COMMONWEALTH OF PENNSYLVANIA
HOUSE OF REPRESENTATIVES

ENVIRONMENTAL RESOURCES AND ENERGY
COMMITTEE HEARING

STATE CAPITOL
IRVIS OFFICE BUILDING
ROOM G-50
HARRISBURG, PENNSYLVANIA

TUESDAY, SEPTEMBER 30, 2008
1:30 P.M.

PRESENTATION ON
THE MARCELLUS SHALE

BEFORE:
HONORABLE CAMILLE "BUD" GEORGE, MAJORITY CHAIRMAN
HONORABLE TIM SEIP
HONORABLE GREG VITALI
HONORABLE JAMES WANSACZ
HONORABLE SCOTT E. HUTCHINSON, MINORITY CHAIRMAN
HONORABLE GARTH D. EVERETT
HONORABLE RON MILLER
HONORABLE KATHY L. RAPP
HONORABLE CHRIS ROSS
HONORABLE RICHARD R. STEVENSON

IN ATTENDANCE:
HONORABLE SANDRA J. MAJOR

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ALSO PRESENT:
E. THOMAS KUHN
MAJORITY EXECUTIVE DIRECTOR
LEEANN H. MURRAY
MAJORITY LEGAL COUNSEL
JOSEPH A. DEKLINSKI
MINORITY EXECUTIVE DIRECTOR

DEBRA B. MILLER
REPORTER

I N D E X

TESTIFIERS

P R O C E E D I N G S

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CHAIRMAN GEORGE: The hour of 1:30 having arrived, the committee will come to order.

I would like to introduce the members of the committee.

Next to the young lady on the far right is Representative Seip. I will get to you, ma'am.

Then Representative Vitali.

Then the gentleman, Representative Hutchinson.

Representative Everett.

Representative Stevenson.

And Representative Miller.

Representative Ross just came in.

Representative Major is an invited Representative. We welcome her.

We are here today to discuss the Marcellus Shale explorations. While Pennsylvania is no stranger to gas exploration and Marcellus Shale deposits present new challenges to our current system of drilling, the size and magnitude of it is to be examined and understood so that we can ensure that industry as well as the environment is protected.

To better understand the mechanisms involving the entire drilling process, along with the potential environmental concerns posed by this new water-intensive drilling, we have invited various individuals here to testify on this day before the Environmental Resources and Energy Committee.

By becoming somewhat educated about the Marcellus Shale and the fracing used to extract this valuable resource, I believe the Legislature will come to understand those areas where we will best be able to serve the people of this fine Commonwealth.

I turn to my cochairman for opening remarks, if you will, Mr. Hutchinson.

REPRESENTATIVE HUTCHINSON: Thank you, Chairman George.

I also want to thank you for holding this hearing on what I believe is an exciting opportunity for the State of Pennsylvania, both economically, because of the potential creation of many jobs in wide-ranging areas of the Commonwealth because of this newly accessible resource, as well as an opportunity to make our State more energy independent.

And I think with both of those aspects, it is important that we do our best to promote the use of this homegrown energy and to move forward in a timely manner in making Pennsylvania energy independent and economically stronger, and I thank you for holding this hearing today.

CHAIRMAN GEORGE: I thank the gentleman.

We have a full agenda on this afternoon. Consequently, it is imperative that those presenting their testimony keep their presentation within the allotted time. Your complete testimony should be submitted for the record.

Up first is the gentleman, John Hanger, recently nominated by Governor Rendell as Secretary of the Pennsylvania Department of Environmental Protection.

Welcome, Mr. Secretary.

ACTING SECRETARY HANGER: Thank you, Mr. Chairman.

One preliminary question: What is the allotted time?

CHAIRMAN GEORGE: When you hear me holler louder than you, then you will know that you are over your time.

ACTING SECRETARY HANGER: I have prepared

brilliant testimony, but it is somewhat lengthy, so I may get hollered at.

CHAIRMAN GEORGE: Before you start, may I introduce the lady, Representative Kathy Rapp.

ACTING SECRETARY HANGER: Thank you again, Mr. Chairman, and also Chairman Hutchinson and members of the committee, as well as Representative Major. It is a pleasure to be here.

With me is Ron Gilius, who is the Director of the Bureau of Oil and Gas Management.

We thank you for this opportunity to testify. It is certainly an important topic, and it is one that deserves some serious time and attention.

The Marcellus Shale is a rock formation that underlies much of Pennsylvania and portions of New York and West Virginia at a depth of 5,000 to 8,000 feet.

It is estimated to hold as much as 150 trillion cubic feet of recoverable natural gas. To put this in -- that is the Pennsylvania portion, I should add. To put this number in perspective, the United States consumes 23 trillion cubic feet of natural gas a year.

While it has long been considered

prohibitively expensive to access the natural gas contained within the Marcellus Shale, recent advances in drilling technology and rising natural gas prices have attracted new interest in this previously largely untapped formation.

Developing these resources not only will build on our continuing efforts to develop more homegrown energy resources that are cleaner and better for the environment, but also could lead to billions of dollars in new economic investment for Pennsylvania's communities as well as tens of thousands of new jobs.

As an example of what may be in store for the Commonwealth, I offer the case of the Barnett Shale in Texas. Since development of that formation began in 2001, nearly 84,000 new jobs have been created, and the annual output of the region's economy increased by $8.2 billion.

Here in Pennsylvania, Penn State University estimates the economic value of the Marcellus Shale formation at $1 trillion, and that for every $1 billion in royalty income paid to Pennsylvania's residents, nearly 8,000 new jobs will be created each year over the next 3 years.

If we apply the mandated minimum royalty

percentage of 12.5 percent to the estimated value of the natural gas the formation contains, Pennsylvania's landowners could receive as much as $125 billion in royalty payments. That creates the potential of tens of thousands of new jobs.

The economic potential contained in the Marcellus Shale could be a boon to Pennsylvania communities, particularly regions in the north-central and northeastern parts of the State that have not traditionally seen much gas well drilling development.

Earlier this month, DEP issued 83 drilling permits for exploration in the Marcellus Shale, or I should add another 83 permits for drilling in the Marcellus Shale.

As more developers converge on Pennsylvania and discussions over leasing and purchasing mineral rights become more common, there has been considerable interest from the media and the general public.

The Department of Environmental Protection has fielded many calls over the past year with questions from landowners, farmers, local governments, environmental organizations, and sportsmen's groups.

The questions have ranged from how we intend to facilitate the tremendous economic opportunities before us to how to handle land leases to how the department plans to protect our natural resources.

Each drilling operation in the Marcellus Shale will require substantial volumes of water, much more than conventional drilling operations. Ensuring that water withdrawals do not threaten Pennsylvania's environment or ecosystems is one of the department's primary concerns.

With increased interest and activity in oil and gas drilling throughout the State, Pennsylvania will indeed experience a boost to its local economies, but we want to make sure that our environment and natural resources are not sacrificed in the process.

While the department is committed to providing the industry with prompt reviews and timely decisions on all permit applications that meet our regulations, we are mindful of the consequences these operations could have on the State's natural resources and are working to ensure that both gas can be produced and water protected.

Below, I will address some of the more often-asked questions and issues surrounding this

activity in greater detail.

More than 350,000 oil and gas wells have been drilled in Pennsylvania since the first commercial oil well was developed in 1859. The Commonwealth first began regulating drilling in 1956.

Oil and gas exploration and production is regulated under all or part of the State's oil and gas laws and the environmental protection laws. That includes the Clean Streams Law, the Dam Safety and Encroachments Act, the Solid Waste Management Act, and others.

The Department of Environmental Protection is responsible for reviewing and issuing well permits, inspecting drilling operations, and responding to complaints related to water supplies and other water-quality problems.

Thirty-six DEP inspectors and water-quality specialists conduct routine and unannounced inspections of drilling sites and wells statewide.

Other agencies directly involved in monitoring the effects of drilling on water quality and aquatic life include the Pennsylvania Fish and Boat Commission, the Susquehanna and Delaware River Basin Commissions, the U.S. Fish and Wildlife

Service, and Pennsylvania's county conservation districts.

In May and June, routine DEP inspections uncovered violations at Marcellus Shale drilling operations, including poorly constructed water impoundments, inadequate erosion and sediment controls, improper waste and fluid disposal, and unregistered and unapproved water withdrawals from streams.

The violations threatened the State's water resources. Consequently, DEP took action on May 30 by ordering the drilling companies to cease withdrawal and use of water on two sites until complete water management plans were submitted to the department and approved.

The plans were approved on July 9, and the sites have resumed operation, although each remains under order to maintain records of water use and disposal volumes at the sites.

In June of this year, DEP, along with the Department of Conservation and Natural Resources, the Fish and Boat Commission, and the Susquehanna and Delaware River Basin Commissions, hosted a summit with current and prospective gas exploration companies to review permit procedures and expected

environmental public health and safety outcomes, including the requirements for water management plans.

More than 300 representatives from across the industry and across the nation attended this summit at the Farm Show Complex. Those in attendance expressed their desire to work within the framework of our environmental regulations and asked that we present them with a clearly defined statewide permitting process.

Since then, permitting staff from DEP's regional office have met one on one with each drilling company that had received permits to explore the Marcellus Shale to review development plans and appropriate regulations.

We have also worked with the industry and the Susquehanna and Delaware River Basin Commissions to develop an amended permitting process that creates consistent rules for water usage and disposal in all areas of the State to ensure that water quality is not threatened by drilling operations.

Pennsylvania has witnessed an increase in gas production each year since 2001 due to increased drilling activity throughout the State. An additional 35 billion cubic feet of gas was produced

in 2006 when compared to 2001.

The department has seen a steady increase in oil and gas exploration permits over the past several years. In 2004, more than 4,500 permits were issued, and this year, we expect 7,200 permits will be issued statewide.

Of the permits issued to date, 267 permits have been issued to drill exclusively in the Marcellus Shale formation. The department has issued 528 Marcellus Shale permits since development of the formation began in 2005.

Drilling activities have taken place at 277 well sites. And I was told yesterday that there are 20 drilling operations underway just recently, in essentially the last 2 weeks, in 10 counties on the northern tier that probably are not reflected in that number.

Extracting natural gas from the Marcellus Shale formation requires horizontal drilling and a process known as hydraulic fracturing that uses far greater amounts of water than traditional natural gas exploration.

Drillers pump large amounts of water, sometimes on the magnitude of a few million gallons, mixed with sand and other chemical additives into the

shale formation under high pressure to fracture the shale around the well, which allows the natural gas to flow freely.

Once the hydraulic fracturing process is completed, the used water, often referred to as "frac fluid," must be treated to remove chemicals and minerals.

During the fracing operation, these fluids must be contained in impermeable tanks or impoundments and disposed of at an approved treatment facility.

Drilling companies must identify where they plan to obtain and store the water used in their drilling operations and where the used frac water is to be stored and treated as part of the drilling permit application process.

When applying for a permit, drillers must specify the sources and location of fresh water and the anticipated impacts of water withdrawals on water resources and obtain approval from the appropriate river basin commission.

DEP has been working in cooperation with the Susquehanna and Delaware River Basin Commissions to create a consistent process for evaluating water usage and disposal in all areas of the State, because

this type of drilling requires significant amounts of water.

In the course of reviewing any gas well permit, the department needs to have a thorough understanding of proposed water withdrawals as well as disposal and treatment plans.

An Application Addendum was created and designed to assist applicants in completing a water management plan associated with the development of the Marcellus Shale Gas Wells.

Under the application process, gas well operators seeking to extract resources from the Marcellus Shale formation must provide the following information to DEP when applying for a permit to drill a gas well: the type of well with proposed location; acreage to be disturbed by drilling and operations; sources and locations of water to be used in the drilling process, the impacts of drilling on water resources, and proof that the water withdrawals have been approved by the appropriate river basin commission; locations of treatment facilities where drilling and fracing fluids will be taken for treatment and disposal; and size and locations of proposed dams and water impoundments.

Depending on various site considerations and

timing issues, applicants may propose to obtain the water for the fracing operations from a public water supplier or propose a direct withdrawal from a stream or groundwater well. That Application Addendum has been designed to accommodate all these options.

The gas well permit application and Application Addendum are submitted to the appropriate Oil and Gas Program office. The Oil and Gas Program will then forward the Application Addendum to the appropriate Watershed Program.

