

**COMMENTS OF
THE NORTHERN WAYNE PROPERTY OWNERS' ALLIANCE
ON THE DELAWARE RIVER BASIN COMMISSION
DRAFT NATURAL GAS DEVELOPMENT REGULATIONS**

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NATURAL GAS DEVELOPMENT REGULATIONS

ARTICLE 7

Section 7.1: Purpose, Authority, Scope and Relationship to other Requirements and Rules.

7.1(a) Purpose. The purpose of this Article is to protect the water resources of the Delaware River Basin during the construction and operation of natural gas development projects. To effectuate this purpose, this Section establishes standards, requirements, conditions and restrictions to prevent, reduce or mitigate depletion and degradation of surface and groundwater resources and to promote sound practices of watershed management including control of runoff and erosion.

Missing from this statement of purpose is any reference to the requirement that the DRBC must concern itself with "the government, employment, industry, and economic development of the entire region and the health, safety, and general welfare of its population" and this will be accomplished by the commission's overseeing "the use, conservation, management, and control of the water and related resources of the Delaware River Basin." Section 4.2(a) further states the commission has the power to regulate "flows and supplies of surface and ground waters of the basin, for the protection of public health, stream quality control, economic development, improvement of fisheries, recreation, dilution and abatement of pollution, the prevention of undue salinity and other purposes."

The draft regulations incorrectly construe the task of the DRBC as being limited to the narrow goal of protecting water quality, without a hint at the need to allocate water resources, let alone address economic considerations. The statement of purpose must be amended to indicate a primary function of the regulations is the allocation of water resources for the development of natural gas resources, as a matter of economic development, while preserving water quality for other uses.

7.1(c) Scope. This Article applies to all natural gas development projects as defined in Section 7.2...

The Section 7.2 definition of a "natural gas development project" (q.v.) is an example of the micromanagement typical of the regulations, which would include control over such items as tire washing of support vehicles and dust control on access roads, when the basic issue is one of erosion and sedimentation control, which is under the jurisdiction of the respective state environmental protection agencies in any case.

7.1(d) Comprehensive Plan and Project Review... The Commission has also determined that all natural gas development projects may have a substantial effect on the water resources of the

Basin...

The statement that all natural gas development projects may have a “substantial effect” on the water resources of the basin is conjectural. Moreover since most drilling pads are reclaimed very quickly, the impact from these activities will be minimal compared to those resulting, say, from a strip mall, a commercial development, or an industrial complex, activities which are not subject to these regulations. Water quality of streams changes and becomes impacted as soon as the impervious areas in their respective watersheds exceed 10%, and by 25 % the water is degraded no matter the type or nature of the development. Natural gas pad and pad design are not where the Commission should be concentrating its expertise.

7.1(e) Planning Framework. In accordance with Section 13.1 of the Compact, the Commission has adopted and from time to time amends a Comprehensive Plan designed to facilitate the optimum planning, development, conservation, utilization, management and control of the water resources of the Basin to meet present and future needs...

Since such terms as "optimum" and "future needs" are left undefined and are probably indefinable, the preceding amounts to window dressing and little more.

...The Commission concludes that management of natural gas development projects should promote use and development of the Basin’s water resources in a sustainable manner and should be conducted pursuant to rules and regulations that avoid pollution of or injury to the water resources of the Basin...

Again, we have window dressing but little substance.

7.1(e)(1)(i) Designation of 150 of 200 miles of the non-tidal river in the Upper Basin as Wild and Scenic pursuant to the National Wild and Scenic Rivers Act and the establishment of three National Park Units associated with the mainstem River;

The National Park Units should be named and the differences among them spelled out. Merely mentioning the three units glosses over the fact that among the three the Delaware Water Gap National Recreation Area is the only national park in the usual sense of the word. The other two are hybrids, created by legislative fiat and imposed on landowners whether they wanted it or not and without any sort of compensation.

7.1(e)(1)(ii) Promulgation of Park Unit Management Plans, which recognize that the forested headwaters of the Delaware River Basin are critically important to the supply of clean water to satisfy basin needs for drinking water, aquatic life, recreation, and other designated uses;

The Park Unit Management Plans be should named and defined and the word "forested"

deleted, since the entire headwater region — forests, hayfields and more — is important to the cleanliness of the water supply.

7.1(e)(2)(i) Link water quality and water quantity with the management of other resources;

The term "other resources" is vague and should be replaced with an enumeration of these "other resources." Better still, eliminate the entire section which is basically empty of content.

7.1(e)(2)(iii) Recognize the importance of watershed and aquifer boundaries...

How these "aquifer boundaries" are to be determined needs to be spelled out. If these are as vague and conjectural as, say, the boundaries of the Marcellus Shale, they can hardly be the basis of a rule or regulation.

7.1(e)(2)(iv) Avoid shifting pollution from one medium to another or adversely impacting other locations; and push the boundaries of technological possibility while balancing economic constraints.

The statement above is ambiguous and essentially empty of meaningful content.

7.1(e)(3) Improves land management which is essential for improving the condition of water resources.

There's no guarantee that any particular land-management practice is good, and "improving" any given practice won't necessarily improve the conditions of related water resources.

7.1(e)(3)(i) Decision-making should be based on sound scientific principles and an understanding of the relationship between land and water resources;

The statement above should end right after "sound scientific principles" — full stop.

7.1(e)(3)(iii) Existing planning efforts can provide the foundation for improving land and water resources management.

The focus should be on water management. The DRBC does not have nor should it have authority to "improve" or "manage" lands it does not own. And if it did, who would be billed for these "improvements"?

7.1(e)(4)(i) Water withdrawal requirements that preserve river flows to protect instream living resources and downstream withdrawers, and ensure adequate assimilative capacity for approved discharges;

Existing state and federal law protect "instream living resources" so this is redundant, and if TDS levels rise because of reduced river flow, the DRBC has authority to invoke pass-by rules, so "protecting downstream withdrawers" is again redundant. The statement should read: "Water withdrawal requirements that preserve river flows and ensure adequate assimilative capacity for approved discharges."

7.1(e)(4)(ii) Well Pad requirements that protect surface and groundwater resources and facilitate tracking of water use from the withdrawal or diversion point to the point of use, and wastewater from the point of production to the point of treatment and disposal;

The statement above should end with the words "... facilitate tracking of water use" — full stop. The statement also fails to specify who should do the tracking specified and who will pay for it.

7.1(e)(4)(iii) Natural Gas Development Plan requirements that foster protection of water resources through broad scale, rather than limited site-by-site decision making, with due consideration of environmentally sensitive landscapes;

The words "through broad scale, rather than limited site-by-site decision making" should be deleted.

7.1(h) Delegation of Authority. Pursuant to these regulations, the Commission delegates certain authority...

This should read "the Commission may delegate certain authority..."

7.1(i) Host State Regulation of Natural Gas and Exploratory Well Construction and Operation. Pursuant to their respective sovereign authorities, the Basin states of New York and Pennsylvania have enacted statutes and promulgated regulations governing the gas industry. These state laws impose requirements on, among other things, natural gas well construction and operation to protect human health and the environment, including water resources.

The words "of New York and Pennsylvania" should be deleted from the statement above.

7.1(i) Host State Regulation of Natural Gas and Exploratory Well Construction and Operation...

Section 1.5 of the Compact provides that it is the purpose of the signatory parties to the Compact to "preserve and utilize the functions, powers and duties of existing offices and agencies of government to the extent not inconsistent with the compact." Section 1.5 further authorizes and directs the Commission "to utilize and employ such offices and agencies for the purpose of this compact to the fullest extent it finds feasible and advantageous." In accordance with section 1.5 of the Compact, the Commission will utilize and employ existing offices and rely upon agencies of the State of New York and the Commonwealth of Pennsylvania in their respective states in lieu of separately administering natural gas and exploratory well construction and operation standards.

While this article cites the compact, it does nothing to explain what the DRBC envisions as the relationship between DRBC and the states. In this dual authority structure, there's huge risk of duplication, redundant regulatory fee assessments, differing regulations in different locations and possible mismanagement. The federal EPA has delegated the authority to Pennsylvania's DEP to issue permits and exercise enforcement authority. That doesn't mean that EPA doesn't have any authority and can't overfile or second-guess the DEP in some circumstances, but generally, there is an understanding that the DEP has primary authority for those programs.

Subject to the provisions of this Section 7.1, a project sponsor's compliance with state laws and permit requirements relating to natural gas and exploratory well construction and operation shall constitute satisfaction of the project sponsor's obligations under section 3.8 of the Compact that relate to regulation of gas well construction and operation, (except as specified in Section 7.5.) In particular, a project sponsor's compliance with New York Environmental Conservation Law Article 23 (NY ECL §23-0101 et seq.), and its implementing regulations and permitting requirements or Pennsylvania's requirements in the Oil and Gas Act, the act of December 19, 1984 (P.L. 1140, No. 223), as amended, 58 P.S. §§ 601.101 et seq., and 25 Pa. Code Chapter 78, satisfies the Commission's requirements with respect to natural gas well construction and operation.

With a mere six words #### "except as specified in Section 7.5" #### the DRBC contradicts all its acknowledgements that the states have the right to regulate gas exploration and production activities within their respective borders. With the exception above, cited here, the commission declares itself above the states and all county and municipal governments and laws.

Compare this attempt by the DRBC to give itself absolute power with the practices of the Susquehanna River basin (Title 18, Vol. 2, Chapter 806-7):

Concurrent project review by member jurisdictions.

(a) The Commission recognizes that agencies of the member jurisdictions will exercise their review and approval authority and evaluate many proposed projects in the basin. The Commission will adopt procedures to assure compatibility between

jurisdictional review and Commission review.

7.1(i)(2) Administrative Agreements between Commission and Host States.

In accordance with and pursuant to section 1.5 of the *Compact*, the Commission and the Basin states may enter into an Administrative Agreements (Agreements) that coordinate their functions and eliminate unnecessary duplication of effort. The Agreements are designed to: effectuate intergovernmental cooperation, minimize the efforts and duplication of state and Commission staff resources where consistent with Commission, state and federal legal requirements, ensure compliance with Commission approved basin-wide requirements, enhance early notification of the public and other concerned interests of proposed projects in the basin, indicate that the host state requirements satisfy the Commission's regulations and clarify the relationship and project review decision making processes of the states and the Commission for projects subject to review by the states under their state authorities and by the Commission under Section 3.8 and Articles 10 and 11 of the *Compact*.

The language must explicitly keep the DRBC from regulating any activities that are already regulated by the states so that later there can be no interpretation that would allow multiple layers of government with redundant regulations. The language should also specify what constitutes duplication and who will make the determination that an effort is duplicative.

In accordance with section 1.5 of the *Compact*, the Agreements may be used as a vehicle to further reduce any overlap between the administration of the Commission's natural gas development regulations and the regulations of New York and Pennsylvania.

Instead of involving itself and everyone else in squabbling over proposed natural-gas regulations, the DRBC should have been seeking to strengthen its agreements with the states, the so-called "memoranda of understanding," affirming its right to consult with the states on issues affecting the basin and to appeal state decisions in the courts, if necessary.

Section 7.2 Definitions. For purposes of this Article, the following terms and phrases have the meanings provided. These definitions of necessity differ from those provided in regulations of one or more of the Commission's member states and federal agencies.

This opening statement begs the question why should these definitions "of necessity differ from those provided in regulations of one or more of the Commission's member states and federal agencies" other than in superficial ways. The DRBC's definitions should be consistent wherever possible with the most widely accepted and used definitions.

Access road - a road constructed to the well pad that provides access for the drilling rig and other drilling-related equipment. The road is also used to inspect and maintain the well during the operating phase.

The language here should be "This road may also be used..." to reflect the fact that new roads can be built and older ones may be reclaimed. This state of flux needs to be considered

in estimating the overall impact of access roads.

