309	0.126904	$ -	
16	$ 35,448	$ 148,555	$ -	0.110064	$ -		16	$ 6,398	0.110064	$ -	
17	$ 27,296	$ 148,555	$ -	0.095459	$ -		17	$ 4,927	0.095459	$ -	
18	$ 21,017	$ 148,555	$ -	0.082792	$ -		18	$ 3,793	0.082792	$ -	
19	$ 16,185	$ 148,555	$ -	0.071806	$ -		19	$ 2,921	0.071806	$ -	
20	$ 12,461	$ 148,555	$ -	0.062277	$ -		20	$ 2,249	0.062277	$ -	
21	$ 9,595	$ 148,555	$ -	0.054013	$ -		21	$ 1,732	0.054013	$ -	
22	$ 7,388	$ 148,555	$ -	0.046846	$ -		22	$ 1,334	0.046846	$ -	
23	$ 5,689	$ 148,555	$ -	0.040629	$ -		23	$ 1,027	0.040629	$ -	
24	$ 4,380	$ 148,555	$ -	0.035238	$ -		24	$ 791	0.035238	$ -	
25	$ 3,373	$ 148,555	$ -	0.030562	$ -		25	$ 609	0.030562	$ -	
26	$ 2,597	$ 148,555	$ -	0.026507	$ -		26	$ 469	0.026507	$ -	
27	$ 2,000	$ 148,555	$ -	0.022999	$ -		27	$ 361	0.022999	$ -	
28	$ 1,540	$ 148,555	$ -	0.019939	$ -		28	$ 278	0.019939	$ -	
29	$ 1,186	$ 148,555	$ -	0.017293	$ -		29	$ 214	0.017293	$ -	
30	$ 913	$ 148,555	$ -	0.014998	$ -		30	$ 165	0.014998	$ -	
31	$ 703	$ 148,555	$ -	0.013008	$ -		31	$ 127	0.013008	$ -	
32	$ 541	$ 148,555	$ -	0.011282	$ -		32	$ 98	0.011282	$ -	
33	$ 417	$ 148,555	$ -	0.009786	$ -		33	$ 75	0.009786	$ -	
34	$ 321	$ 148,555	$ -	0.008488	$ -		34	$ 58	0.008488	$ -	
35	$ 247	$ 148,555	$ -	0.007360	$ -		35	$ 45	0.007360	$ -	
36	$ 190	$ 148,555	$ -	0.006384	$ -		36	$ 34	0.006384	$ -	
37	$ 147	$ 148,555	$ -	0.005536	$ -		37	$ 26	0.005536	$ -	
38	$ 113	$ 148,555	$ -	0.004802	$ -		38	$ 20	0.004802	$ -	
39	$ 87	$ 148,555	$ -	0.004166	$ -		39	$ 16	0.004166	$ -	
40	$ 67	$ 148,555	$ -	0.003612	$ -		40	$ 12	0.003612	$ -	

WORKING INTEREST APPRAISAL

ROYALTY INTEREST APPRAISAL

09-06201606334

					2014	GAS INCOME	OIL INCOME			GAS INCOME	OIL INCOME			
					WRK INT	$ 8,147,445	$ 10,257		YR1	$ 1,354,078	$ 2,721			
YR 1	80%				ROY INT	$ 934,896	$ 1,848			$ 244,128	$ 490			
YR 2	20%								YR2	$ 1,009,413	$ 2,018			
YR3+	23%									$ 181,382	$ 362			
	$ 2,575,981		TY2016 WORKING INTEREST								TY2016 ROYALTY INTEREST			
YEAR	WRK INT INCOME		WORKING COST	NET INC	PROT FCTR(16.0%)		OIL INC		YEAR	ROY INT INCOME		PROT FCTR(16.0%)		OIL INC
1	$ 1,366,796		$ 149,713	$ 1,217,083	0.931291		$ 1,133,459		1	$ 245,614		0.931291		$ 228,738
2	$ 1,011,429		$ 149,713	$ 861,716	0.807711		$ 695,815		2	$ 181,764		0.807711		$ 146,808
3	$ 778,801		$ 149,713	$ 629,088	0.700530		$ 440,695		3	$ 139,951		0.700530		$ 98,040
4	$ 599,676		$ 149,713	$ 449,964	0.607572		$ 273,386		4	$ 107,762		0.607572		$ 65,473
5	$ 461,751		$ 149,713	$ 312,038	0.526948		$ 164,428		5	$ 82,977		0.526948		$ 43,724
6	$ 355,548		$ 149,713	$ 205,835	0.457024		$ 94,072		6	$ 63,902		0.457024		$ 29,200
7	$ 273,772		$ 149,713	$ 124,059	0.396378		$ 49,174		7	$ 49,197		0.396378		$ 19,501
8	$ 210,804		$ 149,713	$ 61,092	0.343780		$ 21,002		8	$ 37,882		0.343780		$ 13,023
9	$ 162,319		$ 149,713	$ 12,607	0.298161		$ 3,759		9	$ 29,159		0.298161		$ 8,697
10	$ 124,986		$ 149,713	$ -	0.258598		$ -		10	$ 22,460		0.258598		$ -
11	$ 96,238		$ 149,713	$ -	0.224281		$ -		11	$ 17,294		0.224281		$ -
12	$ 74,104		$ 149,713	$ -	0.194519		$ -		12	$ 13,317		0.194519		$ -
13	$ 57,060		$ 149,713	$ -	0.168707		$ -		13	$ 10,264		0.168707		$ -
14	$ 43,936		$ 149,713	$ -	0.146320		$ -		14	$ 7,906		0.146320		$ -
15	$ 33,831		$ 149,713	$ -	0.126904		$ -		15	$ 6,079		0.126904		$ -
16	$ 26,050		$ 149,713	$ -	0.110084		$ -		16	$ 4,681		0.110084		$ -
17	$ 20,058		$ 149,713	$ -	0.095459		$ -		17	$ 3,606		0.095459		$ -
18	$ 15,445		$ 149,713	$ -	0.082792		$ -		18	$ 2,778		0.082792		$ -
19	$ 11,893		$ 149,713	$ -	0.071806		$ -		19	$ 2,137		0.071806		$ -
20	$ 9,157		$ 149,713	$ -	0.062277		$ -		20	$ 1,646		0.062277		$ -
21	$ 7,051		$ 149,713	$ -	0.054013		$ -		21	$ 1,267		0.054013		$ -
22	$ 5,429		$ 149,713	$ -	0.046846		$ -		22	$ 976		0.046846		$ -
23	$ 4,181		$ 149,713	$ -	0.040629		$ -		23	$ 751		0.040629		$ -
24	$ 3,219		$ 149,713	$ -	0.035236		$ -		24	$ 579		0.035236		$ -
25	$ 2,479		$ 149,713	$ -	0.030552		$ -		25	$ 446		0.030552		$ -
26	$ 1,909		$ 149,713	$ -	0.026507		$ -		26	$ 343		0.026507		$ -
27	$ 1,470		$ 149,713	$ -	0.022989		$ -		27	$ 264		0.022989		$ -
28	$ 1,132		$ 149,713	$ -	0.019936		$ -		28	$ 203		0.019936		$ -
29	$ 871		$ 149,713	$ -	0.017293		$ -		29	$ 157		0.017293		$ -
30	$ 671		$ 149,713	$ -	0.014998		$ -		30	$ 121		0.014998		$ -
31	$ 517		$ 149,713	$ -	0.013008		$ -		31	$ 93		0.013008		$ -
32	$ 398		$ 149,713	$ -	0.011282		$ -		32	$ 71		0.011282		$ -
33	$ 306		$ 149,713	$ -	0.009785		$ -		33	$ 55		0.009785		$ -
34	$ 236		$ 149,713	$ -	0.008486		$ -		34	$ 42		0.008486		$ -
35	$ 182		$ 149,713	$ -	0.007360		$ -		35	$ 33		0.007360		$ -
36	$ 140		$ 149,713	$ -	0.006384		$ -		36	$ 25		0.006384		$ -
37	$ 108		$ 149,713	$ -	0.005536		$ -		37	$ 19		0.005536		$ -
38	$ 83		$ 149,713	$ -	0.004802		$ -		38	$ 15		0.004802		$ -
39	$ 64		$ 149,716	$ -	0.004166		$ -		39	$ 11		0.004166		$ -
40	$ 49		$ 149,713	$ -	0.003612		$ -		40	$ 9		0.003612		$ -
	WORKING INTEREST APPRAISAL									ROYALTY INTEREST APPRAISAL				

