

# Proposed New 18 CFR Part 440 - Hydraulic Fracturing in Shale and Other Formations:

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## SUBCHAPTER B – SPECIAL REGULATIONS

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### PART 440 – HYDRAULIC FRACTURING IN SHALE AND OTHER FORMATIONS

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#### **440.1 Purpose, authority and relationship to other requirements.**

- (a) *Purpose.* The purpose of this part is to protect and conserve the water resources of the Delaware River Basin. To effectuate this purpose, this section establishes standards, requirements, conditions and restrictions to prevent or reduce depletion and degradation of surface and groundwater resources and to promote sound practices of water resource management.
- (b) *Authority.* This part implements Sections 1.5, 3.6(b), 3.8, 4.1, 5.2, 7.1, 13.1 and 14.2(a) of the Delaware River Basin Compact.
- (c) *Comprehensive Plan.* The Commission has determined that the provisions of this part are required for the immediate and long range development and use of the water resources of the Basin and are therefore incorporated into the Commission’s Comprehensive Plan.
- (d) *Relationship to other Commission requirements.* The provisions of this part are in addition to all applicable requirements in other Commission regulations, dockets and permits.

Upon the effective date of this rule, the Executive Director Determinations dated May 19, 2009, June 14, 2010 and July 23, 2010, to the extent not already superseded by the Commission’s Resolution dated December 8, 2010, are no longer operative.

- (e) *Severability.* The provisions of this part are severable. If any provision of this part or its application to any person or circumstances is held invalid, the invalidity will not affect other provisions or applications of this part, which can be given effect without the invalid provision or application.
- (f) *Coordination and avoidance of duplication.* In accordance with and pursuant to section 1.5 of the Delaware River Basin Compact, to the fullest extent it finds feasible and advantageous the Commission may enter into an Administrative Agreement (Agreement) with any Basin state or the

federal government to coordinate functions and eliminate unnecessary duplication of effort. Such Agreements will be designed to: effectuate intergovernmental cooperation, minimize the efforts and duplication of state and Commission staff resources wherever possible, ensure compliance with Commission-approved requirements, enhance early notification of the general public and other interested parties regarding proposed activities in the Basin, indicate where a host state's requirements satisfy the Commission's regulatory objectives 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 6, 7, 10 and 11 of the Compact.

#### **440.2 Definitions.**

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

*Basin* - the area of drainage into the Delaware River and its tributaries, including Delaware Bay.

*Centralized waste treatment (CWT) facility* - as defined by EPA at 40 CFR 437.2(c), any facility that treats (for disposal, recycling or recovery of material) any hazardous or non-hazardous industrial wastes, hazardous or non-hazardous industrial wastewater, and/or used material received from off-site. "CWT facility" includes both a facility that treats waste received exclusively from off-site and a facility that treats wastes generated on-site as well as waste received from off-site.

*Commission* - the Delaware River Basin Commission (DRBC) created and constituted by the Delaware River Basin Compact.

*Conservative Substances* - pollutants that undergo no or minimal transformation or decay in a water body or groundwater, except by dilution.

*CWT wastewater* – For purposes of this part, "CWT wastewater" means any wastewater or effluent resulting from the treatment of produced water by a CWT.

*Docket* - a legal instrument issued by the Commission approving, or approving as modified, a project having a substantial effect on water resources of the Basin. The approval may modify the project by imposing conditions to prevent the project from substantially impairing or conflicting with the Commission's comprehensive plan.

*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.

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

*Flowback* - Fluids returned to the surface through an oil or gas well once hydraulic fracturing pressure is released. Flowback can also refer to the stage of well completion in which fluids are returned to the surface through the well after fracturing is performed.

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

*Hydraulic Fracturing* - a technique used to stimulate the production of oil and natural gas from a well by injecting fracturing fluids down the wellbore under pressure to create and maintain induced fractures in the hydrocarbon-bearing rock of the target geologic formation.

*High-volume hydraulic fracturing (HVHF)* – hydraulic fracturing using a combined total of 300,000 or more gallons of water during all stages in a well completion, whether the well is vertical or directional, including horizontal, and whether the water is fresh or recycled and regardless of the chemicals or other additives mixed with the water.

*Fracturing fluid(s)* - a mixture of water (whether fresh or recycled) and/or other fluids and chemicals or other additives, which are injected into the subsurface and which may include chemicals used to reduce friction, minimize biofouling of fractures, prevent corrosion of metal pipes or remove drilling mud damage within a wellbore area, and propping agents such as silica sand, which are deposited in the induced fractures.

*Person* - any natural person, corporation, partnership, association, company, trust, federal, state or local governmental unit, agency, or authority, or other entity, public or private.

*Pollutants* - any substance which when introduced into water resources, including surface water or groundwater, degrades natural or existing water quality, including but not limited to: dredge spoils, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemicals and chemical wastes, biological materials, radioactive materials, methane, 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.

