Attachment 1
1/28/15

Negotiated Rulemaking and Proposed Rules for IDAPA 20.07.02
Oil and Gas Conservation Rules Hearing

Mr. Chairman and members of the committee, my name is Tom Schultz and I am the Director for the Idaho Department of Lands.

Thank you for the opportunity to appear before you today to present testimony on changes to IDAPA 20.07.02 rules Governing Oil and Gas Conservation in the State of Idaho as negotiated thru rulemaking.

The Department is the administrative agency for the Idaho Oil and Gas Conservation Commission. The Commission's duty under Idaho Code 47-3 is to prevent waste during the exploration and development of oil and gas resources, protect the correlative rights of mineral owners, and protect fresh waters during oil and gas development on all federal, state, and private lands in Idaho.

In April 2014 the Oil and Gas Conservation Commission directed the Department to enter into negotiated rule making to revise IDAPA 20.07.02. Two informal workshops, four (4) public meetings, and one (1) public hearing were held. A wide variety of interests participated including governmental organizations, non-governmental organizations, and industry representatives. The Commission approved the pending rules in October 2014.

This rulemaking was conducted to update Idaho's Oil and Gas Program rules to better align them with best management practices of the industry and to prevent waste.

The IDL is requesting these rules be adopted to allow for orderly development of oil and gas resources, with clear direction to the industry as to how business is to be conducted.

As you are aware we had a number of rule changes in 2012. Oil and Gas exploration is still fairly new in Idaho. As it has developed there were a number of issues we had not experienced previously that need to be dealt with. Many rule changes were drafted to better organize how the rules were laid out, and to clarify how they are implemented.

A summary of more material changes include:

- A clarification of setbacks of wells from unit boundaries to allow for more flexibility in optimal placement for exploration. (section 120)

- Establishment of an integration application, how to notify mineral interest owners and Commission hearing requirements (section 130)

- Establishment of rule giving mineral interest owners options on exercising mineral rights after the Commission has integrated the unit. (section 131)

- Requirement for well operators to list ingredients used in well treatments on www.FracFocus.org and establishing 500 foot buffers above aquifers. (section 210)

- Increase bonding from current $1 per foot to $8 per foot on inactive wells to reflect actual cost of plugging and abandonment of wells. (section 220)

- Require operators to maintain a safe and orderly well site. (section 301)

- New timeline requirements before drilling and cementing so inspectors can be on site during critical well construction. (section 310)

- Establishment of when and what shall be reported to the department regarding oil and gas produced and sold. (section 400)

- Oil to gas ratios set to allow the Commission to properly classify the well. (section 403)

- Gas flaring time frames are limited to prevent waste. (section 413)

- Industry Best Management Practices are set for holding tanks to prevent spills and setbacks from occupied structures, surface waters and infrastructure is specified. (section 420)

- Requirement of detailed site plans be provided to the department in order to regulate Gas Processing Facilities (§47-219(6)(b)). Setbacks, flaring

limitations, quarterly inspections and reporting of production are specified. (section 430)

Why do we need the changes?

Three major advancements in the rules are regarding integration, setbacks, and protection of clean water.

Integration is important in protecting correlative rights. Oil and gas rights are divided into units over Idaho's geography. The establishment of drilling units ensures that all mineral owners will receive proper compensation for the oil and gas produced from a unit.

If an entire drilling unit is not owned by the same mineral rights holder and some want to drill but other mineral rights owners are hesitant to participate, integration is an important means of allowing development to move forward. It is important to establish a process allowing majority mineral holders an avenue for an integration hearing after a good faith effort to negotiate.

The Commission can allow the majority holders who want to develop to move forward while protecting the minority holder's rights to collect royalties. This process guarantees mineral rights holders in the unit will receive the market value of what is extracted.

Originally during negotiated rulemaking 200 foot setbacks were agreed upon by a majority of those participating in the meeting. During the subsequent comment period, new information was made available that the 200 foot setbacks would make obtaining a Federal Housing Authority (FHA) insured mortgage difficult by HUD appraisal standards.

Under HUD guidelines the minimum setback is 300 feet for existing construction. The rules were then changed to match the 300 foot setbacks for both holding tanks and new gas processing facilities. This distance will reduce the amount of noise and noticeable traffic during maintenance and daily operations. Protecting water quality in Idaho is a priority. Changing the rules to require operators to give 72 hours notice before drilling and 24 hours notice before cementing allows an inspector to be on site during critical well construction. By

inspecting at the critical points of well construction Idaho's water is better protected.

Mr. Chairman, with that I would be happy to stand for any questions.

