Penn State Environmental Law Review

Volume 19 | Number 2 Article 2

5-1-2011

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Recommended Citation

Nicolle R. Bagnell, *Environmental Regulation Impacting Marcellus Shale Development*, 19 *Penn St. Envtl. L. Rev.* 177 (2011).

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Articles

Environmental Regulation Impacting Marcellus Shale Development

Nicolle R. Snyder Bagnell*

Pennsylvania has a long history of oil and gas development, and development of the Marcellus Shale has significantly increased production in recent years. This increased production has produced a corresponding increase in the attention given to the environmental impact and regulation of this development. Legislatures and regulatory agencies have proposed and promulgated new regulations, courts have addressed new issues that require the analysis of environmental topics, and members of the public and the academic community have begun to debate new environmental concerns.

This paper provides a general overview that touches on some of those issues. It identifies some of the new and existing regulations that govern the development of the Marcellus Shale and discusses recent cases and precedent. Finally, the paper highlights some of the pending issues that will be addressed in the coming years as natural gas production from the Marcellus continues to develop.

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I. ENVIRONMENTAL REGULATION OF OIL AND GAS OPERATIONS IN PENNSYLVANIA

Pennsylvania regulates oil and gas operations extensively. The statutory authority requiring permits for all new oil and gas wells can be found in the Oil and Gas Act, 58 Pa. Cons. Stat. Ann. §§ 601.101-.605 (West 1996). The implementing regulations can be found at 25 Pa. Code §§ 78.1-.906 (2011). In addition, other regulations relating to water, waste, earth disturbance, and air apply to development of the Marcellus.

On March 22, 2010, Pennsylvania Governor Rendell signed into law Senate Bill 297. This bill, originally proposed by Senator Yaw in February of 2009, provides for increased record-keeping and reporting requirements, including a requirement that Marcellus Shale well operators submit annual and semi-annual reports specifying, among other things, "the amount of production on the most well-specific basis available" and the status of each well. The bill also requires the Pennsylvania Department of Environmental Protection ("DEP") to post Marcellus Shale well data online. This new requirement will significantly impact the availability of natural gas producers' production information, which was previously kept confidential for five years.

Most recently, on February 5, 2011, new regulations went into effect that significantly revised Chapter 78 of Title 25 of the Pennsylvania Code.[1] Some key features of the proposed regulations include: (1) a provision requiring operators to implement a pressure barrier plan to minimize well control events; (2) a provision requiring operators to condition the wellbore to ensure an adequate bond between the cement, casing, and formation; (3) a provision requiring the use of centralizers to ensure casings are properly positioned in the wellbore; and (4) a provision improving the quality of the cement placed in the casing to protect fresh groundwater. In drafting the regulations, the DEP relied on input and comments from the public solicited as part of a series of public meetings held by the Environmental Quality Board.

II. REGULATION OF WATER AND WASTEWATER FROM MARCELLUS SHALE DEVELOPMENT

Because production from the Marcellus uses large amounts of water and results in significant volumes of wastewater, this area has already received a significant amount of attention from the public, the regulators, and the industry.[2]

1. 41 Pa. Bull. 805 (Feb. 5, 2011).

2. *See generally* Robert E. Beck, *Current Water Issues in Oil and Gas Development and Production: Will Water Control What Energy We Have?*, 49 WASHBURN L.J. 423

A. *Water Usage*

Production of natural gas from the Marcellus uses significant quantities of fresh water. Each well can use millions of gallons of water during the drilling and fracturing[3] processes. Pennsylvania is the second richest state in the country in terms of water resources, but there are still concerns regarding the availability of sufficient resources to meet the increasing demands imposed by developing the Marcellus.

Although drilling permit applications require a plan for water usage in Pennsylvania, there are no state regulations that address water usage by producers. There are two major Commissions that operate outside of the DEP to regulate water usage by natural gas drilling operations in Pennsylvania. They are the Delaware River Basin Commission and the Susquehanna River Basin Commission.[4]

1. Delaware River Basin Commission

The Delaware River Basin Commission ("DRBC") was created in 1961 by concurrent compact legislation from the federal government and the states of Delaware, New Jersey, Pennsylvania, and New York.[5] The Commission's programs include water quality protection, water supply allocation, and permitting. The members of the Commission include the governors of each of the four states as well as the Division Engineer, North Atlantic Division, U.S. Army Corps of Engineers acting as the federal representative.[6]

Since May of 2009, no gas extraction project could be undertaken in the parts of the Marcellus Shale that are within the Special Protection Waters[7] of the Basin without DRBC approval. Since June of 2010, this rule has also applied to exploratory wells. Currently, however, "Commission consideration of natural gas development projects will

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(2010); Hannah Wiseman, *Regulatory Adaption in Fractured Appalachia*, 21 VILL. ENVTL. L.J. 229 (2010).

