

PROPOSED RULEMAKING

ENVIRONMENTAL QUALITY BOARD

Acceptance of Two Rulemaking Petitions for Study

On November 16, 2021, the Environmental Quality Board (Board) accepted two rulemaking petitions for study under 25 Pa. Code Chapter 23 (relating to Environmental Quality Board policy for processing petitions—statement of policy). Both petitions were submitted on behalf of the Sierra Club, Clean Air Council, Earthworks, PennFuture, Protect Penn-Trafford and Mountain Watershed Association. One petition requests the amendment of 25 Pa. Code § 78.302 (relating to requirement to file a bond) to increase bonding amounts for conventional oil and gas wells. The other petition requests the amendment of 25 Pa. Code § 78a.302 (relating to requirement to file a bond) to increase bonding amounts for unconventional gas wells.

Under the Board's acceptance of the petitions, the Department of Environmental Protection (Department) will prepare a report evaluating each petition. These reports will include recommendations on whether the Board should proceed with proposed rulemakings and, if so, the process that the Department would need to undertake to develop the proposed rulemakings.

The previously-referenced petitions are available to the public by contacting the Environmental Quality Board, P.O. Box 8477, Harrisburg, PA 17105-8477, (717) 787-4526 and accessible on the Department's web site at www.dep.pa.gov (select "Public Participation," then "Environmental Quality Board," then "2021 Meetings," then scroll to "Meeting Agendas/Minutes/Handouts: November 16, 2021: In-Person/WebEx Meeting").

PATRICK McDONNELL,
Chairperson

[Pa.B. Doc. No. 21-1996. Filed for public inspection December 3, 2021, 9:00 a.m.]

DELAWARE RIVER BASIN COMMISSION

[25 PA. CODE CHS. 901 AND 903]

Importations of Water into and Exportations of Water from the Delaware River Basin; Discharges of Wastewater from High Volume Hydraulic Fracturing and Related Activities

Summary: The Commission will hold public hearings and accept written comment on a proposal to amend its Comprehensive Plan and *Water Code* concerning importations of water into and exportations of water from the Delaware River Basin; to amend its *Special Regulations—High Volume Hydraulic Fracturing* to prohibit the discharge of wastewater from high volume hydraulic fracturing and related activities to waters or land within the Delaware River Basin; and to incorporate key elements of the latter proposed amendments into the Commission's *Water Quality Regulations*.

Dates:

Written comments: Written comments will be accepted through 5 p.m. on February 28, 2022.

Public hearings: Public hearings will be held remotely via Zoom on the following dates at the noted times. Details about accessing the hearings are available on the Commission's website, www.drbc.gov.

1. December 8, 2021, 2:30 p.m. to no later than 4:30 p.m.
2. December 8, 2021, 6:30 p.m. to no later than 8:30 p.m.
3. December 15, 2021, 1 p.m. to no later than 3 p.m.
4. December 15, 2021, 4 p.m. to no later than 6 p.m.

On October 28, 2021, a notice including these public hearing dates, times and locations was posted on the Commission's website and circulated directly to Commission notice subscribers interested in this subject matter. Members of the public may sign up through the Commission's website to receive direct notice via email of additions or changes to the information provided above.

Addresses:

To submit written comments: Written comments will be accepted until 5 p.m. on February 28, 2022 through the Commission's online public comment collection system at: <https://dockets.drbc.commentinput.com/?id=x2K8A>. To request an exception from use of the online system based on lack of access to the Internet, please contact: Commission Secretary, DRBC, P.O. Box 7360, West Trenton, NJ 08628.

To register to speak at public hearings: Although attendance at the hearings is not limited and requires no registration, those who wish to provide oral comment at a hearing must register in advance to do so. Registration will be through EventBrite. Links to EventBrite for each of the public hearing dates and times are posted at www.drbc.gov. Online registration will remain open until 5 p.m. on the day prior to the hearing date or until all available speaking slots have been filled, whichever is earlier. Each person who wishes to provide oral comment may do so at only one public hearing. Registrations will be monitored, and if capacity is not adequate to accommodate all who wish to speak, additional opportunities may be added.

See SUPPLEMENTARY INFORMATION for details regarding the substance of written comments.

For Further Information Contact: For information regarding the public hearings and submission of written comments, contact Kate Schmidt, Communications Specialist, at kate.schmidt@drbc.gov (preferred) or 609-883-9500, ext. 205. For information concerning the proposed amendments, contact Pamela Bush, Commission Secretary and Assistant General Counsel, at pam.bush@drbc.gov (preferred) or 609-477-7203.

Supplementary Information: The Delaware River Basin Commission ("DRBC" or "Commission") is a regional interstate and federal agency formed by compact legislation of four states and the United States in 1961¹ to manage the water resources of the Delaware River Basin (the "Basin") without regard to political boundaries. Its members are, *ex officio*, the governors of the Basin states (Delaware, New Jersey, New York, and Pennsylvania) and the commander of the U.S. Army Corps of Engineers North Atlantic Division, who represents the United States.

¹ United States Public Law 87-328, Approved Sept. 27, 1961, 75 Statutes at Large 688; 53 Delaware Laws, Ch. 71, Approved May 26, 1961; New Jersey Laws of 1961, Ch. 13, Approved May 1, 1961; New York Laws of 1961, Ch. 148, Approved March 17, 1961; Pennsylvania Acts of 1961, Act. No. 268, Approved July 7, 1961.

