



Via Certified Mail, Return Receipt Requested

August 29, 2018

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**RE: Notice of Intent to Sue for Violations of the Clean Water Act and
Pennsylvania’s Clean Streams Law at the Brunner Island Steam Electric
Station in York County, Pennsylvania**

Dear Sirs:

The Environmental Integrity Project (“EIP”) is writing on behalf of the Lower Susquehanna Riverkeeper Association, the Waterkeeper Alliance (together “Waterkeepers”) and PennEnvironment (hereinafter collectively “Citizens”) to provide you with notice of their intent to file suit against Talen Energy Corporation, and Brunner Island LLC (collectively, “Talen”) for significant and ongoing violations of the Clean Water Act, 33 U.S.C. § 1251 *et seq.*, and Pennsylvania’s Clean Streams Law, as amended, 35 Pa. Cons. Stat. § 691.1 *et seq.*, at Talen’s Brunner Island Steam Electric Generating Station (“Brunner Island”), located at 1400 Wago Road – Brunner Island, York Haven, East Manchester Township, Pennsylvania 17370-0221.

Talen owns and operates Brunner Island, which is a coal- and natural gas-fired electrical generation facility located on an island bordered on the east by the Susquehanna River and on the west by Black Gut Creek, a tributary of the Susquehanna River (**Figure 1**, below). Operations began at Brunner Island in 1961, when it was under ownership by PPL Corporation (“PPL”). The energy-producing division of the business was renamed Talen Energy Corporation in 2015.

During the process of burning coal, Brunner Island generates coal combustion residuals (“CCR”)¹ pollution and other waste, which it currently deposits in Ash Basin 6 and Disposal Area 8 (which was constructed atop unlined Ash Basin 5). In addition to the discharge of pollutants from Ash Basin 6 and Disposal Area 8, this letter also alleges that Talen is actively discharging pollutants from Ash Basin 5.

According to the U.S. Energy Information Administration, Brunner Island currently generates over 442,000 tons of CCR annually, including fly ash, bottom ash, and flue gas desulfurization gypsum. *See*, U.S. Energy Information Administration Form 923, Schedule 8A (2016).

Talen was reissued a National Pollutant Discharge Elimination System Permit (“NPDES Permit”) on July 27, 2018 by the Pennsylvania Department of Environmental Protection (“PA DEP”). PA DEP, Authorization to Discharge Under the National Pollutant Discharge Elimination System Discharge Requirements for Industrial Wastewater Facilities, NPDES Permit No. PA0008281 (issued to Brunner Island, LLC, effective Aug. 1, 2018) [hereinafter “2018 NPDES Permit”]. The permit had previously been reissued in 2006 and administratively extended after it expired in 2011 following PPL’s submission of a renewal application. *See* PA DEP, Authorization to Discharge Under the National Pollutant Discharge Elimination System Discharge Requirements for Industrial Wastewater Facilities, NPDES Permit No. PA0008281 (issued to PPL Brunner Island, LLC) (effective Oct. 1, 2006, as amended Sept. 26, 2008) [hereinafter “2006 NPDES Permit”]; PPL Generation, LLC, PPL Brunner Island, LLC NPDES Permit No. PA0008281 Permit Renewal Application (Mar. 14, 2011). Talen’s NPDES Permit only authorizes the discharge of pollutants from designated outfalls, and subject to effluent limitations and other requirements.

As explained more fully below, Talen is:

- 1) Discharging CCR and/or non-CCR wastewater² from coal ash management units, specifically, Ash Basin 6, Ash Basin 5, and Disposal Area 8 (which sits atop Ash Basin 5), to the Susquehanna River and its tributaries through hydrologically connected groundwater, without permit authorization and in violation of the Clean Water Act;

¹ “CCR” when used in this notice letter refers to the regulatory definition of “*Coal combustion residuals (CCR)*” found in 40 C.F.R. § 257.53 (stating that CCR “means fly ash, bottom ash, boiler slag, and flue gas desulfurization materials generated from burning coal for the purpose of generating electricity by electric utilities and independent power producers”) (emphasis in original). As per this definition, CCR includes the more common term “coal ash.”

² For purposes of this notice letter, “non-CCR wastewater” refers to process wastewater or other byproducts of facility operations deposited by Talen in Ash Basin 6 that do not meet the regulatory definition of CCR. Although not CCR, this wastewater may contain CCR constituents.

2) Discharging pollutants directly to the Susquehanna River and its tributaries from seeps, a spring, and other saturated areas near these management units, without permit authorization and in violation of the Clean Water Act and Pennsylvania's Clean Streams Law;

3) Discharging unknown water to a tributary of the Susquehanna from an unpermitted outfall (pipe) in violation of the Clean Water Act and Pennsylvania's Clean Streams Law; and

4) Violating effluent limitations and other requirements contained in its NPDES Permit, in violation of the permit, the Clean Water Act and Pennsylvania's Clean Streams Law.

These unpermitted discharges are ongoing and are expected to continue until abated by Talen.

The Clean Streams Law claims may be pleaded in federal district court alongside the Clean Water Act claims pursuant to pendant jurisdiction. *See, Hagans v. Lavine*, 415 U.S. 528, 545–46 (1974) (there is a strong presumption that pendant state claims should be heard in federal courts).

Figure 1: Map of Brunner Island



Unsafe management of coal ash is dangerous and threatens the health of local communities, makes groundwater unsafe to drink, harms aquatic life and wildlife, and pollutes rivers, streams, and creeks. Coal ash management practices such as those at Brunner Island are known to leach toxic pollutants into groundwater. Contaminated groundwater and contaminants present in seeps, a spring, and other saturated areas associated with management units such as Ash Basin 6, Ash Basin 5, and Disposal Area 8 flow uncontrolled into surface waters, either through hydrologically connected groundwater or directly over land.

The Lower Susquehanna River and Hartman Run (which flows into and becomes Black Gut Creek) both have protected water uses that include Warm Water Fishes and Migratory Fishes. 25 Pa. Code §§ 93.3, 93.90 (2018) (Drainage Basin O). Downstream of the Brunner Island Plant, the Susquehanna River is listed as impaired (Category 5) for the designated use of Aquatic Life due to metals. *See id.*; *see also Pennsylvania Dep't Env'tl. Prot., 2016 Pennsylvania Integrated Water Quality Monitoring and Assessment Report - Streams, Category 5 Waterbodies, Pollutants Requiring a TMDL*, at 970,

<http://www.depgreenport.state.pa.us/elibrary/GetDocument?docId=5954&DocName=26%202016%20INTEGRATED%20REPORT%20CATEGORY%205%20-%20STREAMS.PDF%20>.

By failing to comply with the environmental laws detailed in this notice letter, Talen has injured or threatened to injure, and will continue to injure or threaten to injure, the health, environment, aesthetic, and economic interests of the Waterkeepers and PennEnvironment, as well as their members. These injuries or risks are traceable to Talen's violations at Brunner Island and redressing these ongoing violations will redress Citizens' injuries or risks.

After providing notice, Citizens are entitled to bring suit against "any person . . . alleged to be in violation" of an "effluent standard or limitation" established under the Clean Water Act. 33 U.S.C. § 1365(a)(1). Citizen suits are similarly authorized by the Clean Streams Law. 35 Pa. Cons. Stat. § 691.601. Any person who discharges any pollutant without authorization of an NPDES permit violates section 301 of the Clean Water Act and can be subject to a civil penalty of up to \$37,500 per violation per day that occurred before November 2, 2015 and up to \$53,484 per violation per day that occurred after November 2, 2015. 40 C.F.R. § 19.4 tbs. 1, 2; 42 U.S.C. §§ 6972(a) (authorizing suits and also authorizing a district court to "apply any appropriate civil penalties under section 6928(a) and (g)"). Any person who violates the Clean Streams Law, or a permit or regulation pursuant thereto, including by discharging, placing or allowing the flow of industrial waste or other pollution to groundwater without authorization, can be subject to a civil penalty of up to \$10,000 per violation per day. 35 Pa. Cons. Stat. § 691.605(a). These citizen suit provisions also allow the recovery of reasonable attorney and expert fees in addition to other costs by prevailing plaintiffs. Therefore, Citizens may bring suit to obtain declaratory relief, enjoin illegal discharges of pollution, compel compliance with the conditions of Talen's NPDES Permit, abate pollution, impose civil penalties, recover attorneys' fees and costs of litigation, and obtain other appropriate relief.

In accordance with section 505(b)(1)(A) of the Clean Water Act and sections 601(c) and (e) of the Clean Streams Law, this letter serves to notify you that Citizens intend to file suit in federal

district court at any time beginning 60 days after the postmarked date of this letter. 40 C.F.R. § 135.2(c).

I. DESCRIPTION OF BRUNNER ISLAND'S ASH BASIN 6 AND DISPOSAL AREA 8/ASH BASIN 5 AND UNDERLYING TOPOGRAPHY

A. Topographical Overview of the Site

Brunner Island was formed as a delta at the mouth of the Conewago Creek and elongated by the Susquehanna River as a point bar deposit. Several old flow channels associated with Black Gut Creek and Hartman Run were identified on a 1939 geological map. *See*, V.F. Britton Group, LLC, Work Plan, Groundwater Risk Evaluation Ash Basin 4 and Pyrite Tomb, Brunner Island, LLC, East Manchester Township, York, County, Pennsylvania at 8 (Sept. 29, 2016) [hereinafter 2016 Ash Basin 4 and Pyrite Tomb Work Plan]. According to Talen's contractor, V.F. Britton Group, LLC, "some evidence of these historic flow channels can still be seen on more recent USGS topographic maps of the area." *Id.* This work plan further states that Brunner Island "exists within the discharge zone associated with the Susquehanna River and was likely at one time part of the Susquehanna River during periods of high water levels." *Id.* Finally, the same contractor states that, "[b]ased on recent groundwater elevation measurements . . . groundwater movement generally occurs perpendicular to the axis of Brunner Island from the central portion of the island outward toward the Susquehanna River and Black Gut Creek." *Id.* at 7. Site hydrology beneath Ash Basin 6, Disposal Area 8, and Ash Basin 5 are discussed in more detail below (*see* **Section II.A**).

B. Ash Basin 6

Ash Basin 6 was constructed between 1975 and 1979 to facilitate the sedimentation of pollutants out of wastewater. The basin is unlined, with a continuous, earthen berm, currently holds approximately 3.2 million tons of CCR, and covers an area of roughly 70 acres (**Figure 2**). The sediments underneath the basin consist of a "silty clay material overlaying a sand and gravel layer." *See* Advanced GeoServices and V.F. Britton Group, LLC, Initial Annual Groundwater Monitoring and Corrective Action Report for 2017 for Ash Basin 6, at 1-2 (prepared for Talen) (Jan. 31, 2018) [hereinafter 2017 Ash Basin 6 Annual Groundwater Report]. According to Talen's contractor, "[t]his unconsolidated material lies directly on top of a fractured bedrock that has been carved over time by the Susquehanna River. It is understood that the earthen berms constructed for Basin 6 were constructed directly on top of the bedrock material and that most of the unconsolidated materials underlying the berm footprint were removed." *Id.* at 1-3. According to this same report, the native overburden material in the central portion of Ash Basin 6 was untouched and the CCR placed directly on top of it. *Id.* at 2-1.

Figure 2: Aerial Photograph of Ash Basin 6



See Advanced Geoservices, Coal Combustion Residual Closure Plan for Brunner Island Ash Basin No. 6, at Fig. 2 (Sept. 2016) [hereinafter Ash Basin 6 CCR Closure Plan].

There is nothing but an earthen berm, in the event of a breach, to keep over three million tons of wet CCR and non-CCR wastewater from entering the Susquehanna River or its tributary, Black Gut Creek.³ The eastern boundary of the basin is 700 feet or less from the Susquehanna River and the western boundary of the basin is 700 feet or less from Black Gut Creek.

Talen currently sends approximately 5 million gallons of CCR and non-CCR wastewater to Ash Basin 6 every day. The CCR and non-CCR wastewater sent to Ash Basin 6 flows from the north end of the basin to a polishing pond through a stop log structure at the basin's south end before being discharged to the Susquehanna River via NPDES permitted Outfall 004.

Talen has submitted a closure plan for Ash Basin 6, pursuant to the U.S. Environmental Protection Agency's ("EPA") 2015 CCR disposal rule. See Ash Basin 6 CCR Closure Plan; U.S. Env'tl. Prot. Agency ("EPA"), Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals From Electric Utilities, 80 Fed. Reg. 21,302, 21,449 (proposed Apr. 17, 2015), codified at 40 C.F.R. pts 257, 261 (2015) (hereinafter "CCR Rule"). A 2014 approved state closure plan also is in place that requires excavation of de-watered CCR for beneficial reuse. PA DEP, Solid Waste Disposal Permit, Major Modification, Ash Basin No. 6

³ Ash Basin 6 was self-classified by Talen as having a "significant hazard potential" as defined by the CCR rule and Pennsylvania's Dam Safety Guidelines, in part because a failure of the ash basin could cause "environmental damage as a result of inflow of ash to the Susquehanna River." Talen Energy, Dam Failure Analysis and 2016 Initial Hazard Potential Classification, Brunner Island Ash Basin No. 6 (Sept. 29, 2016).

Clean Closure Permit No. 301300 (Nov. 24, 2014). As of 2017, and in accordance with its state closure plan, Talen had removed and shipped off-site 390,000 tons of CCR for beneficial reuse, leaving approximately 3.2 million tons of wet CCR in place.

Talen estimates that the excavation phase will not be completed until mid-2031. In addition, Talen's closure plan calls for this basin to continue receiving CCR and non-CCR wastewater throughout the excavation phase. *See* Ash Basin 6 CCR Closure Plan; *see also* PA DEP, Solid Waste Disposal Permit No 301300 for Brunner Island, Ash Basin No. 6 (renewed Oct. 7, 2016) (expiring June 28, 2027). Monitoring wells are in place around the perimeter of Ash Basin 6 pursuant to both its state-issued solid waste disposal permit and the federal CCR Rule. As discussed in detail below, monitoring results from these wells indicate significant and ongoing discharge of pollutants from unlined Ash Basin 6 to groundwater hydrologically connected to – and a direct conduit to – Black Gut Creek and the Susquehanna River.