3. *See* discussion *infra* Part II.B.

4. Pennsylvania is also a member of the Great Lakes Commission and the Interstate Commission on the Potomac River Basin, but these commissions do not regulate Marcellus withdrawals. Additionally, Pennsylvania is a member of the Ohio River Valley Water Sanitation Commission ("ORSANCO"). ORSANCO does not handle oil or gas issues, but it does deal with the treatment of sewage and industrial wastes discharged to the Ohio River.

5. *See* DRBC Overview, http://www.state.nj.us/drbc/over.htm (last visited Mar. 25, 2011).

6. *See* Natural Gas Drilling in the Delaware River Basin, http://www.state.nj.us/drbc/naturalgas.htm (last visited Mar. 25, 2011).

7. Special Protected Waters, http://www.state.nj.us/drbc/spw.htm (last visited Mar. 25, 2011) (providing maps of the Special Protected Waters).

[not] occur [until] after new DRBC regulations are adopted."[8] The notice and comment period for these new regulations will close on March 16, 2011.

While the existing regulations established a program for regulating water withdrawals, the draft regulations are lengthy and comprehensive, and they apply to "all natural gas development projects involving siting, construction or use of production, exploratory or other wells in the Basin regardless of the target geologic formation, and to water withdrawals, well pad and related activities and wastewater disposal activities comprising part of, associated with[,] or serving such projects."[9] With regard to water sources, the draft regulations will: (1) require water used for natural gas development projects to come from Commission-approved sources; (2) permit water sources within the boundaries of an approved Natural Gas Development Plan ("NGDP") to be approved for uses within the plan; and (3) allow flowback, production waters, treated wastewater, and mine drainage waters to be reused for natural gas development in certain instances. For well pad siting, the draft regulations will, *inter alia*: (1) require the preparation of an NGDP for any entity with more than 3,200 Basin acres leased and any entity proposing to construct more than five well pads; (2) require the identification of foreseeable development in a defined geographic area; (3) restrict siting in certain areas; and (4) require surface water, groundwater, and wastewater treatment monitoring. The draft regulations will also require a treatability study from any treatment facility within the basin that accepts non-domestic wastewater from a natural gas development project. Finally, the draft regulations include a streamlined application process that, where applicable, can lead to approval in less than 30 days.

2. Susquehanna River Basin Commission

The Susquehanna River Basin Compact, adopted in 1970 by the United States Congress and the legislatures of New York, Pennsylvania, and Maryland, created the Susquehanna River Basin Commission ("SRBC").[10] The SRBC's programs include Compliance, Monitoring & Assessment, Planning & Operations, Project Review, and Restoration & Protection.[11] The governors of each member state serve as members of

8. *See* Natural Gas Drilling in the Delaware River Basin, http://www.state.nj.us/drbc/naturalgas.htm (last visited Mar. 25, 2011).

9. Draft Natural Gas Development Regulations "At-a-Glance" Fact Sheet, http://www.state.nj.us/drbc/naturalgas-draftregs-factsheet.pdf (last visited Mar. 25, 2011).

10. Overview, http://www.srbc.net/about/gen info.htm (last visited Mar. 25, 2011).

11. Programs and Activities, http://www.srbc.net/programs/programs.htm (last visited Mar. 25, 2011).

the commission along with a federal representative appointed by the President.