Background

By Resolution No. 91-9 on June 19, 1991, the Commissioners amended the Commission's Comprehensive Plan by the addition of policies and regulations relating to transfers of water into and out of the Basin. These provisions were later codified in the Delaware River Basin Water Code.² The Commission on November 30, 2017 proposed regulations that, in part, concerned inter-Basin transfers of water and wastewater associated with high volume hydraulic fracturing ("HVHF") ("2017 draft rule") and that addressed the treatment and discharge of wastewater generated by HVHF. Concurrently with adoption of its final rule by Resolution No. 2021-01 on February 25, 2021, the Commission withdrew from consideration those provisions of the 2017 draft rule that concerned the exportation of water to support HVHF and the importation, treatment, and discharge of "produced water" and "CWT wastewater" as defined therein.³ By a Resolution for the Minutes on February 25, 2021, the Commissioners directed the Executive Director to prepare and publish for public comment a set of amendments to the Comprehensive Plan and implementing regulations to update the Commission's policies and provisions concerning importation and exportation of water and wastewater from and into the Basin and "to include such other proposed amendments. . . as [the Executive Director, in consultation with the Commissioners] deem necessary or appropriate."

In accordance with the Commissioners' February 25, 2021 directive, the Commission is proposing amendments to its Comprehensive Plan and regulations to better provide for the planning, conservation, utilization, development, management and control of the Basin's water resources in connection with: the importation of water, including wastewater, into the Basin; the exportation of water, including wastewater, from the Basin; and the discharge of wastewater from HVHF and HVHF-related activities. The Commission proposes to amend the Water Code by clarifying the circumstances in which exportations of water, including wastewater, from the Basin and importations of water, including wastewater, into the Basin are considered by the Commission and the factors to be used in evaluating whether such proposed imports and exports of water may be approved. The proposed amendments will not apply to importations and exportations that existed prior to the effective date of any final rules, but are proposed to apply to increases in the rate or volume of existing importations and exportations. The Commission also proposes to amend its Special Regulations regarding HVHF by the addition of a finding that the discharge of wastewater from HVHF and HVHF-related activities poses significant, immediate, and long-term risks to the development, conservation, utilization, management, and preservation of the Basin's water resources, and that controlling future pollution by prohibiting such discharge 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. The finding is accompanied by a provision prohibiting the discharge to waters of the Basin of wastewater from HVHF and HVHF-related activities.

² Delaware River Basin Water Code (hereinafter "Water Code") (incorporated by reference at 18 CFR part 410), section 2.30.

³ 83 FR 1586, pp. 1589, 1591 (defining "produced water" as "any water or fluid returned to the surface through the production well as a waste product of hydraulic fracturing," and defining "CWT wastewater" as "wastewater or effluent resulting from the treatment of produced water by a centralized waste treatment facility ("CWT)").

Managing water quantity and quality through a basinwide Comprehensive Plan. The Delaware River Basin Compact directs the Commission to develop and adopt, and from time to time review and revise, a Comprehensive Plan "for the immediate and long range development and use of the water resources of the [B]asin" to which Federal, State and local agencies and private parties are bound.⁴ Through the adoption of a series of policies and regulations establishing and amending its Comprehensive Plan, the Commission over the past half-century has developed and implemented in-stream water quality standards throughout the Basin, prohibited degradation of groundwater, instituted reservoir drought operating plans, established protected areas to prevent the depletion of groundwater, and provided special protection to the non-tidal portion of the Delaware River to preserve its exceptionally high scenic, recreational, ecological and water supply values. As the agency through which the five signatory parties to the Compact—the States of Delaware, New Jersey and New York, the Commonwealth of Pennsylvania, and the United States—collectively manage the Basin's water resources on a regional basis, the Commission has taken these steps to, among other things, ensure an adequate supply of suitable quality water for domestic use, recreation, power generation, industrial activity and aquatic life, and to accommodate large out-of-Basin diversions by the City of New York and the State of New Jersey that are authorized by the 1954 decree of the U.S. Supreme Court in *New Jersey v. New York*, 347 U.S. 995 (the "Decree").

Water Exportation. Since June 19, 1991, the Commission's policy as articulated in the Comprehensive Plan and Water Code (incorporated by reference at 18 CFR part 410) has been to discourage the exportation of water from the Basin on grounds that the Basin's waters "are limited in quantity and the Basin is frequently subject to drought warnings and drought declarations due to limited water supply storage and streamflow during dry periods."⁵

In allocating the waters of the Basin under Section 3.3 of the Compact, the Commission is constrained by limited reservoir storage, particularly during periods of low flow.⁶ Droughts of varying intensity and length have impacted the Basin since the Commission was formed in October 1961.⁷ The Commission has implemented drought operations thirteen times over six decades, including during seven droughts so severe the Commission declared them to be drought emergencies.⁸

The Commission's current Comprehensive Plan includes three major types of exportations of water from the Basin, many of which have also been the subject of DRBC project approvals:

- Pre-Compact out-of-Basin diversions by New York City and the State of New Jersey authorized by the Decree; and with the unanimous consent of the parties to the Decree in accordance with Section 3.3 of the Compact, modifications of such diversions;

- Out-of-Basin transfers approved on a long-term basis pursuant to Section 3.8 and Article 11 of the Compact to

⁴ Compact, supra note 1, sections 3.2 and 13.1.

⁵ See Water Code section 2.30.2.

⁶ See e.g., Water Code section 2.30.2; U.S. Department of the Interior U.S. Geological Survey Office of the Delaware River Master, History of the Reservoir Releases Program in the Upper Delaware River Basin, available at: <https://webapps.usgs.gov/odrm/about/history>.

⁷ Delaware River Basin Commission, An Overview of Drought in the Delaware River Basin (Feb. 2019), Sec. "DRBC's Basinwide Drought Actions," par. 1, available at: https://www.state.nj.us/drbc/library/documents/drought/DRBdrought-overview_feb2019.pdf.

⁸ Id., at Table 1: Basinwide Drought Actions (two of the emergency actions were conditional and did not go into effect).

meet the needs of public water systems with service areas straddling or adjacent to a Basin boundary; and

- Out-of-Basin transfers approved on a temporary or emergency basis pursuant to Section 3.8 of the Compact to ensure the public health and safety of communities adjacent to or straddling a Basin boundary.