The overall intent of this addendum is to utilize a consistent framework Commonwealth-wide when evaluating water usage. This effort will help to protect water resources in the Ohio and Potomac and Great Lakes Basins where no Federal interstate compact commission exists. This will also help in the Delaware Basin where the policy is less protective than the Susquehanna River Basin Commission.

Erosion and sediment control plan requirements under State law apply to any earth-disturbance activities, including oil and gas drilling.

For oil and gas well activity on less than 5 acres, an erosion and sediment control plan must

contain best management practices designed to minimize point source discharges to surface waters, preserve the integrity of stream channels, and protect the physical, biological, and chemical qualities of the receiving waterway.

For oil and gas earth-disturbance activities that disturb 5 or more acres at one time, a notice of intent authorization for the erosion and sediment control general permit must be completed.

The erosion and sediment control plan or the notice of intent must be submitted to the DEP or an authorized county conservation district for review and approval.

The oil and gas industry has questioned the legality of this State permit and has complained that the process is difficult to work with, and I am personally committed to working with them to see what changes can be made where appropriate.

The Energy Policy Act of 2005 exempted oil and gas activities from the requirements of the NPDES Stormwater Construction Permit. However, the EPA acknowledged that this does not prohibit individual States from regulating oil and gas earth-disturbance activities under State authority.

In response to the EPA's decision, DEP has

used its authority under the Clean Streams Law and Pennsylvania's Oil and Gas Act to regulate erosion, sediment, and stormwater runoff associated with oil and gas activities.

Additionally, over the past summer, staff from DEP's Bureau of Oil and Gas Management has conducted 12 training sessions on the use of best management practices and State permits for industry, county conservation districts, and the DEP regional office staff. Three more training sessions are scheduled for the coming months.

Drilling companies involved in the natural gas wells in the Marcellus Shale must disclose the names of all chemicals to be stored and used at a drilling site in the pollution prevention and contingency plan, as well as response plans in case of an accidental release.

These plans contain copies of material safety data sheets along with emergency contact information and training protocol for employees. The information is on file with DEP and is available to landowners, local governments, and emergency responders.

Pennsylvania law requires drillers to install steel casing and cement the casing through

all fresh water aquifers before drilling through deeper zones known to contain oil or gas.

This casing protects groundwater by isolating the borehole from the groundwater system. It further keeps water from the surface and other geological strata from mixing with and contaminating groundwater.

Disrupting water quality or flow in water wells from drilling activities does occur in some cases, and this disruption is often temporary. However, if problems persist, State law requires drilling operators to replace or restore water supplies affected by drilling.

Landowners should contact the drilling company if problems with water wells develop. Landowners who are not satisfied with the company's response should contact the nearest DEP regional office. DEP will investigate complaints within 10 days and issue orders as necessary to replace or restore water supplies.

The mineral lease is a private contractual agreement between the owner of the minerals and the producer; i.e., a drilling or mining company.

County courts hear suits for property damage or disputed lease matters. The Commonwealth does not

regulate mineral leases, audit payments, or read or calibrate meters.

DEP recommends that landowners who are contacted by companies wanting to purchase or lease mineral rights consult an attorney who is familiar with oil and gas law before signing any documents. Contact the local Bar Association for assistance finding an attorney in your area.

Under Pennsylvania law, there is no eminent domain granted for natural gas collection pipelines associated with the well. Drilling companies must negotiate with landowners for the rights to build gas lines on their property. This right may be included as part of a lease agreement.

Interstate transmission pipelines are regulated by the Federal Energy Regulatory Commission, and indeed the FERC does have eminent domain power.

DEP issues permits for earth-disturbances and to protect wetlands and streams but does not have the authority to control the route or location of these interstate pipelines.

According to the U.S. EPA, at power plants, the burning of natural gas produces nitrogen oxides and carbon dioxide but in lower quantities than

burning coal or oil. Methane, a primary component of natural gas and a greenhouse gas, can also be emitted into the air when natural gas is not burned completely.

Similarly, methane can be emitted as the result of leaks and losses during transportation. Emissions of sulfur dioxide and mercury compounds from burning natural gas are negligible.

The average emission rates in the United States from natural gas-fired generation, and there are some numbers there which I am not going to read, you can see for yourself, but the point is that natural gas generation is typically quite a bit cleaner than most pollutants, in the case of most pollutants than coal-fired or oil-fired generation.

Wells cannot be drilled within 200 feet of structures or within 100 feet of streams and wetlands. The locations of wells, access roads, and related drilling operations are usually negotiated as part of the lease agreement.

If the proposed location of a pipeline or access road must cross a stream or wetland, an encroachment permit must be obtained from the department which includes U.S. Army Corps of

Engineers' approval.

Drilling operators must restore the land once drilling activities are completed. Once a well is no longer producing, the operator must plug the well, then restore the site within 9 months.

A permit applicant may propose to construct a fresh water impoundment to store this water or may propose to store the water in many individual 22,000-gallon tanks for the drilling process.

Whether the source of water is from a public water supplier, a large river, or a small stream, there may be considerable truck traffic between the source of the water and the gas well site.

Maintenance and repair of municipal and State roads is an important concern in rural areas. In many cases, these local municipal roads will need to be repaired after they are used to access well sites. The Pennsylvania Department of Transportation has a process to assist municipalities to survey and evaluate roads and establish mitigation procedures.

Conclusion.

There is no question that Marcellus Shale holds tremendous potential for Pennsylvania citizens, communities, and the economy if managed properly.

Governor Rendell recognizes this potential and has made facilitating this development in a manner that is environmentally sound one of his top priorities.

Given that direction, the Department of Environmental Protection is working diligently to review permits expeditiously and render a decision in a timely fashion once it has been thoroughly evaluated.

As I mentioned earlier, although the vast majority of activities surrounding the Marcellus Shale to date has involved the purchase or leasing of mineral rights, drilling activity has begun, and even some wells are actually producing gas.

If the drilling companies find natural gas in the anticipated quantities, we can expect exploration and drilling activity to increase dramatically. I believe the department, along with its partner agencies, is prepared to meet this challenge.

Thank you, Mr. Chairman and members of the committee.

CHAIRMAN GEORGE: I thank the gentleman.

Let me say it first: I was being somewhat facetious, but I feel we ought to allow a credible

amount of time for all testimony today so we can go out of here at least with some vision of what still has to be done legislatively.

I wish to introduce the gentleman from Lackawanna, Representative Wansacz, who has now presented himself to the committee.

And I will, since you are willing to answer some interrogation, I will turn to the -- I intend to -- can I take you in order?

I will recognize you first, Mr. Seip, because you called in, then I will call on the dear lady.

Go ahead, Mr. Seip.

REPRESENTATIVE SEIP: Thank you, Mr. Chairman.

I thank you for your testimony, Mr. Secretary. Thanks for being here today.

ACTING SECRETARY HANGER: Thank you.

REPRESENTATIVE SEIP: Just two quick questions, Mr. Chairman. You'll appreciate my brevity.

Just one on permitting and one on the fracing operations.

In regard to permitting, do you feel that you have enough staff currently to handle this

process, and what would you anticipate the length of the permit applications to average?

ACTING SECRETARY HANGER: To answer your first question, the answer is, unfortunately no. As you saw, the volume of permit applications has increased from, in a short period of time, 4,500 to 7,200. Actually, just a few short years before that, we were at 1,500 permits a year. So we have essentially gone from 1,500 permits a year to over 7,000.

I would also point out that the fee for applying for a permit is still $100. That was the original fee set in the early 1980s, and it has not been increased since then.

We do not have the staffing to properly implement all of the responsibilities of the department. I have informed the Governor of that and have, with the help of the DEP staff, submitted to him a budget proposal that we hope will be a part of his budget. This, of course, would take effect in 2009, on July 1, 2009.

What was your second question?

REPRESENTATIVE SEIP: In regard to the fracing operations.

Unfortunately, my district does seem to have

a surplus of mine acid drainage, and I am just wondering if it would be possible to use that in these fracing operations and then hopefully restore water back to the environment that would be in much better condition than the mine acid drainage that we started with.

ACTING SECRETARY HANGER: That is one of our hopes, too. I know the industry is interested in all sources of water, and I want to thank the industry for exploring that possibility.

I do not know how practical it is going to be. I would imagine, as we move forward with this activity, that in some cases the water used for fracing could well come from an acid mine pool of some sort.

So we have an opportunity in looking to encourage it, and I am also glad to say it is my understanding, at least in talking with industry, that they are also interested in that possibility.

REPRESENTATIVE SEIP: Thank you for your answers today.

Thank you, Mr. Chairman.

CHAIRMAN GEORGE: I thank the gentleman.

The gentlelady, Miss Major.

REPRESENTATIVE MAJOR: Thank you, Chairman George.

Good afternoon, Secretary Hanger. I sincerely appreciate your being here today to provide testimony.

As Chairman George indicated, I am not a member of the Environmental Resources Committee but am very interested as a member of the House of Representatives, because the Marcellus Shale indeed does exist in all three of the counties of Susquehanna, Wyoming, and Wayne that I indeed represent. So it is a very active process ongoing.

One of the big concerns that I hear from my constituents is the issue of their wells, the water that we obtain, because as you know, in the rural areas, wells are very prominent in how we achieve our drinking water.

And I am just wondering, does the department anticipate that there should be or needs to be any additional regulations that they need to impose to protect our water resources? Specifically, our well water, drinking water.

ACTING SECRETARY HANGER: Well, you are right to emphasis the well-water issue.

Approximately, I believe close to 25 percent of Pennsylvanians actually receive their water from a well. And the department is mindful of the fact that water is probably our most precious resource, even more precious than natural gas, and that so many of us rely on water for so many different things. And we take it for granted, and, of course, when you lose it, then you really realize the value of it.

The department, working with the Delaware River Basin Commission and the Susquehanna River Basin Commission, is carefully examining the issue of water withdrawals, which is obviously one issue, and the Delaware River Basin Commission and the Susquehanna River Basin Commission have the authority to look at groundwater as well as surface water and withdrawals from groundwater.

At this point, as to that issue of withdrawal of water, at least within the Delaware River Basin Commission and the Susquehanna River Basin Commission, I believe all three counties are in the latter, so it is covered under the Susquehanna River Basin Commission. I hope I got that right, but I think you are covered under that.

REPRESENTATIVE MAJOR: They are actually in both.

ACTING SECRETARY HANGER: You are both. Okay. You are in that part of Pennsylvania where you could just be in both.

It is my sense today that for those counties, the withdrawal issue is well regulated. And once the drilling process occurs, then there are instances already that have come to the department's attention where there is some impact on a landowner's water, it sometimes being the case that it is the landowner who has leased the property for the drilling and in other instances it may be a neighbor, and I addressed that in the testimony.

Often in our experience, so far at least, the impacts have been temporary in that water resumes, but we believe we have in those instances authority under existing law to provide a remedy for the landowner or homeowner.

We also believe that industry is going to hopefully not test that authority but they will be good corporate citizens and in fact recognize when there is a problem and appropriately respond to the problems to keep the departments out of this as much as possible. We are not eager to interject ourselves into those kinds of situations, but we stand absolutely ready to do so if needed.

Now, I have to tell you, there is a part of Pennsylvania that is not within any of the Federal interstate compacts, like the Delaware River Basin Commission or the Susquehanna River Basin Commission, and we address that in the testimony as well.

There, the regulatory authority as to groundwater distinct from surface water is more questionable, and we are relying really there on the Clean Streams Law. And the Clean Streams Law has good protections as to surface water. It is probably more open to legal challenge and discussion about how protective it is of groundwater.

We have had internal discussions of that issue, and we are reviewing that matter.

REPRESENTATIVE MAJOR: Thank you.

One other question, Mr. Chairman, if I might.

It is an issue, and you mentioned it, you addressed it somewhat in your testimony, and that is the issue that the department is handing down, when you indeed receive a permit application, that permit ultimately can be passed down to the local soil conservation agency within our counties for them to review, say where indeed the companies might be passing a certain stream, or whatever erosion might

be taking place.

Is the department mindful of, especially in the three counties that I represent -- I indicated Wayne, Wyoming, and Susquehanna -- the number of permit applications that may be applied for and the number of those applications indeed being passed down to those local conservation districts, is the department mindful of the manpower that it will take to review those applications? And indeed is the department looking towards next year's budget to help compensate the counties for the manpower that is going to be utilized within the counties and what is going to be needed there to actually review those applications on the local level?

ACTING SECRETARY HANGER: That is an excellent question.