The SRBC "regulates all withdrawals of surface water and groundwater and consumptive water uses within the basin for natural gas development in the Marcellus . . . formation[]."[12] Surface water and groundwater usage applications are acted on quarterly and only after a technical review process, which generally includes scientific and/or engineering studies. Surface water withdrawal applications are examined while considering possible adverse impacts on other water users and the water resources of the basin. Groundwater withdrawal applications take into consideration the sustainability of the withdrawal and whether or not the withdrawal is consistent with long-term protection of water resources in the basin. Groundwater withdrawal applications require a 72-hour-long constant-rate aquifer test. Consumptive water uses at drilling pads require a general administrative permit process known as "Approval by Rule." These Approvals are not acted on quarterly, but are instead reviewed by the SRBC's Executive Director. They allow SRBC to track where water is coming from and how much is used. Additional restrictions include a specified maximum rate of withdrawal and maximum daily withdrawal amount, each of which must be monitored and reported to the SRBC. Finally, natural gas projects have a 4-year term of operation, and can, in certain circumstances, be reviewed before that time period has elapsed.

Despite the above requirements, the SRBC is clear that there are a number of things they do not regulate. This broad category includes water quality, fracking[13] fluid treatment, fracking fluid recycling, fracking fluid disposal, and drilling activities. Instead, the Commission states only that companies drilling in the Susquehanna River Basin must obey the pertinent state regulations on these issues.

B. *Hydraulic Fracturing*

One area that has garnered significant attention from Congress, the media, and the public is hydraulic fracturing (or "fracking") of wells in the Marcellus and elsewhere. Because the shale in which the gas is trapped is very tight, it is necessary to create cracks and fractures through which the natural gas can escape, flow to the well, and reach the surface. In order to create these fractures, producers force large amounts of fracking fluids down the well and into the target formation. These fracking fluids are generally large volumes of water containing small

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12. Project Review Frequently Asked Questions, http://www.srbc.net/programs/marcellus_faq.htm (last visited Mar. 25, 2011).

13. *See* discussion *infra* Part II.B.

amounts of chemicals used to lubricate, inhibit corrosion and otherwise aid in the fracturing process. Much of the water forced into the formation during fracking is never recovered. Producers recover wastewater that may include not only the fracking fluids but also other components naturally occurring in the formation. The recovered wastewater is often called "flowback" or "flowback water." Fracking is not a new process; it has been used for more than fifty years.

1. Federal Regulation of Fracking

There are currently no federal statutes or regulations setting forth guidelines specifically for management of wastewater from fracking operations. These operations are exempted from the Resource Conservation and Recovery Act ("RCRA")[14] and the underground injection well requirements of the Safe Drinking Water Act.[15] Generally, however, the Clean Water Act[16] governs the disposal of fracking wastes, and the Hazardous Materials Transportation Act regulates the transport of any hazardous chemicals. In 2009, the Fracturing Responsibility & Awareness of Chemicals ("FRAC") Act was proposed to increase federal supervision of disposal, treatment, and overall management of fracking water, but the Act never passed. The Environmental Protection Agency ("EPA") is currently in the process of conducting a study of the effects of fracking. The initial results are expected by late 2012.

2. Pennsylvania Regulation of Fracking

In Pennsylvania, the DEP published new standards entitled "Policy and Procedure for NPDES Permitting of Discharges of Total Dissolved Solids (TDS)" on August 21, 2010. The new regulations set guidelines for treatment of TDS in wastewater produced from fracking and bans direct discharges from drilling sites.[17]

Under section 95.10 of the new regulations, there are no restrictions on the transportation of oil and gas wastewater to a publicly-owned treatment works ("POTW") holding a pre-August 21, 2010 National Pollutant Discharge Elimination System ("NPDES") permit. As such, "existing sources" of high-TDS wastewater are authorized to continue operating under their prior permit limits and conditions until such time as

14. 42 U.S.C. §§ 6901-6992k (2006).
15. *Id.* §§ 300f-300j-26.
16. 33 U.S.C. §§ 1251-1376 (2006).
17. *See* 25 PA. CODE § 95.10 (2011). *See also* PA. DEP'T OF ENVTL. PROT., DRAFT POLICY AND PROCEDURE FOR NPDES PERMITTING OF DISCHARGE OF TOTAL DISSOLVED SOLIDS (TDS) – 25 PA. CODE § 95.10 (Jan. 22, 2011), *available at* http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-82913/Draft_385-2100-002.pdf.

they propose to expand their existing daily discharge load of any pollutant of concern. Although the EPA has recommended that pre-August 21, 2010-permitted POTWs not accept oil and gas wastewater because of the potential for "pass through" of TDS and chlorides,[18] there are no "pretreatment standards" in place. Instead, non-domestic discharges to POTWs are subject to existing general pretreatment standards.

