NATURAL GAS DEVELOPMENT REGULATIONS
November 8, 2011
Article 7 of Part III- Basin Regulations

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NATURAL GAS DEVELOPMENT REGULATIONS

ARTICLE 7

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

(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.

(b) Authority. This Article implements Sections 3.3, 3.6(b), 3.8, 4.1, 5.2, 7.1, 13.1 and 14.2(a) of the Delaware River Basin Compact and supplements the Commission's Comprehensive Plan with respect to natural gas extraction projects within the Basin.

(c) Scope. This Article applies to all natural gas development projects as defined in Section 7.2 including the construction or use of production, exploratory or other natural gas wells in the Basin regardless of the target geologic formation, and to water withdrawals, well pad and related activities, and wastewater management activities comprising part of, associated with or serving such projects.

(d) Comprehensive Plan and Project Review. The Commission has determined that the provisions of this Article are required for the immediate and long range use of the water resources of the Basin and are therefore incorporated into the Commission's Comprehensive Plan. The Commission has also determined that all natural gas development projects may have a substantial effect on the water resources of the Basin. Consequently, in accordance with Section 3.8 of the Compact, no natural gas development project may be undertaken in the basin except in accordance with this Article 7. Any approvals of natural gas development projects granted by the Commission or the Executive Director in accordance with Section 3.8 of the Compact or otherwise will contain such conditions as are appropriate to ensure that the project does not conflict with the provisions of this Section.

(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.*** The Plan consists of certain public and private facilities and projects, statements of policies, and programs that the Commission has determined are necessary to govern the proper development and use of

the water resources of the Delaware River Basin. Recognizing that the goals of the Comprehensive Plan could not be achieved without implementation authority, the signatory parties adopted Compact provisions to enable the Commission to integrate and achieve the Compact's multiple objectives. These provisions include, among others, the Commission's project review authority (*Compact*, Section 3.8), the Commission's authority to control future pollution that may injuriously affect the waters of the basin (Article 5 of the Compact) and the Commission's authority to promote sound principles of watershed management (Article 7 of the Compact*).*

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. The Commission concludes that these goals and the other goals of the Comprehensive Plan should be realized by a regulatory regime that:

(1) Builds on the rich history of planning in this region, including:

(i) Designation of 153 of 197 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;

(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;

(iii) Establishment of Management Plan Goals, the first of which is protection of the high water quality of the Upper Basin;

(iv) Development of a basinwide Water Resources Plan; and

(v) Designation of Special Protection Waters.

(2) Promotes the principles of sound watershed management contemplated in Section 7.1 of the Compact and the guiding principles enumerated in the *Water Resources Plan for the Delaware River Basin* (adopted in September 2004 by the governors of the four Basin states and the Environmental Protection Agency, National Park Service, U.S. Fish and Wildlife Service, US Army Corps of Engineers, US Geological Survey and Natural Resources Conservation Service). Prominent among these principles is the recognition that integrated water management is crucial for sound results and that water resource management decisions should:

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

(ii) Recognize hydrological, ecological, social and institutional systems;

(iii) Recognize the importance of watershed and aquifer boundaries; and

(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.

(3) Improves land management where essential for maintaining and/or improving the condition of water resources, through adherence to the following principles:

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

(ii) Effective integrated water management requires coordinated planning and action by all levels of government including federal, regional, state and local levels; and

(iii) Planning efforts can provide the foundation for improving land and water resources management.

(4) Manifests regulations through a strategic regulatory framework that addresses water withdrawals, high value landscapes in Special Protection Waters, wastewater management, surface and groundwater monitoring, and water use. The framework implements standards for individual well pad siting, well construction and operations, primarily by relying on host state review and requirements as specified in Section 7.1(i). The framework includes:

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

(ii) Requirements that 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 transfer, treatment and/or discharge, in order to better protect the quality and quantity of surface and groundwater resources;

(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 high value landscapes and Special Protection Waters;

(iv) Water quality monitoring (1) in connection with individual well pad development projects to assess changes in nearby stream quality and groundwater quality and (2) on a sub-watershed basis to assess whether no measureable change to existing water quality is being attained for those waters designated as Special Protection Waters;

(v) Wastewater docket provisions that protect receiving waters within the Delaware River Basin; and

(vi) Commission approval processes in the form of (1) dockets and protected area permits issued to water withdrawers; and (2) Bulk Water Use and Management Approvals, Approved Lists of Water Sources and Natural Gas Development Plan approvals issued to natural gas development project sponsors.

(f) Relationship to Other Commission Requirements. The provisions of this Article are in addition to all applicable requirements in other Commission regulations, dockets and permits. This Article supplements the Groundwater – Basinwide regulations set forth in Section 3.40 of the Commission's Administrative Manual – Part III Water Quality Regulations (WQR), 18 C.F.R. Section 410, that protect groundwater uses and quality and Section 2.20 of the Commission's Water Code that addresses groundwater apportionment, storage, recharge and withdrawal.

This Article also helps implement the Commission's Special Protection Waters (SPW) anti-degradation program where natural gas development projects are located within or affect waters designated by the Commission as Special Protection Waters or their drainage areas. The SPW regulations require among other things that a project cause no measurable change to existing water quality from point or nonpoint sources at control points identified in the SPW regulations and that the project implement non-point source controls (WQR §3.10.3A.2.b. and e.). An applicant for approval of a natural gas development project located in the drainage area of Special Protection Waters must comply with all SPW regulations in addition to this Article.

This Article may also assist in implementing, as applicable, the effluent limitations and stream quality objectives in Articles 3 and 4 of the WQR; the conservation standards in Article 2 of the Commission's Water Code, the flood plain requirements in Article 6 of the Administrative Manual – Part III Flood Plain Regulations and the water withdrawal requirements and limitations in the Ground Water Protected Area Regulations.

Upon the effective date of this Article, the Executive Director Determinations dated May 19, 2009, June 14, 2010 and July 23, 2010, to the extent not already superseded by the Commission's Resolution dated December 8, 2010, are superseded by the applicable provisions of this Article. These regulations are applicable to all "natural gas development

projects" within the Delaware River Basin as that term is defined in Section 7.2 of this article, including but not limited to those projects for which the host state has issued permits before the effective date of these regulations and those completed in accordance with the Executive Director Determinations cited above.

(g) **Severability**. The provisions of this Article are severable. If any provision of this Article or its application to any person or circumstances is held invalid, the invalidity will not affect other provisions or applications of this article, which can be given effect without the invalid provision or application.

(h) **Delegation of Authority**. Pursuant to these regulations, the Commission delegates certain authority regarding the review of natural gas development projects to the Executive Director.

(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, individual natural gas well pad siting, and natural gas well construction and operation to protect human health and the environment, including water resources.

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 the construction and operation of individual natural gas wells and well pads.

Subject to the provisions of this Section 7.1, a project sponsor's compliance with state laws and permit requirements relating to the construction and operation of natural gas wells and well pads shall constitute satisfaction of the project sponsor's obligations under section 3.8 of the Compact that relate to regulation of natural gas well construction and operation, except as specified in Sections 7.4, 7.5 and 7.6. 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.*, The Oil and Gas Conservation Law, 58 P.S. §§401 *et seq.*, and 25 Pa. Code Chapter 78, satisfies the Commission's requirements with respect to natural gas well construction and operation. The Commission

may through notice and comment rulemaking expand the areas for which compliance with state laws and permit requirements will satisfy a project sponsor's obligations under the Compact.

Article 7 contains provisions relating to applications for water withdrawal and water usage reviews, natural gas development plan approvals, financial assurance and waste/wastewater management requirements that, when supplemented with the state programs referred to above, are necessary to prevent substantial effects on the water resources of the basin. Article 7 provisions relating to natural gas development plans are included to facilitate evaluation of actual development and planning for foreseeable development as a means to further prevent potential adverse effects on the water resources of the basin. Nothing in this Article 7 shall be construed to reduce the authority of the Commission to take actions or impose requirements that the Commission may determine to be necessary to prevent adverse impacts to water resources.

Notwithstanding the other provisions of this subsection (i), in accordance with and pursuant to section 1.5 of the Compact, the Commission and the basin states may enter into 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 where 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.

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.

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

Access road - a road constructed to provide access to and among natural gas development projects.

API identification - a number referencing system designed by the American Petroleum Institute to identify wells; each state and county has a specific number code.

Approval by Delegated Authority (ADA) - written approval by the Executive Director for specific natural gas development activities as provided in this Article 7.

Approved list of water sources - a current listing of Commission approved water sources that can be utilized by a natural gas development project sponsor through one or more bulk water use approvals.

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 wells, mines, mine shafts, or tunnels.

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

Brine - a solution containing appreciable amounts of sodium chloride (NaCl) and/or other salts.

Bulk Water Use and Management Approval - written approval issued by the Executive Director or the Commission to utilize Commission approved sources of water as defined in Section 7.3(b) herein for natural gas development projects.

Casing - steel pipe placed in a well.

Centralized wastewater storage facility - an impoundment (see "Impoundment") or tankage that serves or is served by more than one well pad for the temporary storage of flowback or production water or both or a combination of water and flowback/production water. (Also, "wastewater impoundment".)

Chemical Abstract Services (CAS) Registry Number - Chemicals Abstract Service number, assigned by Chemical Abstracts Service, which is part of the American Chemical Society. The CAS registry is the most authoritative collection of disclosed chemical substance information, containing more than 48 million organic and inorganic substances and 61 million sequences.

Commission - the Delaware River Basin Commission (DRBC).

Commission approval - written approval in the form of a docket, protected area permit or approval by delegated authority.

Consumptive water use - the water lost to the atmosphere from cooling devices, evaporated from water surfaces, or exported from the Delaware River Basin, or any other water use for which the water withdrawn is not returned to the waters of the basin undiminished in quantity.

Community water supply well - see public water supply well.

Compressor stations - facilities which increase the pressure on natural gas to move it in pipelines or into storage.

Contiguous - having a common side, property line or boundary in part or entirety.

Core forest area - the sheltered forest environment at least 300 feet from forest edges, altered land, or any human-created opening such as a road or right-of-way. Forest core has the same meaning as core forest.

Critical habitat – specific geographic areas that are determined by 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.

Customary procedure for review of projects - a procedure involving application by the project sponsor, technical review by Commission staff, publication of a draft docket, and a public hearing followed by Commission action at a public meeting.

Discharge Length Scale - the square root of the cross-sectional area of any discharge outlet.

Diversion - the conveyance or transfer of water.

Docket - a legal document granting approval by the Commission for a project that may have a substantial effect on the water resources of the Basin.

Domestic wastewater - liquid waste that contains pollutants produced by a domestic residence or residences or by a non-residential facility that generates wastewater with the same characteristics as residential wastewater. "Domestic wastewater" includes liquid waste discharged after treatment by domestic wastewater treatment facilities or residences or collected in portable self-contained toilets.

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

Drill cuttings - rock cuttings and related mineral residues generated during the drilling of an oil, gas or exploratory well.

Drilling fluid - mud, water, brine, air, gas, or other fluids pumped down the drill string that acts as a lubricant for the bit and is used to carry rock cuttings back up the wellbore.

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

Ecosystem services – the public benefits that result from the natural function of ecological systems, including but not limited to: purification of water, generation of soil and vegetation, and groundwater recharge. The products and processes of ecosystem services are complex and may occur over long periods of time.

Entire basin leasehold - all leaseholds in the Basin in which a project sponsor or one or more of its direct or indirect parent, subsidiary or affiliated persons have contractual or other rights to natural gas or to participate in the ownership or operation of natural gas development projects. To the extent that project sponsors obtain rights to conduct natural gas development activities, including but not limited to the extraction of natural gas, through property interests other than or in addition to a leasehold, for purposes of these Natural Gas Development Regulations those rights shall be administered in the same manner and subject to the same restrictions and other requirements as leaseholds.

Erosion and sediment control plan - a site-specific plan identifying stormwater BMPs to minimize accelerated erosion from earth disturbance activity and reduce sedimentation in waterbodies.

Executive Director - the Executive Director of the Delaware River Basin Commission.

Exploratory (stratigraphic) well - a well drilled outside a proven area or horizon to determine the geologic strata or the viability of natural gas production. Also referred to as a test well, such wells may or may not be converted to production wells.

Flood fringe – the portion of the flood hazard area outside of the floodway as defined in the Commission's Administrative Manual – Part III Basin Regulations - Flood Plain Regulations.

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.

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.

Floodway – the channel of the watercourse and those portions of the adjoining flood plains which are reasonably required to carry and discharge the regulatory flood as defined in the Commission's Administrative Manual – Part III Basin Regulations - Flood Plain Regulations.

Flowback water - the return flow of water and formation fluids recovered from the wellbore within 45 days following the release of pressures induced as part of hydraulic fracturing of a natural gas well, or until the well is placed into production, whichever occurs first.

Forest core - see Core forest area.

Forested - dominated by trees with an average height generally greater than 15 feet.

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

Groundwater - includes all water beneath the surface of the ground.

Headwater streams - typically considered to be first- and second-order streams, meaning streams that have no upstream tributaries (i.e., "branches") and those that have only first-order tributaries, respectively.

Headwaters - See "headwater streams".

High Value Water Resource Landscapes (HVWRLs) – portions of the landscape designated by the Commission by means of an NGDP docket approval to be integral to the maintenance of the quality and availability of water resources by virtue of their containing one or more of the following elements: wetlands, erodible soils, steep slopes, floodplains, groundwater recharge areas, headwater streams and their watersheds, riparian corridors and forested landscapes, especially core forested areas.

Hydraulic fracturing - a well stimulation technique which consists of pumping water, chemicals and a propping agent, such as sand, or other fluids and materials down the wellbore under high pressure to create and maintain induced fractures in the hydrocarbon-bearing rock of the target geologic formation.

Hydraulic fracturing fluid(s) - a mixture of water, chemicals and propping agents or other fluids and materials used in the hydraulic fracturing process.

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, structurally sound and lined in accordance with host state requirements (whether or not the impoundment is regulated by the host state). Within this Article 7, an impoundment used to store wastewater (whether treated or untreated), or both freshwater and wastewater (whether treated or untreated), may be referred to as a "wastewater impoundment" and must take the form of a Centralized Wastewater Storage Facility as defined above. An impoundment used to store freshwater is called a "freshwater impoundment."

Invasive species - a species of plant, animal or other organism that is (1) non-native (or alien) to the ecosystem under consideration and (2) whose introduction causes or is likely to cause economic, human health or environmental damage to that ecosystem..

Leasehold - parcels of land or mineral estates in which a project sponsor or its direct or indirect parent, subsidiary or affiliated entities has individual ownership, or common ownership, control or interest with other parties. To the extent that project sponsors obtain rights to conduct natural gas development activities, including but not limited to the extraction of natural gas, through property interests other than or in addition to a leasehold for purposes of these Natural Gas Development Regulations those rights shall be administered in the same manner and subject to the same restrictions as leaseholds.

Linear infrastructure – pipelines for collecting or transmitting natural gas, pipelines designed to carry water used to serve natural gas development activities, roads serving natural gas development activities, and power lines serving natural gas development activities.

Local water depth - the natural water depth at the outlet of an outfall structure that existed prior to the installation of the discharge outlet under the design conditions for establishing mixing zones for the protection of aquatic life from acute effects.

Material Safety Data Sheets (MSDS) - A MSDS contains details of the hazards associated with a chemical, and gives information on its safe use (see 29 CFR 1910.1200(g)).

Mine drainage water (MDW) - all water from mines (whether by gravity flow or active pumping) or mined materials. MDW can emanate from abandoned, inactive, active or orphaned mines. In addition, MDW can be in the form of surface seepage associated with certain stockpiled (mined materials) or stockpiled mined waste products.

Mitigation – an action undertaken to eliminate or make up for an impairment or loss of a natural resource or ecosystem services. Actions may include avoidance, minimization, repair, replacement and/or compensation.

National Park Service Wild and Scenic River corridor – as defined in management plans for the federally designated Wild and Scenic or Scenic & Recreational segments of Delaware River Basin waters, including, but not limited to the Upper Delaware Scenic and Recreational River, the Delaware Water Gap National Recreation Area, the Lower Delaware Wild and Scenic River, portions of the Maurice and Musconetcong Rivers (NJ) and White Clay Creek (DE) and their similarly designated tributaries.

Natural diversity inventory assessment (NDIA) - an assessment of the occurrence of state and federally listed threatened and endangered species on a site. 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.

Natural gas development activities - all activities undertaken for the development, exploration, production and transportation of natural gas, including but not limited to (1) the construction and operation of wells and well pads, including air rotary and mud rotary natural gas exploratory or production well drilling and other aspects of natural gas exploratory and production well construction and testing, hydraulic fracturing well stimulation and hydraulic fracturing chemical storage; (2) the installation, operation and maintenance of gas collection and transmission infrastructure (e.g., gathering and transmission pipelines and compressor stations); (3) associated access road construction, staging, support vehicle tire cleaning, and withdrawal and storage of fresh water; (4) the final plugging and abandonment of natural gas wells and restoration of the well pad site; (5) any mitigation or remediation required by the Commission or the host state or federal government; and (6) the storage, reuse, transfer, transport and discharge of all domestic and non-domestic wastewaters, including flowback and production water.

Natural gas development project - one natural gas development activity, or several inter-related natural gas development activities, for which an applicant is required to seek an approval from the Commission in accordance with the provisions of this Article 7.

Natural gas development plan (NGDP) - a project sponsor's overall plan for siting and accessing natural gas development projects in its leasehold(s) or property.

Natural gas gathering pipeline - a pipeline or series of pipelines used for the collection and movement of raw gas from the wellhead to an acceptance point of a natural gas transmission pipeline.

Natural gas transmission pipeline - a pipeline, or series of pipelines, other than a gathering pipeline, used for the collection and movement of gas from a gathering line, compressor station or processing plant from a region where it is produced to a region where it is to be distributed.

Non-domestic wastewater - liquid wastes, including treated or untreated wastewater, from sources other than domestic sanitary and gray water, including brines, production water, any other water containing brines (including flowback), drilling muds, hydraulic fracturing fluids, well servicing fluids, oil, drilling fluids, and cement mixer or cement truck washout water.

Non-linear infrastructure – facilities appurtenant to natural gas development, exploration and production activities, such as natural gas wells, well pads and compressor stations, that are not included in the definition of "Linear infrastructure."

Non-point source pollution control plan (NPSPCP) - a written plan describing the proposed erosion and sedimentation controls and pre- and post-construction stormwater management. An approved NPSPCP is required for all projects in the drainage area of the DRBC Special Protection Waters regardless of the amount of area disturbed.

Pass-by flow requirement - a prescribed quantity of flow that must be allowed to pass a surface water intake when withdrawal is occurring. Pass-by requirements also specify low flow conditions during which no water can be withdrawn.

Person - any natural person, corporation, partnership, association, trust, agency, authority or other entity, public or private.

Pipeline - a temporary or permanent conduit used to convey liquids and/or gasses from one site to another. Pipelines may include, but are not limited to natural gas gathering and transmission lines, and fresh water transmission lines, lines that convey flowback or production water from a well, well pad, impoundment or centralized wastewater storage facility to another well, well pad, impoundment or centralized wastewater storage facility.

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 as well as any substance defined as a pollutant, contaminant or hazardous substance by any federal or state statute or regulation.

Potable water - water suitable for human consumption.

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.

Practicable - an activity available and capable of being done after taking into consideration cost, existing technology and logistics in light of overall project purposes.

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

Project sponsor - any person proposing a project for Commission approval. This term encompasses the direct or indirect parent, subsidiary or affiliated persons and other persons who have individual or common ownership, control or interest in the project. To the extent that a project sponsor obtains rights to conduct natural gas development activities, including but not limited to the extraction of natural gas, through property interests other than or in addition to a leasehold, for purposes of these Natural Gas Development Regulations those rights shall be administered in the same manner and subject to the same restrictions and other requirements as leaseholds.

Protected area permit - a permit approved by the Executive Director in accordance with the Delaware River Basin Commission's Southeast Pennsylvania Ground Water Protected Area Regulations.