The draft amendments establish the circumstances under which proposed exportations that meet the existing threshold for review established by the Commission's Rules of Practice and Procedure may be considered for approval. Under the proposed rule, the Commission may approve an exportation of water from the Basin if the export is needed to serve a straddled or adjacent public water system; if it is required on a temporary, short-term, or emergency basis to meet public health and safety needs; or if it comprises an exportation of wastewater. The proposed amendments provide that in reviewing proposed exportations, an analysis of alternatives to the proposed exportation will be considered, along with factors that include the effects of the proposal on public health and safety and effectuation of the Comprehensive Plan. The amended rules will further the Commission's objectives of conserving, utilizing, managing, and controlling the Basin's water resources by ensuring that the uses included within the Comprehensive Plan are protected, and will preserve the diversions, compensating releases, rights, conditions, and obligations of the parties to the U.S. Supreme Court Decree of 1954 in *New Jersey v. New York*, 347 U.S. 995 (1954).

Water Importation. At the time the Commission was created in 1961, the tidal Delaware River suffered from water quality impairments that included severe hypoxia (lack of dissolved oxygen) annually from May through November, preventing the passage of fish species that migrate between marine and fresh waters to reproduce. A key step in the Estuary's restoration was the establishment of water quality uses and criteria by the Commission in 1967. Because even after treatment, wastewater typically contains oxygen-depleting substances, the Commission has for decades used wasteload allocations for carbonaceous oxygen demand to protect the uses it established, including by maintaining dissolved oxygen in the Estuary at levels sufficient to support aquatic life.⁹

The presence of persistent bioaccumulative toxic contaminants in sediment, the water column and fish tissue is a legacy of the Delaware River Estuary's nearly two centuries of industrial use. Although water quality improvements over the past fifty years have substantially increased the variety and abundance of Estuary fish, multiple species are contaminated with polychlorinated biphenyls ("PCBs"), dioxins and furans, mercury, and dieldrin at levels exceeding human health risk advisory limits for their consumption.¹⁰ By Resolution No. 2000-4 the Commission in 2000 determined that allocations of the waste assimilative capacity of the Estuary were necessary in Water Quality Zones 2 through 5 to maintain stream quality objectives for acute toxicity and chronic toxicity. The Commission and its members face new challenges in the emergence of previously unknown

contaminants now understood to have adverse impacts on human health and aquatic life.

Although water quality management objectives in the Delaware River Estuary have of necessity prioritized restoration, the focus in the non-tidal Delaware River has been to prevent degradation of waters that are exceptionally clean. By resolutions in 1992, 2005 and 2008, the Commission designated the entire 197-mile reach of the non-tidal main stem Delaware River from Hancock, New York to Trenton, New Jersey as "Special Protection Waters," due to their exceptionally high scenic, recreational, ecological, and water supply values. The importance of these waters to the public is underscored by their national designation: the non-tidal main stem within and downstream of potential HVHF activity includes 147 river miles designated by Congress as parts of the National Wild and Scenic Rivers System, including 113 river miles that have also been designated as units of the National Park System.¹¹ New or expanded pollutant loadings to Special Protection Waters—whether from imported wastewater or wastewater generated within the Basin—are permitted only if they do not measurably change the defined, existing water quality.

For the foregoing reasons, since June 19, 1991, the Commission's policy as set forth in the Water Code and Comprehensive Plan is to discourage the importation of wastewater into the Basin on grounds that the Basin's waters "have limited assimilative capacity and limited capacity to accept conservative substances without significant impacts."¹² The Commission will continue to use its authority to preclude the discharge of wastewater that would impede the restoration of water quality and aquatic life in the tidal Delaware River or that would degrade the Basin's Special Protection Waters.

The proposed rules regarding importation clarify the factors the Commission will use in evaluating proposed importations that meet the existing thresholds for review established by the Commission's Rules of Practice and Procedure. Although importations of wastewater are "discouraged," they may be permitted after careful consideration to ensure that available alternatives have been evaluated, treatment is employed to ensure applicable water quality criteria are achieved, restoration efforts are not impeded, and uses incorporated in the Commission's Comprehensive Plan are protected. The amended rules will further the Commission's objectives of conserving, utilizing, managing, and controlling the Basin's water resources by ensuring continued protection of the uses included within the Comprehensive Plan.

Notably, to date, the Commission has not approved transfers into the Basin of wastewater associated with HVHF, and no applications for such transfers are under consideration. Additionally, in many instances, the Commission has conditioned its approvals of wastewater discharge projects on a requirement that no importation, treatment or discharge of HVHF wastewater may be undertaken by a docket holder without the Commission's prior review and approval. As discussed below, amendments to the Commission's Special Regulations at 18 CFR Part 440—High Volume Hydraulic Fracturing are being

⁹ See Delaware River Basin Water Code, sections 3.30.2 D.2, 3.30.3 D.2, 3.30.4 D.2, 3.30.5 D.2, 3.30.6 D.2.

¹⁰ See Delaware Department of Natural Resources and Environmental Control, Delaware Fish Consumption Advisories (Jan. 2018), available at: <https://documents.dnrec.delaware.gov/fw/Fisheries/Documents/2018-Delaware-Fish-Consumption-Advisory-Table.pdf>; New Jersey Department of Environmental Protection & New Jersey Department of Health, Fish Smart, Eat Smart: A guide to Health Advisories for Eating Fish and Crabs Caught in New Jersey Waters (Nov. 2020), available at: <https://www.nj.gov/dep/dsr/fish-advisories.pdf>; Pennsylvania Department of Environmental Protection, Commonwealth of Pennsylvania Public Health Advisory 2021 Fish Consumption (Feb. 2021), available at: <https://pfbc.pa.gov/fishpub/summaryad/sumconsumptionotepdf>.