For "new" (post-August 21, 2010) and expanding POTWs proposing to receive and treat natural gas wastewater (resulting from fracking, production, exploration, drilling, or well completion), section 95.10(b)(1)-(3) prohibits any discharge of such wastewater into the Pennsylvania watershed unless pre-treatment of the wastewater at a centralized waste treatment facility ("CWT") precedes POTW treatment and meets the following requirements (along with section 95.10 requirements generally): (1) the discharge may not contain more than 500 mg/L of TDS as a monthly average; (2) the discharge may not contain more than 250 mg/L of total chlorides as a monthly average; (3) the discharge may not contain more than 10 mg/L of total barium as a monthly average; (4) the discharge may not contain more than 10 mg/L of total strontium as a monthly average; and (5) the discharge complies with the performance standards set forth in 40 CFR 437.45(b) (relating to new source performance standards (NSPS)).

3. Proposed Legislation in Pennsylvania

Additional proposed state legislation in 2011 includes Pennsylvania House Bill 234, which seeks to create an online tracking and reporting system for frack water on the DEP website. In addition, Pennsylvania House Bill 232, which proposes to strengthen disposal of wastewater, creates an online wastewater tracking system, and imposes a three-year moratorium on new permits to discharge drilling wastewater into surface waters.

C. Drinking Water Concerns

The water issues described above all relate in a broader sense to the public concern regarding safe drinking water. Communities have already seen impacts to drinking water from Marcellus Shale production. For example, according to the DEP, Cabot Oil and Gas Company's ("Cabot") natural gas drilling activities in Susquehanna County are believed to be the source of gas migration and water contamination problems affecting Dimock residents' water wells. The DEP began investigating in January

18. *See* 40 C.F.R. § 403.5 (2011).

2009, and after that investigation, Cabot reached a $4.1 million settlement with the DEP. The terms of the settlement agreement will require Cabot to reimburse DEP $500,000 for the cost of investigating the gas migration. Cabot must also enable all 19 of the affected families to resolve their water-related issues based on their particular circumstances (with a minimum payment of $50,000), including offering, installing, and paying for whole-house gas mitigation water treatment systems.

In addition to this settlement, two cases dealing with strict liability of hydrofracturing operations recently survived motions to dismiss in Pennsylvania federal court. In *Fiorentino v. Cabot Oil & Gas Corp.*[19] and *Berish v. Southwestern Energy Production Co.*,[20] the plaintiffs claimed that they were injured, both physically (past and future health problems) and economically (decrease in property value), by hydrofracturing chemicals that leached into the groundwater near their properties. In both opinions, the court determined that the plaintiffs sufficiently pled a cause of action for strict liability based on an abnormally dangerous activity and refused to dismiss their claims without further discovery.[21] The *Berish* court indicated, however, that the plaintiffs will be fighting an uphill battle to prove that hydrofracturing is abnormally dangerous. In particular, of the factors that Pennsylvania courts consider in deciding whether an activity is abnormally dangerous, the plaintiffs likely will have difficulty proving that: (1) hydrofracturing is "not a matter of common usage"; (2) hydrofracturing is "inappropriate[] to the place where it is carried on"; and (3) the "value [of hydrofracturing] to the community is outweighed by its dangerous attributes."[22] When finally resolved, these cases likely will set important precedent for hydrofracturing claims in the Marcellus Shale going forward.

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19. Fiorentino v. Cabot Oil & Gas Corp., Civ. No. 09-CV-2284, 2010 U.S. Dist. LEXIS 120566 (M.D. Pa. Nov. 15, 2010).

20. Berish v. Sw. Energy Prod. Co., Civ. No. 3:10-CV-1981, 2011 U.S. Dist. LEXIS 10626 (M.D. Pa. Feb. 3, 2011).

21. *Id.* at *7 (quoting RESTATEMENT (SECOND) OF TORTS § 520 (1977)). Other claims for negligence *per se*, punitive damages, medical monitoring, emotional distress accompanied by physical injury, and recovery of response costs under Pennsylvania's Hazardous Sites Cleanup Act also survived the defendants' motions to dismiss. *Id.*

22. Other factors include: (1) the "existence of a high degree of risk of some harm to the person, land or chattels of others"; (2) the "likelihood that the harm that results from [hydrofracturing] will be great"; and (3) the "inability to eliminate the risk by the exercise of reasonable care." RESTATEMENT (SECOND) OF TORTS § 520 (1977).