C. Disposal Area 8 and Ash Basin 5

Disposal Area 8, located just north of Ash Basin 6, is a 21-acre landfill that was constructed between 2006 and 2009 directly on top of a closed, unlined surface impoundment (Ash Basin 5); Ash Basin 5 continues to hold approximately 35 to 40 feet of CCR, predominantly fly ash. The eastern boundary of Ash Basin 5 is approximately 500 feet or less from the Susquehanna River and the western boundary is approximately 500 feet or less from Black Gut Creek. The western boundary of Disposal Area 8 is located approximately 800 feet from Black Gut Creek.

Spanning approximately 95 acres, Ash Basin 5 was closed in 1988 with nearly 5.5 million cubic yards of ash material left in place; the footprint of Ash Basin 5 is shown in **Figure 1**, above. *See* James K. Holley, Groundwater Management Associates, Inc., Preliminary Hydrogeological Evaluation, Brunner Island Steam Electric Station, York County, Pennsylvania, at 5 (May 17, 2017) (Attachment 1) [hereinafter 2017 Holley Evaluation]; *see also* Talen Energy, Risk Assessment Report and Cleanup Plan/Remedial Investigation Report, Closed Ash Basins 4 and 5, Brunner Island, LLC, at 2.5.1 (Apr. 16, 2018) [hereinafter 2018 Risk Assessment]. According to Talen's contractor, Ash Basin 5 is potentially unstable. *Id.*

Talen's solid waste disposal permit for Disposal Area 8 was recently re-issued. PA DEP, Solid Waste Disposal Permit for Brunner Island, Disposal Area 8 Type 2 Residual Waste Landfill (Permit No. 301354) (June 7, 2018); *see* 48 Pa. Bull. 3751 (June 23, 2018). Disposal Area 8 consists of three cells (see **Figure 3**), though as of January 2018, only Cell 1 (9 acres) was in use and lined. The liner for Cell 1 consists of a compacted clay layer as well as a geosynthetic clay layer. In addition, there is a leachate collection system that conveys leachate to the facility's treatment plant. Talen acknowledges that Disposal Area 8's liner and leachate collection system has been inadequate, malfunctioned, or otherwise has failed to contain the CCR deposited in the unit since at least 2011. *See* Talen Energy, 2015 Annual (Initial) USEPA CCR Landfill Inspection Report, Brunner Island Ash Disposal Area No. 8, at 2 (Jan. 15, 2016); *see also* Talen Energy, 2016 Annual USEPA CCR Landfill Inspection Report, Brunner Island Ash Disposal Area No. 8, at 2 (Dec. 9, 2016).

Figure 3: Aerial Photograph of Disposal Area 8



Photo 1 - Aerial view of Brunner Island Ash Area No. 8. The active part of Cell 1 is seen to the left (north). The right (southern) part of Cell 1 has had the liner system installed, but has not been filled. Temporary plastic tarps can be seen covering the liner system over the inactive part of Cell 1. Construction of Cells 2 and 3 has not yet started.

HDR, 2015 Annual (Initial) USEPA CCR Landfill Inspection Report, Brunner Island Ash Disposal Area No. 8, at Appendix A-2 (Jan, 15, 2016).

As of January 2018, Talen reported that Cell 1 of Disposal Area 8 contained 141,830 tons of CCR and records indicate that Talen adds about 500 tons of CCR to the landfill per week. Talen's closure plan for Disposal Area 8 is to keep placing CCR in the landfill throughout the remaining operating life of the facility and then to close the unit with the CCR – up to 1.4 million cubic yards – left in place. *See* Talen Energy, 2017 Annual USEPA CCR Landfill Inspection Report, Brunner Island Ash Disposal Area No. 8 (Jan. 8, 2018); *see also* HDR Engineering, Inc., 2015 Annual (Initial) USEPA CCR Landfill Inspection Report, Brunner Island Ash Disposal Area No. 8, at 2 (Jan. 15, 2016), *and* HDR Engineering, Inc., 2016 Annual USEPA CCR Landfill Inspection Report, Brunner Island Ash Disposal Area No. 8, at 2 (Dec. 9, 2016).

Because Disposal Area 8 is built upon an unlined, potentially unstable surface impoundment, and because the liner beneath Cell 1 and the leachate collection system have experienced chronic deficiencies that are ongoing to date, there is no reliable barrier to prevent constituents of CCR deposited in the landfill from leaking into Ash Basin 5 and then reaching groundwater.

Monitoring wells are in place around the perimeter of Ash Basin 5 to monitor that basin as well as Disposal Area 8 pursuant to both the state-issued solid waste disposal permits and the federal CCR Rule. Talen's current solid waste permit for Ash Basin 5 was issued in May 2007 (Solid Waste Permit No. 301337). As discussed in detail below, monitoring results from the wells

identified by Talen as most indicative of pollutants in groundwater from Disposal Area 8 indicate significant and ongoing discharge of CCR to groundwater that is hydrologically connected to – and a direct conduit to – the Susquehanna River and Black Gut Creek. In addition to discharge from Disposal Area 8, Ash Basin 5 also is discharging because constituents of CCR from Disposal Area 8 leak into Ash Basin 5 and also because groundwater and precipitation facilitate the discharge of pollutants from CCR contained in Ash Basin 5.

II. Violations of the Clean Water Act and Pennsylvania’s Clean Streams Law

Section 101(a) of the Clean Water Act, 33 U.S.C. § 1251(a), states that the central objective of the Act is “[t]o restore and maintain the chemical, physical, and biological integrity of the Nation’s waters. Section 301(a) of the Act, 33 U.S.C. § 1311(a), makes unlawful the discharge of any pollutant into waters of the United States by any person except in compliance with certain other enumerated sections of the Act. Section 402 of the Act, 33 U.S.C. § 1342, created the national pollutant discharge elimination system (NPDES), under which EPA may issue NPDES permits for point source discharges to waters of the United States. Section 402(b) of the Act, 33 U.S.C. § 1342(b), authorizes the Administrator of EPA to delegate to the states the authority to issue NPDES permits. The Commonwealth of Pennsylvania through PA DEP was delegated the authority to issue NPDES permits on June 30, 1978 and has been implementing the federal permitting program since that date. *See* 67 Fed. Reg. 55,841-01, 55,842.⁴

Section 301 of the Clean Streams Law prohibits the discharge of any “industrial waste” or “pollution” into waters of the Commonwealth, unless such discharge is in compliance with both the terms and conditions of a permit issued by the Commonwealth pursuant to section 402 and with the rules, regulations, and orders of the Commonwealth.⁵

⁴ The Commonwealth issues permits, including Talen’s 2006 NPDES Permit, pursuant to this authority under the Clean Water Act and the Clean Streams Law. *See, e.g.*, 25 PA. CODE § 963.1 (2018) (defining a Part I Permit as an NPDES permit “issued by the Department under section 5 of the Clean Streams Law (35 Pa. Cons. Stat. § 691.5) and section 402 of the Clean Water Act (33 U.S.C. § 1342); 33 U.S.C. § 1342(i)).

⁵ “Industrial waste” means “any liquid, gaseous, radioactive, solid or other substance, not sewage, resulting from any manufacturing or industry, or from any establishment, as herein defined, and mine drainage, refuse, silt, coal mine solids, rock, debris, dirt and clay from coal mines, coal collieries, breakers or other coal processing operations, including all such substances whether or not generally characterized as waste.” 35 Pa. Cons. Stat. § 691.1, 691.301. “Pollution” means “contamination of any waters of the Commonwealth such as will create or is likely to create a nuisance or to render such waters harmful, detrimental or injurious to public health, safety or welfare, or to domestic, municipal, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses, or to livestock, wild animals, birds, fish or other aquatic life, including but not limited to such contamination by alteration of the physical, chemical or biological properties of such waters, or change in temperature, taste, color or odor thereof, or the discharge of any liquid, gaseous, radioactive, solid or other substances into such waters. The department shall determine when a discharge constitutes pollution, as herein defined, and shall establish standards whereby and wherefrom it can be ascertained and determined whether any such discharge does or does not constitute pollution as herein defined.” *Id.*

A. SUBSURFACE VIOLATIONS

1. Overview

Talen acknowledges that CCR and non-CCR wastewater deposited in Ash Basin 6 and Disposal Area 8, which sits atop Ash Basin 5, discharge to groundwater that is directly connected, hydrologically, to the Susquehanna River and its tributary, Black Gut Creek. Talen acknowledges that the topographical features of Brunner Island are such that groundwater from Ash Basin 6, Ash Basin 5, and Disposal Area 8 flows radially from the center of the island directly to surface waters. Ash Basin 6 is within 700 feet of the banks of the Susquehanna and its tributary; Ash Basin 5 is approximately 500 feet from surface waters; and Disposal Area 8 is approximately 800 feet from Black Gut Creek. Talen also admits that the groundwater elevation beneath these units is higher than the elevation of the Susquehanna River and Black Gut Creek. Moreover, Talen's documents establish that the groundwater table is higher than the bottom layer of CCR deposited in Ash Basin 6 and Ash Basin 5 (and is within inches of Disposal Area 8). Last, because Ash Basin 5 and Ash Basin 6 are unlined and are leaking CCR and/or non-CCR wastewater, and because constituents of CCR from Disposal Area 8 are passing through unlined Ash Basin 5, all three of these units are discharging CCR and non-CCR pollutants to surface waters via hydrologically connected groundwater. These discharges are unpermitted and constitute violations of the Clean Water Act.

In addition, Talen has documented numerous seeps and other saturated areas at the site, which are the result either of contaminated groundwater reaching surface soils or occur when liquid from a CCR unit penetrates a berm and leaks through and onto surface soils.

2. Claim 1: Talen's Discharge of Pollutants from Ash Basin 6 without a Permit Violates the Clean Water Act.

All of the information alleged above is incorporated herein. Talen's past and ongoing practice of depositing pollutants into unlined Ash Basin 6, and allowing these pollutants to discharge to surface water through hydrologically connected groundwater, is in violation of section 301 of the Clean Water Act because:

- a. Talen Energy Corporation and Brunner Island, LLC are corporations and therefore are "person(s)" pursuant to section 502(5) of the Clean Water Act.
- b. CCR is a "pollutant," and CCR and non-CCR wastewaters deposited in Ash Basin 6 contain "pollutants," as that term is defined in section 502(6) of the Clean Water Act.
- c. Ash Basin 6 is a "point source" because the basin is a "discernible, confined, and discrete conveyance . . . from which pollutants are or may be discharged." 33 U.S.C. § 1362(14). "The term 'point source' has been taken beyond pipes and ditches and now includes less discrete conveyances, such as cesspools and ponds." *N. Cal. River Watch v. City of Healdsburg*, 2004 U.S. Dist. LEXIS 1008 (N.D. Cal. 2004) (citing *Cnty. Ass'n for Restoration v. Bosma Dairy*, 305 F.3d 943, 955 (9th Cir. 2002); *Wash. Wilderness Coal. v. Hecla Mining Co.*, 870 F. Supp. 983, 988 (E.D. Wash. 1994)), *aff'd*, 496 F.3d 993 (9th Cir. 2007).

- d. The Susquehanna River is a “navigable water” pursuant to section 502(7) of the Clean Water Act because it is a “water of the United States” as that term is defined by 40 C.F.R. § 230.3(s)(1) (the 1986/1988 regulatory definition of “waters of the United States”).⁶ 33 U.S.C. § 1362. Because Black Gut Creek is a tributary of the Susquehanna River as per 40 C.F.R. § 230.3(s)(5), the creek (and other Susquehanna River tributaries, such as Hartman Run) also are “waters of the United States” and therefore also “navigable water(s)” pursuant to the Clean Water Act. *Id.*
- e. The leaking of pollutants from Ash Basin 6 to groundwater constitutes a “discharge of pollutants” under section 502(12) of the Clean Water Act because the groundwater beneath the basin is hydrologically connected to the Susquehanna River and its tributary, Black Gut Creek. Both are “waters of the United States” and therefore “navigable waters” pursuant to section 502(7) of the Clean Water Act.

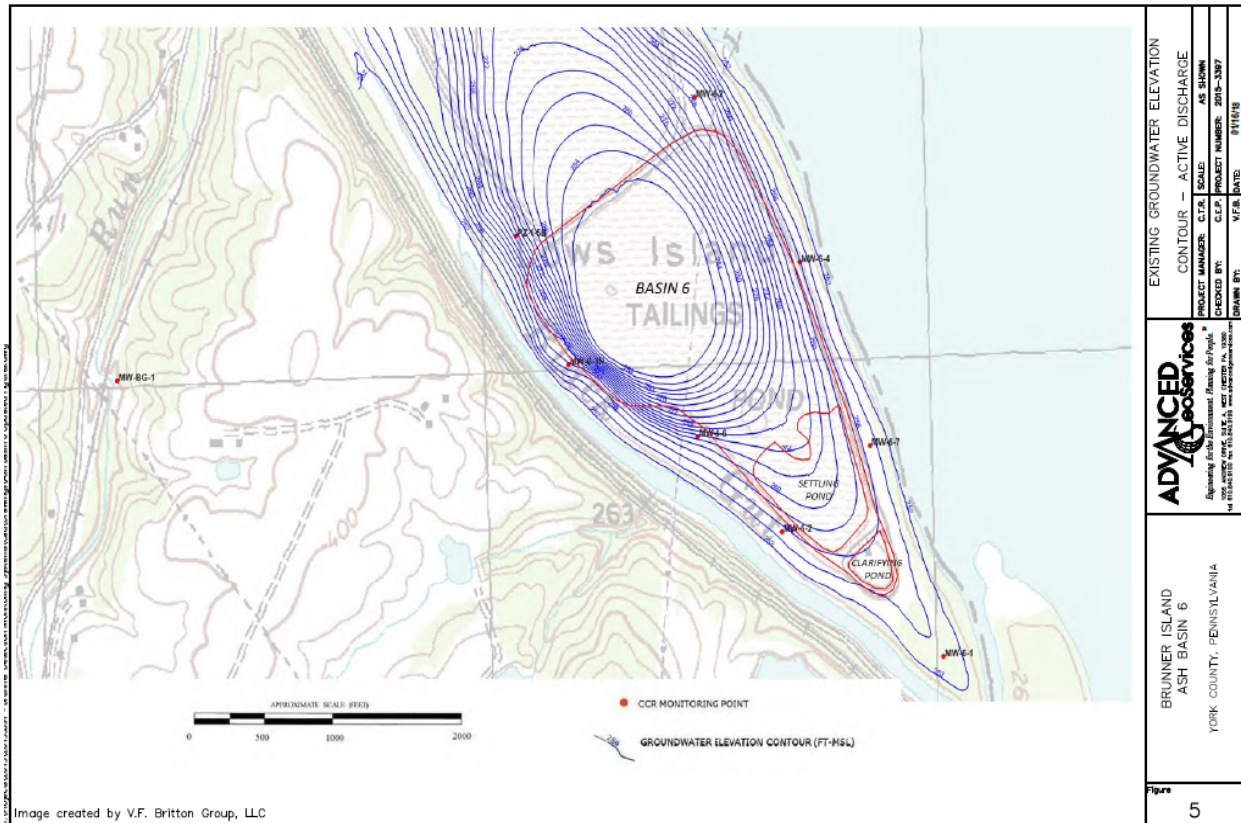
Hydrological Connection of Groundwater to Surface Waters

Ash Basin 6 is 700 feet or less from the Susquehanna River and Black Gut Creek (*see Figure 1*, above). Talen’s contractor stated in a 2017 report that the groundwater beneath the island flows radially outward toward surface waters. More specifically, Talen’s contractor stated that “[t]opographic highlands exist to the west of Brunner Island with associated groundwater moving from the highland recharge zone to the east and discharges into the Susquehanna River (regionally) and Black Gut Creek (locally). 2017 Ash Basin 6 Annual Groundwater Report, at 2-2.