Private water supply well - See Domestic Well

Propping agent - a granular substance (sand grains, aluminum pellets, or other material) that is carried in suspension by the hydraulic fracturing fluid, and that serves to keep the induced fractures open when hydraulic fracturing fluid is withdrawn after a hydraulic fracturing treatment.

Public water supply - a source of drinking water for a public water system.

Public water supply well - a well that serves a public water system.

Public water system - a system for the provision to the public of water for human consumption through pipes or other constructed conveyances, if the system has at least 15 service connections or regularly serves at least 25 individuals; this may include community, transient non-community or non-transient non-community water systems as defined in 42 U. S. Code, section 300f(4)(A), (B) and (C).

Q_{7-10} a statistical estimate of the lowest average flow during a consecutive 7-day period with an average recurrence interval of 10 years.

Quarterly reporting - quarterly water use reports are due 30 days after the close of each calendar-year quarter as follows: 1st Quarter due by April 30; 2nd Quarter due by July 30; 3rd Quarter due by October 30; and 4th Quarter due by January 30.

Regional resource management corridors - linear portions of the landscape identified by a federal or state agency or the Commission for a specific resource management purpose, such as but not limited to, the protection of water quality, public access to scenic resources, wildlife habitat and wildlife migration. This term includes but is not limited to any Wild & Scenic River corridor as delineated in a River Management Plan developed by the National Park Service with regional, state, and local partners.

Release - any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment (including the abandonment or discarding of barrels, containers, and other closed receptacles containing any hazardous substance or pollutant or contaminant).

Remediate - to clean up, mitigate, correct, abate, minimize, eliminate, control or prevent a release of a regulated substance into the environment to protect the present or future public health, safety, welfare or the environment, including preliminary actions to study or assess the release.

Remediation - See "Remediate".

Restoration - recovery of a damaged ecosystem to its former function or state; the process of re-establishing the character and environmental function(s) of a landscape that has been changed, altered or impaired by natural gas development activity.

Riparian corridor – the area of land adjacent to a river, stream, lake or other natural body of water that provides a transition between aquatic and upland terrestrial environments and directly affects or is affected by the adjacent waterbody.

Rules of Practice and Procedure (**RPP) -** DRBC Administrative Manual - Rules of Practice and Procedure.

Seep - an area, generally small, where water percolates slowly to the land surface; *also see* "Spring".

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

Siting - the process of identifying and selecting the place(s) where natural gas development projects are to be located.

Special Protection Waters (SPW) - waters of the mainstem Delaware River located between Hancock, NY and Trenton, NJ and select tributary reaches classified by the Commission as Outstanding Basin Waters or Significant Resource Waters. *(See also: DRBC Water Quality Regulations 3.10.3 A.2.).*

Spring - a discrete place where groundwater flows naturally from a rock or the soil onto the land surface or into a body of surface water. See also "Seep".

Steep slopes - slopes greater than 15%, and land with a high potential for erosion as classified on the Soil Survey Geographic (SSURGO) Database by the National Resource Conservation Service, U.S. Department of Agriculture.

Stimulation - act of increasing production of natural gas by artificial means such as hydraulic fracturing.

Stormwater - water that originates from precipitation that washes over the land surface or any structures or improvements located on the land surface.

Structure - any assembly of material above or below the surface of land or water, including but not limited to, buildings, dams, fills, levees, bulkheads, dikes, impoundments, jetties, embankments, causeways, culverts, roads, railroads and bridges.

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.

Tophole water - water that is brought to the surface while drilling through the strata containing fresh groundwater and water that is fresh groundwater or water that is from a body of surface water. Tophole water may contain drill cuttings typical of the formation being penetrated but may not be polluted or contaminated by additives, brine, oil or man induced conditions.

Transfer facility – a facility that accepts wastewater for transfer to wastewater treatment, wastewater discharge or waste disposal facilities.

Underground injection control (UIC) facility – a facility as defined in the Safe Drinking Water Act and Title 40 of the Code of Federal Regulations Parts 144-148.

Wastewater - liquids to which pollutant(s) have been introduced and are proposed to be discharged to the ground, groundwater, or surface water, transported to storage or

wastewater treatment facilities, beneficially reused or discharged to the ground, groundwater or surface water after treatment. Wastewater includes both domestic and non-domestic wastewater.

Wastewater records - a record of all wastewater produced, stored, or reused at a project site on a daily basis, and the amounts and destination of all wastewaters transported offsite by individual trucks and/or pipelines.

Wastewater treatment facility - any facility storing, intercepting, transporting, treating, or discharging wastewater.

Waterbody – (1) a natural landscape feature containing or conveying water on a permanent, seasonal or intermittent basis, including but not limited to springs and seeps, wetlands, vernal pools, ponds, lakes, streams and rivers; or (2) a constructed depression or channel for storing or conveying water that is hydrologically connected to a natural waterbody or to potable ground water, including canals and aqueducts.

Water Code - DRBC Water Code – 18 CFR Part 410

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

Water user - any person who uses, takes, withdraws or diverts waters of the Delaware River Basin.

Water resource(s) - water and related natural resources in, on, under, or above the ground, including related uses of land, which are subject to beneficial use, ownership or control within the hydrologic boundary of the Delaware River Basin.

Watershed - the area drained by, or contributing water to a wetland, stream, lake, river, or other waterbody.

Wellbore - a borehole; the hole drilled by the bit. A wellbore may have casing in it or it may be open (uncased); or part of it may be cased, and part of it may be open. Also called a borehole or hole.

Well pad - a site constructed, prepared, leveled, or cleared in order to perform the activities and stage the equipment necessary to drill and operate a natural gas exploratory or production well.

Wetlands - those areas which are inundated or saturated by surface or groundwater with 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; also, those areas delineated as wetlands by a signatory party.

Working day - a day upon which the offices of the Delaware River Basin Commission are open for business.

Section 7.3 Administration

(a) Determinations.

(1) Substantial effect. The headwaters and groundwater of the Delaware River Basin are critically important to the supply of clean water in quantities sufficient 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 the first and fifth largest cities in the nation, New York City and Philadelphia, respectively. Maintaining and enhancing the quality and quantity of the basin's water resources and promoting their sustainable use are essential to the long-term quality of life, health of ecosystems and economic development of the region.

Due to advances in natural gas extraction technologies, many natural gas development projects may be proposed for the Delaware River Basin. Each will involve land disturbance for such appurtenances as roads, well pads, pipelines, impoundments, and compressor stations; most will entail the withdrawal or the diversion into or out of the basin of surface water, groundwater, non-contact cooling water, mine drainage water, and/or treated wastewater. These activities will take place on lands that are the most critical to protection of water resources and the most vulnerable in the Delaware River Basin – the basin headwaters – with potential changes on the land including loss of forest cover, building on erodible slopes, and encroachment on waterbodies and riparian lands. These multiple aspects of natural gas development activities may have a substantial effect, either individually or cumulatively, on the surface water and groundwater resources of the basin.

(2) Rules of Practice and Procedure (RPP) thresholds not protective. For the reasons set forth below, the existing project review thresholds established by the RPP for the review of projects in accordance with Section 3.8 of the Delaware River Basin Compact do not adequately protect the water resources of the basin from the potential impacts of natural gas development.

(i) Water withdrawals. Although the geologic potential of natural gas production has yet to be determined, natural gas development activities in the Delaware River Basin may encompass multiple gas wells on numerous well pads within the basin, many of which may be proximate to small headwater streams within 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. The Commission has

determined that the water uses associated with natural gas development are almost entirely consumptive in nature. Although some of the water used to hydraulically fracture a natural gas well will be recovered and reused to hydraulically fracture other natural gas wells in the basin, much of the water used at each well will come from other water sources identified in Sections 7.4(a) and (b) and will not be returned to the source water near the point of withdrawal. Accordingly, during the intermittent withdrawals required for natural gas development activities, flows and assimilative capacities in aquifers and surface waters in the vicinity of the sources may be commensurately reduced, with potential streamflow and assimilative capacity impacts affected by the quantity, location, timing and manner of such withdrawals. The review thresholds for water withdrawals established by the RPP, however, contemplate continuous or regular withdrawals to serve stationary domestic, commercial and industrial projects and do not clearly apply to such intermittent and impermanent withdrawals as may be made for natural gas development activities.

(ii) Wastewater treatment. Natural gas development may involve the use of significant quantities of surface water, groundwater, non-contact cooling water, mine drainage water, and/or treated wastewater and in turn, after recycling and reuse, will generate quantities of wastewater that must be safely treated and disposed of or recycled into the hydraulic fracturing of gas wells, as appropriate. Wastewater generated by natural gas development activities may differ in composition or quantity from those normally present in municipal and industrial wastewater and not contemplated by existing Commission regulations. Such constituents may adversely affect treatment processes or be passed through such processes without proper treatment. Existing thresholds established by the RPP for the review of wastewater treatment facilities in the basin are not necessarily triggered if a new or existing facility proposes to accept wastewater generated by natural gas development activities.

(iii) High value landscapes and Special Protection Waters. The Water Resources Plan for the Delaware River Basin ("Basin Plan"), signed in 2004 by the four basin state Governors and the regional administrators of five federal agencies, established specific goals for "linking land and water management." Goal 3.2 of the Basin Plan calls for maintaining and restoring the integrity and function of "High Value Water Resource Landscapes," defined by way of example as including wetlands, erodible slopes, floodplains, headwater streams and associated drainage area, forested areas – especially those associated with headwaters and water supply – and waterbodies and their associated riparian corridors, habitat and floodplains.

(iv) The Commission's Special Protection Waters regulations, adopted in 1992 for point sources and 1994 for non-point sources, established an anti-degradation regime for interstate waters of the basin deemed "to have exceptionally high scenic, recreational, ecological and/or water supply values." WQR § 3.10.3A.2.a. Following amendments to the regulations as recently as 2008 extending SPW protections to reaches of the main stem below the Delaware Water Gap, the entire 197-mile non-tidal Delaware River is subject to a management goal of ensuring "no measurable change in existing water quality except toward natural conditions." WQR § 3.10.3A.2.

(v) Existing RPP thresholds do not trigger reviews for large-scale, widely dispersed industrial activities of the type anticipated for natural gas development in the most environmentally sensitive regions of the basin. Without additional standards of planning and design to protect landscape features essential to maintaining existing high water quality in the non-tidal river, the shared vision of the Basin Plan will not be realized and the SPW management objective of "no measurable change" will not be attained.

(3) Rules of Practice and Procedure (RPP) thresholds inapplicable. For the foregoing reasons, in accordance with the provisions of this article, Commission approval is required for most sources and uses of water for natural gas development activities; for the transfer, treatment and/or discharge by facilities within the basin of wastewater generated by natural gas development activities; and for the siting of natural gas wells, well pads and associated infrastructure.

(b) Types of Approvals Required by the Commission for Natural Gas Development Projects. In accordance with Section 3.8 of the Compact, the following types of activities associated with natural gas development constitute projects requiring Commission approval, as set forth in greater detail in Sections 7.4 through 7.6 of this article:

(1) Water withdrawals and diversions.

(i) Sources within the basin. As set forth in detail in Section 7.4(a) of this Article, with limited exceptions, water sources located within the basin may not be used to serve natural gas development projects – whether inside or outside the basin – unless and until the Commission has issued an approval in the form of a docket or protected area permit, as appropriate, to the withdrawer.

(ii) Sources outside the basin (diversions into the basin).

(A) In accordance with Section 7.4(b), notwithstanding the provisions of Section 2.30 of the Commission's Water Code (requiring Commission

approval in the form of a docket for all diversions of water into or out of the basin regardless of the intended use), the sponsor of a natural gas well pad project or projects within the basin may divert specified categories of water and wastewater into the basin ("import" such water, in the language of the Commission's Water Code, Rules of Practice and Procedure and other documents) for use in the hydraulic fracturing of its natural gas wells, provided that the project sponsor has obtained a Bulk Water Use and Management Approval in the form of an Approval by Delegated Authority (ADA) or a docket issued by the Commission.

(B) Approval in the form of a docket issued by the Commission is required for any diversion into the basin by an entity that is not the natural gas well pad project sponsor, for natural gas development purposes other than hydraulic fracturing of natural gas wells, and/or involving categories of water other than those specifically identified as eligible for diversion into the basin with approval by means of a Bulk Water Use and Management Approval issued in the form of an ADA. The application fee for such docket approval will be the same as that for a water withdrawal (item (a) in Table 7.3.1).

(iii) Term and Conditions. A docket or protected area permit for a withdrawal or diversion may have a term of up to 10 years. The conditions of such an approval for a groundwater or surface water withdrawal, as set forth in detail in Section 7.4(d) of this Article, include, among others: daily, monthly, seasonal and/or other withdrawal limits, a pass-by flow requirement, and requirements for an invasive species control plan, non-point source pollution control plan, natural diversity inventory assessment, metering and recording of withdrawals, withdrawal site plan and access restrictions, withdrawal site operations plan, drought emergency plan, and requirements relating to complaints by other water users alleging interference.

Other withdrawals or diversions that require Commission approval will be subject to applicable conditions among those set forth above and to such additional conditions as the Commission deems necessary to protect the water resources of the basin consistent with the Delaware River Basin Compact and the Comprehensive Plan.

(2) Bulk Water Use and Management. As set forth in detail in Section 7.4(e), the use of water for "natural gas development projects" as defined in Section 7.2 of this Article, must be undertaken in accordance, in most instances, with a Bulk Water Use and

Management Approval issued to the project sponsor by the Executive Director in the form of an Approval by Delegated Authority (ADA).

(i) Scope of application and approval. For projects involving the construction or operation of natural gas wells, a Bulk Water Use and Management Approval is required for each well pad. For natural gas gathering or transmission pipeline projects, the Bulk Water Use and Management Approval will be issued on a project-specific basis.

(ii) Bulk Water Use and Management Approval independent of other approvals. The requirement for a Bulk Water Use and Management Approval for the use of water to serve natural gas development projects is independent of and in addition to the requirement, when applicable, for approval in the form of a docket for a Natural Gas Development Plan (NGDP), a water withdrawal from a source within the basin, most diversions of water out of the basin.

(iii) Docket required. A Bulk Water Use and Management Approval must be issued in the form of a docket rather than an ADA for any natural gas development project proposed to be located within either (A) management areas of the National Park Service (NPS), including the Upper Delaware Scenic and Recreational River (UPDE), the Delaware Water Gap National Recreation Area (DEWA), and other areas in which the NPS or other federal agencies have management interest; or (B) the watersheds draining to New York City's Delaware River Basin Reservoirs.

(iv) Approval must precede well pad construction. The Bulk Water Use and Management Approval must be in place before water from any source – whether inside or outside the basin – is used for natural gas development projects and before the project sponsor either (1) commences well pad construction, including land clearing and installation of access roads or other appurtenant facilities, or (2) after the effective date of these regulations, continues operations at a pre-existing natural gas well pad or natural gas well.

(v) Term of initial approval; renewals. A Bulk Water Use and Management Approval may have an initial term of up to 5 years, followed by renewals of up to five years until all natural gas wells included in the approval are brought into production, after which the Executive Director may grant renewals of up to 10 years. A Bulk Water Use and Management Approval issued for a well pad must be renewed prior to the end of each approval term until all wells at the well pad have been plugged and the project sponsor has provided the Executive Director with a copy of the state-approved plugging certificate or report.

(vi) Sequencing of host state and DRBC reviews. The Commission or the Executive Director, as appropriate, will consider an application for an a docket or an ADA for bulk water use and management for a well pad only after the host state has issued applicable state approvals for the pad or at least one of the wells located on the pad; provided, however, that the Commission will proceed with its review in any case where the Delaware River Basin Commissioner for the host state requests concurrent review or otherwise waives this sequencing of approvals.

(vii) Conditions. A docket or an ADA for bulk water use and management will include a bulk water allocation accompanied by a series of conditions, as set forth in Section 7.4(e)(3), that include among others: well pad siting and setback requirements; payment of water use charges, an annual compliance and monitoring fee, a surface water monitoring fee; implementation of invasive species control measures; and metering and reporting of all water delivered to the project site, used for natural gas well stimulation, recovered from natural gas wells as flowback or production water, recycled for natural gas well stimulation, and/or stored on or transported from a pad site as wastewater.

(3) Approved List of Water Sources (ALWS). As set forth in greater detail in Section 7.4(c), the Commission will maintain an Approved List of Water Sources (ALWS) for each natural gas development project sponsor that has received one or more Bulk Water Use and Management Approvals from the Executive Director for projects within the basin. The ALWS will include each water source from which the natural gas development project sponsor may obtain water for its projects located in the basin. A project sponsor may take the quantity of water allocated by its Bulk Water Use and Management Approval(s) from any source or combination of sources on its ALWS, provided that the use may not cause an exceedence of the Commission-approved allocation issued to the withdrawer or diverter or any other violation of the withdrawer or diverter's approval. A project sponsor may not use water from any source that has not been added to its ALWS.

(4) Natural Gas Development Plan (NGDP). Except as provided herein, any natural gas development project sponsor with natural gas leaseholds in the Delaware River Basin encompassing a total of over 3,200 acres or who intends to construct more than five natural gas well pads in the Delaware River Basin may undertake natural gas development projects within the basin only after obtaining approval in the form of a docket issued by the Commission for a Natural Gas Development Plan (NGDP) in accordance with Section 7.5 of this article.

(i) Five well-pad allowance. A single "project sponsor" as that term is defined in Section 7.2 of this article may develop a maximum of five natural gas well pads in the basin in the absence of a Commission-approved NGDP, after obtaining a Bulk Water Use and Management Approval for each well pad and all necessary state approvals.

(ii) Phasing. If development of a natural gas leasehold is undertaken in phases in accordance with Section 7.5, then a separate NGDP docket approval issued by the Commission is required for each phase.

(5) Transfer, treatment and/or discharge of wastewater. In accordance with Section 7.6, wastewater from natural gas development projects may be transferred, treated and/or discharged within the Delaware River Basin only in accordance with an approval in the form of a docket issued by the Commission to the owner or operator of the transfer, wastewater treatment and/or discharge facility. If, subsequent to transfer or treatment, a discharge of wastewater will occur, the owner or operator of the transfer or treatment facility must identify the discharge facility or location.

(i) Term of approval. A docket approval for treatment and/or discharge of wastewater from natural gas development projects may have a term of up to 5 years.

(ii) Sequence of host state and DRBC reviews. The Commission encourages applicants to apply to the Commission in advance of receiving state approvals in order to facilitate concurrent reviews. The Commission will not make a determination on the application for the treatment and/or discharge of wastewater from natural gas development projects until after the host state has reviewed the project and issued any applicable state approvals; provided, however, that the Commission will proceed with its review in any case where the Delaware River Basin Commissioner for the host state waives this sequencing of approvals.

(iii) Conditions. As set forth in Section 7.6, a docket approving the treatment and/or discharge of wastewater from natural gas development activities will be conditioned on, among other things: demonstration through a treatability study that the wastewater will not interfere with wastewater treatment and operations or waste management and that the resulting effluent will comply with state and DRBC discharge requirements; demonstrations that a proposed discharge (a) will not contribute to or result in exceedence of the EPA's primary and secondary drinking water standards for specified parameters, (b) will comply with DRBC basin-wide and zone-specific effluent limitations and stream quality objectives, and (c) will comply with DRBC TDS stream quality objectives.

(c) Approval Procedures. The procedures for issuance of a docket, protected area permit, approval by delegated authority and addition to a list of approved water sources are set forth below:

(1) Docket. A docket is issued following the Commission's customary procedure for the review of projects pursuant to Section 3.8 of the Delaware River Basin Compact, including, but not necessarily limited to an application, inclusion in a Notice of Applications Received (NAR), technical review, publication of a draft docket, public hearing, and Commission action at a public meeting.

(2) Protected area permit. The process for review and approval of a protected area permit for a groundwater withdrawal that is below the threshold volume for review as set forth in the Commission's Rules of Practice and Procedure, includes but is not necessarily limited to, an application, inclusion in a Notice of Applications Received (NAR), technical review, and approval by the Executive Director following consultation with the host state's alternate Commissioner appointed to represent the host state's Governor on the Commission. Where the withdrawal meets the threshold volume for review set forth in the Rules of Practice and Procedure, the procedure is the same as that for a docket, as set forth in the preceding paragraph.