Agriculture, agricultural operations – the use of land to produce crops, livestock or poultry; the activities undertaken to grow, produce, harvest and distribute crops livestock or poultry.

Although this definition reflects earlier views it does not take into account the many other "crops" that are now produced by what is essentially agricultural activity, such as timber, fish and nursery stock for use as Christmas trees and in landscaping.

Agricultural land – any parcel of land whose predominant use is categorized as agriculture or agricultural operations by the federal satellite imagery or official state orthophotography as of January 2010.

The inclusion of a specific date prevents taking into account that land use is not static, that land can be in a state of flux between agricultural use and lying fallow.

Artificial penetration – a human-made excavation, opening, or void beneath the ground surface that may provide a pathway for the upward migration of any potential contaminant existing or injected below the ground surface. This may include any type of well, mine, mine shafts, or tunnels.

The inclusion of words here "that may provide a pathway for the upward migration of any potential contaminant existing or injected below the ground surface" is unnecessary and prejudicial. The appropriate response to "they may provide" is "then again, they may not."

Best management practices (BMPs) - activities, facilities, measures, or procedures used to protect, maintain, reclaim and restore the quality of waters and the existing or designated uses of waters within the Delaware River Basin.

The teleological explanation provided by the DRBC may express the commission's purpose in invoking BMPs but in no way defines what they are. A "proper" definition might read something like this: "Best management practices (BMPs) are state-of-the-art mitigation measures applied to oil and natural gas drilling and production to help ensure that energy development is conducted in an environmentally responsible manner." If desired, the definition could then reference the BMPs developed by the federal Bureau of Land Management, which offers the preceding definition on its website.

Centralized wastewater storage facility – an impoundment (see Impoundment) or tankage that serves or is served by more than one well pad.

Replacing the word "wastewater" with "fluids" would give this definition greater applicability. Wastewater is not the only fluid stored in a centralized facility.

Critical habitat – specific geographic areas, whether occupied by federal or state listed species or not, that are determined by the federal or state natural resource agencies to contain physical or biological features essential to the conservation and management of species listed by the federal government or state signatories to the Delaware River Basin Compact as threatened or endangered.

This definition, which is poorly constructed and marked with language redundancies, is redundant overall in the context of the proposed regulations because this issue is already addressed effectively by the U.S. Fish and Wildlife Service.

Disturbed area - land area where an earth disturbance activity is occurring or has occurred. A disturbed area is devoid of trees greater than 5 meters in height and substantially devoid of native woody vegetation.

The first sentence in this definition is essentially tautological, amounting to nothing more than the statement "a disturbed area is a disturbed area." The second sentence, as written, would include hayfields, lawns, wetlands, among them areas that have never had tree cover or haven't had such cover for a century or more. This definition might best be simply deleted.

Diversion – the conveyance or transfer of water.

This definition is too vague for regulatory use. The sale of water which stays in one place is a "conveyance," for example, but not of the sort the DRBC presumably had in mind.

Docket - a legal document granting approval by the Commission, including conditions for a project having a substantial effect on the water resources of the Basin.

A "docket," even in the DRBC's usage, has many more functions than this definition would suggest. The definition also fails to quantify in any way the term "substantial effect." One gets the feeling that many of the definitions the DRBC provides were borrowed from some earlier text that defined terms for young readers.

Domestic water supply well - any potable water well not classified as a public water supply well. A domestic well normally serves an individual residence or small business.

This definition would be strengthened by eliminating: "A domestic well normally serves an individual residence or small business."

Earth disturbance activity - a construction or other human activity that disturbs the surface of the land, including, but not limited to, clearing and grubbing, grading, excavations, creating embankments, land development, agricultural plowing or tilling, timber harvesting activities, road construction or maintenance activities, mineral extraction, and the moving, depositing, stockpiling, or storing of soil, rock or earth materials.

This definition is far too broad, including many normal farming practices that have been carried out in our region, often in the same locations, for nearly two centuries. The Pennsylvania DEP does not regard timber harvesting and so-called "brush-hogging" as earth disturbances. These inclusions may reflect the views of some academics, but are not appropriate in a regulatory scheme.

Final site restoration – the process of returning or restoring the surface of a disturbed site as nearly as practicable to its condition prior to the commencement of gas drilling operations.

This definition makes no allowance for the preferences of the landowner, who may not want the area returned to the state it had been before the commencement of gas drilling.

Flood hazard area - means the area inundated by the regulatory flood as defined in the Commission’s Administrative Manual – Part III Basin Regulations - Flood Plain Regulations.

This definition would be much improved if it read this is "an area subject to inundation by a flood as defined in the definition "Floor, regulatory," below.

Flood, regulatory - means the flood which has a one percent (1%) chance of occurring in any one year (the “100-year flood”) as defined in the Commission’s Administrative Manual – Part III Basin Regulations - Flood Plain Regulations.

Better worded " a flood which has a one percent..."

Flowback - retrieved and recovered fluid from hydraulic fracturing of a natural gas well.

A better definition would be "fluid that flows back to the surface immediately after the hydraulic fracturing of a natural gas or oil well." See also "produced water."

Forested landscape – landscape classified as forested in the USGS National Land Cover Dataset (NLCD).

This definition could be acceptable if it is limited to a descriptive use. If it is used

proscriptively, it is totally unacceptable. The DRBC's interest in forest clearing, for example, should be limited to the effects on the waters under its jurisdiction of accelerated erosion, sedimentation, thermal impacts and improper management of post-construction stormwater, and these issues are already strictly governed in the basin -- in Pennsylvania, for example -- by the commonwealth's Chapter 102 Erosion and Sediment Control regulations.

Forested site – any parcel of land identified for a natural gas development project that is within a forested landscape, or that is substantially covered by tree canopy as shown on state orthophotography prior to January 2010, and which will require removal of 3 or more acres of tree canopy, for the project.

If the DRBC's goal is to regulate gas drilling activity only, the word “project” should be replaced with “well pad,” and the definition should stop right after the date “January 2010.” Attempting to impose a limit on forest clearing in the middle of a definition is deceptive and appears to be mostly an effort at getting the proverbial camel's nose under the tent in matters of land use, which are properly under the jurisdiction of state and municipal governments. Moreover, the amount of forest clearing that gas drilling and production would involve would be minimal, likely less than one percent (1%) and, in any case, is a non-issue in Wayne County, where nearly all the gas drilling in the basin is likely to take place and where for half a century an average of nearly 1,000 acres a year has been added to our forest inventory.

Freshwater - water containing less than 1,000 milligrams per liter of dissolved solids, (most often salt).

Specifying “most often salt” is unnecessary.

Impoundment – a liquid containment facility that is installed in a natural topographical depression, an excavation, or a bermed area formed primarily of earthen materials. Impoundments are required to be engineered and structurally sound and lined with a geomembrane or a combination of other geosynthetic materials. An impoundment used to store wastewater is termed a wastewater impoundment; an impoundment used to store freshwater is termed a freshwater impoundment.

The sentence “Impoundments are required to be engineered and structurally sound and lined with a geomembrane or a combination of other geosynthetic materials” is yet another example of the DRBC's putting a regulation into the body of a definition. This is a confusing practice at best, and the sentence should be deleted.

Natural gas development project - all activities necessary for the development, extraction and transportation of natural gas including but not limited to well pad, gas collection and transmission infrastructure (e.g., pipelines, compression stations,) associated access road

construction, air rotary/mud rotary natural gas exploratory or production well drilling, natural gas exploratory and production well construction and testing, support vehicle tire cleaning, dust control on access roads, storage of fresh water, hydraulic fracturing well stimulation, hydraulic fracturing chemical storage, final site reclamation, and the storage, reuse, transport and disposal of all domestic and non-domestic wastewaters, including flowback and production water.

This very inclusive definition argues for a desire by the DRBC to micromanage all aspects of gas drilling. State and municipal authorities have jurisdiction over such activities as "support vehicle tire cleaning" and "dust control on access roads." The DRBC should be concerned with issues like these only when enforcement failures by the appropriate authorities has led to detectable sedimentation in the waters under DRBC jurisdiction. Also, specifying domestic wastewaters is unnecessary since these are neither produced nor used in gas drilling. This would seem to be another example of the hasty "cut and paste" approach evidently used to assemble these regulations and that in a process that took some three years.

Pollutants – any substance which when introduced into surface water or groundwater degrades natural water quality, including but not limited to: dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, sediment, cellar dirt and industrial, municipal or agricultural waste.

Identifying rocks and sand as "pollutants" comes across as extreme to the point of being risible.

Post Hydraulic Fracturing Report – a report listing the volumes and sources of water, wastewater, and flowback and the volume and amounts of all chemicals and additives used during the hydraulic fracturing of a natural gas well. Also included in the report are the total volume of flowback recovered from the well within 45 days of the completion of hydraulic fracturing, and the amounts and destinations of any flowback removed from the site for disposal or reuse.

While demanding information about the volume and amounts of all chemicals and additives used during the hydraulic fracturing of a well may be commendable, doing so in the body of a definition, rather than in the regulations proper is a very dubious approach. It's also ironic that the DRBC would impose a 45-day deadline on flowback reports, the same amount of time that Pennsylvania's DEP imposes upon itself for the approval or rejection of permit applications, a kind of deadline the DRBC has not specified for itself.

Production water - water and other fluids brought to the surface during production of oil or gas.

The industry usually refers to this as "produced water," and an industry definition might

read more like this: "water trapped in or injected into underground formations that is brought to the surface along with oil or gas."

Private water supply well - See Domestic Well

This definition should be framed to include potable water wells used by large commercial operators for things like bottled water and food processing. Such wells are neither domestic nor public water supply wells as defined here.

Setback - minimum distance required between a well pad and other zones, boundaries, or natural or constructed landscape features such as wetlands, streams, or buildings.

The terms "other zones" and "boundaries" could be expanded and their meanings in this context clarified. But here once again the DRBC is poised to intrude into land-use issues ### "turf" long held by states and municipalities and appropriately so.

Substantial funds - financial resources sufficient to demonstrate to the Commission that the approved project is active and viable and that completion is anticipated in a reasonable time.

This suggests the DRBC wants to get into the business of vetting a sponsor's finances, along with demanding a performance bond, which seems to be enough to satisfy the needs of other jurisdictions. The definition should be deleted entirely.

Water body – a natural or constructed landscape feature containing or conveying surface water on a permanent, seasonal, or intermittent basis, including 1) depressional features such as reservoirs, lakes, ponds, and embayments; 2) natural or constructed channels that convey flowing water such as streams, canals, ditches, and similar drainageways, and 3) wetlands.

This definition is ludicrously all-inclusive, especially since these "water bodies" are then used as the basis for setback restrictions. With the proposed 500-foot setback combined with slope restrictions, practically nowhere in Wayne County would be acceptable for gas drilling. Moreover, if these restrictions are later applied to other areas of activity, as the DRBC seems determined to do, our communities will be destroyed and our region turned into a forest preserve by a form of seizure without compensation. Incidentally, including "embayments" in this definition suggests once again a "cut and paste" approach to rulemaking. We don't have "embayments" up here in the headwater region.

Water for use for natural gas development – Any water intended for application in natural gas development projects, including surface water, groundwater, mine drainage, recovered flowback or production water, non-contact cooling water, or treated wastewater.

This definition seems entirely superfluous, since the purpose to which someone puts water doesn't change its basic identity.

Wetlands - those areas which are inundated by surface or groundwater with a frequency sufficient to support a prevalence of vegetative or aquatic life that requires saturated soil conditions for growth and reproduction, or are delineated as wetlands by a signatory party.

This definition is probably adequate, but the definition offered by the Army Corps of Engineers, which is widely cited in wetlands literature, is fuller and clearer: "Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."