The county conservation districts often have primary or even exclusive jurisdiction over the erosion and sediment control permits.

In some cases, the department's regional offices -- Delaware County's -- have historically, for whatever reason, not chosen to have their conservation districts do that. But in many cases, it is the county conservation district.

The county conservation districts' budget --

we also looked at that -- has essentially not increased for, I belive it is at least 5 years. In real dollars, the county conservation districts have seen a 15-percent decline in their budget.

Ladies and gentlemen, we cannot keep doing more and more with less and less, despite what some folks might want to say, to do more with less. There is a limit to that.

So it is a serious issue, and I cannot sit here in good conscience and tell you that each county conservation district has the staffing necessary to process erosion and sediment plans in a timely manner when I personally have not visited them. I have not, at this juncture, personally gotten to all of them, and I think that is an open question.

I know the county conservation districts are seeking an increase in their budget. We all know the difficult financial economic times that we now live in. There are some very hard decisions that have to get made.

I think that is one of the reasons we are looking at the fees for these applications. I really do not believe it is defensible to have the fees still at $100, which was the original fee set in 1980 or thereabouts, the early 1980s.

I think we have to ask those who apply for permits, in the case of at least the original permit to do drilling, to pay a greater share of the total costs so that this is not a taxpayer exclusively or largely a taxpayer burden.

REPRESENTATIVE MAJOR: Thank you.

And thank you, Mr. Chairman, for allowing me to ask questions.

CHAIRMAN GEORGE: The gentleman, Mr. Vitali.

REPRESENTATIVE VITALI: Thank you, Mr. Chairman.

Thank you, Secretary Hanger, for coming here today.

Some of my questions have been answered, and as we go along, I will just sort of underscore them a little bit.

It just seems obvious that with this enormous amount of profit to be made here and the acute need for inspectors with regard to water quality and water withdrawal and so forth, that the people who are making the profit ought to be paying for it, the inspection and treatment and so forth.

So what I am hearing you saying, and you just sort of correct me, there is some thought to letting the people making the profit pay for the

framework to make sure the environment is kept sound here by additional fees, by perhaps even some sort of extraction tax.

How would that match up, how would that match up, keeping the environment sound with making the people who are making the profits pay for that?

ACTING SECRETARY HANGER: Well, we are looking at the fees. As I said, it is $100, and that was set nearly 30 years ago without any change, and it was at a time, a very different time, a very different volume, very different demands.

And very frankly, from a long period of time, the gas industry was not very profitable. The natural gas over a period of time was very low, and many of these companies had a hard time keeping the doors open. Circumstances have changed, so we are looking at the fees.

The extraction-tax issue is above my pay grade, that is your pay grade and the Governor's pay grade, and I will leave that to them, them and you, to consider.

REPRESENTATIVE VITALI: Now, the second question I have, I understand -- when I came in, my question involved whether companies were revealing

the chemicals they were adding to the water to make the fracing more effective, and it appears from your testimony that they are listing these chemicals with you. So I assume that you know what they are adding to the water.

My question is, and I also understand that when they drill this water and they add in the chemicals even in the ground, some of the water with those chemicals remains there? Could you sort of discuss, you know, how are we dealing with the issue of these chemicals which remain in the ground, polluting the groundwater? Is this an issue that we need to be concerned about?

ACTING SECRETARY HANGER: Well, it is almost inevitably the case that not every molecule or chemical that goes down in order to contribute to breaking the gas loose comes back up and is then safely, quote, unquote, "safely" stored. And we are concerned about those chemicals and the fracing water polluting other groundwater and drinking water, and we are monitoring those circumstances.

I cannot tell you that there is a 100-percent guarantee of no problem there. I can tell you that our eyes are open, our ears are open. We will respond to any problem that is identified.

We are also, in the first instance, trying to limit the possibility of problems. And I think, generally speaking, at this point in our experience, we feel that we are managing that situation and that problem or challenge well. And next week we might learn something different that may cause me to revise that comment.

REPRESENTATIVE VITALI: My final question.

Do you think additional State legislation is needed to help keep the environment sound in light of the anticipated increase in drilling here?

ACTING SECRETARY HANGER: Well, I believe that there is a need for more staff, which I have stated already, to implement the existing laws, which in most cases are robust and protective of Pennsylvania's water resources. It is up to the regulators to reasonably implement those laws and enforce those laws, and we will do that in a reasonable way.

I have also said and would repeat that we are looking at the question of whether or not there is a legal gap to protect groundwater outside of the river basin commissions, whether the existing framework of Pennsylvania law provides adequate authority to deal with real problems in those parts

of Pennsylvania that are not part of the interstate commissions.

REPRESENTATIVE VITALI: Thank you, Secretary Hanger, and thank you, Mr. Chairman, for your indulgence.

CHAIRMAN GEORGE: Thank you.

The gentleman, Mr. Ross.

REPRESENTATIVE ROSS: Thank you, Mr. Chairman.

Good afternoon, Secretary Hanger.

Forgive me, but we do not do a lot of gas drilling or gas exploration down in Chester County, so I am not as up to speed as some of my colleagues on this particular subject.

But I was wondering if you could maybe take a step back and talk a little bit about the history of this technique of fracing in other areas of the country and perhaps the world in situations similar to ours; in other words, deep drilling in areas where they are essentially going below the groundwater supply and protecting it.

The protective techniques that you are applying currently, have those been used successfully for an extended period of time in similar situations elsewhere? How long has this technique been used in

a significant way? Just if you could put me in the frame a little bit, if you will.

ACTING SECRETARY HANGER: Yes, it's a good question, and I can give you probably a partial and incomplete answer, because at this point, there has been this sort of drilling done in a number of different locations, a number of different geological formations or physical environments, different regulatory schemes.

It is my understanding that one of the very first was in Texas in the Barnett Shale area, and I think that more or less this technology was developed actually more than 20 years ago for use in that area. And so there has been at least some experience with this in some parts of the United States for roughly 20 years.

The pace of this technology's deployment has followed, really, in part the natural gas price increases. This is expensive technology. The drilling and the investors in these companies and the companies themselves are devoting considerable capital and putting considerable capital at risk.

And natural gas at $2 a thousand cubic feet probably can support it, and that was, as you know, Representative Ross, was the case from a lot of the

eighties and nineties. Natural gas, where it was this morning, at roughly $7 and a few odd cents, apparently can support it.

So I think it is the case that the technology itself has been available, but its deployment has increased dramatically with the increase in fossil fuel prices and specifically natural gas prices that we have experienced over the last 5 to 8 years.

REPRESENTATIVE ROSS: Thank you.

I mean, I know we all really want this to go and to be successful, but we are particularly looking at longitudinally in some of these situations that some of the problems do not always appear immediately, and that does make me a little concerned anyway. But thank you for your efforts in this regard.

Thank you, Mr. Chairman.

CHAIRMAN GEORGE: I thank the gentleman.

The gentleman, Mr. Wansacz.

REPRESENTATIVE WANSACZ: Thank you, Chairman George.

First up, it is good to know that many of my colleagues share the same concerns, especially of us in the east and north-central. I know we have been

hearing from our constituents in trying to find out that hub of activity.

A couple of things concern me. I was led to believe when we had these DEP meetings and things that we did have enough staff in the beginning. Now you are saying we do not have enough staff.

When are we going to have -- you are saying maybe July of next year if we can do it. Is there anything that we can do before that? Do you the request into the Governor of how many additional staff that we need before July of next year?

ACTING SECRETARY HANGER: I have made a request to the Governor, and I do not know whether it is possible to -- we have a hiring freeze now statewide, and that is a very big concern.

Our revenue collections were $118 million less than August ---

REPRESENTATIVE WANSACZ: Well, how many people -- I know that -- how many people do we have, like that you have requested?

ACTING SECRETARY HANGER: Well, we believe and the department believes that we need in the range of 68 or so more people to fully implement this opportunity in a way that allows us to match the words that we are talking about here.

We are trying to make sure that the permits are issued in a timely way -- and the industry needs that -- and we are also trying to respond to all these excellent questions you have about well water, about surface waters.

Those are real issues, and this is an exciting opportunity, and we believe that with the proper additional staff, we can deliver on our promise, which is to have the gas produced and the water protected.

REPRESENTATIVE WANSACZ: And I think, Secretary Hanger, that all of us would agree this is an exciting opportunity. We just want to make sure that it is done right. That is the purpose that we are here.

ACTING SECRETARY HANGER: I agree.

REPRESENTATIVE WANSACZ: The $100 fee, do you have the ability to do that through regulations internally to raise that, or does that have to come through us?

ACTING SECRETARY HANGER: We believe we can do it through regulation. We cannot do that overnight. You have to go through a regulatory process, and we are going to do it as fast as we can. And we are in the process of working on that right

now.

REPRESENTATIVE WANSACZ: Also my question here is, when these companies are coming in and drilling and they are creating this casement during the fracing process, do we have someone on site from DEP making sure it is done right, or are we just kind of going with, we hope it is done right and that it will work?

ACTING SECRETARY HANGER: Well, we are not necessarily on site each and every minute. We can't possibly -- we do inspect. There are unannounced inspections, and I will actually let Ron Gilius supplement my answer to that question.

MR. GILIUS: Sure.

For the hydro-fracing operations, the important part is when the surface casing is installed through the groundwater system and when it is cemented in place. That is when we want to make sure we are out there, to make sure that is done properly, because that is the protection for the fresh groundwater system.

We do the spot check during the fracing operation to make sure that things are going right, but again, we are not out there at every moment of the day.

REPRESENTATIVE WANSACZ: But we are inspecting the case to make sure that none of these chemicals are getting into the groundwater?

MR. GILIUS: That is our priority, yes.

REPRESENTATIVE WANSACZ: Now, I have a question, because I am concerned about the groundwater, just with the homeowners again. We are excited about the process, and we just want to make sure it is done, because it is our most valuable resource, the water.

Is there anything in place that we can do, regulations or so, because from my understanding, it is not shared with the general public of what chemicals are used, because each company uses their own thing for protection. How would a landowner, let's say it is my land, I have a well, they are drilling on my land, how would I know that my well water is safe?

MR. GILIUS: First of all, there is a lot of misinformation on this subject out in the public domain.

Whereas the formulation might be proprietary, the chemicals are not, okay? So they have to list, provide us information on what chemicals are being used with the exact ratio of

all the individual. That is the proprietary information.

A landowner, when they sign the lease, they should request that directly from the operator. If a community wants information on the chemicals, they can go through Pennsylvania's Community Right-to-Know Law for worker protection and community protection.

We also have information on the chemicals that are being used. We are trying to summarize that right now and put it on the Web site so it is available, so it is transparent.

REPRESENTATIVE WANSACZ: So would a landowner then be able to get their well tested and ship it out with these chemicals and see if it is present in their well, present in their well water, or is that---

MR. GILIUS: That is a wise insurance policy for a landowner, to have their own water supply tested, yes.

REPRESENTATIVE WANSACZ: Great. Thank you.

MR. GILIUS: Certainly.

ACTING SECRETARY HANGER: Thank you for your questions.

CHAIRMAN GEORGE: I thank the gentleman.

The gentleman, Mr. Everett.

REPRESENTATIVE EVERETT: Thank you, Mr. Chairman.

Thank you, Secretary Hanger, for taking the time today.

I'll just make a quick statement.

I'm from Lycoming County, which is in the middle of where the Marcellus Play is being hotly followed right now. But I am also a member of six different stream and conservation associations.

In Lycoming County, we have beautiful farms, hunting camps, a lot of State forests, a lot of Game Commission land, and we are very interested in protecting our environment, but we are also very interested in the economic development and the things that can flow from this.

So our county established a Gas Task Force some months ago, and we have heard presentations from, except for Mr. Hanger, I think from everybody that is in the room today and about maybe five different times probably.

And through that, just for the folks that are here, we are becoming convinced that we can have the best of both worlds, that we can do this in a manner that will leave us with the beautiful parts of Pennsylvania that I represent and that we can reap

the economic benefits at the same time.

And just to follow up, I just want to be clear, has there been, up to this point, any documented contamination of any well water in Pennsylvania as a result of Marcellus operations that the DEP is aware of?

ACTING SECRETARY HANGER: I personally have not, but I'm going to ask Ron, because I have been on the job 4 weeks. So I would say here, let him answer.

MR. GILIUS: We have received a couple of water supply complaints that they were -- well, while in the process of drilling through the fresh groundwater system before they set the surface casing.