(3) Approval by Delegated Authority (ADA). The procedure for issuance of an ADA for bulk water use and management for natural gas development activities in accordance with Section 7.4(e) of this article includes, but is not necessarily limited to: public notices consistent with the requirements of Section 7.3(h) below, an application, inclusion by the Commission in a Notice of Applications Received (NAR), technical review by the Commission staff, and issuance of an ADA by the Executive Director. An ADA for an activity other than bulk water use and management will be subject to a similar process.

(4) Addition to list of approved water sources. The Executive Director may approve the addition of a water source to a project sponsor's ALWS upon the written request of the project sponsor, submitted in such format as may be prescribed by the Executive Director, and following verification by the Commission staff that the source has received all necessary Commission and, where applicable, state approvals, is operating in compliance with such approvals, and will not be placed out of compliance by serving as a source for the project sponsor.

(d) Appeal.

(1) An appeal from a determination of the Commission issued in accordance with this article may be made in accordance with Article 6 of the Commission's Rules of Practice and Procedure.

(2) In the event of an appeal from a determination of the Executive Director issued in accordance with this article, the determination is automatically stayed pending review and final determination by the Commission, except and unless as otherwise provided by the Executive Director or the Commission.

(e) Expiration or renewal of an approval.

(1) Expiration due to failure to commence activity. If, by the third anniversary of the date of issuance of an approval issued by the Commission or the Executive Director, neither construction nor operation of the approved 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 submits to the Executive Director a request for extension supported by a showing that substantial funds in relation to the project cost have been expended toward construction and/or operation since the date the approval was issued. Upon such a showing, the Executive Director may approve an extension of time to initiate construction or operation of the project but in no event will the extension date be later than the date of expiration set forth in the approval.

(2) Renewal; administrative continuance. A complete renewal application must be submitted at least twelve months before the date of expiration of a docket or protected area permit and at least six months before the date of expiration of an ADA. In the event of timely submission of a complete renewal application, an approval will be deemed administratively continued in the event that the Commission or the Executive Director, as appropriate, has not acted on the application prior to the date of expiration of the approval.

(f) Transfers and Name Changes. A project sponsor may request and the Executive Director may grant the transfer from one entity to another of an approval issued by the Commission or the Executive Director or a change in the name of a project sponsor, provided that the Executive Director has determined that the transfer would not result in violation of Commission regulations and that the transferee has a satisfactory compliance history. The fee for a transfer or name change is set forth in Table 7.3.1.

(g) Modification or suspension of a Commission approval. 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. The Executive Director may modify conditions of an approval involving reports (e.g., operating plans, monitoring requirements, etc.) and construction schedules at the request of the project sponsor upon a demonstration to the Executive Director's satisfaction that such change will not adversely affect the Commission's ability to protect water resources of the basin.

(h) Notice Procedures. A natural gas development project sponsor seeking a Bulk Water Use and Management Approval in accordance with Section 7.4(e) or NGDP approval in accordance with Section 7.5 of this article is responsible for issuing notices as follows:

(1) Concurrent with the submission of an application to the Commission, the project sponsor must notify via United States Postal Service (USPS) certified mail, return receipt requested, the appropriate agencies of the host state, federal government, each municipality in which the project is located, and the county planning agency of each county in which the project is located.

(2) Within 10 days of the date of submission of an application to the Commission, the project sponsor must cause to be published in a newspaper of general circulation serving the area in which the project is located a notice that it has filed the application.

(3) Within 10 days of the date of submission of an application to the Commission, the project sponsor must provide written notice of its application to property owners and others in the project area as follows:

(i) For a bulk water use and management application for a natural gas well pad, the project sponsor must notify:

(A) area water purveyors, and

(B) each adjacent property owner and any other property owner within 2,000 feet of the natural gas well pad.

(ii) For bulk water use and management applications to serve a natural gas gathering or transmission pipeline project, the project sponsor must notify each property owner in the basin adjacent to the right-of-way of the pipeline. This provision may be waived for natural gas transmission lines if approved in writing by the Executive Director.

(iii) For NGDP applications, the project sponsor must notify:

(A) all owners of property within the boundary of the leasehold covered by the NGDP;

(B) all owners of property adjacent to the boundary line of the leasehold covered by the NGDP; and

(C) all area water purveyors.

(4) A request for a variance from the siting and setback requirements of Section 7.5(d)(1) must be accompanied by evidence that the project sponsor has notified all property owners identified in sub-sections 7.3(b)(3)(i) and/or (iii) above (in connection with Bulk Water Use and Management Approval and NGDP approval applications, respectively) of the request.

(5) All notices required by this section must contain a description of the project, its purpose, and the address, electronic mail address and phone number of both the project sponsor and the Delaware River Basin Commission. Notices must indicate that written comments should be directed to the Delaware River Basin Commission with copies to the project sponsor. (Project sponsors may provide the Commission with their responses to any comments received on an application.

(6) The project sponsor must provide the Commission with a copy of each USPS return receipt for notifications to agencies of the host state, Federal government, municipalities and the county required by Section 7.3(h)(1). The project sponsor must also provide certification on a form provided by the Commission that it has issued the notices to adjacent property owners and area water purveyors and that notice was published in local newspapers as required by Sections 7.3(h)(2) and (3), if applicable. Until these items are provided to the Commission, review of the application will not proceed. The project sponsor must maintain all proofs of notice required hereunder for the duration of the corresponding approval if granted.

(i) 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:

(i) enter any part of the natural gas development project site for purposes of inspection, sampling, monitoring, observation or photography; and

(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.

(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.

(3) The project sponsor or site operator must provide Commission representatives with an escort knowledgeable about site operating procedures as well as any specialized personal protective equipment ("PPE") and site safety training upon entering the site. Safety training is any safety training normally prescribed for visitors to the site. Specialized PPE means any required PPE other than a long-sleeved shirt and long pants rated as fire retardant, hard hat, safety shoes, hearing protection and safety glasses.

(4) Records referenced in Section 7.3(i)(1)(ii) are required to be kept at the project site, unless approved otherwise by the Commission or Executive Director. Records not stored at the project site must be made available to Commission representatives within two working days of a request by the Commission.

(j) Financial Assurance Requirements.

(1) The project sponsor must provide financial assurance for:

(i) the plugging and abandonment of all natural gas wells and restoration of all natural gas well pad sites within the project sponsor's Entire Basin Leasehold in accordance with requirements of the host state (also, "host state closure requirements"), to the extent that any financial assurance required for such purposes by the host state is not sufficient or is not immediately available.

(ii) completion of all mitigation and restoration requirements set forth in Section 7.5 for Natural Gas Development Plans (NGDPs) to the extent that financial assurance, if any, required for such purposes by the host state is not sufficient or is not immediately available.

(iii) mitigation and/or remediation of any release or threatened release of hazardous substances, pollutants or contaminants and restoration of the natural gas well pad site and any affected area, whether on or off the pad site, required as a result of such release or threatened release, to the extent that financial assurance, if any, required for such purposes by the host state, is not sufficient or is not immediately available.

(2) The financial assurance required by this Section 7.3(j) must remain continuously in force from the date physical work commences on the project until the Executive

Director releases the project sponsor from the requirement in accordance with Section 7.3(j)(16) below.

(3) Each instrument of financial assurance provided in accordance with this Section 7.3(j) must contain language providing that the instrument will remain applicable notwithstanding the dissolution, bankruptcy or incapacity of the debtor.

(4) The financial assurance provided in accordance with this Section does not limit the duty or liability of the project sponsor to comply with host state closure requirements or the mitigation and restoration requirements for NGDPs as set forth in Section 7.5. Nor does such financial assurance limit the duty or liability of the project sponsor to remediate any release or threatened release of hazardous substances, pollutants or contaminants at or from the natural gas well, well pad site or associated equipment and structures.

(5) Use of Funds. The Executive Director may use funds provided by the financial instruments required by this Section 7.3(j) to perform or complete the required closure, restoration, mitigation and/or remediation activities after:

(i) The host state determines that the project sponsor failed to adequately comply with the host state closure requirements and any financial assurance required for such purposes by the host state is not sufficient or is not immediately available; or

(ii) The Executive Director has determined that the project sponsor failed to complete the mitigation and restoration activities required by Section 7.5 of this article, and the financial assurance, if any, required for such purposes by the host state is not sufficient or is not immediately available; or

(iii) The Executive Director has determined in consultation with the host state and the Commission Chair that the project sponsor failed to remediate a release or threatened release of hazardous substances, pollutants or contaminants as specified in Section 7.3(j)(1)(iii) and the financial assurance, if any, required for such purposes by host state or federal regulations is not sufficient or is not immediately available.

(6) The project sponsor must satisfy the financial assurance requirements of this Section 7.3(j) by establishing or obtaining one or a combination of the following:

(i) A surety bond satisfying the requirements of Section 7.3(j)(12).

(ii) A letter of credit satisfying the requirements of Section 7.3(j)(13).

(iii) A trust fund satisfying the requirements of Section 7.3(j)(14).

(iv) An insurance policy satisfying the requirements of Section 7.3(j)(15).

(7) Amount of Financial Assurance.

(i) For plugging and abandonment of all natural gas wells and restoration of all natural gas well pad sites in accordance with Section 7.3(j)(1)(i) above, financial assurance in the amount of $25,000 per natural gas well is required, provided that the maximum aggregate value of the financial assurance required for an Entire Basin Leasehold is $250,000. If an insurance policy is used to satisfy this requirement, the policy limits must be no less than $25,000 per occurrence and $250,000 in the aggregate.

(ii) For completion of the mitigation and restoration requirements for NGDPs in accordance with Section 7.3(j)(1)(ii) above, the amount of financial assurance required depends upon the extent of project impacts to High Value Water Resource Landscapes as defined by Section 7.2. Financial assurance is required in the amount equal to the estimated cost of implementing the mitigation and restoration required by Section 7.5. This amount will be specified in the NGDP docket.

(iii) For the mitigation and/or remediation of any release or threatened release of hazardous substances, pollutants or contaminants in accordance with Section 7.3(j)(1)(ii) above, financial assurance in the amount of $8,000 per acre must be provided for that portion of the project sponsor's Entire Basin Leasehold located within the sponsor's approved NGDP; provided, however, that the maximum aggregate value of the financial assurance required for an Entire Basin Leasehold is $25,000,000. For natural gas well pad projects that are not part of an approved NGDP, financial assurance is required in the amount of $5,000,000 for each approved natural gas well pad. If an insurance policy is used to satisfy this requirement, the policy limits must be no less than $5,000,000 per occurrence and $25,000,000 in the aggregate.

(iv) The requirements set forth in subsections (i), (ii) and (iii) immediately above must be satisfied independently of one another. A project sponsor may use a single financial assurance instrument to satisfy all or any combination of these requirements; however, if a single instrument is used, that instrument must be in the amount of the sum of the above requirements or contain provisions satisfying each of the above requirements separately. More than one financial assurance instrument may not be used to satisfy any one of the three requirements.

(v) If a phased development is approved in accordance with Section 7.3(b)(4), then the financial assurance may be based upon the acreage and corresponding restoration, mitigation and/or remediation required for that phase.

(8) The financial assurance required by this section is in excess of any financial assurance provided to the host state in accordance with state regulations. The financial assurance provided under this section may only be used when the financial assurance provided under host state or federal requirements is not sufficient or is not immediately available provided however that failure to satisfy one or more of the conditions of this subsection shall not provide a defense to payment under the financial assurance instrument nor a basis to delay any payment demanded by the Executive Director.

(9) The project sponsor must submit a copy of the financial instrument or instruments to the Executive Director at least 60 days before commencing site preparation work on any natural gas development project in the leasehold and at least 60 days before any modification or replacement of a financial instrument becomes effective unless these rules provide for earlier submission.

(10) The project sponsor must report the status of financial assurance to the Commission annually on a date and in a format prescribed by the Executive Director.

(11) The project sponsor must notify the Executive Director when the size of its Entire Basin Leasehold changes and must provide proof of financial assurance coverage to the Executive Director for areas added to its Entire Basin Leasehold within 30 calendar days of gaining control of new areas.

The Executive Director will release from these financial assurance requirements any area that is no longer controlled by the project sponsor upon a showing by the project sponsor that the area it no longer controls is either no longer under lease for natural gas development or was transferred to another project sponsor that has obtained financial assurance for the area.

(12) The project sponsor may satisfy the financial assurance requirements of this Section 7.3(j) by obtaining one or more surety bonds consistent with Sections 7.3(j)(1) through (9) inclusive, above, and with this Section 7.3(j)(12).

(i) The surety company issuing the bond or bonds must be among those listed as acceptable sureties on federal bonds in the latest Circular 570 of the U.S. Department of the Treasury.

(ii) The surety company must be authorized to do business in the state in which the NGDP or well pad is located.

(iii) The Commission will retain, during the term of the bond, and upon forfeiture of the bond, a property interest in the surety's guarantee of payment under the bond which is not affected by the bankruptcy, insolvency or other financial incapacity of the operator or principal on the bond.

(iv) The surety must give written notice to the Executive Director, if permissible under the law, and to the principal within ten days of a notice received or action filed by or with a regulatory agency or court having jurisdiction over the surety while lodging one of the following:

(A) The insolvency or bankruptcy of the surety.

(B) A violation of regulatory requirements applicable to the surety, when as a result of the violation, suspension or revocation of the surety's license to do business in any jurisdiction is under consideration by a regulatory agency.

(v) The bond must be substantially in one of the forms provided in Section (i) of the Appendix.

(vi) The bond, if in the form of a payment bond, must be accompanied by a standby trust substantially in the form of Section (iii) of the Appendix.

(13) The project sponsor may satisfy the financial assurance requirements of this Section 7.3(j) by submitting one or more irrevocable stand-by letters of credit to the Commission that comply with Sections 7.3(j)(1) through (9) inclusive, above, and with this Section 7.3(j)(13).

(i) The issuing institution must be an entity which has the authority to issue letters of credit and whose letter-of-credit operations are regulated and examined by a federal agency.

(ii) The letter of credit must be irrevocable and must be so designated. However, the Executive Director may accept a letter of credit for which a limited time period is stated if the following conditions are met and are stated in the letter:

(A) The letter of credit is automatically renewable for additional time periods unless the financial institution gives at least ninety (90) days prior written

notice to both the Executive Director and the sponsor of its intent to terminate the credit at the end of the current time period.

(B) The Executive Director or Commission has the right to draw upon the credit before the end of its time period if the sponsor fails to replace the letter of credit with other acceptable means of compliance with this section within thirty (30) days of the financial institution's notice to terminate the credit.

(iii) Letters of credit must name the Commission and the Executive Director in her official capacity as the beneficiaries 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.

(iv) The letter of credit will be subject to the Uniform Commercial Code and the latest revision of the International Chamber of Commerce Uniform Customs and Practices for Documentary Credits.

(v) The financial institution issuing the letter of credit must not have failed, refused or unduly delayed to pay in full on any letter of credit or certificate of deposit previously submitted as collateral to the Commission.

(vi) The issuing financial institution must waive rights of set-off or liens which it has or might have against the letter of credit.

(vii) The letter of credit must be substantially in the form provided in Section (ii) of the Appendix. The letter of credit must be accompanied by a standby trust substantially in the form of Section (iii) of the Appendix.

(14) The project sponsor may satisfy the financial assurance requirements of this Section by establishing one or more trust funds that comply with Sections 7.3(j)(1) through (9) inclusive, and with this Section 7.3(j)(14).

(i) The trust fund must be funded for the full required amount specified in Section 7.3(j)(7) or for part of the required amount of coverage and used in combination with another mechanism or mechanisms that provide the remaining required coverage.

(ii) The trustee must be an entity that has the authority to act as a trustee and whose trust operations are regulated and examined by a federal agency or an agency of the state in which the well pad or NGDP is located.

(iii) If other financial assurance as specified in this Section 7.3(j) is substituted for all or part of the trust fund, the project sponsor may submit a written request to the Executive Director for release of the excess amount of financial assurance.

(iv) The wording of the trust agreement must be identical to that set forth in Section (iii) of the Appendix.

(15) The project sponsor may satisfy the financial assurance requirements of this Section by obtaining one or more insurance policies that comply with Sections 7.3(j)(1) through (9) inclusive, and with this Section 7.3(j)(15) and submitting a certificate of such insurance to the Executive Director.

(i) At a minimum, the insurer must be licensed to transact the business of insurance or eligible to provide insurance as an excess or surplus lines insurer in the state in which the NGDP or well pad is located.

(ii) The wording of the certificate of insurance must conform substantially to the wording specified in Section (iv) of the Appendix.

(iii) The insurance policy must be issued with policy limits equal to the amounts specified in Section 7.3(j)(7) above.

(iv) The term “policy limit” means the total amount the insurer is obligated to pay per occurrence or in the aggregate under the policy. Actual payments by the insurer will not change the policy limits.

(v) The terms of the insurance policy must automatically renew the policy limits annually.

(vi) The insurance policy must guarantee that upon the date physical work commences on the project sponsor’s first natural gas well pad within the covered project, the insurer will be responsible for paying out funds upon the direction of the Executive Director to such persons as the Executive Director specifies, in an amount or amounts equal to the limits of the policy.

(vii) The project sponsor must maintain the policy in full force and effect until the Executive Director approves termination of the policy in writing in accordance with Section 7.3(j)(15)(ix) below. Failure to maintain the policy without

substitution of alternate financial assurance as specified in this section will constitute a violation of these regulations warranting such remedy as prescribed by Section 7.3(l). Such violation will be deemed to begin upon receipt by the Executive Director of a notice of future cancellation, termination, or failure to renew due to nonpayment of the premium.

(viii) Each policy must contain a provision allowing assignment of the policy to a successor owner or operator. Such assignment may be conditional upon consent of the insurer, provided that such consent is not to be unreasonably refused.

(ix) The policy must provide that the insurer may not cancel, terminate, or decline to renew the policy except for failure to pay the premium. The automatic renewal provision of the policy must, at a minimum, provide the insured with the option of renewal with the same policy limits as the expiring policy.

If there is a failure to pay the premium, the insurer may elect to cancel, terminate, or decline to renew the policy by sending notice by certified mail to the owner or operator and the Executive Director. Cancellation, termination, or failure to renew may not occur, however, during the 120 days beginning with the date of receipt of the notice by both the Executive Director and the project sponsor, as evidenced by the return receipts. Cancellation, termination, or failure to renew may not occur and the policy must remain in full force and effect unless an alternate financial assurance instrument is provided as specified in this section.

(x) The Executive Director will give written consent to the project sponsor that it may terminate the insurance policy when:

(A) the project sponsor provides proof of coverage under an alternate financial assurance instrument as specified in this section; or

(B) the Executive Director releases the project sponsor from the requirements of this section in accordance with Section 7.3(j)(16) below.

(16) Release from Financial Assurance. Once the project sponsor has completed all activities for which financial assurance is required by this Section 7.3(j), the project sponsor may request that the Executive Director release the project sponsor from one or all of the requirements listed in Sections 7.3(j)(1)(i) (ii) and (iii). Provided, however, that a release from these financial assurance requirements does not limit or release the project sponsor from its liability or duty to mitigate and remediate the incomplete or defective plugging or abandonment of any natural gas wells or restoration of any natural gas well pad sites in accordance with host state closure

requirements; and/or any release or threatened release of hazardous substances, pollutants or contaminants at or from the project sponsor's natural gas development activities.

(i) The Executive Director may release a project sponsor from the financial assurance requirements or reduce financial assurance requirements relating to the plugging and abandonment of natural gas wells and restoration of well pad sites in accordance with Section 7.3(j)(1)(i) after the Executive Director receives confirmation from the host state that the state has released the project sponsor from its financial assurance requirements for closure of all natural gas well sites in the project sponsor's Entire Basin Leasehold.

(ii) The Executive Director may release a project sponsor from the financial assurance requirements for mitigation and restoration of an NGDP area in accordance with Section 7.3(j)(1)(ii) after the Executive Director has approved a Mitigation and Restoration Statement submitted by the project sponsor certifying that mitigation and restoration was completed for the NGDP area consistent with the requirements of Section 7.5.