Whatever the definition, wetlands are adequately defined and protected by the basin states and should be of concern to the DRBC only when failed enforcement of state regulations or insufficient regulation has led to impacts on waters under the commission's jurisdiction.

Section 7.3 Administration

7.3(a) Types of Natural Gas Development Projects. For purposes of applications by project sponsors and reviews by the Commission in accordance with Section 3.8 of the Compact, each of the following types of projects require individual review unless the Executive Director approves otherwise:

7.3(a)(1) Water withdrawals and water use for natural gas development as described in Section 7.4.

Water withdrawals and use should be reviewed and approved by docket only.

7.3(a)(2) Natural Gas Development Plans (NGDP) as described in Section 7.5.

This is the responsibility of the host state, not the DRBC.

7.3(a)(3) Well pads for natural gas development as described in Section 7.5.

Once again, this is the responsibility of the host state, not the DRBC.

7.3(a)(4) Treatment and/or discharge of wastewater that was generated or reused for natural gas development as described in Section 7.6.

Wastewater treatment and discharge should be reviewed and approved by docket only.

7.3(c) Approval by Rule for Natural Gas Development Projects.

An ABR is one way to request approval of certain defined water supply and well pad activities if prescribed conditions are met.

The ABR provisions include no deadlines for DRBC actions, which is absolutely unacceptable. Deadlines on permit applications, for example, should be such that an application will be deemed approved if the DRBC fails to act upon it within a reasonable and clearly specified period of time. The Pennsylvania DEP, for example, has 45 days to act on a properly completed permit application. Also, well pad activities should be removed from this description since they should remain under the exclusive jurisdiction of the states.

7.3(c)(1) Eligible Projects: An Approval by Rule (ABR) may be issued by the Executive Director in accordance with this section for the following types of natural gas development projects:

7.3(c)(1)(i) Water Withdrawal. Refer to Section 7.4 for eligible water withdrawal projects.

Water withdrawals should be reviewed and approved by docket only.

7.3(c)(1)(ii) Natural Gas Well Pad Projects. Refer to Section 7.5 for eligible well pad projects.

This provision should be deleted because approval of well pads should remain under the exclusive jurisdiction of the states.

7.3(e) Duration of an Approval.

7.3(e)(1) Approvals of water withdrawals and water uses for natural gas development approvals may have terms of up to 10 years.

Water withdrawal and use terms should be firmly set or at least a minimum term determined to allow adequate planning for development.

7.3(e)(2) Approvals of Natural Gas Development Plans (NGDP) may have terms of up to 10 years. NGDPs may be extended for an additional 10 years by the Executive Director when the Executive Director determines there is no substantial change to the docketed NGDP and applicable Commission regulations.

7.3(e)(3) Approvals of well pads for natural gas development may have terms of up to 10 years. Well pad approvals may be extended for an additional 10 years by the Executive Director when the Executive Director determines there is no substantial change to the well pad approval and applicable Commission regulations.

7.3(e)(4) Approvals for well pads that are used exclusively for the development of exploratory wells or low volume hydraulically fractured wells may have terms that are equal to

that of the host state natural gas well construction permit. If the host state permit expires, the project sponsor must notify the Executive Director. If the host state permit is renewed or extended, the project sponsor must notify the Executive Director for continued approval.

Section 7.3 (e) 3. seems suggest that well pad approvals would have to be renewed every 10 years over the life of a well, which is often more than 30 years. This would seem pointless except as a potential revenue producer for the DRBC. In any case, Sections 7.3 (e) 2, 3 and 4 should be deleted. The Commission should have no jurisdiction over well pads or Natural Gas Development Plans. These should be under the exclusive purview of the host state.

7.3(e)(5) Approvals for wastewater treatment and disposal/discharge may have terms of up to 5 years.

Once again, for purposes of adequate planning, it would be better if terms were firmly set or at least a minimum term determined. This provision should specify that wastewater treatment and disposal plans included in an NGDP are to be governed by the term of the plan itself.

7.3(f) Expiration. If by the third anniversary of the date of approval of a natural gas project by the Commission, neither construction nor operation of the project has commenced, the approval will be deemed expired. An extension may be granted if in advance of the three-year anniversary of the approval, the project sponsor furnishes the Executive Director with a request for extension, supported by a showing that since the approval date substantial funds (in relation to the project cost) have been expended toward construction and/or operation. Upon such a showing, the Executive Director may approve an extension of time to initiate construction of the project. Such approval will not extend beyond the expiration date in the approval. Project sponsors must submit a renewal application at least one year before the expiration date in order to qualify for an administrative continuance of the approval.

Terms like "substantial" are weaseling words. Quantification should be provided, such as "X percent (X%) of the estimated project cost." Also a one-year renewal application deadline is extravagant; if the DRBC is competent to do the job it has set out for itself, 90 days should be more than adequate.

7.3(h) Docket, protected area permit and ABR modification or suspension by Director. The Executive Director may modify or suspend an approval or any condition thereof, or require mitigating measures pending additional review, if in the Executive Director's judgment such modification or suspension is required to protect the water resources of the Basin. In addition, the Executive Director may approve modifications to the docket, protected area permit or ABR conditions involving reports (e.g. operation plans, monitoring requirements, etc.) and construction schedules required in the approved docket , protected area permit or ABR.

Too much arbitrary power is assigned here to the Executive Director. Suspensions, for example, should be permitted in emergency situations but should be deemed vacated if

they're not reviewed and approved by the commissioners within a specified number of days. This provision should specify that it is applicable only to consumptive uses of water; other actions should be implemented for wastewater discharges.

7.3(i) Public Notice Procedure. The sponsor of a natural gas project is responsible for issuing notices as follows:

7.3(i)(1) Concurrent with the submission of an application to the Commission, the project sponsor must notify the appropriate agency of the host state, each municipality in which the project is located, the county planning agency of each county in which the project is located, each adjacent property owner and any other property owner within 2,000 ft of the well pad of such application...

7.3(i)(2) The project sponsor must provide the Commission with a copy of the United States Postal Service return receipt for the notifications to agencies of the host state, municipalities and county planning agencies required by the preceding paragraph...

These two provisions ### 7.3 (i) (1) and 7.3 (i) (2) ### are unnecessary and should be deleted in their entirety because the notification of governments and agencies and affected landowners is required and regulated by the states. For the DRBC to have its own notification requirements is duplicative and likely to cause confusion in the community.

7.3(j) Site Access.

(1) The project sponsor must allow any authorized representative of the Commission, at reasonable times and upon the presentation of proper credentials, to:

7.3(j)(1)(i) enter any part of the approved facility for purposes of inspection, sampling, monitoring, observation or photography; and

7.3(j)(1)(ii) inspect and or photocopy any records that must be kept as a condition of the approval or which demonstrate the status of compliance with the approval.

7.3(j)(2) Reasonable times include any hour during which the facility is operational and staffed. For unstaffed facilities, access must be provided within two hours of an entry request made during reasonable times for the office controlling the unstaffed site.

The DRBC has neither the expertise nor the staff to do onsite inspections other than those pertaining to water dockets or wastewater treatment facilities. Inspections at well sites should remain under the jurisdiction of host state regulatory agencies. The "reasonable time" idea evidently pertains only to the DRBC's wishes. Demanding access within two hours to an unstaffed site hardly qualifies as "reasonable."

7.3(j)(4) Facility records are required to be kept at the project site, unless approved

otherwise by the Commission or Executive Director. Facility records not stored at the facility must be made available to Commission representatives within two working days of the Commission's request.

No definition of "facility records" has been provided either in this provision or in the Definitions Section 7.2. Moreover, this records requirement is probably covered by state regulations.

7.3(j)(5) Specialized PSE means any required PSE other than a long sleeve shirt, long pants, hard hat, safety shoes, hearing protection and safety glasses.

The shirts and pants mentioned here probably should be treated with fire retardant.

7.3(k) Financial Assurance Requirements.

The states should have primary jurisdiction over issues of financial assurance. Moreover, the DRBC with no justification is making demands on the natural-gas industry it does not make on other water users, including some that use more water than the gas industry ever will and pose far greater pollution threats. The states should impose bonding requirements on natural-gas projects, with the DRBC 's bonding requirements limited to water withdrawals and waste disposal, if at all.

7.3(k)(6) Use of Funds. After determining that the project sponsor has failed to adequately perform the closure activities specified by Section 7.5(h)(1)(vi) and Subsection (17) below, or remediation of a release or threatened release of hazardous substance, pollutants or contaminants as specified in Section 7.5(h)(1)(vi) and Subsection (17) below, the Executive Director may use the funds established by the financial instruments under these provisions to perform or finish the specified tasks.

This provision must be amended to require notification of project sponsor of the executive director's intention to act on the matter and must include a reasonable time for the sponsor to respond and also an appeal process.

7.3(k)(8) The financial assurance required by this Section must be in the amount of \$125,000 per natural gas well. The financial assurance must cover all wells on a well pad. A single instrument may cover multiple well pads provided that the amount of financial assurance in the aggregate is no less than the sum of the amounts required for each well pad if separate financial assurance instruments were obtained...

Since the states have provision requiring project sponsors to provide financial assurances and performance bonds, the DRBC should require such assurances and bonds only on aspects of natural gas exploration and development that are not covered by the guarantees

required by the states. Also, by requiring a guarantee of \$125,000 per well, a project with a 1,280-acre drilling unit and well pad with 20 horizontal wells would require \$2.5 million in guarantees, an amount that so exceeds the potential remediation costs at the site it can only be seen as punitive. The Pennsylvania DEP estimates, for example, that between January 2007 and December 2009, the average cost to plug an orphan well in the commonwealth was approximately \$9,650 per well.

Even if Pennsylvania increases its bonding requirement to reflect current realities, which it should do as quickly as possible, the disparity in capital requirements between the DRBC's proposed financial assurance requirements and those of the commonwealth would surely encourage the development of natural gas in parts of Pennsylvania outside the Delaware River Basin and thereby cause economic harm to the landowners within the basin.

...If the project sponsor receives approval for a natural gas development plan pursuant to Section 7.5(c) of these regulations, the Executive Director may reduce the financial assurance requirement by an amount of up to 25% upon a showing by the project sponsor that the amount of financial assurance remaining will be sufficient to pay for the closure and remediation activities required by Section 7.3(k)(1) and (2) above for the entire area covered by the plan. The Commission may, after public notice and hearing, amend the amount of financial assurance required to adjust for inflation or differing actual costs.

It's intriguing that the DRBC would require public notice and a hearing before granting a reduction of the financial assurance requirement of 25% or less, while allowing the executive director such sweeping discretionary powers elsewhere.

7.3(k)(9) The financial assurance required by this Section is separate from any financial assurance provided to the host state in accordance with state regulations.

This provision would be acceptable if and only if the DRBC's requirements do not overlap those of the states and require assurances that duplicate assurances already required by the states.

7.3(k)(9)(iii) Letters of credit must name the Commission and the Executive Director as the beneficiary and be payable to the Commission, upon demand, in part or in full, upon presentation of the Commission's drafts at sight. The Commission's right to draw upon the letter of credit does not require documentary or other proof by the Commission that the customer has violated the conditions of the bond, the docket or other requirements.

The statement that the commission need not show proof of violation to draw on a sponsor's letter of credit seems at the very least to be an open invitation to abuse.

7.3(k)(15) The project sponsor may at its option reduce the amount of the initial financial assurance required by Section 7.3(k)(8) by [75%] upon receiving written approval for such reduction from the

Executive Director based upon the project sponsor's certification of the following...

7.3(k)(15)(iv) The project sponsor has obtained excess financial assurance for any undiscovered existing or future harm to water resources in accordance with the provisions of Section 7.3(k)(16).