We have not received, at least I have not heard of any, where it is a result of the hydro-fracing process. It is when the initial drill goes down through the fresh groundwater system.

REPRESENTATIVE EVERETT: So a temporary interruption in water supply, but no permanent contamination?

MR. GILIUS: That is the information I have at this point, yes.

REPRESENTATIVE EVERETT: And today, from

Marcellus operations, have we had any incidents where there was stream contamination or any kind of spill or any, you know, toxic event of any sort?

ACTING SECRETARY HANGER: Go ahead.

MR. GILIUS: We have had a couple of spills -- okay? -- at one of the operations up in the northeast. But, you know, through our regulations, you know, they were able to respond to the spill and clean it up afterwards, and it was fuel from the equipment at the site, and, you know, that was addressed by the spill cleanup.

REPRESENTATIVE EVERETT: And that was nothing different than what would happen in a construction operation if somebody was building anything; it was not anything particular to gas and oil operations?

MR. GILIUS: It was part of the fuel for the bulldozers, and, you know, that could happen in any types of situations.

REPRESENTATIVE EVERETT: Thank you very much.

MR. GILIUS: Sure.

ACTING SECRETARY HANGER: Thank you.

CHAIRMAN GEORGE: The gentleman, Mr. Stevenson.

REPRESENTATIVE STEVENSON: Thank you, Mr. Chairman.

Thank you for your testimony today, Secretary Hanger.

Just one brief question. Actually, it is a clarification based on comments as given earlier.

Pennsylvania has such a long history of oil and gas exploration and extraction. I just want to make sure I heard you correctly.

I believe you said that our current process for extraction is well regulated, and I interpret that to mean that you do not see the need for new regulations given the Marcellus Shale discovery and what we see ahead of us, that the regulations we have in place are adequate.

ACTING SECRETARY HANGER: The laws that are in place are adequate, with only the exception of the issue identified outside of the river basin commissions. They are looking at that.

There is obviously the fee issue, which is a regulatory change.

But at this point, we believe we have adequate authority to deal with both the challenge and the opportunity in a responsible way.

REPRESENTATIVE STEVENSON: Thank you very

much.

Thank you, Mr. Chairman.

CHAIRMAN GEORGE: Representative Rapp.

REPRESENTATIVE RAPP: Thank you, Mr. Chairman.

Thank you, Mr. Hanger, for being here today.

I represent Warren, Forest, and McKean Counties, so I am very familiar with oil and gas drilling.

And as well as Representative Everett, I also live in an area with a beautiful national forest -- some of the headwaters of the Allegheny River and lots of hunting camps and lots of oil and gas wells.

My question to you is just kind of following up with Representative Stevenson. I live 40 miles, approximately, from the Drake Well, which I see you have here was drilled in 1859, and we started regulating the oil and gas industry in 1956.

And I hear you say that, it seems to me, hearing you say that you are fine with the regulations the way they are, that our oil and gas producers actually have a pretty good track record of complying with those regulations as they are. Am I

correct?

ACTING SECRETARY HANGER: I am not here to complain about the oil and gas industry, and I believe based upon the Marcellus Shale activity, there have only been a small number of problems. A couple were identified just previously.

I believe that the existing statutory authority with the areas that I have already noted, with possible exceptions, is a good statutory authority. I believe that the challenge here is implementing the existing law in a way that allows the gas to be produced while protecting our water.

As Representative Everett said, I, too, believe that we can achieve both of those goals. It does require day-to-day work by the industry, and I am grateful to them acting responsibly. It frankly requires regulators who, nonetheless, will watch and inspect and play a real role in this whole activity, and we will do that.

REPRESENTATIVE RAPP: With the wells that had, the plans that were approved on July 9 where there were some problems with the water and you are asking them now to maintain records of that water use, just from that statement I am hearing that those producers are complying with the DEP and with

basically what you are asking them to do, to make sure and to ensure that that water table is not being destroyed.

ACTING SECRETARY HANGER: I am going to say yes, but I am going to have it confirmed or denied by Ron here.

MR. GILIUS: Yes, all the operators that have filed the Marcellus Shale applications, they have proper plans in place for water withdrawals. They have water-disposal locations as part of the addendum process that we are reviewing.

ACTING SECRETARY HANGER: But the question was specifically as to the July 9; we issued an order saying that they could resume operations after---

MR. GILIUS: Yes, they have brought their operations into compliance also.

REPRESENTATIVE RAPP: And just a comment.

I also know that there are, you know, some problems. You know, in my area, there was a sabotage just recently, but that was not the fault of the producers. And there have been some producers who, you know, have been told by DEP to cease to drill.

But I guess what I am hearing from you, if I am correct, that by and large since 1956, our producers have been complying with regulations.

ACTING SECRETARY HANGER: Well, look, I cannot say since 1956. I wasn't -- I was born in 1957, so I cannot vouch for the industry that long, Representative.

And we do have oil and gas wells that the taxpayers are putting a lot of money up to plug, so there is a real need for a regulatory role here, and I am confident with a responsible industry and proper oversight regulators who are committed to the law and implementing it fairly, that we can avoid future problems and have this natural resource, the natural gas, developed in a way that is consistent with the other priceless natural resource, our water.

REPRESENTATIVE RAPP: Thank you.

Thank you, Mr. Chairman.

CHAIRMAN GEORGE: I thank you.

And just a couple of questions. I do not want to be redundant, but again, I have noticed that two or three of our members have asked that same question in different ways.

But isn't it true the regulations that you have to implore are the regulations that the department has had for years? They are not new regulations, and they are not taking into any consideration the fact of drilling these deep wells

and the need to have approximately to a million gallons of water available, and the fact that when that water comes back out it will be polluted.

Now, I am not against prosperity in my area or any other area, and I know, I was not here in '54 but I was here in '74, and I put a law in called rebuttable presumption. So I daresay there are not too many that believe in the preservation and the protection of water like this guy does.

So I am not picking on the department, but when you say we could be ready, do you think that we have the facilities available to be able to treat this fracing water when it comes out of that ground?

ACTING SECRETARY HANGER: That is an excellent question and point.

I am concerned about the amount of capacity to treat water, the industrial water treatment capacity. The industry is concerned about that. And we are in the process of permitting three more facilities that would provide additional water treatment for the fracing water.

We are also looking, as the industry is, at certain technology that could allow the water to be essentially desalinated and recycled. It is

expensive technology. I know at least one of the companies doing business in Pennsylvania is seriously considering investing in that technology.

We also, the department, are interested in other solutions. If we could find a safe underground disposal site where it could be injected and contained away from other groundwater, so we are not treating it and then returning it to the surface waters, that might also be a very useful and good thing for the environment, assuming, again, the site is appropriate and did the job that was needed.

So you are right to point out that there is a problem looming, which is, we have got this tremendous rush of drilling, there is increasing volumes of water that are going to be used in the fracing process, and it has to be all disposed of safely.

Today, we are doing that, but we have got to stay -- our ability to treat the water or dispose of the water has to match and stay up with the increased volumes of water being used in the drilling process.

That is one of the reasons why the department has initiated the requirement of a water plan that goes with each permit, and that was not always the case. And that water plan, as listed in

the testimony, some of the basic elements of the water plan include where the water is going to go.

CHAIRMAN GEORGE: Your department wouldn't hesitate to send this committee some type of version of that water plan and what you would insist upon, would they?

ACTING SECRETARY HANGER: Oh, we would gladly provide that to you. I'm sorry we haven't already. I'd be glad to let you see that.

CHAIRMAN GEORGE: Good.

Let me take this one step further: Is there going to be any effort to make sure that at a time of drought, that the normalization of the drilling and the usage will be contained in that the continual withdrawal could place a community in desperate need?

And the fact remains, there is no one can deny that there are more areas in Pennsylvania without the potable water used in what they had years ago. So can we as a group, working with you and the energy development people, utilize the philosophy of using bad water rather than just imploring good water?

For example, we are blamed for being environmentalists. I really want to be a

conservative Legislator. And you can smile, but you listen: I frowned for years of the department insisting that a coal operator treat water that is just going to go down the stream 5 miles and run into another source that has been abandoned for 20 years. You gain nothing.

So wouldn't we be benefiting at all by using that water that is bad and then treating it and putting it into a stream?

ACTING SECRETARY HANGER: Yes, Mr. Chairman.

I am smiling because your experience is valuable and you are right. And it is similar to what Representative Seip was talking about, is trying to identify mine water and utilizing that as a source for water in the fracing process.

That, I think everybody in this room might be able to agree, that would be better than taking water from a stream or even a municipal water supply and still have the issue that you have raised about disposing of it, making sure we have adequate disposal.

CHAIRMAN GEORGE: And then finally, and this may be a little bit higher than your pay grade, as you insisted. By the way, how high is your pay grade?

Will this drilling and this usage of this very fine resource, will it result in more of it being used in-State where the pricing will help to lower the pricing?

Now, I have argued for years on these fears that for some reason a lot of this stuff goes out of State, and when it comes back it is not controlled by the PUC, as you yourself know, being a former Commissioner. So in essence it is easy to send it out, create it, and bring it back and get a lot more money, while at the same time the guy on that property cannot even utilize it. I would like to talk to you and the individuals to see what we can do to make everybody happy.

And if we are going to have altered the sources, I do not think there is any better source -- I am not against gas; I want to see it utilized -- but don't you think we ought to approach that in some intelligent but yet modest manner? Or is that still 50 cents above what you make?

ACTING SECRETARY HANGER: No, I'm fine. I will try to answer that one.

You are right, I think, to point out that the gas that is produced here is set at a market price, and the market price is generally the price

for Appalachian gas, which is a little different than gas, say, in the Gulf, but not hugely different, and no producer is going to sell gas at something less than the market price. And this is where you might find this not completely correct; I do not blame them for selling at the market price, and I do not really expect them to do anything other than that.

I do think this amount of gas is so large here in Pennsylvania, and then there are similar technologies opening up in other areas of the country and producing so much new natural gas, that the supply of natural gas in the country is going to increase enough to put downward pressure on the market price of natural gas.

CHAIRMAN GEORGE: Now, you know, Mr. Secretary, there are landowners that do not own either the mineral or the gas rights, and there was a time when we were all much younger when some of these gas companies would be credible to the point that they would offer the landowner the use of that very important resource for heating purposes or whatever.

Now over the years, this committee and this Legislator, we get complaints about that stopping, because somebody is selling to somebody else and then

not accommodating or keeping that word of continued usage.

Now, there is a thing that I am going to remind you, since you are the new Secretary. For example, we have called the gentleman on your right -- he has been very cooperative -- but when we say these people are fracturing all night and the people can't sleep and the noise is just out of the realm of being absolutely acceptable, and then they say, well, we can build a shed, and they make them build a shed without insulation, and now the noise is accentuated in a hundred different fold, now we have got to do something to be able to keep this landowner who isn't benefiting.

Now, if this landowner is benefiting, then he should put up with some of this so-called routine. But for an individual, and let me give you an example.

ACTING SECRETARY HANGER: Okay.

CHAIRMAN GEORGE: Should you be an individual that bought a home, and you and your wife 4 years later, your job is transferred and you have to leave. At the time you bought it, it was a nice serene greenery. At the time you are going to sell it, there is a gas well in the back.

You do not think it will bring the same money as what you paid for it, do you, sir?

ACTING SECRETARY HANGER: Probably not.

CHAIRMAN GEORGE: I thank you for your testimony. I thank you for your flexibility. And I thank the gentleman to your right.

And incidentally, we have still got to get to you about taking care of that shed.

ACTING SECRETARY HANGER: Well, we thank you, and we stand ready to work with you, Mr. Chairman.

CHAIRMAN GEORGE: I thank the gentleman.

ACTING SECRETARY HANGER: Thank you.

CHAIRMAN GEORGE: The next guest will be Thomas Beauduy, Deputy Director and Counsel for the Susquehanna River Basin Commission.

Welcome, sir.

MR. BEAUDUY: Good afternoon, Mr. Chairman, Chairman Hutchinson, members of the committee, and Representative Major.

We do appreciate, the commission appreciates the opportunity to be here today and offer comment on this very important issue, and we acknowledge and commend your leadership in bringing this matter up for review.

I believe that most of you--- Excuse me for a second.

Let me just introduce Michael Brownell. Mike is the Chief of our Water Resources Management Division at the commission, oversees the regulatory program, and interfaces with this industry on a daily basis. And he is my lifeline here today, because when you start to ask questions of a highly technical nature, I know I'll get in over my head. So Mike is here as a resource for all of us.