(iii) The Executive Director may release a project sponsor from the requirements for mitigation and/or remediation of a release or threatened release in accordance with Section 7.3(j)(1)(iii) after:

(A) the project sponsor has been released from any financial assurance requirements of the host state in accordance with Section 7.3(j)(16)(i) above; and

(B) the project sponsor has been released from the financial assurance requirements for mitigation and restoration of an NGDP area as provided by Section 7.5(j)(16)(ii) above; and

(C) the project sponsor has provided to the Executive Director written confirmation from the host state and/or federal government as applicable that (a) the project sponsor has successfully completed any mitigation and/or remediation required by the host state and/or the federal government; and (b) the host state and/or federal government as applicable has (have) released the project sponsor from any financial assurance required by state and/or federal regulations for such mitigation and/or remediation; and

(D) the Executive Director has determined in consultation with the host state and the Commission Chair that (a) the project sponsor has successfully

completed any mitigation and/or remediation required by the Executive Director or the Commission pursuant to Section 7.3(l)(1) of this article; and (b) the project sponsor has resolved any outstanding issues of compliance with applicable Commission approvals and/or regulations.

(k) Project Fees

(1) Fee Schedule. An application for approval by the Delaware River Basin Commission must be accompanied by the corresponding non-refundable review fee calculated in accordance with Table 7.3.1. An approval will be conditioned upon timely payment of water charges and other fees as appropriate, also as set forth in Table 7.3.1 below.

(2) Fee payable for each project category. If a project involves components in more than one category, a separate fee calculated in accordance with Table 7.3.1 is required for each component.

(3) Fees non-refundable. Application fees are non-refundable. No portion of a fee will be credited to the project sponsor in the event that the Commission denies an application, if the application is withdrawn during the review process or if the applicant does not accept the Commission's determination.

(4) Application fee worksheet. Project sponsors must complete and submit the Natural Gas Project Application Fee Worksheet along with their fee payment and application.

(5) Alternative fee based on actual cost. When a fixed fee or fee calculated in accordance with the formula set forth in Table 7.3.1 is deemed by the Executive Director to be insufficient to cover costs associated with a project, the Executive Director may impose a fee in the amount of up to 100 percent of the Commission's actual cost.

(6) Payment of fee with application. The appropriate review fee must be submitted to the Commission with the project application. Failure to include the fee or payment of an insufficient fee may result in return of the application to the project sponsor or, at the discretion of the Executive Director, issuance of an invoice for the balance owed. Refunds will be issued for any portion of a fee payment that exceeds the appropriate amount. The Executive Director or Commission may choose to take no action on a project application until all applicable fees are paid or may condition the approval on payment of the required fees.

(7) Prior assessments, debts and other financial obligations outstanding. The Commission will not consider any application involving property, including without limitation a mineral estate, owned or controlled by, or leased by or to, individuals or

entities with outstanding debts, assessments or other financial obligations due to the Commission unless and until such obligations are paid in full. Except for water supply charges, which are addressed in paragraph (8) below, if a debt, assessment or other financial obligation remains outstanding for more than six months, the payment in full must include interest accrued at a rate of 1% per month commencing thirty days following the date on which the obligation was first incurred.

(8) Water supply charge. The holder of a Bulk Water Use and Management Approval issued by the Commission in accordance with Section 7.4(e) of this article is required to pay a water supply charge for consumptive use as set forth in Table 7.3.1 below. Water supply charges apply to all water sources listed in Section 7.4(a) for natural gas development activities, unless provided otherwise by that section. (The following are exempt from such charges: (a) recovered flowback and production water; (b) tophole water and precipitation incidentally collected on the well pad or in impoundments or water storage facilities; and (c) water diverted into the basin from outside sources.) One hundred percent (100%) of water used to serve a natural gas development activity is considered to be consumptively used for the purpose of calculating the water supply charge owed the Commission. Consumptive use water supply charges are to be paid on a quarterly basis by the holder of the Bulk Water Use and Management Approval and must be received by the Commission within 30 calendar days of the end of each quarter. Late payments will be subject to an interest charge of 1% per month from the end of the month during which the payment was due.

(9) Annual compliance and monitoring fee. In addition to the application fee, an annual compliance and monitoring fee will be assessed for each Bulk Water Use and Management Approval, Natural Gas Development Plan, water withdrawal and wastewater transfer, treatment and/or discharge approval issued in accordance with this Article 7. The annual compliance and monitoring fee will be prorated from the date of application for the first calendar year and must be submitted with the application. For each calendar year thereafter, the fee will be due by January 30 of that year. Annual compliance and monitoring fees not received by the Commission by January 30 of that year will be subject to interest charges of 1% per month from January 30 until the date of receipt by the Commission.

(10) Surface water monitoring fee. The holder of an approval for any project that includes well pads is required to pay a fee for monitoring of surface water in the vicinity of the pad site, at locations both upstream and downstream of the natural gas well pad. The initial surface water monitoring fee must be submitted concurrent with the submission of an application for a Bulk Water Use and Management Approval for use at a well pad. The initial fee will be used to pay for the physical, chemical and

biological surface water monitoring conducted by the Commission prior to and following the initial hydraulic fracturing event at the well pad. For each subsequent hydraulic fracturing event at the well pad, the project sponsor must submit a surface water monitoring fee at least 30 calendar days in advance of the event. If no hydraulic fracturing event is scheduled in a calendar year, the project sponsor must submit a surface water monitoring fee on or before January 30 of that calendar year. This annual surface water monitoring fee for surface water monitoring conducted by the Commission must be paid until all natural gas wells at the well pad have been plugged and the project sponsor has provided the Executive Director with a copy of the state-approved plugging certificate or report. As an alternative to payment of a fee for surface water monitoring conducted by the Commission, a project sponsor may elect to perform the required surface water monitoring in accordance with a monitoring plan approved by the Executive Director, which plan is sufficient to determine the potential physical, chemical and biological effects of natural gas development on the surface waters. Late payments will be subject to an interest charge of 1% per month commencing thirty days following the date on which the obligation was first incurred.

TABLE 7.3.1: APPLICATION FEES AND WATER CHARGES ASSOCIATED WITH NATURAL GAS DEVELOPMENT PROJECTS IN THE DELAWARE RIVER BASIN

	Project Category	**Fee Calculation Formula**	**Standard Fee**
(a)	Water Withdrawal (Docket or Protected Area Permit) – Industrial, Commercial, Private or Public	The higher of total project cost formula or actual review cost. The minimum fees for public and private projects respectively will apply.	The greater of 0.4% of total project cost up to $10M, plus 0.12% of total project cost over $10M, not to exceed $75,000, or actual review cost.[1][2] A minimum fee of $500 for public projects and $1,000 for private projects applies.
(b)	Bulk Water Use and Management Approval (ADA)	Fixed fee	A minimum fee of $22,500[2] or actual review cost[1] [2]
(c)	Addition to Approved List of Water Sources (Creation of list and listing of initial source are included in (b)).	Fixed fee	$1,000 per source
(d)	Natural Gas Development Plan (NGDP) (Docket)	Fixed fee or actual review cost.	A minimum fee of $132,500 or actual review cost [1]
(e)	Wastewater Discharge (Docket) – involving treatment and /or discharge of natural gas wastewaters – Industrial, Commercial, Private or Public	The higher of the fee based on total project cost formula or actual review cost. The minimum fees for public and private projects respectively will apply.	The greater of 0.4% of total project cost up to $10M, plus 0.12% of total project cost over $10 M, not to exceed $75,000, or actual review cost.[1] [2] A minimum fee of $500 for public projects and $1,000 for private projects applies.
(g)	Transfer of Ownership of (a) through (e) above	Fixed fee	$1,000
(h)	Change in name of project owner or sponsor of (a) through (e) above	Fixed fee	$500

(i)	Renewal of Approval of (a) through (e) above where the renewal involves no substantive change to the project (e.g., increase in water allocation).	Minimum fee, fixed fee or actual review cost as provided.	For (a) and (e), see (a) and (e) standard fees above.[2]
			For (b) and (c), $2,000.[2]
			For (d), $10,000 or actual review cost. [1] [2]

	Project Category	Fee Calculation Formula	Standard Fee
(j)	Natural Diversity Index Assessment	If performed by the Commission: Fixed fee or actual review cost.	For (a) and (b) - $10,000 or actual review cost.[1]
(k)	Renewal or Modification of an Approval by the Commission or the Executive Director Not Listed Above	Fixed fee or actual review cost.	$2,500 or actual review cost.[1] [2]
(l)	Consumptive Water Use Charge	Consumptive water use charge.	$80 per million gallons ($0.08 per 1,000 gallons) used.[2][3]
(m)	Any Project Regulated by this Article 7 Resulting in an Out-of-Basin Water or Wastewater Diversion		See note below.[2]
(n)	Annual Monitoring and Compliance Fee	Fixed fee	$ 5,000 [4]
(o)	Surface Water Monitoring Near Well Pad	If performed by the Commission: Fixed Fee	$15,000 [5]

[1] See Section 7.3(k)(5) (concerning alternative fee based on actual cost of review).

[2] Twice the fee calculated in accordance with the "Standard Fee" column will be charged for any project resulting in an out-of-basin diversion of water as defined in Section 7.4(d)(vi).

[3] Water from any source listed in Section 7.4(c) other than flowback or production water that is delivered to or withdrawn or used at a well pad site is deemed to be consumptively used.

[4] See Section 7.3(k)(9).

[5] See Section 7.3(k)(10).

(l) Compliance Assurance, Enforcement.

(1) Obligation to Report Violations. The project sponsor must report in writing to the Commission any violation of these rules or the conditions of its approval (either docket, ADA, protected area permit, operations plan or other plan or approval), or any circumstances that may reasonably lead to a finding of violation within 48 hours of the occurrence or upon the project sponsor's 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 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(l)(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.

(2) Additional Obligations in Event of Spill or Release. Within one hour of discovery of a spill or release of contaminants, the project sponsor or project sponsor's agent must notify all operators of public water system intakes potentially affected by the spill or release that it has occurred, in order to afford them the maximum response time.

(3) Suspension of Activities and Correction of Water Resources Impacts.

(i) Authority. Upon a determination by the Executive Director that a practice, operation, or activity of a project sponsor violates applicable Commission regulations or approvals, or poses a threat to the water resources of the basin, the Executive Director, following consultation with the host state, may order any such practice, operation, or activity to cease or be corrected, mitigated and/or remediated immediately or according to a schedule detailed in the order. Such order will remain in effect until the earlier of the expiration date stated in the order or a determination by the Commission of any appeal filed in accordance with Commission rules, unless the Executive Director revokes or modifies the order.

(ii) Notification and Appeal Process. Any order issued by the Executive Director pursuant to this section will state the practices, operations, or activities affected, a summary of the basis for the Executive Director's determination, and the project sponsor's right to object and appeal in accordance with Article 5 or Article 6 of the Rules of Practice and Procedure. Upon appeal, the Commission may continue, modify or vacate the order, and with notice to the project sponsor may also invoke its authority under Section 7.3(1)(3) to suspend, modify or terminate Commission approval. The authority granted the Executive Director to issue an order pursuant to this Section 7.3(l)(2) is in addition to and does not limit the authority of the Executive Director or Commission to invoke other remedies.

(4) Modification or Suspension or Termination of Commission Approval.

(i) Authority. The Executive Director or the Commission, pursuant to their authorities under the Compact, including without limitation 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.

(ii) Notification and Appeal Process. The Executive Director or the Commission will issue in writing to the project sponsor holding the ADA, protected area permit or docket an order suspending, modifying or terminating an approval issued in accordance with this Article 7, setting forth the basis for the decision and advising the recipient of the right to appeal such decision under Article 5 or Article 6 of the Rules of Practice and Procedure. The order of suspension, modification or termination will not become effective until a final determination is issued following an administrative hearing by the Commission unless the project sponsor does not file an appeal within the time limits set forth in the Rules of Practice and Procedure or unless the Executive Director or Commission find that an earlier effective date of the order is necessary to prevent, mitigate or remediate an adverse effect on the water resources of the basin. The authority granted the Executive Director and Commission to issue an order pursuant to this Section 7.3(l)(3) is in addition to and does not limit the authority of the Executive Director or Commission to invoke other remedies.

(iii) Reinstatement. The Executive Director or Commission may reinstate a suspended, modified or terminated ADA and the Commission may reinstate a suspended, modified or terminated protected area permit or docket, upon a showing demonstrating to the satisfaction of the appropriate entity or party that the violation or condition upon which the suspension, modification or termination was based is corrected and that procedures have been implemented to prevent a recurrence of the violation or condition such that natural gas development activities by the project sponsor are in full compliance with this Article.

(5) Penalties. Persons who violate or attempt to violate these regulations may be subject to enforcement proceedings and penalties pursuant to Section 14.17 of the Compact.

(m) 18-Month Assessment. Eighteen months following the effective date of this Article 7, the DRBC staff will provide the Commissioners with an administrative and operational assessment of the regulatory program established by this article, including the staging of natural gas well development. The Commissioners will review the staff's assessment and within six months will make recommendations for such adjustments to the regulatory program as they deem appropriate. Total Bulk Water Use and Management Approvals issued during the 24 months immediately following the effective date of this Article 7 will authorize water use for not more than 300 natural gas wells. No additional Bulk Water Use

and Management Approvals may be issued until such time as the Commissioners approve resumption by the Executive Director of the issuance of such approvals; however, the review of applications may proceed pending such action by the Commissioners.

Section 7.4 Approvals for Water Sources and for Bulk Water Uses and Management Related to Natural Gas Development Activities

(a) Water sources within the basin. With limited exceptions, as set forth below, water sources located within the basin may not be used to serve natural gas development projects – whether inside or outside the basin – unless and until the Commission has issued an approval in the form of a docket or protected area permit, as appropriate, to the withdrawer.

(1) **Existing groundwater and surface water withdrawals with valid Commission approvals.**

(i) In-basin uses in same state as withdrawal. Because existing, Commission-approved surface water and groundwater withdrawal sources have already received a full Commission review, including an allocation, these sources may be used to supply water to natural gas development projects within the basin and within the same state without further review or approval by the Commission, provided that each of the following conditions is met:

(A) Current approval(s). The withdrawal is being made in accordance with a valid docket approval or protected area permit issued by the Commission and, if applicable, a valid permit issued by the state in which the withdrawal is located.

(B) No change in allocation. The proposed use entails no increase in the Commission-approved withdrawal allocation, including any individual well and surface water intake allocations established by the Commission or by a state.

(C) In compliance. The withdrawer is in compliance with cumulative and individual withdrawal allocations; conditions relating to interference with other users; applicable Commission water use fees; pass-by flow requirements; and applicable monitoring and reporting conditions.

(D) No triggering conditions. No condition or term of the existing approval(s) triggers further Commission review in connection with the proposed use.

If any of the above criteria are not satisfied, the docket or protected area permit holder must obtain an amendment of its docket or permit by action of the Commission in accordance with the customary procedure for the review and approval of projects pursuant to Section 3.8 of the Delaware River Basin Compact and the Rules of Practice and Procedure before supplying water for natural gas development projects.

(ii) In-basin use in different state from withdrawal. An existing, Commission-approved surface water or groundwater withdrawal source that meets conditions (A) through (D) of sub-section 7.4(a)(1)(i) above may be used to supply water to natural gas development projects within the basin but within another state, provided that the withdrawer has obtained approval in the form of an Approval by Delegated Authority (ADA). For purposes of the application fee, such an approval will be treated in the same manner as a "Renewal or Modification of an Approval by the Commission or the Executive Director Not Listed Above" (item (k) in Table 7.3.1).

If any of the criteria (A) through (D) of sub-section 7.4(a)(1)(i) are not satisfied, the docket or protected area permit holder must obtain an amendment of its docket or permit by action of the Commission before supplying water for natural gas development projects within the basin but within another state.

(iii) Out-of-basin uses. Water from an in-basin surface or groundwater source operating with a valid Commission-issued docket or permit may be diverted out of the basin ("exported") only after the withdrawer has obtained an amendment of its docket or permit by action of the Commission consistent with Section 2.30 of the Water Code.

(2) **New surface or groundwater withdrawals.** A new surface or groundwater withdrawal within the basin may serve natural gas development projects either within or outside the basin only after the Commission has issued a docket or protected area permit as appropriate to the withdrawer, expressly approving such use.

(3) **Treated wastewater or non-contact cooling water.** All or any portion of a discharge of treated wastewater or noncontact cooling water to surface or groundwater within the basin may be used to serve natural gas development projects within or outside the basin only after the Commission has amended the existing docket or issued a new docket to the owner or operator approving the withdrawal and if applicable, the out-of-basin diversion.

(4) **Mine drainage water (MDW).** A withdrawal of MDW from an in-basin source must have Commission approval in the form of a withdrawal docket before serving natural gas development projects inside or outside the basin.

(5) **Recovered flowback and production water.** Flowback and production water recovered from natural gas development projects within the basin may be a water source for stimulating natural gas wells as follows:

(i) If the source project and the receiving project are located within the basin and within the same state, such reuse may be undertaken in compliance with a standard condition of the Bulk Water Use and Management Approval issued to the sending site, the ALWS for the receiving site and any approvals required by the host state.

(ii) If the source project and the receiving project are located within the basin but in different states, the transfer and reuse may occur only after the operators of both the source and receiving sites have obtained approval in the context of their Bulk Water Use and Management Approvals.

(iii) A diversion of flowback and production water for use, treatment and/or discharge outside the basin will be subject to review and approval in the context of the Bulk Water Use and Management Approval for the in-basin project.

(iv) Recovered flowback and production water that is reused for natural gas development projects is exempt from the water use charges that otherwise apply to all water used at a natural gas well project site in accordance with Section 7.3(k)(8).

(6) **Impoundments and storage facilities.** A centralized water impoundment or storage facility constructed to store and distribute water for natural gas development projects ("facility") (including any such facility used to store or treat flowback and production water prior to reuse in the hydraulic fracturing of wells) requires no docket or protected area permit but may supply water to natural gas development projects only in accordance with Section 7.4(c)(4) below, providing that the facility must first be added to the project sponsor's Approved List of Water Sources and that the facility owner or operator must submit quarterly reports to the Commission listing the quantity and source of water transferred to the facility and the quantity and destination of water transferred from the facility.

(7) **Incidental sources.** Fresh water generated during the drilling of a well ("tophole water") and precipitation incidentally collected on a well pad, in a centralized wastewater storage facility or in a freshwater impoundment also may be used for natural gas development activities. Use of water from these sources for natural gas development activities requires no Commission approval. These incidental sources are considered "de minimis" for the purpose of water use charges in accordance with Section 7.3(k)(8).

(b) Water sources outside the basin (diversions into the basin).

(1) Sources eligible for ADA. Notwithstanding the provisions of Section 2.30 of the Commission's Water Code (requiring Commission approval in the form of a docket

for all diversions of water into or out of the basin regardless of the intended use), the sponsor of a natural gas well pad project or projects within the basin may divert the following categories of water and wastewater into the basin ("import" such water, in the language of the Commission's Water Code, Rules of Practice and Procedure and other documents) for use in the hydraulic fracturing of its natural gas wells, provided that the project sponsor has obtained a Bulk Water Use and Management Approval from the Commission in the form of an Approval by Delegated Authority (ADA):

(i) Fresh water – whether the source is groundwater or surface water.

(ii) Treated wastewater consisting of either (1) domestic wastewater treated to secondary treatment standards; or (2) industrial wastewater that has received Best Practicable Treatment (BPT) or Best Available Treatment (BAT) as these terms are defined by the U.S. EPA.

(iii) Natural gas flowback and production water (whether treated or untreated) if used within the same state.

(iv) Non-contact cooling water.

(v) Mine drainage water.

(2) Sources requiring docket approval. Approval in the form of a docket issued by the Commission is required for any diversion into the basin where either:

(i) the entity importing the water is not the natural gas well pad project sponsor; or

(ii) the water is diverted into the basin to serve purposes other than hydraulic fracturing of natural gas wells; or

(iii) the categories of water being diverted into the basin are other than those specifically identified in Section 7.4(b)(1) above as eligible for approval by means of an ADA.