09-06201663G2

				2014	GAS INCOME	OIL INCOME			GAS CAP INCOME	OIL CAP INCOME				
				WRK INT	$ 6,847,471	$ 9,606		YR1	$ 1,146,139	$ 1,602				
YR 1	80%			ROY INT	$ 1,125,917	$ 1,418			$ 299,191	$ 348				
YR 2	20%							YR2	$ 1,146,689	$ 1,333				
YR3+	23%								$ 221,379	$ 287				
	$ 3,368,254	TY2016 WORKING INTEREST							TY2016 ROYALTY INTEREST					
YEAR	WRK INT INCOME	WORKING COST	NET INC	PROT FCTR(16.8%)	DIS INC			YEAR	ROY INT INCOME	PROT FCTR(16.8%)	DIS INC			
1	$ 1,551,362	$ 149,832	$ 1,401,548	0.931291	$ 1,305,250			1	$ 299,508	0.931291	$ 278,930			
6	$ 1,148,023	$ 149,832	$ 998,190	0.807711	$ 806,249			6	$ 221,637	0.807711	$ 179,019			
3	$ 883,977	$ 149,832	$ 734,148	0.700530	$ 514,291			3	$ 170,660	0.700530	$ 119,553			
4	$ 680,663	$ 149,832	$ 530,830	0.607572	$ 322,616			4	$ 131,409	0.607572	$ 79,840			
5	$ 524,110	$ 149,832	$ 374,278	0.526648	$ 197,226			5	$ 101,186	0.526648	$ 53,319			
6	$ 403,566	$ 149,832	$ 253,732	0.457024	$ 115,982			6	$ 77,912	0.457024	$ 35,608			
7	$ 310,748	$ 149,832	$ 160,912	0.396376	$ 63,782			7	$ 59,992	0.396376	$ 23,780			
8	$ 239,274	$ 149,832	$ 89,441	0.343760	$ 30,748			8	$ 46,194	0.343760	$ 15,881			
9	$ 184,241	$ 149,832	$ 34,408	0.298161	$ 10,259			9	$ 35,569	0.298161	$ 10,606			
10	$ 141,865	$ 149,832	$ -	0.258566	$ -			10	$ 27,388	0.258566	$ -			
11	$ 109,236	$ 149,832	$ -	0.224261	$ -			11	$ 21,089	0.224261	$ -			
12	$ 84,112	$ 149,832	$ -	0.194519	$ -			12	$ 16,239	0.194519	$ -			
13	$ 64,766	$ 149,832	$ -	0.168707	$ -			13	$ 12,504	0.168707	$ -			
14	$ 49,870	$ 149,832	$ -	0.146320	$ -			14	$ 9,628	0.146320	$ -			
15	$ 38,400	$ 149,832	$ -	0.126904	$ -			15	$ 7,413	0.126904	$ -			
16	$ 29,568	$ 149,832	$ -	0.110064	$ -			16	$ 5,706	0.110064	$ -			
17	$ 22,767	$ 149,832	$ -	0.095459	$ -			17	$ 4,396	0.095459	$ -			
18	$ 17,531	$ 149,832	$ -	0.082792	$ -			18	$ 3,384	0.082792	$ -			
19	$ 13,499	$ 149,832	$ -	0.071806	$ -			19	$ 2,606	0.071806	$ -			
20	$ 10,394	$ 149,832	$ -	0.062277	$ -			20	$ 2,007	0.062277	$ -			
21	$ 8,003	$ 149,832	$ -	0.054013	$ -			21	$ 1,545	0.054013	$ -			
22	$ 6,163	$ 149,832	$ -	0.046846	$ -			22	$ 1,190	0.046846	$ -			
23	$ 4,748	$ 149,832	$ -	0.040629	$ -			23	$ 916	0.040629	$ -			
24	$ 3,654	$ 149,832	$ -	0.035236	$ -			24	$ 706	0.035236	$ -			
25	$ 2,813	$ 149,832	$ -	0.030562	$ -			25	$ 543	0.030562	$ -			
26	$ 2,166	$ 149,832	$ -	0.026507	$ -			26	$ 418	0.026507	$ -			
27	$ 1,668	$ 149,832	$ -	0.022988	$ -			27	$ 322	0.022988	$ -			
28	$ 1,284	$ 149,832	$ -	0.019939	$ -			28	$ 248	0.019939	$ -			
29	$ 989	$ 149,832	$ -	0.017293	$ -			29	$ 191	0.017293	$ -			
30	$ 762	$ 149,832	$ -	0.014998	$ -			30	$ 147	0.014998	$ -			
31	$ 586	$ 149,832	$ -	0.013008	$ -			31	$ 113	0.013008	$ -			
32	$ 452	$ 149,832	$ -	0.011282	$ -			32	$ 87	0.011282	$ -			
33	$ 348	$ 149,832	$ -	0.009785	$ -			33	$ 67	0.009785	$ -			
34	$ 268	$ 149,832	$ -	0.008486	$ -			34	$ 52	0.008486	$ -			
35	$ 206	$ 149,832	$ -	0.007360	$ -			35	$ 40	0.007360	$ -			
36	$ 159	$ 149,832	$ -	0.006384	$ -			36	$ 31	0.006384	$ -			
37	$ 122	$ 149,832	$ -	0.005536	$ -			37	$ 24	0.005536	$ -			
38	$ 94	$ 149,832	$ -	0.004802	$ -			38	$ 18	0.004802	$ -			
39	$ 72	$ 149,832	$ -	0.004165	$ -			39	$ 14	0.004165	$ -			
40	$ 56	$ 149,832	$ -	0.003612	$ -			40	$ 11	0.003612	$ -			
	WORKING INTEREST APPRAISAL								ROYALTY INTEREST APPRAISAL					