III. AIR REGULATION AND ISSUES

There have also been concerns raised regarding the impact to air quality from increased production. In response to this concern, the DEP conducted a short-term study of potential negative impacts to air quality resulting from Marcellus Shale natural gas operations in Northeastern Pennsylvania. To collect samples for the study, the DEP conducted air monitoring surveys over a period of four weeks at various drilling sites in Susquehanna and Sullivan Counties. Sites included an operating gas well, compressor stations, and a well site currently being fracked. The survey monitored volatile organic compounds generally associated with petroleum products, such as benzene and xylene, and other pollutants. Although the sampling did detect emissions of various natural gas constituents and related compounds (ethane, methane, carbon monoxide, etc.), none of the emissions contained chemical concentrations that would constitute a health concern. According to the DEP, the study did not indicate emissions levels of any compound that would trigger air-related health concerns associated with drilling activities in the region.

There is also much continuing debate regarding issues such as aggregation of well sites and related air quality issues. However, at this point, no changes to existing regulations or policies have been made.[23]

IV. PRODUCTION ON STATE LAND

In 2010, Governor Rendell issued a moratorium on new leasing in state park and forest land and implemented a policy that required well operators to obtain an environmental impact assessment statement from the Pennsylvania Department of Conservation and Natural Resources ("DCNR") before applying for a drilling permit to operate on state park and forest land. The policy provided for increased cooperation among the DEP, the DCNR, and well operators in addressing drilling permit applications and applied in situations where the surface rights to the land were state owned, but the subsurface mineral rights were privately held.

In February of 2010, Pennsylvania's new governor, Tom Corbett, rescinded the 4-month-old policy. The Corbett administration described the newly-rescinded policy as "unnecessary and redundant" as operators are already required to mitigate environmental damage and are held to responsible drilling practices by the DCNR and DEP. Some commentators have viewed the rescission as Governor Corbett's first step towards fulfilling his promise to lift Pennsylvania's current

23. In addition, on February 26, 2001, a Notice to Rescind Technical Guidance and Notice of Intent to Reopen the Public Comment Period on the Air Quality Exemption List and the General Plan Approval and/or General Operating Permit for Nonroad Engines was published in the Pennsylvania Bulletin. 41 Pa. Bull. 1,066 (Feb. 26, 2011).

moratorium, also imposed by the Rendell administration, on new leasing of state forest lands for natural gas drilling where the state owns the mineral rights.

In addition to the moratorium and policy, the courts have recently addressed the ability of federal and state governments to impose restrictions on surface use when they do not own the subsurface minerals. In 2009, the federal district court for the Western District of Pennsylvania addressed an issue in the 1980 landmark decision *U.S. v. Minard Run Oil Co.* In that case, the court considered what rights a mineral owner had to use the surface to develop his minerals and held that each party must exercise due regard for the rights of the other. While the owner of the mineral rights may enter upon the property to access and extract his minerals, he nevertheless must take appropriate action to prevent unnecessary disturbance to the owner of the surface."[24] From 1980 until 2008, the United States Forest Service ("USFS"), in accordance with the 1980 *Minard Run* settlement agreement, had been reviewing requests by oil and gas drilling companies to conduct drilling operations in the Allegheny National Forest ("ANF").[25] Upon approval of those requests, it issued Notices to Proceed.[26] In 2007, the USFS determined that the Federal National Environmental Policy Act ("NEPA") applied to Notices to Proceed, which led to lawsuits by environmental interest groups demanding that the USFS require Environmental Impact Statements for all requests to conduct drilling in the ANF.[27] The USFS and environmental interest groups entered into a settlement agreement in 2009 whereby the USFS agreed to analyze all future drilling proposals on split mineral estates in the ANF in accordance with NEPA.[28] The agreement provided, *inter alia*, that the USFS environmental impact analyses conducted pursuant to NEPA—each of which was estimated to take between one to five years to process—would then serve as a prerequisite to issuing the Notices to Proceed to oil and gas drilling companies.[29]

The Pennsylvania Oil and Gas Association, representing the industry, filed suit seeking an injunction to stop the new practice and to return to the previous method. The court looked at the prior case law and determined that the mineral rights were subject to limited review by the

24. United States v. Minard Run Oil Co., Civ. No. 80-129 Erie, 1980 U.S. Dist. LEXIS 9570, at *13-14 (W.D. Pa. Dec. 16, 1980) (citing Chartiers Block Coal Co. v. Mellon, 25 A. 597, 598 (1893)).