*Pollutants of concern* - conservative, radioactive, toxic or other substances that are potentially present in produced water, consisting of all parameters listed in the EPA *Technical Development Document for the Effluent Limitations Guidelines and Standards for the Oil and Gas Extraction Point Source Category* (June 2016), specifically all pollutants for produced water listed in Tables C-11, C-13, C-15, C-17, and C-19.

*Produced water* - the water that flows out of an oil or gas well, typically including other fluids and pollutants and other substances from the hydrocarbon-bearing strata. Produced water may contain “flowback” fluids, fracturing fluids and any chemicals injected during the stimulation process, formation water, and constituents leached from geologic formations. For purposes of §§ 401.35(b)(18) and 440.5, the term “produced water” encompasses untreated produced water, diluted produced water, and produced water mixed with other wastes.

*Wastewater treatment facility* - any facility treating and discharging wastewater.

*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.

#### **440.3 High volume hydraulic fracturing (HVHF)**

- (a) **Determination.** The Commission has determined that high volume hydraulic fracturing poses significant, immediate and long-term risks to the development, conservation, utilization, management, and preservation of the water resources of the Delaware River Basin and to Special Protection Waters of the Basin, considered by the Commission to have exceptionally high scenic, recreational, ecological, and/or water supply values. Controlling future pollution by prohibiting such activity in the Basin is required to effectuate the Comprehensive Plan, avoid injury to the waters of the Basin as contemplated by the Comprehensive Plan and protect the public health and preserve the waters of the Basin for uses in accordance with the Comprehensive Plan.
- (b) **Prohibition.** High volume hydraulic fracturing in hydrocarbon bearing rock formations is prohibited within the Delaware River Basin.

#### **440.4 Exportation of water for hydraulic fracturing**

As set forth in Section 2.30 of the Water Code (incorporated by reference at 18 CFR Part 410), it is the policy of the Commission to discourage the exportation of water from the Delaware River Basin. Accordingly, the diversion, transfer or exportation of water from sources within the Basin to support hydraulic fracturing outside the Basin is discouraged. The transfer of surface water, groundwater, treated wastewater or mine drainage water, at any rate or volume, for utilization in hydraulic fracturing of hydrocarbon bearing rock formations outside the Basin requires Commission approval in the form of a docket and shall be subject to the evaluation described by section 2.30.4 of the Water Code.

#### **440.5 Produced water**

- (a) *Related Commission Policies.*
  - (1) It is the policy of the Commission to discourage the importation of wastewater into the basin (*see* Section 2.30.2 of the Delaware River Basin Water Code, incorporated by reference at 18 CFR Part 410).
  - (2) It is the policy of the Commission to give no credit toward meeting wastewater treatment requirements for wastewater imported into the basin (*see* Section 2.30.6 of the Delaware River Basin Water Code incorporated by reference at 18 CFR Part 410).

- (3) The Commission has determined (see Resolution 2000-4) that allocations of the waste assimilative capacity of the Delaware River Estuary are necessary to maintain stream quality objectives for acute toxicity and chronic toxicity in Water Quality Zones 2, 3, 4 and 5 and for 1,2 dichloroethane and tetrachloroethene in Water Quality Zones 2 and 3.
  - (4) It is the policy of the Commission that there be no measurable change in existing water quality except towards natural conditions in waters considered by the Commission to have exceptionally high scenic, recreational, ecological, and/or water supply values. Waters with exceptional values may be classified by the Commission as either Outstanding Basin Waters or Significant Resource Waters. (See Section 3.10.3.2 of the Delaware River Basin Water Code, incorporated by reference at 18 CFR Part 410).
  - (5) Effluents shall not create a menace to public health or safety at the point of discharge. (See Section 3.10.4 of the Delaware River Basin Water Code, incorporated by reference at 18 CFR Part 410).
  - (6) The underground water resources of the Basin shall be used, conserved, developed, managed, and controlled in view of the needs of present and future generations, and in view of the resources available to them. To that end, interference, impairment, penetration, or artificial recharge shall be subject to review and evaluation under the Compact. (See Section 2.20.6 of the Delaware River Basin Water Code, incorporated by reference at 18 CFR Part 410).
- (b) *Approval required.* Produced water and CWT wastewater as defined in this part may not be imported into the Basin except by a new or existing wastewater treatment facility located within the Basin, and may not be transferred to, treated by or discharged from or to a new or existing wastewater treatment facility located within the Basin, at any volume or rate, except in accordance with an approval in the form of a docket issued by the Commission to the owner or operator of the wastewater treatment facility pursuant to Section 3.8 of the Compact or in accordance with a state permit issued pursuant to a duly adopted administrative agreement between the Commission and the host state.
- (c) *Alternatives and impact assessment.* Any project involving the importation of produced water or CWT wastewater into the Basin shall be subject to the requirement that alternatives involving no importation must be analyzed and the water resource, economic and social impacts of the project evaluated, as described in section 2.30.4 of the Commission's Water Code.
- (d) *Compliance with existing rules.* In addition to the requirements in this part, all discharges within the Basin of produced water and CWT wastewater as defined in this part must comply with applicable DRBC Water Quality Regulations (incorporated by reference at 18 CFR Part 410), state regulations and federal regulations. If a conflict exists among the applicable regulations, the more stringent requirement shall apply to these discharges.
- (e) *Treatment facilities.*