This report further includes a map of Ash Basin 6 mean groundwater elevation contours, which clearly establishes that the elevation of the groundwater beneath the basin is higher than the elevation of the Susquehanna River and Black Gut Creek and is at its highest toward the center of the basin (**Figure 4**). *Id.* at Figure 5.

⁶ This is the 1986/1988 regulatory definition of “waters of the United States” that EPA states is currently in effect following the President’s February 28, 2017 Executive Order staying a 2015 revised regulatory definition. Exec. Order No. 13778, 82 Fed. Reg. 12,497 (Mar. 3, 2017).

Figure 4: Ash Basin 6 Groundwater Elevation



According to the annual report, “the average groundwater elevation below Basin 6 is 280 feet Mean Sea Level (ft MSL) which is within the ash material and above the overburden material.” *Id.* at 2-3.

Thus, according to Talen’s contractor, the groundwater beneath unlined Ash Basin 6 is within the bottom layer of deposited CCR and non-CCR wastewater. In addition, Talen admits that “the plant process water that is discharged to the surface of Basin 6 is creating a groundwater mound under the basin with radial flow outward.” *Id.* at 2-2.

There is no dispute regarding whether waste deposited in Ash Basin 6 is being discharged to groundwater. Talen also does not dispute that groundwater beneath Ash Basin 6 flows directly toward and into surface waters, which are only 500-700 feet away. *Id.*

Data Indicating Pollutants from Ash Basin 6 are Discharging to Groundwater that is Hydrologically Connected to Surface Water

Various groundwater monitoring wells, seeps, and springs at and around Ash Basin 6 that have been monitored for different purposes over time indicate that pollutants are being discharged from Ash Basin 6. These monitoring points are shown in in **Figure 5**.

Figure 5: Groundwater and Surface Water Monitoring Locations at Ash Basin 6

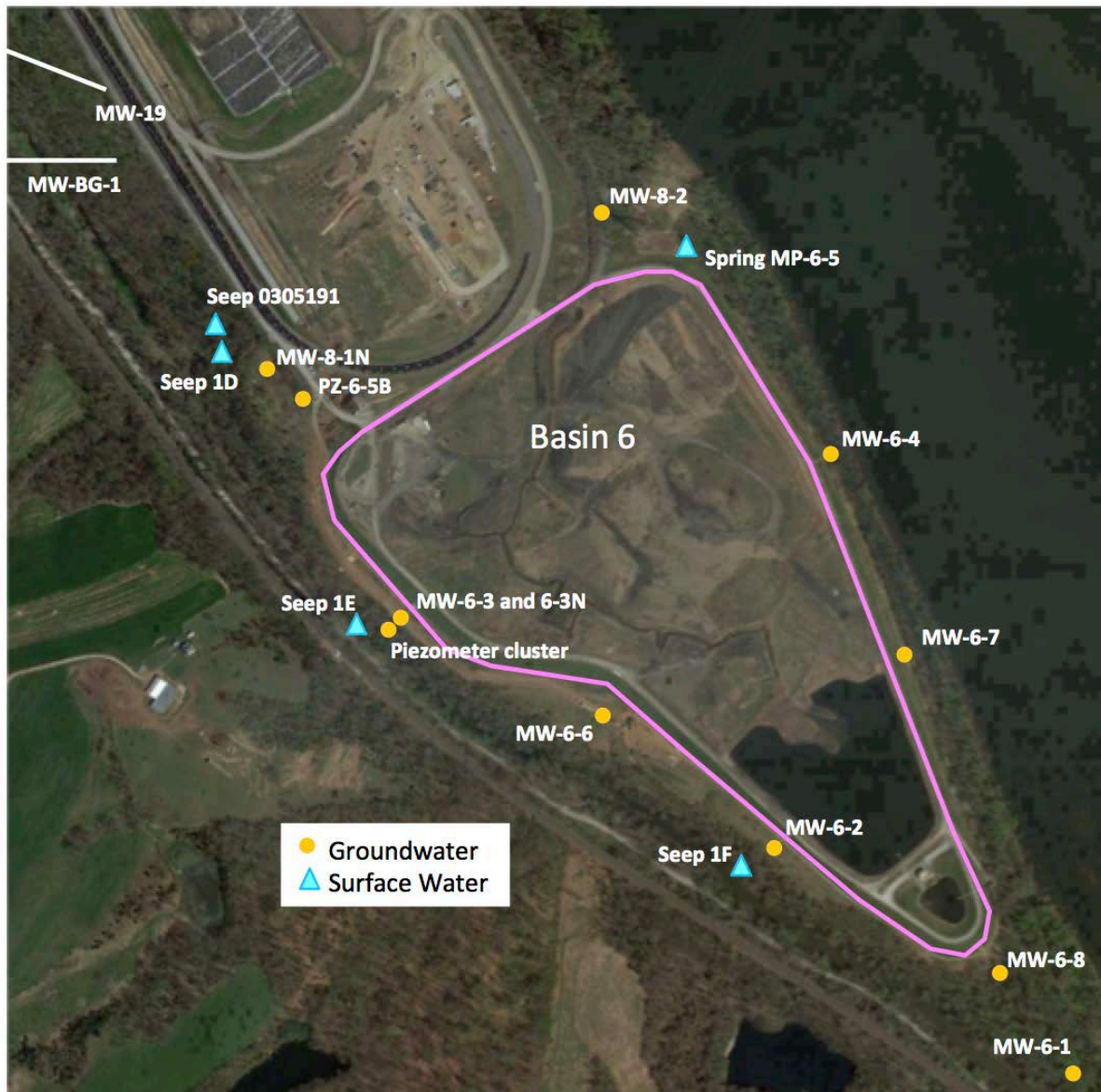


Table 1, below, presents average concentrations of selected CCR constituents from the following sampling points in order to illustrate the clear presence of CCR pollution in local groundwater, seeps, and springs:

- Talen monitors the groundwater at Brunner Island pursuant to both state law and the federal CCR Rule. The monitoring wells are listed in **Table 1** as either “state” or “CCR” wells (or both). Citizens have analyzed “state” data for the 2013 through 2018 time period. “CCR” data are only available for the time period covering April 2016 through September 2017. For consistency and for demonstration purposes, the groundwater data in **Table 1** represent mean values over the later time period (April 2016 through

September 2017). Mean concentrations over the 2013 through 2018 time period, for the “state” wells, would be similar (data not shown).

- One location shown on **Figure 5** (“piezometer cluster”) is actually a group of wells (piezometers).⁷ These piezometers are located very closely together and show similar groundwater quality results. For ease of presentation, these results have been averaged in **Table 1** as “piezometers.”
- Talen’s contractor, Ish Inc., undertook an investigation designed to address seeps to Hartman Run and Black Gut Creek. The work plan included water quality data for two sets of seeps. One set of seeps was monitored by PA DEP and PPL in 2007 and the data are included in **Table 1**.⁸ The seep associated with Ash Basin 6 is shown in **Figure 5** and **Table 1** as seep 0305191. *See* Workplan for Hydrological and Water Quality Investigations to Determine the Source of Seeps to Hartman Run-Black Gut Stream Area and for Examining Arsenic in Groundwater in Shallow Bedrock at Brunner Island Steam Electric Station (Apr. 11, 2008) [hereinafter 2008 Seeps Investigation] (Attachment 2).
- In December, 2017, the Waterkeepers collected samples from one surface water background location (in Hartman Run) and five seeps on the Black Gut Creek side of Brunner Island. Three of these seeps, 1-D, 1-E, and 1-F are shown in **Figure 5** and **Table 1**. *See* **Claim 4**, below, for greater detail regarding the December 2017 sampling and the evidence related to seeps and other saturated areas.
- State sampling location MP-6-5 measures surface water in a spring on the Susquehanna River side of the island near the northeast corner of Ash Basin 6.
- The characteristics of unaffected background water can be found in four places. First, Talen measures groundwater quality roughly half a mile southwest of the island in monitoring well MW-BG-1. This is the monitoring well that Talen identified as being representative of background groundwater quality conditions for purposes of monitoring pollutants from Ash Basin 6 for CCR Rule compliance. Second, Talen measures background groundwater quality for state law purposes at monitoring well MW-19. PA DEP requested the addition of monitoring well MW-19 as a well upgradient of Area 8 some time before June, 2008. PPL Brunner Island, Disposal Area 8 Groundwater Sampling and Analysis Plan, at *9 (June 2008). The location of well MW-19 appears to be west of both Brunner Island and Black Gut Creek. *Id.* at *5. Third, the Waterkeepers measured upstream (i.e., background) surface water quality in 2017 at location 1-A. *See* **Figure 7**. Last, PPL measured surface water quality at one of its Susquehanna River intakes and provided the data in its 2011 NPDES permit application. The two sets of surface water monitoring data are provided as further comparison against concentrations of pollutants d in seeps and the spring.

Table 1, below, presents mean concentrations of five representative CCR constituents - boron, sulfate, arsenic, lithium, and molybdenum - present in the groundwater beneath Ash Basin 6. Boron and sulfate are the leading indicators of CCR contamination because they are present in CCR leachate, are unlikely to occur together as a result of any other industrial practice, and are mobile in groundwater (not binding to the geologic substrate). As EPA noted in the preamble to

⁷ Piezometers were installed to measure the depth of groundwater but Talen also has used them to obtain groundwater samples.

⁸ The work plan also included monitoring data for another set of seeps, but no boron, arsenic, lithium, or molybdenum data was reported, and locations of these seeps were not identified.

the 2015 CCR Rule, “[t]he high mobility of boron and sulfate explains the prevalence of these constituents in damage cases that are associated with groundwater impacts.” 80 Fed. Reg. at 21,456. Boron and sulfate are both “detection monitoring” constituents in the CCR Rule. 40 C.F.R. § 257, Appendix III. Boron also was one of nine constituents presenting unacceptable risks in the Risk Assessment that EPA prepared for the 2015 CCR Rule, and the only constituent presenting unacceptable risks to both human and ecological receptors. *See EPA, Human and Ecological Risk Assessment of Coal Combustion Residuals* (Dec. 2014) [hereinafter 2014 Risk Assessment]; *see also* EPA, Hazardous and Solid Waste, Management System: Disposal of Coal Combustion Residuals From Electric Utilities; Amendments to the National Minimum Criteria (Phase One); Proposed Rule, 83 Fed. Reg. 11,584, 11,589 (Mar. 15, 2018). Arsenic, lithium and molybdenum are “assessment monitoring” constituents in the CCR Rule, 40 C.F.R. § 257, Appendix IV, because they are “risk drivers,” according to EPA. 83 Fed. Reg., at 11,589.

The mean downgradient monitoring results in **Table 1** are arranged geographically, from the most northwestern location to the most southeastern location on each side of the island.

Table 1: Mean⁹ concentrations of selected CCR constituents around Ash Basin 6.
Highlighted rows are surface water sampling locations. See text for additional explanation, and Figure 5, above, for locations.

Well or location	Program	Boron (µg/l)	Sulfate (mg/l)	Arsenic (µg/l)	Lithium (µg/l)	Molybdenum (µg/l)
Background						
MW-BG-1	CCR	13	21	0.2	5.1	<5.0
MW-19	State	42	24	0.4	3.6	<1.0
<i>Intake</i>	<i>NPDES</i>	<50	38	<5.0	<i>no data</i>	<10.0
<i>1-A</i>	<i>Citizen Sampling</i>	85	39	<0.5	<50.0	8.1
Downgradient, adjacent to Susquehanna River (Northwest to Southeast)						
MW-8-2	State & CCR	495	135	<0.5	21.6	302.5
<i>MP-6-5</i>	<i>State</i>	497	125	1.7	34.1	171.5
MW-6-4	State & CCR	121	129	0.8	3.4	122.8
MW-6-7	CCR	695	110	6.2	57.8	234.3
Downgradient, adjacent to Black Gut (Northwest to Southeast)						
<i>0305191</i>	<i>2007 Seep</i>	300	<i>no data</i>	<3.0	<i>no data</i>	<70
<i>1-D</i>	<i>2017 Seep</i>	173	347	<0.5	<50.0	1.5
MW-8-1N	State	66	609	<0.5	2.8	<1.0
PZ-6-5B	CCR	368	337	0.4	11.1	72.5
<i>1-E</i>	<i>2017 Seep</i>	360	185	382.0	118.0	112.0
Piezometers	State	318	100	18.5	15.9	151.7
MW-6-3	State	441	79	17.1	15.9	413.8
MW-6-3N	State & CCR	428	107	230.2	69.0	317.8
MW-6-6	State & CCR	210	100.3	<0.5	9.9	<1.0
<i>1-F</i>	<i>2017 Seep</i>	168	83	7.2	<50.0	28.5
MW-6-2	State & CCR	201	42.8	1.1	20.0	<5.0
Downgradient, southeast tip of island						
MW-6-8	CCR	29	27	0.9	3.2	<5.0
MW-6-1	State	<20	67	0.7	11.2	<1.0

⁹ As discussed above, mean concentrations were calculated over the April 2016 through September 2017 time period, which is the full extent of the “CCR” dataset. For purposes of averaging, nondetects were treated as being present at one-half of the detection limit. For example, a value of “<0.01 mg/L” would be treated quantitatively as 0.005 mg/L.