The application fee for such docket approval will be the same as for a Water Withdrawal as set forth in Table 7.3.1, item (a),

(c) Approved list of water sources (ALWS).

(1) The Commission will maintain an Approved List of Water Sources (ALWS) for each natural gas development project sponsor that has received one or more Bulk Water Use and Management Approvals for projects within the basin. The initial ALWS will be established in conjunction with the Executive Director's approval of the project sponsor's first Bulk Water Use and Management Approval.

(2) The ALWS will include each water source from which the natural gas development project sponsor may obtain water for its natural gas development activities located in the basin. The project sponsor may use the allocation established by its Bulk Water Use and Management Approval(s) from any source or combination of sources on its ALWS. The project sponsor may not use water from any source until the Executive Director places the source on the project sponsor's ALWS.

(3) The Executive Director may approve the addition of a water source to a project sponsor's ALWS upon the written request of the project sponsor, submitted in such format as may be prescribed by the Executive Director, and following verification by the Commission staff that the source has received all necessary Commission and, where applicable, state approvals, is operating in compliance with such approvals, and will not be placed out of compliance by serving as a source for the project sponsor.

(4) Consistent with Section 7.4(a)(6), a centralized wastewater storage facility constructed to store and distribute water (other than fresh water) for natural gas development projects ("facility") may supply water for natural gas development activities only after the facility has been added to the natural gas development project sponsor's ALWS in accordance with the preceding paragraph. For such a facility to remain on an ALWS, the facility owner or operator must submit to the Executive Director within 30 days of the close of each calendar quarter a report in such format as may be prescribed by the Executive Director, listing the quantity and source of water transferred to the facility and the quantity and destination of water transferred from the facility.

(d) Conditions of approvals issued for water sources to serve natural gas development projects.

(1) Groundwater and surface water withdrawals. Groundwater and surface water withdrawals approved for uses related to natural gas development activities will be subject to the conditions set forth below, as well as to any additional conditions that the Commission deems necessary to protect the water resources of the basin consistent with the Delaware River Basin Compact and the Comprehensive Plan.

(i) Other Commission regulations. All sources must conform to applicable requirements of other Commission regulations, including but not limited to the Water Code and Flood Plain Regulations, in addition to the provisions of this Article 7.

(ii) Local, state and federal approvals. Commission approval does not exempt the water withdrawer from obtaining all necessary permits and/or approvals that may be required by other local, state and federal government agencies. The Commission reserves the right to modify, suspend or revoke an approval if the withdrawer fails to obtain or maintain approvals required by other jurisdictions.

(iii) The application must include a project narrative specifying the requested allocation, describing the proposed water use, and listing the area to be served.

(iv) Impacts to other users and aquatic resources. The proposed withdrawal or diversion must not have a significant adverse effect or interfere with upstream or downstream dischargers (due to loss of assimilative capacity), downstream withdrawers, wetlands, or aquatic life. Nor may it adversely affect groundwater levels in the vicinity of the withdrawal or diversion.

(v) Pass-by flow requirement. If determined by the Commission to be necessary, the project sponsor must develop and implement an operations plan including pass-by monitoring. The reduction in the amount of the approved withdrawal from a discharge may not cause the stream flow below the point of withdrawal to be less than the $Q_{7\text{-}10}$ flow or a more stringent value recommended by the appropriate host state agency. If the withdrawal is located in shared waters, the more stringent pass-by flow requirement recommended by either of the states sharing the waterway will apply. No withdrawal may be made and the entire natural stream flow must be allowed to pass at any time when the withdrawal would reduce the stream flow immediately below the point of withdrawal to less than the minimum pass-by amount. Pass-by conditions also may include conditions intended to minimize short-term swings in surface flow volumes. The withdrawal site operations plan submitted with an application for a surface water withdrawal must include the method and equipment to be used to demonstrate compliance with applicable pass-by requirements. No withdrawal may be initiated until the method and equipment to be used to demonstrate compliance with the pass-by requirements are operational, and thereafter no withdrawal may be made during any period during which the method and equipment are not operational.

(vi) Out-of-basin diversion. Water from sources within the Delaware River Basin may not be diverted outside the basin unless the Commission has reviewed and expressly approved such diversion by means of a docket or docket amendment.

(vii) Invasive species control plan. Unless determined by the Executive Director to be unnecessary, the withdrawer must develop and implement an Invasive Species Control Plan (ISCP). The ISCP must include the management and treatment program that the project sponsor will implement to ensure that all water taken from the withdrawal site is managed or treated prior to its distribution to transportation vehicles, so as to prevent potentially invasive, harmful, or nuisance species from entering other watersheds in the basin. The management and treatment program must address the potential for withdrawal site activities and moveable equipment to send invasive species from one project site to another and the methods that will be used to prevent this type of transmission of problematic species. An ISCP may be approved by the Commission as part of a docket or it may be approved (or modified) by the Executive Director after the Commission has issued a docket approval. In the latter case, the provisions of the ISCP will be incorporated by reference into the docket. No withdrawals for natural gas well projects may be made until the ISCP is approved by the Executive Director.

(viii) Non-point source pollution control plan. If the water 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 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 satisfy Commission and host state erosion and sedimentation control requirements at the site of the withdrawal or diversion facility, including measures to control stormwater both during and after construction. The post-construction portion of the plan must describe the operating 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 withdrawal site 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 accept erosion and sediment control plans and post-construction stormwater management plans that conform to host state antidegradation implementation requirements where established, in fulfillment of the NPSPCP requirement.

(ix) 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.

(x) Metering and recording of withdrawals and transfers. A metering plan must accompany any withdrawal application. Water withdrawals must be metered and recorded by means of an automatic continuous recording device, or flow meter, and measured to within 5 percent of actual flow. Any withdrawal in excess of the daily allocation approved by the Commission must be reported to the Commission within 48 hours of the exceedence. Total withdrawals must be recorded on a daily basis. 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 unless otherwise provided by the Commission or the Executive Director, and furnished promptly at the request of the Executive Director or a designated member of the Commission staff.

(xi) Withdrawal site plan. A preliminary site plan for the proposed withdrawal site must accompany an application for Commission approval of a withdrawal. The preliminary plan must include a description of the site, the facilities to be installed on the site and a map indicating the location of all facilities on the site. Final construction plans and specifications may be submitted with the application or after the Commission has issued an approval. No site clearing, site preparation, construction, or water withdrawal may commence at the site until final construction plans and specifications have been approved by the Executive Director.

(xii) Withdrawal site access restrictions. 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. The area may not be used as staging area 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.

(xiii) Flood hazard area. Project sites that are located in the Flood Hazard Area (defined in the Commission's Administrative Manual – Part III Basin Regulations – Flood Plain Regulations as the 100-year floodplain) must comply with the Commission's Flood Plain Regulations.

(xiv) Withdrawal site operations plan. The site operations plan for a water withdrawal must include at a minimum: specific procedures for metering, recording and reporting water withdrawals and pass-by flows and complying with the pass-by flow requirements. No construction may be initiated until the Commission has approved the docket or permit and the Executive Director has approved the site operations plan.

(xv) Notice of construction start and completion. The project sponsor must notify the Executive Director in writing of the initiation of construction at least ten (10) days prior to commencing construction. Within thirty (30) days of completion of construction of the approved project, the project sponsor must submit a statement to the Commission, signed by the project sponsor's engineer or other responsible agent, advising the Commission that construction of the project has been completed consistent with the approved plans, and stating the final construction cost of the project and the date the project was or is scheduled to be placed in operation.

(xvi) Expiration of approval. An approval by the Commission expires three calendar years from the approval date unless prior thereto the holder of the approval has commenced operation of the project. 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 or operation of the project. Such approval will not extend beyond the expiration date in the approval.

(xvii) Renewal of 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 until a decision is made on the renewal application.

(xviii) Commission approval of a water withdrawal does not constitute approval or permission to commence any other physical activity associated with natural gas development projects in the Delaware River Basin.

(xix) Drought operations. 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 provisions for drought contingency notification to all users and 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.

(xx) Final 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; and 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 otherwise approved in writing by the Executive Director or as a condition of the Commission's 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:

(A) Date and time of all static, pumping, and recovery water level measurements

(B) Record of pumping rate measured frequently throughout the test

(C) Sufficient static water level measurements in all wells and at all monitoring points prior to start of pumping and following cessation of pumping to determine trends in water level changes

(D) Pumping and recovery measurements in the pumped well and observation wells

(E) Monitoring of wells sufficient to determine all possible interference

(F) The final hydrogeologic report must include appropriate calculations using the collected data to determine: all relevant aquifer parameters, including without limitation, transmissivity, storage coefficients, hydraulic conductivity, specific yield, etc., and an extrapolated drawdown prediction at the tested rate in the pumping well and all affected wells over an assumed six-month period of no recharge.

(G) Groundwater discharge from the proposed production well during the pumping test must be directed an adequate distance from the pumping well, observation wells, and monitoring locations such that recirculation or artificial recharge does not occur. Recirculation and artificial recharge may invalidate the pumping test and may require re-testing.

(H) Discharges of groundwater and groundwater laden with drill cuttings must be controlled in such a way as to prevent erosion and sediment pollution of waterways. The project sponsor must obtain any and all approvals required by state and local water management agencies and soil conservation districts before conducting any drilling or aquifer pumping tests.

(I) Records of precipitation, measurements or observations of nearby streamflows, and weather conditions throughout the test

(J) A map identifying all nearby water 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.
Type of use
Date drilled
Depth drilled (feet)
Borehole diameter (inches)
Casing diameter (inches)
Casing depth (feet below ground surface)
Top of well screen depth (feet)
Bottom of well screen depth (feet)
Pump type
Estimated pump capacity (gpm)
Intake setting depth (feet)
Approximate location of well on property
Latitude of well in DMS, north
Longitude of well in DMS, west

(xxi) Interference. If the monitoring required by regulation or as a condition of the Commission's approval or any other data or information demonstrate that the operation of the withdrawal significantly affects or interferes with any designated uses of ground or surface water, or if the docket holder receives a complaint regarding the withdrawal, the docket holder must immediately notify the Executive Director of any such data, information, or complaints and

unless excused by the Executive Director, must investigate the bases and causes of the conditions resulting in the data, information or complaints. The docket holder 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, within 10 working days of the receipt of a complaint, the docket holder must provide written notification to all potentially impacted users of wells or surface waters of the docket holder's responsibilities under this condition. Any groundwater or surface water source that is adversely affected, including sources that are diminished or rendered dry as a result of the docket holder's withdrawal, must be repaired, replaced or otherwise mitigated at the docket holder's expense. 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 timeframe 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.

(xxii) Site access. If the withdrawal is to be operated by the project sponsor but the property is not owned by that entity, then the project sponsor must certify to the Commission that the property owner has granted access to the proposed withdrawal location for the duration of the term of the docket approval. The project sponsor must notify the Commission within thirty (30) days of a termination of such access agreement.

(xxiii) Sound practices of excavation, backfill and reseeding must be used at the withdrawal site to minimize erosion and prevent non-point source pollutants from leaving the site. The docket holder must abide by all state and local erosion and sediment control requirements, state stream bank disturbance permit conditions, local floodplain development requirements and post-construction storm water management control requirements.

(xxiv) For all surface water withdrawals, before commencing construction of any water intake, withdrawer must first obtain approval for the intake design from the Executive Director, host state, and where applicable the U.S. Army Corps of Engineers and U.S. Fish and Wildlife Service. The withdrawer must provide the Commission with copies of all correspondence with other government agencies reviewing the intake design at the time the correspondence is sent or received.

(2) Other water sources. Other water sources that require Commission approval before they can be used to serve natural gas development projects will be subject to applicable conditions among those set forth above, and to such additional conditions as the Commission deems necessary to protect the water resources of the basin consistent with the Delaware River Basin Compact and the Comprehensive Plan.

(e) Bulk Water Use and Management Approvals for natural gas development projects.

(1) As provided in Section 7.3(b)(2) above, the sponsors of all natural gas development projects located within the basin without exception must obtain a Commission-issued Bulk Water Use and Management Approval for each natural gas well pad and each project consisting of the construction or hydrostatic testing of natural gas gathering lines and transmission lines. Such approval must be in place before water from any source – whether inside or outside the basin – is used for the project sponsor's natural gas development activities and before the project sponsor either (i) commences well pad construction, including land clearing and installation of access roads or other appurtenant facilities; or (ii) after the effective date of these regulations, continues operations at a pre-existing natural gas well pad or natural gas well.

(2) Form of approval. Such approval will generally be in the form of an Approval by Delegated Authority (ADA) issued to the natural gas development project sponsor. However, a Bulk Water Use and Management Approval must be issued in the form of a docket for any natural gas development project proposed to be located within either (i) management areas of the National Park Service (NPS), including the Upper Delaware Scenic and Recreational River (UPDE), the Delaware Water Gap National Recreation Area (DEWA), and other areas in which the NPS or other federal agencies have management interest; or (ii) the watersheds draining to New York City's Delaware River Basin Reservoirs.

(3) Conditions/elements of a Bulk Water Use and Management Approval.

(i) General. A Bulk Water Use and Management Approval will include all terms and conditions necessary to ensure compliance with the Delaware River Basin Compact, Comprehensive Plan, Flood Plain Regulations and other applicable Commission rules and regulations, including the provisions of this Article 7.

(ii) Effective date and term of approval; renewal. A Bulk Water Use and Management Approval may have an initial term of up to 5 years, followed by renewals of up to five years until all natural gas wells included in the approval are brought into production, after which the Executive Director or Commission may extend the term of a renewal to 10 years. A Bulk Water Use and Management Approval may be administratively continued if application is made

to the Executive Director at least six (6) months prior to the date of expiration of the approval.

(iii) Allocation. A Bulk Water Use and Management Approval will establish the maximum volume of water approved for use by the project in millions of gallons per day (for well pad projects) or the total volume to be used by the project during the term of the approval (for pipeline projects).

(iv) Conservation. The approval will be conditioned on implementation by the project sponsor of a program to encourage water conservation in all types of uses within the facilities served. Project sponsors must maximize the reuse and recycling of flowback and production waters.

(v) Water supply charge. In accordance with Section 7.3(k)(8) of the Water Quality Regulations, the Commission's water supply charge for consumptive use will be applied to 100 percent of the water used for natural gas development projects except as provided by that section. Water supply charges are to be paid on a quarterly basis and must be received by the Commission within 30 calendar days of the end of each quarter. Late payments will be subject to an interest charge of 1% per month from the end of the month during which the payment was due.

(vi) Surface water monitoring. In accordance with Section 7.3(k)(10) of this article, a Bulk Water Use and Management Approval for any natural gas well project will include a condition requiring that the project sponsor either (a) pay a fee to cover the cost of physical, chemical and biological monitoring of surface water upstream and downstream of the pad site both prior to and following each hydraulic fracturing event, and an annual fee thereafter for annual surface water monitoring by the Commission; or (b) perform such monitoring through a qualified professional selected by the project sponsor in accordance with a monitoring plan approved by the Executive Director.

(vii) Advance notifications and disclosures.

(A) General. The project sponsor must demonstrate compliance with applicable requirements of Section 7.3(h) (establishing public notice procedures for natural gas development projects).

(B) Notices of host state approval and intent to commence natural gas well construction.

(1) Notice of host state approval. The project sponsor must notify the Executive Director upon receipt of a final approval issued by the

host state for the construction of a natural gas well or well pad. If the host state approval is issued before the project sponsor files an application with the Commission for Bulk Water Use and Management Approval, the information listed in sub-paragraph (3) below must be provided with the application for Bulk Water Use and Management Approval. If the host state approval is issued after the project sponsor has filed an application with the Commission for a Bulk Water Use and Management Approval or has received its Commission Bulk Water Use and Management Approval, then the project sponsor must submit the information listed in sub-paragraph (3) below to the Commission within 10 working days of issuance of the host state approval.

(2) Notice of intent to commence construction. A notice of intent to commence well construction must be submitted to the Commission within 10 working days of the project sponsor's receipt of a final approval issued by the host state for the construction of a natural gas well or well pad and in no case fewer than 30 days before initiation of well and or well pad construction activities. In instances where host state approval for construction of a well or well pad was issued to the project sponsor prior to the effective date of these regulations, such notice must be submitted within 30 days of the effective date of the regulations.

(3) Contents. The notice must include all of the following:
- Project sponsor name
- Project sponsor contact information
- State approval (permit) number
- Well pad name
- Well pad location
- American Petroleum Institute well numbers
- DRBC Bulk Water Use and Management Approval number
- NGDP docket number if applicable

(C) Notice of completion of drilling. The project sponsor must notify the Commission in writing within 48 hours of the completion of drilling of a natural gas well.

(D) Notice of intent to initiate well stimulation; verification as to discharge facilities. The project sponsor must provide written notice to the Commission at least 30 calendar days in advance of the initiation of well stimulation. If some portion of flowback or production fluid may not be

reused, such notification must include verification that each wastewater treatment or discharge facility that is to receive flowback or production water has received all applicable approvals from the Commission (if within the basin) and the facility's host state, as well as the capacity to accept the non-domestic wastewater generated from the hydraulic fracturing operation.

(viii) Demonstrations regarding water sources.

(A) Initial review of existing approved sources. The Commission's review of a bulk water use and management application will include a review to verify that proposed water sources have received all necessary Commission and/or state approvals.

(B) Annual demonstration. The project sponsor must demonstrate to the Commission annually by means of a bulk water sales contract or other documentation acceptable to the Commission, that each approved bulk water source will continue to supply water to the project sponsor.

(ix) Well pad siting and setbacks. The sponsor of a well pad project must demonstrate compliance with the siting and setback requirements contained in Section 7.5.

(x) Invasive species control. Unless determined by the Executive Director to be unnecessary, the project sponsor must develop and implement an Invasive Species Control Plan (ISCP) as a condition of the use for natural gas well pad projects of an existing Commission-approved groundwater or surface water source that has not previously required such measures. In such instances, the natural gas project sponsor may be required to furnish an Invasive Species Control Plan (ISCP) and to demonstrate that such plan will be implemented before the source may be included in a Bulk Water Use and Management Approval. The ISCP must include the management and treatment program that will be implemented to ensure that all water taken from the withdrawal site is managed or treated prior to its distribution to transportation vehicles, so as to prevent potentially invasive, harmful, or nuisance species from entering other watersheds in the basin. The management and treatment program must address the potential for moveable equipment to carry invasive species from one project site to another and the methods that will be used to prevent this type of transmission of problematic species. If the Executive Director has determined that an ISCP is needed, no withdrawals for natural gas well projects may be made until the ISCP is approved by the Executive Director.

(xi) Water use metering and reporting.

(A) Metering. The project sponsor must meter (or otherwise measure) and record daily the volume of all water delivered to the natural gas well pad or natural gas pipeline site from each water source, including recycled flowback and production water transported to the project site Such metering or measuring must include the source, means of delivery and volume. Metering must be performed with an automatic continuous recording device or equivalent that measures to within 5 percent of actual flow. The Executive Director may grant a written exception to allow for measurements to within 10 percent of actual flow if the project sponsor presents a demonstration acceptable to the Executive Director that maintaining the 5 percent standard is not technically feasible or economically practicable.

(B) Reporting. The project sponsor must submit to the Commission on a quarterly basis in such format as may be prescribed by the Executive Director a report indicating the monthly and daily total volumes of water delivered to each well pad or pipeline site from each source.

(xii) Well stimulation metering and reporting.

(A) Water used for stimulation. The project sponsor must meter the volume of water used for each hydraulic fracturing event at each natural gas well, including separate measurement of recycled flowback and production water used to stimulate the well. Metering must be performed with an automatic continuous recording device or equivalent that measures to within 5 percent of actual flow. The Executive Director may grant a written exception to allow for measurements to within 10 percent of actual flow if the project sponsor presents a demonstration acceptable to the Executive Director that maintaining the 5 percent standard is not technically feasible or economically practicable.

(B) Recovered flowback and production water. The volume of flowback and production water must be metered with the same degree of accuracy as required by the preceding paragraph.