¹¹ See 16 U.S.C. 1274(a)(19)-(20) (Upper Delaware Scenic and Recreational River and Delaware Water Gap National Recreation Area), 16 U.S.C. 1274(a)(165) (Lower Delaware River and Associated Tributaries). Other Basin waters included in the Wild and Scenic Rivers System and protected by state antidegradation programs include: 190 miles of the White Clay Creek and its tributaries in Delaware and Pennsylvania, 35 miles of the Maurice River and its tributaries in New Jersey, and 25 miles of the Musconetcong River, also in New Jersey. See, 16 U.S.C. 1274(a)(163) (White Clay Creek and its tributaries); 16 U.S.C. 1274(a)(146)–(149) & 1274(a)(151)–(153) (Maurice River and its tributaries); 16 U.S.C. 1274(a)(169) (Musconetcong River).

¹² See Water Code section 2.30.2 (or "limited capacity to assimilate pollutants" as reflected in the proposed amendments).

proposed that would prohibit the discharge of HVHF wastewater to water or land within the Basin.

Prohibition on Discharge of Wastewater from HVHF and HVHF-Related Activities. The Commission's Comprehensive Plan and Water Code provide in part that "[t]he quality of Basin [surface] waters, except intermittent streams, shall be maintained in a safe and satisfactory condition" for uses that include, "agricultural, industrial, and public water supplies after reasonable treatment, except where natural salinity precludes such uses; . . . wildlife, fish and other aquatic life; recreation; navigation; [and] controlled and regulated waste assimilation to the extent that such use is compatible with other uses."¹³ Similarly, the Comprehensive Plan and Water Code provide that the quality of ground waters of the Basin "shall be maintained in a safe and satisfactory condition, except where such uses are precluded by natural quality, for . . . domestic, agricultural, industrial, and public water supplies; [and] . . . a source of surface water suitable for recreation, wildlife, fish and other aquatic life."¹⁴

In its proposed and final rules prohibiting HVHF within the Basin in November 2017 and February 2021, respectively, the Commission recognized that the treatment and disposal of HVHF wastewater, among other activities associated with HVHF, posed risks, vulnerabilities and impacts to the Basin's water resources.¹⁵ The peer-reviewed science discussed in detail in the Comment and Response Document adopted concurrently with the Commission's final rule (hereinafter, the "CRD")¹⁶ demonstrates that for a variety of reasons, protecting public health and preserving the Basin's water resources for uses in accordance with the Comprehensive Plan require that discharges of HVHF wastewater to Basin waters or land be prohibited.

Hydraulic fracturing wastewater may contain a complex blend of constituents, including known carcinogens, neurotoxins, or endocrine disruptors, or are characterized by reproductive or developmental toxicity or adverse immune system effects.¹⁷ As discussed at length in the CRD, some of the chemicals used are not known because they are accorded protection as trade secrets.¹⁸ The U.S. Environmental Protection Agency (hereinafter, "EPA"), has reported that the majority of chemicals associated with hydraulic fracturing, both known and unknown, have not undergone significant toxicological assessment.¹⁹ The impacts from those chemicals to human health and aquatic life are thus undetermined.²⁰ In addition to the potential pollutants in fracturing fluid, the fluid returned from an oil or natural gas well after HVHF (typically

called "produced water" and including "flowback water") is mixed with water from the target formation, which contains: salts, including chloride, bromide, sulfate sodium, magnesium, and calcium; metals, including barium, manganese, iron, and strontium; naturally-occurring organic compounds, including benzene, toluene, ethylbenzene, and xylenes; oil and grease; and radioactive materials, including radium, found in ancient sea water trapped within the oil- and gas-bearing shale formations.²¹

A report by the U.S. Geological Survey ("USGS") observed that the salts in shale waters (which are sometimes referred to as "total dissolved solids" or "TDS") reached extreme concentrations over millions of years, and their chemical interactions with surrounding rock can mobilize radionuclides.²² The USGS authors cite radioactivity as a key characteristic of the HVHF waste stream that potentially represents a substantial risk to water resources, aquatic ecosystems and biota, and public health, if released.²³

Wastes associated with oil and natural gas exploration, development and production, including oil and gas drilling fluids and produced waters, are exempt from federal regulations for the management of hazardous wastes.²⁴ But these wastes may cause harm to public health and the environment if they are not properly managed. The CRD references multiple studies documenting adverse impacts to water resources from HVHF wastewater after treatment, whether by municipal or industrial treatment facilities.²⁵ Because produced water contains high TDS and dissolved inorganic constituents that most publicly owned treatment works and other municipal wastewater treatment facilities are not designed to remove, EPA in 2016 issued a final rule banning the treatment and discharge of oil and gas extraction wastewater from publicly owned treatment works ("POTWs").²⁶ Privately owned treatment works that treat primarily domestic and commercial wastewater remain outside the scope of EPA's "zero discharge" rule.

The Commonwealth of Pennsylvania manages the risks associated with disposal of HVHF wastewater in part through a detailed statute and regulations focused on protecting water resources and public health while preserving commercial interests. Regulations adopted in 2010 pursuant to the Pennsylvania Clean Streams Law address risks associated with HVHF wastewater treatment and discharge by limiting new discharges of TDS, chlorides, barium and strontium in treated wastewater, regardless of the type of discharge—public, private, municipal or industrial.²⁷

Research has demonstrated that even with specialized treatment, however, the discharge of HVHF wastewater to surface waters can adversely impact downstream waters. The Commission's CRD contains an extensive discus-

¹³ Water Code, section 3.10.2. B.

¹⁴ *Id.*, section 3.40.3.