25. *See* Minard Run Oil Co. v. U.S. Forest Serv. (*Minard Run 2009*), Civ. No. 09-125, 2009 U.S. Dist. LEXIS 116520, at *20-21 (W.D. Pa. Dec. 15, 2009).

26. *See id.* at *21, 66.

27. *See id.* at *29-30.

28. *See id.* at *31-32.

29. *See id.* at *37.

USFS.[30] The court held that USFS regulation of oil and gas drilling was further limited as part of the 1980 *Minard Run* Settlement Agreement, which was later codified as part of the Energy Policy Act of 1992.[31] None of the requirements imposed on the USFS pursuant to the Act involved a NEPA-based environmental impact analysis of the various requests to conduct oil and gas drilling. Instead, the court found that the NEPA requirements are triggered only by a proposal for major federal action, and the USFS review of the drilling requests did not constitute such action.[32] Additionally, the court found that the USFS did not possess the regulatory authority it claimed under the Weeks Act of 1911 with regard to the processing of oil and gas drilling proposals.[33] Accordingly, the court granted the preliminary injunction preventing the USFS from requiring the preparation of a NEPA document as a precondition to the exercise of private oil and gas rights in the ANF.[34] The court also preliminarily enjoined the forest-wide drilling ban in the ANF and ordered the USFS to comply with the 1980 *Minard Run* Settlement Agreement requirements.[35]

On September 20, 2011, the Third Circuit Court of Appeals "affirm[ed] in all respects the District Court's thorough, well-reasoned opinion" in *Minard Run*, confirming that in Pennsylvania, the mineral estate was the dominant estate, and was to be granted whatever surface use was reasonably necessary for extraction and agreeing that the USFS did not have the "broad authority" it claimed over mineral owners' access to the surface.[36]

Also in 2009, the Pennsylvania Supreme Court sided with the mineral owner where the Pennsylvania DCNR, as the surface owner, attempted to impose various conditions on the mineral owner before commencing drilling operations in *Belden & Blake Corp. v. Pennsylvania Department of Conservation and Natural Resources*.[37] In this case, Belden & Blake held the rights to oil and gas for certain parcels of land beneath Oil Creek State Park. The producer gave notice to DCNR of its intention to develop gas wells on the tracts. The DCNR

30. *See id.* at *63-92.

31. *See id.* at *20. *See also* 30 U.S.C. § 226(o) (2006).

32. *See* Minard Run Oil Co. v. U.S. Forest Serv. (*Minard Run 2009*), Civ. No. 09-125, 2009 U.S. Dist. LEXIS 116520, at *67-68. (W.D. Pa. Dec. 15, 2009).

33. *See id.* at *85.

34. *See id.* at *92-93.

35. *See id.* at *94.

36. Minard Run Oil Co. v. U.S. Forest Serv., --F.3d--, Nos. 10-1265, 10-2332, 2011 WL 4389220, at *1-*2, *12 (3d Cir. Sept. 20, 2011) (citing Belden & Blake Corp. v. Commonwealth, 969 A.2d 528, 532 (Pa. 2009)).

37. Belden & Blake Corp. v. Pa. Dep't of Conservation & Natural Res., 969 A.2d 528, 531-32 (Pa. 2009).

responded by imposing conditions on the development, including execution of a right-of-way/coordination agreement, posting of a $10,000 performance bond for each well, and payment of $74,885 in fees for removal of timber. Belden & Blake refused to comply with the conditions and filed suit seeking to enjoin DCNR from interfering with its use of the surface estate along with a declaration that it had an implied easement over the surface.[38]