7.3(k)(16) To satisfy the excess financial assurance requirements of paragraph 7.3(k)(15), the project sponsor must alone or in combination with other sponsors of natural gas well projects within the Delaware River Basin procure excess financial assurance meeting the following conditions:

7.3(k)(16)(i) The excess financial assurance shall be in the amount of [\$67,500] for each natural gas well covered by the financial assurance instrument until the proceeds available from the financial assurance reach an aggregate amount of [\$25] million for all sponsors of all natural gas wells covered by the financial assurance instrument and located within the Delaware River Basin;

7.3 (k)(16)(ii) The full aggregate amount of the excess financial assurance instrument must be available to respond to any and all costs specified in Section 7.3(k)(1) and (k)(2) after exhaustion of the primary financial assurance instrument provided by the project sponsor of the natural gas well causing the costs to be incurred.

These provisions regarding the excess financial assurance requirement are unclear and should be explained, perhaps with some allusion to the purpose of the financial pool that would be established. At the same time, this entire financial assurance scheme would be unnecessary if the DRBC deferred to the states, as it should, in what are essentially land use matters.

7.3(l) Project Review Fees

7.3(l)(1) Fee Schedule

The Delaware River Basin Commission requires payment of non-refundable review fees, water charges and other fees as set forth in TABLE 7.3.1: APPLICATION FEES AND WATER CHARGES ASSOCIATED WITH NATURAL GAS EXPLORATION AND DEVELOPMENT PROJECTS...

The cumulative impact of the fee structure the DRBC proposes would be to create a superagency that essentially would be beyond the budgetary reach of its constituent members, a juggernaut that would collect tens of millions of dollars in fees and act as it pleases whether that pleased the people in its thrall or not. The fees the DRBC would assess against each well in the basin could easily total \$100,000 compared to the \$2,000 to \$5,000 assessed by the states. It would seem that the regulations are fee driven, that the fee schedule was crafted even before the regulations themselves to assure the DRBC would be self-funding.

7.3(I)(5) Alternative fee based on actual cost of review. When a fixed fee or fee calculated in accordance with a formula set forth in Table 7.3.1 below is deemed by the Executive Director to be insufficient to cover costs associated with review of an application or submission made by a project sponsor consistent with the conditions of a project approval, the Executive Director may impose a fee in the amount of up to 100 percent of the Commission's actual cost.

This could provide the occasion to order unnecessary investigations and to finance what would essentially be a make-work operation .

Section 7.3(I)(7) The holder of a natural gas well pad approval, whether or not the well pad is part of a NGDP is required to pay a water supply charge for consumptive use as specified in Table 7.3.1. Water supply charges apply to all groundwater and surface water used to support natural gas development projects. One hundred percent (100 %) of water used by a natural gas extraction and development project is considered to be consumptive for the purpose of calculating the water supply charge due to the Commission...

It is our understanding the natural gas industry has been advised that the DRBC is planning to charge the per-gallon fee for the reuse in drilling and fracking of flowback water. If this is true, it would give credence to the suggestion that the proposed regulations are fee driven. Charging for the reuse of flowback would discourage wastewater recycling, which the DRBC says it supports in Section 75(h)(1)(iii)(F): "The project sponsor must implement a continuous program to encourage water conservation in all types of use within the facilities served by the Commission's well pad approval. The water conservation program must include the reuse and recycling of flowback and production waters to the greatest extent possible." Moreover charging such a fee would contravene the exception made for "flowback and production water" in Footnote 3 to Table 7.3.1, which reads "All water (surface, ground or wastewater other than flowback or production water) delivered, withdrawn or used at a well pad site is deemed to be consumptively used."

7.3(I)(10) Annual compliance and monitoring fee. In addition to the application fee, an annual compliance and monitoring fee of \$2,000 will apply to all projects approved in accordance with these regulations. A separate fee will be charged for each water withdrawal docket or ABR, each individual well pad, and each well pad approved as part of a NGDP. The annual compliance and monitoring fee will be prorated for the first year and will be due by January 31 of the following year. For each year thereafter, the fee will be due by January 31 of the following year. Annual compliance and monitoring fees not received by the Commission by January 31 will be subject to interest charges of 1% per month from January 31 until the date of receipt by the Commission.

It's unclear whether this \$2,000 annual fee would be assessed against each well, each well pad, each company, nor does this provision specify clearly the amount of the "separate fee"

mentioned.

TABLE 7.3(1): APPLICATION FEES AND WATER CHARGES ASSOCIATED WITH NATURAL GAS EXPLORATION AND DEVELOPMENT PROJECTS IN THE DELAWARE BASIN

One failing across the entire fee table is that it doesn't specify when the respective fees are due. Also, beyond our basic belief that the fees cited in the table are excessive, we believe one item should not be included at all:

(l)	Natural Diversity Index Assessment	If performed by the Commission: Fixed fee or actual review cost.	a-g - \$15,000 or actual review cost. ⁽¹⁾
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Since Natural Diversity Index Assessments are mandated by the states and carried out under state auspices, there's no reason for their inclusion in the fee schedule.

Regarding Item (n) in the table, which deals with the Consumptive Water Use Charge, see the comment on Section 7.3(1)(7) above.

7.3(m) Reporting Violations.

7.3(m)(1) The project sponsor must report in writing to the Commission any violation of these rules, the requirements of its approval including but not limited to, docket, ABR, protected area permit, or approved operations or other plans, or any circumstances that may reasonably lead to a finding of violation, within 48-hours of the occurrence or upon the project sponsor becoming aware of the violation or circumstance. In addition, the project sponsor must notify the Commission by telephone immediately upon learning of any violation, occurrence or condition that may cause a significant harm to water resources. The project sponsor must also provide a written explanation of the causes of the violation, occurrence or condition for which written or telephone notice is required by this subpart 7.3(m)(1) within 30 days of the violation, occurrence or condition and must set forth the action(s) the project sponsor has taken to correct and address the consequences of the violation, occurrence or condition and protect against a future violation.

This provision would impose a duty on the project sponsor to "report in writing" to DRBC any violation of the rules "or any circumstances that may reasonably lead to a finding of violation" within 48 hours. That would appear to be redundant with State regulations and more stringent than any reporting obligations imposed by Pennsylvania's DEP.

7.3(m)(2) If the monitoring required herein, or any other data or information demonstrates that the operation of this project significantly affects or interferes with any designated uses of ground or surface water, or if the project sponsor receives a complaint regarding this project, the project sponsor must immediately notify the Executive Director of such condition or complaint and unless excused by the Executive Director, must investigate such condition or complaint. The project sponsor must direct phone call notifications of complaints involving water resources to the DRBC. Oral notification must always be followed up in writing directed to the Executive Director. In addition, the project sponsor must provide written notification to all potentially impacted users of wells or surface water users of the project sponsor's responsibilities under this condition. Any ground or surface water user which is substantially adversely affected, rendered dry or otherwise diminished as a result of the project sponsor's project withdrawal, must be repaired, replaced or otherwise mitigated at the expense of the project sponsor. A report of investigation and/or mitigation plan prepared by a qualified professional must be submitted to the Executive Director as soon as practicable or within the time frame directed by the Executive Director. The Executive Director will consult with the host state prior to making a final determination regarding the validity of such complaints, the scope or sufficiency of such investigations, and the extent of appropriate mitigation measures, if required.

Most of the items in this provision ### other than reports to the DRBC itself ### are things regulated by the states. In Pennsylvania, the DEP is charged with investigating complaints of adverse impacts upon water users and is willing and able to force well developers to mitigate any adverse impacts they have caused. Once again it appears the DRBC is striving for dual jurisdiction, a situation where conflict between the agencies could unnecessarily delay or totally block the resolution of problems.

7.3(n) Enforcement.

7.3(n)(2) Suspension, Modification or Termination of Commission Approval.

7.3(n)(2)(i) Authority. The Executive Director or the Commission, pursuant to Sections 3.6(h) and 3.8 of the Compact, may suspend, modify or terminate an approval or any condition thereof, in the event of serious, continuing or repeated violations of Commission regulations or of the conditions of approval, or when in the judgment of the Executive Director or Commission, such action is necessary to protect the water resources of the basin or to effectuate the Comprehensive Plan.

DRBC's power to suspend or revoke approvals for "serious, continuing or repeated violations of Commission regulations" could present a situation where a well developer resolves any violations with the Pennsylvania DEP through a CACP or a CO&A, but still faces the prospect of being shut down by the DRBC. The DRBC's draft regulations state that a permit can be reinstated, but only upon a showing of "full compliance." Again, that would seem to limit the DEP's ability to use a CO&A and compliance schedule as a mechanism for bringing a well developer into compliance. The most disconcerting aspect of this is the self-granted authority and power granted to the executive director of the DRBC. At the whim of

the executive director or staff, contrary to what the states may determine, a company could find its permits suspended, operations terminated and bonds revoked. This is placing far too much power in the hands of a single bureaucrat.

Section 7.4 Water Sources for Uses Related to Natural Gas Well Development

Natural gas development project sponsors may only use water from Commission approved sources.

This provision impinges upon landowner rights and unfairly singles out the natural-gas industry. Pond owners can sell their water for other uses but are here prevented from doing so.

Section 7.4(b) Preliminary determinations.

Section 7.4(b)(1) Substantial effect. Due to advances in horizontal drilling and hydraulic fracturing technologies, thousands of natural gas development projects are expected to be proposed for the Delaware River Basin. Each will involve land disturbance for such appurtenances as roads, well pads, pipelines, impoundments, and compressor stations; and most will entail the withdrawal, diversion, importation into or exportation out of the basin of surface water, ground water, non-contact cooling water, mine drainage water, and/or treated wastewater. These uses may have a substantial effect either individually or cumulatively, on the surface water and groundwater resources of the basin.

The statement "thousands of natural gas projects are expected" begs the question, "Expected by whom?" Calculations done for the Northern Wayne Property Owners Alliance concluded that the numbers suggested by the DRBC in its presentations explaining the proposed regulations to the public overestimated the number of wells and well pads by a factor of 2 at the very least. Furthermore, the suggestion that roads, pipelines and compressor stations will entail "withdrawal, diversion, importation" etc. of water and have a substantial effect on the water resources of basin simply flies in the face of reason.

Section 7.4(b)(2) Rules of Practice and Procedure (RPP) thresholds not applicable. Natural gas well development within the Delaware River Basin will encompass thousands of drilling sites, many of them proximate to headwater streams in the sparsely populated upper portion of the Delaware Basin that comprises the drainage area of the Commission's Special Protection Waters. Estimates of the quantity of water needed to develop these wells and perform hydraulic fracturing range from 3 to 5 million gallons per well. Although some of the water used at a well can be recovered and reused at other wells, much of the water used at each well will come from the other sources identified in this Section 7.4. Because the water uses associated with natural gas development are almost entirely consumptive in nature, little if any of the water withdrawn or diverted for these purposes will be returned to streams and aquifers in the vicinity of the sources...

Since the geology of the region is uncertain, as is the location of shale with commercially exploitable amounts of natural gas, any estimate of the number of potential well sites in the basin is highly speculative and here likely exaggerated. Further, the usage "sparsely populated" should be deleted anywhere it appears in the proposed regulations. The term is used prejudicially and is strictly a matter of opinion. For some of us who live in the Upper Basin, the area bordering the Delaware has become uncomfortably overpopulated.

...Flows and assimilative capacities in aquifers and water bodies in the vicinity of the sources will be commensurately reduced. For this combination of reasons, the water uses associated with natural gas development are unlike those for the stationary industrial, commercial and domestic projects contemplated by the Commission's *Rules of Practice and Procedure* (RPP). The thresholds established by the RPP for the review of projects under Section 3.8 of the Delaware River Basin Compact do not adequately protect the water resources of the basin from the effects of natural gas development. Accordingly, these thresholds are not applicable to water withdrawals and diversions to be used in natural gas well development. Instead, sponsors of natural gas development projects within the Delaware River Basin must obtain Commission approval for all sources of water.

