

# MARCELLUS EDUCATION FACT SHEET



## Natural Gas Lessors' Experiences in Bradford and Tioga Counties, 2010

**A**s the natural gas industry continues to spread throughout the Marcellus shale, little is understood about the people leasing their oil and gas rights. What were their reasons for entering into a natural gas lease? Who did they consult prior to signing a lease? Are they satisfied with their overall leasing experiences? Many assumptions have been made regarding how landowners view the booming industry, and as the number of Pennsylvania lessors continues to increase, understanding people's actions during the leasing process is becoming more important.

As part of a larger study focusing on the economic impacts of Marcellus shale development, a household survey was sent to 1,000 landowners located within 1,000 feet of active Marcellus wells in Pennsylvania's Bradford and Tioga Counties in fall 2010. The survey results provide insights into what occurred in two of Pennsylvania's most active Marcellus shale counties during 2010 and what other counties could potentially experience as drilling activity increases throughout the state.

### About the Counties

The survey was sent to landowners within Pennsylvania's Bradford and Tioga Counties. Both counties are located in Pennsylvania's northern tier, along the New York border,

and are predominantly rural counties, with significant forests and farmland. In 2009, the U.S. Census estimated Bradford County's population at 61,131 residents and Tioga County's population at 40,875, with approximately 80 percent of these residents being over the age of 18 in each county. In 2008, the U.S. Census estimated both Bradford and Tioga Counties' median household incomes at approximately \$40,000 (U.S. Census Quick Facts).

These counties were selected due to their high activity of Marcellus shale development, which increases the likelihood of finding landowners who have signed a natural gas lease. Bradford and Tioga Counties have seen the most Marcellus drilling activity of any of the Pennsylvania counties. In 2010, the Department of Environmental Protection (DEP) reported 355 wells drilled in Bradford County and 266 wells drilled in Tioga County (PA DEP, 2011).

In addition, these counties were selected because they have not experienced an extensive history of severing surface land rights and mineral rights. Many landowners in these counties thus also own the mineral rights beneath their land, making it possible to use public landownership records to learn about mineral ownership. Identifying mineral rights owners in Pennsylvania is difficult because most Pennsylvania

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counties do not maintain active summary records of mineral rights ownership, comparable to land ownership summary records that list names, parcel, and address.

## Methods

Landowners were identified using geographic information system (GIS) property records, drawing a 1,000-foot-radius circle around longitude and latitude information about active wells in Bradford and Tioga Counties (as reported by DEP). One thousand landowners were randomly selected from the resulting list of landowners, and surveys were sent to them in fall 2010. The sample included 516 landowners from Bradford County and 484 from Tioga County. Two follow-up reminders were sent to nonresponders. Responses were received from 501 landowners, for a response rate of 50.1 percent. Surveys were returned from 19 people who said they had not leased their oil and gas rights for natural gas drilling in the Marcellus shale; their answers were dropped from the analysis. Of the respondents whose minerals were leased for drilling in the Marcellus shale, 30 people said they were not the mineral owner responsible for leasing their property; their answers were also dropped from the analysis. The remaining respondents owned the minerals under their land and leased them for Marcellus shale development. In the remainder of this fact sheet they will be referred to as “lessors” or “mineral owners.”

## Mineral Owners’ Reasons for Signing a Natural Gas Lease

About 75 percent of the survey respondents first entered a lease for natural gas drilling since 2004, the year the first well was completed in the Marcellus shale. The majority of these leases were owned by individual families (about 80 percent of respondents) who lived on the property over the gas lease (about 70 percent of respondents) and who had a household income (before taxes) between \$50,000 and \$74,999 the year before they entered into a natural gas lease (about 25 percent).

About 43 percent of the lessors said they leased their oil and gas

rights for economic reasons (Table 1). Thirty-one percent said the price offered was “right.” In contrast, about 11 percent said they leased because they felt pressured by others to do so, such as neighbors or a natural gas company. Typical comments from these mineral owners included feeling forced by neighbors to sign so they could be included to complete a drilling unit, or that “the gas people said they could go under us and take the gas if we were not leased, so we might as well sign the lease.”

## Mineral Owners’ Actions Prior to Signing a Natural Gas Lease

The vast majority of lessors reported signing a lease without doing much background work to understand the implications of such a decision. Only 32 percent reviewed any educational materials about the leasing process prior to signing their natural gas lease (Table 2). About one-quarter (26 percent) of these lessors who reviewed materials received information prepared or provided by Penn State Extension, while Internet searches (21 percent) and the

**Table 1. Lessor reasons for signing a natural gas lease.**

<i>What were your reasons for leasing your oil and gas rights for natural gas drilling? (Select all that apply.)</i>	<i>Percent selecting response (Number selecting response)</i>		
	<i>All Responses*</i>	<i>Bradford County*</i>	<i>Tioga County*</i>
Needed the income	43% (177)	45% (102)	40% (75)
The price was right	31% (128)	31% (71)	31% (57)
Do not live on the land being drilled	10% (40)	8% (18)	12% (22)
Do not use the land being drilled	5% (22)	4% (9)	7% (13)
Pressure from neighbors	5% (19)	5% (12)	4% (7)
Pressure from gas company	3% (11)	3% (7)	2% (4)
General pressure	3% (11)	2% (5)	3% (6)
Other	18% (73)	17% (38)	19% (35)

\*Figures do not add to 100 percent since respondents could select multiple answers.