¹⁵ See, e.g., DRBC Resolution No. 2021-01, p. 4, par. 4. Available at: https://www.state.nj.us/drbc/library/documents/Res2021-01_HVHF.pdf. See generally, Delaware River Basin Commission, Comment and Response Document: Proposed Amendments to the Administrative Manual and Special Regulations Regarding High Volume Hydraulic Fracturing Activities; Additional Clarifying Amendments, Feb. 25, 2021 (hereinafter, "CRD"), at, e.g., pp. E-1, 65-66 ("Synthesis" of response to comments concerning spills); pp. 158-59 (water quality impacts from discharges of treated hydraulic fracturing wastewater). The CRD is available at: https://www.state.nj.us/drbc/library/documents/CRD_HVHFrulemaking.pdf

¹⁶ See CRD, supra note 15.

¹⁷ CRD, supra note 15, pp. 131, 161, and 255 (citing E.G. Elliott, et al., A systematic evaluation of chemicals in hydraulic-fracturing fluids and wastewater for reproductive and developmental toxicity, *J. Exposure Science & Environmental Epidemiology*, 27: 90–99 (2017)). See also, United States Environmental Protection Agency ("U.S. EPA"), Hydraulic fracturing for oil and gas: Impacts from the hydraulic fracturing water cycle on drinking water resources in the United States (final report) (EPA/600/R-16/236F) (2016) (hereinafter "U.S. EPA 2016 Assessment"), p. ES-20; U.S. EPA, Technical development document for the effluent limitations guidelines and standards for the oil and gas extraction point source category (EPA-820-R-16-003), 2016, pp. 43–47 (Sec. 1.2).

¹⁸ See CRD, supra note 15, pp. 259–264.

¹⁹ *Id.*, p. 132 (citing U.S. EPA 2016 Assessment, supra note 17, p. ES-42-45, 9-1).

²⁰ U.S. EPA, Detailed study of the centralized waste treatment point source category for facilities managing oil and gas extraction wastes. (EPA-821-R-18-004) (2018), p. 9-36. Available at: https://www.epa.gov/sites/default/files/2018-05/documents/cwt-study_may-2018.pdf.

²¹ CRD, supra note 15, pp. E-6, 71.

²² CRD, supra note 15, p. 84 (citing E.L. Rowan, et al., Radium content of oil- and gas-field produced waters in the Northern Appalachian Basin (USA): Summary and discussion of data, U.S. Department of the Interior, U.S. Geological Survey: Scientific Investigations Report 2011-5135 (2011)).

²³ CRD, supra note 15, p. 86 (citing E.L. Rowan, et al., supra note 22) (also noting that chemically, radium behaves in a manner similar to calcium and is capable of bioaccumulation in plants and animals).

²⁴ See, e.g., U.S. Environmental Protection Agency, Office of Solid Waste, Exemption of Oil and Gas Exploration and Production Wastes from Federal Hazardous Waste Regulations, EPA530-K-01-004 (2002).

²⁵ See CRD, supra note 15, pp. 18-19, 128–143. See also U.S. EPA, *infra* note (regarding impacts associated with discharges from municipal wastewater treatment plants); U.S. EPA, supra note 20 (regarding impacts associated with discharges from the industrial wastewater treatment facilities known as "CWTs").

²⁶ U.S. EPA, Effluent Limitations Guidelines and Standards for the Oil and Gas Extraction Point Source Category, 81 FR 41845 (Aug. 29, 2016) (preamble). See also 81 FR 88126 (Dec. 7, 2016) (extending deadline for compliance); CRD, supra note 15, pp. 18-19, 128.

²⁷ 25 Pa. Code section 95.10. See also CRD, supra note 15, pp. 132, 178.

sion of the potential risks associated with the treatment and discharge of HVHF wastewater to Basin waters from CWTs.²⁸ The Commission concluded that treatment of HVHF wastewater at CWTs with subsequent discharge of effluent to the waters of the Basin would present significant risks to the receiving waters.²⁹

Growth in Marcellus shale gas production is anticipated,³⁰ and in the Marcellus production area immediately west of the Basin, recent data show increasing water use by the shale gas production industry, which may result in increasing volumes of wastewater.³¹ Although additional factors may affect demand for HVHF wastewater treatment and discharge options, these shale gas production and water use trends create the potential for increased demand for CWT services in the region.³² To protect the public health and preserve the waters of the Basin for uses in accordance with the Comprehensive Plan, the Commission thus proposes to prohibit the discharge of treated or untreated HVHF wastewater to waters or land within the Basin.

Water Quality Regulations. To facilitate the alignment of certain Basin state discharge permits with the Commission's proposed regulations regarding wastewater from high volume hydraulic fracturing, the Commission further proposes to amend its Water Quality Regulations, Article 4—Application of Standards. The proposed amendment would consist of a new section 4.50, captioned "Wastewater from High Volume Hydraulic Fracturing and Related Activities," expressly incorporating into the Water Quality Regulations the determination and prohibition comprising § 440.4 of title 18 of the CFR, and the purpose and definitions encompassing sections 440.1 and 440.2. Existing section 4.50 of the Water Quality Regulations and its sub-paragraphs 4.50.1 through 4.50.6 are proposed to be redesignated as section 4.60 and 4.60.1 through 4.60.6.

Public Process

Substance of comments: The Commission expressly seeks comment on the effects the proposed rules may have within the Basin on: water availability, the control and abatement of water pollution, economic development, the conservation and protection of drinking water supplies, the conservation and protection of aquatic life, the conservation and protection of water quality in Special Protection Waters, and the protection, maintenance and improvement of water quantity and quality Basinwide. The Commission welcomes and will consider any other comments that concern the potential effects of the draft rules on the conservation, utilization, development, management and control of the water and related resources of the Basin. Comments on matters not within the scope of the proposed rules may not be considered.