**********End of Testimony**********

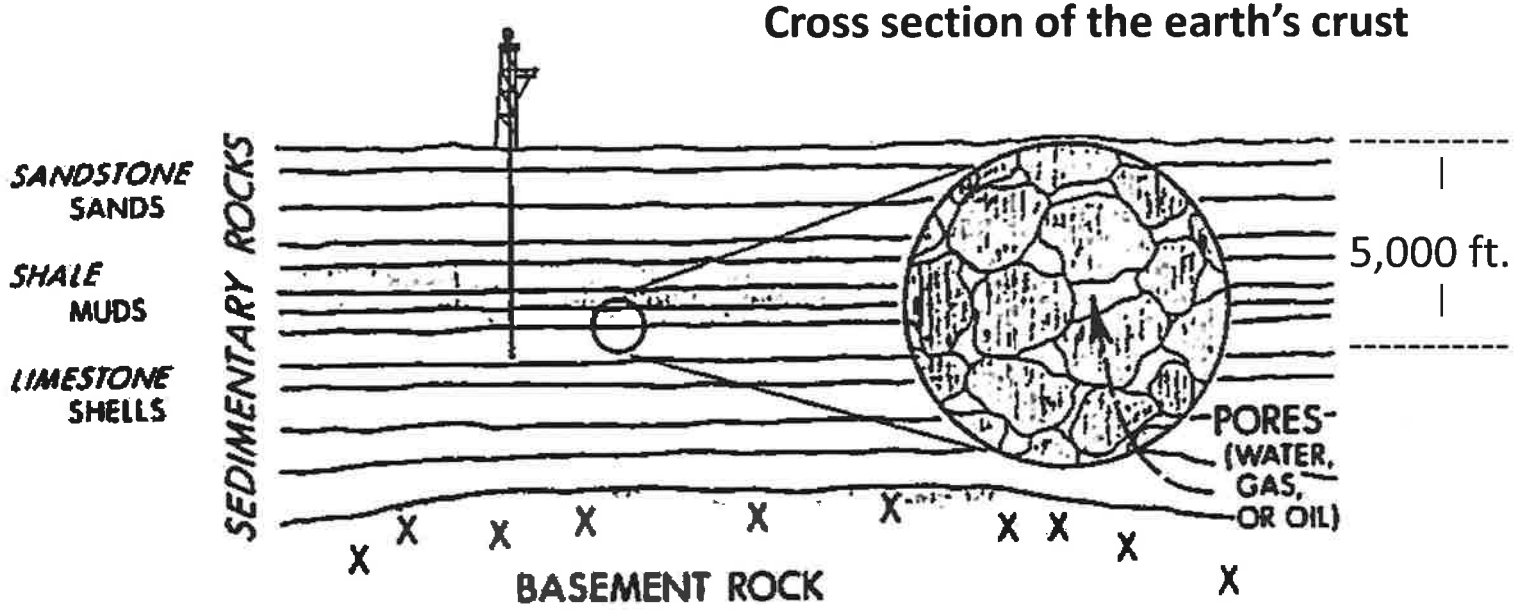
Attachment 2
1/28/15

Integration Explained

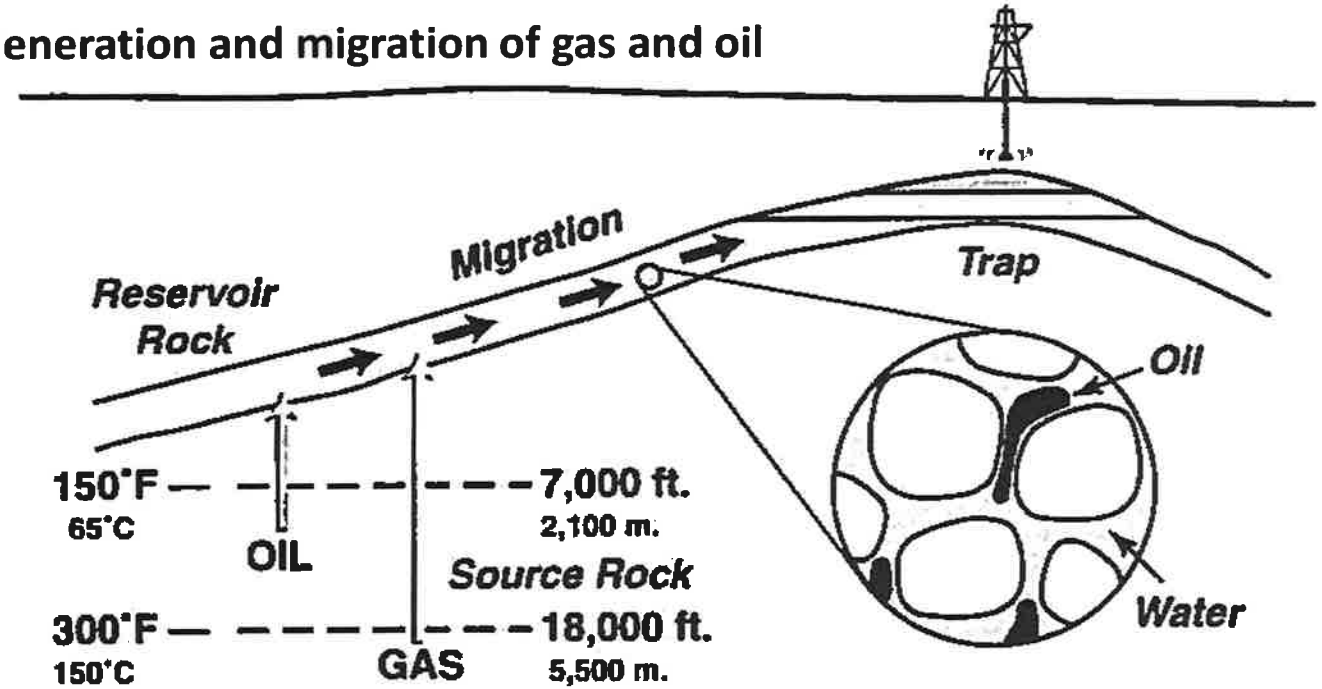
20-0702-1401

Idaho Department of Lands
Director Tom Schultz

Cross section of the earth's crust

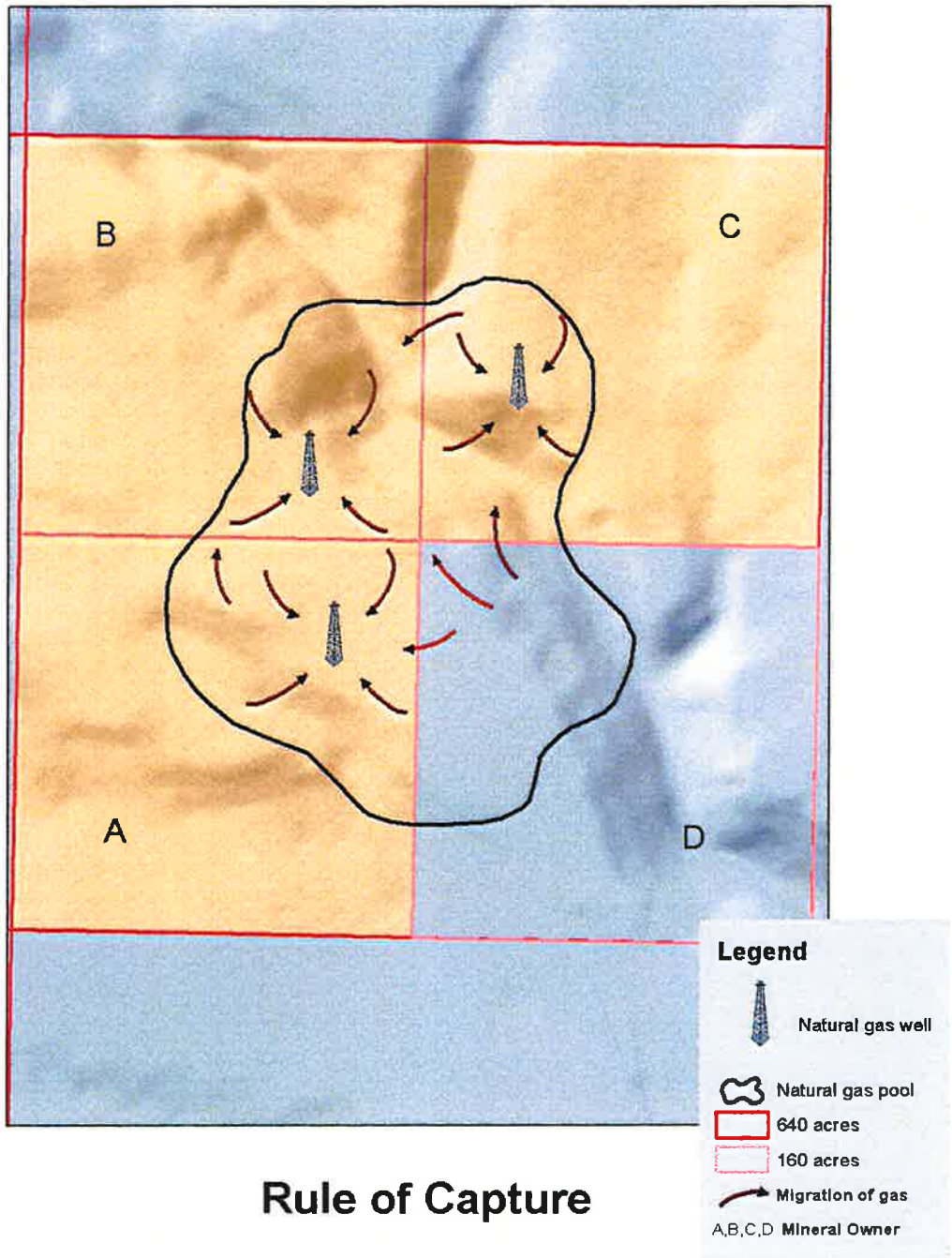