CHAIRMAN GEORGE: So you are saying that some of the questions might be over your pay grade?

MR. BEAUDUY: That is correct, sir.

I believe most of you are familiar with the commission, but for the record, I will offer that both under Pennsylvania law and Federal law, we are charged with managing the water resources of the Susquehanna Basin in the State of Pennsylvania. That comprises about 50 percent of the land area.

I would also add that we undertake those responsibilities in close coordination with the Department of Environmental Protection and the Commonwealth generally.

I would like to speak today on the role of the commission in addressing water resource issues

associated with the development of the Marcellus Play.

The short answer is that we have a very limited but very important role to play in this activity. Our business is water resource management, not mineral resources development.

We do not regulate drilling or the production or transmission of natural gas. We rely on our member jurisdictions to oversee those aspects of this activity, and we focus on water resource issues strictly.

We regulate water withdrawals and the consumptive use of water and, in particular, that associated with this development activity.

Our management objective is to have this industry avail itself of the water resources of the basin in the development of this important mineral resource and to do it in a way that minimizes impact to the basin's water resources.

As you may know, we regulate water withdrawals generally of 100,000 gallons a day or more, and the consumptive use of water of 20,000 gallons a day or more.

As the industry ramped up its exploratory drilling this past year, we became aware of

operations exceeding our regulatory thresholds that didn't have commission approval, and as a result, we took several immediate steps over the last, I would say 120 days as this thing took off.

First, we issued a couple of cease-and-desist orders in conjunction with the department. The Secretary mentioned those earlier.

Secondly, we immediately notified all companies known or believed to have been issued Marcellus drilling permits by DEP and the Susquehanna Basin, informing them of our regulatory requirements and recommending that they come forward to address any prior noncompliance and obtain approvals they would need for continuing their operations.

Shortly thereafter, we negotiated settlements with seven companies to resolve some noncompliance issues, and in the last 90 days, we have received 92 applications for surface water withdrawals or consumptive use approvals from this industry, and they have been very responsive since that initial rough start several months back.

Thus far, the commission has issued dockets for 39 surface water withdrawal approvals and 8 consumptive use approvals. Those dockets were approved at commission meetings. We meet quarterly,

and the last two quarterly meetings were in June and September of '08.

Do the members have the handouts, the booklets? They do; okay.

You have a booklet in your packet that sets forth all the approvals with some detail from our last meeting up in Lewisburg, Pennsylvania.

And while that activity was going on, we also took a third step, which was to activate a previously unused rule that the commission had adopted in 2006 that authorized administrative Approval by Rule and an administrative Approval by Rule process for projects consumptively using water obtained solely from public water supplies.

The industry came to us realizing that the commission only met quarterly, that we had a number of projects in the queue already. We have a $400 million hydroelectric upgrade project. We have ethanol. We have industrial uses. We have public water supply systems, looking for review and approval of those projects.

We had a tremendous workload as it stood, and we told the industry that we could not immediately issue surface water approvals for them overnight. But we did have this rule. It was

available to utilize, at least on a temporary basis.

When the commission adopted that rule and put it in place, it did not contemplate that it would be used by the natural gas industry. It established it with the rationale that people who are on public water supply systems could take that water, that the impacts of those withdrawals are analyzed at the time the public water supply system was authorized to make those withdrawals, and so, therefore, it warranted an expedited administrative review. There wasn't a need to rereview matters that were previously addressed from the standpoint of the water resource impacts.

Given the time-sensitive nature of staging drilling and hydrofracture infrastructure in this emerging industry and because the commission only meets quarterly, we utilized this provision to establish an industry-specific Approval by Rule procedure that has enabled us to turn around consumptive use approvals generally in less than 30 days.

To date, the commission has received 82 notices of intent to use the rule, and we have issued 64 approvals by rule since July 1.

There is another graphic in your package

that depicts the location and supply systems that have been approved under that administrative process.

The use of water sourced from public water supply systems may have some long-term viability, but this was really seen as a short-term measure to allow activity to continue while requests for surface water approvals underwent review and consideration by the commission at its quarterly meeting process.

It does raise policy concerns as well, given that it puts tremendous tanker-truck traffic on the roads of rural communities. It is very energy inefficient, and it diverts high-quality water to a use that does not really need it.

Again, we view this as a stopgap measure and anticipate less use of this option as we move forward and continue to issue approvals for regular withdrawals, be they surface water, groundwater, or other, and as a result of the regulatory action that we intend to take, that I will mention in a moment.

As all this was unfolding this summer, we took a fourth step. Using regulatory authority established by the commission, our Executive Director, Paul Swartz, issued a Notice of Determination on August 14, announcing that as of

October 15 -- in a couple of weeks -- all natural gas well development projects in the Susquehanna Basin targeting the Marcellus and involving the withdrawal or consumptive use of water would be subject to commission review and approval.

You have a copy of that determination, the Notice of Determination, in your packet.

Let me offer a few comments on the rationale for this action. First, as the practices of this industry became better known to us, it became clear that there was a wide variability in the amount of water being used in drilling and fracing operations, especially between vertical and horizontal wells. That range started in the hundreds of thousands of gallons and ran up to 3 to 5 million gallons per well in some situations.

Our consumptive use standard is 20,000 gallons a day, based on a 30-day average. Deep well injection, which hydrofracture treatment entails, is considered to be a consumptive use of water.

When you use 600,000 gallons or more on a given day to do a frac operation, that effectively triggers our requirement. Whether the operation is going to use 580,000 gallons or 620,000 gallons can't always be determined in advance.

Also, stream withdrawals associated with consumptive uses are also subject to review, regardless of whether they triggered the 30-day average of 100,000 gallons per day, which is our typical threshold for withdrawals.

What we also saw was that withdrawals on cold-water trout streams, even if less than 100,000 gallons per day, had a real potential for impact during low-flow conditions.

In our view, the situation revealed the potential for adverse impact and a fair amount of confusion in the field, I might add, as well. Were vacuum trucks taking water for frac operations that were exempt because they fell below the threshold or above? We were getting calls from county governments, we were getting calls from landowners and Legislators and others, you know, saying, why is one type of activity controlled; why is another one not?

The reality is that we saw the potential for adverse impact for any activity related to the Marcellus, and we set to clarify the rules for the industry and to make it very straightforward. If you are drilling a Marcellus well, you need an approval if you are going to use the water in any way

associated with those projects.

It may add some additional wells, particularly some of the exploratory wells that were coming in below 600,000 gallons, to regulatory oversight. But it clarifies for the industry, for us, local officials, and landowners what needs to come in and what needs to be approved.

Along with the Notice of Determination issued to the industry, we also announced a proposed regulatory change to be recommended to our Commissioners for consideration at their September meeting in Lewisburg, Pennsylvania. That recommendation was approved, and we are now undergoing a formal proposed rulemaking process to receive comment on the proposal that would make the following changes to our regulatory program.

First, it would require all requests for consumptive use approvals to go through this administrative Approval by Rule process rather than the commission's standard consumptive use application and docketing process, which takes an extended period of time.

Second would be expansion of the current Approval by Rule process that I mentioned earlier in that it will allow project sponsors to utilize a

broader range of water resources as part of their approval, not just public water supplies but discharges from wastewater treatment plants, mine pools, and other lesser quality water resources, as well as withdrawals that are approved by the commission for underground or surface water withdrawals.

It would regulate projects on a drilling-pad basis versus the current docket approvals that address consumptive use on a company lease-area basis.

I will also add that while that is how the dockets have been approved, the actual Approval by Rule of the water supply systems is focused on a drilling-pad basis. So that for any drilling pad that is out there, there is a set approval. Regardless of whether one well is being drilled or 10 wells are being drilled on a drilling pad, there will be a single approval that controls water-use aspects related to that operation.

It would require all projects to demonstrate or certify compliance with all State and Federal laws for the treatment and disposal of flowback or produced fluids, including brines.

Again, we coordinate with our member

jurisdictions. We do not want to duplicate that effort. They have got controls in place, laws and regulations in place that address it. We are relying on our member jurisdictions to regulate that aspect of the activity.

It would also incorporate into the regulations the removal of the regulatory thresholds that I mentioned in the August 14 determination. Mainly, it is a Marcellus well that comes in for an approval.

Finally, it would also provide for a 5-year term to allow for the development activity to occur.

The proposed rulemaking is now in the process of being published in the Pennsylvania Bulletin, the New York Register, the Maryland Register, and the Federal Register for review and comment.

Those actual publications, they start to roll out this week, and we will be conducting and it will be announcing public hearings for Williamsport on October 21 and Binghamton, New York, on October 22 to take comment on the proposal. The public comment period will remain open until October 31 of this year.

That proposed rulemaking package is also included in your packet.

It is our intention to present a final regulation incorporating all constructive comments to our Commissioners for consideration and final adoption at the commission's December 3, 2008, meeting.

Our hope is to streamline the approval process for consumptive use, yet simultaneously require the monitoring, reporting, and mitigation requirements that all consumptive users in the basin comply with so as to enable the commission to better manage the cumulative impact of such use.

I should also add that the proposed rulemaking does not modify any of the current standards or requirements associated with the review and approval of water withdrawals. We have a very mature program for evaluating and approving water withdrawals from streams and groundwater. That will continue in place unaffected by this rule change.

They will continue to be subject to the same standards that all withdrawals all across the basin are subject to and we believe are appropriate to protect our water resources as we simultaneously allow for the utilization to support this important

industry.

We stand ready to continue to provide value-added service to the Commonwealth as it moves forward with the natural gas production issues associated with the Marcellus Shale.

Mr. Chairman, I want to thank you for the opportunity to present this testimony. I know the hour has gone late, but we are here and stand ready to answer any and all questions that you may have.

Thank you.

CHAIRMAN GEORGE: I thank the gentleman, and I know there will be questions.

I will start on the left. The gentleman from York.

REPRESENTATIVE MILLER: Thank you, Mr. Chairman.

I guess I would just ask how other States within the basin are dealing with this same issue? Is it being coordinated so it is all the same?

MR. BEAUDUY: Yes, it is coordinated at certain different levels.

First, the other States that are members of the commission, their gubernatorial appointees and our Commissioners meet. They are all involved in the decisions related to this.

These rules, these changes, are basin-wide in scope. They are not limited to Pennsylvania. We have coordinated with the New York DEC, the Maryland MDE. The Governor's representatives from those States in fact are officials with those environmental agencies.

So on a policy level, they are very much involved. On a technical level, Mike has led a major coordination effort, more particularly with the State of New York and the State of Maryland. There is activity in western Maryland, but in the Maryland portion of the Susquehanna Basin, there is no activity ongoing right at the moment. However, we are bringing up officials from Maryland to meet with DEP officials and to take a look at things in the field here this coming month.

The State of New York is a different situation. There is a lot of activity in the State of New York, not quite as much as there is in Pennsylvania, but I will tell you that there is a lot of activity, political policy and regulatory, in the State of New York right now.

New York has an environmental review statute that suggests and the State has decided -- the Governor made a determination a month or two ago

indicating that the generic environmental impact statement that had been developed for this industry in '92, I believe, did not contemplate this type of activity, and therefore, they are developing a supplemental generic EIS for the State of New York. We are actively involved with DEC in the scoping of that exercise, we will participate in the public hearing process as well, and have been actively coordinating with New York State with regard to water resource issues.

REPRESENTATIVE MILLER: And I appreciate that answer. I was wondering how our neighbor to the south was involved. I could envision New York State, but I appreciate that.

Thank you, Mr. Chairman.

CHAIRMAN GEORGE: I thank the gentleman.

The gentleman, Mr. Stevenson.

The gentleman, Mr. Everett.

REPRESENTATIVE EVERETT: Thank you, Mr. Chairman.

It is good to see you, Tom.

MR. BEAUDUY: Representative.

REPRESENTATIVE EVERETT: Just maybe so that you can calm the fears of maybe some of the folks.

When you take the whole Susquehanna River watershed and the amount of water that we are talking about withdrawing, is there enough water in the Susquehanna watershed that can be safely removed to support these gas operations?

MR. BEAUDUY: In a general sense, yes, there is. Let me offer a few perspectives.

First, the nature of water use by this industry is somewhat different than other industries. You can get, on a deep horizontal frac operation, you can get millions of gallons of water used at one time.