Non-digitized, voluminous materials such as books, journals or collected letters and petitions will not be accepted. Digital submissions of articles and websites must be accompanied by a statement containing citations to the specific findings or conclusions the commenter wishes to reference.

Submission of written comments. Written comments along with any attachments should be submitted through the Commission's web-based comment system (<https://>

dockets.drbc.commentinput.com/?id=x2K8A) until 5 p.m. on February 28, 2022. All materials should be provided in searchable formats, preferably in .pdf searchable text. Notably, a picture scan of a document may not result in searchable text. Comments received through any method other than the designated on-line method, including via email, fax, postal/delivery services or hand delivery, will not be considered or included in the rulemaking record unless an express exception has been granted. Requests for exceptions from the web-based-submissions-only policy based on lack of access to the web-based comment system may be addressed to: Commission Secretary, DRBC, P.O. Box 7360, West Trenton, NJ 08628.

Public hearings. To provide for an orderly process and to support public and community health measures, the Commission is conducting its public hearings virtually. Attendance at the hearings is not limited and requires no registration. However, to eliminate uncertainty on the part of attendees about whether they will have an opportunity to provide oral comment, those who wish to speak at a hearing must register in advance to do so, using links on the Commission's website. Registrations will be monitored, and if capacity is not adequate to accommodate all who wish to speak, additional opportunities may be added. Key elements of the procedure are as follows:

- Online registration to speak at a public hearing will remain open until 5 p.m. the day prior to each hearing.
- Each person who wishes to provide oral comment may do so at only one public hearing.
- Speaking time will be limited to approximately three minutes per speaker.
- Elected government officials and their staff will have the opportunity to identify themselves when registering to attend a hearing.
- Attendance at the public hearings is not limited and requires no advance registration.
- Written and oral comment will receive equal consideration.

The Commission appreciates the public's participation and input on this important matter.

More Information. Detailed and up-to-date information about the public process, including all proposed rule text, related documents and links for online registration to speak at each of the scheduled public hearings, can be found on the DRBC website, www.drbc.gov.

For the reasons set forth in the preamble, the Delaware River Basin Commission proposes to amend its *Water Code* and *Water Quality Regulations* (incorporated by reference in the Code of Federal Regulations at 18 CFR Part 410 and in the *Pennsylvania Code* at 25 Pa. Code Ch. 901), and its *Special Regulations* (codified at 18 CFR Part 440), which are incorporated by reference at 25 Pa. Code Ch. 903, as set forth below.

DELAWARE RIVER BASIN WATER CODE

ARTICLE 2—CONSERVATION, DEVELOPMENT AND UTILIZATION OF DELAWARE RIVER BASIN WATER RESOURCES

[INCORPORATED BY REFERENCE AT 25 PA CODE § 901.2]

(Editor's note: Section 2.30 of the Delaware River Basin Water Code is proposed to be replaced in its entirety with the text set forth below. Existing Section 2.30 of the Water Code is available at: <https://www.state.nj.us/drbc/>

²⁸ See CRD, supra note 15, pp. 130–143, 178. See generally U.S. EPA, supra note 20.

²⁹ See CRD, supra note 15, p. 138.

³⁰ U.S. EPA, supra note 20, p. 8-6.

³¹ See CRD, supra note 15, p. 16 (reporting increased length of natural gas well laterals and increased use of water per foot of well fractured in the Susquehanna River Basin, which adjoins the Basin) (citing Susquehanna River Basin Commission, Water use associated with natural gas development in the Susquehanna River Basin: An update of activities through December 2018 (Publication No. 323) (2020)).

³² See U.S. EPA, supra note 20, pp. 8-4–8-6.

library/documents/watercode.pdf. For the text of the entire Water Code, visit: <https://www.state.nj.us/drbc/library/documents/watercode.pdf>.

2.30 IMPORTATIONS AND EXPORTATIONS OF WATER, INCLUDING WASTEWATER

2.30.1 *Definitions (Resolutions Nos. 91-9 and xxx)*. For purposes of this section 2.30:

A. “Adjacent public water system” means a public water system located outside of the Delaware River Basin that either: (1) is interconnected with a public water system located entirely inside the Basin or with a “straddled public water system” (as defined herein); or that (2) has a service area directly bordering the service area of a public water system located entirely within the Basin or that straddles the Basin boundary.

B. “Basin water” (also, “waters of the Basin”) means water in, on, under or above the ground within the Delaware River Basin. “Basin water” includes wastewater.

C. “Delaware River Basin” (or “Basin”) has the meaning assigned to it by Section 1.2(a) of the *Delaware River Basin Compact*—the area of drainage into the Delaware River and its tributaries, including Delaware Bay.

D. “Exportation” means the conveyance, transfer, or diversion of Basin water from a source within the Delaware River Basin to a location outside the Basin without return of such water to the Basin. Exportations from the Basin of consumer goods or foods that have been manufactured, bottled, packaged, or processed using Basin water are not considered “exportations” for purposes of this rule.

E. “Importation” means the conveyance, transfer, or diversion of water, including wastewater, into the Delaware River Basin from a source outside the Basin, resulting in a discharge of the imported water to land or water within the Basin, with or without prior treatment.

F. “Public water system” means a system primarily for the provision to the public of piped water for human consumption, if such system has at least fifteen service connections or regularly serves at least twenty-five individuals. A “public water system” may be publicly or privately owned.

G. “Straddled public water system” means a public water system that serves an area partially within and partially outside of the Delaware River Basin.

H. “Wastewater” means water that is stored, transported or discharged after use, including, but not limited to, any water for which a National Pollutant Discharge Elimination System (NPDES) permit under the federal Clean Water Act or any state or DRBC approval is required before the water can lawfully be discharged to waters or land within the Basin.