09-062016064O4

				2014	GAS INCOME	OIL INCOME			GAS CAP INCOME	OIL CAP INCOME			
				WRK INT	$ 5,803,036	$ 2,668		YR1	$ 1,459,306	$ 704			
YR 1	99%			ROY INT	$ 1,284,586	$ 606			$ 332,962	$ 161			
YR 2	29%							YR2	$ 1,079,146	$ 521			
YR3+	23%								$ 246,279	$ 119			
	$ 3,120,122		TY2016 WORKING INTEREST							TY2016 ROYALTY INTEREST			
YEAR	WRK INT INCOME	WORKING COST	NET INC	PROT FCTR(16.9%)	DIS INC			YEAR	ROY INT INCOME	PROT FCTR(16.9%)	DIS INC		
1	$ 1,459,008	$ 149,930	$ 1,309,077	0.931291	$ 1,219,132			1	$ 332,962	0.931291	$ 310,068		
2	$ 1,079,566	$ 149,930	$ 929,736	0.807711	$ 750,967			2	$ 246,392	0.807711	$ 199,014		
3	$ 631,343	$ 149,930	$ 481,412	0.700530	$ 477,350			3	$ 199,722	0.700530	$ 132,906		
4	$ 640,134	$ 149,930	$ 490,203	0.607572	$ 297,834			4	$ 146,086	0.607572	$ 88,758		
5	$ 492,903	$ 149,930	$ 342,973	0.526948	$ 180,729			5	$ 112,486	0.526948	$ 59,274		
6	$ 379,535	$ 149,930	$ 229,606	0.457024	$ 104,938			6	$ 86,814	0.457024	$ 39,668		
7	$ 292,242	$ 149,930	$ 142,312	0.396376	$ 56,409			7	$ 66,693	0.396376	$ 26,436		
8	$ 228,027	$ 149,930	$ 78,096	0.343780	$ 25,817			8	$ 51,354	0.343780	$ 17,654		
9	$ 173,270	$ 149,930	$ 23,340	0.298161	$ 6,959			9	$ 39,542	0.298161	$ 11,790		
10	$ 133,418	$ 149,930	$ -	0.258569	$ -			10	$ 30,448	0.258569	$ -		
11	$ 102,732	$ 149,930	$ -	0.224281	$ -			11	$ 23,446	0.224281	$ -		
12	$ 79,104	$ 149,930	$ -	0.194519	$ -			12	$ 18,052	0.194519	$ -		
13	$ 60,910	$ 149,930	$ -	0.168707	$ -			13	$ 13,900	0.168707	$ -		
14	$ 46,901	$ 149,930	$ -	0.146320	$ -			14	$ 10,703	0.146320	$ -		
15	$ 36,113	$ 149,930	$ -	0.126904	$ -			15	$ 8,242	0.126904	$ -		
16	$ 27,807	$ 149,930	$ -	0.110064	$ -			16	$ 6,348	0.110064	$ -		
17	$ 21,412	$ 149,930	$ -	0.095456	$ -			17	$ 4,888	0.095456	$ -		
18	$ 16,487	$ 149,930	$ -	0.082792	$ -			18	$ 3,763	0.082792	$ -		
19	$ 12,696	$ 149,930	$ -	0.071808	$ -			19	$ 2,897	0.071808	$ -		
20	$ 9,776	$ 149,930	$ -	0.062277	$ -			20	$ 2,231	0.062277	$ -		
21	$ 7,527	$ 149,930	$ -	0.054013	$ -			21	$ 1,718	0.054013	$ -		
22	$ 5,796	$ 149,930	$ -	0.046846	$ -			22	$ 1,323	0.046846	$ -		
23	$ 4,463	$ 149,930	$ -	0.040629	$ -			23	$ 1,018	0.040629	$ -		
24	$ 3,436	$ 149,930	$ -	0.035238	$ -			24	$ 784	0.035238	$ -		
25	$ 2,646	$ 149,930	$ -	0.030562	$ -			25	$ 604	0.030562	$ -		
26	$ 2,037	$ 149,930	$ -	0.026507	$ -			26	$ 465	0.026507	$ -		
27	$ 1,569	$ 149,930	$ -	0.022989	$ -			27	$ 358	0.022989	$ -		
28	$ 1,208	$ 149,930	$ -	0.019939	$ -			28	$ 276	0.019939	$ -		
29	$ 930	$ 149,930	$ -	0.017293	$ -			29	$ 212	0.017293	$ -		
30	$ 716	$ 149,930	$ -	0.014998	$ -			30	$ 163	0.014998	$ -		
31	$ 551	$ 149,930	$ -	0.013006	$ -			31	$ 126	0.013006	$ -		
32	$ 424	$ 149,930	$ -	0.011282	$ -			32	$ 97	0.011282	$ -		
33	$ 327	$ 149,930	$ -	0.009786	$ -			33	$ 75	0.009786	$ -		
34	$ 252	$ 149,930	$ -	0.008488	$ -			34	$ 57	0.008488	$ -		
35	$ 194	$ 149,930	$ -	0.007360	$ -			35	$ 44	0.007360	$ -		
36	$ 149	$ 149,930	$ -	0.006384	$ -			36	$ 34	0.006384	$ -		
37	$ 115	$ 149,930	$ -	0.005536	$ -			37	$ 26	0.005536	$ -		
38	$ 89	$ 149,930	$ -	0.004802	$ -			38	$ 20	0.004802	$ -		
39	$ 68	$ 149,930	$ -	0.004166	$ -			39	$ 16	0.004166	$ -		
40	$ 52	$ 149,930	$ -	0.003612	$ -			40	$ 12	0.003612	$ -		
	WORKING INTEREST APPRAISAL								ROYALTY INTEREST APPRAISAL				

09-06201666429

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 295

ACCOUNT:0660000714 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:HDRST JR #1

STATUS:A API#:00714 DATE:02/16/1962 DAYS:365 BBLS: MCFS: 230 RCPTS: 742 GWI: 400 OWI: 162

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.340 0.220 0.220 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 53

	GAS WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR	OIL WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	DISCODNT INCOME	FACTOR
1	268	188	175	86	80	0.931						
2	209	129	104	67	54	0.808						
3	163	83	58	52	37	0.701						
4	127	47	28	41	25	0.608						
5	99	19	10	32	17	0.527						
6	77	0	0	25	0	0.457						
TOTAL:			375		212							
EXPENSE:	80		80	80								

OCT 12, 2016
05:09 PM

'OOOORIDGE' COUNTY, WV
YIELO CAP MODEL REPORT POR - 2016

NRI05: 297

ACCOUNT:0660000783 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:NORST JR #4

STATUS:A API#:00783 OATE:06/13/1962 OAYS:365 BBLS: MCPS: 230 RCPTS: 742 GWI: 400 OWI: 162

SYSTEM RATES:
CAP RATE: 15.300 OECLINE RATE: 0.340 0.220 0.220 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USEO:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLEO YEARS: 53

	GAS WORKING INTEREST GROSS INCOME	NET INCOME	DISCOONT INCOME	GAS ROYALTY INTEREST GROSS INCOME	OISCOUNT INCOME	PACTOR	OIL WORKING INTEREST GROSS INCOME	NET INCOME	OISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	OISCOUNT INCOME	PACTOR
1	268	188	175	86	80	0.931						
2	209	129	104	67	54	0.808						
3	163	83	58	52	37	0.701						
4	127	47	28	41	25	0.608						
5	99	19	10	32	17	0.527						
6	77	0	0	25	0	0.457						
TOTAL:			375		212							
EXPENSE:	80		80	80								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 299

ACCOUNT:0660000788 RE5ODRCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:HURST JR #9

5TATUS:A API#:00788 DATE:09/15/1962 DAYS:365 EBLS: MCFS: 230 RCPT5: 742 GWI: 400 OWI: 162

5YSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.340 0.220 0.220 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES U5ED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

5ETTLED YEARS: 53

	GAS WORKING INTEREST GROSS INCOME	GAS WORKING INTEREST NET INCOME	GAS WORKING INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	GAS ROYALTY INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST FACTOR	OIL WORKING INTEREST GROSS INCOME	OIL WORKING INTEREST NET INCOME	OIL WORKING INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	OIL ROYALTY INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST FACTOR
1	268	188	175	86	80	0.931						
2	209	129	104	67	54	0.808						
3	163	83	58	52	37	0.701						
4	127	47	28	41	25	0.608						
5	99	19	10	32	17	0.527						
6	77	0	0	25	0	0.457						
TOTAL:			375		212							
3XPENSE:	80		80	80								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 301