Table 1 reveals three important facts:

- Concentrations of boron, sulfate, arsenic, lithium, and molybdenum are all much higher in downgradient wells than they are in upgradient wells MW-BG-1 and MW-19, frequently by an order of magnitude or more. This shows that the groundwater has been, and continues to be, contaminated by CCR.
- The data from seeps and the spring correlate with the data from nearby groundwater wells, showing that the seeps and the spring are areas where contaminated groundwater is coming to the surface before entering either the Susquehanna River or Black Gut Creek.
- The seep samples from 2007 and 2017 both show elevated concentrations of CCR constituents, demonstrating that the seepage problems identified in 2007 (and which date back, at least with regard to certain seeps, to 1990 or earlier (*see Claim 4*, below)) are related to CCR contamination, and continue to date.

Table 1 illustrates the fact that the groundwater and seeps are contaminated by CCRs, but is not intended to be an exhaustive inventory of onsite contamination. Appendices A and D, attached hereto and incorporated herein, set forth more complete downgradient monitoring results for Ash Basin 6 as compared against the highest monitored background concentration measured for each pollutant. As the data in Appendices A and D indicate, there were at least 3,158 instances where levels of CCR pollutants downgradient or downstream of Ash Basin 6 exceeded the highest background value, indicating that Ash Basin 6 was the source of the contamination. The contaminants that exceeded background values were aluminum, ammonia, arsenic, boron, cadmium, calcium, chloride, copper, fluoride, iron, lead, lithium, magnesium, manganese, mercury, molybdenum, pH, radium 226 and 228 combined, sodium, strontium, sulfate, titanium, total dissolved solids, and vanadium. These pollutants are being released from Ash Basin 6 into groundwater that is directly hydrologically connected to the Susquehanna River and Black Gut Creek.

Talen's Documents Establish that CCR and Non-CCR Wastewater from Ash Basin 6 are Discharging to Surface Waters via Hydrologically Connected Groundwater.

The wastewater sent to Ash Basin 6 flows from the north end of the basin to a polishing pond through a stop log structure before being discharged to the Susquehanna River via NPDES permitted Outfall 004. *See* Talen Energy, Dam Failure Analysis and 2016 Initial Hazard Potential Classification, Brunner Island Ash Basin No. 6 (Sept. 29, 2016). According to Talen's contractor, "the plant process water that is discharged to the surface of Basin 6 is creating a groundwater mound under the basin with radial flow outward." *Id.* at 2-2. "It is estimated that up to one-million gallons of water per day infiltrates into Basin 6 as a result of the plant process water (estimated up to 5-million gallons/day) entering Basin 6." *Id.* These statements establish that up to 20% of the CCR and non-CCR wastewater Talen sends to Ash Basin 6 is not conveyed to the Polishing Pond for eventual discharge from NPDES-permitted Outfall 004 but is instead deposited in the basin. Even taking into account evaporation, large quantities – potentially hundreds of thousands of gallons per day of CCR and non-CCR wastewater – is discharged to groundwater.

Talen admits there is no liner, synthetic or clay, to contain the deposited CCR and non-CCR wastewater. According to Talen's contractor, "[t]he bottom of the basin has not been lined and allows some of the water to infiltrate through the bottom of the basin." 2017 Ash Basin 6 Annual Groundwater Report, at 1-2; *see also* Talen Energy, Dam Failure Analysis and 2016 Initial Hazard Potential Classification, Brunner Island Ash Basin No. 6 (Sept. 29, 2016).

The historic and continuing presence of seeps, springs, and other saturated areas supports the conclusion that unlined Ash Basin 6 fails to contain the CCR and non-CCR wastewater. For example, Talen's annual inspection report for Ash Basin 6 in 2015 states that "seepage of wet soils were observed nearly continuously along a roughly 1,000 foot-long section of the lower slope and toe of the northern part of the west embankment." HDR Engineering Inc., 2015 Annual USEPA CCR Surface Impoundment Initial Annual Inspection Report for Brunner Island Ash Basin No. 6, at 10 (Dec. 11, 2015). Another document submitted by Talen in 2016 explains that "[w]ater was observed actively seeping from the slope at and near the location of Boring B09-4 [at the east embankment] and *could be audibly heard as it trickled down the slope*. The toe was saturated." Geosyntec, History of Construction, Brunner Island SES Ash Basin 6, East Manchester Township, Pennsylvania, at 114, 120 (prepared for Talen) (Oct. 1, 2016) (emphasis added). Seeps, springs, and other saturated areas are discussed in more detail in **Claim 4**, below.

The presence of a large groundwater mound beneath Ash Basin 6, which Talen acknowledges, further confirms that the contents of the basin are leaking (and thus discharging) into groundwater. According to Talen's contractor, "the plant process water that is discharged to the surface of Basin 6 is creating a groundwater mound under the basin with radial flow outward." Talen, Dam Failure Analysis and 2016 Initial Hazard Potential Classification, Brunner Island Ash Basin No. 6, at 2.2 (Sept. 29, 2016).

The monitoring results set forth in Appendices A and D and summarized in **Table 1** indicate high concentrations of CCR pollutants discharging from Ash Basin 6. As Talen acknowledges, the groundwater beneath Ash Basin 6 is hydrologically connected to the Susquehanna River to the east and Black Gut Creek to the west. In one report, Talen's contractor even acknowledges that Brunner Island is isolated hydrogeologically from the topographic highlands to the west, which "prevents potential contaminants emanating from Brunner Island from migrating westward past Black Gut Creek and impacting properties west of Black Gut Creek." 2017 Ash Basin 6 Annual Groundwater Report, at 2-2. Talen would not need to clarify to EPA that such contaminants are prevented from migrating past the creek were it not implicit that contamination is reaching the creek.

As previously established, Ash Basin 6 is within 700 feet of surface waters, the elevation of groundwater is higher than the elevation of the surrounding surface waters, and groundwater beneath the basin is above and within the layer of wet CCR.

The discharge of pollutants by a person from a point source to waters of the United States is prohibited except when authorized by and in compliance with a NPDES permit. 33 U.S.C. § 1311. These violations of the Clean Water Act are ongoing and are expected to continue.

The pollutants that Talen is discharging from Ash Basin 6 to groundwater that is hydrologically connected to surface water include metals and other toxic pollutants. Monitoring results from the wells identified by Talen as most indicative of pollutants in groundwater from Ash Basin 6 indicate significant and ongoing discharge of specific CCR constituents (such as arsenic and boron) to groundwater that Talen acknowledges is a conduit to the Susquehanna River and Black Gut Creek. *See, Table 1*, above, and Appendices A and D. The low concentrations of pollutants measured by the monitoring well chosen by Talen as being representative of background groundwater quality sampling confirms that the pollution is coming from Ash Basin 6.

For at least the past five years, Talen has been discharging very high concentrations of CCR pollutants and non-CCR wastewater from unlined Ash Basin 6. The continuing discharge of CCR pollutants – including toxic pollutants – into groundwater that is hydrologically connected to the Susquehanna River and its tributaries will continue until Talen ceases depositing CCR pollution in Ash Basin 6, takes steps to abate the continuing release of pollutants, and takes steps to remediate the contamination it caused.

Talen is subject under the Clean Water Act to injunctive relief to resolve the violations and to a civil penalty for each day that Ash Basin 6 discharges of up to \$37,500 per day that occurred before November 2, 2015 and up to \$53,484 per day that occurred after November 2, 2015.

4. Claim 2: Talen’s Discharge of Pollutants from Disposal Area 8 and/or Ash Basin 5 without a Permit Violates the Clean Water Act.

All of the information set forth above is incorporated herein. Talen’s past and ongoing practice of depositing CCR into unlined Ash Basin 5 and Disposal Area 8, and allowing CCR constituents to discharge to surface water through hydrologically connected groundwater, is in violation of section 301 of the Clean Water Act:

- a. Talen Energy Corporation and Brunner Island LLC are corporations and therefore are “person(s)” pursuant to section 502(5) of the Clean Water Act.
- b. CCR and its constituents deposited in Ash Basin 5 and Disposal Area 8 are “pollutants” pursuant to section 502(6) of the Clean Water Act.
- c. Ash Basin 5 and Disposal Area 8 are “point source(s)” because they are both “discernible, confined, and discrete conveyance(s) . . . from which pollutants are or may be discharged.” 33 U.S.C. 1362(14). “The term ‘point source’ has been taken beyond pipes and ditches and now includes less discrete conveyances, such as cesspools and ponds.” *N. Cal. River Watch v. City of Healdsburg*, 2004 U.S. Dist. LEXIS 1008 (N.D. Cal. 2004) (citing *Cnty. Ass’n for Restoration v. Bosma Dairy*, 305 F.3d 943, 955 (9th Cir. 2002); *Wash. Wilderness Coal. v. Hecla Mining Co.*, 870 F. Supp. 983, 988 (E.D. Wash. 1994)), *aff’d*, 496 F.3d 993 (9th Cir. 2007). In addition, a “point source need not be the original source of the pollutant; it need only convey the pollutant to ‘navigable waters.’” *S. Fla. Water Mgmt. District v. Miccosukee Tribe of Indians*, 541 U.S. 95, 105 (2004); accord *W. Va. Highlands Conservancy, Inc. v. Huffman*, 625 F.3d 159, 168 (4th Cir. 2010).
- d. The Susquehanna River is a “navigable water” pursuant to section 502(7) of the Clean Water Act because it is a “water of the United States” as that term is defined by

- 40 C.F.R. § 230.3(s)(1) (the 1986/1988 regulatory definition of “waters of the United States”).¹⁰ 33 U.S.C. § 1362. Because Black Gut Creek is a tributary of the Susquehanna River as per 40 C.F.R. § 230.3(s)(5), the creek (and other Susquehanna River tributaries, such as Hartman Run) also are “waters of the United States” and therefore also “navigable water(s)” pursuant to the Clean Water Act. *Id.*
- e. The leaking of pollutants from Ash Basin 5 and Disposal Area 8 constitute the “discharge of pollutants” under section 502(12) of the Clean Water Act because the groundwater beneath these CCR units is hydrologically connected to the Susquehanna River and its tributary, Black Gut Creek, which are “navigable waters.”

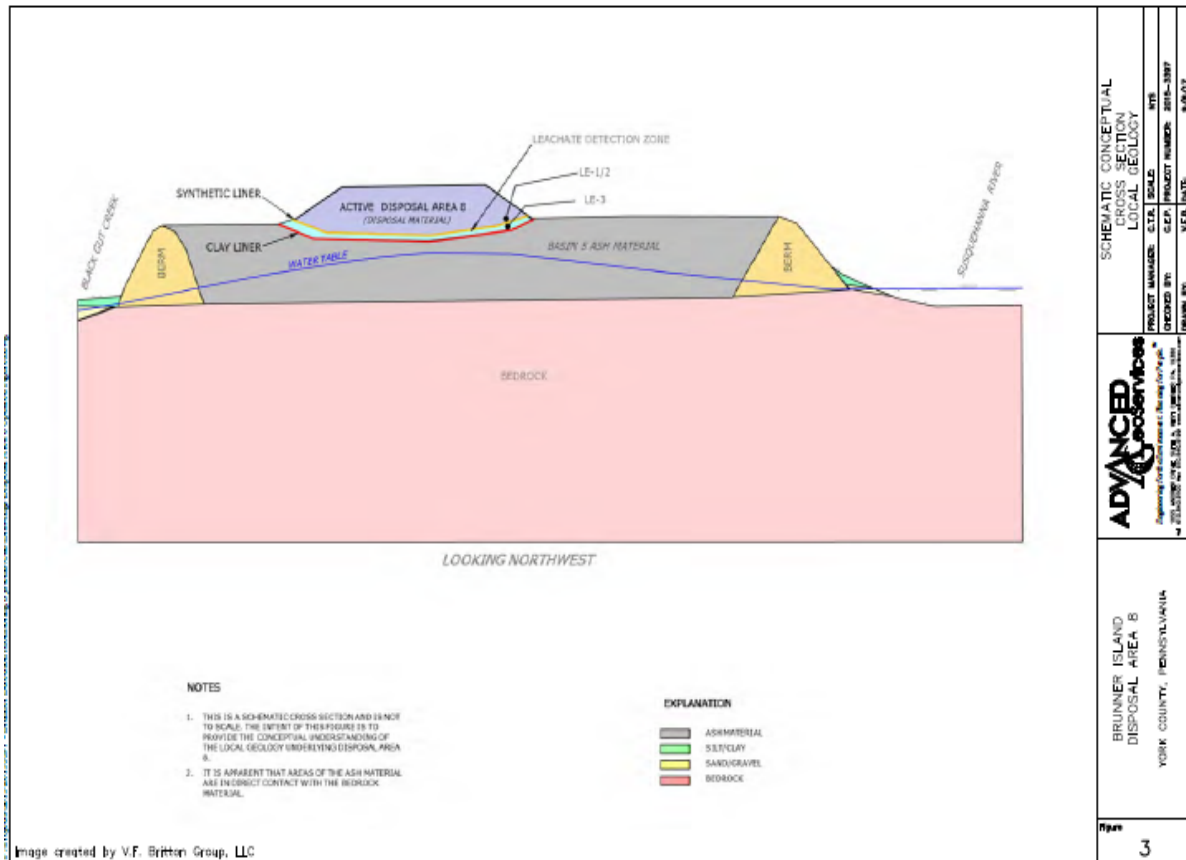
CCR and CCR constituents deposited in Ash Basin 5 and/or Disposal Area 8 constitute “industrial waste” and “pollution” as those terms are defined in section 1 of the Clean Streams Law. 35 Pa. Cons. Stat. § 691.1. The Susquehanna River and its tributaries are “Waters of the Commonwealth” pursuant to the Clean Streams Law. *Id.* Under state law, groundwater also constitutes waters of the Commonwealth regardless of its hydrological connection to surface waters. *Id.*

Hydrological Connection of Groundwater to Surface Waters

Ash Basin 5 is approximately 500 feet from the Susquehanna River and Black Gut Creek and the active cell of Disposal Area 8, which sits atop Ash Basin 5, is approximately 800 feet from Black Gut Creek. *See Section I.C., supra.* Groundwater beneath Ash Basin 5 and Disposal Area 8 is at a higher elevation than the Susquehanna River and Black Gut Creek and groundwater beneath this landfill (and Ash Basin 5) flows radially toward surface waters, which Talen acknowledges. *See 2018 Risk Assessment.* Similar to Ash Basin 6, Talen also acknowledges that the groundwater table is within Ash Basin 5’s ash layer and within inches of the ash deposited in Disposal Area 8. *See Figure 6, infra.* *See also* Letter from Andrey Lernerman, PPL, to PA DEP (Feb. 9, 2015) (Attachment 3) (in which PPL Corporation, Talen’s predecessor, further states that the average elevation of groundwater beneath Disposal Area 8 is 279.24 feet mean sea level, at its highest, which is above and within the CCR deposited in Ash Basin 5 and only 0.76 feet below the base of Disposal Area 8 (280 feet mean sea level).

