

**Testimony of**  
**J. Scott Roberts, Deputy Secretary for Mineral Resources Management**  
**Department of Environmental Protection**  
**before the House Republican Policy Committee**  
**Thursday, May 20, 2010**

Chairman Saylor and members of the committee, thank you for the opportunity to appear before you today to discuss the gas migration events that have taken place in Dimock Township, Susquehanna County and the department's actions to correct and further prevent these types of events in the future.

Gas migration is a dangerous phenomenon that can cause explosions, destruction of property, injuries and loss of life. Local emergency responders and police are often on the front lines of evacuating residences and securing properties and neighborhoods during gas migration events. A reasonable severance tax on the extraction of natural gas would provide funds for state and local officials to receive the necessary training and equipment so that these brave men and women are not endangered during performance of their duties to protect lives and property.

The well contamination situation in Dimock was the result of poorly constructed wells by Texas-based Cabot Oil & Gas Corporation that allowed methane to migrate into water supplies, making those supplies unusable and endangering area residents. The gas that migrated was shallower gas that was not isolated as Cabot drilled for the deeper Marcellus gas. Frac fluids did not contaminate drinking wells but the gas did.

An explosion did occur in Dimock as a result of gas migration from Cabot's wells on January 1, 2009, and fortunately no injuries resulted. Following this explosion DEP conducted an investigation and found that two nearby Cabot wells had pressures exceeding that allowed by regulations and that other Cabot wells had insufficient or improperly cemented casings. Both of these problems are believed to have allowed or caused gas from a shallow formation to migrate into groundwater supplies and ultimately into residential homes and wells. The investigation identified other Cabot wells in the vicinity where visual observation indicated that insufficient or improperly cemented casings may be a concern.

The attached chronology lists the actions taken in 2009, and in November 2009, the department issued a consent order and agreement that directed Cabot to meet a March 31, 2010 deadline to fix defective cement and well casings. The company did not meet this deadline.

During further inspections in March, 2010, DEP identified five additional defective Cabot gas wells and another home water supply that has been affected by gas migration, bringing to 14 the number of impacted water supplies in the Dimock area.

On April 15, 2010, the department issued an unprecedented order that required Cabot to take extensive actions and help the residents affected by the company's drilling activities. Under

the agreement, Cabot must plug three wells by May 25, 2010 that are believed to be the source of migrating gas that has contaminated groundwater and the drinking water supplies of 14 homes in the region. The company was also ordered to install permanent treatment systems by July 15, 2010.

In addition, the department immediately suspended its review of Cabot's pending permit applications for new drilling activities statewide until it fulfills its obligations under the order. The company is also barred from drilling any new wells for at least one year in the area impacted by gas migration.

As part of the order, Cabot paid a \$240,000 fine to the commonwealth, which has been deposited into the state's well-plugging account and must continue to pay \$30,000 per month beginning in May until DEP has determined that the company has met its obligations under the 2009 order.

### **Current Progress**

Since the issuance of the order, Cabot has contacted the 14 affected homeowners to fix their water supplies. Twelve of these families have raised concerns with the methane treatment systems proposed by the company and the department continues to work with these residents regarding other acceptable options.

On May 4, DEP Secretary John Hanger and members of my staff traveled to Dimock and met personally with the affected families and their attorneys to discuss their concerns about our Consent Order and Agreement with Cabot and to answer questions about the regulation of gas drilling in Pennsylvania.

The company has begun the process of plugging the three wells and fixing a fourth well. Cabot has also hired an environmental service firm that has had a strong and positive working relationship with DEP to oversee all environmental aspects of their drilling operations in Pennsylvania.

Pennsylvania welcomes the economic opportunities presented by the Marcellus Shale. Producing this gas will create thousands of new jobs and profoundly change our economy, but these changes place added burdens on local and state government. The companies that are coming here to harvest this resource are large, often multi-national corporations that typically pay a severance tax on the gas they extract in other states such as Texas, Alaska and Louisiana.