ACCOUNT:0660001145 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:HURST JR. #6

STATUS:A API#:01145 DATE:07/21/1964 DAYS:365 BBLS: MCFS: 230 RCPTS: 742 GWI: 400 OWI: 162

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.340 0.220 0.220 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 51

	GAS WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR	OIL WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR
1	268	188	175	86	80	0.931						
2	209	129	104	67	54	0.808						
3	163	83	58	52	37	0.701						
4	127	47	28	41	25	0.608						
5	99	19	10	32	17	0.527						
6	77	0	0	25	0	0.457						
TOTAL:			375		212							
EXPENSE:	80		80	80								

'OOOORIOGE' COUNTY, WV
YIELD CAP MOOEL REPORT FOR - 2016

OCT 12, 2016
05:09 PM

NR105: 303

ACCOUNT:0660003477 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:PEARCY B 3

STATUS:A API#:03477 DATE:12/06/1985 OAYS:365 BBLS: MCFS: 17 RCPTS: 1987 GWI: 129 OWI: 1485

SYSTEM RATES:
CAP RATE: 15.300 OECLINE RATE: 0.340 0.220 0.220 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USEO:
CAP RATE: 15.300 OECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLEO YEARS: 30

	GAS WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	OISCOUNT INCOME	FACTOR	OIL WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR
1	86	61	56	20	19	0.931						
2	67	41	34	16	13	0.808						
3	53	27	19	12	9	0.701						
4	41	15	9	10	6	0.608						
5	32	6	3	7	4	0.527						
6	25	0	0	6	0	0.457						
TOTAL:			121		50							
EXPENSE:	26		26	26								

'OODDRIOGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

OCT 12, 2016
05:09 PM

NR105: 305

ACCOUNT:0680003134 RESOURCE:GS OWNER:ANTERO RESOORCES CORPORATI LOCATION:MAXWELL #3

STATOS:A API#:03134 OATE:08/28/1982 OAYS:365 BBLS: MCFS: 314 RCPTS: 1127 GWI: 929 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 OECLINE RATE: 0.390 0.220 0.100 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 OECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 33

	GAS WORKING INTEREST GROSS INCOME	GAS WORKING INTEREST NET INCOME	GAS WORKING INTEREST OISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	GAS ROYALTY INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST FACTOR	OIL WORKING INTEREST GROSS INCOME	OIL WORKING INTEREST NET INCOME	OIL WORKING INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	OIL ROYALTY INTEREST OISCOONT INCOME	OIL ROYALTY INTEREST FACTOR
1	790	553	515	168	157	0.931						
2	711	474	383	151	122	0.808						
3	640	403	282	136	95	0.701						
4	576	339	206	123	75	0.608						
5	518	281	148	110	58	0.527						
6	466	229	105	99	45	0.457						
7	420	183	72	89	35	0.396						
8	378	141	48	80	28	0.344						
9	340	103	31	72	22	0.298						
10	306	69	18	65	17	0.259						
11	275	38	9	59	13	0.224						
12	248	11	2	53	10	0.195						
13	223	0	0	48	0	0.169						
TOTAL:			1,819		678							
EXPENSE:	237		237	237								

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

OCT 12, 2016
05:09 PM

NR10S: 307

ACCODNT:0680003174 RESOURCE:GS OWNER:ANTERO RESOORCES CORPORATI LOCATION:COX "B" BATTEN #2

STATDS:A API#:03174 DATE:11/26/1982 DAYS:365 BBLS: MCFS: 2237 RCPTS: 7528 GWI: 6315 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.350 0.200 0.100 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 33

	GAS WORKING INTEREST			GAS ROYALTY INTEREST			OIL WORKING INTEREST			OIL ROYALTY INTEREST		
	GROSS INCOME	NET INCOME	DISCOONT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR
1	5,368	3,757	3,499	1,031	960	0.931						
2	4,831	3,221	2,601	928	750	0.808						
3	4,348	2,738	1,918	835	585	0.701						
4	3,913	2,303	1,399	752	457	0.608						
5	3,522	1,911	1,007	676	356	0.527						
6	3,170	1,559	713	609	278	0.457						
7	2,853	1,242	492	548	217	0.396						
8	2,567	957	329	493	170	0.344						
9	2,311	700	209	444	132	0.298						
10	2,080	469	121	399	103	0.259						
11	1,872	261	59	360	81	0.224						
12	1,684	74	14	324	63	0.195						
13	1,516	0	0	291	0	0.169						
TOTAL:			12,362		4,152							
EXPENSE:	1610		1610	1610								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 309

ACCOUNT:0690004484 RESOURCE:OG OWNER: LOCATION:

STATUS:A API#:04484 DATE:05/18/1919 DAYS:365 BBLS: MCFS: RCPTS: 11417 GWI: 0 OWI: 9365

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.360 0.160 0.130 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 GS EXPENSE: 0.3

SETTLED YEARS: 96 OL EXPENSE: 0.3

	GAS WORKING INTEREST			GAS ROYALTY INTEREST			OIL WORKING INTEREST			OIL ROYALTY INTEREST		
	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR
TOTAL:												

GS EXPENSE:

OL EXPENSE:

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

OCT 12, 2016
05:09 PM

NR105: 311

ACCOUNT:0800735003 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:JOSEPH FREEMAN #1

STATUS:A API#:01058 DATE:05/24/1913 DAYS:365 EELS: MCFS: 2755 RCPTS: 10329 GWI: 9038 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.340 0.170 0.140 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 102

	GAS WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR	OIL WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR
1	7,140	4,998	4,655	1,020	950	0.931						
2	6,140	3,998	3,230	877	708	0.808						
3	5,281	3,139	2,199	754	528	0.701						
4	4,541	2,399	1,458	649	394	0.608						
5	3,906	1,764	929	558	294	0.527						
6	3,359	1,217	556	480	219	0.457						
7	2,889	747	296	413	164	0.396						
8	2,484	342	118	355	122	0.344						
9	2,136	0	0	305	0	0.298						
TOTAL:			13,440		3,380							
EXPENSE:	2142		2142	2142								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 313

ACCOUNT:0800735007 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:W F SMITH #4

STATUS:A API#:03344 DATE:09/12/1984 DAYS:365 BBLS: MCFS: 1733 RCPTS: 5420 GWI: 4756 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.340 0.170 0.140 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE:
WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 31

	GAS WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR	OIL WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR
1	3,757	2,630	2,449	525	489	0.931						
2	3,231	2,104	1,699	451	364	0.808						
3	2,779	1,652	1,157	388	272	0.701						
4	2,390	1,263	767	334	203	0.608						
5	2,055	928	489	287	151	0.527						
6	1,768	640	293	247	113	0.457						
7	1,520	393	156	212	84	0.396						
8	1,307	180	62	183	63	0.344						
9	1,124	0	0	157	0	0.298						
TOTAL:			7,072		1,738							
EXPENSE:	1127		1127	1127								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 315

ACCOUNT:0800735009 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:MAXWELL#3

STATUS:A API#:03735 DATE:08/03/1989 DAYS:365 BBLS: MCFS: 908 RCPTS: 5724 GWI: 5009 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.440 0.220 0.100 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 26