¹⁰ *See supra* note 6.

Figure 6: Cross-section of Disposal Area 5



Advanced GeoServices, Initial Annual Groundwater Monitoring and Correction Action Report for 2017, Disposal Area 8, USEPA Coal Combustion Residuals (CCR) Rule, Brunner Island Steam Electric Station, at Fig. 3 (Jan. 31, 2018). Thus, according to Talen, the groundwater beneath Ash Basin 5 and Disposal Area 8 is within the bottom layer of Ash Basin 5’s deposited CCR.

There is no dispute that pollutants from Ash Basin 5 are being discharged to groundwater. This is true regardless of their source: CCR constituents deposited during the time when Ash Basin 5 was active are being both saturated with groundwater and subject to vertical infiltration of precipitation or CCR constituents from Disposal Area 8 that leak into the basin, as more fully discussed below, due to an inadequate liner and leachate collection system. Because pollutants are leaking from Disposal Area 8 into Ash Basin 5, Disposal Area 8 also is discharging CCR to groundwater.

Talen also does not dispute that groundwater beneath Ash Basin 5 and Disposal Area 8 flows directly toward and into surface waters, which are within 500 to 800 feet. *See* Advanced GeoServices and V.F. Britton Group, LLC, Initial Annual Groundwater Monitoring and Corrective Action Report for 2017 for Disposal Area 8, at 2-2 (“[t]opographic highlands exist to the west of Brunner Island with associated groundwater moving from the

highland recharge zone to the east and discharges into the Susquehanna River (regionally) and Black Gut Creek (locally”).

Data Indicating Pollutants from Ash Basin 5 and Disposal Area 8 are Discharging to Groundwater that is Hydrologically Connected to Surface Water

Various groundwater monitoring wells, seeps, and springs at and around Ash Basin 5 and Disposal Area 8 have been monitored for different purposes over time. See **Figure 7**, below.

Figure 7: Groundwater and Surface Water Monitoring Locations at Ash Basin 5/Disposal Area 8

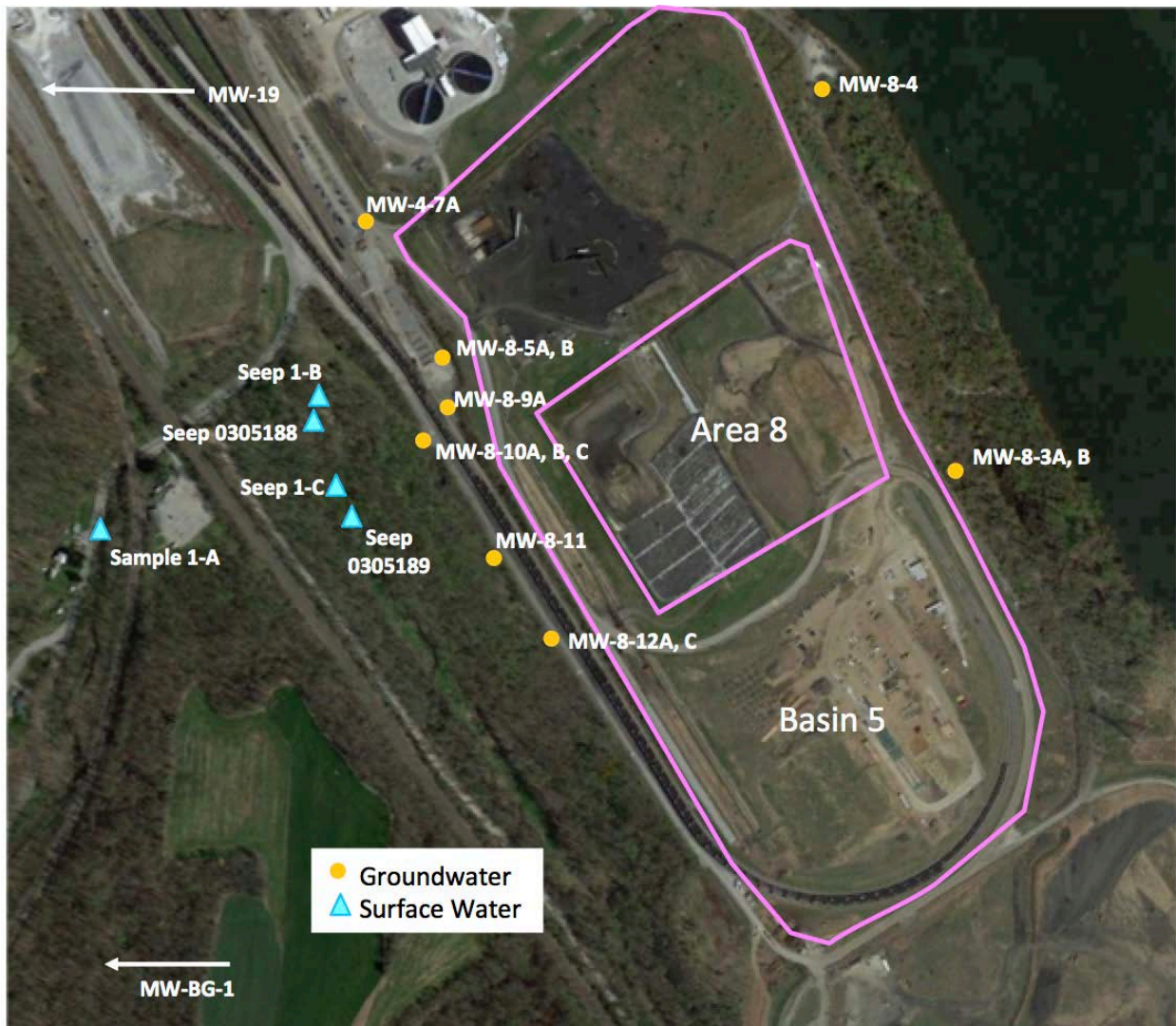


Table 2, below, shows average concentrations of selected CCR constituents from the following sampling points:

- Talen monitors the groundwater at Brunner Island pursuant to both state law and the federal CCR Rule. The monitoring wells are listed in **Table 1** as either “state” or “CCR” wells (or both). Citizens have analyzed “state” data for the 2013 through 2018 time period. “CCR” data are only available for the time period covering April 2016 through September 2017. For consistency, the groundwater data in **Table 1** represent mean values over the later time period (April 2016 through September 2017). Mean concentrations over the 2013 through 2018 time period, for the “state” wells, would be similar (data not shown).
- 2008 Seeps Investigation (Attachment 2). The seeps located near Ash Basin 5/Disposal Area 8 are shown in **Figure 7** and **Table 2** as seeps 0305188 and 0305189.
- Two of five seeps sampled by Waterkeepers in December 2017, sample 1-B and 1-C, as well as the background sample obtained from Hartman Run (1-A) are shown in **Figure 7** and **Table 2**.¹¹
- As with Ash Basin 6, the characteristics of unaffected background water are taken from monitoring wells MW-BG-1 and MW-19, and surface water samples from Waterkeeper sample 1-A and the Brunner Island intake of Susquehanna River water.
- Talen also identified two “background” monitoring wells for purposes of the CCR Rule with regard to Disposal Area 8, MW-8-3 and MW-8-12 (*see Figure 7*). However, these wells appear to be downgradient of Ash Basin 5, and potentially downgradient of Disposal Area 8 as well.¹² In addition, Talen’s contractor acknowledged that part of Ash Basin 6’s groundwater mound intrudes into Ash Basin 5 and encompasses the two monitoring wells that Talen identified as background wells for purposes of the CCR Rule with regard to Disposal Area 8. *See* Advanced GeoServices and V.F. Britton Group, LLC, Initial Annual Groundwater Monitoring and Corrective Action Report for 2017 for Disposal Area 8, at 2-2 (Jan. 31, 2018). Because the “background” wells chosen by Talen for Disposal Area 8 are known to be contaminated by CCR (from Ash Basin 5, Ash Basin 6, and potentially Disposal Area 8), the concentrations of CCR constituents in the Disposal Area 8 monitoring wells are compared to background wells MW-BG-1 and MW-19.

As with **Table 1**, above, **Table 2** also presents mean concentrations of five representative CCR constituents – boron, sulfate, arsenic, lithium, and molybdenum – present in the groundwater beneath Ash Basin 5 and Disposal Area 8. *See Claim 1*, above. The mean downgradient monitoring results in **Table 2** are arranged geographically, from the most northwestern location to the most southeastern location on each side of the island.

¹¹ *See Claim 4*, below, for greater detail regarding the December 2017 sampling and the evidence related to seeps and other saturated areas.

¹² The potentiometric surfaces presented in that 2017 report suggest that MW-8-3 and MW-8-12 may in fact be downgradient of Disposal Area 8, and definitely are downgradient of the ash buried in Disposal Area 5, and also downgradient of Ash Basin 6. Advanced GeoServices and V.F. Britton Group, LLC, Initial Annual Groundwater Monitoring and Corrective Action Report for 2017 for Disposal Area 8, at Fig. 5 (Jan. 31, 2018). These two wells are therefore likely to be impacted by any CCR contamination emanating from Ash Basin 6, Ash Basin 5, and possibly Disposal Area 8, and do not serve as useful ‘background’ points of comparison.

Table 2: Mean¹³ concentrations of selected CCR constituents around Disposal Area 8/Ash Basin 5. Highlighted rows are surface water sampling locations. See text for additional explanation, and Figure 7, above, for locations.

Well or location	Program	Boron (µg/l)	Sulfate (mg/l)	Arsenic (µg/l)	Lithium (µg/l)	Molybdenum (µg/l)
Background						
MW-BG-1	CCR	13	21	0.2	5.1	<5.0
MW-19	State	42	24	0.4	3.6	<1.0
Intake	NPDES	<50	38	<5.0	no data	<10.0
1-A	2017 citizen testing	85	39	<0.5	<50.0	8.1
Downgradient, adjacent to Susquehanna River (Northwest to Southeast)						
MW-8-4	State & CCR	311	593	1.4	21.0	<1.0
MW-8-3A	CCR	420	236	12.9	15.9	68.8
MW-8-3B	State & CCR	345	152	7.9	26.2	139.8
Downgradient, adjacent to Black Gut (Northwest to Southeast)						
MW-4-7A	State	1478	549	<0.5	115	20.7
1-B	2017 Seep sample	538	298	16.3	<50.0	167.0
305188	2007 Seep samples	255	no data	16.6	no data	<70
MW-8-5A	State & CCR	886	300	126.7	183.8	391.8
MW-8-5B	State	829	260	254.0	142.3	343.3
MW-8-9A	CCR	727	257	20.8	54.4	255.4
MW-8-10A	State	494	396	<0.5	16.4	46.5
MW-8-10B	State	279	188	1.7	14.4	35.5
MW-8-10C	State	485	122	1.6	17.0	61.4
1-C	2017 Seep sample	652	599	3.2	66.5	52.4
305189	2007 Seep samples	1015	no data	<3.0	no data	69.5
MW-8-11A	CCR	711	101	3.0	118.3	517.1
MW-8-12A	CCR	1234	114	2.6	8.4	915.1
MW-8-12C	State	1230	145	<0.5	24.5	404.5

¹³ As discussed above, mean concentrations were calculated over the April 2016 through September 2017 time period, which is the full extent of the “CCR” dataset. For purposes of averaging, nondetects were treated as being present at one-half of the detection limit. For example, a value of “<0.01 mg/L” would be treated quantitatively as 0.005 mg/L.

Table 2 reveals three important facts:

- Concentrations of boron, sulfate, arsenic, lithium, and molybdenum are all much higher in downgradient wells than they are in upgradient wells MW-BG-1 and MW-19, frequently by an order of magnitude or more. This shows that the groundwater has been, and continues to be, contaminated by CCR.
- The data from seeps and the spring correlate with the data from nearby groundwater wells, showing that the seeps and the spring are areas where contaminated groundwater is coming to the surface before entering either the Susquehanna River or Black Gut Creek.
- The seep samples from 2007 and 2017 both show elevated concentrations of CCR constituents, demonstrating that the seepage problems identified in 2007 (and which date back, at least with regard to certain seeps, to 1990 or earlier, also were related to CCR contamination, and that they continue today. *See Claim 4*, below, for discussion of historic and current seeps.