(C) Post-hydraulic fracturing report. Within 60 days of hydraulic fracturing of a well, the project sponsor must submit to the Commission in a format prescribed by the Executive Director a post-hydraulic fracturing report, to include, along with any additional information the Executive Director may require: the volumes of water measured in accordance with paragraphs (A) and (B) above; total amount of fracturing fluid used; the amount of

each chemical additive used; and the percent by mass of each chemical constituent of all additives used in the hydraulic fracturing fluid. Such characterization must include individual chemicals/additives with Chemical Abstract Services (CAS) registry numbers and Material Safety Data Sheets (MSDS). Upon request for confidentiality and a demonstration by the project sponsor to the satisfaction of the Executive Director that any portion of the post-hydraulic fracturing report is comprised of trade secrets or other confidential business information (CBI), the portion of the report demonstrated to contain trade secrets or other CBI will be kept confidential. A project sponsor must clearly identify any information that it seeks to protect as trade secrets or other CBI.

(D) Quarterly reports. Volumes of flowback and production water recovered on an ongoing basis must be reported quarterly in accordance with the paragraph below.

(xiii) Wastewater metering and reporting.

(A) Flowback and production water by well pad. Flowback and production water volumes transferred from each well pad, together with the transfer destination must be recorded daily and submitted to the Commission on a quarterly basis in a format prescribed by the Executive Director.

(B) Non-domestic wastewater transported offsite. Quarterly reporting must include monthly and daily total volumes of flowback and production water and other non-domestic wastewater transported off the well pad site, by method of transport (e.g., individual trucks and/or pipeline), and must identify for each destination facility or well pad, the name and location, state permit number, and Commission approval number (whether docket or ADA). The project sponsor also must obtain and retain records from the destination facility confirming that transferred wastewater was received by the destination facility. Such records must be submitted to the Commission or Executive Director upon request in an electronic form specified by the Executive Director.

(xiv) Disposal of target formation drill cuttings. Cuttings and fluids from the target formation must be transported offsite within 45 days after completion of well drilling, unless before expiration of the 45-day period an extension is approved in writing by the Executive Director or the project sponsor provides the Executive Director with documentation of the host state's approval of a limited-term extension. Upon removal from the natural gas well pad, target formation

drill cuttings must either be beneficially reused off-site in accordance with applicable state regulations or disposed of at an appropriate waste treatment and/or disposal facility approved by the host state.

(xv) Wastewater storage, reuse, treatment and discharge.

(A) Term of temporary storage of flowback and production water.

(1) Unless a limited extension has been authorized in writing by the Executive Director or the host state, within 90 days of the date that stimulation of a natural gas well is completed all flowback water recovered from the well must either be reused to fracture natural gas wells at the same site or transported directly to a treatment and/or discharge facility or to another well pad site that has received all required approvals.

(2) If multiple natural gas wells on the same well pad are hydraulically fractured within 30 days of one another, then the 90-day limit for on-site storage will begin upon completion of stimulation of the last well to be stimulated.

(3) The project sponsor's program for storage, reuse and/or removal of production fluids from the well pad site must be furnished to the Executive Director and the host state.

(B) Means of storage.

(1) Storage on pad site. Flowback and production water or any other category of water that is not fresh water must be stored in water-tight tanks designed and constructed to safely contain the water and meet applicable host state requirements. Such tanks must be used and maintained according to the manufacturer's specifications.

(2) Storage in centralized wastewater storage facility. Any category of water other than fresh water that is approved for use in fracturing natural gas wells may also be stored in centralized wastewater storage facilities if permitted by the host state. Any such storage must be designed to minimize access by wildlife, including waterfowl.

(C) Reuse of flowback and production water. As set forth in Section 7.4(a)(5), flowback and production water recovered from natural gas

development projects within the basin may be reused to stimulate other natural gas wells as follows:

(1) Each bulk water use and management approval will contain a standard condition providing that if the source project and the receiving project are located within the basin and within the same state, such reuse may be undertaken in compliance with conditions of the approval issued by the host state and after the source has been added to the receiving site's ALWS.

(2) If the source project and the receiving project are located within the basin but in different states, the transfer and reuse may occur only after the operators of both the source and receiving sites have obtained approval in the context of their Bulk Water Use and Management Approvals and the source has been added to the receiving site's ALWS.

(3) A diversion of flowback and production water out of the basin is subject to review and approval in the context of the Bulk Water Use and Management Approval for the in-basin project.

(D) Transfer, treatment and discharge of domestic and non-domestic wastewater. Domestic and non-domestic wastewater may be transferred, treated and/or discharged as follows:

(1) at a facility located within the basin only if the owner or operator of the facility has the Commission's approval to accept domestic or non-domestic natural gas development wastewater, as appropriate, and has obtained the applicable state permits and approvals; or

(2) at a facility located outside the basin provided that the natural gas development project sponsor has demonstrated that the owner or operator of the out-of-basin facility has obtained the applicable state permits and approvals.

(E) Disposal by means of Underground Injection Well (UIC). Flowback and production water may be disposed of in a UIC facility within the basin only if the UIC facility has the approval of the host state and the United States Environmental Protection Agency (U.S. EPA) in accordance with Section 7.6(b)(7) below.

(F) No un-permitted discharges. No wastewater (treated or untreated), hydraulic fracturing fluid, mine drainage water, other fluids or unused

water from any source may be placed into any freshwater impoundment or discharged to groundwater, surface water, roads or other land surfaces or otherwise used at the project site or elsewhere within the Delaware River Basin without the express written approval of the Executive Director or Commission and the appropriate state agency.

(xvi) Sampling of flowback and production water.

(A) Parameters and methods. Samples sufficient to characterize all flowback and production water must be collected and analyzed by the project sponsor for such parameters and using such analytical methods and detection limits as may be specified by the Executive Director.

(B) Alternate analytical method. Project sponsors may propose an analytical method other than that specified by the Executive Director, but must demonstrate to the Executive Director's satisfaction that the proposed method will meet the required detection limits and will provide comparable precision and accuracy.

(C) Professional standards. Sampling must be performed by a qualified professional experienced and trained in the collection of environmental samples for physical, chemical and biological analysis. For those parameters subject to basin state laboratory certification programs, sample analysis must be conducted by a state-certified laboratory.

(D) No filtering. Samples must not be filtered, provided that the Executive Director or designee may allow sample filtration if the project sponsor so requests and the project sponsor demonstrates that matrix interferences prevent accurate and precise determination of the concentration of required analytical parameters.

(E) Reporting format. All monitoring data must be submitted to the Commission in an electronic format specified by the Executive Director.

(xvii) Interference. If results of monitoring required by the Commission or other data or information, including complaints by nearby water users, indicate that well pad operations significantly affect or interfere with any Commission-approved uses of groundwater or surface water, the project sponsor or the sponsor's agent must immediately notify the Executive Director of such data or information and unless excused by the Executive Director, must investigate the possible causes of the apparent or alleged interference. All persons who phone the project sponsor (or agent) to register complaints involving water resources

must be referred to the DRBC, and the project sponsor (or agent) must follow up promptly with a written notice to the Executive Director. Any groundwater or surface water source that is adversely affected, including sources that are diminished or rendered dry as a result of the project sponsor's operations must be repaired, replaced or otherwise mitigated at the project sponsor's expense. 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 timeframe approved by the Executive Director. The Executive Director will consult with the host state prior to making a final determination regarding the validity of the complaints, the scope or sufficiency of the investigations, and the nature and extent of appropriate mitigation measures, if any, to be required.

(xviii) Site access. If the site is to be operated by an entity other than the property owner, then the project sponsor must certify to the Commission that the property owner has granted Commission personnel access to the site for the duration of the approval term.

(4) Application for Bulk Water Use and Management Approval. An application for Bulk Water Use and Management Approval must include the following information on such forms as may be prescribed by the Executive Director, except in those circumstances where the Executive Director determines that the information is not applicable:

(i) Project sponsor's contact information.

(ii) Project location. For a natural gas well pad, location information must include the municipality, the geographic coordinates of the center of the natural gas well pad, the proposed size of the well pad, and the proposed gas extraction area. For a natural gas gathering or transmission pipeline project, location information must include a site plan showing locations of the natural gas gathering lines and/or transmission lines. Pipelines that will pass in, on, under or across an existing or proposed reservoir or recreation project area that has been included in the Comprehensive Plan or involve significant disturbance of ground cover affecting water resources are subject to full Commission review pursuant to Article 3, Sections 2.3.5A.12. and B.7 of the RPP.

(iii) For a natural gas well pad project, the proposed number of natural gas wells on the pad.

(iv) Natural gas well identification. For a natural gas well pad project, the American Petroleum Institute (API) identification number and the number and date of

state approvals issued for each natural gas well must be provided either with the application or upon receipt of the API number from the host state. If the host state approves additional wells at a well pad after the Bulk Water Use and Management Approval for the well pad has been issued, the project sponsor must notify the Commission in writing of the API identification number, state approval date and date each well is to be constructed in accordance with Section 7.4(e)(3)(vii)(B) (requiring a notice of intent to commence natural gas well construction).

(v) Requested allocation. For natural gas well pad projects, water needs must be stated in millions of gallons per day (mgd) and for natural gas pipeline projects, water needs must be stated as the total volume of water to be used by the project during the term of the approval.

(vi) Proposed water sources. Each water source proposed to be used at the well pad or pipeline project must be identified at a minimum by its name, Commission and state approval numbers and corresponding approval dates. The project sponsor may apply to supplement its approved sources during the term of the Bulk Water Use and Management Approval.

(vii) Bulk water sales contracts. The application must include a copy of the bulk water sale agreement between the natural gas project sponsor and each proposed water source. For all existing, Commission-approved groundwater or surface water sources that did not seek an increase in a Commission-approved allocation to serve the sponsor's natural gas project, such agreement must include a provision to the effect that if at any time all or any portion of the supplier's allocation is needed to meet demand associated with the uses for which the docket or protected area permit was originally approved, including uses or areas identified in the "Area Served" section of the docket or protected area permit (collectively, "approved uses"), such that the docket or protected area permit holder cannot fully serve the approved uses and also meet its bulk sale target for natural gas-related uses, the quantity sold for natural gas-related uses must be reduced to the extent necessary to fully satisfy the demand associated with the approved uses.

(viii) Non-point source pollution control plan. If the water 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 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 satisfy Commission and host state erosion and sedimentation control requirements at

the site of the withdrawal or diversion facility, including measures to control stormwater both during and after construction. The post-construction portion of the plan must describe the operating 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 withdrawal site 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 accept erosion and sediment control plans and post-construction stormwater management plans that conform to host state antidegradation implementation requirements where established, in fulfillment of the NPSPCP requirement.

(ix) Financial assurance. A demonstration of financial assurance consistent with the requirements of Section 7.3(j) is required.

(x) Groundwater monitoring.

(A) Pre-alteration Report. Well pad project sponsors must submit to the Commission's Executive Director a pre-alteration groundwater monitoring study report (pre-alteration report) as part of the Bulk Water Use and Management Approval application.

(1) The pre-alteration report must include an artificial penetration survey of the proposed natural gas extraction area and an inventory and the mapped locations of groundwater wells within 2,000 ft. of the project well pad. The pre-alteration report must also include the results of groundwater sampling and laboratory analysis of a representative number of groundwater wells within 2,000 feet of the 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 feet of the project well pad, the project sponsor will be required to install a monitoring well or wells within 1,000 feet of the project well pad. The pre-alteration 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.

(2) Sample parameters, frequency, analytical methods and required detection limits for the groundwater will be as specified by the Executive Director.

(3) All monitoring data must also be submitted to the Commission in a format as prescribed by the Executive Director. It is recommended that project sponsors discuss the scope of the pre-alteration groundwater monitoring study with Commission staff prior to implementation and prior to submittal.

(4) All sampling must be performed by a qualified professional experienced and trained in the collection of groundwater samples. 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 that specified by the Executive Director, but must demonstrate that the alternative method will meet the required detection limits and will provide comparable precision and accuracy.

(5) Samples must not be filtered. If a project sponsor can demonstrate matrix interferences, filtration of metals samples may be allowed, but all pre- and post-drilling comparisons must be made on the same basis (unfiltered or filtered).

(6) If, despite reasonable efforts of the project sponsor, owners of proposed monitoring wells do not cooperate with the proposed groundwater monitoring program, the Executive Director may approve an alternative program based on monitoring wells established to accomplish this requirement.

(7) Additional sampling and analysis may be required by the Executive Director based on the monitoring results.

(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.

(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.

(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 owner of any well sampled 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.

(xi) Wastewater treatment facilities.

(A) Treatment and/or discharge facility information. For each facility to be used, whether located inside or outside the basin, the project sponsor must provide the facility name, a copy of the state or federal permit and if the facility is located within the basin, the Commission docket number, if appropriate.

(B) Contracts. Provide a copy of the contractual agreement between the project sponsor and each treatment and disposal facility to be used.

(C) Changes. Proposed changes to treatment and/or disposal facility information must be submitted in writing to and approved by the Executive Director. The project sponsor may not send wastewater to a treatment and/or disposal facility before the project sponsor's use of such facility has been approved by the Executive Director.

Section 7.5 Protection of High Value Water Resource Landscapes and Special Protection Waters

(a) Purpose and Applicability. Pursuant to the Determinations set forth in Section 7.3, this section establishes standards of planning and design to protect landscape features essential to maintaining existing high water quality in the non-tidal river. The section has two parts: it establishes (i) siting requirements for natural gas development projects; and (ii) requirements for the preparation of Natural Gas Development Plans (NGDPs) for large lease holdings.

(b) Goals and Objectives.

(1) Siting Requirements and Natural Gas Development Plans will:

(i) Ensure that the project sponsor investigates and mitigates the broad and cumulative effects that natural gas development activities may have on the landscape and water resources associated with the geographic area of each NGDP.

(ii) Require both (a) the analysis of potential water resource impacts and (b) measures to ensure that these impacts are avoided or minimized. In particular, these provisions will help to ensure that the adverse water resource impacts associated with incremental facility siting and multiple access corridors in leasehold-scale areas are avoided or reduced.

(iii) Protect the natural character of the watershed and the project area by encouraging facility siting that minimizes land disturbance, including forest clearing and fragmentation.

(iv) Sustain important components of the forest ecosystem for long-term forest health, which is critical to maintaining the existing water resources.

(v) Protect the natural hydrology of watersheds by minimizing soil compaction and installation of impervious surfaces, especially in High Value Water Resource Landscapes – areas with ecosystem characteristics directly linked to the protection of clean water.

(vi) Assure that Regional Resource Management Corridors are avoided to the maximum extent practicable.

(2) The requirement for Natural Gas Development Plans is also intended to ensure that the following objectives are attained:

(i) No degradation of water quality in the Special Protection Waters of the Basin.

(ii) Minimize floodplain and headwater stream encroachment.

(iii) Minimize net loss of forest cover in headwater watersheds and floodplains and fragmentation of forest cores.

(c) Applicability and approvals associated with siting requirements and NGDPs.

(1) Siting Requirements. All well pads and associated non-linear infrastructure related to natural gas development activities constructed within the basin must adhere to the prohibition and setback requirements of Section 7.5(d) unless a variance is approved by the Executive Director or Commission in accordance with that Section. The siting requirements will be administered through two processes:

(i) Approval by Delegated Authority (ADA) or docket for bulk water use and management, in accordance with Sections 7.3(b)(2) and 7.4(e); and

(ii) Docket approval for Natural Gas Development Plans (NGDPs).

(2) Natural Gas Development Plans (NGDPs).

(i) Form of approval. Commission approval of an NGDP will be in the form of a docket.

(ii) Applicability. As set forth in Section 7.3(b)(5), except as provided herein, any natural gas development project sponsor with natural gas leaseholds in the Delaware River Basin encompassing a total of over 3,200 acres or who intends to construct more than five natural gas well pads in the Delaware River Basin may undertake natural gas development projects within the basin only after obtaining approval in the form of a docket issued by the Commission for a Natural Gas Development Plan (NGDP) in accordance with this Section 7.5.

(A) Five well pad allowance. A single "project sponsor" as that term is defined in Section 7.2 of this article may develop a maximum of five natural gas well pads in the basin in the absence of a Commission-approved NGDP, after obtaining a bulk water use and management approval for each well pad and all necessary state approvals.

(1) For purposes of the limitation of five natural gas well pads per project sponsor and the intention to construct more than five natural gas well pads, the term "natural gas well pad" includes any well pad constructed for the purpose of installing one or more natural gas

wells, including any hydraulically fractured vertical or horizontal well intended for natural gas production, any exploratory or stratigraphic well whether or not it is hydraulically fractured, and any other natural gas well that is not hydraulically fractured.

(2) An NGDP must be approved by the Commission before the project sponsor may construct a sixth natural gas well pad anywhere in the Basin.

(3) The limit of five natural gas well pads per project sponsor prior to approval of an NGDP applies regardless of whether the project sponsor's leasehold will be divided or development of the leasehold phased in accordance with Section 7.5(c)(2)(ii)(C) or (D) below.

(B) NGDP Exemption. A project sponsor required to obtain an NGDP approval may make application to the Commission requesting an exemption from the requirement where the project sponsor certifies that individual well pad sites are geographically disparate.

Well pads sited in leaseholds that are contiguous or located such that the produced natural gas from the well pads may be transported through a common gathering pipeline do not qualify for an exemption from the NGDP requirement. The Executive Director or Commission may deny, approve, or approve with conditions a request for exemption from the requirement to prepare a NGDP.

(C) Division of Entire Basin Leasehold. A project sponsor may apply to the Commission for the division of its Entire Basin Leasehold into separate units where the project sponsor can demonstrate that geographic separation of the units warrants such division. The Executive Director may deny, approve, or approve with conditions the requested division of an Entire Basin Leasehold. Division of the leasehold does not relieve a project sponsor from the obligation to develop a NGDP.

(D) Phased Development of Entire Basin Leasehold. A project sponsor may apply to the Commission for approval of phased development of its Entire Basin Leasehold where the project sponsor identifies to the Commission the geographic area reserved for future phases and certifies to the Commission that natural gas development activities will not take place within the area reserved for future phases within five years of the date of application for the initial (or current) phase. The Executive Director (may deny, approve, or approve with conditions all or part of a request for

phased development of an Entire Basin Leasehold. Phasing of the leasehold does not relieve a project sponsor from the obligation to develop a NGDP.

(d) Siting and Setback Requirements.

(1) Siting Restrictions.

(i) Flood Hazard Area. Well pads and other non-linear infrastructure related to natural gas development activities, such as compressor stations and impoundments, may not be sited in the floodway of any waterway within the Delaware River Basin. Consistent with a variance pursuant to Section 7.5(d)(2)(ii), non-linear infrastructure may be placed in the flood fringe, and linear infrastructure may be placed in a flood hazard area. Delineation of the Flood Hazard Area, defined as the 100-year floodplain, will be in accordance with the provisions of the Commission's *Administrative Manual – Part III Basin Regulations - Flood Plain Regulations*.

(ii) Upper Delaware River Corridor (defined as ridge to ridge from River Mile 258.4 to RM 330.7). In accordance with the River Management Plan for the Upper Delaware Scenic and Recreational River developed pursuant to P.L. 95-625 [("UPDE")] as "guidance for local, State and Federal governments … in the preparation of and enforcement of land and water use regulations designed to implement the legislation designating the [UPDE]" natural gas exploration and extraction activities are deemed incompatible land uses at locations in the UPDE Corridor. Accordingly, natural gas development activity is prohibited in such areas without a variance issued in accordance with Section 7.5(d)(2) below. (*See* Conference of Upper Delaware Townships, in cooperation with the Commonwealth of Pennsylvania, State of New York, Delaware River Basin Commission, National Park Service and Upper Delaware Citizens Advisory Council, November 1986), pp. 114 (Preamble, Summary); 127 (definition of "Gas and Oil Fields"), and 134 ("Schedule of Compatible, Conditional, and Incompatible Land Uses" respectively).