This provision ### based in part on what we believe are exaggerated assumptions ### suggests that water withdrawals will substantially reduce the flows and assimilative capacities in nearby aquifers and water bodies, ignoring the fact that a single 1-inch rain event over the upper third of the watershed will provide enough water for nearly 16,000 wells, more than will ever be drilled in the Upper Basin, and we have several such rain events most years. The wells drilled in the Upper Basin will actually be completed over a period of 20 years or more in a region with an average annual rainfall in excess of 40 inches. And should there be a dangerous drought, the DRBC can invoke its water-withdrawal pass-by rules.

Particularly vexing to us is that the needs of those living outside the basin are considered while our need is not even mentioned. The DRBC expresses more concern for "instream living resources" than it does for us. At least the denizens of the deep get a mention. The "sparsely populated" explanation above says it all: Our future doesn't matter because there aren't many of us. There needs to be balance and consideration of our needs. The Compact calls for equitable apportionment of the basin's resources.

Section 7.4(d)(1) Approved withdrawals.

Section 7.4(d)(1)(vi) because no portion of the water used for natural gas well projects will be returned to a drinking water aquifer or surface water in the vicinity of the withdrawal point, the applicant must demonstrate...that removal of one hundred percent of the water proposed to be purchased for uses related to natural gas development will not adversely affect streamflow in the vicinity of the withdrawal point or in the vicinity of the point of discharge...

The wording of this provision should be altered to reflect the possibility that within the

foreseeable future it may be possible to safely return water used in natural-gas development back into the environment. A persistent problem with the proposed regulations is that the authors seem to regard drilling and fracking technology as essentially static when, in fact, the field is constantly evolving and rapidly so.

Section 7.4(d)(1)(vii) the bulk water sale agreement between the seller and the natural gas well-related user includes the following...

The DRBC should not be interfering to this degree in private party contracts. This objection applies equally to 7.4(d)(2)(v)(A) on Page 40 of the proposed regulations.

Section 7.4(d)(1)(xi) Pass-by flow requirement. The project withdrawal may not cause the stream flow below the point of withdrawal to be less than the Q7-10 flow...

The need to invoke pass-by restrictions would likely be reduced if New York City could be convinced to be more openhanded about releasing unneeded water from its reservoirs. Such releases should be part of a comprehensive solution to river-flow issues, for which the DRBC should be pushing harder and could be if its energies weren't spent pursuing jurisdiction over areas and issues already well covered by the states.

7.4(e)(2)(i) Non-point source pollution control plan. If the source is located within the drainage area of a portion of the Delaware River classified by the Commission as Special Protection Waters (SPW), the applicant must demonstrate compliance...

Once again, the DRBC is intruding to no great purpose into an area more than adequately administered by the states. Stream quality in Wayne County has been improving constantly for years now as measured by objective standards. The only thing DRBC can accomplish with this provision is to force duplication of effort, make the permitting procedure even more complicated than it would be otherwise and muddy the jurisdictional waters. Unnecessary intrusions of this sort threaten to deprive the headwaters region of economic development and punish us because we have Special Protection Waters that in no small part are in that condition because we have been good stewards of the land.

7.4(e)(2)(ii) Natural diversity inventory assessment. Project sponsors are required to submit as part of the project application the results of a natural diversity inventory assessment (NDIA) for the water withdrawal site. The Commission reserves the right to prepare a separate NDIA at the expense of the project sponsor if it determines that a separate assessment is required.

The states require natural diversity inventory assessments and if an assessment prepared for a project sponsor satisfies all state requirements and was completed less than 365 days before the date of submission of the related permit application and the DRBC wants something more, then the DRBC should order the additional assessment and pay for it.

7.4(e)(2)(iii) Metering and recording of withdrawals and transfers. Water withdrawals must be metered and recorded by means of an automatic continuous recording device... For a period of ten (10) years following the withdrawal, all water withdrawal and transfer records must be available for inspection at the withdrawal site and furnished promptly at the request of the Executive Director or a designated member of the Commission staff...

Requiring that water-withdrawal records be kept for 10 years and be available on request may have merit, but requiring that those records be kept "at the withdrawal site" for 10 years is unsupportable. The site may be otherwise unused for years. Surely other arrangements to ensure storage and accessibility of those records could be made and specified in the regulations.

The DRBC could require more comprehensive monitoring and reporting associated with water withdrawal and wastewater disposal docket. The funds collected as part of the review fees should be used to install and maintain a real-time water quality monitoring network of the surface water and groundwater and other stream assessments. The data could be used to create a base inventory.

7.4(e)(2)(vi) Water withdrawal site operations plan. The site operations plan for a new surface water withdrawal... No construction may be initiated until the Commission has approved the docket and the Executive Direction...

Presumably the words "Executive Direction" in the preceding should read "Executive Director."

7.4(e)(2)(x) Restricted access and operations. Access to the withdrawal site must be restricted through use of fencing, signage or other similar means. In addition, the withdrawal site location must be restricted to operations associated with the function of water withdrawal. These areas may not be used as staging areas for the addition of chemicals (except as required by an Invasive Species Control Plan) or fuel in excess of the quantity needed to run an emergency generator if one is used.

It's not at all clear why the rules for water-withdrawal sites used in natural-gas operations should be different from those for other withdrawal sites.

7.4(e)(2)(xiii) Drought emergency plan. For the duration of any drought emergency declared by the Governor of the state in which the water withdrawal is located or by the Commission, water withdrawals by the project sponsor in accordance with this approval shall be subject to any prohibition by the Governor, the state emergency management agency, the state environmental protection agency, or the state drought coordinator to the extent applicable, and to any emergency resolutions or orders issued by the Commission. The project sponsor must

submit as part of its application a Drought Emergency Plan, including drought contingency notice to all users and providing for cessation of operations in the event required by state or Commission authorities. The provisions of this plan will be incorporated by reference into the docket.

The DRBC here reserves the right to issue emergency resolutions or orders limiting water withdrawals in the case of what it believes to be a drought, even when the Governor has issued no such emergency resolution. Once again, the DRBC is really showing little more than its willingness and desire to trump state authority at will. Surely by the time any declaration of a drought would be needed from any quarter, the DRBC's pass-by regulations would already be in operation.

7.4(e)(3)(i) Invasive species control plan.

While an invasive species control plan could have merit in many circumstances, in natural gas development it would likely be overkill most of the time. Few, if any, aquatic species that live at ordinary river depths would ever survive the pressures of many thousand of pounds per square inch used in fracking, not to mention the mineral salts typically found in flowback water.

7.4(e)(4) Additional submittals, conditions applicable to new groundwater withdrawals.

7.4(e)(4)(i) Hydrogeologic report. For all groundwater well sources, a Final Hydrogeologic Report detailing extended pumping test procedures, results and analyses must be provided with the application. The Final Hydrogeologic Report must include a discussion of field procedures, a listing of all data gathered, an analysis of the data and an evaluation of the impact of the proposed withdrawal on the aquifer and on other groundwater and surface water users in the vicinity. All relevant data, including but not limited to a geologic map, well log, water level charts, tables and graphs for the pumped well, monitoring wells, and nearby perennial streams, wetlands and other sensitive hydrologic features must be submitted. The pumping test may be of not less than 48 hours pumping duration, unless approved in writing by the Executive Director or in the Commission approval, at an uninterrupted, constant withdrawal rate of not less than the proposed pumping rate. Information to be collected must include, but is not limited to the following:

7.4(e)(4)(i)(B) Record of pumping rate measured frequently throughout the test

7.4(e)(4)(i)(C) Sufficient static water level measurements in all wells and at all monitoring points to determine trends in water level changes prior to start of pumping

7.4(e)(4)(i)(E) Monitoring of wells sufficient to determine all possible interference

A problem found in Sections 7.4(e)(4)(i) through 7.4(e)(4)(i)(E) and throughout the regulations is the authors' including ambiguous, unquantified and unquantifiable standards. Words like "impact" (without further qualification), "frequently," "sufficient," or "all

possible" have no meaning in the final analysis. Rules with such words in pivotal places can neither be obeyed, nor fairly enforced.

7.4(e)(4)(i)(G) A map identifying all nearby wells owned by others that could be affected by pumping of the new well(s) and the following information for each if available:

Name of Well Owner
 Telephone No. of Well Owner
 Address of Well Owner
 State Well ID No....

This could be a tough requirement to meet. Most people in the Upper Basin wouldn't have a fraction of the information sought here (the list is much longer than shown), and more than a few wouldn't share the information if they had it. The framers of these regulations must live in a far more regulated world than we do. There are no state well ID numbers in Pennsylvania for private wells; in fact Pennsylvania remains one of the few states in the nation that has no private well regulations at all. In any case, if water wells start running dry, most people will know whom to blame and whom to call.

(i) Obligations relating to interference.

If the monitoring required herein, or any other data or information demonstrates that the operation of this project significantly affects or interferes with any designated uses of ground or surface water, or if the project sponsor receives a complaint regarding this project, the project sponsor must immediately notify the Executive Director of any complaints and unless excused by the Executive Director, will investigate such complaints. The project sponsor must direct phone call notifications of complaints involving water resources to the DRBC. Oral notification must always be followed up in writing directed to the Executive Director. In addition, the project sponsor must provide written notification to all potentially impacted users of wells or surface water users of the project sponsor's responsibilities under this condition. Any ground or surface water user which is substantially adversely affected, rendered dry or otherwise diminished as a result of the docket holder's project withdrawal, must be repaired, replaced or otherwise mitigated at the expense of the project sponsor. A report of investigation and/or mitigation plan prepared by a hydrologist must be submitted to the Executive Director as soon as practicable or within the time frame directed by the Executive Director. The Executive Director will make the final determination regarding the validity of such complaints, the scope or sufficiency of such investigations, and the extent of appropriate mitigation measures, if required.

Requiring a project sponsor to provide written notification as a matter of routine to all potentially impacted users of a groundwater or surface water resource is an invitation to frivolous complaints. If other users of a resource are significantly affected, they'll know it in most cases and will quickly figure out for themselves whom to hold responsible and whom to call for help. If the "impact" is something imperceptible to the senses, notification of all

potentially impacted users could then be required.

Section 7.5 Well pads for Natural Gas Activities

7.5(a) Purpose and Applicability.

7.5(a)(1) The headwaters and groundwater of the Delaware River Basin are critically important to the supply of clean water to satisfy basin needs for drinking water, aquatic life, recreation, and other designated uses. Over 15 million people (approximately five percent of the nation's population) rely on the waters of the Delaware River Basin for drinking, agricultural, and industrial use, but the watershed drains only four-tenths of one percent of the total continental U.S. land area. The 15 million figure includes about seven million people in New York City and northern New Jersey who live outside the basin. New York City gets roughly half its water from three large reservoirs located on tributaries to the Delaware. The ground waters of the Basin are protected and regulated under Article 2, Section 2.20 and Article 3, Section 3.40 of the Water Code. Protecting and managing areas in source watersheds is essential to maintaining the high water quality of the National Scenic and Recreational Delaware River and the River's tributary systems. Protecting the high value landscapes of forests and water resources implements and is consistent with Goal 3.2 of the Water Resources Plan for the Delaware River Basin (Resolution 2004-BP) and with the anti-degradation program codified in the Commission's Special Protection Waters program, DRBC Water Quality Regulations, 18 C.F.R. Part 410, Article 3.10.3.A.2 et seq.