2.30.2 *Protection and Preservation*

A. The waters of the Delaware River Basin are limited in quantity, and the Basin is frequently subject to drought warnings, drought declarations, and drought operations due to limited water supply storage and streamflow during dry periods. In addition, portions of the Basin have been delineated by the Commission as groundwater protected areas due to water shortages. Therefore, it is the policy of the Commission to promote the conservation and preservation of water and related natural resources, including aquatic ecosystems, and effectuate the Comprehensive Plan and the uses of the water resources of the Basin identified therein, by dis-

couraging, limiting, or placing conditions on the exportation of Basin water as may be required to protect the health and safety of Basin residents, aquatic ecosystems and the uses of water identified in the Compact and Comprehensive Plan.

B. The Commission shall review a proposed new exportation of Basin water, including any proposed increase in the rate or volume of an existing exportation, and may impose conditions, obligations and release requirements related thereto, pursuant to Sections 3.3, 3.8, 5.2, 10.3, 10.4 and Article 11 of the Compact and the regulations and docket approvals implementing these provisions.

C. A proposed new exportation of Basin water that is subject to review under the Compact and implementing regulations, including any proposed increase in the rate or volume of an existing exportation, may be approved by the Commission after consideration of the factors set forth at Section 2.30.3 below, if:

1. the sponsor demonstrates that the exportation of Basin water is required to serve a straddled or adjacent public water system;
2. the sponsor demonstrates that the exportation of Basin water is required on a temporary, short-term, or emergency basis to meet public health and safety needs; or
3. the sponsor is proposing an exportation of wastewater.

D. Basin waters have limited capacity to assimilate pollutants without significant impacts to the health and safety of Basin residents, the health and functioning of aquatic ecosystems in the Basin, and the effectuation of the Comprehensive Plan. Accordingly, it is the policy of the Commission to discourage, limit, or condition the importation of wastewater into the Delaware River Basin as necessary to avoid impairment of Basin waters. A proposed new importation of water or wastewater, including any proposed increase in the rate or volume of an existing importation, shall be reviewed by the Commission consistent with the factors set forth at Section 2.30.3 below.

E. This Section 2.30 shall not apply to importations and exportations of water, including wastewater, that existed prior to enactment of the Compact or that were approved by the DRBC prior to [date of adoption of these amendments].

2.30.3 *Commission Considerations (Resolutions Nos. 91-9 and xxx)*. In evaluating importations and exportations, the Commission’s review will include consideration of the following factors:

A. For exportations of Basin water:

1. the effect of the exportation on the health and safety of the Basin community;
2. the effect of the exportation on existing or future water availability or shortages, including, but not limited to, sources within areas designated by the Commission as protected areas pursuant to Section 10.2 of the Compact, sources within Delaware River reaches with flows that are frequently augmented by reservoir releases due to low flows, and sources in areas subject to DRBC drought operations or state drought declarations within the past five years;
3. the effect of the exportation on aquatic ecosystems;
4. the effect of the exportation on water quality and waste assimilation;

5. the effect of the exportation on salinity concentrations;

6. the effect of the exportation on the water uses protected by the Comprehensive Plan, DRBC regulations or DRBC docket approvals, or on the ability of DRBC to effectuate the Comprehensive Plan;

7. the effect of the exportation, including its volume, rate, timing and duration, on passby or instream flow requirements contained in DRBC regulations or project approvals;

8. the sponsor's planned use for the water and any resulting public benefits;

9. the availability to the sponsor of alternatives to the exportation of Basin water and whether these alternatives have been diligently pursued, including without limitation a review of the sponsor's uses of water outside the sponsor's service area, if any; conservation measures undertaken by the sponsor or a public water system in the service area where the sponsor is located to forestall the need for a transfer of Basin water; and the results of a water audit (or audits) performed by the sponsor in accordance with Section 2.1.8 of the Delaware River Basin Water Code; and

10. whether the exportation would contravene sections 3.3 and 3.5(a) of the Compact by impeding or interfering with the rights, powers, privileges, conditions or obligations contained in the Supreme Court Decree in *New Jersey v. New York*, 347 U.S. 995 (1954), as modified by the Commission with the unanimous consent of the parties to the Decree.

B. For importations of water, including wastewater:

1. the effect of the importation on the health and safety of the Basin community with due consideration of the available alternatives to the importation;

2. the characterization and treatability of the wastewater;

3. the potential impacts on water resources of the Delaware River Basin of the proposed importation and of each available alternative, including alternatives that avoid an importation of water, including wastewater. The potential impacts considered will include the effects of the quality, volume, flow rate, timing and duration of the proposed importation in relation to:

a. flow objectives or passing or instream flow requirements contained in DRBC regulations or project approvals;

b. the record of hydrologic conditions in the proposed receiving region and the larger Delaware River Basin;

c. water uses as established by the Comprehensive Plan, including the DRBC Water Code;

d. the effect of the importation on aquatic ecosystems;

e. water quality and waste assimilation capacity in the affected receiving streams; and

f. prior regulations or orders of the Commission which may be identified during the course of the Commission's review.

2.30.4 *Analyses by Applicant for Section 3.8 Approval.* When an importation or exportation of water or wastewater is subject to review by the Commission, the applicant shall furnish the Commission with such analyses of the factors set forth in Sections 2.30.2 and 2.30.3 above and as the Commission may direct.

2.30.5 *Water Charges (Resolutions Nos. 91-9 and xxx).* Exportation of Basin water constitutes consumptive water use and will be subject to the water charges in effect at the time of transfer in accordance with the Commission's Water Supply Charges regulations (18 CFR Part 420), as amended.

