

# **Ad Hoc Advisory Committee Report on Leasing of Land for Exploration and Drilling for Natural Gas in the Marcellus Shale**

**May 28, 2010**

## **BACKGROUND**

Provost Kent Fuchs appointed the committee on February 10, 2010.

## **CHARGE**

The Ad Hoc Advisory Committee on Leasing of Land for Exploration and Drilling for Natural Gas in the Marcellus Shale is being formed in partial response to the Faculty Senate's resolution calling for the formation of an advisory group to advise the executive administration on future decisions regarding the leasing of Cornell lands for horizontal drilling combined with hydraulic fracturing. The committee will create a brief report with guidelines to be used by the president in making future decisions on issues related to leasing of Cornell lands for drilling in the Marcellus Shale.

At the present time, the university has no plans to lease lands for natural gas drilling.

## **MEMBERSHIP**

### ***Co-Chairs (faculty):***

Susan Riha, Earth & Atmospheric Sciences  
Yves Parlange, Biological & Environmental Engineering

### ***Faculty:***

Rick Allmendinger, Earth & Atmospheric Sciences  
Tony Ingraffea, Civil & Environmental Engineering  
Linda Nicholson, Molecular Biology & Genetics  
Max Pfeffer, Development Sociology

### ***Staff:***

Steve Johnson, Government & Community Relations  
Drew Lewis, Cornell University Agricultural Experiment Station  
Gail Steinhart, Mann Library  
Pat McNally, Environmental Health & Safety

### ***Graduate Student:***

Jeffrey Jacquet, Natural Resources

### ***Undergraduate Student:***

Alexandra Gore, Civil & Environmental Engineering

### ***Legal Counsel:***

Shirley Egan, Associate University Counsel

### ***Committee Secretary:***

Liane Cooper, Government & Community Relations

## **TIMELINE**

The charge indicated the report to be due to the president by the end of the Spring 2010 semester.

## COMMITTEE TIMELINE

The committee met weekly from February through May 2010. The following individuals were invited speakers to the committee meetings:

- John Martin, Senior Project Manager, Energy R&D, NYSERDA (2/26/10) "December 2009 New York State Energy Policy & Role of Shale Gas"
- Drew Lewis, Committee Member (2/26/10) "Map of Cornell land holdings in Marcellus Shale region and Cornell's Climate Action Plan"
- Tom LiVigne, Director, Real Estate (2/26/10) "What lands does Cornell own that are currently being or could be leased for gas drilling"
- Andrew Hunter, Lecturer, Chemical and Biomolecular Engineering (3/5/10) "Earnings/Economic Benefits of Leasing"
- Drew Lewis, Committee Member (3/5/10) "Alternative or Complimentary Uses of the Land with CURBI plans"
- Lanny Joyce, Manager, Engineering, Planning, and Energy Management and Bert Bland, Director, Environmental Compliance (3/12/10) "Renewable Energy: Solar, Geothermal, and Wind Energy Sources"
- Pat McNally, Committee Member (3/12/10) "Use of O&G Lease for Environmental Protection"
- Brett Chedzoy, Sr. Extension Resource Educator, Ag and Natural Resources (3/19/10) "Perspectives on Concerns of the Public and Landowner Coalitions"
- Ed Marx, Commissioner of Planning and Public Works, Tompkins County (4/9/10) "Concerns of Municipalities"
- Susan Christopherson, City and Regional Planning (4/9/10) "Gas Drilling and Regional Economic/Workforce Development"

The committee also held one campus-wide public meeting on April 22, 2010 in Call Auditorium of Kennedy Hall. Twenty faculty, staff, and students testified to the committee with an audience of approximately 100 individuals. A list of presenters follows:

1. Colleen Lamarre	Law	Student
2. Clayton Munnings	Sci of Ntl & Env Systems	Student
3. Ilana Malekan	Animal Sci & Biol	Student
4. Alyssa Tsuchiya	Sci Ntl Env Systems	Student
5. Charles Mohler	Crop & Soil Sciences	Sr Res Assoc
6. Robert Howarth	Ecology & Evol Bio	Faculty
7. Peter Davies	Plant Biology	Faculty
8. Robert Oswald	Molecular Medicine	Faculty
9. Carolyn Eberhard	Plant Biology	Faculty (retired)
10. Cyrus Umrigar	Physics	Faculty
11. Aaron Sachs	History	Faculty
12. Martin Hatch	Chair, Sust Comm CU Assembly	Faculty
13. Sandy Podulka	Ornithology	Staff
14. Lawrence Cathles	Earth & Atmos Sci	Faculty
15. Linda Adams	PDC	Staff
16. Albert George	Mech, Aero, & Systems Eng	Faculty
17. Michele Brown	Preserv & Collection Maint	Staff
18. Ellen Harrison	Crop & Soil Sci	Faculty (retired)
19. Todd Bittner	Plantations	Staff
20. Carol Chock	Foundation Relations	Staff (retired)

In addition the Committee set up a special mailbox ([adhocmarcellus@cornell.edu](mailto:adhocmarcellus@cornell.edu)) and received numerous communications from various faculty, staff, students, alumni, and interested persons and organizations. All of these communications are contained in the Appendix.

On May 12, 2010 the committee also visited gas well sites in Pennsylvania on a day long bus trip sponsored by the Cornell Real Estate Office.

The committee wishes to acknowledge the ideas and information provided by the Cornell community to assist us in making our recommendations.

## **RECOMMENDATIONS AND RATIONALE**

1. Our ad hoc committee was established by the Provost in February 2010 and included faculty staff and students with a broad range of technical expertise and involvement in issues surrounding gas drilling. The purpose of our committee was not to determine if Cornell University should support or oppose development of gas shales in New York, but rather to propose guidelines to be used by the president in making future decisions on issues related to leasing of Cornell lands for drilling in the Marcellus Shale.

There are other gas bearing shale formations in addition to the Marcellus occurring both regionally and nationally. Their exploitation will likely employ horizontal drilling in conjunction with hydrofracking. Therefore, our proposed guidelines refer to drilling for gas in all such shales. Furthermore, our committee realized that a distinction needs to be made between leasing land and drilling for gas, as one action may not imply the other. There is the possibility that Cornell could lease its lands for gas drilling to a friendly lessee and gain some degree of control over if, when, and how drilling would occur. Conversely, through compulsory integration, it is possible for gas well drilling to occur under Cornell land even if a decision is made not to lease. Consequently, a proactive approach to leasing could result in giving the University the greatest protection from and control over drilling on, under, or near its land. Therefore, we recommend:

- The University carefully study all options available to it regarding land leasing and take whatever steps are necessary to maintain, to the extent it is feasible, control over if, when, and how gas drilling will occur in the shales under its lands.
- The University be attentive to leasing that is occurring adjacent to, or in the vicinity of, its lands in order to anticipate and proactively negotiate against the possibility of compulsory integration of its land.
- To the extent possible, the University does not make leasing decisions that might force unwilling adjacent property owners to be subject to compulsory integration.

In the text below, we use the term “development” to refer to any activities that may lead to the exploitation of gas in the Marcellus or other shales.

2. Cornell has made a substantial commitment to addressing sustainability challenges; the Cornell Center for a Sustainable Future and the Cornell Climate Action Plan (CAP) are two major examples. As both a global citizen and significant consumer of energy, we recognize that Cornell’s use of energy has consequences for other parts of the country and the world. Cornell’s heat and most of its electricity is now generated from natural gas and, under current projections, Cornell will be highly dependent on natural gas for the next two decades. The total amount of revenue that Cornell might realize from shale gas development at current standard royalties, gas prices and projected productivity

is small relative to Cornell's annual energy costs. However, it is possible that Cornell could supply its own natural gas consumption from shale gas wells on its lands. Since Cornell should and does serve as a model for responsible environmental stewardship and rational decision-making, we recommend the following:

- Shale gas development on Cornell lands should occur only if it can be justified in terms of Cornell's sustainability and climate neutrality efforts.
- Cornell should undertake a thorough assessment of the cumulative environmental, economic, and social impacts that may accrue to Cornell and to the community at large from shale gas development before undertaking any shale gas development on its lands.
- Based on this assessment, Cornell should ensure that best management practices, which may be above and beyond those required by law, are implemented on any Cornell land leased for gas drilling to avoid, reduce or mitigate its negative impacts.
- Cornell should consider the benefits and drawbacks of becoming an operator, producing shale gas on its own lands for its own use and selling excess gas.
- Recognizing that natural gas is a transitional fuel in Cornell's Climate Action Plan, any profits and/or savings that Cornell might realize from shale gas development on or under its lands should be committed to research and development on renewable energy sources (such as solar, wind, biomass and geothermal), more efficient energy systems, and reductions in energy consumption.

3. Cornell University's mission is intimately linked to its stewardship of the surrounding environment. Any decision Cornell makes regarding gas development on its lands could impact its mission. Such a decision will affect its reputation as a leader in sustainability efforts, its relationships with surrounding communities, and its ability to recruit the best students, faculty and staff who, at least in part, want to come to Cornell due to the quality of life Ithaca and the surrounding area provide. Also, Cornell is an essentially permanent institution and faces no urgency to develop shale gas in the near future. Many of the concerns regarding drilling for shale gas are related to cumulative impacts, which would be lessened if the amount of land being developed at a given point in time were reduced. Furthermore, current trends suggest that in the future the technologies and best management practices for exploiting shale gas will improve and results of studies of the impacts of horizontal hydrofracking that are only now being initiated at the federal and other levels will become available in the next few years. Until that point, the risks associated with this technology are largely unknown. Given these conditions, we recommend:

- Cornell should delay any development of shale gas on its lands until relative risks and cumulative impacts are quantified.

4. Development of shale gas will have significant impacts on the citizens and communities in the region. As the major employer in the region, Cornell should serve as a model for responsible environmental stewardship and community relationships. Furthermore, as the Land Grant University for New York State, Cornell has a responsibility to collect, assess and communicate information to New York State citizens and communities, so that they can make informed personal and collective decisions regarding shale gas development. Therefore, we recommend:

- Cornell should develop an open and transparent external communication plan regarding development of any its land for shale gas development. Minimally, this plan should engage neighboring landowners concerning their plans to lease their lands; local residents regarding quality of life impacts such as noise, traffic, and possible air and well water pollution (including full disclosure of all chemicals used in drilling and fracking); and municipal governments about siting of well pads, safe disposal of waste, emergency response, road maintenance regulations, and other community impacts.

- Cornell should ensure and promote opportunities for research, education and outreach that could be realized during shale gas development on Cornell land or elsewhere, ranging from tours of well sites to performing geological, hydrological or other in-depth research.
- In support of its research mission, Cornell should be vigilant in ensuring that any leasing of its own lands or of adjacent lands is thoroughly protective of unique or critical natural areas, and long term and active research areas.
- Cornell should initiate chemical monitoring of drinking water wells in several of its outlying research facilities in advance of possible shale gas development near them in order to establish a chemical baseline for potentially vulnerable water resources.
- Given its outreach mission, including Cooperative Extension, Cornell University should continue to educate individuals and communities to strengthen their capacity to plan for and respond to the range of possible impacts of shale gas and future energy developments.

5. Any leasing of land for shale gas drilling has multiple environmental, legal, economic and community implications. Furthermore, these implications will change over time. Therefore, we recommend:

- Any effort to develop a lease agreement be coordinated at the highest levels of the University.
- In the process of developing requirements for a specific lease agreement, the University should avail itself of the full range of scientific, socioeconomic and legal expertise needed to create a lease that addresses environmental, human health, community and other complexities associated with shale gas development.
- The University must be fully transparent in developing any lease agreement.

#### **APPENDIX: COMMENTS RECEIVED FROM CORNELL COMMUNITY AND PUBLIC**

- April 22, 2010 Marcellus Shale Ad Hoc Committee Meeting with Cornell Community: Speaker's Summaries
- Unsolicited emails sent to [adhocmarcellus@cornell.edu](mailto:adhocmarcellus@cornell.edu)