Table 2 illustrates the fact that the groundwater and seeps are contaminated by CCR, but is not intended to be an exhaustive inventory of onsite contamination. Appendices B and D, attached hereto and incorporated herein, set forth more complete downgradient monitoring results for Ash Basin 6 as compared against the highest monitored background concentration measured for each pollutant. As the data in Appendices B and D indicate, there were at least 3,400 instances where levels of CCR pollutants downgradient or downstream of Ash Basin 5 and Disposal Area 8 exceeded the highest background value, indicating that the two disposal areas were the source of the contamination. The contaminants that exceeded background values were aluminum, ammonia, antimony, arsenic, beryllium, boron, cadmium, calcium, chloride, chromium, cobalt, copper, fluoride, iron, lead, lithium, magnesium, manganese, mercury, molybdenum, nickel, nitrate, pH, radium 226 and 228 combined, selenium, silver, sodium, strontium, sulfate, thallium, titanium, total dissolved solids, vanadium, and zinc. These pollutants are being released from Ash Basin 6 into groundwater that is directly hydrologically connected to the Susquehanna River and Black Gut.

Talen's Documents establish that CCR from Ash Basin 5 and/or Disposal Area 8 are Discharging to Surface Waters via Hydrologically Connected Groundwater.

According to Talen, Disposal Area 8 was built upon a potentially unstable and unlined surface impoundment that contains 5.5 million cubic yards of ash material. 2017 Holley Evaluation, at 5 (Attachment 1); *see also* 2018 Risk Assessment at 2.5.1. CCR constituents originating from both Disposal Area 8 and Ash basin 5 continue to discharge to surface water through underlying groundwater. *See* 2018 Risk Assessment.

Since at least 2011, Disposal Area 8's liner and leachate collection system has been inadequate, has malfunctioned, and continues to allow CCR to leak into Ash Basin 5, where it then intercepts groundwater. *See* Talen Energy, 2015 Annual (Initial) USEPA CCR Landfill Inspection Report, Brunner Island Ash Disposal Area No. 8, at 2 (Jan. 15, 2016); *see also* Talen Energy, 2016 Annual USEPA CCR Landfill Inspection Report, Brunner Island Ash Disposal Area No. 8, at 2 (Dec. 9, 2016). In August 2011, PPL Corporation (Talen's predecessor) notified PA DEP that

Disposal Area 8 flow meters indicated that leachate was moving beyond the leachate collection zone. *See* Self-Disclosure Letter from Sam Pellerite, Jr., PPL, to PA DEP (Aug. 5, 2011) (Attachment 4). In October 2013, PPL determined there was a problem with Cell 1's liner anchor that was causing the discharge of leachate disclosed in 2011. *See*, PPL Letter from Thomas E. Hickes, Plant Manager, to PA DEP, PPL Brunner Island Disposal Area 8 (Nov. 18, 2013) (Attachment 5). Two years later, in 2015, Talen reported that the problem had been corrected but that a seasonal pattern of leakage was still evident. *See* HDR, 2016 Annual USEPA CCR Landfill Inspection Report, Brunner Island Ash Disposal Area No. 8, at 3 (Dec. 9, 2016) (HDR recommends "continued monitoring of liner leakage, followed by identification of the cause and repair, if necessary"); *see also* 2017 Holley Evaluation (Attachment 1);

Because Disposal Area 8 is built upon an unlined, potentially unstable surface impoundment, and because the liner beneath Cell 1 and the leachate collection system have experienced chronic deficiencies that are ongoing to date (at a minimum on a seasonable basis), there is no reliable barrier to prevent CCR placed in the landfill from leaking into unlined Ash Basin 5 and from there reaching groundwater.

The historic and continuing presence of seeps, springs, and other saturated areas also supports the conclusion that unlined Ash Basin 5 and/or Disposal Area do not prevent the discharge of CCR constituents to groundwater.

The monitoring results set forth in Appendices B and D and summarized in **Table 2** indicate high concentrations of CCR constituents discharging from Ash Basin 5 and Disposal Area 8 into the groundwater beneath these units. As Talen acknowledges, the groundwater beneath Ash Basin 5 and Disposal Area 8 is hydrologically connected to the Susquehanna River to the east and Black Gut Creek to the west. According Talen's contractor, "[t]opographic highlands exist to the west of Brunner Island with associated groundwater moving from the highland recharge zone to the east and discharges into the Susquehanna River (regionally) and Black Gut Creek (locally). *See* Advanced GeoServices and V.F. Britton Group, LLC, Initial Annual Groundwater Monitoring and Corrective Action Report for 2017 for Disposal Area 8, at 2-2.

As previously established, Ash Basin 5 is within 500 feet of surface waters (Disposal Area 8 is approximately 800 feet from Black Gut Creek) and the elevation of groundwater is higher than the elevation of the surrounding surface waters. In addition, groundwater beneath Ash Basin 5 is above and within the bottom layer of the basin's CCR and within inches of Disposal Area 8. *See* Attachment 3 (providing that the average elevation of groundwater beneath Disposal Area 8 is 279.24 feet mean sea level, at its highest, which is above and within the CCR deposited in Ash Basin 5 and only 0.76 feet below the base of Disposal Area 8 (280 feet mean sea level)).

The discharge of pollutants by a person from a point source to waters of the United States is prohibited except when authorized by and in compliance with a NPDES permit. 33 U.S.C. § 1311. These violations of the Clean Water Act are ongoing and are expected to continue.

The CCR that Talen that is discharging from Ash Basin 5 and Disposal Area 8 to groundwater that is hydrologically connected to surface water include metals and other toxic pollutants. Monitoring wells are in place around Ash Basin 5/Disposal Area 8 pursuant to Talen's state-

issued solid waste disposal permits as well as the federal CCR Rule (*see Figure 7*, above). As discussed herein, monitoring results from the wells identified by Talen as most indicative of pollutants in groundwater from these units indicate significant and ongoing discharge of specific CCR pollutants (such as arsenic and boron) to groundwater that Talen acknowledges is a conduit to the Susquehanna River and Black Gut Creek. *See Table 2*, above, and Appendices B and D.

For at least the past five years, Talen has been discharging very high concentrations of CCR and non-CCR wastewater from unlined Ash Basin 5 and Disposal Area 8. According to Talen's groundwater monitoring data, summarized in **Table 2**, above, and set forth in more detail in Appendices B and D, the groundwater beneath and around Ash Basin 5 and Disposal Area 8 contains very high concentrations of CCR constituents, especially in comparison to upgradient (i.e., background) monitoring results. The low concentrations of pollutants measured by the background monitoring wells identified as MW-BG-1 and MW-19 indicate that the pollution is coming from Ash Basin 5 and Disposal Area 8.

The continuing discharge of CCR – including toxic pollutants – into groundwater that is hydrologically connected to the Susquehanna River and its tributaries will continue until Talen ceases depositing CCR into Ash Basin 5 and Disposal Area 8, takes steps to abate the continuing release of pollutants, and takes steps to remediate the contamination it caused. For each and every CCR pollutant discharged from Ash Basin 5 and/or Disposal Area 8 during the last five years, including those identified in **Table 2** and Appendices B and D, Talen is subject under the Clean Water Act to injunctive relief to resolve the violations and to a civil penalty for each day that Ash Basin 5 and/or Disposal Area 8 discharges of up to \$37,500 per day that occurred before November 2, 2015 and up to \$53,484 per day that occurred after November 2, 2015.

5. Claim 3: The Entire Brunner Island Site is a Point Source that is Discharging Pollutants without a Permit in Violation of the Clean Water Act.

All of the information set forth above is incorporated herein, with particular reference to **Section II.A.3 and Section II.A.4**.

None of the CCR units on the Brunner Island site, whether closed or actively receiving CCR or non-CCR wastewater, are authorized to discharge pollutants in accordance with the Clean Water Act and/or the Clean Streams Law. As an alternative to **Claims 1-3** above, Citizens allege that the entire site is a point source that is discharging CCR and non-CCR wastewater to waters of the United States via hydrologically connected groundwater in violation of the NPDES Permit and the Clean Water Act, and the Clean Streams Law. *See e.g., Williams Pipe Line Co. v. Bayer Corp.*, 964 F. Supp. 1300, 1319 (S.D. Iowa 1997). *See Tables 1 and 2* and Appendices A through D.

These violations are ongoing and will not cease until Talen stops depositing CCR and non-CCR wastewater in the facility's CCR management units, takes steps to abate the continuing release of pollutants, and remediates the contamination that these management practices have caused. Every day that Talen continues to discharge CCR and non-CCR wastewater from the Brunner

Island facility to groundwater that is hydrologically connected to the Susquehanna River and/or Black Gut Creek is a separate violation of the Clean Water Act subject to a civil penalty of up to \$37,500 per violation per day that occurred before November 2, 2015 and up to \$53,484 per violation per day that occurred after November 2, 2015.

B. SURFACE WATER VIOLATIONS

1. Claim 4: Talen’s Discharges from Seeps, the Spring Located at the Northeast Corner of Ash Basin 6, and other Saturated Areas without a Permit Violate the Clean Water Act and Pennsylvania’s Clean Streams Law.

All of the information set forth above is incorporated herein. The above discussion of Brunner Island’s hydrogeology and topographical features is relevant to Citizens’ claims regarding seeps. Some seeps and other saturated areas are the result of liquid pushing through an earthen berm, which for instance, Talen has documented numerous times with regard to Ash Basin 6. Other seeps, however, are formed when groundwater reaches to the surface and penetrates surface soils. Regardless, the geography of the site is such that seeps, springs, and other saturated areas discharge pollutants that are conveyed downhill toward and into either the Susquehanna River or Black Gut Creek.

The seeps, spring, and other saturated areas present near Ash Basin 6 and Ash Basin 5/Disposal Area 8, some of which date back to at least 1990, contain either contaminated groundwater or CCR and non-CCR wastewater that leaked through the earthen berms of the CCR management units. Talen’s past and ongoing discharge of pollutants from seeps, the spring, and other saturated areas is in violation of the NPDES Permit and section 301 of the Clean Water Act:

- a. Talen Energy Corporation and Brunner Island LLC are corporations and therefore are “person(s)” pursuant to section 502(5) of the Clean Water Act.
- b. CCR, CCR constituents, and non-CCR wastewater constituents in the groundwater beneath Ash Basin 6 and Ash Basin 5/Disposal Area 8 that come to the surface in the form of a spring or seeps are “pollutants” pursuant to section 502(6) of the Clean Water Act, as are CCR and/or non-CCR wastewater deposited in Ash Basin 6 and Ash Basin 5/Disposal Area 8. Likewise, CCR, CCR constituents, or non-CCR wastewater constituents that breach the berms of these units – and in doing so create other saturated areas – also are pollutants.
- c. Seeps, the spring, and other saturated areas identified and referenced herein are “point source(s)” because they are “discernible, confined, and discrete conveyance(s) . . . from which pollutants are or may be discharged.” 33 U.S.C. § 1362(14). “The term ‘point source’ has been taken beyond pipes and ditches and now includes less discrete conveyances, such as cesspools and ponds.” *N. Cal. River Watch v. City of Healdsburg*, 2004 U.S. Dist. LEXIS 1008 (N.D. Cal. 2004) (citing *Cnty. Ass’n for Restoration v. Bosma Dairy*, 305 F.3d 943, 955 (9th Cir. 2002); *Wash. Wilderness Coal. v. Hecla Mining Co.*, 870 F. Supp. 983, 988 (E.D. Wash. 1994)), *aff’d*, 496 F.3d 993 (9th Cir. 2007). In addition, a “point source need not be the original source of the pollutant; it need

only convey the pollutant to ‘navigable waters.’” *S. Fla. Water Mgmt. District v. Miccosukee Tribe of Indians*, 541 U.S. 95, 105 (2004); accord *W. Va. Highlands Conservancy, Inc. v. Huffman*, 625 F.3d 159, 168 (4th Cir. 2010).

- d. The Susquehanna River is a “navigable water” pursuant to section 502(7) of the Clean Water Act because it is a “water of the United States” as that term is defined by 40 C.F.R. § 230.3(s)(1) (the 1986/1988 regulatory definition of “waters of the United States”).¹⁴ 33 U.S.C. § 1362. Because Black Gut Creek is a tributary of the Susquehanna River as per 40 C.F.R. § 230.3(s)(5), the creek (and other Susquehanna River tributaries, such as Hartman Run) also are “waters of the United States” and therefore also “navigable water(s)” pursuant to the Clean Water Act. *Id.*
- e. The discharge of pollutants from seeps, the spring, and other saturated areas constitutes “discharge of pollutants” under section 502(12) of the Clean Water Act because the water containing the pollutants flows directly toward and into the Susquehanna River and its tributary, Black Gut Creek. Both the river and creek are “waters of the United States” and therefore “navigable waters” pursuant to section 502(7) of the Clean Water Act.