The DRBC's emphasis on protecting forest landscapes adds up to little more than an unobtrusive way of laying the groundwork to block natural gas development in the Upper Basin. One also wonders whether it's prelude to a DRBC effort to stop timber harvesting in our region, a traditional livelihood here for more than a century and one of the few we have. Further, in terms of preventing erosion and sedimentation and removing potential contaminants from surface runoff and groundwater flows, pasture lands and brush patches can be highly effective, as a 2005 EPA study of riparian buffers details. And the forest's superiority over grassland in taking up nitrogen is of minimal importance in an area like the Upper Basin, where dairy farming has nearly disappeared and so little of our land is used for crops like corn, which usually is grown with heavy applications of nitrogen-rich fertilizer.

And while it has been said before, it's worth repeating here that we find it more than a bit dismaying that the needs of the residents of the Lower Basin and even of residents outside the basin receive consideration here, but no mention at all is made of our need in the economically depressed Upper Delaware Basin to develop our resources. Bucolic poverty provides little pleasure for those forced to live in it.

It's also interesting to note that the Pennsylvania DEP's "Oil and Gas Operators Manual" says the commonwealth, when considering certain types of wastewater discharges, may "accommodate important economic or social development in the area in which the waters

are located."

7.5(a)(2) The siting and operation of natural gas well pads within the Delaware River Basin may have a substantial impact on the water resources of the Basin. To allow for the development of natural gas resources while minimizing adverse impact to water resources, all natural gas well pads to be located within the Delaware River Basin are subject to the siting, design and operational criteria of this Section 7.5. All natural gas well pad projects in the Delaware River Basin require Commission approval. As provided for in Section 7.1(i), DRBC is relying on the Commonwealth of Pennsylvania and State of New York (PADEP and NYSDEC, respectively) regarding the construction and operation of natural gas well pads except as specified in this section.

Section 7.5(2) asserts, with no evidence, that well pads "may have a substantial impact on the water resources of the basin." This would seem a highly unlikely outcome when a well pad initially covers 5 to 6 acres, nearly all of which will be quickly restored, in a drilling unit of 640 to 1,280 acres. At most, that's less than one percent of the land in a unit and when that land use is reduced to a half-acre, as it will be, that well pad could occupy as little as 0.004 percent of the unit.

Both New York and Pennsylvania already enforce extensive stormwater management rules (some of the toughest in the nation) and, in Wayne County at least, the amount forested land has grown steadily over the last half-century. There is simply no basis for a statement that well pads could have a substantial impact on the water resources of the basin.

The specific regulations that follow would set the DRBC up as a super-agency to regulate land use and supersede state environmental regulations. We cannot have still another agency deciding matters of land use in the Upper Delaware region. This would engender only confusion and conflict. The best and simplest solution would be for the DRBC to simply delete Section 7.5 from its proposed regulations.

7.5(b)(1)(i) Natural Gas Development Plan Docket

Lessors in our region have expressed concern that they will be identified in this docket as having leased their land for natural-gas development. The docket could easily become a "hit list" for antidrilling activists, an unsettling thought in an area such as ours which has minimal police protection. Also, the DRBC plans to charge a fee of \$75,000 or more to review the company's development plan, along with a fee for each well. These fees seem excessive, and our states get none of the revenue they produce.

7.5(b)(3) Siting Restrictions. A well pad may not be sited:

7.5(b)(3)(ii) On a slope with a pre-alteration grade of 20% or greater.

This restriction is not in line with state regulatory practices.

7.5(b)(3)(iii) In an area that serves as a critical habitat for a federal or state designated threatened or endangered species unless host state/federal mitigation measures have been approved.

This is already taken care of by the states.

7.5(b)(4) Setbacks. All natural gas well pad sites must adhere to the following minimum setback requirements:

In its list of landscape features it deems must be protected with setbacks, the DRBC defers to the host state in five of nine instances and should do the same for all. The DRBC requires 500-foot setbacks for water bodies, wetlands, surface water supply intakes and water supply reservoirs. That requirement has no scientific basis. The EPA and the Yale School of Forestry and Environmental Studies have both published extensive literature reviews on studies of riparian buffer function with recommended widths of 30 to 328 feet, depending on specific factors, but nowhere is there a recommendation as high as 500 feet.

7.5(b)(4)(i) Water body: 500-ft

This setback requirement is completely unrealistic when combined with the DRBC's slope restrictions and its all-inclusive definition of a water body as "a natural or constructed landscape feature containing or conveying surface water on a permanent, seasonal, or intermittent basis, including 1) depressional features such as reservoirs, lakes, ponds, and embayments; 2) natural or constructed channels that convey flowing water such as streams, canals, ditches, and similar drainageways, and 3) wetlands."

Practically nowhere in northern Wayne County lies outside this definition, which is so broad and vague it can be interpreted to include a depression in the middle of normally dry field that occasionally fills with rainwater. Assuming that a typical 5-acre well pad would be a square 475 feet on a side, a 500-foot buffer surrounding such a pad would require a 50 acre area free of any water bodies or wetlands as defined by the DRBC, a practical impossibility here. Indeed, calculations carried out by the Northern Wayne Property Owners Alliance suggest that only 0.5 percent of the land in northern Wayne County would meet the DRBC's requirements.

But beyond all this, the well-pad standards proposed by the DRBC are almost wholly redundant with state regulations and unnecessary.

7.5(b)(9) Variances.

The restrictions articulated throughout these proposed regulations and especially those

governing Approval by Rule in Section 7.5(e) are so stringent that variances of one sort or another will be needed for just about every well pad permit application. For all practical purposes, the fate of every application in the basin will be at the discretion of DRBC's executive director, who would be free to accept, reject or modify any and all. This would be a source of immense uncertainty for project sponsors and an open invitation to corruption and abuse. The variance procedure should be for exceptions to the rule and not the rule itself.

7.5(b)(9)(i) A project sponsor may request the Executive Director to grant a variance to the provisions of Sections 7.5(b)(3) and 7.5 (b)(4) of this rule. No variances shall be granted to the restriction against locating well pads in a floodway as provided in the Commission's Administrative Manual – Part III Basin Regulations - Flood Plain Regulations.

No mention of drilling pads seems to be included in the DRBC's Administrative Manual, Part III, and, on the face of it, drilling pads do not seem significantly different from other commercial activities that are generally permitted or can be allowed by special permit on the floodway. It would be one thing for the DRBC to allow well pads only on condition the project sponsor takes specified or approved extra precautions because of the floodway's environmental sensitivity, a power given to the executive director in 7.5(b)(9)(iv), but a blanket prohibition is not acceptable.

(iii) Before any request for a variance will be considered, the project sponsor must provide the Executive Director with evidence that it has notified the property and the mineral rights owners in writing of the intent to request a variance.

This would hardly seem necessary. The mineral rights owner and the project sponsor are already in a contractual relationship and don't need the DRBC to intrude into that relationship. Moreover, in most cases in our region the mineral rights and property owners are same. The provision should be deleted.

7.5(b)(9)(iv) The Executive Director may approve a variance subject to additional conditions to protect the water resources of the basin.

7.5(c) Natural Gas Development Plans.

7.5(c)(1) Applicability. Natural Gas Drilling Plans (NGDP) are intended to identify foreseeable natural gas development in a defined geographic area, facilitate analysis of potential water resource impacts and identify measures to minimize these impacts. In accordance with these regulations, a Commission approved NGDP is required of all project sponsors that have:

7.5(c)(1)(i) natural gas well pad leaseholds in the Delaware River Basin (basin) encompassing a total of over 3,200 acres; or,

The wording "natural gas well pad leaseholds" in this provision is odd. "Natural gas leaseholds" would surely suffice, since other natural-gas activities wouldn't require such

large land holdings.

7.5(c)(1)(ii) the intention to construct more than five (5) natural gas well pads in the basin.

This requirement could be completely unrealistic, especially early on, because the geology of the region and its gas-production potential are still unknown. The states work on a well-by-well basis and charge their fees by the well. The DRBC wants to collect a review fee on the NGDP, then charge an additional per-well fee.

7.5(c)(3) NGDP Application Requirements.

7.5(c)(3)(i) Lease Area Map. A lease area map is a map of all a project sponsor's leaseholds in the basin. The leasehold map(s) must be a United States Geologic Survey (USGS) 7.5 minute or 15 minute series topographic quadrangle if necessary due to size. The map(s) must show development units within the leaseholds that will be developed in 5 year increments.

Because the geology and gas-development potential of the region are still unknown, the reading of the final sentence of this provision should be something like this: "The map(s) must show proposed development units as they might be developed in 5 year increments."

7.5(c)(3)(ii) Landscape Map.

7.5(c)(3)(ii)(B) List of property and mineral rights owners of the leaseholds located within 0.5 mile of any proposed well pad site.

This provision should be deleted. There is no reason for this information to be included in the NGDP and made public as a result.

7.5(c)(3)(ii)(C) 7.5 minute USGS quad showing (lease area plus a 0.5 mile perimeter around the leasehold): existing roadways, existing rights of way - utility lines, pipelines, transmission lines, existing oil and gas wells, existing water supply wells – community, domestic (within a 0.5 mile radius of any proposed natural gas well pads), and any wellhead protection area prescribed by the state, and existing buildings.

This provision should specify a GIS map. Information on all the features specified in the provision may not be available, and some of it is confidential and its release would require approval by the landowner. The DRBC seems to think landowners lose all right to privacy because they've signed lease agreements.

7.5(c)(3)(ii)(D) Hydrology Map...

7.5(c)(3)(ii)(F) Soils Series Map. . .

Some of the information requested in the provisions above may be proprietary or unavailable.

7.5(c)(3)(ii)(H) Critical Habitat Map – areas designated for a federal or state threatened or endangered species.

This shouldn't be necessary because the protection of species designated threatened or endangered by federal or state authorities should remain under the exclusive jurisdiction of those authorities.

7.5(c)(3)(ii)(J) Map of all forested landscapes (lease area)

If included, this provision should specify inclusion of a date or year the map was prepared.

7.5(c)(3)(iv) Circulation Plan. A map and description of existing and proposed roads and rights-of way on the leasehold that will be used for vehicular, pipeline or utility access to and among identified well field development areas, natural gas well pads, compressor stations and other ancillary equipment, within or connecting to areas outside of the geographic area covered by the Plan. Linear infrastructure must be co-located whenever feasible. If there are any proposed changes to the plan, project sponsors may apply to the Executive Director for adjustments to the locations of these sites and routes included in a Commission approved NGDP. The Executive Director may deny, approve or approve with conditions the requested adjustments to the siting.

This provision needs clarification. The meaning of the term "well field development areas" should be spelled. The term " the Plan" presumably refers to the NGDP, which should be cited specifically if that is what is meant.

7.5(d) Natural Gas Well Pad Docket Application Requirements.

...Project sponsors are also required to submit to the Commission the results of a NDIA. For projects located in the Commonwealth of Pennsylvania, a Pennsylvania Natural Diversity Inventory (PNDI) assessment satisfies this requirement. For projects located in the state of New York, an assessment done in accordance with New York, 6 NYCRR Part 182 satisfies this requirement. The Commission reserves the right to prepare a separate NDIA at the expense of the project sponsor if it determines that a separate assessment is required

This is a potentially abusive provision. If the DRBC wants a separate NDIA, the DRBC should prepare it at the DRBC's expense.

7.5(e) Approval by Rule (ABR).

Since Approval by Rule is a mechanism to allow approval of single wells or a small numbers of wells that would not be subject to the NGDP provision or of wells deemed desirable in an NGDP area after the plan has been filed and approved, there's no reason why the rules should be more stringent under ABR than they would be for well pads in an NGDP. The restrictions articulated throughout these proposed regulations and especially those governing Approval by Rule in Section 7.5(e) are so stringent that variances of one sort or another will needed for just about every well pad permit application. For all practical purposes, the fate of every application in the basin will be at the discretion of DRBC's executive director, who would be free to accept, reject or modify any and all. This would be a source of immense uncertainty for project sponsors and an invitation to corruption and abuse.