Generation and migration of gas and oil

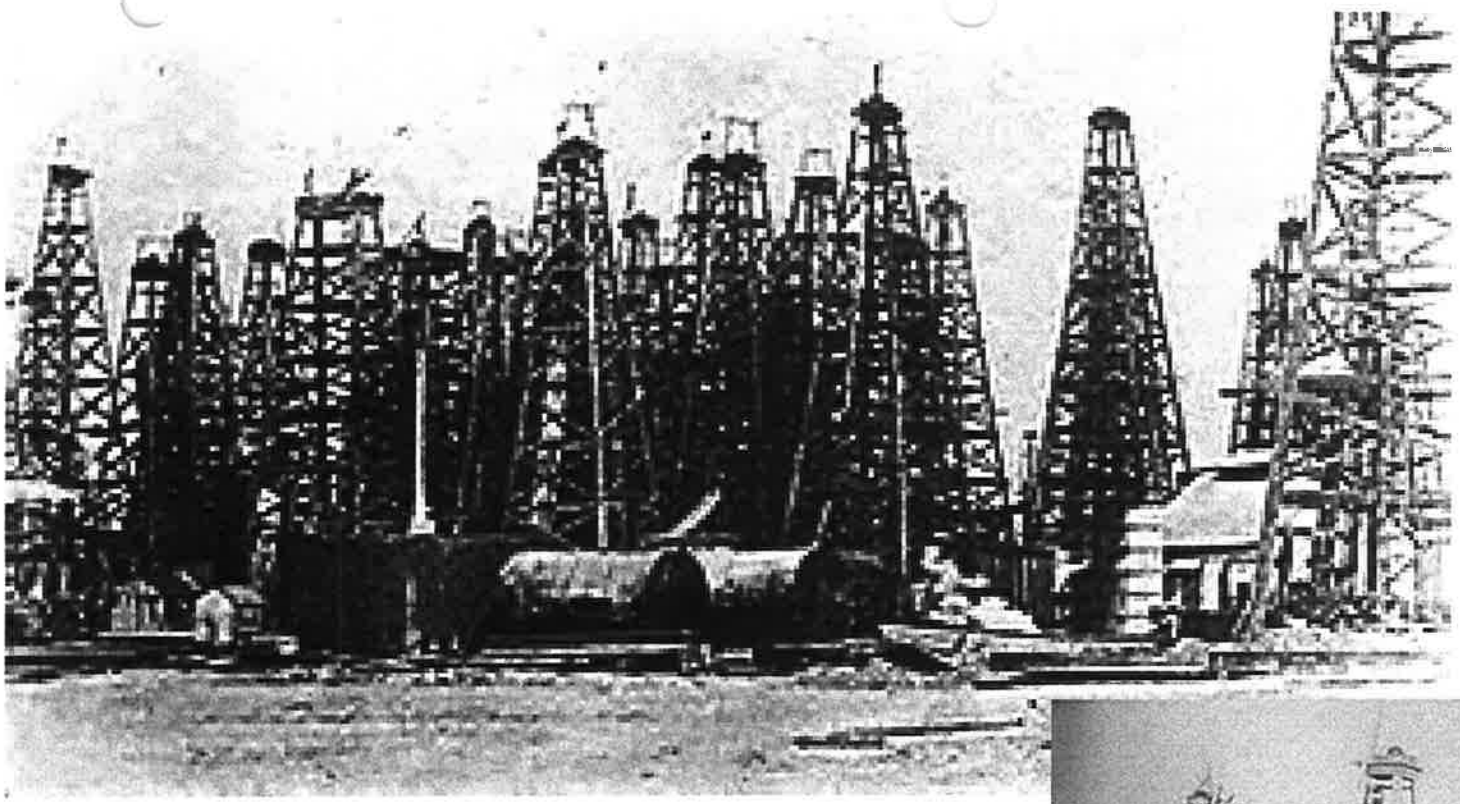


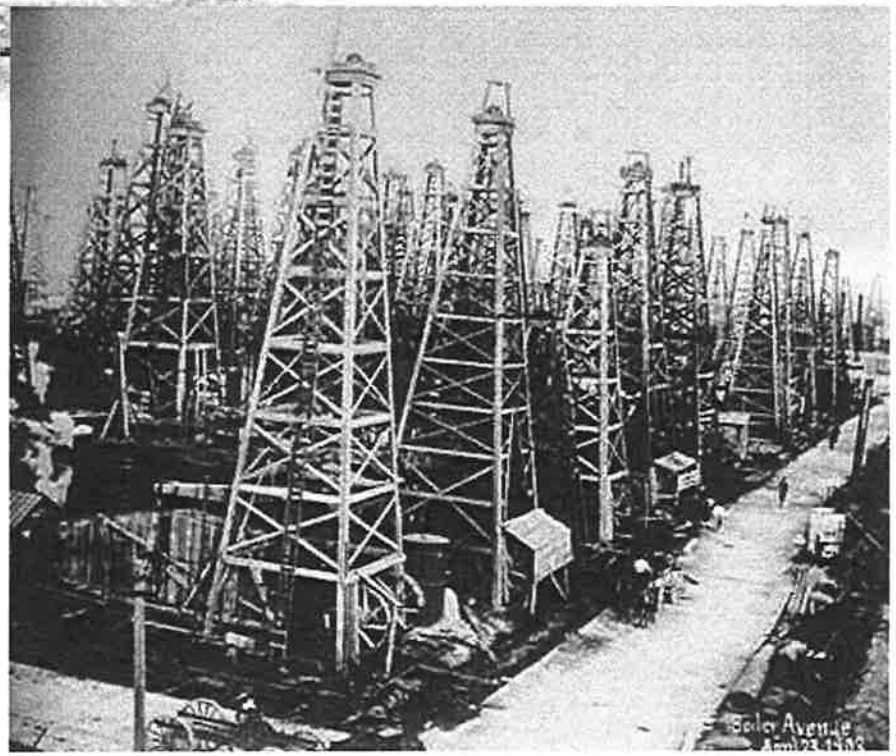
Rule of Capture:

The owner of a tract of land acquires title to the oil and gas which he produces from wells drilled thereon, though it may be proved that part of such oil or gas migrated from adjoining lands.