	GAS WORKING INTEREST GROSS INCOME	GAS WORKING INTEREST NET INCOME	GAS WORKING INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	GAS ROYALTY INTEREST DISCOUNT INCOME	GAS ROYALTY INTEREST FACTOR	OIL WORKING INTEREST GROSS INCOME	OIL WORKING INTEREST NET INCOME	OIL WORKING INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	OIL ROYALTY INTEREST DISCOUNT INCOME	OIL ROYALTY INTEREST FACTOR
1	4,258	2,980	2,776	608	566	0.931						
2	3,832	2,555	2,063	547	442	0.808						
3	3,449	2,171	1,521	492	345	0.701						
4	3,104	1,827	1,110	443	269	0.608						
5	2,793	1,516	799	399	210	0.527						
6	2,514	1,237	565	359	164	0.457						
7	2,263	985	391	323	128	0.396						
8	2,036	759	261	291	100	0.344						
9	1,833	555	166	262	78	0.298						
10	1,650	372	96	235	61	0.259						
11	1,485	207	46	212	48	0.224						
12	1,336	59	11	191	37	0.195						
13	1,202	0	0	172	0	0.169						
TOTAL:			9,805		2,447							
EXPENSE:	1277		1277	1277								

OCT 12, 2016
05:09 PM

'OODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 317

ACCOUNT:0816165096 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:FREEMAN 016

STATUS:A API#:05096 OATE:10/06/2005 OAYS:365 BBLS: MCFS: 2113 RCPTS: 9030 GWI: 7655 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.340 0.170 0.140 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USEO:
CAP RATE: 15.300 OECLINE RATE:
WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLEO YEARS: 10

	GAS WORKING INTEREST GROSS INCOME	NET INCOME	OISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR	OIL WORKING INTEREST GROSS INCOME	NET INCOME	OISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	OISCOUNT INCOME	FACTOR
1	6,047	4,233	3,942	1,086	1,012	0.931						
2	5,201	3,387	2,735	934	755	0.808						
3	4,473	2,658	1,862	803	563	0.701						
4	3,847	2,032	1,235	691	420	0.608						
5	3,308	1,494	787	594	313	0.527						
6	2,845	1,031	471	511	234	0.457						
7	2,447	632	251	439	174	0.396						
8	2,104	290	100	378	130	0.344						
9	1,810	0	0	325	0	0.298						
TOTAL:			11,383		3,600							
EXPENSE:	1814		1814	1814								

				2014	GAS INCOME	OIL INCOME			GAS CAP INCOME	OIL CAP INCOME			
				WRK INT	$ 3,515,451	$ 553,994		YR1	$ 1,911,650	$ 167,305			
YR 1	39%			ROY INT	$ 2,025,121	$ 136,944			$ 536,687	$ 83,540			
YR 2	29%							YR2	$ 1,566,176	$ 116,406			
YR3+	23%								$ 367,139	$ 34,994			
	$ 6,445,714		TY2018 WORKING INTEREST						TY2018 ROYALTY INTEREST				
YEAR	WRK INT INCOME	WORKING COST	NET INC	PROT FCTR(18.5%)	DIS INC			YEAR	ROY INT INCOME	PROT FCTR(18.5%)	DIS INC		
1	$ 2,979,185	$ 141,530	$ 2,537,634	0.931291	$ 2,363,278			1	$ 570,297	0.931291	$ 531,113		
2	$ 1,982,582	$ 141,530	$ 1,841,051	0.807711	$ 1,487,037			2	$ 422,020	0.807711	$ 340,070		
3	$ 1,526,588	$ 141,530	$ 1,385,058	0.700530	$ 970,274			3	$ 324,955	0.700530	$ 227,641		
4	$ 1,170,473	$ 141,530	$ 1,033,942	0.607572	$ 628,194			4	$ 250,216	0.607572	$ 152,024		
5	$ 905,114	$ 141,530	$ 763,584	0.526948	$ 402,389			5	$ 192,666	0.526948	$ 101,525		
6	$ 696,938	$ 141,530	$ 555,407	0.457024	$ 253,834			6	$ 145,353	0.457024	$ 07,601		
7	$ 536,642	$ 141,530	$ 395,112	0.396378	$ 156,614			7	$ 114,232	0.396378	$ 45,279		
8	$ 413,214	$ 141,530	$ 271,684	0.343780	$ 93,400			8	$ 07,955	0.343780	$ 30,236		
9	$ 315,175	$ 141,530	$ 176,646	0.296101	$ 52,669			9	$ 67,728	0.296101	$ 20,194		
10	$ 244,995	$ 141,530	$ 103,464	0.256596	$ 26,755			10	$ 52,151	0.256596	$ 13,486		
11	$ 188,648	$ 141,530	$ 47,118	0.224281	$ 10,567			11	$ 40,156	0.224281	$ 9,006		
12	$ 145,257	$ 141,530	$ 3,727	0.194519	$ 725			12	$ 30,920	0.194519	$ 0,010		
13	$ 111,848	$ 141,530	$ -	0.168707	$ -			13	$ 23,806	0.168707	$ -		
14	$ 86,123	$ 141,530	$ -	0.146320	$ -			14	$ 18,332	0.146320	$ -		
15	$ 66,010	$ 141,530	$ -	0.126904	$ -			15	$ 14,110	0.126904	$ -		
16	$ 01,082	$ 141,530	$ -	0.110064	$ -			16	$ 10,869	0.110064	$ -		
17	$ 39,010	$ 141,530	$ -	0.095459	$ -			17	$ 8,369	0.095459	$ -		
18	$ 30,275	$ 141,530	$ -	0.082792	$ -			18	$ 6,444	0.082792	$ -		
19	$ 23,012	$ 141,530	$ -	0.071806	$ -			19	$ 4,962	0.071806	$ -		
20	$ 17,950	$ 141,530	$ -	0.062277	$ -			20	$ 3,821	0.062277	$ -		
21	$ 10,821	$ 141,530	$ -	0.054013	$ -			21	$ 2,942	0.054013	$ -		
22	$ 10,643	$ 141,530	$ -	0.046846	$ -			22	$ 2,265	0.046846	$ -		
23	$ 8,190	$ 141,530	$ -	0.040629	$ -			23	$ 1,744	0.040629	$ -		
24	$ 0,310	$ 141,530	$ -	0.035238	$ -			24	$ 1,343	0.035238	$ -		
25	$ 4,859	$ 141,530	$ -	0.030562	$ -			25	$ 1,034	0.030562	$ -		
26	$ 3,741	$ 141,530	$ -	0.026507	$ -			26	$ 796	0.026507	$ -		
27	$ 2,881	$ 141,530	$ -	0.022989	$ -			27	$ 013	0.022989	$ -		
28	$ 2,218	$ 141,530	$ -	0.019939	$ -			28	$ 472	0.019939	$ -		
29	$ 1,708	$ 141,530	$ -	0.017293	$ -			29	$ 364	0.017293	$ -		
30	$ 1,010	$ 141,530	$ -	0.014998	$ -			30	$ 280	0.014998	$ -		
31	$ 1,013	$ 141,530	$ -	0.013006	$ -			31	$ 210	0.013006	$ -		
32	$ 780	$ 141,530	$ -	0.011282	$ -			32	$ 166	0.011282	$ -		
33	$ 600	$ 141,530	$ -	0.009785	$ -			33	$ 128	0.009785	$ -		
34	$ 462	$ 141,530	$ -	0.008486	$ -			34	$ 98	0.008486	$ -		
35	$ 356	$ 141,530	$ -	0.007360	$ -			35	$ 76	0.007360	$ -		
36	$ 274	$ 141,530	$ -	0.006384	$ -			36	$ 58	0.006384	$ -		
37	$ 211	$ 141,530	$ -	0.005536	$ -			37	$ 45	0.005536	$ -		
38	$ 163	$ 141,530	$ -	0.004802	$ -			38	$ 35	0.004802	$ -		
39	$ 125	$ 141,530	$ -	0.004165	$ -			39	$ 27	0.004165	$ -		
40	$ 96	$ 141,530	$ -	0.003612	$ -			40	$ 21	0.003612	$ -		
	WORKING INTEREST APPRAISAL								ROYALTY INTEREST APPRAISAL				