(iii) Setbacks. All well pads and other non-linear infrastructure related to natural gas development activities must adhere to the more stringent of the state-imposed requirements or the following minimum setbacks; provided however, that additional setbacks or best management practices ("BMPs") may be required to protect public drinking water systems or water supply reservoirs and in watersheds of waterbodies designated by the Commission as Special Protection Waters, by the Commonwealth of Pennsylvania as "high quality waters" or "exceptional value waters", or by the State of New York for extra protection:

(A) Stream, waterbody or wetland – the greater of 300 ft. from the wellbore or 100 ft. from the nearest disturbance.

(B) Surface water supply intake – 1,000 ft. from nearest disturbance

(C) Water supply reservoir – 1,000 ft. from nearest disturbance

(D) Public water systems – 1,000 ft. from nearest disturbance

(E) Private water supply well – 500 ft. from nearest disturbance

(iv) Steep Slope Conditions. Any disturbance associated with natural gas development infrastructure (whether linear or non-linear) on slopes greater than 15% will be subject to such additional site management requirements as the Commission deems necessary to protect water resources.

(2) Variances from siting restrictions.

(i) At the request of the project sponsor, the Executive Director (when issuing a bulk water use and management approval) or Commission (when issuing a docket approval for an NGDP or other natural gas development project) may grant a variance from the requirements set forth above (although not from the state requirement if more stringent, unless the state has expressly agreed) consistent with the following:

(A) Non-linear infrastructure in flood hazard area. No variance may be granted from the restriction against placement of non-linear infrastructure in a floodway. A variance may be granted from the restriction against placement of non-linear infrastructure in a flood fringe, provided that no alternative means of gaining access to the natural gas exists and/or where the absence of a variance would leave the mineral estate with no economic value.

(B) Linear infrastructure in flood hazard area. A variance may be granted for the placement of linear infrastructure such as access roads and gathering lines in a flood hazard area if no alternative route is feasible

(C) Natural gas exploration and extraction activities in the Upper Delaware Scenic and Recreational River (UPDE) Corridor. A variance may be granted for natural gas exploration and extraction activities within the UPDE Corridor.

(ii) A variance may be granted when the project sponsor demonstrates to the satisfaction of the Executive Director or Commission, as the case may be, that:

(A) application of the minimum setbacks set forth above would place an undue burden on the project sponsor for reasons related to terms of the leasehold among other factors; and

(B) the proposed siting conditions would be equally or more protective of water resources of the basin, taking into consideration mitigation measures such as but not limited to: spill control, containment, berms, enhanced erosion and sediment controls, project timing restrictions to avoid adverse effects on threatened or endangered species, and/or vegetated buffers.

When a request for variance is made of the Executive Director, the Executive Director, after determining whether the conditions set forth above are met, may approve or deny the request or recommend that a decision be made by the Commission following a public hearing.

(iii) A request for a variance from the siting and setback requirements of Section 7.5(d)(1) must be accompanied by evidence that the project sponsor has notified all property owners identified in sub-sections 7.3(b)(3)(i) and/or (iii) above (in connection with Bulk Water Use and Management Approval and NGDP approval applications, respectively) of the request.

(iv) The Executive Director or Commission may approve or deny a request for a variance or may approve the request subject to additional conditions to protect the water resources of the basin.

(e) Natural Gas Development Plans (NGDPs).

(1) Concept. A Natural Gas Development Plan will be based on landscape mapping of three sets of data:

(i) Areas prohibited from development, including flood hazard areas and constraints set by the state, local government and/or the lease agreement.

(ii) Areas prohibited from development absent a variance, including setbacks established by DRBC or by the state, provided, however, that variances from state setbacks must be expressly approved by the state.

(iii) Remaining lands available for natural gas development activities showing level of environmental sensitivity. Use of these lands is subject to an avoidance analysis, minimization of impacts through BMPs, restoration and compensation requirements determined based on the environmental sensitivity of the chosen sites.

(2) Assumptions, demonstration.

(i) Assumptions. It is understood that the project sponsor is performing a concept plan analysis, that aspects of the lease area plan may not be finalized, and that site plans likely will change. The purpose of the NGDP is to require proactive planning and mitigation where impacts cannot be avoided.

(ii) Demonstration by project sponsor. A project sponsor must demonstrate that the project design will meet the goals and objectives listed in Section 7.5(b).

(3) Application. The elements of a Natural Gas Development Plan application include the following:

(i) Contact. The name and contact information for an individual who will serve as the contact for information concerning the NGDP.

(ii) Lease area map. The project sponsor's Entire Basin Leasehold must be delineated on a map or maps, utilizing as the base map a United States Geologic Survey (USGS) 7.5-minute series topographic quadrangle (or its equivalent), provided, however, that a USGS 15-minute series topographic quadrangle may be used if the leasehold size requires it. If phased development has been approved or the project sponsor is applying for phased development approval, the map(s) must show development units within the leasehold that will be developed in five-year increments.

(iii) Narrative to lease area map. The lease area map must be accompanied by a narrative containing the following information:

(A) A summary of the total acreage leased within the basin, with a breakdown by development units.

(B) A summary of the number of well pads and wells anticipated to be constructed through build-out of all of the project sponsor's basin leaseholds.

(C) A break-down of the information provided in the preceding paragraph, by development unit, including the number of well pads expected to be initiated by year.

(D) Analysis of potential impact due to the siting of non-linear and linear features throughout the lease area based on the siting criteria listed in the following section.

(iv) Siting analysis. A siting analysis in the form of a map (or maps) and including data layers supplied by DRBC and the applicant will be used to evaluate the potential impact of the proposed layout of natural gas extraction and distribution infrastructure. Multiple scenarios for the placement of well pads and ancillary infrastructure should be evaluated by the applicant in order to develop a plan that best reduces impacts to High Value Water Resource Landscapes (HVWRLs) and regional resource management corridors.

(A) Data layers to be supplied by DRBC include but are not limited to:

(1) Base map with roads and structures (based on state or USGS topographical map data), flood hazard areas, waterbodies, wetlands, and setbacks as defined in Section 7.5(c).

(2) Composite map of regional resource management corridors and areas identified by staff on a preliminary basis as HVWRLs, including, but not limited to the following:

- Forested riparian corridors
- Headwater watersheds
- Wetlands and waterbodies (including classification)
- Sensitive soils – (hydric and highly erodible)
- Core Forests
- Steep slopes
- Regional resource management corridors

(B) Layers to be supplied by the project sponsor include but are not necessarily limited to:

(1) Additional roads, rights of way, structures, private wells, existing natural gas collection lines and other appurtenant facilities and infrastructure not noted on the DRBC base map.

(2) Additional prohibited or limited-use areas in accordance with state or local government requirements or lease conditions.

(3) Geologic constraints (faults, abandoned wells, etc.)

(4) Concept Plan showing:

(A) proposed well pad locations and associated infrastructure

(B) freshwater impoundments

(C) water withdrawal locations (if in lease area)

(D) centralized wastewater storage facilities

(E) roads, gathering lines and rights of ways

(F) additional waterbodies not noted on DRBC Base Map proposed to be disturbed by the above infrastructure components, identified by means of a site survey

(v) Such additional information as the Executive Director or the Commission may require.

(4) Mitigation requirements. To the extent possible, natural gas infrastructure is to be placed so as to avoid and minimize the disturbance of HVWRLs and regional resource management corridors. Impacts that cannot be avoided must be addressed by means of the approaches listed in sub-section (i)(B) through (D) below to re-capture the ecological functions and ecosystem services provided by the landscapes before they were disturbed. These mitigation requirements are independent of and in addition to any imposed by the host state. Specific requirements will depend upon the landscape elements affected (e.g., core forest areas, steep slopes) and are to be determined by the siting analysis.

(i) For the purpose of this Article, mitigation approaches from most to least preferred are as follows:

(A) Avoid through planning and minimize through use of BMPs impacts to HVWRLs and regional resource management corridors by limiting the degree or magnitude of the action and its implementation;

(B) Rectify the impact by repairing, rehabilitating or restoring the impacted environment;

(C) Reduce or eliminate the impact over time by preservation and maintenance operations during the life of the action.

(D) If the impact cannot be eliminated by following steps (A)-(C) above, compensate for the impact by replacing the environment impacted by the project or by providing substitute resources or environments.

(ii) Mitigation in connection with permanent natural gas infrastructure.

(A) Compensation by replacement is required to offset the permanent loss of HVWRLs by re-capturing the ecological function and ecosystem services lost within the sub-watershed(s) of the leasehold as a result of the construction of permanent natural gas exploration and production infrastructure.

(B) Permanent infrastructure includes those structures or disturbances that are reasonably expected to remain in place beyond the term of the NGDP docket approval, or the presence of which will result in permanent impacts to HVWRLs and regional resource management corridors. The following infrastructure elements are assumed to be permanent:

(1) roads

(2) maintained rights-of-way and well plug

(3) compressor and processing stations

(4) freshwater impoundments

(5) water withdrawal sites and associated infrastructure

(iii) Mitigation in connection with temporary natural gas infrastructure.

(A) Site repair (restoration) must be designed and implemented following temporary disturbances associated with the construction of natural gas infrastructure, to reclaim the water resource-related ecological function and ecosystem services performed by HVWRLs, including but not limited to the hydrologic transmissivity of soils and the shade, moisture retention, soil stabilization and other properties of forested vegetation that are integral to the protection of water resources.

(B) Temporary disturbances are those that will not last beyond the term of the docket approval or for which the footprint will be substantially reduced in size within such term. Restoration must commence within three months of the cessation of operations in the affected area of the leasehold and be completed within one year. Temporary disturbances include, but are not necessarily limited to:

(1) natural gas well pads

(2) temporary roads (i.e., roads that will be retired)

(3) flowback and production water recycling sites

(4) staging areas

(5) centralized waste storage facilities

Section 7.6 Wastewater Generated by Natural Gas Development

(a) Applicability and form of approval. Except for recovered flowback and production water reused in accordance Section 7.4(a)(5), non-domestic natural gas wastewater may not be transferred, treated or discharged at a new or existing facility located in the Delaware River Basin except in accordance with an approval in the form of a docket issued by the Commission to the owner or operator of the facility.

(b) Demonstrations required by treatment and/or discharge facility. The owner or operator of a treatment and/or discharge facility within the Delaware River Basin that proposes to accept non-domestic natural gas wastewater must make the following demonstrations:

(1) **Treatability.** Such owner or operator must submit a treatability study prepared by a professional engineer licensed to practice in the state in which the proposed discharge is located, demonstrating that:

(i) the introduction of such non-domestic wastewater will not pass through or interfere with the wastewater treatment or discharge operations or waste management at the facility; and

(ii) the resulting combined effluent will comply with the wastewater discharge permit requirements of the state in which the wastewater treatment facility is located, as well as with all conditions of an amended Commission docket approval.

(iii) A treatability study prepared in fulfillment of a state and/or federal requirement may be used to satisfy this requirement if such study establishes that the proposed discharge will meet the conditions set forth in paragraphs (i) and (ii) above.

(2) **Special Protection Waters.** For discharges located within the drainage area of waters designated by the Commission as Special Protection Waters, demonstration that the facility and discharge are in compliance with provisions of the Commission's regulations concerning such waters.

(3) **Non-exceedance of primary and secondary safe drinking water regulations.** Consistent with the intent of Section 3.10.3.B.2. of the Commission's Water Quality Regulations (WQR), owners or operators of basin discharge facilities, except for those that discharge to Zones 4, 5 and 6 of the Delaware Estuary, are required to furnish the Commission with an analysis that demonstrates their proposed discharge will not result in basin waters being rejected for public water supply. Specifically,

such analysis must demonstrate that the resulting discharge will not contribute to or result in exceedence of the EPA's primary and secondary drinking water standards for the following parameters at a minimum: Total Dissolved Solids, Chloride, Barium, Sulfate, Iron, Nitrite-Nitrogen, Fluoride, Manganese, Zinc, Nitrate-Nitrogen, Aluminum, Copper, Lead, Cyanide-Free, 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 such analysis may be specified by the Executive Director.

(4) **Effluent limitations and stream quality objectives for discharges to Zones 2-6.** Any such owner or operator of a facility discharging to DRBC's Water Quality Zone 2, 3, 4, 5 or 6 of the Delaware Estuary must submit an analysis demonstrating that the proposed discharge will comply with:

(i) the applicable basin-wide effluent limitations set forth in Sections 3.10.4 and 4.30 of the WQR;

(ii) the applicable basin-wide stream quality objectives set forth in Section 3.10.3.B. of the WQR; and

(iii) the zone-specific stream quality objectives found in Section 3.30 of the WQR, including the applicable portions of Tables 3, 4, 5, 6 and 7 of the WQR.

(5) **Basin-wide effluent limitations and stream quality objectives.** With the exception of owners or operators of facilities discharging to DRBC water quality zones 2 through 6, such an owner or operator must submit an analysis demonstrating that the resulting discharge will be in compliance with:

(i) the applicable basin-wide effluent limitations set forth in Sections 3.10.4 and 4.30 of the WQR;

(ii) the basin-wide stream quality objectives found in Section 3.10.3.B of the WQR; and

(iii) the stream quality objectives for toxic substances as follows:

(A) The toxicity in non-tidal basin waters must not exceed 0.3 Toxic Units (acute), except in small mixing areas that may be established by the Commission near outfall structures in accordance with subsection 7.6(b)(7)(ii) below.

(B) The toxicity in non-tidal basin waters must not exceed 1.0 Toxic Units (chronic).

(C) For the purposes of determining compliance with the requirements of this section for acute and chronic toxicity, the duration of exposure of aquatic organisms shall be one hour for acute toxicity and four days for chronic toxicity.

(6) **Basin-wide Total Dissolved Solids (TDS) Stream Quality Objective**. All project sponsors, are required to submit an analysis that demonstrates their proposed discharge is in compliance with the following TDS stream quality objectives:

(i) The concentration of TDS must not exceed 133% of background (*see* Section 3.10.3.B.1.b. of the WQR), and in no case may it exceed 500 mg/l, except for those projects that discharge to Zones 4, 5 and 6 of the Delaware Estuary (*see* Section 3.10.3.B.2. of the WQR).

(ii) Background TDS must be established by using the observed concentration of TDS during low flow conditions ($Q_{7\text{-}10}$) or, in the absence thereof, an estimate acceptable to the Commission (*see* Section 3.10.6.G. of the WQR). 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 submitting a project application.

(7) **Point of Compliance and Mixing Zone**.

(i) Unless provided otherwise, effluent limitations are to be met at the point of discharge unless a mixing zone is approved in accordance with paragraph (ii) below.

(ii) Mixing zone. For non-tidal portions of the basin, a mixing zone must meet the following requirements:

(A) The dimension of the mixing area is to be limited to the more stringent of:

(1) A distance of 50 times the discharge length scale in any direction from the outfall structure, or

(2) A distance of 5 times the local water depth in any direction from the outfall structure.

(B) A mixing area may not be located in areas which are or could be occupied by a species absent the toxic effect of pollutants; and which have those physical, chemical and biological features which are essential to the conservation and maintenance of the Delaware River Basin population.

The Commission will identify and determine such areas. Such determinations shall consider the spatial and temporal requirements of the species, including critical life stages. Determinations shall be governed by the Commission's Rules of Practice and Procedure relating to review, hearing, decisions and objections thereto.

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

(D) A zone of passage for free-swimming and drifting organisms equal to 50% of the surface width of the stream at the location of the discharge must be provided.

(E) Upon the request of one or more dischargers, the Executive Director may consider requests for alternatives to the requirements of Subsections (A) through (D) above. Such requests must provide a demonstration that the alternative requested will not adversely impact free-swimming, drifting and benthic organisms, and be supported by a sound rationale and substantial scientific data and analysis. The Commission may establish alternative areas where the acute toxicity requirement of Section 7.6(b)(5)(iii)(A) may be exceeded based upon the evaluation of the submitted demonstrations.

(8) Wastewater imports for transfer, treatment and/or discharge. Basin waters have limited assimilative capacity and limited capacity to accept conservative substances without significant impacts. It is the policy of the Commission to discourage the importation of wastewater into the basin that would significantly reduce the assimilative capacity of the receiving stream on the basis that the ability of basin streams to accept wastewater discharges should be reserved for users within the basin (*see* Section 2.30.2 of the Water Code). Non-domestic natural gas wastewater may be imported into the basin only after approval by the Commission in accordance with Section 2.30 of the Water Code.

(9) Underground Injection Control. Any entity proposing to construct and operate an Underground Injection Control (UIC) facility for the disposal of non-domestic natural gas wastewater in the basin must first obtain all necessary approvals from the host state and the U.S. EPA. U.S. EPA approval to construct and operate a UIC facility within the basin will be deemed sufficient to demonstrate that the facility is consistent with the comprehensive plan, including all applicable Commission requirements, and no separate Commission review or determination will be required.

Appendix: Wording of Financial Assurance Instruments

(i) Surety Bond.

1. A surety bond guaranteeing payment into a trust fund, as specified in Section 7.3(j)(12), must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

Financial Guarantee Bond

Date bond executed:

Effective date:

Principal: [legal name and business address of project sponsor]

Type of Organization: [insert "individual," "joint venture," "partnership," or "corporation"]

State of incorporation:

Surety(ies): [name(s) and business address(es)]

Facilities Covered: All Natural Gas wells pads, wells, and associated facilities located on the following leaseholds: [insert leasehold description]

Total penal sum of bond: $_____

Type of activity covered as defined in 7.3(j)(1)(i) and/or (ii): [Insert one or more as applicable.]

Surety's bond number: _____

Know All Persons By These Presents, that we, the Principal and Surety(ies) hereto are firmly bound to the Delaware River Basin Commission (hereinafter "DRBC or Commission"), in the above penal sum for the payment of which we bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally; provided that, where the Surety(ies) are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sum only as is set forth opposite the name of such Surety, but if no limit of liability is indicated, the limit of liability must be the full amount of the penal sum.

Whereas said Principal is required, under the Delaware River Basin Compact and its implementing regulations, to secure DRBC approval in order to undertake a natural gas development project within the leasehold defined above; and

Whereas said Principal is required to provide financial assurance for [Select one or more of the following as applicable] plugging, abandonment and restoration according to host state requirements as described in Section 7.3(j)(1)(i)"; and/or

"mitigation, remediation of or other response to any release or threatened release as described in Section 7.3(j)(1)(ii);" and

Whereas said Principal must establish a standby trust fund as is required when a surety bond is used to provide such financial assurance;

Now, therefore, the conditions of the obligation are such that if the Principal must faithfully, before the beginning of final closure of each facility identified above, fund the standby trust fund in the amount(s) identified above for the facility,

Or, if the Principal must provide alternate financial assurance, as specified in Section 7.3(j), and obtain the Executive Director's written approval of such assurance, within 90 days after the date notice of cancellation is received by both the Principal and the Executive Director from the Surety(ies), then this obligation shall be null and void; otherwise it is to remain in full force and effect.

The Surety(ies) shall become liable on this bond obligation only when the Principal has failed to fulfill the conditions described above. Upon notification by the Executive Director or designee that the Principal has failed to perform as guaranteed by this bond, the Surety(ies) must place funds in the amount guaranteed for the facility(ies) into the standby trust fund as directed by the Executive Director.

The liability of the Surety(ies) must not be discharged by any payment or succession of payments hereunder, unless and until such payment or payments shall amount in the aggregate to the penal sum of the bond, but in no event shall the obligation of the Surety(ies) hereunder exceed the amount of said penal sum.

The Surety(ies) may cancel the bond by sending notice of cancellation by certified mail to the Principal and to the Executive Director, provided, however, that cancellation must not occur during the 120 days beginning on the date of receipt of the notice of cancellation by both the Principal and the Executive Director, as evidenced by the return receipts and must not be valid unless the Principal has provided alternate financial assurance as specified in Section 7.3(j) and obtained the Executive Director's written approval of such assurance.

The Principal may terminate this bond by sending written notice to the Surety(ies), provided, however, that no such notice must become effective until the Surety(ies) receive(s) written authorization for termination of the bond by the Executive Director.

[The following paragraph is an optional rider that may be included but is not required.]

Principal and Surety(ies) hereby agree to adjust the penal sum of the bond yearly so that it guarantees a [Select one or more of the following as Applicable] plugging, abandonment and restoration, and/or mitigation, remediation or response amount, provided that the penal sum does not increase by more than 20

percent in any one year, and no decrease in the penal sum takes place without the written permission of the Executive Director.