**Table 2. Lessor actions prior to signing their natural gas leases.**

	<i>Percent selecting response (Number selecting response)</i>		
	<i>All Responses</i>	<i>Bradford County</i>	<i>Tioga County</i>
<i>Prior to signing your lease, did you review any educational materials about the leasing process?</i>			
No	68% (273)	69% (153)	67% (120)
Yes	32% (128)	31% (70)	33% (58)
<i>If “yes,” which organization(s) developed or provided these educational materials?</i>			
Penn State Extension	26% (23)	31% (16)	18% (7)
Gas company	19% (17)	17% (9)	21% (8)
Internet searches	21% (19)	15% (8)	29% (11)
Other	34% (31)	37% (19)	32% (12)
<i>How many natural gas leasing workshops did you attend prior to or after signing your lease?</i>			
None	70% (284)	68% (153)	72% (131)
One workshop	13% (54)	13% (30)	13% (24)
Multiple workshops	17% (70)	19% (42)	15% (28)

gas company (19 percent) were also common sources of the information. Other information sources included outside experts, attorneys, or others who had already leased. A similar low percentage of mineral owners (30 percent) reported attending educational workshops on natural gas leasing prior to signing their lease.

Experts on natural gas leasing typically recommend that oil and gas rights owners, prior to signing a lease, consult with an attorney to protect their legal rights, and talk with more than one gas company to better negotiate the lease price. Relatively few of the lessors reported taking either action. Only 28 percent talked with an attorney prior to leasing, and only 21 percent

talked with more than one gas company (Table 3). These percentages are consistent across both Bradford and Tioga Counties. When mineral owners reported that they did speak to more than one natural gas company, the majority only spoke with two. About 26 percent of the mineral owners are working with a financial adviser to help manage their leasing and royalty income.

### Dollars Received for Leasing

The amount of leasing dollars being paid per acre varied drastically among lessors, ranging from \$1 per acre to \$5,750 per acre. A similar percentage of lessors (about 30 percent) are receiving either less than \$50 per acre or from \$1,000 to

\$3,000 per acre. These percentages are about equal across both Bradford and Tioga Counties. The majority of leases for less than \$50 per acre were signed in 2006, while the majority of leases for \$1,000–3,000 per acre were signed in 2008. About 70 percent of the leases receiving over \$3,000 per acre were signed in 2009.

The actions lessors took before signing their leases seemed to have an impact on the amount of leasing money they received, when accounting for the year of the lease, number of acres leased, and the county. Statistical analysis of their answers suggests that the owners who spoke with more than one natural gas company received about \$404 more per acre in their natural gas lease than did mineral rights owners who did not. Those who consulted a lawyer received about \$278 more per acre. The lessors who reviewed educational materials prior to signing a natural gas lease appeared to receive a higher price per acre, but these results were not statistically significant.<sup>1</sup>

### Land Use and Changes to Properties with a Well Pad

One hundred and forty-five of the lessors said that they had at least one well pad on their parcel; of these, 125 have at least one well (26 percent have one well, and 74 percent have multiple wells). A little more than half of the land with well pads is being farmed or has a residence on it (Table 4). Very few of the leased parcels are categorized as commercial or industrial properties.

About 78 percent of the lessors with well pads on their property said natural gas drilling has affected their property. These impacts included heavy traffic, road damage, decreased aesthetics, and noise to increased property values. Half of the owners of farmed land with well pads indicate that they have seen significant changes in their ability to farm that land (Table 5). Unfortunately, the survey did not ask more detailed information about

**Table 3. Lessor actions prior to entering natural gas lease.**

	Percent selecting response (Number selecting response)		
	All Responses	Bradford County	Tioga County
Did you consult with a lawyer before signing your lease?			
No	72% (292)	72% (160)	72% (132)
Yes	28% (113)	28% (61)	28% (52)
Did you speak with more than one natural gas company before signing a lease?			
No	79% (320)	80% (176)	79% (144)
Yes	21% (84)	20% (45)	21% (39)
If "yes," how many companies did you talk to?			
Two	59% (45)	55% (22)	64% (23)
Three	28% (21)	28% (11)	28% (10)
Four or more	13% (10)	18% (7)	8% (3)
Are you working with or have you hired a finance manager to help you manage the leasing/royalty income?			
No	74% (301)	70% (155)	78% (146)
Yes	26% (108)	30% (68)	22% (40)

**Table 4. Current surface use of land with well pads.**

	Percent selecting response (Number selecting response)		
	All Responses*	Bradford County*	Tioga County*
What is the current land use of the surface property of your leased parcel? Please select all that apply.			
Residence	56% (44)	58% (31)	50% (13)
Farmed	73% (58)	77% (41)	65% (17)
Commercial/Industrial	1% (1)	1% (1)	0 (0)
Recreational (vacation/camp) with second home	15% (12)	17% (9)	12% (3)
Recreational without second home	18% (14)	15% (8)	23% (6)
Other	8% (6)	6% (3)	12% (3)

\*Figures do not add to 100 percent since respondents could select multiple answers.