Rule of Capture





Rule of Capture

Spindletop - 1903
Beaumont, Texas
400 wells
100 companies
100,000 bbls/day

Integration:
The voluntary or involuntary process of pooling adjoining mineral tracts (leased and unleased) for inclusion into units for the purpose of producing oil and gas resources, while protecting correlative rights.

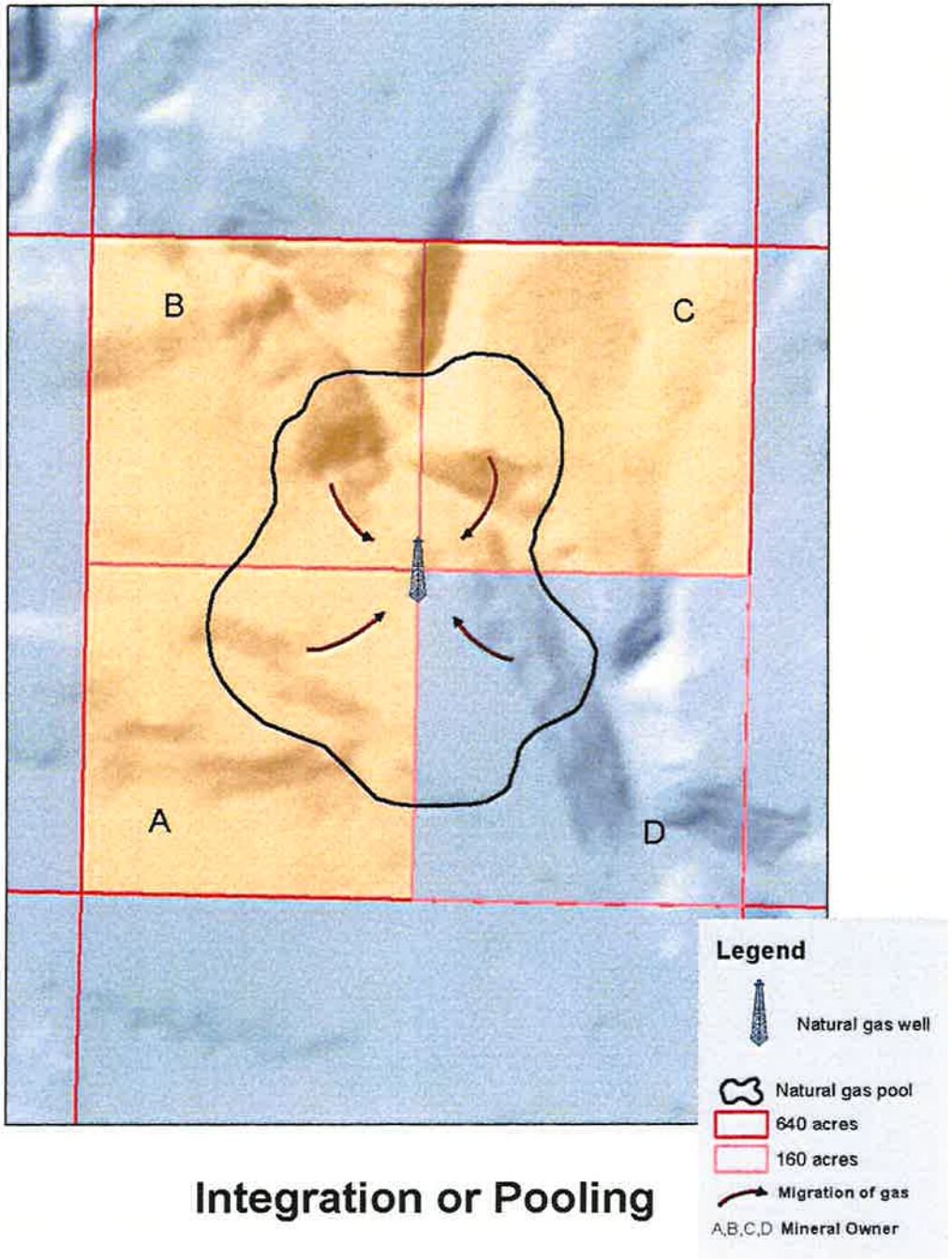
Benefits of Integration:

- Limits overdrilling (reduces costs and surface impacts)
- Limits dissipation of natural energy/reservoir pressure
- Protects correlative rights

Correlative Rights:
The rights of each owner of oil and gas interest in a common pool or source of supply of oil or gas to have a fair and reasonable opportunity to obtain and produce his just and equitable share of the oil and gas in the pool or sources of supply without being required to drill unnecessary wells or incur other unnecessary expense to recover or receive the oil or gas or its equivalent

Integration in Other Oil Producing States

Requirement to apply	# of states
1-2 interested parties	26
51% or less leased	5
60-78% leased	4