We are strengthening our regulations in response to the anticipated growth of this industry. On May 17, the Environmental Quality Board (EQB) approved rules to strengthen our existing well construction standards. A properly cased and cemented well is critical to containing gas, oil and other fluids within the well bore and avoiding the sort of problems that happened in Dimock. These regulations make important improvements through such measures as pressure testing casing used in Marcellus Shale and other high-pressure wells, and further defining specifications for oil field-grade cement to be used for well casing. The regulations will also require well operators to inspect all existing wells quarterly to ensure

that each well is structurally sound, and report the results of these inspections to DEP. If the operator discovers a problem with the well, such as being over-pressured or if the casing has become corroded, they must notify DEP immediately and take steps to remedy the problem.

The EQB also approved final rules requiring drilling companies to treat highly polluted drilling wastewater to drinking water quality if they chose to return drilling wastewater to rivers and streams. Drilling companies have other options for disposing of wastewater other than treating such as reuse and recycling or injection into EPA-permitted caverns thousands of feet below drinking water supplies.

In addition to strengthening our rules, Governor Rendell has directed DEP to increase the staff due to the increased drilling monitoring and enforcement. The department hired 37 new staff in 2009 and we are in the process of hiring another 68 staff this year, more than doubling our oil and gas staff since 2008. As a part of our effort to further increase oversight, DEP has also opened new offices in Williamsport and Scranton to oversee drilling operations in the north-central and northeast areas of the state. A reasonable severance tax paid by the operators would assist in covering the cost of these additional Department staff and resources.

We are taking these actions to put in a place a comprehensive and world class regulatory framework that will protect our residents and our natural resources while allowing development of Pennsylvania's Marcellus Shale reserves to continue. None of us should underestimate the importance of this gas reserve or the amount of interest it has generated on a global scale.

The lure of productive and accessible natural gas reserves in close proximity to the high population densities on the east coast is drawing billions of dollars in investment from companies in other states and around the world. The profit potential is enormous with companies estimating a 10 percent return on their investment at gas prices of \$2.20 to \$2.80 per cubic foot. Today, gas prices are approximately \$4 per cubic foot.

Even with strong regulations, impacts will not be zero. Drilling is an industrial process. It is impacting the land; it is impacting our roads. Spills and accidents will occur. Tragically, three workers have been killed in workplace accidents at Marcellus sites.

Local and environmental impacts can be reduced but cannot be eliminated. A severance tax is one way to ensure the benefits of gas production outweigh its costs. Pennsylvania must join nearly every other gas-producing state and enact a reasonable severance tax as part of its development of the Marcellus Shale gas reserve.

### **Conclusion**

The drilling industry is ultimately responsible for ensuring their wells are properly constructed and must use the best casing and cementing practices to prevent problems. DEP will hold drillers in Pennsylvania accountable for problems caused by drilling. In addition, our new wastewater and well construction regulations and a severance tax on the extraction

of natural gas will give regulators and local governments the tools they need to protect our environment and our residents.

The gas migration situation in Dimock has given a black eye to the oil and gas industry, to the Department of Environmental Protection and to the entire state. The Marcellus Shale gas industry operating in Pennsylvania can and must be the very best in the world. Strong rules and enforcement combined with companies dedicated to production, environmental and safety excellence is the way to become world class.

Chairman Saylor and members of the committee, thank you for your attention. I will answer any question you have at this time.

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#### **Gas Migration Events Timeline in Dimock Township:**

- Jan 1, 2009 -- An explosion was reported in an outside, below-grade water well pit in Dimock Twp, Susquehanna Co. Because the site of explosion was near Cabot drilling activities, DEP initiated an investigation to determine if the explosion was related to Cabot's activities.
- Jan 23, 2009 -- DEP forwarded correspondence to Cabot requesting that Cabot provide DEP with information for an investigation of the explosion, and directed Cabot to take certain actions at nearby gas wells. Information gathered by DEP during the investigation revealed that two Cabot wells had pressures exceeding that allowed by regulations, that certain other Cabot wells had insufficient or improperly cemented casings, and that DEP's visual observation at other wells indicated that insufficient or improperly cemented casings may be a concern.
- Feb 27, 2009 -- DEP cited Cabot for, among other things, discharging natural gas - a polluting substance - to waters of the Commonwealth and for failing to prevent gas from entering fresh groundwater. DEP also directed Cabot to install methane gas detectors in nine specified residences, to provide alternate sources of water to four residences, to provide DEP with all sample results gathered by Cabot since the onset of the investigation and to submit a plan and schedule to undertake and complete the requested actions. DEP also requested to meet with Cabot regarding the gas migration investigation.
- March 13, 2009 -- Cabot responded to DEP that much information has been gathered, that several residents have been provided with an alternate source of water, that vents have been installed on water wells at certain residences and that Cabot has undertaken a series of actions to move towards resolution of the migration concerns. Cabot advised that they will have a summary report of their investigation in April, and agreed to meet with DEP early that month.