The Pennsylvania Supreme Court, relying on an earlier case from the 1800s that held that mineral rights owners and lessees have the right to use so much of the surface as is "reasonably necessary" in order to access what they own,[39] found that the exercise of a subsurface owner's rights must be reasonable and that "Belden & Blake facially fulfilled its obligation."[40] The court affirmed the lower court's holding that the DCNR may not unilaterally impose additional conditions on Belden & Blake's exercise of its right to access its mineral interests.[41] It also recognized that "a [subsurface] property owner's interests and rights cannot be lessened, nor their reasonable exercise impaired without just compensation, simply because a government agency with a statutory mandate comes to own the surface."[42] Although the court noted that DCNR has a duty to maintain and preserve state parks, it underscored the fact that the surface owner has the burden to challenge the subsurface owner's reasonable exercise of its rights, not the reverse.[43]

V. CONFLICTS BETWEEN GAS PRODUCTION AND COAL OPERATIONS

Another area where Marcellus production is implicated in environmental governance is where conflicts arise between the production of gas and coal.[44] Parties applying for a well permit are required to notify owners, lessees, and coal operators of underlying workable coal seams.[45] The owner or operator of the underlying coal seams shall have the right to file objections to the permit in the following circumstances: (1) if the proposed well will penetrate anywhere within the outside coal boundaries of any operating coal mine, a coal mine

38. *See id.* at 529.

39. *See generally* Oberly v. H.C. Frick Coke Co., 104 A. 864 (Pa. 1918); Chartiers Block Coal Co. v. Mellon, 25 A. 597 (Pa. 1893).

40. *Belden & Blake*, 969 A.2d at 532.

41. *Id.*

42. *Id.* at 533.

43. *See id.* at 532.

44. *See* Nicolle R. Snyder Bagnell, Rocky Mountain Mineral Law Foundation Joint Symposium, Navigating Potential Development Conflicts in Shale Gas Resource Plays: Coal and Oil/Gas Conflicts—Marcellus Shale Development in Coal Country (Dec. 7, 2010).

45. *See* 58 PA. CON. STAT. ANN. § 601.201(b) (West 2010).

already projected and platted but not yet being operated, or within 1,000 linear feet beyond such boundaries; or (2) if in the opinion of the coal owner or operator, the well will unduly interfere with or endanger the proposed or existing mine.[46]

Any dispute that arises may be resolved either through the conference procedures under the Oil and Gas Act, or through the panel procedures of the Coal and Gas Resource Coordination Act.[47] Under the Oil and Gas Act, the coal owner or operator must file objections to the proposed location of well within 15 days of the receipt of the plat.[48] If possible, an alternative location for the well should be indicated in the objections. If a coal owner or operator files objections, the Department will schedule a conference within 10 calendar days from the date of service of objections.[49] At the conference, if the well operator and coal owner and operator agree upon a well location, the agreement will be reduced to writing and become effective unless the DEP rejects it within 10 days.[50] If the parties cannot reach an agreement, then the DEP determines a location for the well where, in the judgment of the DEP, the well can be safely drilled, as near as possible to the original location.[51] Then the DEP shall proceed to issue or deny the permit.

A dispute between coal and gas activities may also be resolved through creation of a panel, as authorized under the Coal and Gas Resource Coordination Act. In accordance with 25 Pa. Code § 78.30, a panel may hear objections by the owner or operator of the coal mining area only if the proposed gas well is not subject to the Oil and Gas Conservation Law.[52] The Oil and Gas Conservation Law applies only to wells drilled after July 25, 1961 that are deeper than 3,800 feet and penetrate the Onondaga horizon.[53] Additionally, one of the following must apply: (1) the well will be drilled through an area that is projected and permitted, but not yet being operated; (2) the well will be drilled through a perimeter area; or (3) the well will penetrate a workable coal seam and will be located above an active mine, but will not penetrate an operating mine.

In order to convene a panel, the owner of the coal mine must file objections in writing within 10 days of receipt of the plat and notice, setting out in detail the ground or grounds upon which the objections are

46. *See id.* § 601.202(b).
47. *Id.* §§ 501-518.
48. *See id.*
49. *See id.* § 601.202(c).
50. *See id.* § 601.501.
51. *Id.* § 601.202(c).
52. *Id.* §§ 401-419.
53. *Id.* § 403(b).

based.[54] If the well operator and objecting coal owner and operator are unable to agree upon a drilling location, their differences will be submitted to a panel consisting of one person selected by the objecting coal owner or operator, one person selected by the permit applicant, and a third person selected by the first two panel members.[55]

Once the review process and meeting are completed, the panel will make a recommendation as to the proposed well location and submit it to the DEP. The DEP must issue a drilling permit within twenty days utilizing the recommended location unless it determines that the location endangers a mine or the public.[56] If the DEP makes a determination that the location cannot be used, it directs the panel to submit another recommendation within 10 days for an alternate location.[57] After a second location recommendation by the panel, the DEP may accept the recommendation, designate a different location, or deny the permit entirely.