Integration or Pooling


State 1-17
Payette, County Idaho
2014

State	Type of Regulation(s)	Percentage or Interest for application	Section Number	Supervising Agency
Alabama	1) Forced pooling 2) Compulsory unitization	No percentage	400-7	Alabama State Oil and Gas Board
Alaska	Involuntary unitization	no percentage	31.05.110	Alaska Oil and Gas Conservation Commission
Arizona	Compulsory unitization	2 or more	27-506	Arizona Oil and Gas Conservation Commission
Arkansas	Compulsory integration	2 or more	15-72-303	Arkansas Oil and Gas Commission
California	Compulsory unitization	65%	3320.2	California Division of Oil, Gas and Geothermal Resources
Colorado	Involuntary pooling	2 or more tracts	34-60-116	Colorado Oil and Gas Conservation Commission
Connecticut	NA	NA	NA	Connecticut Dept. of Consumer Protection
Delaware	Forced pooling	2 or more	7-7000-7503	Delaware Dept. of Natural Resources and Environmental Control
Florida	Forced pooling	75%	377.28	Florida Oil and Gas Program
Georgia	Compulsory unitization	2 or more	12.4.45	Georgia Environmental Protection Division
Hawaii	NA	NA	NA	Hawaii Dept. of Land and Natural Resources
Idaho	NA	NA	NA	Idaho Oil and Gas Conservation Commission
Illinois	1) Integration pooling 2) Compulsory unitization	51%	240.131	Illinois Division of Oil and Gas
Indiana	Integration and forced pooling	2 or more	14-37-9	Indiana Division of Oil and Gas
Iowa	Compulsory unitization	2 or more	458A.8	Iowa Dept. of Natural Resources
Kansas	Compulsory unitization	interested party	55-703	Kansas Corporation Commission
Kentucky	Involuntary pooling	51%	353.64	Kentucky Division of Oil and Gas
Louisiana	Compulsory unitization	25%	30.9	Louisiana Office of Mineral Resources
Maine	NA	NA	NA	Maine Dept. of Environmental Protection
Maryland	NA	NA	NA	Maryland Bureau of Mines
Massachusetts	NA	NA	NA	Massachusetts Office of Energy and Environmental Affairs
Michigan	Compulsory pooling	2 or more	324.304	Michigan Dept. of Natural Resources and Environment
Minnesota	Compulsory unitization	2 or more	93.515	Minnesota Dept. of Natural Resources

State	Type of Regulation(s)	Percentage or Interest for application	Section Number	Supervising Agency
Mississippi	Compulsory unitization	2 or more	53-3-7	Mississippi Oil and Gas Board
Missouri	1) Involuntary pooling 2) Statutory unitization	2 or mores	259.110 50-5.010	Missouri Oil and Gas Council
Montana	1) Involuntary pooling 2) Compulsory unitization	interested party	82-11-202	Montana Board of Oil and Gas Conservation
Nebraska	Involuntary pooling	2 or more	57-909	Nebraska Oil and Gas Conservation Commission
Nevada	Compulsory unitization	2 or more separately owned tracts	522.0824	Nevada Division of Minerals
New Hampshire	NA	NA	NA	New Hampshire Dept. of Environmental Services
New Jersey	NA	NA	NA	New Jersey Dept. of Environmental Protection
New Mexico	1) Forced pooling 2) Statutory unitization	75%	19.2.100.52	New Mexico Oil Conservation Division
New York	Compulsory integration and unitization	60%	23-0901	New York Division of Mineral Resources
North Carolina	NA	NA	NA	North Carolina Dept. of Environment and Natural Resources
North Dakota	Integration of fractional tracts	2 or more	38-08-08	North Dakota Oil and Gas Division
Ohio	Mandatory pooling	interested party	1509.27	Ohio Oil and Gas Commission
Oklahoma	1) Compulsory unitization 2) Forced pooling	Interested Party	287.4	Oklahoma Corporation Commission Oil and Gas Division
Oregon	Compulsory integration	Interested Party	632-010-0161	Oregon Department of Geology and Mineral Industries
Pennsylvania	Compulsory integration	Interested Party	79.33	Pennsylvania Bureau of Oil and Gas Management
Rhode Island	NA	NA	NA	Rhode Island Department of Environmental Management
South Carolina	Compulsory integration	Interested Party	48-43-340	South Carolina Department of Natural Resources
South Dakota	1) Compulsory pooling 2) Compulsory unitization	Interested Party	45-9	South Dakota Oil and Gas Section
Tennessee	Forced integration	50%	1040-5-1-.01	Tennessee Oil and Gas Board
Texas	Forced pooling	Right of Capture	102.017	Texas Commission on Environmental Quality
Utah	1) Involuntary pooling 2) Compulsory unitization	Interested Party	40-6-6.5	Utah Division of Oil, Gas and Mining

State	Type of Regulation(s)	Percentage or Interest for application	Section Number	Supervising Agency
Vermont	Forced pooling	Interested Party	14-29-523	Vermont Natural Gas and Oil Resources Board
Virginia	Compulsory pooling	25%	45.1-361.21	Virginia Division of Gas and Oil
Washington	Compulsory unitization	Interested Party	78.52.250	Washington State Department of Natural Resources
West Virginia	Mandatory pooling	Interested Party	22C-9-7	West Virginia Office of Oil and Gas
Wisconsin	NA	NA	NA	Wisconsin Department of Natural Resources
Wyoming	Compulsory pooling	75%	30-5-109	Wyoming Oil and Gas Conservation Commission

Very Few states have a percentage for a minimum threshold. Numbers range from 25% to 75% in the states that do have a percentage of leased individuals or working interest prior to application for integration.

Idaho Statutes

TITLE 47
MINES AND MINING

CHAPTER 3
OIL AND GAS WELLS -- GEOLOGIC INFORMATION, AND PREVENTION OF WASTE

47-322. INTEGRATION OF TRACTS -- ORDERS OF COMMISSION. (a) When two (2) or more separately owned tracts are embraced within a spacing unit, or when there are separately owned interests in all or a part of a spacing unit, the interested persons may integrate their tracts or interests for the development and operation of the spacing unit. In the absence of voluntary integration, the commission, upon the application of any interested person, shall make an order integrating all tracts or interests in the spacing unit for the development and operation thereof and for the sharing of production therefrom. The commission, as a part of the order establishing a spacing unit or units, may prescribe the terms and conditions upon which the royalty interests in the unit or units shall, in the absence of voluntary agreement, be deemed to be integrated without the necessity of a subsequent separate order integrating the royalty interests. Each such integration order shall be upon terms and conditions that are just and reasonable.

(b) All operations, including, but not limited to, the commencement, drilling, or operation of a well upon any portion of a spacing unit for which an integration order has been entered, shall be deemed for all purposes the conduct of such operations upon each separately owned tract in the spacing unit by the several owners thereof. That portion of the production allocated to a separately owned tract included in a spacing unit shall, when produced, be deemed, for all purposes, to have been actually produced from such tract by a well drilled thereon.

(c) Each such integration order shall authorize the drilling, equipping, and operation, or operation, of a well on the spacing unit; shall provide who may drill and operate the well; shall prescribe the time and manner in which all the owners in the spacing unit may elect to participate therein; and shall make provision for the payment by all those who elect to participate therein; of the reasonable actual cost thereof, plus a reasonable charge for supervision and interest. If requested, each such integration order shall provide for one or more just and equitable alternatives whereby an owner who does not elect to participate in the risk and cost of the drilling and operation, or operation, of a well may elect to surrender his leasehold interest to the participating owners on some reasonable basis and for a reasonable consideration which, if not agreed upon, shall be determined by the commission, or may elect to participate in the drilling and operation, or operation, of the well, on a limited or carried basis upon terms and conditions determined by the commission to be just and reasonable. If one or more of the owners shall

Attachment 3
1/28/15

Senator Steve Bair, Chairman
Members of the Senate Resources and Environment Committee

Thank you for the opportunity to appear before you today and address some of my concerns with the current oil and gas regulations.