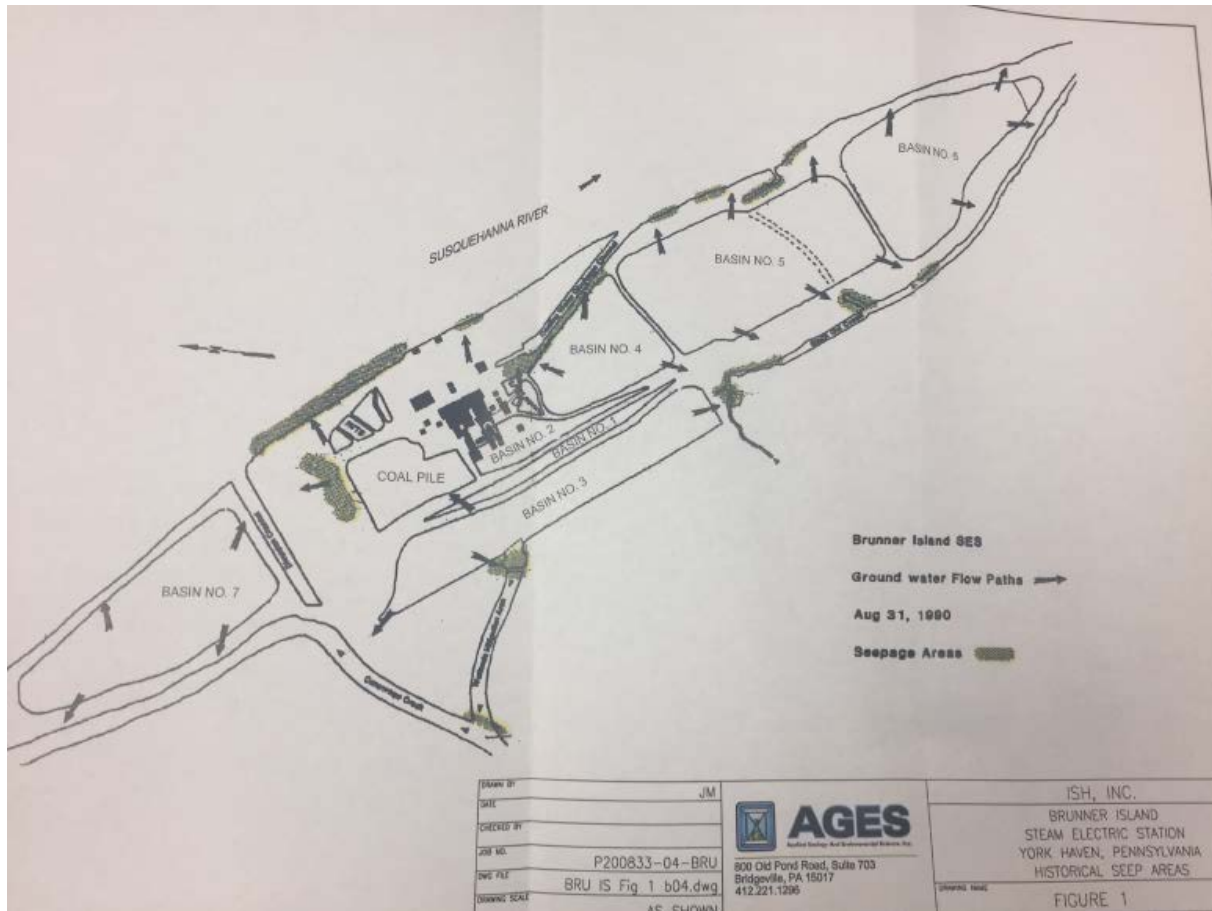
Pollutants present in seeps, the spring, and saturated areas constitute “industrial waste” and “pollution” as those terms are defined in section 1 of the Clean Streams Law. 35 P.S. § 691.1. The Susquehanna River and its tributaries are “Waters of the Commonwealth” pursuant to the Clean Streams Law. *Id.* Under state law, groundwater also constitutes waters of the Commonwealth regardless of its hydrological connection to surface waters. *Id.*

Talen acknowledges that the seeps, the spring, and other saturated areas present near Ash Basin 6, Ash Basin 5, and Disposal Area 8 are historic, are ongoing, and that Talen continues to monitor them.

According to Talen and its contractors, the presence of seeps discharging to the Susquehanna River and its tributaries, including Black Gut Creek, date back to the 1980s. In 2007, Talen retained Ish, Inc. to review and evaluate the source of historic and current seeps. *See* Letter from Glenn P. Amey, P.G., PPL, to PA DEP, Re: Additional Groundwater Assessments – Hartman Creek/Black Gut Creek Area & IWTB (Aug. 1, 2007) (Attachment 6); *see also* 2008 Seeps Investigation (Attachment 2). Areas of seepage present in 1990 were illustrated in a map produced by Ish, Inc. as part of this evaluation.

¹⁴ *See supra* note 6.

Figure 8: Seepage Areas as of August 1990



Ish, Inc., Work Plan for Hydrological and Water Quality Investigations to Determine the Source of Seeps to Hartman Run-Black Gut Area, Fig. 1 (Apr. 11, 2008); *see also* 2017 Holley Evaluation, at Appendix II (Attachment 1). Eight years later, many of the seeps that were known and documented in 1990 were still present and discharging. For instance, the 2008 Seeps Investigation identified four seeps, three of which appear to be seeps also identified in the 1990 map that were west of Ash Basin 5 (and Disposal Area 8) (**Figure 8**, above). Both PA DEP and PPL sampled the seeps identified in the 2008 Seeps Investigation and the pollutants measured clearly indicate that three of the four seeps contained CCR constituents. *See Table 1, Table 2, and Appendices C and D.*

In 2009, Talen’s contractor documented a saturated area (seep) at the toe of Ash Basin 6’s east embankment (hereinafter 2009 Seep). **Figure 9.**

Figure 9: Seep at the Toe of Ash Basin 6's East Embankment



Photo 1 – Wet area at toe of the East Embankment, looking north from Sta 0+30. (2009 annual inspection)

GeoSyntec Consulting, History of Construction, Brunner Island Ash Basin 6 at Appendix B (Photo 1) (Oct. 2016). In 2015, regarding Ash Basin 6, Talen's contractor HDR Engineering acknowledged that "seepage at the toe of the embankment has been observed along the eastern and northwestern sections of the embankment." HDR Engineering Inc., 2015 Annual USEPA CCR Surface Impoundment Initial Annual Inspection Report for Brunner Island Ash Basin No. 6 (Dec. 11, 2015). Regarding the northwest embankment specifically, HDR Engineering stated that "[s]eepage of wet soils were observed nearly continuously along a roughly 1,000 foot-long section of the lower slope and toe of the northern part of the west embankment between the two outside bends . . . This area has demonstrated varying degrees of seepage in previous inspections." *Id.* at 10. These historic seep/saturated area are referred to hereinafter as the 2015 Ash Basin 6 Embankment Seeps.

In short, many seeps and saturated areas are identified in this 2015 inspection report, including a photo (**Figure 10**, below), of what Talen's contractor describes as a "pool of stagnant standing water at the [south embankment] toe of the downstream slope of the polishing pond":

Figure 10: Standing Water at the Toe of the Polishing Pond's South Embankment



Id. at A-9, photo 14. Another photo (**Figure 11**) indicates standing water in ruts at the toe of the slope at the north end of the west embankment.

Figure 11: Standing Water at the Toe of the Slope at the North End of the West Embankment



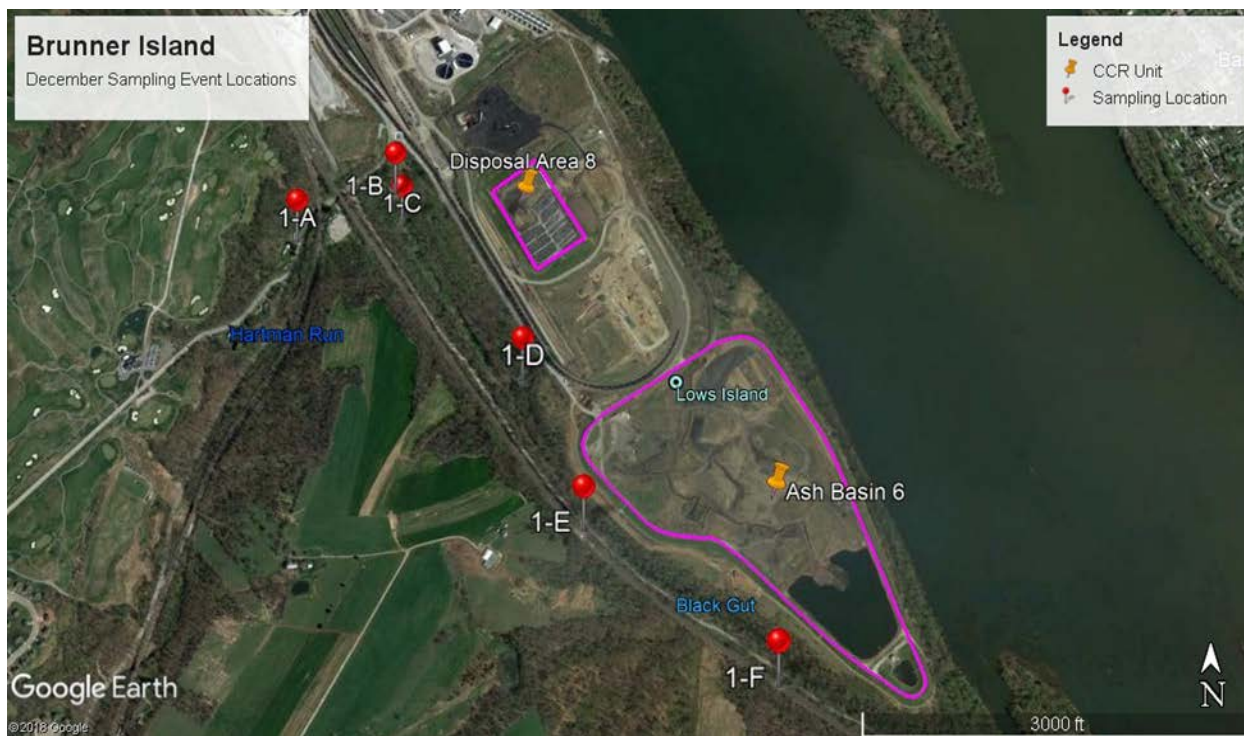
Id. at A-13, photo 22. Other photos from the 2015 inspection report indicating the presence of seeps or saturated areas include Photos 2 and 3 (at A-3), Photo 6 (at A-5), and Photo 21 (at A-12).

Similarly, another Talen contractor, Geosyntec, indicated in 2016 that “puddled water and other evidence of seepage were observed extending approximately 1/3 of the way up the slope from the toe along the [Ash Basin 6] embankment. This degree of seepage was considered to be a concern for a 2:1 slope.” Geosyntec, History of Construction, Brunner Island SES Ash Basin 6, East Manchester Township, Pennsylvania, at 114 (Oct. 1, 2016). Geosyntec further noted that the “proximity of the ash basin slopes to the Susquehanna River creates the potential for recurring rapid drawdown conditions on the downstream slope due to significant rapid-stage changes as a result of flooding.” *Id.* As acknowledged by Talen’s contractor, seeps associated with Ash Basin 6, including “[e]vidence of seepage or soils saturation along the eastern embankment” and “[e]vidence of previous sloughing failures at the north and south ends of the east embankment and at the north end of the west embankment,” date back to at least 2008, and these seeps and sloughs have been monitored for change “ever since.” *Id.* at 10. As part of its 2016 investigation of Ash Basin 6, Talen’s contractor noted in the report that “[w]ater was observed actively seeping from the slope at and near the location of Boring B09-4 [at the east embankment] and **could be audibly heard as it trickled down the slope**. The toe was saturated.” *Id.* at 120 (emphasis added). These seeps/saturated areas are referred to hereafter as 2016 Ash Basin 6 Embankment Seeps.

In addition to the seeps and other saturated areas identified and monitored by Talen and its contractors over at least the last 20 years, Talen also is conducting groundwater monitoring of a spring located at the northeast corner of Ash Basin 6. *See Figure 5*, monitoring location MP-6-5, above. This spring contains CCR and non-CCR wastewater from contaminated groundwater beneath Ash Basin 6 and is discharging directly over land to the Susquehanna River. *See Tables 1 and 2*, above.

On December 15, 2017, the Lower Susquehanna Riverkeeper Association conducted sampling of seeps and springs downgradient of Ash Basin 6 and Disposal Area 8/Ash Basin 5 that were discharging to Black Gut Creek. The sampling was conducted at six locations, including a background sample taken in Hartman Run. *See Figure 12*, below. This sampling event helps confirm the historic, continuing, and unabated presence of seeps at Brunner Island. In fact, except for sample 1-F, the locations where the seeps were observed and sampled in December 2017 correspond very closely to the 1990 seep locations identified by PPL’s contractor, Ish, Inc. (*Figure 8*, above), and for three of the seeps, to the locations identified in the 2008 Seeps Investigation.

Figure 12: December 2017 Sampling Locations



Seeps, the spring at the northeast corner of Ash Basin 6, and other saturated areas have discharged and continue to discharge pollutants to the Susquehanna River and Black Gut Creek. None of these discharges are authorized by the Clean Water Act or Clean Streams Law.

Seeps for which monitoring data exist include:

1. Seep 0305188; west of Ash Basin 5 (*see Figure 7 and Table 2*)
2. Seep 0305189; west of Ash Basin 5 (*see Figure 7 and Table 2*)
3. Seep 0305191; northwest of Ash Basin 6 and west of the southern tip of Ash Basin 5 (*see Figure 5 and Table 1*)
4. Susquehanna Riverkeeper Seep Sample 1-B; west of Disposal Area 8/Ash Basin 5 in the same vicinity as historic Seep 0305188 (*see Figures 7 and 12 and Table 2*)
5. Susquehanna Riverkeeper Seep Sample 1-C; west of Disposal Area 8/Ash Basin 5 in the same vicinity as historic Seep 0305189 (*see Figures 7 and 12 and Table 2*)
6. Susquehanna Riverkeeper Seep Sample 1-D; northwest of Ash Basin 6 in the same vicinity as historic Seep 0305191 (*see Figures 5 and 12 and Table 1*)
7. Susquehanna Riverkeeper Seep Sample 1-E; west of Ash Basin 6 (*see Figures 5 and 12 and Table 1*)
8. Susquehanna Riverkeeper Seep Sample 1-F; west of Ash Basin 6 toward the southern end of the basin (*see Figures 5 and 12 and Table 1*)

Monitoring data also exist with regard to the spring at the northeast corner of Ash Basin 6 (located at monitoring point MP-6-5; *see* **Figure 5**)

The exact locations (by coordinates) where the Lower Susquehanna Riverkeeper Association conducted sampling in December 2017 are as follows:

Sample 1-A (background sample in Hartman Run): 40° 5'11.61"N, 76°41'46.67"W

Sample 1-B: 40° 5'15.83"N, 76°41'36.07"W

Sample 1-C: 40° 5'12.88"N, 76°41'35.10"W

Sample 1-D: 40° 4'59.84"N, 76°41'21.29"W

Sample 1-E: 40° 4'47.92"N, 76°41'14.62"W

Sample 1-F: 40° 4'36.43"N, 76°40'54.87"W

For the data regarding all of the constituents monitored in the above seeps and spring, and for a comparison of the concentration of these constituents to unaffected (background) surface water sampling and groundwater sampling, see Appendices C and D, which are attached hereto and incorporated herein. The above-identified seeps and spring, as well as other seeps and saturated areas identified by Talen and discussed and documented in this notice letter (including the 2009 Seep, the 2015 Ash Basin 6 Embankment Seeps, and the 2016 Ash Basin 6 Embankment Seeps), are discharging high concentrations of CCR pollutants directly to either the Susquehanna River or its tributary, Black Gut Creek. *See* the highlighted rows of surface water monitoring results for seeps and the spring in **Tables 1 and 2**, above. As the data in Appendices C and D indicate, there have been over 250 instances of the presence of pollutants in the spring and seeps in excess of the highest upgradient sampling result for each pollutant. The elevated pollutants include aluminum, arsenic, beryllium, boron, cadmium, chloride, chromium, cobalt, fluoride, iron, lithium, manganese, molybdenum, nickel, pH, selenium, sulfate, thallium, total dissolved solids, and vanadium.