This map is required to be submitted with the well pad application. The project sponsor must also submit a landscape map, a constraints analysis map, and a circulation plan as described in Sections 7.5(c)(3)(ii),(iii) and (iv) above for the area within 0.5 miles of the well pad sites proposed in the application at submittal. ABRs may only be issued in accordance with this section for a well pad that meets the following criteria:

(1) The project has been identified and is in conformance with an approved NGDP; or meets all of the following:

(2) It must not be located on a forested site, as that term is defined by these regulations; and

A 3-acre forest removal test, found in the "Forested site" definition in Section 7.2 (q.v.) and applied in this provision, is unfounded and unprecedented. The DRBC imposes no similar restriction on any other industry Why the DRBC would want to impose this restriction is baffling, since natural-gas development with horizontal drilling has a smaller surface disturbance impact than residential development, farming, or forestry.

(3) It must be located on a site with a pre-alteration slope, as that term is defined by these regulations, not in excess of 15 per cent; and

The allowable slope should at least match that specified for well pads within an NGDP, namely 20 percent.

(4) It must be located outside management areas of the National Park Service (NPS), including the Upper Delaware Scenic and Recreational River (UPDE) and the Delaware Water Gap National Recreation Area (DEWA) and other areas in which the National Park Service or other federal agencies have a management interest; and

Since the management area of the Upper Delaware Scenic and Recreational River is the

river itself and the small parcel of land used for the park's headquarters, its inclusion here as an area off-limits for well pads seems gratuitous if not nonsensical, nor is it likely that anyone will attempt to drill a gas well within the boundaries of the federally owned Delaware Water Gap National Recreation Area. The provision should be deleted.

(5) It must be located outside of the watersheds that drain to New York City's Delaware River Basin Reservoirs; and

This is not the DRBC's business, and the provision should be deleted. New York State and New York City are perfectly capable of protecting the city's watersheds.

(6) It must meet the applicable siting and design criteria in Section 7.5(b)(3) and 7.5(b)(4).

We have commented extensively on Section 7.5(b)(3) and 7.5(b)(4), and the comments are posted with those sections.

(7) For exploratory and low volume hydraulically fractured well pads a project sponsor must have a state issued approval for well construction and operation.

This provision should apply to all types of well-pad applications submitted for approval by rule

7.5(h)(1) Applicable Requirements for all Well Pads.

7.5(h)(1)(i) Planning Requirements. If a project sponsor meets the criteria in Section 7.5(c), it must submit a Lease Area Map in accordance with Section 7.5(c)(3)(i) with its first ABR application. A NGDP must be submitted and approved prior to initiating the development of its sixth well pad in the basin. Upon approval of the NGDP, all subsequent well pads constructed exclusively for exploratory or low volume hydraulically fractured natural gas wells not included in the approved NGDP docket, but within the boundaries of the NGDP, and in accordance with the terms and conditions of the NGDP, are eligible for ABRs.

If the DRBC insists on having information that many landowners regard as private matters, such as lease area maps, the commission must make provision to keep such information confidential. A great deal controversy and expressions of ill will have erupted in our community ### death threats included ### in part because of the DRBC's tardiness in publishing natural-gas regulations. Documents identifying lessors can easily become "hit lists" for antidrilling activists, leading to harassment or worse.

7.5(h)(1)(iii)(C) Water Recording. Well pad project sponsors must monitor and record the volume of all water delivered to the well pad site from each source used on a daily frequency. The project sponsor must maintain a record of each truck/pipeline delivery and its source. The project sponsor must submit the records in a Commission- specified electronic format to the Commission upon request by the Executive Director.

The electronic format should be specified, perhaps subject to revision as technology develops.

7.5(h)(1)(iii)(E) Water supply charge. The holder of a natural gas well pad approval, whether or not the well pad is part of a Natural Gas Development Plan, is required to pay the Commission's water supply charge for consumptive use based on quarterly water reporting noted above. Water supply charges apply to all groundwater and surface water used to support natural gas development projects. One hundred percent (100 %) of water used by a natural gas extraction and development project is considered to be consumptive for the purpose of calculating the water supply charge due to the Commission...

Commenting on Section 7.3(l)(7) (q.v.), we noted our belief that charging for the reuse of flowback would discourage wastewater recycling, which the DRBC says it supports in Section 75(h)(1)(iii)(F) (see below). Moreover such a fee would contravene the exception made for "flowback and production" water in Footnote 3 to Table 7.3.1.

7.5(h)(1)(iii)(F) Water Conservation. The project sponsor must implement a continuous program to encourage water conservation in all types of use within the facilities served by the Commission's well pad approval. The water conservation program must include the reuse and recycling of flowback and production waters to the greatest extent possible. Applies to all well pad project sponsors, except those approved by an ABR for exploratory or low volume hydraulically fractured wells.

As suggested in comment on 7.5(h)(1)(iii)(E), the DRBC seems to be determined to both encourage and discourage the recycling of flowback and produced water. Charging for the reuse of flowback and produced water would certainly discourage recycling and water conservation thereby. Also, a term like "to the greatest extent possible" is not specific enough if this is to be a binding regulation.

7.5(h)(1)(iv) Wastewater. All well pad project sponsors must satisfy the following requirements:

7.5(h)(1)(iv)(A) Disposal.

(4) Wastewater, recovered flowback and or production water and brines from natural gas well pads may not be applied to any road or other surface within the Delaware River Basin.

During the debate between the Pennsylvania DEP and the regulated community over proposed regulations governing TDS, much discussion focused on what to do with brines remaining after the treatment of flowback and produced water. The DEP staff at one time discussed the possibility of using the brines as a substitute for road salt. The draft regulations would appear to close the door on that possibility. The DRBC should consult

with the DEP and/or PennDot before adopting a provision barring such a use for brines.

7.5(h)(1)(iv)(B) Recording. Well pad project sponsors must record the volume of all non-domestic wastewater produced onsite on a daily frequency... The project sponsor must submit the records in a Commission-specified electronic format to the Commission upon request by the Executive Director.

The electronic format should be specified, perhaps subject to revision as technology develops.

7.5(h)(1)(iv)(C) Reporting.

(2) The well pad sponsor must submit to the Commission on a quarterly basis reports indicating monthly and daily total volumes of flowback and production water collected and transported offsite from the well pad and results of any flowback/production water samples in a format prescribed by the Executive Director.

With the exception of seeking test results on flowback/production water samples, this provision is redundant with Section 7.5(h)(1)(iv)(B). Perhaps the two provisions could be profitably combined. As mentioned before, the electronic filing format should be specified, perhaps subject to revision as technology develops.

7.5(h)(1)(v) Non-point source pollution control plan. If the well pad is located within the drainage area of a portion of the Delaware River classified by the Commission as Special Protection Waters (SPW), the project sponsor must demonstrate compliance with section 3.10.3A.2.e. of the Commission's Water Quality Regulations, providing for development and implementation of a Non-Point Source Pollution Control Plan (NPSPCP). The NPSPCP must be consistent with the more stringent of Commission and state requirements for erosion and sedimentation controls to be implemented at the well pad, including measures to control stormwater both during and after construction. The post-construction portion of the plan must describe the final site conditions, including a pre- and post-construction project hydrograph analysis, permanent facilities, equipment, access roads, and all stormwater control structures that may be necessary after final site restoration has been completed. No site clearing or construction work at the well pad may be initiated until the NPSPCP has been approved by the Commission, or by the host State in accordance with an Administrative Agreement between the Commission and the host State. The Commission will rely upon host state erosion and sediment control plan and post construction stormwater management plan requirements for NPSPCPs for well pads approved by an ABR for exploratory or low volume hydraulically fractured wells.

Just what might constitute an "Administrative Agreement between the Commission and the host State" is never spelled out anywhere in the proposed regulations, which could become an issue. Also why should the DRBC accept host state erosion and sediment control and stormwater management plans as specified here and not elsewhere? Presumably all well pads present the same E&S and stormwater risks, for example, so having different rules

seems arbitrary in the extreme.

7.5(h)(1)(vi) Mitigation, Remediation and Restoration

(A) The project sponsor must immediately report to the Executive Director as well as appropriate local, state and federal agencies any release or threatened release to the environment...

(B) The project sponsor must take steps to prevent any threatened release and immediately mitigate and remediate any release...

(C) The project sponsor must also provide written notification to all potentially impacted users of wells or surface water users of the project sponsor's responsibilities under this condition. Any ground or surface water user which is substantially adversely affected, rendered dry or otherwise diminished as a result of the release must be repaired, replaced or otherwise mitigated at the expense of the project sponsor. A report of investigation and/or mitigation plan prepared by a qualified professional must be submitted to the Executive Director as soon as practicable or within the time frame directed by the Executive Director. The Executive Director will make the final determination regarding the validity of such complaints, the scope or sufficiency of such investigations, and the extent of appropriate mitigation measures, if required.

While immediate notification of a serious and imminent threat is almost always a good idea, the immediate notification of a potential problem, as required in 7.5(h)(1)(vi)(C), can create unnecessary alarm and, in too many cases, is nothing but an invitation to frivolous complaints. Moreover, most of the issues covered in 7.5(h)(1)(vi)(A) through (C) are already under state jurisdiction and administration and should stay that way.

7.5(h)(2) Additional Requirements for all Well Pads involving High Volume Hydraulically Fractured Wells.

While many of the provisions below are good ideas in themselves, there's no reason to link them particularly with wells completed with high-volume fracking, other than to perpetuate scientifically baseless allegations and assumptions about such wells.

7.5(h)(2)(i) Groundwater and Surface Water Monitoring.

7.5(h)(2)(i)(A) Pre-alteration Report. Well pad project sponsors must submit to the Commission's Executive Director c/o the project review section a pre-alteration groundwater and surface water monitoring study report as part of the well pad application.

Since the terms "alteration" is usually used to describe such operations as additional drilling on an already drilled well, it would be better to substitute "drilling" for "alteration" in this provision and those related to it.

7.5(h)(2)(i)(A)(1) The pre-alteration report must include an inventory and the mapped locations of any artificial penetrations including groundwater wells within 2,000 ft of the project well pad. The report must also include the results of groundwater sampling and laboratory analysis of a representative number of groundwater wells within 1,000 ft of the well pad. If the project sponsor or the Executive Director concludes that an insufficient number of existing wells are identified within this distance to adequately characterize the groundwater, the sampling distance must be extended up to 2,000 ft from the gas well pad. If there are no existing groundwater wells or the project sponsor is unable to gain access to any existing groundwater wells within 2,000 ft of the project well pad, the project sponsor will be required to install a monitoring well or wells within 1,000 ft of the project well pad. The well monitoring study report must also identify any of the sampled wells that the project sponsor proposes not to monitor on an annual basis. The Executive Director may approve their exclusion or require these wells to be included in the annual studies required by subparagraph (B) below.

The requirements in this provision are problematic. First off, neither the project sponsor nor the DRBC has the power to compel private landowners to share the information sought about artificial penetrations, so much of data could be inaccessible. Secondly, a vague terms like "representative number" is unworkable; a minimum number should be specified up front. Finally, requiring the project sponsor to drill wells within 1,000 feet of the well pad for monitoring purposes assumes the landowners within that distance will be willing to allow such wells to be drilled on their land. This is by no means guaranteed.

7.5(h)(2)(i)(A)(2) The report must also include the mapped locations and the results of surface water monitoring in the nearest water body(ies) up gradient and down gradient of the well pad for temperature and specific conductivity, water chemistry parameters and benthic macroinvertebrates. At least one upstream and one downstream sampling site is required. Sampling frequency, sample parameters, analytical methods and required detection limits for both the groundwater and surface water monitoring will be specified by the Executive Director.