1. Multiple regression was performed to determine these values. The adjusted R<sup>2</sup> = 0.3661. Statistical significance is 99 percent for talking with more than one natural gas company, and 94 percent for consulting an attorney.

how their ability to farm the land has been affected, such as whether this refers solely to the land under the well pad or the entire field that has such a well pad. Some lessors' comments indicated a mix of impacts, such as the following: "Land disturbed. Not just the drill pad, but drains made in the field, loss of top soil, etc.," "Small percent of our hay field was used for [the] road to well pads," "Subsurface drainage has been altered, resulting in wet areas that were dry," and, "Pads are not all located to allow reasonable farming activities (i.e., in the middle of the field)."

### Lessor Actions and Lease Satisfaction

A little more than half of the lessors (about 55 percent) said that if they were given a choice, they would not sign their original lease again. Many of these lessors reported that they believe their lease and royalty payments were too low, and others said they would have included additional amendments or clauses in their original lease. Lessors who had

spoken with an attorney or multiple companies before leasing were somewhat more likely to be willing to sign their original lease, yet still less than half would do so (Table 6).

This dissatisfaction appears to be focused mostly on the terms of the leases, rather than on the drilling activity itself. Only 17 percent of all the owners said that if given a chance, they would not sign any natural gas drilling lease again. About 83 percent of all lessors and 76 percent of lessors with well pads currently on their property said they were willing to sign natural gas leases again.

### Overall Impacts on Lessors and Community

About half of the lessors near Marcellus shale wells (52 percent) thought that drilling activity has had a positive impact on them personally. A little more than one-quarter (28 percent) were not sure whether it has personally affected them positively or negatively, and 17 percent said the effects have been negative. Four percent thought

Marcellus activity has both positive and negative effects. A larger percentage of mineral owners (60 percent) said that Marcellus activity had a positive effect on their community, and only 15 percent said the impacts had been negative. An additional 17 percent said that they did not know whether impacts were positive or negative, and 8 percent said the effects had been both positive and negative.

### Implications

The responses from lessors living close to Marcellus shale wells provide useful insights into how Marcellus shale activity is affecting them. Lessors who consulted with an attorney and talked with more than one gas company earned more leasing dollars per acre and were somewhat more satisfied with their original leases than were lessors who signed without legal advice. Most lessors are not satisfied with their current lease terms but would be open to signing another natural gas lease under different conditions. These findings indicate that lessors need information that can help them find an appropriate lawyer and other gas companies to consult prior to signing a natural gas lease.

One in ten dissatisfied lessors say they originally signed their natural gas lease due to some type of pressure. The majority of these lessors blamed their neighbors for pressuring them to sign. Even though most lessors are dissatisfied with their current leases, most feel that drilling the Marcellus shale has had a positive impact on their community and on them personally. In fact, the majority of lessors who believe natural gas drilling has had a negative impact on their community would still be interested in signing another lease. Similarly, lessors who feel the natural gas development is negatively affecting their property are still very willing to sign another gas lease. This important finding illustrates the significance of the lease and royalty dollars to the individual lessor.

**Table 5. Ability to farm land with well pads.**

	Percent selecting response (Number selecting response)		
	All Responses	Bradford County	Tioga County
If the surface property is agricultural land, have you seen any significant changes in the ability to farm it?			
No	50.00% (28)	47.50% (19)	56.25% (9)
Yes	50.00% (28)	52.50% (21)	43.75% (7)

**Table 6. Lessors' prior actions versus lease satisfaction.**

Would you sign your original gas lease again?	Percent selecting response (Number selecting response)	
	Yes	No
If reviewed educational materials prior to signing a lease		
No	34% (87)	66% (171)
Yes	44% (54)	56% (70)
If consulted with a lawyer prior to signing a lease		
No	34% (94)	66% (182)
Yes	45% (49)	55% (59)
If spoke with multiple gas companies prior to signing your lease		
No	35% (107)	65% (197)
Yes	46% (37)	54% (44)

## References

Pennsylvania Department of Environmental Protection. "2010 Wells Drilled by County."

U.S. Census Bureau. "State and County Quick Facts, 2010."

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## Put Our Experience to Work for Your Community

The Penn State Extension Marcellus Education Team strives to bring you accurate, up-to-date information on natural gas exploration and drilling in Pennsylvania. Learn about your rights and choices as a landowner, a businessperson, a local official, or a concerned citizen. Discover the resources available to you.

Visit [naturalgas.psu.edu](http://naturalgas.psu.edu).

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