09-08201606223

NATURAL OIL & GAS APPRAISAL [illegible]

	DECLINE RATES	2014	GAS INCOME	OIL INCOME		GAS S&P INCOME	OIL S&P INCOME
YR 1	80%	WRK INT	$ 5,874,038	$ 336,469	YR1	$ 2,288,620	$ 89,164
YR 2	29%	ROY INT	$ 1,718,800	$ 98,661		$ 448,403	$ 17,865
YR3+	23%				YR2	$ 1,700,978	$ 85,982
						$ 336,866	$ 13,072

$ 5,641,465

TY2015 WORKING INTEREST

YEAR	WRK INT INCOME	WORKING COST	NET INC	PRCT FCTR(12.0%)	DIS INC
1	$ 2,387,784	$ 144,613	$ 2,243,171	0.931291	$ 2,089,045
2	$ 1,766,960	$ 144,613	$ 1,622,347	0.807711	$ 1,616,388
3	$ 1,360,660	$ 144,616	$ 1,215,946	0.700630	$ 861,807
4	$ 1,047,631	$ 144,613	$ 903,617	0.607572	$ 548,648
5	$ 806,676	$ 144,613	$ 662,062	0.526946	$ 348,872
6	$ 621,140	$ 144,613	$ 476,527	0.457024	$ 217,784
7	$ 478,278	$ 144,613	$ 333,665	0.396376	$ 132,257
8	$ 368,274	$ 144,613	$ 223,661	0.343780	$ 76,890
9	$ 283,671	$ 144,613	$ 138,958	0.298161	$ 41,432
10	$ 218,350	$ 144,613	$ 73,736	0.258596	$ 19,068
11	$ 168,129	$ 144,613	$ 23,516	0.224281	$ 6,274
12	$ 129,460	$ 144,613	$ -	0.194519	$ -
13	$ 99,684	$ 144,613	$ -	0.168707	$ -
14	$ 76,757	$ 144,613	$ -	0.146320	$ -
15	$ 59,103	$ 144,613	$ -	0.126904	$ -
16	$ 45,509	$ 144,613	$ -	0.110064	$ -
17	$ 35,042	$ 144,613	$ -	0.095459	$ -
18	$ 26,982	$ 144,613	$ -	0.082792	$ -
19	$ 20,776	$ 144,613	$ -	0.071806	$ -
20	$ 15,998	$ 144,613	$ -	0.062277	$ -
21	$ 12,318	$ 144,613	$ -	0.054013	$ -
22	$ 9,485	$ 144,613	$ -	0.046846	$ -
23	$ 7,304	$ 144,613	$ -	0.040629	$ -
24	$ 5,624	$ 144,613	$ -	0.035238	$ -
25	$ 4,330	$ 144,613	$ -	0.030562	$ -
26	$ 3,334	$ 144,613	$ -	0.026507	$ -
27	$ 2,567	$ 144,613	$ -	0.022989	$ -
28	$ 1,977	$ 144,613	$ -	0.019939	$ -
29	$ 1,522	$ 144,613	$ -	0.017293	$ -
30	$ 1,172	$ 144,613	$ -	0.014998	$ -
31	$ 903	$ 144,613	$ -	0.013008	$ -
32	$ 695	$ 144,613	$ -	0.011282	$ -
33	$ 535	$ 144,613	$ -	0.009785	$ -
34	$ 412	$ 144,613	$ -	0.008486	$ -
35	$ 317	$ 144,613	$ -	0.007360	$ -
36	$ 244	$ 144,613	$ -	0.006384	$ -
37	$ 188	$ 144,613	$ -	0.005536	$ -
38	$ 145	$ 144,613	$ -	0.004802	$ -
39	$ 112	$ 144,613	$ -	0.004165	$ -
40	$ 86	$ 144,613	$ -	0.003612	$ -

WORKING INTEREST APPRAISAL [illegible]

TY2015 ROYALTY INTEREST [illegible]

YEAR	ROY INT INCOME	PRCT FCTR(16.0%)	DIS INC
1	$ 473,068	0.931291	$ 440,564
2	$ 350,070	0.807711	$ 282,755
3	$ 269,664	0.700630	$ 188,931
4	$ 207,657	0.607572	$ 126,106
5	$ 159,619	0.526946	$ 84,216
6	$ 123,060	0.457024	$ 56,241
7	$ 94,756	0.396378	$ 37,559
8	$ 72,962	0.343780	$ 25,083
9	$ 56,181	0.298161	$ 16,751
10	$ 43,259	0.258596	$ 11,187
11	$ 33,310	0.224281	$ 7,471
12	$ 25,649	0.194519	$ -
13	$ 19,749	0.168707	$ -
14	$ 16,207	0.146320	$ -
15	$ 11,709	0.126904	$ -
16	$ 9,616	0.110064	$ -
17	$ 6,942	0.095459	$ -
18	$ 6,346	0.082792	$ -
19	$ 4,116	0.071806	$ -
20	$ 3,169	0.062277	$ -
21	$ 2,440	0.054013	$ -
22	$ 1,879	0.046846	$ -
23	$ 1,447	0.040629	$ -
24	$ 1,114	0.035238	$ -
25	$ 858	0.030562	$ -
26	$ 661	0.026507	$ -
27	$ 509	0.022989	$ -
28	$ 392	0.019939	$ -
29	$ 302	0.017293	$ -
30	$ 232	0.014998	$ -
31	$ 179	0.013008	$ -
32	$ 138	0.011282	$ -
33	$ 106	0.009785	$ -
34	$ 82	0.008486	$ -
35	$ 63	0.007360	$ -
36	$ 48	0.006384	$ -
37	$ 37	0.005536	$ -
38	$ 29	0.004802	$ -
39	$ 22	0.004165	$ -
40	$ 17	0.003612	$ -

ROYALTY INTEREST APPRAISAL [illegible]