But it is a one-time use, if you will. I mean, there may be situations where they come back and refrac down the road, but effectively it is a one-time use on a well basis, unlike most of the industries in the basin that are continuously using water around the clock.

A power plant is taking in millions of gallons of water a day, and that runs 24/7, 365 days a year. This industry is somewhat different.

When you look at the volume of approvals that have already come before our commission, and we do anticipate the ones that are going to be coming on a continuing basis, the numbers may seem daunting,

but they need to be reviewed in context. Let me give you one.

The Barnett Shale out in the Texas-Oklahoma area of this country is a major, major development for this industry involving thousands of wells, lots of water, and it is actually happening in an area that is not blessed with the water resources that we are. But it takes water to run these operations.

When you look at the entire quantity of water being used in the Barnett and looking at it going from the exploratory phase to the production phase, and if you were to double that and apply it to the Susquehanna Basin and you annualized the numbers, you are looking at about 28 million gallons a day. Now, that is a little bit of fuzzy math, I guess, but the bottom line is, that represents about half the amount of water used by the golf course industry, the recreation industry, in the basin, okay?

So it is a significant amount of water, but it is a manageable amount of water. We are a water-rich basin. The real issue is making sure that the use, the withdrawals and the use occur in a way that does not impact, particularly during low-flow conditions, and that that use is mitigated.

So we believe that there are adequate

resources here if properly managed to accommodate this industry.

REPRESENTATIVE EVERETT: Thank you, sir.

And just one more question, a similar question that was asked of Secretary Hanger.

Do you feel that the Susquehanna River Basin has the appropriate amount of personnel, budget, and everything that you can stay on top of the issues you just identified?

MR. BEAUDUY: No, sir, but we are taking steps to address that.

Let me tell you that we have a little bit more flexibility than the department in that regard. We are bringing on additional staff. We have already advertised for them.

We have also retained firms to assist us. We have a provision in our fee schedule that allows us, if an applicant wants to be moved up to the head of the class, if you will, if they are willing to pay the increased costs associated with that, we can make some accommodation.

We cannot sacrifice our review of projects that are currently in the queue, but the bottom line is that in this last wave of approvals, what we are doing is having the industry pick up the bill to

allow consulting firms that we utilize to assist us in doing some of the assessments, the analyses. And so we have the ability to surcharge our fee schedule to bring on the additional help that we need to keep things moving along.

But looking long term and looking at what the anticipated level of activity is, there is no question that we are going to need to modify our fee schedule, and although -- we have a fairly robust fee schedule. I am sure the industry has probably told you that.

But nonetheless, we are trying to anticipate what the workload is to be responsive to the requests that are being made to us and not negatively impact all the other water users out there that are standing in line waiting for their projects to be approved that have nothing to do with this industry.

And so it is going to require additional support. We are modifying management systems internally to address this. We are rebuilding data systems so that we can track all of this activity -- the reporting activity, the quantification of data, compliance reviews, and the like.

So we are developing as many smart systems as we can to address the anticipated workload. We

are bringing on additional people. We do have the ability to surcharge, and we do believe that we are up to the task, but it is going to take more than what we have now. Thank you.

REPRESENTATIVE EVERETT: Thank you, sir.

And, Mr. Chairman, if I may just make a comment based on what we just heard, that this may be something that we would want to look at, providing DEP with that kind of flexibility that they could adapt, you know, through fee schedules and the kind of flexibility that they are talking about, to be able to stay up with the surges that we are going to see in permit applications on the gas bill side.

Thank you, Mr. Chairman.

CHAIRMAN GEORGE: I thank the gentleman.

Again, the matter of a fee schedule and the matter of prioritizing those that can be most willing to put up the money isn't, in my opinion, always the way to go if you are concerned about certain matters, and the matter we are concerned about more than the environment is the water loss.

So we are going to, as a committee, you can be sure, work with all concerned. And we want to see this developed, but we are also going to put an emphasis on the preservation of this most important

commodity and resource, which is water.

Now, any of us -- and most of us live in an area where we have seen the decline. And again, I came up and mentioned to the Secretary the ability to utilize that that has already been degradated. But, you know, you have already got people that have drilled in for this deep-well need, and I am sure you have better facts than me with 580,000 to 620,000 gallons. That is an awful lot of water whenever we have other industries that are begging for an allowance of 150,000 and they cannot get it from the department.

So again, I know you will be most willing to work with us and to confide some of the policy and the directions that you will be going, because I think the committee wants to see this industry survive, but we also want to see the matter of water preservation still be a priority, if you will.

I see no other questioning. At this time, Mr. Beauduy, I thank you and your colleague for taking the time to come before us. Thank you very much.

MR. BEAUDUY: Thank you.

CHAIRMAN GEORGE: We will just take 2 minutes now, if you will, while we change around.

I think we are going to have the gentleman, Mr. Richard Weber, President of Atlas Energy Resources; and the gentleman, Stephen Rhoads, President of the Pennsylvania Oil & Gas Association; and the gentleman, Louis D'Amico, Executive Director of Independent Oil and Gas Association of Pennsylvania.

Welcome, gentlemen. Take your time to get yourselves settled in.

MR. RHOADS: Chairman George, Chairman Hutchinson, thank you all very much for this opportunity.

We really appreciate the opportunity to come here today and address the committee.

There are three of us here, and we are going to start with Mr. Weber.

If you would, Rich.

MR. WEBER: Good afternoon, Chairman George, Chairman Hutchinson, distinguished committee members and other guests.

My name is Rich Weber. I am the President of Atlas Energy Resources of Moon Township, Pennsylvania.

We have been drilling and operating natural gas wells in Pennsylvania for over 30 years and are

the largest oil and gas producer headquartered in the Commonwealth.

In addition to our activities in Pennsylvania, we are active in seven other States and are the 12th largest driller of oil and gas wells in the country according to RigData reports. Atlas Energy trades on the New York Stock Exchange under the symbol ATN.

In our home State of Pennsylvania, we operate approximately 6,000 natural gas and oil wells and are one of the largest owners of oil and gas mineral rights with approximately 600,000 acres under lease.

We directly employ about 350 Pennsylvanians. However, if you include the employees of our subcontractors, total employment of Pennsylvanians as a result of our activities would measure in the thousands.

Traditionally, we have targeted the upper Devonian sandstones and siltstones of central and southwestern Pennsylvania and the Medina sandstones in northwestern Pennsylvania.

We became interested in Marcellus Shale as a potential commercial play about 2 1/2 years ago. We always knew the Marcellus Shale existed and that it

was gas saturated, but we didn't know how to extract the resource profitably from such a tight rock.

With the success of new technologies being employed in the Barnett Shale in Texas, and in particular the use of large-scale hydraulic fracs, we decided to try some of these new techniques in the Marcellus Shale.

Today, we have over 80 Marcellus wells producing into a pipeline and are convinced that the Marcellus Shale is a large commercial resource capable of being one of the largest natural gas fields in the United States.

Essentially, all of our Marcellus production is located in the southwestern part of the State, specifically in Fayette, Greene, Westmoreland, and Washington Counties.

However, the Marcellus Shale extends up along the western front of the Allegheny Mountains into the far northeast counties of Pennsylvania and underlies approximately 60 percent of our State. It is found at depths between 4,000 and 9,000 feet and is anywhere from 40 and 250 feet thick in the productive areas.

Our company has already invested over $150 million dollars in the development of the

Marcellus Shale, and we plan to accelerate our capital investment over the next few years. We count over 30 companies with equally ambitious plans for the shale, which portends significant capital investment and job growth in Pennsylvania.

Our two industry associations in Pennsylvania, the Independent Oil & Gas Association of Pennsylvania and the Pennsylvania Oil and Gas Association, have jointly formed the Marcellus Shale Committee, which count as members the 25 largest players in the Marcellus Shale.

The purpose of this committee is to form industry consensus as to best practices and to form consensus on the many issues that face the profitable development of the Marcellus Shale.

In addition, we plan to implement a public outreach campaign to help increase the general public's awareness as to the many benefits of natural gas development in the Marcellus Shale.

Lastly, we have commissioned the Pennsylvania Economy League to study the impact of our existing industry in Pennsylvania and have also commissioned Penn State University to study the potential impact of the Marcellus Shale itself.

We plan to make the Economy League study

public in the next week or so. However, I did take a quick peek at the study and noted that our industry currently employs 26,000 Pennsylvanians with an aggregate annual payroll of $1 billion.

The total direct and indirect economic impact to Pennsylvania of the indigenous oil and gas industry is over $7 billion annually. This is before the impact of the Marcellus Shale.

We hope to make the Penn State study public by the end of the year.

As operators, all we ask of our Legislature and regulators is fair and balanced laws and regulations that are consistently timely and predictably implemented. Our industry is very capital intensive with long lead times and uncertainty with regard to regulation and significant risk to our decisionmaking.

At Atlas, we are active in three other shale plays in other States and make decisions every day on how to allocate our capital. As Pennsylvanians, we at Atlas look forward to the continued profitable development of the Marcellus Shale and our continued responsible stewardship of our environment and the natural resources in Pennsylvania.

Thank you.

CHAIRMAN GEORGE: I thank the gentleman.

The next that we have would be the gentleman, Mr. Rhoads. Would you prefer to be last?

MR. RHOADS: Do you want to go, Lou? Let Lou go ahead of me.

CHAIRMAN GEORGE: The gentleman, Mr. Louis D'Amico, Executive Director of Independent Oil.

Who is going first? You, sir?

Welcome sir. You may present.

MR. D'AMICO: Good afternoon, Chairman George, Chairman Hutchinson, and distinguished committee members.

I am Lou D'Amico, Executive Director of the Independent Oil and Gas Association of Pennsylvania.

Thank you for the opportunity to provide testimony in developing the Marcellus Shale here in Pennsylvania.

I find myself in an unusual and unexpected position today. Since I graduated from Penn State in 1972 with a degree in natural gas engineering, I worked in my home State literally in the backwaters of the oil and gas industry.

Prior to joining IO then in government affairs, my career was primarily focused on the growing completion of operations on marginal wells.

Our industry here has often struggled with economic liability. In the 1980s, I watched many friends and colleagues become jobless as the industry lost three-quarters of a million jobs in the exploration and production business in the country nationwide.

At the same time, I watched high school classmates from my southwestern Pennsylvania roots, those in manufacturing jobs and mining jobs, as government policies encouraged our companies to move to other States and take their jobs with them.

Today, there appears to be an opportunity for my friends in my home State to benefit from the industry in which I spent my entire career. The Marcellus Shale has the potential to generate huge economic opportunity.

Some industry experts have estimated that the Marcellus Shale could contain up to 200 trillion cubic feet of clean-burning natural gas reserves, enough to supply the U.S. natural gas demand for nearly a decade. Pennsylvania is poised to become a leader in energy production.

We currently produce about 25 percent of the natural gas that Pennsylvania consumes. The Marcellus Shale could turn the Commonwealth into an exporter of natural gas, providing tens of thousands of high-paying jobs to Pennsylvania in the process.

Virtually every day I read or hear of some editorial about how the Marcellus Shale development threatens the environment or will ruin the character or our municipalities or take over all of our water supplies. The amount of misinformation, exaggeration, and outright lies being spread is staggering. The facts tell a far different story.

The story in Pennsylvania is of an industry over a century old. The story is of an industry in Pennsylvania that has an enviable environmental record. The story is of an industry full of outdoors men, hunters, fishermen, and outdoor enthusiasts who love and respect our environment as much as any environmental science professor in some Pennsylvania college or university.

We have heard about all this new dangerous technology, like hydraulic fracturing. Is it not strange that this new dangerous technology has been referred to by the Interstate Oil and Gas Compact Commission and the Association of Regulators from all

the oil and gas producing States that clearly state there is no problem with this 50-year-old new technology; the fracing has not resulted in damage to the nation's groundwater supplies. Or in 50 years of hydraulic fracturing where it has been standard practice for almost all of Pennsylvania's oil and gas wells, our own DEP has not seen a problem with this new technology affecting our groundwater.

There clearly are new methods of completion in drilling in the Marcellus Shale, yet these new technologies are not significantly different from what has happened in the past, just combined in a different manner. We still set protective casing to protect the freshwater supplies as mandated by State law. We still will be disposing of the fracture fluids, drilling fluids, and production fluids in accordance with the same State laws that conventional oil comply with.

My fundamental message is that the Oil and Gas Act, Clean Streams Law, and other existing laws regulating this industry will still serve the needs of the Commonwealth to protect the environment.