I became involved in the development of the gas and oil industry in Idaho after a neighbor told me they were going to drill for natural gas just north of property in Washington County that I had recently purchased and was in the process of building a new home. At that time I didn't know if I even owned the minerals under my land. That was 4+ years ago. I knew nothing about the gas and oil industry but I have certainly learned a lot during these past 4+ years!

I attended the IDL rule revisions meetings this past summer. I appreciate many of the changes Mr. Johnson made in these rules as there were some areas that were very vague. However, there are still several areas that must be improved to protect the health, safety and private property rights of all the citizens of Idaho.

During those negotiated rule making meetings, there was some "lively" discussion about integration – the rule in general and most especially the 55% required for integration. The non-industry stakeholders were never in favor of the 55%. While I completely understand the integration section of the rules, I continue to be bothered by the percentage and feel that the percent should be at least 75% - even a super majority of 66% sits better with what Idaho holds as sacred – private property rights! Forced pooling and deemed leasing, while designed to protect the minority mineral interest owner, is an affront to Idaho's private property rights and I feel is somewhat of a punishment to the mineral interest owner who doesn't consent up front.

Additionally, the distance for setbacks at gas processing facilities and tank batteries is inadequate at 300 feet. The **minimum** distance should be 1,000 feet, with a preferred distance of ¼ mile, from exiting occupied structures, water wells, canals and ditches, the natural or ordinary high water mark of surface waters. I own my mineral rights so I have a lot more power in negotiating a lease agreement with the industry than does a split estate landowner. Section 110 of these rules speaks to their rights.

It also remains imperative that the flaring notification to the county and owners of occupied structures that has been removed from Section 430.04 be reinstated along with limiting flaring to 14 days – not 60. If the flaring is allowed to last longer than 14 days our resource is being wasted!

Section 430.04 now states the IDEQ is now responsible for flaring at gas processing facilities. Refer to IDAPA 58.01.01 which then refers you to Section 200-223 of IDAPA 58. These rules are very complicated and the average person certainly has no clue about what is required for monitoring these facilities or gas wells. I remain most concerned about knowing what is happening at those facilities when they are operational just as I am about all aspects of the development of this industry. Inspections are imperative in all aspects of this industry whether it is by the IDEQ, IDL or DOT – these departments must work together to insure "things" are being done right and the rules and regulations are being followed.

Attachment 4
1/28/15

THE CARNEGIE LIBRARY
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P.O. Box 2139
Boise, ID 83701
Toll Free: 877 896 8863
P: 208.429.0344
F: 208.472.1447

the Huntley Law Firm PLLC

Uncommon Law

ATTORNEYS AT LAW

January 6, 2012

[redacted]
Parma, Idaho 83660

Re: Our File No. [redacted] – Generic Mineral Lease and Issues Raised

Mr. and Ms. [redacted]

[redacted]

I reviewed the New York Bar Journal article, and the redacted lease form, both sent with this letter. The two-page lease form version[1] appears to affect rights of property owners in some of these ways:

1. The length of the leases initially appears to be "five years." But they are really indefinite. They can last for as much time as (a) extraction or drilling (exploration) is conducted by the oil and gas companies that own the lease; or (b) for as long as "market conditions" make it unprofitable to explore;

2. The leases continue even after work on your land is over. They remain open-ended as long as extraction, drilling or exploration occurs on other lands "pooled" or integrated in an exploration plan;

3. A "pool" is completely undefined. It may be created at the absolute discretion of the companies. Under present laws it can extend across counties and even state lines;

4. Only crops are protected from damage – not structures, soil nor even to the quality of your water;

5. Most of us have borrowed money secured by our property, or expect to sell it in the future. (a) We are required by law and good stewardship to protect it against the effects of hazardous materials. (b) These leases give the companies unfettered rights to cause permanent damage from hazardous activities, while (b) absolving them from fixing or even mitigating it.

[1] A third page beginning with a paragraph numbered "9" appeared to have been added from another document, and was not considered.

6. Speaking of water, the leases give nearly unlimited water rights to the companies;

7. An owner signing this lease might be in immediate default of many standard mortgages or deeds of trust;

8. The lease purports to bind a wife or husband without consent of the other;

9. You may sell, subdivide or lease your land, but only after cumbersome and expensive documentation to the companies;

10. Unless you choose to take your compensation in actual oil or gas, its dollar value may be severely reduced or even eliminated based on market conditions, costs of processing or the whim of the companies to hold it for investment; and

11. Indefinite storage can occur on your land (e.g., a tank farm); your land can also host easements for pipelines, roads and other utilities – all at the whim of the companies.

The information contained in the letter is based upon the information that you provided, and is not intended as an opinion on any particular transaction or legal document. You have not retained us to pursue this matter further on your behalf. [redacted]

[redacted]

Sincerely,

M Boyn

Robert A. Wallace
RAW/trw

[Opposing parties identified to date:

Bridge Energy, Denver, CO
Snake River Oil & Gas, Denver, CO
Green Tree Financial
Bank of America
Attention: General Counsel
450 American St.
Mailing Code: CA6-919-01-15
Simi Valley, CA 93065-6285
Mr. John Peiserach, AR
PNC Financial Services]

Attachment 5
1/28/15

After Recording Return To:

_____
_____
_____
_____

_____ **[Space Above This Line For Recording Data]** _____

DEED OF TRUST

DEFINITIONS

Words used in multiple sections of this document are defined below and other words are defined in Sections 3, 11, 13, 18, 20 and 21. Certain rules regarding the usage of words used in this document are also provided in Section 16.

(A) "Security Instrument" means this document, which is dated _____, _____, together with all Riders to this document.
(B) "Borrower" is _____. Borrower is the trustor under this Security Instrument.
(C) "Lender" is _____. Lender is a _____ organized and existing under the laws of _____. Lender's address is _____. Lender is the beneficiary under this Security Instrument.
(D) "Trustee" is _____.
(E) "Note" means the promissory note signed by Borrower and dated _____, _____. The Note states that Borrower owes Lender _____ Dollars (U.S. $_____) plus interest. Borrower has promised to pay this debt in regular Periodic Payments and to pay the debt in full not later than _____.
(F) "Property" means the property that is described below under the heading "Transfer of Rights in the Property."
(G) "Loan" means the debt evidenced by the Note, plus interest, any prepayment charges and late charges due under the Note, and all sums due under this Security Instrument, plus interest.
(H) "Riders" means all Riders to this Security Instrument that are executed by Borrower. The following Riders are to be executed by Borrower [check box as applicable]:

☐ Adjustable Rate Rider	☐ Condominium Rider	☐ Second Home Rider
☐ Balloon Rider	☐ Planned Unit Development Rider	☐ Other(s) [specify]_____
☐ 1-4 Family Rider	☐ Biweekly Payment Rider	

(I) "Applicable Law" means all controlling applicable federal, state and local statutes, regulations, ordinances and administrative rules and orders (that have the effect of law) as well as all applicable final, non-appealable judicial opinions.
(J) "Community Association Dues, Fees, and Assessments" means all dues, fees, assessments and other charges that are imposed on Borrower or the Property by a condominium association, homeowners association or similar organization.
(K) "Electronic Funds Transfer" means any transfer of funds, other than a transaction originated by check, draft, or similar paper instrument, which is initiated through an electronic terminal, telephonic instrument, computer, or magnetic tape so as to order, instruct, or authorize a financial institution to debit or credit an account. Such term includes, but is not limited to, point-of-sale transfers, automated teller machine transactions, transfers initiated by telephone, wire transfers, and automated clearinghouse transfers.
(L) "Escrow Items" means those items that are described in Section 3.
(M) "Miscellaneous Proceeds" means any compensation, settlement, award of damages, or proceeds paid by any third party (other than insurance proceeds paid under the coverages described in Section 5) for: (i) damage to, or destruction of, the Property; (ii) condemnation or other taking of all or any part of the Property; (iii) conveyance in lieu of condemnation; or (iv) misrepresentations of, or omissions as to, the value and/or condition of the Property.
(N) "Mortgage Insurance" means insurance protecting Lender against the nonpayment of, or default on, the Loan.
(O) "Periodic Payment" means the regularly scheduled amount due for (i) principal and interest under the Note, plus (ii) any amounts under Section 3 of this Security Instrument.
(P) "RESPA" means the Real Estate Settlement Procedures Act (12 U.S.C. §2601 et seq.) and its implementing regulation, Regulation X (24 C.F.R. Part 3500), as they might be amended from time to time, or any additional or successor legislation or regulation that governs the same subject matter. As used in this Security Instrument, "RESPA" refers to all requirements and restrictions that are imposed in regard to a "federally related mortgage loan" even if the Loan does not qualify as a "federally related mortgage loan" under RESPA.
(Q) "Successor in Interest of Borrower" means any party that has taken title to the Property, whether or not that party has assumed Borrower's obligations under the Note and/or this Security Instrument.

TRANSFER OF RIGHTS IN THE PROPERTY

This Security Instrument secures to Lender: (i) the repayment of the Loan, and all renewals, extensions and modifications of the Note; and (ii) the performance of Borrower's covenants and agreements under this Security Instrument and the Note. For this purpose, Borrower irrevocably

grants and conveys to Trustee, in trust, with power of sale, the following described property located in the _____ of _____:
[Type of Recording Jurisdiction] [Name of Recording Jurisdiction]

which currently has the address of _____
[Street]
_____, Idaho _____("Property Address"):
[City] [Zip Code]

TOGETHER WITH all the improvements now or hereafter erected on the property, and all easements, appurtenances, and fixtures now or hereafter a part of the property. All replacements and additions shall also be covered by this Security Instrument. All of the foregoing is referred to in this Security Instrument as the "Property."

BORROWER COVENANTS that Borrower is lawfully seised of the estate hereby conveyed and has the right to grant and convey the Property and that the Property is unencumbered, except for encumbrances of record. Borrower warrants and will defend generally the title to the Property against all claims and demands, subject to any encumbrances of record.

THIS SECURITY INSTRUMENT combines uniform covenants for national use and non-uniform covenants with limited variations by jurisdiction to constitute a uniform security instrument covering real property.

UNIFORM COVENANTS. Borrower and Lender covenant and agree as follows:

1. Payment of Principal, Interest, Escrow Items, Prepayment Charges, and Late Charges. Borrower shall pay when due the principal of, and interest on, the debt evidenced by the Note and any prepayment charges and late charges due under the Note. Borrower shall also pay funds for Escrow Items pursuant to Section 3. Payments due under the Note and this Security Instrument shall be made in U.S. currency. However, if any check or other instrument received by Lender as payment under the Note or this Security Instrument is returned to Lender unpaid, Lender may require that any or all subsequent payments due under the Note and this Security Instrument be made in one or more of the following forms, as selected by Lender: (a) cash; (b) money order; (c) certified check, bank check, treasurer's check or cashier's check, provided any such check is drawn upon an institution whose deposits are insured by a federal agency, instrumentality, or entity; or (d) Electronic Funds Transfer.

Attachment 6
1/28/15

THE CONVERSATION

January 27 2015, 6.08am EST

The false promise of fracking and local jobs

AUTHOR

Susan Christopherson

Professor, Department of City and Regional Planning at Cornell University

A natural gas well in Bradford County, PA. Reuters

In a surprise decision that led to consternation in the oil and gas industry and elation among fracking opponents, New York Governor Andrew Cuomo in December banned fracking in the state. He attributed his decision to unresolved health risks associated with this drilling technique, but the governor surely also weighed the economics and the politics.

During the past five years, I've researched and written about the economic impacts of fracking and, as a long-time resident of New York, I have observed its fractious politics. What I've found is that most people, including politicians and people in the media, assume that fracking creates thousands of good jobs.

But opening the door to fracking doesn't lead to the across-the-board economic boon most people assume. We need to consider where oil and gas industry jobs are created and who benefits from the considerable investments that make shale development possible. A look at the job numbers gives us a much better idea of what kind of economic boost comes with fracking, how its economic benefits are distributed and why both can be easily misunderstood.

Not a recession buster

Pennsylvania is one of the centers of dispute over fracking job numbers. In Pennsylvania, the job numbers initially used by the media to describe the economic impact of fracking were

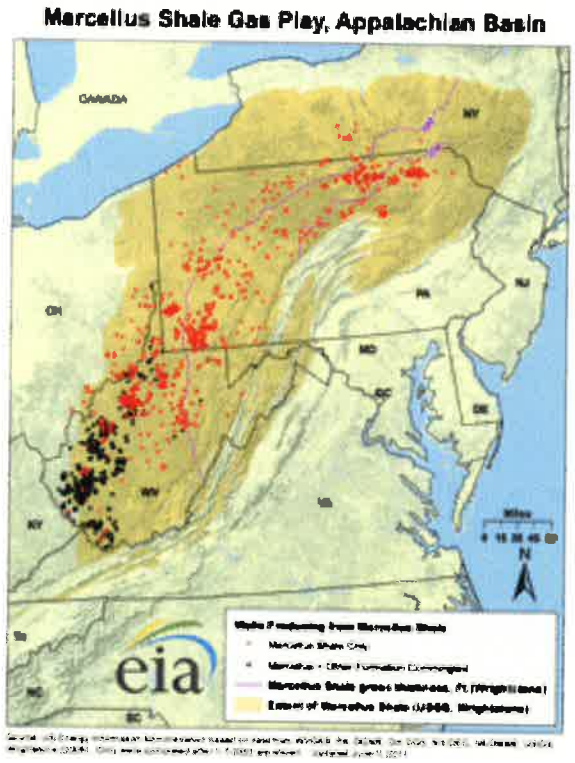
predictions from models developed by oil and gas industry affiliates. For example, a Marcellus Shale Coalition press release in 2010 claimed:

> *"The safe and steady development of clean-burning natural gas in Pennsylvania's portion of the Marcellus Shale has the potential to create an additional 212,000 new jobs over the next 10 years on top of the thousands already being generated all across the Commonwealth."*

These job projections spurred enthusiasm for fracking in Pennsylvania and gave many people the impression that oil and gas industry employment would lead Pennsylvania quickly out of the recession. That didn't happen.

Pennsylvania's unemployment roughly tracked the national average throughout the state's gas boom. While some counties benefited from the fracking build-up, which occurred during the "great recession," the state economy didn't perform appreciably better than the national economy.

Nationally, the oil and gas industry employs relatively few people compared to a sector like health care and social assistance, which employed over 16 million Americans in 2010. The drilling, extraction and support industries employed 569,000 people nationwide in 2012, according to the Energy Information Administration (EIA).



US Energy Information Administration
Click to enlarge

Although it grew faster than other sectors of the economy, the core of oil and gas employment constitutes only one half of one percent of total US private sector employment. This total includes jobs unrelated to shale development and jobs that preceded the shale boom. As for job growth, the EIA indicates that 161,600 of these jobs were added between 2007 and 2012. Drilling jobs specifically increased by only 6,600.

Impressive growth percentages notwithstanding, that is not a lot of jobs. In 2010, more than 143 million people were employed in the US, according to the Bureau of Labor Statistics (BLS).

In Pennsylvania, the Multi-State Shale Research Collaborative (MSSRC) report on shale employment in the Marcellus states found that shale development accounts for 1 out of every 249 jobs, while the education and health sectors account for 1 out of every 6 jobs.

FedEx drivers?

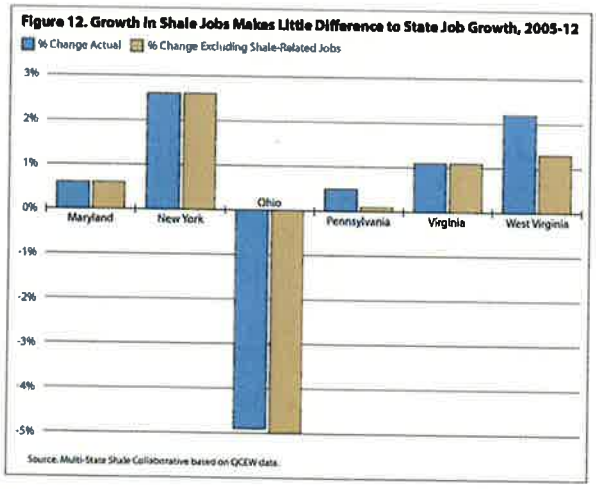
The central issue with job projections is how many additional jobs are credited to oil and gas development beyond the relatively small number of people directly employed in oil and gas extraction.

In December 2014, Pennsylvania's Department of Labor and Industry reported that just over 31,000 people were employed in the state's oil and gas industry. That figure was higher than the federal data indicates, but appears to be reasonable. However, what's striking is that the Department attributed another 212,000 jobs to shale development by adding employment in 30 "ancillary" industries.

All employment in these related industries – including such major employers as construction and trucking – was included in this attributed jobs figure. Thus, a driver delivering for FedEx or a housing construction worker were "claimed" as jobs produced by the shale industry.

This is eye-rolling territory for economists. They know that attributing two additional jobs to every one directly created in an industry is very generous. The Commonwealth of Pennsylvania attributed *seven* additional jobs to each one created in the oil and gas industry.

Depending on how broadly you define the state's oil and gas industry, between 5,400 and 31,000 people were employed in Pennsylvania before many of the rigs started pulling out in 2012 to head west. Certainly, jobs in other sectors were also created, but a generous estimate would be 30,000 to 60,000 rather than the hundreds of thousands claimed by industry promoters.



QCEW is the Quarterly Census of Employment and Wages, a federal-state cooperative program that is based largely on the quarterly Unemployment Insurance reports filed by employers. Multi-State Shale Research Collaborative, Pennsylvania Budget and Policy Center, Author provided

The MSSRC report demonstrates that only a tiny portion (under 1%) of jobs in many of these

30 industries could be related to shale development activities, and further, that Pennsylvania employment in these industries overall changed little before, during, and after the shale boom.

The real winner: Texas

Beyond the exaggerated numbers, a geographic blindness obscures our view of fracking jobs. Where do the workers extracting gas in Pennsylvania or Ohio live and spend their money? Where are the best jobs located? While the fracking industry may support the national economy as a whole, some places are winners and others are losers.

In Ohio, where extraction continues because its shale holds both natural gas and other valuable "wet gas" hydrocarbons, a series of investigative reports by The Columbus Dispatch showed that at least a third of the workforce in drilling areas are transient workers. In the four Ohio counties with the most shale permits, the number of local people employed actually decreased between 2007 and 2013.

This tells us that the production sites aren't necessarily the places that get the economic boost. The most skilled workers on drilling crews are from Texas and Oklahoma and they return home to spend their earnings. Northern Pennsylvania drilling crews spent much of their money in the Southern Tier of New York.

Marcellus shale gas-drilling site along PA Route 87, Lycoming County. Nicholas Tonelli/Flickr, CC BY

My own research on the geography of shale jobs shows that Texas has derived the lion's share of the benefits from US fracking. Texas has consistently had around half the jobs in the oil and gas industry (currently 47%). During the 2007-2012 shale boom, Pennsylvania gained 15,114 jobs in the drilling, extraction and support industries, but Texas gained 64,515 – over four times as many jobs. Texas not only has much of the skilled drilling workforce, but the majority of the industry's managers, scientists and experts, who staff the global firms headquartered in Houston. Still, even in Texas, energy-related jobs constitute only 2.5% of the state's now more diversified employment.

What does this tell us about New York's decision on fracking? Andrew Cuomo may have decided that the state would do better providing finance capital to the oil and gas industry from Wall Street rather than taking on high-risk, low-reward fracking production.

Ned Rightor, an independent researcher, contributed to this article.