In Witness Whereof, the Principal and Surety(ies) have executed this Financial Guarantee Bond and have affixed their seals on the date set forth above.

The persons whose signatures appear below hereby certify that they are authorized to execute this surety bond on behalf of the Principal and Surety(ies) and that the wording of this surety bond is identical to the wording specified in Section 7.3(j) and Section (i) of this Appendix, as such regulations were constituted on the date this bond was executed.

Principal

[Signature(s)]_____

[Name(s)]_____

[Title(s)]_____

[Corporate seal]_____

Corporate Surety(ies)

[Name and address]

State of incorporation:_____

Liability limit: $_____

[Signature(s)]

[Name(s) and title(s)]

[Corporate seal]

[For every co-surety, provide signature(s), corporate seal, and other information in the same manner as for Surety above.]

Bond premium: $_____

2. A surety bond guaranteeing performance of [Select one or more of the following as applicable] plugging, abandonment and restoration according to host state requirements as described in Section 7.3(j)(1)(i)"; and/or "mitigation, remediation of or other response to any release or threatened release as described in Section 7.3(j)(1)(ii)," as specified in Section 7.3(j), must be worded as follows, except that the instructions in brackets are to be replaced with the relevant information and the brackets deleted:

Performance Bond

Date bond executed:_____

Effective date:_____

Principal: [legal name and business address of project sponsor]

Type of organization: [insert "individual," "joint venture," "partnership," or "corporation"]

State of incorporation:_____

Surety(ies): [name(s) and business address(es)]_____

Facilities Covered: All Natural Gas wells pads, wells, and associated facilities located on the following leaseholds: [insert leasehold description]

Type of activity covered as defined in 7.3(j)(1)(i), (ii), or (iii). [Insert one or more as applicable.

Total penal sum of bond: $_____

Surety's bond number:_____

Know All Persons By These Presents, that we, the Principal and Surety(ies) hereto are firmly bound to the Delaware River Basin Commission (hereinafter "DRBC"), in the above penal sum for the payment of which we bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally; provided that, where the Surety(ies) are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sum only as is set forth opposite the name of such Surety, but if no limit of liability is indicated, the limit of liability must be the full amount of the penal sum.

Whereas said Principal is required under the Delaware River Basin Compact and its implementing regulations to secure DRBC approval in the form of a docket or, if available, an approval by delegated authority ("ADA") in order to undertake a project regarding each natural gas well identified above, and

Whereas said Principal is required to provide financial assurance for plugging and abandonment, and restoration of the natural gas well, well pad site and associated equipment and structures, as specified in Section 7.3(j) as a condition of the docket or ADA, and

Whereas said Principal must establish a standby trust fund as is required when a surety bond is used to provide such financial assurance;

Now, Therefore, the conditions of this obligation are such that if the Principal must faithfully perform [Select one or more of the following as applicable]

plugging, abandonment and restoration according to host state requirements as described in Section 7.3(j)(1)(i)"; and/or "mitigation, remediation of or other response to any release or threatened release as described in Section 7.3(j)(1)(ii)" whenever required to do so, of each facility for which this bond guarantees restoration, closure or remediation, in accordance with requirements of Article 7, the Commission approval may be amended, pursuant to all applicable laws, statutes, rules, and regulations, as such laws, statutes, rules, and regulations may be amended,

Or, if the Principal must provide alternate financial assurance as specified in Section 7.3(j), and obtain the Executive Director's written approval of such assurance, within 90 days after the date notice of cancellation is received by both the Principal and the Executive Director from the Surety(ies), then this obligation shall be null and void, otherwise it is to remain in full force and effect.

The Surety(ies) shall become liable on this bond obligation only when the Principal has failed to fulfill the conditions described above.

Upon notification by the Executive Director or designee that the Principal has been found in violation of the requirements of Section 7.3(j), for a facility for which this bond guarantees performance, the Surety(ies) must either perform in accordance with the docket requirements or place the amount guaranteed for the facility into the standby trust fund as directed by the Executive Director.

Upon notification by the Executive Director that the Principal has failed to provide alternate financial assurance as specified in Section 7.3(j), and obtain written approval of such assurance from the Executive Director during the 90 days following receipt by both the Principal and the Executive Director of a notice of cancellation of the bond, the Surety(ies) must place funds in the amount guaranteed for the facility(ies) into the standby trust fund as directed by the Executive Director.

The surety(ies) hereby waive(s) notification of amendments to closure plans, permits, dockets, applicable laws, statutes, rules, and regulations and agrees that no such amendment shall in any way alleviate its (their) obligation on this bond.

The liability of the Surety(ies) must not be discharged by any payment or succession of payments hereunder, unless and until such payment or payments must amount in the aggregate to the penal sum of the bond, but in no event shall the obligation of the Surety(ies) hereunder exceed the amount of said penal sum.

The Surety(ies) may cancel the bond by sending notice of cancellation by certified mail to the owner or operator and to the Executive Director, provided, however, that cancellation must not occur during the 120 days beginning on the date of receipt of the notice of cancellation by both the Principal and the Executive Director, as evidenced by the return receipts and shall not be valid unless the Principal has provided alternate financial assurance as specified in Section 7.3(j) and obtained the Executive Director's written approval of such assurance.

The principal may terminate this bond by sending written notice to the Surety(ies), provided, however, that no such notice shall become effective until the Surety(ies) receive(s) written authorization for termination of the bond by the Executive Director.

[The following paragraph is an optional rider that may be included but is not required.]

Principal and Surety(ies) hereby agree to adjust the penal sum of the bond yearly so that it guarantees a new amount, provided that the penal sum does not increase by more than 20 percent in any one year, and no decrease in the penal sum takes place without the written permission of the Executive Director.

In Witness Whereof, The Principal and Surety(ies) have executed this Performance Bond and have affixed their seals on the date set forth above.

The persons whose signatures appear below hereby certify that they are authorized to execute this surety bond on behalf of the Principal and Surety(ies) and that the wording of this surety bond is identical to the wording specified in Section 7.3(j)(12) and section (i) of this Appendix as such regulation was constituted on the date this bond was executed.

Principal

[Signature(s)]

[Name(s)]

[Title(s)]

[Corporate seal]

Corporate Surety(ies)

[Name and address]

State of incorporation:_____

Liability limit: $_____

[Signature(s)]

[Name(s) and title(s)]

[Corporate seal]

[For every co-surety, provide signature(s), corporate seal, and other information in the same manner as for Surety above.]

Bond premium: $_____

(ii) Letter of Credit.

A letter of credit, as specified in Section 7.3(j)(13) of this Section, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

Irrevocable Standby Letter of Credit

Executive Director

Delaware River Basin Commission

Dear Sir or Madam:

We hereby establish our Irrevocable Standby Letter of Credit No. ------ in your favor, at the request and for the account of [sponsor's name and address] up to the aggregate amount of [in words] U.S. dollars $------, available upon presentation of

(1) your sight draft, bearing reference to this letter of credit no. ------, and

(2) your signed statement reading as follows: "I certify that the amount of the draft is payable pursuant to regulations issued under authority of the Delaware River Basin Compact."

This letter of credit is effective as of [date] and shall expire on [date at least 1 year later], but such expiration date shall be automatically extended for a period of [at least 1 year] on [date] and on each successive expiration date, unless, at least 120 days before the current expiration date, we notify both you and [sponsor's name] by certified mail that we have decided not to extend this letter of credit beyond the current expiration date and the Principal has provided alternate financial assurance as specified in Section 7.3(j) and obtained the Executive Director's written approval of such assurance. In the event you are so notified, any unused portion of the credit shall be available upon presentation of your sight draft for 120 days after the date of receipt by both you and [project sponsor's name], as shown on the signed return receipts.

Whenever this letter of credit is drawn on under and in compliance with the terms of this credit, we shall duly honor such draft upon presentation to us, and we shall deposit the amount of the draft directly into the standby trust fund of [project sponsor's name] in accordance with your instructions.

We certify that the wording of this letter of credit is identical to the wording specified in Section 7.3(j)(13) and section (ii) of this Appendix as such regulations were constituted on the date shown immediately below.

[Signature(s) and title(s) of official(s) of issuing institution] [Date]

This credit is subject to [insert "the most recent edition of the Uniform Customs and Practice for Documentary Credits, published and copyrighted by the International Chamber of Commerce," and "the Uniform Commercial Code"].

(iii) Trust Fund.

A trust agreement for a trust fund, as specified in Section 7.3(j)(14), must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

Trust Agreement

Trust Agreement, the "Agreement," entered into as of [date] by and between [name of the owner or operator], a [name of State] [insert "corporation," "partnership," "association," or "proprietorship"], the "Grantor," and [name of corporate trustee], [insert "incorporated in the State of ----------" or "a national bank"], the "Trustee."

Whereas, the Delaware River Basin Commission ("DRBC"), a federal interstate compact agency, has established certain regulations applicable to the Grantor, requiring that the sponsor of a natural gas development project must provide assurance that funds will be available when needed for [Select one or more of the following as Applicable] plugging, abandonment and restoration according to host state requirements as described in Section 7.3(j)(1)(i)"; and/or "mitigation, remediation of or other response to any release or threatened release as described in Section 7.3(j)(1)(ii)"

Whereas, the Grantor has elected to establish a trust to provide all or part of such financial assurance for the facilities identified herein,

Whereas, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this agreement, and the Trustee is willing to act as trustee,

Now, Therefore, the Grantor and the Trustee agree as follows:

Section 1. *Definitions*. As used in this Agreement:

(i) The term "Grantor"' means the project sponsor who enters into this Agreement and any successors or assigns of the Grantor.

(ii) The term "Trustee" means the Trustee who enters into this Agreement and any successor Trustee.

Section 2. *Identification of Facilities*. This Agreement pertains to all Natural Gas wells pads, wells, and associated facilities located on the leasehold identified on attached Schedule A. [Include a description of each leasehold in Attachment A.]

Section 3. *Establishment of Fund*. The Grantor and the Trustee hereby establish a trust fund, the "Fund," for the benefit of DRBC. The Grantor and the Trustee intend that no third party have access to the Fund except as herein provided. The Fund is established initially as consisting of the property, which is acceptable to the Trustee, described in Schedule B attached hereto. Such property and any other property subsequently transferred to the Trustee is referred to as the Fund, together with all earnings and profits thereon, less any payments or distributions made by the Trustee pursuant to this Agreement. The Fund must be held by the Trustee, IN TRUST, as hereinafter provided. The Trustee shall not be responsible nor shall it undertake any responsibility for the amount or adequacy of, nor any duty to collect from the Grantor, any payments necessary to discharge any liabilities of the Grantor established by DRBC.

Section 4. *Payment for Covered Activities*. The Trustee must make payments from the Fund as the Executive Director shall direct, in writing, to provide for the payment of the costs covered by this Agreement. The Trustee must reimburse the Grantor or other persons as specified by the Executive Director from the Fund for covered expenditures in such amounts as the Executive Director shall direct in writing. In addition, the Trustee must refund to the Grantor such amounts as the Executive Director specifies in writing. Upon refund, such funds shall no longer constitute part of the Fund as defined herein.

Section 5. *Payments Comprising the Fund*. Payments made to the Trustee for the Fund must consist of cash or securities acceptable to the Trustee.

Section 6. *Trustee Management*. The Trustee must invest and reinvest the principal and income of the Fund and keep the Fund invested as a single fund, without distinction between principal and income, in accordance with general investment policies and guidelines which the Grantor may communicate in writing to the Trustee from time to time, subject, however, to the provisions of this section. In investing, reinvesting, exchanging, selling, and managing the Fund, the Trustee must discharge his duties with respect to the trust fund solely in the interest of the beneficiary and with the care, skill, prudence, and diligence under the circumstances then prevailing which persons of prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

(i) Securities or other obligations of the Grantor, or any other sponsor, owner or operator of the facilities, or any of their affiliates as defined in the Investment Company Act of 1940, as amended, 15 U.S.C. 80a-2.(a), must not be acquired or held, unless they are securities or other obligations of the Federal or a State government;

(ii) The Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by an agency of the Federal or State government; and

(iii) The Trustee is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

Section 7. *Commingling and Investment*. The Trustee is expressly authorized in its discretion:

(i) To transfer from time to time any or all of the assets of the Fund to any common, commingled, or collective trust fund created by the Trustee in which the Fund is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and

(ii) To purchase shares in any investment company registered under the Investment Company Act of 1940, 15 U.S.C. 80a-1 et seq., including one which may be created, managed, underwritten, or to which investment advice is rendered or the shares of which are sold by the Trustee. The Trustee may vote such shares in its discretion.

Section 8. *Express Powers of Trustee*. Without in any way limiting the powers and discretions conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

(i) To sell, exchange, convey, transfer, or otherwise dispose of any property held by it, by public or private sale. No person dealing with the Trustee shall be bound to see to the application of the purchase money or to inquire into the validity or expediency of any such sale or other disposition;

(ii) To make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;

(iii) To register any securities held in the Fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of such securities in a qualified central depositary even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee of such depositary with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the United States Government, or any agency or instrumentality thereof, with a Federal Reserve bank, but the books and records of the Trustee must at all times show that all such securities are part of the Fund;

(iv) To deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the Federal or State government; and

(v) To compromise or otherwise adjust all claims in favor of or against the Fund.

Section 9. *Taxes and Expenses*. All taxes of any kind that may be assessed or levied against or in respect of the Fund and all brokerage commissions incurred by the Fund must be paid from the Fund. All other expenses incurred by the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustee, the compensation of the Trustee to the extent not paid directly by the Grantor, and all other proper charges and disbursements of the Trustee must be paid from the Fund.

Section 10. *Annual Valuation*. The Trustee must annually, at least 30 days prior to the anniversary date of establishment of the Fund, furnish to the Grantor and to the DRBC Executive Director a statement confirming the value of the Trust. Any securities in the Fund must be valued at market value as of no more than 60 days prior to the anniversary date of establishment of the Fund. The failure of the Grantor to object in writing to the Trustee within 90 days after the statement has been furnished to the Grantor and the DRBC Executive Director shall constitute a conclusively binding assent by the Grantor, barring the Grantor from asserting any claim or liability against the Trustee with respect to matters disclosed in the statement.

Section 11. *Advice of Counsel*. The Trustee may from time to time consult with counsel, who may be counsel to the Grantor, with respect to any question arising as to the construction of this Agreement or any action to be taken hereunder. The Trustee must be fully protected, to the extent permitted by law, in acting upon the advice of counsel.

Section 12. *Trustee Compensation*. The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing from time to time with the Grantor.

Section 13. *Successor Trustee*. The Trustee may resign or the Grantor may replace the Trustee, but such resignation or replacement shall not be effective until the Grantor has appointed a successor trustee and this successor accepts the appointment. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor trustee's acceptance of the appointment, the Trustee shall assign, transfer, and pay over to the successor trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to a court of competent jurisdiction for the appointment of a successor trustee or for instructions. The successor trustee must

specify the date on which it assumes administration of the trust in a writing sent to the Grantor, the Executive Director, and the present Trustee by certified mail 10 days before such change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this Section must be paid as provided in Section 9.

Section 14. *Instructions to the Trustee*. All orders, requests, and instructions by the Grantor to the Trustee must be in writing, signed by such persons as are designated in the attached Exhibit A or such other designees as the Grantor may designate by amendment to Exhibit A. The Trustee must be fully protected in acting without inquiry in accordance with the Grantor's orders, requests, and instructions. All orders, requests, and instructions by the Executive Director to the Trustee shall be in writing, signed by the Executive Director or her designee(s), and the Trustee must act and must be fully protected in acting in accordance with such orders, requests, and instructions. The Trustee must have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the Grantor or DRBC hereunder has occurred. The Trustee shall have no duty to act in the absence of such orders, requests, and instructions from the Grantor and/or DRBC, except as provided for herein.

Section 15. *Notice of Nonpayment*. The Trustee must notify the Grantor and the Executive Director, by certified mail within 10 days following the expiration of the 30-day period after the anniversary of the establishment of the Trust, if no payment is received from the Grantor during that period. After the pay-in period is completed, the Trustee shall not be required to send a notice of nonpayment.

Section 16. *Amendment of Agreement*. This Agreement may be amended by an instrument in writing executed by the Grantor, the Trustee, and the Executive Director, or by the Trustee and the Executive Director if the Grantor ceases to exist.

Section 17. *Irrevocability and Termination*. Subject to the right of the parties to amend this Agreement as provided in Section 16, this Trust shall be irrevocable and shall continue until terminated at the written agreement of the Grantor, the Trustee, and the Executive Director, or by the Trustee and the Executive Director, if the Grantor ceases to exist. Upon termination of the Trust, all remaining trust property, less final trust administration expenses, must be delivered to the Grantor.

Section 18. *Immunity and Indemnification*. The Trustee must not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this Trust, or in carrying out any directions by the Grantor or the Executive Director issued in accordance with this Agreement. The Trustee must be indemnified and saved harmless by the Grantor or from the Trust Fund, or both, from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all

expenses reasonably incurred in its defense in the event the Grantor fails to provide such defense.

Section 19. *Choice of Law*. This Agreement must be administered, construed, and enforced according to the laws of the State in which the natural gas well is located.

Section 20. *Interpretation*. As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each Section of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement.

In Witness Whereof, the parties have caused this Agreement to be executed by their respective officers duly authorized and their corporate seals to be hereunto affixed and attested as of the date first above written: The parties below certify that the wording of this Agreement is identical to the wording specified in Section 7.3(j)(14) and section (iii) of this Appendix as such regulations were constituted on the date first above written.

[Signature of Grantor]

[Title]

Attest:

[Title]

[Seal]

[Signature of Trustee]

Attest:

[Title]

[Seal]

The following is an example of the certification of acknowledgment which must accompany the trust agreement for a trust fund as specified in Section 7.3(j)(14). State requirements may differ on the proper content of this acknowledgment.

State of_____

County of_____

On this [date], before me personally came [owner or operator] to me known, who, being by me duly sworn, did depose and say that she/he resides at [address], that she/he is [title] of [corporation], the corporation described in and which executed the above instrument; that she/he knows the seal of said corporation; that the seal affixed to such instrument is such corporate seal; that it was so affixed by order of

the Board of Directors of said corporation, and that she/he signed her/his name thereto by like order.

[Signature of Notary Public]

(iv) Certificate of Insurance.

A certificate of insurance, as specified in Section 7.3(j)(15) of this Article, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

Certificate of Insurance

In Fulfillment of Financial Assurance Required by Article 7: *Natural Gas Development Regulations: Delaware River Basin Commission Part III Basin Regulations ("Regulations")*

Name and Address of Insurer

(herein called the "Insurer"): _____

Name and Address of Insured

(herein called the "Insured"): _____

Facilities Covered: All Natural Gas wells pads, wells, and associated facilities located on the following leaseholds: [insert leasehold description]

Policy Number: _____

Policy Limits: _____

Effective Date: _____

Expiration Date:_____

The Insurer hereby certifies that it has issued to the Insured the policy of insurance identified above to provide financial assurance for [Insert whichever applies: "plugging, abandonment and restoration according to host state requirements as described in Section 7.3(j)(1)(i)"; and/or "mitigation, remediation of or other response to any release or threatened release as described in Section 7.3(j)(1)(ii)"] for the projects identified above. The Insurer further warrants that such policy conforms in all respects with the requirements of Section 7.3(j) of the Regulations, as applicable and as such regulations were constituted on the date shown immediately below. It is agreed that any provision of the policy inconsistent with such regulations is hereby amended to eliminate such inconsistency.

The Insurer agrees to furnish to the Executive Director of the Delaware River Basin Commission a duplicate original of the policy listed above, including all endorsements thereon on request by the Executive Director.

I hereby certify that the wording of this certificate is identical to the wording specified in Section iv of the Appendix to Article 7 of the *Delaware River Basin Commission Part III Basin Regulations; Natural Gas Development Regulations* as such regulations were constituted on the date shown immediately below:

[Authorized signature for Insurer]

[Name of person signing]

[Title of person signing]

Signature of witness or notary: _____

[Date]