We need the General Assembly, particularly members of this committee, and your counterparts in the Senate to press the regulators of our industry to

continue to meet with industry and develop workable and timely solutions to regulating our industry.

This industry needs sensible regulations that foster development of this huge energy resource while protecting the environment, not bureaucratic layers of policies and regulations that will force oil and gas companies to divert their capital to more business-friendly States.

We are losing the competition to other States with similar shale plays, particularly the Haynesville Shale in Louisiana and east Texas. Drilling capital, regs, oil-fuel services, and people resources are flowing to the Haynesville Play because of regulatory uncertainty here in Pennsylvania.

We need our regulators to think twice about requirements that have no real environmental benefit but rather create delays and costs for no real purpose.

The companies who come to Pennsylvania to develop this are not fly-by-night operators. These are among the largest, best capitalized, and responsible corporations in the country. I am proud to have them come here and I'm proud to represent them.

They are not "invaders," which is a

seemingly favorite term in the press. They are not exploiters of the environment. They are here to eventually make a profit. By being here, they will be improving our Commonwealth -- improving our energy portfolio, improving our economy, improving our employment rate.

Ladies and gentlemen, do not let our regulators bury this economic opportunity in red tape, delay, or unnecessary regulation. For example, we have extensive standards and best management practices for erosion and sedimentation to drill in the Commonwealth. The DEP has full enforcement capabilities under the Clean Streams Law to enforce those standards for BMPs.

Even with robust drilling activity in the Marcellus Shale, maybe about 10,000 acres of land would be disturbed annually compared to over 2 million acres of land that are tilled each year by Pennsylvania's farmers, yet the DEP is banning an erosion and sedimentation permit for Marcellus wells and related facilities. Why?

If the enforcement capability standards are in place -- and they are -- why is it necessary to require a permit on top of the drilling permit? What environmental benefit is being achieved?

This is just one example. There are others, other duplications of effort and time-consuming efforts. We should do all we can to streamline our efforts to give permits, get wells drilled, and get the pipelines laid. The Commonwealth can get this done quickly and expeditiously while still maintaining superior environmental protection.

One area of delaying getting permits is the PNDI program. PNDI searches must be run to determine the potential of endangered species in the permit area. We must get through PNDI clearances before we can even apply for a drilling permit.

The program is housed in the Department of Conservation and Natural Resources, and there are often delays due to work backlogs at that department. If there is a PNDI hit, the operator must determine what the potential impact is and get the clearance necessary.

To clear the PNDI hit, other agencies may be involved. Aquatic species is being required of the Pennsylvania Fish and Boat Commission and the U.S. Fish and Wildlife clearance. Nonaquatic animals may require both the PA Game Commission and U.S. Fish and Wildlife clearances. Each agency may have its own built-in delays.

If DEP could process the rest of the permit application and if the permit application is okay, the permit could be issued whenever PNDI clearance occurs rather than that being the starting point for permit consideration.

The General Assembly could also help by seeing that DCNR is adequately staffed and funded for the PNDI program.

The General Assembly can be involved in assuring that DEP is utilizing the available expertise in the industry in developing policies and propagating regulations for the industry.

In the past, the assumption seems to have been that in some ways, seeking input in the early stages of regulatory development from the industry will taint the process. Clearly, we have something to offer in the way of knowledge in regulating our industry. We believe in the best interests of the Commonwealth and that industry have early involvement in regulatory development.

The department can ignore such advice if it so chooses, but at least potential problems may occasionally be recognized before they are carved in stone. Elected officials can ensure that unnecessary bureaucracy does not stifle the development of this

resource.

Ladies and gentlemen, you have the power to see that the road is not unnecessarily blocked to Marcellus Shale development. Along with the Governor's Office, you could be a positive force not only for the industry but for the people of the Commonwealth.

This concludes my prepared remarks.

CHAIRMAN GEORGE: I thank the gentleman.

The gentleman, Mr. Rhoads.

MR. RHOADS: Thank you, Chairman George, members of the committee, and Miss Major. Thank you for coming out today.

I want to respond to a concern that the Chairman raised in his letter about making sure that we do all this right when you invited us all here to the committee meeting, and specifically I would like to address a few of the environmental issues that have gained a lot of attention in recent months, and they are the potential impacts of this activity, the Marcellus development, on the landscape and the potential impacts it might have on water resources.

With regard to the impacts that we have on the landscape, shales like the Marcellus are difficult geological formations that develop, and it

is only because of the evolution of horizontal drilling technology over the last 25 years in the Barnett that our industry is finally able to produce this resource.

Horizontal drilling has some significant environmental benefits, but principally because it allows the operator to place well locations further apart, to drill multiple wells from a single pad, and to recover more of the underlying gas from one location. This means less earth disturbance from the construction of the well locations, access roads and pipelines, less impact from noise and traffic, and less of a visual change to the landscape.

Horizontal drilling also enables the operator to avoid sensitive environmental features, like habitats which threaten endangered species and also other potential service use conflicts.

With regard to the impact on fresh groundwater, successful development of the Marcellus will largely hinge, as you have all heard, on the use of hydraulic fracturing technology to stimulate the gas production.

Operators expect to use about 1 million gallons of water to frac a vertical well and about 3 million gallons of water to frac a horizontal well.

It is important to remember, as Lou had said, that hydraulic fracing has been around for a very long time. It is not a new technology. It has been in use in Pennsylvania for about 50 years. And these concerns, the use of that technology, was in play in the early 1980s when this General Assembly addressed the environmental concerns related to the oil and gas industry by enacting the Oil and Gas Act of 1984.

For example, some of the rules that came out of that act from DEP include the rules governing the construction of the well. When we drill a completed well, we are required to install multiple steel casing strings that are layered and cemented through the fresh groundwater varying horizons before we continue to drill down to the producing sites.

When operators frac a well, the well has been built that way. The protection provided by the steel and cement is supplemented by a natural barrier of several thousand feet of overlying formations that separate freshwater zones from the bruising formation and prevent the upward migration of frac fluids.

I have included with my testimony a copy of a white paper -- I believe you all have it -- that was handed out, was delivered at last week's

Ground Water Protection Council Annual Forum. That paper is very timely and very interesting. It specifically addresses natural gas drilling in the Marcellus Shale and the effect of hydro-fracing on fresh groundwater.

What it basically concludes is that the potential for impacts to surface and groundwater from the development of the shale are expected to be minimal because of the State regulatory requirements, the practices operators employ to ensure that frac fluids are contained, and the thick blanket of overlying shales and sandstones that lie above the Marcellus and below fresh groundwater-bearing zones.

And then as I think Chairman George said earlier, if all that fails, we can always go back to the Oil and Gas Act, and if something does in fact happen to a groundwater supply, we have the rebuttable presumption to protect the surface owner.

To those of you who don't know, the rebuttable presumption simply states that if I drill a well, I am responsible to replace any water supply that may be damaged in the vicinity of that well, and it is my responsibility to prove that I didn't do it if I don't believe I did it. That is what the rebuttable presumption provides.

With regard to water withdrawals, obvious concerns have been raised about the possible environmental impacts associated with drawing down 3 million gallons of water from the Commonwealth's rivers and streams for frac jobs.

It is very important to acknowledge up front that the Commonwealth is blessed with abundant water resources. We have more than 83,000 miles of streams and rivers and over 40 inches of rainfall on average every year in this Commonwealth.

This substantial water resource makes the region ideal for the development of this kind of a shale opportunity, especially when you consider other parts of the country that are a lot more arid than we are.

As others have discussed, the way we use water is a little different than the way water has been regulated by the commissions and by the department.

Water uses associated with the Marcellus Shale development are small scale, intermittent, and carried out by many different companies at hundreds of locations that are spread throughout thousands of square miles of the Marcellus Shale region.

A typical development pattern for each of

these wells entails the withdrawal of relatively small volumes of water over a period of time, about 30 days, and that water is being stored in surface ponds or tanks and then being used for a 1- or 2-day long frac job.

Clearly, we all need to take the protection of our aquatic resources very seriously, regardless of the size and scope of our water-use activities, but the agencies regulating these activities, both river basin commissions and DEP, need to reconsider the policies and regulatory models they employ to select surface water withdrawal points and to establish water withdrawal limits from Marcellus Shale operators.

The policies and models currently in use are designed to regulate projects that rely on continuous long-term withdrawals and use of water from one or more locations. We don't know this for sure, but they may not be flexible enough to accommodate the pattern of water withdrawals and consumptive uses associated with our development.

For us to function more efficiently, operators need access to water withdrawal points closer to their operations, not just on large streams and rivers. Water-source options that are closer to

the point of use will enable our industry to use temporary pipelines to move water and could help us substantially reduce truck traffic that we would need otherwise to haul water over long distances to our well locations.

To help the agencies address these concerns, our associations through our joint Marcellus Shale Committee are retaining legal and technical expertise to open a dialogue with the potential options of the current flow models that the agency uses to evaluate aquatic life and habitat impacts of surface water withdrawals, and we look forward to finding common ground with them as we move forward. We think we can do that.

Finally, I want to talk a little bit about wastewater disposal.

This has become, I think, the department's focus. Their real concern, I think, with the Department of Environmental Protection is on this issue.

Our industry at this time has three options for disposing of wastewaters. We can either dispose of it at industrial wastewater facilities that treat oil field wastewaters for discharge to streams and rivers under an NPDES permit, we can also go to a

large sewage treatment plant that has the capacity to take these loads in and treat and dispose of them, or we can use underground injection through Class II disposal wells that are regulated by EPA.

All three options are currently available to operators in Pennsylvania in the conventional oil and gas fields, but we expect that the infrastructure capacity that is now available, that it will be fully utilized in the near future as Marcellus Shale operations expand alongside conventional shallow gas and oil development.

There are very limited options available right now to those operators exploring the Marcellus in Pennsylvania's northeastern counties.

Currently, operators there are relying on existing infrastructure and building new alliances with public sewage treatment plants and private wastewater plants wherever they are available.

In the near term, operators hope to permit new wastewater treatment plants within a reasonable distance of their lease holdings, but the department has expressed some concern about these plants and especially the potential impact they may have on the assimilative capacity of the receiving waters.

We as an industry are also beginning to

explore the possibility of deep underground injection as a long-term strategy that could, we believe, facilitate full-scale development of this gas prospect.

It is imperative that we find ways to expedite the permitting and development of the necessary wastewater treatment and disposal infrastructures that our industry needs, and we have to look to the Department of Environmental Protection as a full partner in deploying the appropriate technology and facilities that we need if we are going to fully enjoy the rich economic benefits that this play has to offer.

And with that, ladies and gentlemen, I thank you, and we will be happy to try to answer any questions you may have.

Thank you again.

CHAIRMAN GEORGE: Are there any questions?

The gentleman, Mr. Vitali.

REPRESENTATIVE VITALI: Thank you, Mr. Chairman.

I have to confess I really have not given this issue a lick of thought up until a day or two ago, so I don't really have a good information background here.

But could you talk a little more about the third type of disposal of wastewater, the underground disposal using Class II disposal wells, and the possibility of deep underground injection as a long-term strategy?

Could you tell me how that works and sort of allay the gut reaction fears of you are just putting a problem deep into the ground for someone else to deal with at some other point?

MR. RHOADS: Well, the Underground Injection Control Program is a Federal program. It is run by the U.S. Environmental Protection Agency. Here in Pennsylvania, the EPA Region 3 out of Philadelphia manages the program.

DEP has never taken primacy. They had the option to take primacy over the program, but they never have.

And deep disposal wells have not been used very often in Pennsylvania heretofore. There are, I believe there are about six or seven disposal wells, Class II disposal wells. These are residual waste disposal wells basically that are operating in Pennsylvania with other industries. I think our industry has maybe two, if I am not mistaken.

It has never been fully utilized, and there

has been a longstanding belief in our industry that it could not be, that the geology really isn't here to accommodate that kind of disposal.

But with the advent of the Marcellus Shale here in Pennsylvania and the experience that operators have had in other parts of the country, we have begun to reexamine that thought, and it appears from some analytical information I have from some of the companies that there are in fact opportunities to do this.

And what this means is, you would have a well, an injection well, permitted by EPA specifically for the purpose of injecting and containing wastewaters, residual wastewaters like those associated with frac flowback and produced waters like brine waters, that would be injected into receiving formations that have enough voracity and enough capacity to be able to take this water in significant volumes.