09-0820166225

DECLINE RATES	
YR-1	89%
YR 2	29%
YR3+	23%

2014	GAS INCOME	OIL INCOME
WRK INT	$ 1,974,988	$ 67,512
ROY INT	$ 1,582,789	$ 18,478

	GAS DAP INCOME	OIL DAP INCOME
YR1	$ 2,113,374	$ 17,997
	$ 419,439	$ 5,572
YR2	$ 1,863,897	$ 13,318
	$ 310,385	$ 2,643

$ 4,926,288

TY2016 WORKING INTEREST

YEAR	WRK INT INCOME	WORKING COST	NET INC	PRDT PCTR(16.8%)	DIS INC
1	$ 2,131,371	$ 148,782	$ 1,982,589	0.931291	$ 1,846,867
2	$ 1,577,215	$ 148,782	$ 1,428,433	0.807711	$ 1,153,781
3	$ 1,214,455	$ 148,782	$ 1,065,672	0.700530	$ 746,536
4	$ 935,131	$ 148,782	$ 786,349	0.607572	$ 477,763
5	$ 720,061	$ 148,782	$ 571,269	0.526948	$ 301,029
6	$ 554,439	$ 148,782	$ 405,657	0.457024	$ 185,386
7	$ 426,010	$ 148,782	$ 276,186	0.396378	$ 110,247
8	$ 328,727	$ 148,782	$ 179,945	0.343760	$ 61,861
9	$ 253,120	$ 148,782	$ 104,338	0.296101	$ 31,109
10	$ 194,902	$ 148,782	$ 46,120	0.256596	$ 11,926
11	$ 150,075	$ 148,782	$ 1,293	0.224261	$ 290
12	$ 115,557	$ 148,782	$ -	0.194519	$ -
13	$ 88,979	$ 148,782	$ -	0.168707	$ -
14	$ 68,514	$ 148,782	$ -	0.146320	$ -
15	$ 52,756	$ 148,782	$ -	0.126904	$ -
16	$ 40,622	$ 148,782	$ -	0.110064	$ -
17	$ 31,279	$ 148,782	$ -	0.095459	$ -
18	$ 24,085	$ 148,782	$ -	0.082792	$ -
19	$ 18,545	$ 148,782	$ -	0.071806	$ -
20	$ 14,280	$ 148,782	$ -	0.062277	$ -
21	$ 10,995	$ 148,782	$ -	0.054013	$ -
22	$ 8,467	$ 148,782	$ -	0.046846	$ -
23	$ 6,519	$ 148,782	$ -	0.040629	$ -
24	$ 5,020	$ 148,782	$ -	0.035238	$ -
25	$ 3,865	$ 148,782	$ -	0.030562	$ -
26	$ 2,976	$ 148,782	$ -	0.026507	$ -
27	$ 2,292	$ 148,782	$ -	0.022989	$ -
28	$ 1,765	$ 148,782	$ -	0.019939	$ -
29	$ 1,359	$ 148,782	$ -	0.017293	$ -
30	$ 1,046	$ 148,782	$ -	0.014998	$ -
31	$ 806	$ 148,782	$ -	0.013008	$ -
32	$ 620	$ 148,782	$ -	0.011282	$ -
33	$ 478	$ 148,782	$ -	0.009785	$ -
34	$ 368	$ 148,782	$ -	0.008486	$ -
35	$ 283	$ 148,782	$ -	0.007360	$ -
36	$ 218	$ 148,782	$ -	0.006384	$ -
37	$ 168	$ 148,782	$ -	0.005536	$ -
38	$ 129	$ 148,782	$ -	0.004802	$ -
39	$ 100	$ 148,782	$ -	0.004166	$ -
40	$ 77	$ 148,782	$ -	0.003612	$ -

WORKING INTEREST APPRAISAL

TY2016 ROYALTY INTEREST

YEAR	ROY INT INCOME	PRDT PCTR(16.0%)	DIS INC
1	$ 423,011	0.931291	$ 393,940
2	$ 313,028	0.807711	$ 252,836
3	$ 241,032	0.700530	$ 168,850
4	$ 185,594	0.607572	$ 112,782
5	$ 142,908	0.526948	$ 75,308
6	$ 110,039	0.457024	$ 50,290
7	$ 84,730	0.396378	$ 33,585
8	$ 65,242	0.343760	$ 22,429
9	$ 50,236	0.298181	$ 14,979
10	$ 38,682	0.258596	$ 10,003
11	$ 29,785	0.224261	$ 6,680
12	$ 22,935	0.194519	$ -
13	$ 17,660	0.168707	$ -
14	$ 13,598	0.146320	$ -
15	$ 10,470	0.126904	$ -
16	$ 8,062	0.110064	$ -
17	$ 6,208	0.095459	$ -
18	$ 4,780	0.082792	$ -
19	$ 3,681	0.071806	$ -
20	$ 2,834	0.062277	$ -
21	$ 2,182	0.054013	$ -
22	$ 1,680	0.046846	$ -
23	$ 1,294	0.040629	$ -
24	$ 996	0.035238	$ -
25	$ 767	0.030562	$ -
26	$ 591	0.026507	$ -
27	$ 455	0.022989	$ -
28	$ 350	0.019939	$ -
29	$ 270	0.017293	$ -
30	$ 208	0.014998	$ -
31	$ 160	0.013008	$ -
32	$ 123	0.011282	$ -
33	$ 95	0.009785	$ -
34	$ 73	0.008486	$ -
35	$ 56	0.007360	$ -
36	$ 43	0.006384	$ -
37	$ 33	0.005536	$ -
38	$ 26	0.004802	$ -
39	$ 20	0.004166	$ -
40	$ 10	0.003612	$ -

ROYALTY INTEREST APPRAISAL

09-0820166312

[illegible] NATURAL GAS & OIL APPRAISAL [illegible] SOUTH WEST [illegible]

	DECLINE RATES
YR 1	50%
YR 2	29%
YR3+	23%

2014	GAS INCOME	OIL INCOME		GAS CAP INCOME	OIL CAP INCOME
WRK INT	$ 2,399,380	$ 60,424	YR1	$ 1,430,336	$ 16,012
ROY INT	$ 686,821	$ 11,077		$ 282,303	$ 2,835
			YR2	$ 1,066,815	$ 11,949
				$ 194,104	$ 2,172

$ 3,095,823

TY2016 WORKING INTEREST

YEAR	WRK INT INCOME	WORKING COST	NET INC	PRCT FCTR(15.0%)	DIS INC
1	$ 1,445,848	$ 148,404	$ 1,298,444	0.931291	$ 1,209,230
2	$ 1,070,668	$ 148,404	$ 922,264	0.807711	$ 744,923
3	$ 824,414	$ 148,404	$ 676,010	0.700530	$ 473,566
4	$ 634,799	$ 148,404	$ 486,395	0.607572	$ 295,820
5	$ 488,795	$ 148,404	$ 340,391	0.526948	$ 179,369
6	$ 376,372	$ 148,404	$ 227,969	0.457024	$ 104,187
7	$ 289,807	$ 148,404	$ 141,403	0.396378	$ 65,049
8	$ 223,151	$ 148,404	$ 74,748	0.343780	$ 25,697
9	$ 171,826	$ 148,404	$ 23,423	0.298181	$ 6,984
10	$ 132,306	$ 148,404	$ -	0.258596	$ -
11	$ 101,876	$ 148,404	$ -	0.224281	$ -
12	$ 78,444	$ 148,404	$ -	0.194519	$ -
13	$ 60,402	$ 148,404	$ -	0.168707	$ -
14	$ 46,510	$ 148,404	$ -	0.146320	$ -
15	$ 35,812	$ 148,404	$ -	0.126904	$ -
16	$ 27,576	$ 148,404	$ -	0.110064	$ -
17	$ 21,233	$ 148,404	$ -	0.095459	$ -
18	$ 16,350	$ 148,404	$ -	0.082792	$ -
19	$ 12,589	$ 148,404	$ -	0.071806	$ -
20	$ 9,694	$ 148,404	$ -	0.062277	$ -
21	$ 7,464	$ 148,404	$ -	0.054013	$ -
22	$ 5,747	$ 148,404	$ -	0.046846	$ -
23	$ 4,425	$ 148,404	$ -	0.040629	$ -
24	$ 3,408	$ 148,404	$ -	0.035238	$ -
25	$ 2,624	$ 148,404	$ -	0.030562	$ -
26	$ 2,020	$ 148,404	$ -	0.026507	$ -
27	$ 1,556	$ 148,404	$ -	0.022989	$ -
28	$ 1,198	$ 148,404	$ -	0.019939	$ -
29	$ 922	$ 148,404	$ -	0.017293	$ -
30	$ 710	$ 148,404	$ -	0.014998	$ -
31	$ 547	$ 148,404	$ -	0.013008	$ -
32	$ 421	$ 148,404	$ -	0.011282	$ -
33	$ 324	$ 148,404	$ -	0.009785	$ -
34	$ 250	$ 148,404	$ -	0.008486	$ -
35	$ 192	$ 148,404	$ -	0.007360	$ -
36	$ 148	$ 148,404	$ -	0.006384	$ -
37	$ 114	$ 148,404	$ -	0.005536	$ -
38	$ 88	$ 148,404	$ -	0.004802	$ -
39	$ 68	$ 148,404	$ -	0.004165	$ -
40	$ 52	$ 148,404	$ -	0.003612	$ -