Again, this provision continues the vagueness cited above, giving us "nearest water body(ies)," instead of "X" number of water bodies, for example. The second sentence of this provision, seems to substitute "upstream" and "downstream" for "up gradient" and "down gradient." The logic of the provision strongly suggests the latter. And finally, the provision gives us only the promise that test parameters and methodology will be provided at some undisclosed future date.

7.5(h)(2)(i)(A)(3) All monitoring data must also be submitted to the Commission in an Electronic Data Deliverable by the Executive Director. It is recommended that applicants discuss the pre-alteration well monitoring and surface water monitoring study with Commission staff prior to implementation and prior to submittal.

The electronic format has to be specified or the requirement is unenforceable. The vagueness found in so many places in the proposed regulations bolsters the argument that the DRBC is thoroughly unprepared to administer the regulations it would impose.

7.5(h)(2)(i)(A)(4) All sampling must be performed by a qualified professional experienced and trained in the collection of environmental samples for physical, chemical and biological analysis. Sample analysis must be conducted by a state certified laboratory for those parameters covered by a basin state program. Project sponsors may propose an alternative analytical method to those specified by the Executive Director, but must demonstrate that the alternative methods will meet the required detection limits and will provide comparable precision and accuracy.

This provision specifies that a sample analysis must be conducted for those parameters covered by "a basin state program," but just what that might be is not explained anywhere in the proposed regulations.

7.5(h)(2)(i)(B) Post Construction Report. After construction of any well on a well pad, the wells included in the pre-alteration well monitoring study described above, except for those wells identified in the study as proposed for no future monitoring and not required by the Commission to be monitored, must at a minimum be monitored for the same parameters monitored in the pre-alteration monitoring study on an annual basis until all natural gas wells installed at the well pad site are plugged and sealed according to the standards of the state in which the well is located. Surface water monitoring must also continue at the same locations and for the same parameters monitored in the pre-alteration monitoring study on an annual basis or until a reduced frequency is authorized by the Executive Director.

7.5(h)(2)(i)(B)(1) The annual report(s) must be submitted to the Commission by March 1 of each calendar year and include all data collected through at least December 31 of the previous calendar year.

7.5(h)(2)(i)(B)(2) All monitoring data collected through December 31 of the previous calendar year must also be submitted to the Commission in an Electronic Data Deliverable format specified by the Executive Director. A summary of the sampling results must be provided to the sampled well's owner within thirty (30) days of the submission of the report to the Commission or, if the sampling results reveal analytes exceeding drinking water primary or secondary maximum contaminant levels, immediately after receipt of the results. A higher frequency of adjacent well monitoring and/or monitoring for an expanded list of parameters may be required by the Executive Director, based on actual or potential contamination of a particular well.

If this monitoring program continues for the productive life of the well, this could be for a duration of up to 60 years. Unless the well has been altered, annual testing for 60 years would seem to be excessive. Section 7.5(i)(B) does allow the executive director to modify the annual-reporting requirement, and putting a little certainty into the equation would be advantageous, to wit: "If after X number of years no problems have been reported or detected, the executive director shall modify the annual reporting requirement to allow testing every X number of years or to discontinue it entirely."

As mentioned in comment on Section 7.5(i)(A)(1), if the project sponsor is required to drill water wells for monitoring purposes this would not be possible should the landowners within 1,000 feet reject a request to allow such a well on their land. The project sponsor would need an easement from the property owner, and the presence of easements can seriously impact the salability and value of the land. Moreover, most gas leases have no language requiring landowners to allow such wells.

The potential risk to groundwater has been hugely exaggerated. As noted in the MIT Energy Initiative, "The Future of Natural Gas: An Interdisciplinary MIT Study," 2010, contamination risks are low because of the substantial vertical separation between the shale formation and freshwater aquifers. MIT noted that the depth to the Marcellus shale measures between 4,000 and 8,500 feet, while the depth to aquifers averages 850 feet. The MIT study opined that "good oil-field practice and existing legislation should be sufficient to manage [the] risk" and, since the study was carried out, Pennsylvania has acted to substantially strengthen its well casing and cementing standards.

7.5(h)(2)(ii) Hydraulic Fracturing.

7.5(h)(2)(ii)(B) Project sponsors must provide notice to the Commission at least 48 hours in advance of the initiation of well stimulation.

To avoid unnecessary confusion, the DRBC should simply specify that its filing requirement is the same as that of the host state.

7.5(h)(2)(ii)(D) Project sponsors must maintain a record of the volumes/amounts of all chemicals/additives used for each hydraulic fracturing event. A list of the individual chemicals/additives with Chemical Abstract Services (CAS) registry number and Material Safety Data Sheets (MSDS) as well as amounts used for hydraulic fracturing must to [sic] be submitted to the Commission in the "DRBC Post Hydraulic Fracturing Report".

An ongoing concern of the natural-gas industry has been that regulations regarding the fluids used in hydraulic fracturing would force the disclosure of carefully guarded proprietary chemical formulas. Section 7.5(i)(D) would require that a list of the individual chemicals/additives with Chemical Abstract Services (CAS) registry number and Material Safety Data Sheets (MSDS) as well as amounts used for hydraulic fracturing must to [sic] be submitted to the Commission in the "DRBC Post Hydraulic Fracturing Report" and makes this requirement with no explicit provision protecting from public disclosure those proprietary chemical formulas. Nor is it clear whether such information might be protected under the DRBC's general public disclosure exemption for trade secrets. It is given that the general exemption can be unilaterally waived at the discretion of the DRBC's executive director when determined that "disclosure is in the public interest." (See Del. River Basin Comm. Admin. Manual R. Prac. & Proc., § 2.8.15(A)).

7.5(h)(2)(ii)(G) Project sponsors must store flowback and production waters in accordance with Section 7.5(h)(2)(iv) below in water tight tanks for temporary storage on the well pad site or transport it to a treatment and discharge facility that has received applicable approvals from the host state and by the DRBC if located within the Delaware River Basin. Subject to approval, recovered flowback and production water may be reused at subsequent wells on the same well pad, removed from the well pad site for use at another well pad, recycled and/or disposed at a wastewater treatment facility that has received applicable approvals from the host state, or transferred to a centralized wastewater storage facility having applicable approvals from the host state. All recovered flowback must be reused or disposed of within 45 days of the date of well stimulation unless an extension is approved in writing by the Executive Director or the project sponsor provides the Executive Director with documentation of host state approval.

The recycling and reuse of recovered flowback and produced water should not be made "subject to approval." Who would do the approving isn't specified, and the requirement would complicate and delay to no purpose a procedure that should be kept as straightforward and simple as possible from a regulatory standpoint.

7.5(h)(2)(iii) Drilling Fluids and Drill Cuttings from Horizontal Wellbores in the target formation.

There's no need to differentiate between horizontal and vertical wellbores since cuttings are all the same.)

7.5(h)(2)(iii)(B) The project sponsor must notify the Commission within 48 hours of the completion of drilling.

To avoid confusion, this provision should simply match the reporting requirement of the host state.

7.5(h)(2)(iv) Wastewater Storage.

7.5(h)(2)(iv)(B) Recovered flowback and production water may, subject to approval, be reused at subsequent wells on the same well pad, removed from the well pad for use at another well pad, recycled and/or disposed at treatment facilities that have received applicable approvals by the host state and DRBC (where applicable) or transferred to a centralized storage facility having the applicable approvals from the host state.

This provision is essentially identical to Section 7.5(h)(2)(ii)(G) and should be deleted.

7.5(h)(2)(iv)(B)(1) All recovered production water must be temporarily stored on- site in water-

tight tanks as necessary to safely contain the production water.

It would be good idea for the DRBC to provide an incentive, such as ABR, for the use of closed loop water systems.

7.5(h)(2)(v) Wastewater Treatment and Disposal Plan.

7.5(h)(2)(v)(F) Disposal at a UIC Program. well within the Basin is allowed only if the docket holder of the UIC disposal well first obtains...

No definition or explanation of "UIC Program" is provided in the proposed regulations.

Section 7.6 Wastewater Generated by Natural Gas Development

7.6(b) Treatability Study. If the proposed wastewater treatment and disposal facility is located in the Delaware River Basin...

If the waste-disposal facility has already been approved by the DRBC, the "treatability study" required by the provision would seem entirely superfluous. The provision is unnecessary and should be deleted.

7.6(c) Ensuring non-exceedance of primary and secondary safe drinking water standards. Consistent with the intent of Section 3.10.3.B.2. of the Commission's Water Quality Regulations (WQRs), all project sponsors, except for those that discharge to Zones 4, 5 & 6 of the Estuary, are required to conduct an analysis that demonstrates their proposed discharge will not result in basin waters being rejected for public water supply. Accordingly, the project sponsor must conduct an analysis that demonstrates the discharge of non-domestic natural gas wastewater does not result in an exceedance of the EPA's Primary & Secondary Standards for the following parameters: Total Dissolved Solids, Chloride, Strontium, Barium, Sulfate, Iron, Nitrite, Fluoride, Manganese, Zinc, Nitrate as N, Aluminum, Copper, Lead, Cyanide-Total, Chromium, Arsenic, Thallium, Selenium, Antimony, Silver, Cadmium, Beryllium, Mercury, gross-alpha, gross beta, pH, radium-226 + radium-228 and uranium. Additional parameters to be included in this analysis may be specified by the Executive Director.

Because Pennsylvania DEP standards are more stringent, this provision can be omitted.

7.6(d) Effluent limitations and stream quality objectives for discharges to Zones 2-6. All project sponsors that discharge to Zones 2-6 of the Delaware Estuary are required to submit an analysis that demonstrates their proposed discharge is in compliance with the applicable basin-wide effluent limitations found in Section 3.10.4, the basin-wide stream quality

objectives found in Section 3.10.3.B. and the zone specific stream quality objectives found in Section 3.30 of the WQRs, including the applicable portions of Tables 3, 4, 5, 6 & 7.

7.6(e) Basin-wide effluent limitations and stream quality objectives. All project sponsors, except for those that discharge to Zones 2-6, are required to submit an analysis that demonstrates their proposed discharge is in compliance with the applicable basin-wide effluent limitations found in Section 3.10.4, the basin-wide stream quality objectives found in Section 3.10.3.B of the WQRs, and the following stream quality objective:

These two provision make no particular reference to natural-gas wastewater and presumably would be better placed in a set of regulations for disposal facilities.

7.6(e)(1)(ii)(C) Mixing areas will not be established where effluent flows over exposed benthic habitat prior to mixing with the receiving waters.

It might be a good idea to define either "benthic" or "benthic habitat." Neither would qualify as a commonly understood term. Also this provision makes no particular reference to natural-gas wastewater and presumably would be better placed in a set of regulations for disposal facilities.

7.6(f) Basin-wide Total Dissolved Solids (TDS) Stream Quality Objective. All project sponsors, except for those discharging to Zones 5 & 6 of the Estuary are required to submit an analysis that demonstrates their proposed discharge is in compliance with the TDS stream quality objective.

7.6(f)(1) The concentration of TDS must not exceed 133% of background (Section 3.10.3.B.1.b. of the WQRs), and in no cases may it exceed 500 mg/l (Section 3.10.3.B.2. of the WQRs). This requirement is applied Basin-wide, except for Zones 5 & 6 of the Estuary.

7.6(f)(2) Background TDS must be established by using the observed concentration of TDS during low flow conditions (Q7-10) or, in the absence thereof, an estimate acceptable to the Commission (Section 3.10.6.G. of the WQRs). The Commission has established background conditions for TDS in several locations throughout the Basin. The project sponsor must confirm with Commission staff the appropriate background TDS concentration prior to submittal of a project application.

Once again, these provisions make no particular reference to natural-gas wastewater and presumably would be better placed in a set of regulations for disposal facilities.