- (1) Produced water as defined in this part
    - (i) may not be treated within the Basin except at a centralized waste treatment facility (CWT) as that term is defined by the U.S. Environmental Protection Agency in 40 CFR part 437 (to convert it to CWT wastewater); and pursuant to an approval issued in accordance with section 440.5(b) of this part.
    - (ii) may not be discharged within the basin without treatment at a CWT.
  - (2) CWT wastewater as defined in this part may be discharged only:
    - (i) directly by the CWT pursuant to an approval issued in accordance with section 440.5(b) of this part; or
    - (ii) indirectly by a CWT to a wastewater treatment facility within the Basin (via sewer, truck or other means) pursuant to an approval issued in accordance with section 440.5(b) of this part,
    - (iii) provided that the discharge meets the requirements of sections 440.5(f) through (h) of this part.
- (f) *Treatability studies.* The Commission shall not issue any required docket or approval for the treatment of produced water or the discharge of CWT wastewater unless the project sponsor has identified each proposed source of the produced water or CWT wastewater and has submitted to the Commission a treatability study (or studies) prepared by a professional engineer licensed in the state(s) in which the treatment and discharge facilities are located, demonstrating that:
- (1) an analysis, characterization and quantification of all pollutants of concern, as that term is defined in section 440.2 of this part, has been conducted and the results submitted to the Commission;
  - (2) the acute and chronic toxicity of the waste, measured as Whole Effluent Toxicity (WET), have been evaluated;
  - (3) the treatment technologies and applicable design criteria to be used to meet all requirements of section 440.5(g) of this part have been identified;
  - (4) the produced water (or CWT wastewater) will not pass through or interfere with the facility's treatment process, and the resulting effluent will meet all applicable limits;
  - (5) the classification, treatment and disposal of residuals from the facility, if any, will not be adversely affected; and

- (6) the discharge will not cause or contribute to an exceedance of applicable water quality criteria or stream quality objectives or impair the existing or protected use of the receiving water.
- (g) *Additional effluent requirements.* Except as provided in paragraph (h) of this section, the following requirements shall apply within the Basin to effluent resulting from the treatment of produced water or CWT wastewater. In any instance in which these requirements are deemed to conflict, the more stringent shall apply:
- (1) For total dissolved solids (TDS):
    - (i) the effluent shall not exceed background or 500 mg/l, whichever is less,
    - (ii) provided, however, that in waters that drain to Delaware River Water Quality Zones 4 through 6, the resulting effluent shall not exceed 1,000 mg/l, or a concentration established by the Commission that is compatible with designated water uses and stream quality objectives.
    - (iii) The Commission will publish guidance on acceptable methods for determining background TDS concentrations.
  - (2) For waters for which the protected or designated uses include “public water supplies” or “drinking water”, the effluent shall not exceed the more stringent of EPA’s or the host state’s
    - (i) primary drinking water standards for inorganic chemicals, organic chemicals (excluding acrylamide and epichlorohydrin) and disinfection byproducts; and
    - (ii) secondary drinking water standards (excluding color, corrosivity, and odor).
  - (3) For whole effluent toxicity (WET), the effluent shall not exceed: 0.3 toxic units (acute) and 1.0 toxic units (chronic).
  - (4) For pollutants of concern as defined in Section 440.2 of this part:
    - (i) For waters that drain to Special Protection Waters, the effluent shall not exceed the background concentration of each pollutant in the receiving water.
    - (ii) For waters that do not drain to Special Protection Waters:
      - a. If pollutant-specific numeric water quality criteria exist, the effluent concentration for the pollutant shall not exceed the numeric criteria.
      - b. If pollutant-specific numeric water quality criteria do not exist, the effluent shall not exceed the background concentration of the pollutant

in the receiving water or cause an exceedance or violation of any existing narrative criteria.

- c. The Commission will publish guidance on acceptable methods for determining background concentrations for pollutants of concern.

(5) The Commission may require the discharger to perform such monitoring and reporting as the Commission deems necessary to ensure compliance with established numeric effluent limits and to support the development of additional numeric limits if needed.

(h) *Point of compliance.*

- (1) The effluent limitations are to be met at the point of discharge to basin waters.
- (2) To ensure that all conditions, requirements and standards under this rule are met, the Commission may impose additional monitoring requirements or other conditions on any CWT within the basin that discharges CWT wastewater as defined in this part to another wastewater treatment facility in the basin.
- (3) A mixing zone may be considered for any pollutant for which a mixing zone is permitted in the Delaware River Estuary by the DRBC Water Quality Regulations (incorporated by reference at 18 CFR Part 410).