2.30.6 *Wastewater Treatment Requirements (Resolution No. 91-9).* It is the policy of the Commission to give no credit toward meeting wastewater treatment requirements for importations of wastewater. An effluent loading or concentration authorized in accordance with a water-quality-based effluent limit such as a wasteload allocation may not include loadings attributable to an importation of wastewater.

2.30.7 *Existing Allocations (Resolution No. 91-9).* It is the policy of the Commission to charge all exportations of Basin water against any special regional allocation or any depletive use allocation as may exist at the time of receipt of a completed application for exportation.

2.30.8 *1954 Supreme Court Decree.* This Section 2.30 is intended to preserve the diversions, compensating releases, rights, conditions, and obligations of the parties to the U.S. Supreme Court Decree of 1954 in *New Jersey v. New York*, 347 U.S. 995 (1954), as modified by the Commission with the unanimous consent of the parties to the Decree.

WATER QUALITY REGULATIONS

ARTICLE 4—APPLICATION OF STANDARDS

[INCORPORATED BY REFERENCE AT 25 PA CODE § 901.2]

(Editor's note: New text appears in bold face with underscore, and text to be deleted appears in bold face within brackets. Asterisks represent no change to the existing text. For the text of the entire Water Quality Regulations, visit: <https://www.state.nj.us/drbc/library/documents/WQregs.pdf>.)

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Section 4.40 Ground Water Quality Requirements.

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4.40.2 **Enforcement Procedures.** The enforcement procedure of Section [**4.50**] **4.60** with respect to effluent quality requirements for discharges shall be deemed applicable to the enforcement of this Section and Section 3.40. For the purposes thereof, the word "discharger" as used in Section [**4.50**] **4.60** includes any party affected by this Section.

Section 4.50 Wastewater from High Volume Hydraulic Fracturing and Related Activities. The provisions of 18 CFR 440.4 and the purpose and definitions applicable thereto, encompassing 18 CFR 440.1 and 18 CFR 440.2, are hereby incorporated into these Water Quality Regulations.

Section [4.50] 4.60 Enforcement Procedures.[4.50.1] **4.60.1 Scope.** * * *[4.50.2] **4.60.2 Abatement Schedules and Permits.**

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[4.50.3] **4.60.3 Waste Load Allocations.** * * *

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[4.50.4] **4.60.4 Inspection and Surveillance.**

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[4.50.5] **4.60.5 Noncompliance; Notice.**

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[4.50.6] **4.60.6 Order of Abatement; Sanctions.** * * *

DELAWARE RIVER BASIN COMMISSION
18 C.F.R. CHAPTER III, SUBCHAPTER B—
SPECIAL REGULATIONS
PART 440—HIGH VOLUME HYDRAULIC
FRACTURING

[INCORPORATED BY REFERENCE AT 25 PA
CODE § 903.1]

(Editor's note: Proposed new text appears in bold face with underscore, and text to be deleted appears in bold face within brackets.)

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 3.1, 3.2(a), 3.2 (b), 3.6(b), 3.6(h), 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 **[in this chapter]**, **doctets [and], permits, and determinations.**

(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. **Others are consistent with terms defined by the Delaware River Basin Compact.**

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

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

Fracturing fluid(s) is 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.

High volume hydraulic fracturing (HVHF) is 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.

HVHF-related activities are:

(1) Construction of an oil or natural gas production well that is to be stimulated using HVHF as defined herein;

(2) Chemical mixing or storage of proppant, chemicals and other additives to make fracturing fluid; and

(3) Management of wastewater from hydraulic fracturing, including storage, disposal, treatment, or reuse in hydraulic fracturing operations or other uses.

Hydraulic fracturing is 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.

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

Wastewater from high volume hydraulic fracturing is:

(1) Any wastewater, brine, sludge, chemicals, naturally occurring radioactive materials, heavy metals or other contaminants that have been used for or generated by high volume hydraulic fracturing or HVHF-related activities;

(2) Leachate from solid wastes associated with HVHF-related activities, except if the solid wastes were lawfully disposed of in a landfill within the Basin prior to the effective date of this rule; and

(3) Any products, co-products, byproducts or waste products resulting from the treatment, processing or modification of the wastewater described in paragraphs (1) and (2) of this same definition.

Water resource(s) is, in accordance with Section 1.2(i) of the *Delaware River Basin Compact*, “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 Wastewater from high volume hydraulic fracturing and related activities

(a) *Determination.* The Commission has determined that the discharge of wastewater from high volume hydraulic fracturing and HVHF-related activities poses significant, immediate and long-term risks to the development, conservation, utilization, management, and preservation of the Basin’s water

resources. Controlling future pollution by prohibiting such discharge 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.* No person may discharge wastewater from high volume hydraulic fracturing or HVHF-related activities to waters or land within the Basin.

Dated: November 2, 2021.

PAMELA M. BUSH, Esq.,
Secretary

Fiscal Note: 68-61. No fiscal impact; (8) recommends adoption.

Annex A

**TITLE 25. ENVIRONMENTAL PROTECTION
PART V. DELAWARE RIVER BASIN COMMISSION
CHAPTER 901. GENERAL PROVISIONS**

§ 901.2. Rules of Practice and Procedure.

The Comprehensive Plan regulations as set forth in 18 CFR Part 401, Subpart A (2014) and the Water Code and Water Quality Standards as set forth in 18 CFR Part 410 [(2014)] (2021) are hereby incorporated by reference and made a part of this title.

CHAPTER 903. HYDRAULIC FRACTURING IN SHALE AND OTHER FORMATIONS

§ 903.1. Hydraulic fracturing in shale and other formations.

The hydraulic fracturing in shale and other formation regulations, as set forth in 18 CFR Part 440 [(2018)] (2021), are hereby incorporated by reference and made part of this title.

[Pa.B. Doc. No. 21-1997. Filed for public inspection December 3, 2021, 9:00 a.m.]