- April 7, 2009 -- DEP met with Cabot to discuss the status of the gas migration investigation and to gather information from Cabot regarding steps that they have taken and will take to eliminate gas migration. At the meeting, Cabot indicated that they have installed vents, provided an interim water supply to the specified residents, undertaken an investigation and remedial actions on a number of wells and provided DEP with specific information regarding wells in question. Cabot also advised that a pilot program was initiated to install methane gas removal systems at 3 residences that had been affected.
- May 13, 2009 -- DEP cited Cabot for an improperly cemented casing at its Gesford 3 well and for failing to prevent the migration of gas into fresh groundwater.
- June 19, 2009 -- DEP requested additional information from Cabot to address further concerns arising during the investigation and directed Cabot to take additional actions and provide monthly reports to document its ongoing efforts.
- July 16, 2009 -- Cabot responded to the June 19 correspondence from DEP providing some of the requested information, and promising to deliver several final reports within the next 30 days.
- October 1, 2009 -- Cabot provides additional information but advises that some information cannot be provided until October 15, 2009.
- October 19, 2009 -- DEP meets with Cabot to discuss a Consent Order and Agreement that DEP is preparing.
- October 28, 2009 -- Cabot and DEP met to discuss additional measures that Cabot had employed in a modified drilling program in an attempt to help prevent future gas migration occurrences.
- November 4, 2009 -- DEP executed a Consent Order and Agreement that required Cabot to:
  - Pay \$120,000 civil penalty to address violations resulting from gas migration as well as other violations due to a number of unpermitted discharges at well sites and administrative violations.
  - Continue to provide temporary potable water for 13 affected residents.
  - Only to drill new wells upon prior, DEP written approval of a casing and cementing plan for each well.
  - Submit a plan to DEP within 15 days to identify cementing and casing integrity investigation steps that it will take at specified wells.
  - By March 31, 2010, correct deficiencies identified as a result of well integrity investigation or plug the well.
  - Provide information regarding any other residents that have been provided with alternate water source or that have complained to Cabot regarding their water quality.

- By March 31, 2010, provide plan and schedule to permanently replace or restore 13 affected water supplies.
  - By March 31, 2010, complete all actions necessary to prevent the unpermitted discharge of natural gas from Cabot wells in the defined affected area.
  - Pay daily stipulated penalties at \$1000/day for missed milestones.
- November 20, 2009 -- Cabot Oil & Gas was sued by 15 Dimock residents in Federal Court
  - March 10, 2010 -- DEP identified additional suspect wells where gas was observed migrating to the surface at the well(s).
  - March 31, 2010 -- Deadline for Cabot to address drinking water and gas migration issues passes. No action has been
  - April 13, 2010 -- Cabot is determined to be in violation of the November 4, 2009 Consent Order and Agreement and notified that the department will be taking action to enforce the agreement.
  - April 14, 2010 – The CEO of Cabot Oil & Gas and representatives of the company meet with DEP in Harrisburg and are given a final opportunity to fix the leaking wells and address contaminated water supplies. The department orders Cabot to:
    - Pay \$240,000 civil penalty
    - Within 40 days, plug three wells and take corrective action on a fourth well that are the primary sources of gas migration in Dimock
    - Install methane treatment systems and provide drinking water to 14 homes in Dimock that is at least equal to the water that was present there before drilling began
    - Halt all well completion activity on other wells in the affected area until the three wells are plugged and the water supply problems are addressed.
    - In addition, Cabot is prohibited from drilling any new wells in the 9 square mile area surrounding Dimock for one year and the Department has suspended review of all Cabot permit applications statewide until all wells are plugged and all water supply problems are addressed.