And part of the process of permitting those wells is to ensure that the wells themselves have mechanical integrity; that is, they are designed and built and monitored so that they protect any overlying freshwater, there is no communication, and that they can in fact, formations can in fact contain

the fluids that are disposed.

This is an EPA-regulated process -- DEP does play a role in it as well -- and I believe that they have to issue a well permit, an oil and gas well permit, that accompanies the UIC permit that EPA would issue.

MR. WEBER: I might just add real quick, you know, the company, we have about 75 of these disposal wells in other States and operate them successfully, without incident.

But, you know, it is not a fait accompli that this is the solution in Pennsylvania. In fact, through a partner, we permitted a built for purpose water treatment facility in Masontown, Pennsylvania, that was specifically designed to treat the frac water that we receive and treat the contaminates in that water.

And it is not entirely clear what our long-term solution is, but there are several of them that are at our disposal.

REPRESENTATIVE VITALI: So current State law allows this type of disposal of wastewater.

Under what circumstances would DEP require the treatment plant versus the deep-well-injection remedy?

MR. RHOADS: It is the option, it is the option of the operator. You have both permitting options, and you can come in for either one.

If you can identify an adequate underground injection zone, then you can make an application for the permit. If you cannot in your area where you are operating and you have adequate capacity in the stream to accept an affluent, a treated affluent, then you can go that route.

REPRESENTATIVE VITALI: Thank you, Mr. Chairman.

MR. D'AMICO: If I may, one other thing to add, Representative Vitali.

One of the things we are doing as part of our process of working with the Marcellus Shale Committee is there is a group we refer to as the Appalachian Shale Water Conservation and Management Committee. It has been formed to explore all of the options for water disposal, including the treatment, disposal, and recycling of these fluids.

So we are looking at every possible opportunity that is out there to, you know, minimize the amount of wastewater.

REPRESENTATIVE VITALI: Thank you.

CHAIRMAN GEORGE: Are there any questions to

my right?

The gentleman, Mr. Hutchinson.

REPRESENTATIVE HUTCHINSON: Thank you.

I do not know which or if several of you wanted to jump in on these couple of questions.

One is sort of a follow-up to what we were just discussing about treatment of the water afterwards. And one of the options you talked about, disposal through sewage treatment, large sewage treatment plants, would the processing of this water typically take additional processes over and above what the typical municipal sewage treatment plant does, or can it just flow through that process as long as there is capacity here?

You know, do we have to add chemicals or whatever or use processes of one sort or another in addition to what we normally think of as a sewage treatment plant?

MR. RHOADS: I am not intimately familiar with all the details, but I do understand that there is some concern with the addition of this type of wastewater into the sewage treatment system, and because of that concern, there are, I think -- I believe routinely there are pretreatment requirements that go into effect.

There is also, you know, depending on the size of the facility that would be receiving these things, that also has a lot to say about whether or not a specific plant can be used.

MR. WEBER: And of course we have to dispose of our water in facilities that are configured properly to treat this water. It can't just go to anywhere.

REPRESENTATIVE HUTCHINSON: Right.

MR. WEBER: And that is part of the DEP permitting process that the Secretary talked about.

REPRESENTATIVE HUTCHINSON: The next question is regarding the PNDI.

We had previously heard from DEP. They obviously have all their own processes in place, but this is a separate State agency, DCNR, that oversees PNDI. And my understanding is that there is a bottleneck in that area, and, you know, I wish we maybe could have heard from them.

I have some other communications with DCNR, and I just wanted to hear a little further comment about how that impacts the timeliness of your ability to actually start drilling.

MR. D'AMICO: Yeah; the problem with the PNDI program right now -- actually, there are several

problems.

Number one, there is a backlog within DCNR. They truly do not have all the personnel they probably need to get this accomplished.

But in addition to that, when we get a hit, you know, we get a notification that there is some endangered species, whether it be plant or animal. We have to go through various agencies to get clearance on it.

If it is a DCNR, if it is a plant, the clearance will come from DCNR. If it is a freshwater mussel, we are going to probably be dealing with the Fish and Boat Commission.

So we are -- in addition to having the timing problem with DCNR is whatever other agency that you are dealing with also.

But one of the suggestions that I made here in my testimony is that if DEP could process the rest of the permit application and have it ready to go so that when we do receive the PNDI clearance, that permit could be issued. That would dramatically decrease the time that we are looking at right now. Because right now, the process has to start with the clearance.

MR. RHOADS: Let me add to that, just so you

understand clearly.

DEP's policies state that you have to clear a PNDI hit before they will begin to process your permit. What we are asking for is a concurrent review.

There is one other thing I would like to throw out here for you. You heard comments from Mr. Hanger about the lack of money for staffing. The same problem exists for DCNR for their review of the PNDI.

I was talking to the person who runs that program a few months ago or at the end of -- well, about a month ago, and she told me that for the first time ever, they were able to get rid of their backlog, briefly, because they had some interns on staff to help them over the summer.

DCNR just received an influx of approximately $180 million from the auction of oil and gas rights. I would suggest to you that that money -- some of that money, not all of it -- some of that money could be put to good use by properly and adequately staffing the PNDI program and all the agencies that use it. That would just greatly facilitate the review that is required.

I would also suggest that some of that

money might be used for Secretary Hanger's needs as well.

REPRESENTATIVE HUTCHINSON: I'm going to make one quick comment, because I really do not want to go into the fact that there were some who would question for you to even have a PNDI.

But my final question is regarding the erosion and sedimentation permitting, and could you -- my understanding is that traditionally, those have not been required at drilling sites, but now, because of flexible interpretations of, you know, what is considered being disturbed, that now those are being required. Is that a fair statement, and could you elaborate on that a little bit more?

MR. RHOADS: Go ahead, Lou.

MR. D'AMICO: Yes, I think that is a fair statement.

You know, this has a long history, going back to the Federal Clean Water Act and the NPDES stormwater permit.

The process originally, the Clean Water Act at the Federal level specifically exempted any kind of oil and gas runoff, noncontaminated runoff, from requiring a permit.

There was interpretation within the EPA that

building a well site, building a pipeline, putting a road to a well was an oil and gas activity. We are not sure what oil and gas activity would be, but -- all those things were taken out -- but, you know, that was the interpretation that was made.

The industry nationwide, you know, tried to deal with this. It was not a particularly big problem because the EPA had a 5-acre limitation, and that, at the time, was not a significant issue. It became a very significant issue when the EPA was forced via a lawsuit to go to 1 acre for disturbances.

So to try and make a long story short, the Congress and the Energy Policy Act redefined oil and gas activities. So to clarify it, DEP had the option of letting it alone. They chose not to. They chose to require their own permit, even though we already have the protection in place.

REPRESENTATIVE HUTCHINSON: That is certainly something that I'll look at as we go forward.

Thank you for your testimony, and I have no further questions.

CHAIRMAN GEORGE: The gentleman, Mr. Stevenson.

REPRESENTATIVE STEVENSON: Thank you, Mr. Chairman.

And for Mr. D'Amico, this is just a brief follow-up question. Given the concerns about regulation and extending those regulations that you mentioned in your testimony, what was your reaction to Acting Secretary Hanger's comment that the extraction process is currently well regulated and sees no need for additional regulation?

MR. D'AMICO: I would agree that there certainly is no need for additional regulation. I think -- and no need for additional legislation on that.

I do think there is the possibility of streamlining a lot of the process, and I think it would behoove all of us to be involved in that process.

I think in the past the DEP has, as I said in our testimony, felt that if, you know, industry in some way was involved in the early development of some of these regulations, that it would somehow taint the process. The reality is, you know, there is no place where there is more expertise in the oil and gas industry than within the industry itself.

REPRESENTATIVE STEVENSON: Thank you very much. I appreciated your testimony today.

Thank you, Mr. Chairman.

MR. RHOADS: If I could add something briefly to that.

This whole Marcellus shift that occurred in the agencies has been sudden and rough. It has been a rough road for them as well as for us.

They have been struggling to come up with a way to address the issues that they seek, and the struggle has been causing a lot of uncertainty. The ground has been shifting under us for a few months, and it is causing a lot of risk for the decisions that some of these folks have to make with their capital investments.

We have approached both the DEP and the SRBC just recently to reach out and to talk with them and ask them to open the kind of dialogue that Lou is suggesting we have, and they have expressed an interest, a strong interest, in doing that with us. We expect to start talking with them in a very robust way very soon.

Unfortunately, it is happening now and did not happen 3 months ago.

CHAIRMAN GEORGE: Has the gentleman

concluded?

Are there any other questions?

I have just one, if I may. I can understand that there is going to be some dispute over whether or not the injection of this contaminated source back into the aquifers is going to be somewhat troubling, even though you insist that that is not the case. Do you have any viable proof where it has been tested and that isn't the case?

MR. RHOADS: I do not have it in front of me right now, but I believe it is available. I think we can go to the EPA and get data on that.

Representative George, this program has been around for a long, long time, about 30 years.

CHAIRMAN GEORGE: Let me say this: I have allowed a lot of flexibility, and I intend to do that, but again, there is something that when you and I first met we did not have to consider, and that is, over the last 25 years, our water supplies have dwindled and our aquifers, because of industry, have changed direction. And we have a lot of contaminated water, and that is why I was suggesting that we utilize some of these contaminated waters in the stream.

In one of your testimonies -- just a minute,

please -- in one of your testimonies--- I am being nice today. You ought to be up in front of me when I am not so nice.

MR. RHOADS: I appreciate it.

CHAIRMAN GEORGE: The fact remains that in your testimony I read, Mr. Rhoads, where we pull so many millions of gallons up in the county where the power plant is, and I understand that, but also understand that I was there when they built it, and we didn't have water shortages in those days.

Now, with 25 years of ongoing industry, which we need, this committee and the entire constituency that we represent are not against seeing the exploration and the completion and hopefully the involvement of where we can get a very important resource as cheaply as possible, because with everything happening in the cost to a family, I even encourage you to continue in your effort.

But for you people to insist that you can put contaminated water back into an injection hole where it will hit an aquifer, whether it is true, you know, I do not know of anybody that can look up a blind horse's ear any further than me when you tell me that there will be no problem. So I want proof, and you can get it to me, because what I intend to do

is to work with you, each and all of you, to try to give the people of Pennsylvania the surge in the economy that we have been looking for.

But I want you both to understand that there is another side to this question. We were deliberate in our measures today. We invited the department. We invited you. On the next routine meeting, we are going to invite the public. We are going to find out what their qualms are, what their concerns are, and what they feel that we, as their Representatives, should be able to do to protect them.

So again, I am not going to get into an argument about do you or don't you, but I know one thing: I thought that going forward with the suggestion of treating this water in the stream, you would be doing not only a proper service with the conservation of the potable water that is still in the ground but utilizing your industry at no more charge and preventing yourselves from being involved in other contamination measures. That is why in the future I want to talk about portable -- hauling -- portable facilities, not just these sewage facilities but other facilities where we can work together with you folks and the department for these treatment facilities that can be hauled to different areas as

you do with the construction of concrete -- a portable effort.

So with that in mind -- by the way, before I forget, the Pennsylvania Federation of Sportsmen's Clubs has offered their testimony for this committee, and they will probably be at our next hearing.

So let me say this in closing: We want to work with you. These members are receptive. We want to see you succeed, but we want also to hear the concerns from the public.

Now, for you to tell me that over the years, the last 50 years we have gone after this Marcellus seam -- and we have been using, you know, your figures are 580, 600. I was told that sometimes it is as high as a million gallons. I am set for anything you can provide me, but we want to get everyone together. We want to put Pennsylvania where it ought to be, first in production, first in conservation, and first in environmental control. And we can do that with your cooperation and your open-mindedness, where you must understand there are those that will be affected, and not in a positive way, by your drilling and your exploration and your removal of this most important product.

So bear with us. If you have anything to

say, I am receptive to hear it. So are these members.

So I thank you for coming before us on this given day, and I thank all of those that have taken their time to hear the discussion. And I can say to you there will be several meetings. You are all welcome. You might hear some things that you do not like, but that is what we want. We want you to be able to explain to those people why they are concerned and they should not be.

With nothing other, I thank you, I thank the audience for their indulgence, and have a safe trip home.

This meeting is adjourned.

(The hearing concluded at 4 p.m.)

I hereby certify that the proceedings and evidence are contained fully and accurately in the notes taken by me on the within proceedings and that this is a correct transcript of the same.

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Debra B. Miller, Reporter