Two Pennsylvania cases have interpreted these regulations in the context of gas and coal disputes. In *Einsig v. Pennsylvania Mines Corp.*,[58] the Commonwealth Court reviewed an appeal from an Environmental Hearing Board ("EHB") decision regarding a drilling permit issued by the predecessor to the DEP, the Pennsylvania Department of Environmental Resources ("DER"). The EHB had voided the permit based on its determination that the issuance of the permit constituted an abuse of discretion.[59] On appeal, the Commonwealth Court determined that the DER cannot issue or deny a permit upon consideration of which party will be more financially harmed once it has determined that the well may be safely drilled.[60] The DER's statutory authority under the Act is limited to ascertaining whether a well can be safely drilled, and, if so, where on the driller's tract of land it can be located such that it will least interfere with or endanger the mine.[61] The outcome of this case eventually led to passage of the Oil and Gas Act and the Coal and Gas Resource Coordination Act discussed above.

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54. *See id.* § 512(a).
55. *See id.* § 512(c).
56. *See id.* § 512(e).
57. *Id.*
58. Einsig v. Pa. Mines Corp., 452 A.2d 558 (Pa. Commw. Ct. 1982) (*repealed by* Oil and Gas Act of 1984, 58 PA. CON. STAT. ANN. §§ 601.101-601.605)). This case was decided under Gas Operations Well-Drilling Petroleum and Coal Mining Act of 1955, formerly codified at 52 PA. CON. STAT. ANN. §§ 2201-2602.
59. *See Einsig*, 452 A.2d. at 562.
60. *See id.* at 567.
61. *See id.* at 568.

Another more recent case involving a conflict between gas and coal is *Foundation Coal Resources v. DEP and Penneco Oil Co.*[62] The court addressed whether a coal lessee had standing to object to the location of a natural gas well where the mine was not "projected and platted" and "not yet being operated" under section 202 of the Oil and Gas Act. The Commonwealth Court upheld the EHB's determination that the coal operator did not have standing because it did not have a projected and platted but not yet operating coal mine as the regulations required. Further, the Commonwealth Court affirmed the EHB's conclusion that the imposition of conditions on the drilling, which the coal operator requested, were beyond the scope of the DEP's authority.

VI. ZONING DISPUTES

A final area of law that implicates environmental regulation of development in Pennsylvania is the ability of local governments to regulate exploration and production companies. In 2009, the Pennsylvania Supreme Court reviewed the issue of whether local governments could regulate development of oil and gas within their limits in two separate cases. The first held that local governments could exercise their traditional zoning powers to regulate certain aspects of drilling (such as the location of wells).[63] In the second case, however, the local municipality sought to enforce regulation of oil and gas drilling relating to permitting, bonding, environmental issues, site restoration and plugging of wells, which the Pennsylvania Supreme Court found was preempted by the state's regulation of the industry.[64] More recently, in 2010, the Pennsylvania Commonwealth Court held that a county's zoning regulations pertaining to natural gas development overlapped state regulation, but they were not preempted by those state regulations because the regulations did not constitute a "comprehensive regulatory scheme."[65]

VII. CONCLUSION

Effective environmental regulation of Marcellus Shale development is necessary for production to proceed in a safe and environmentally sound manner. It will be important for the regulators, industry and the public to work together to insure that development is done in a manner

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62. Found. Coal Res. v. DEP and Penneco Oil Co., 993 A.2d 1277 (Pa. Commw. Ct. 2010).

63. *See* Huntley & Huntley, Inc. v. Borough Council, 964 A.2d 855, 862-65 (Pa. 2009).

64. *See* Range Res.—Appalachia, LLC v. Salem Twp., 964 A.2d 869, 877 (Pa. 2009).

65. Penneco Oil Co. v. County of Fayette, 4 A.3d 722, 733 (Pa. Commw. Ct. 2010).

that maximizes production from the Marcellus in accordance with these regulations. Although there is already attention being paid to these issues in Pennsylvania, there will undoubtedly be more regulation and enforcement in the future.