WORKING INTEREST APPRAISAL [redacted]

TY2016 ROYALTY INTEREST [redacted]

YEAR	ROY INT INCOME	PRCT FCTR(15.0%)	DIS INC
1	$ 285,238	0.931291	$ 247,014
2	$ 196,278	0.807711	$ 158,534
3	$ 151,133	0.700530	$ 105,873
4	$ 116,372	0.607572	$ 70,704
5	$ 89,607	0.526948	$ 47,218
6	$ 68,997	0.457024	$ 31,533
7	$ 53,126	0.396378	$ 21,059
8	$ 40,908	0.343780	$ 14,063
9	$ 31,499	0.298181	$ 9,392
10	$ 24,255	0.258596	$ -
11	$ 18,676	0.224281	$ -
12	$ 14,381	0.194519	$ -
13	$ 11,073	0.168707	$ -
14	$ 8,526	0.146320	$ -
15	$ 6,565	0.126904	$ -
16	$ 5,055	0.110064	$ -
17	$ 3,892	0.095459	$ -
18	$ 2,997	0.082792	$ -
19	$ 2,306	0.071806	$ -
20	$ 1,777	0.062277	$ -
21	$ 1,368	0.054013	$ -
22	$ 1,054	0.046846	$ -
23	$ 811	0.040629	$ -
24	$ 625	0.035238	$ -
25	$ 481	0.030562	$ -
26	$ 370	0.026507	$ -
27	$ 285	0.022989	$ -
28	$ 220	0.019939	$ -
29	$ 169	0.017293	$ -
30	$ 130	0.014998	$ -
31	$ 100	0.013008	$ -
32	$ 77	0.011282	$ -
33	$ 59	0.009785	$ -
34	$ 46	0.008486	$ -
35	$ 35	0.007360	$ -
36	$ 27	0.006384	$ -
37	$ 21	0.005536	$ -
38	$ 16	0.004802	$ -
39	$ 12	0.004165	$ -
40	$ 10	0.003612	$ -

ROYALTY INTEREST APPRAISAL [redacted]

09-0820166317

OCT 12. 2016
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'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 327

ACCODNT:0830003784 RESOORCE:GS OWNER:ANTERO RESODRCES CORPORATI LOCATION:FREEMAN 1

STATOS:A API#:03784 DATE:12/01/1989 DAYS:365 EELS: MCFS: 1273 RCPTS: 4299 GWI: 3645 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.340 0.170 0.140 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 26

	GAS WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCONE	GAS ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR	OIL WORKING INTEREST GROSS INCOME	NET INCOME	DISCOONT INCOME	OIL ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR
1	2,880	2,016	1,877	517	481	0.931						
2	2,476	1,613	1,302	444	359	0.808						
3	2,130	1,266	887	382	268	0.701						
4	1,832	968	588	329	200	0.608						
5	1,575	711	375	283	149	0.527						
6	1,355	491	224	243	111	0.457						
7	1,165	301	119	209	83	0.396						
8	1,002	138	47	180	62	0.344						
9	862	0	0	155	0	0.298						
TOTAL:			5,420		1,712							
EXPENSE:	864		864	864								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 329

ACCOUNT:0860002698 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:JOSEPH FREEMAN #2

STATUS:A API#:02698 DATE:09/29/1984 DAYS:365 BBLS: MCFS: 1132 RCPTS: 4262 GWI: 3729 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.360 0.160 0.130 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE:

SETTLED YEARS: 31 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

	GAS WORKING INTEREST			GAS ROYALTY INTEREST			OIL WORKING INTEREST			OIL ROYALTY INTEREST		
	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	FACTOR
1	3,002	2,101	1,957	429	400	0.931						
2	2,612	1,711	1,382	373	302	0.808						
3	2,272	1,372	961	325	228	0.701						
4	1,977	1,076	654	283	172	0.608						
5	1,720	819	432	246	130	0.527						
6	1,496	596	272	214	98	0.457						
7	1,302	401	159	186	74	0.396						
8	1,132	232	80	162	56	0.344						
9	985	85	25	141	42	0.298						
10	857	0	0	123	0	0.259						
TOTAL:			5,921		1,499							
EXPENSE:	901		901	901								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

NR105: 331

ACCOUNT:0860003783 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:W F SMITH #8

STATUS:A API#:03783 DATE:04/06/1990 DAYS:365 BBLS: MCFS: 2441 RCPTS: 7722 GWI: 6776 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.340 0.170 0.140 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE: WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

SETTLED YEARS: 25

	GAS WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	GAS ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR	OIL WORKING INTEREST GROSS INCOME	NET INCOME	DISCOUNT INCOME	OIL ROYALTY INTEREST GROSS INCOME	DISCOUNT INCOME	FACTOR
1	5,353	3,747	3,490	747	696	0.931						
2	4,604	2,998	2,421	643	519	0.808						
3	3,959	2,353	1,648	553	387	0.701						
4	3,405	1,799	1,093	475	289	0.608						
5	2,928	1,322	697	409	215	0.527						
6	2,518	912	417	352	161	0.457						
7	2,166	560	222	302	120	0.396						
8	1,862	257	88	260	89	0.344						
9	1,602	0	0	224	0	0.298						
TOTAL:			10,076		2,476							
EXPENSE:	1606		1606	1606								

OCT 12, 2016
05:09 PM

'DODDRIDGE' COUNTY, WV
YIELD CAP MODEL REPORT FOR - 2016

ACCOUNT:0860003875 NR105: 333

STATUS:A API#:03875 RESOURCE:GS OWNER:ANTERO RESOURCES CORPORATI LOCATION:MAXWELL HRS #5

DATE:08/13/1992 DAYS:365 BBLS: MCFS: 2654 RCPTS: 10570 GWI: 9249 OWI: 0

SYSTEM RATES:
CAP RATE: 15.300 DECLINE RATE: 0.340 0.220 0.220 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

RATES USED:
CAP RATE: 15.300 DECLINE RATE:

SETTLED YEARS: 23 WELLLIFE:99 EXPENSE: 0.3 5000 5000 5000

	GAS WORKING INTEREST			GAS ROYALTY INTEREST			OIL WORKING INTEREST			OIL ROYALTY INTEREST		
	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCOUNT INCOME	PACTOR	GROSS INCOME	NET INCOME	DISCOUNT INCOME	GROSS INCOME	DISCODNT INCOME	FACTOR
1	6,197	4,338	4,040	885	824	0.931						
2	4,834	2,974	2,403	690	558	0.808						
3	3,770	1,911	1,339	538	377	0.701						
4	2,941	1,082	657	420	255	0.608						
5	2,294	435	229	328	173	0.527						
6	1,789	0	0	256	0	0.457						
TOTAL:			8,667		2,187							
EXPENSE:	1859		1859	1859								