Talen acknowledges that the elevation of the seeps and the spring are higher than the elevation of the surface waters; therefore, discharge from the seeps and the spring, as well as from other saturated areas, such as at the wet toes of Ash Basin 6's embankments, flow directly over land toward and into the Susquehanna River or Black Gut Creek. *See, e.g.*, 2017 Ash Basin 6 Annual Groundwater Report, at Figure 5 *and* 2018 Risk Assessment. Moreover, all of these seeps and saturated areas, including the spring located at monitoring location MP-6-5, are located between the river or creek and the perimeters of Ash Basin 6, Ash Basin 5, or Disposal Area 8, which means they are closer to surface waters than the actual units themselves.

Talen's past and ongoing discharge to surface waters of pollutants from seeps, the spring located at MP-6-5, and other saturated areas (as identified and documented by Talen and the Waterkeepers' sampling results) is in violation of section 301 of the Clean Water Act.

Pursuant to section 1 of the Clean Streams Law, Talen is a "person" who is discharging, placing or permitting the flow of "pollution" from the seeps, spring, and other areas saturated by

contaminated groundwater into “waters of the Commonwealth.” The discharge, placing, or permitting of the flow of CCR pollutants from these areas to state waters is not authorized by section 301 of the Clean Streams Law and therefore constitutes a nuisance pursuant to section 401 of the Clean Streams Law.

The discharge of pollutants – including toxic pollutants – from seeps, the spring, and other saturated areas to the Susquehanna River and its tributaries will continue until Talen ceases depositing CCR and/or non-CCR wastewater in Ash Basin 6 and Ash Basin 5/Disposal Area 8, takes steps to abate the continuing release of pollutants, and takes steps to remediate the contamination it caused. For each seep, spring, or saturated area identified above, Talen is subject under the Clean Water Act to injunctive relief to resolve the violations and to a civil penalty of up to \$37,500 per violation per day that occurred before November 2, 2015 and up to \$53,484 per violation per day that occurred after November 2, 2015. Any person found violating the Clean Streams Law, or a permit or regulation pursuant thereto, is subject to injunctive relief to abate the noncompliance and to a civil penalty of up to \$10,000 per violation per day.

2. Claim 5: Talen is Discharging Pollutants from a Pipe to Black Gut Creek without a NPDES Permit, in Violation of the Clean Water Act and the Clean Streams Law.

All of the information above is incorporated herein. On July 24, 2017, the Waterkeepers also observed and documented (by photo) an unpermitted outfall discharging water with unknown characteristics to Black Gut Creek. The large-diameter pipe discharging to the creek was photographed and the information was forwarded to PA DEP later that day. *See* Email from Peter Harrison, Waterkeeper Alliance, to PA DEP (July 24, 2017) (Attachment 7). The issue was also brought to PA DEP’s attention in comments submitted by the Environmental Integrity Project on behalf of Citizens on February 19, 2018 regarding PA DEP’s issuance of the fourth draft of Talen’s NPDES renewal permit. This pipe (visible in the center of **Figures 13 and 14**, below and in Attachment 7) is not an authorized outfall listed in Talen’s NPDES Permit and the characteristics of the water are unknown.

Figure 13: Unauthorized Discharge Pipe near Black Gut Creek



The pipe is located approximately 100 feet northwest from Talen's NPDES-permitted Outfall SW-15 (coordinates: 40° 4' 49.5474", 76° 41' 17.7642"):

Figure 14: Location of Unauthorized Discharge Pipe (GoogleEarth)



This discharge is in violation of section 301 of the Clean Water Act. As per section 502 of the Clean Water Act, Talen is a “person,” the pipe is a “point source,” and Talen is engaged in the “discharge of pollutants” from a pipe to Black Gut Creek, which is a “water of the United States” because it is a tributary of the Susquehanna River, and therefore a “navigable water.” The discharge of pollutants by a person from a point source to waters of the United States is strictly prohibited except when authorized by and in compliance with a NPDES permit. 33 U.S.C. § 1311. Talen’s NPDES Permit does not authorize this discharge.

Pursuant to section 1 of the Clean Streams Law, Talen is a “person” who is discharging “pollution” from a discreet pipe to “waters of the Commonwealth.” The discharge of pollution from this pipe to state waters is unauthorized by Section 301 and therefore constitutes a nuisance pursuant to section 401 of the Clean Streams Law.

There was no indication based on the observation of the flow that the discharge from this pipe was an isolated event and therefore, upon information and belief, this discharge is expected to continue until Talen ceases discharging pollutants through this pipe and takes steps to remediate the contamination it caused. Talen is subject under the Clean Water Act to injunctive relief to resolve this violation and to a civil penalty of up to \$53,484 each day each pollutant was or is being discharged from this unpermitted pipe. Any person found violating the Clean Streams Law, or a permit or regulation pursuant thereto, is subject to injunctive relief to abate the noncompliance and to a civil penalty of up to \$10,000 per violation per day.

3. Claims 6-8: NPDES Permit Violations

Claim 6: Talen Failed to Comply with NPDES Permit Effluent Limitations (Daily, Monthly, and Instantaneous Maximum).

All of the information set forth above is incorporated herein. Talen's NPDES Permit authorizes the discharge of certain pollutants from seven permitted outfalls subject to effluent limitations and monitoring requirements.

The NPDES Permit was renewed on July 27, 2018 and is currently in effect. *See* 2018 NPDES Permit. Prior to that, the 2006 NPDES Permit (as amended in 2008), although it expired on August 31, 2011, had been in effect because it was administratively extended.

With the exception of stormwater outfalls and Outfall 006, which discharges to Black Gut Creek,¹⁵ the 2006 NPDES Permit authorized the discharge of pollutants into the Susquehanna River described as follows (see **Figure 15**, below):

1. Outfall 001: Noncontact cooling water at a monthly average discharge rate of 585 million gallons per day ("MGD");
2. Outfall 002: Wastewater from the "Incidental Waste Treatment Basin" at a long-term average discharge rate of 2 MGD;
3. Outfall 003: Sanitary wastewater at a monthly average discharge rate of 0.017 MGD;
4. Outfall 004: Wastewater from the Ash Basin 6 Polishing Pond, Brunner's Equalization Basin, and other miscellaneous wastewater at a long-term average discharge rate of 4.8 MGD;¹⁶
5. Outfall 005: Emergency Overflow from the On-Site Equalization Basin (normally no discharge);
6. Outfall 006: Spring discharge originating near retired Ash Basins Nos. 1 and 3; flow data not indicated;
7. Outfall 007: Treated wastewater generated by the flue gas desulfurization (scrubber) towers at a long-term average discharge rate of 0.33 MGD;¹⁷
8. Eighteen stormwater outfalls (discharging to the Susquehanna River and its tributaries, Black Gut Creek and Hartman Run).

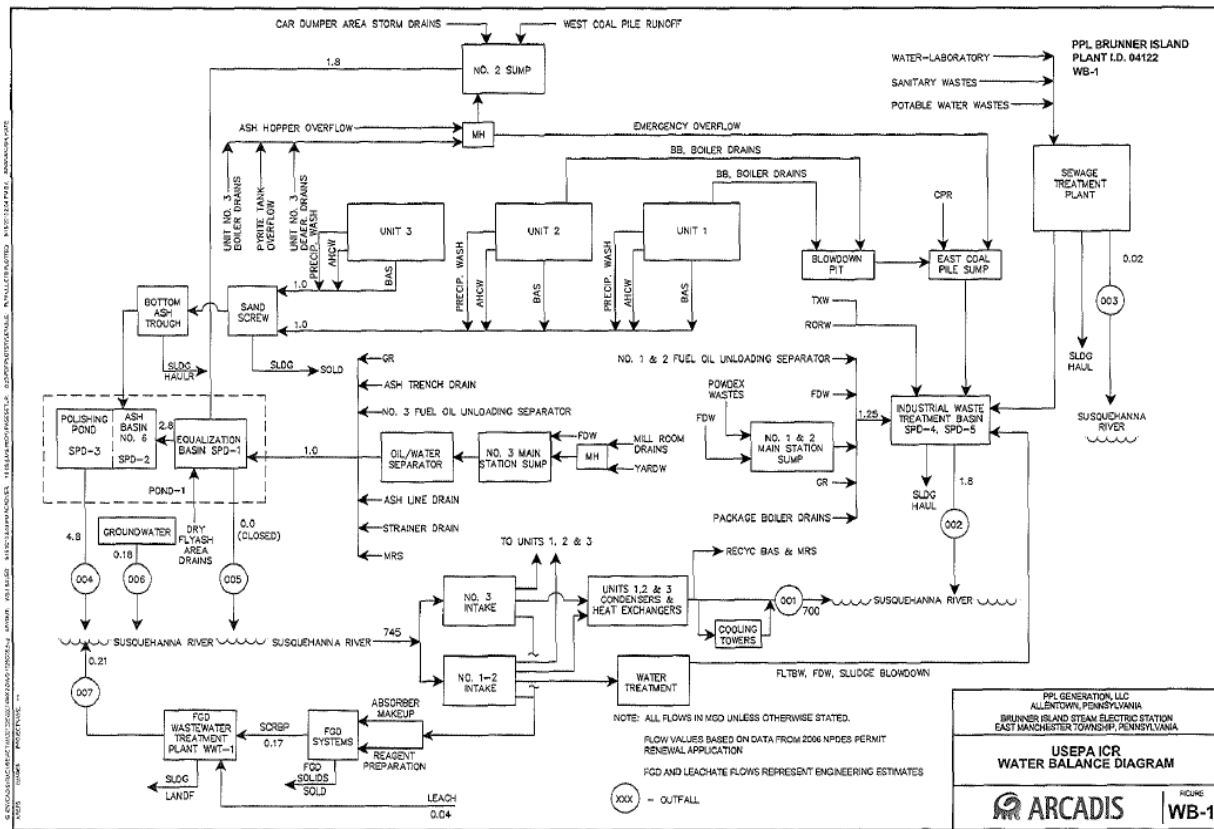
¹⁵ Talen's 2006 and 2011 NPDES renewal applications contained numerous inaccuracies, including identifying the receiving water body for Outfall 006 as the Susquehanna River in several different places. It is apparent however, that Outfall 006 discharges to Black Gut Creek.

¹⁶ PPL, PPL Brunner Island Steam Electric Station, NPDES Permit Renewal Application – NPDES Permit PA0008281, Module 3, at 1 (May 8, 2006) (describing Outfall 004 discharge as "Basin #6: Bottom Ash from All Units, precipitator washes, air heater washes"); *see also*, NPDES Inspection Report (June 3, 2015) (description of Outfall 004 wastewater). In addition, although Talen has proposed to divert flow from Ash Basin 6's Polishing Pond to an industrial wastewater treatment plant constructed several years ago, this plant has not been utilized and discharge from this facility was not permitted until the recent permit renewal. *See* PA DEP, NPDES Permit Fact Sheet, Individual Industrial Waste (IW) and IW Stormwater, Application No. PA0008281, Brunner Island LLC, Brunner Island Steam Electric Station (Apr. 5, 2017).

¹⁷ *See*, Water Quality Management Permit No. 6706201 (authorizing the construction and operation of a wastewater treatment unit for the scrubbers) (Sept. 24, 2008).

The 2018 NPDES Permit retains Outfalls 001 through 007 (with some revisions to the contributing waste streams). *See* 2018 NPDES Permit, Part A. It also adds Outfall 008, “auxiliary wastewater treatment plant effluent (bottom ash transport water, coal pile runoff, low volume wastes,” internal monitoring point 801 (boiler rinse water (chemical metal cleaning wastes)). *Id.* at 16–18. The 2018 NPDES Permit authorizes stormwater discharges from 006 as well as twenty-one stormwater-only outfalls (*see id.* at Part C.IV.A, at 50–51), but there are only monitoring requirements and/or effluent limitations for Outfalls 006, 013, 014, 015, and 026. *See id.* at 51, 19–26.

Figure 15: Brunner Island Process Flow Diagram



PPL Generation, LLC, PPL Brunner Island, LLC NPDES Permit No. PA0008281 Permit Renewal Application (Mar. 14, 2011). The 2006 NPDES Permit and the 2018 NPDES Permit contain “monitoring only” requirements for CCR pollutants discharged from the facility, including metals such as aluminum, arsenic, boron, cadmium, chromium, iron, lead, mercury, molybdenum, nickel and zinc, with the exception of certain limits from Outfall 007 in the 2006 NPDES Permit only, limits for total suspended solids (“TSS”) in both NPDES Permits regarding several outfalls, and limits in the 2018 NPDES Permit that will apply in the future for outfalls 007, 004, and 008. The pollutants for which there are effluent limits, for certain outfalls (discussed in more detail, below) include TSS, total phosphorus, total residual chloride, heat rejection rate, hourly instream temperature change, and total residual oxidants.

Talen has been in violation of certain effluent limitations over 20 percent of the time throughout the last five years. For at least the last five years, Talen has experienced effluent limitation violations, as reported in its monthly Discharge Monitoring Reports (DMRs) to PA DEP, regarding three outfalls:

Outfall 001: consisting of noncontact cooling water at a monthly average discharge rate of 585 million gallons per day (“MGD”)

Outfall 003: consisting of sanitary wastewater at a monthly average discharge rate of 0.017 MGD

Outfall 007: consisting of treated wastewater generated by the flue gas desulfurization (scrubber) towers at a long-term average discharge rate of 0.33 MGD

There is no indication that steps are being taken to prevent the recurrence of these violations in the future.

Table 3: Effluent Violations of Talen’s NPDES Permit (November 2013 to July 2017)

DATE	OUTFALL	EFFLUENT	PERMIT LIMIT (mg/L unless otherwise indicated)	EXCEEDANCE (mg/L unless otherwise indicated)	MEASUREMENT
Nov 2013	003	Total Suspended Solids	30	90.50	Average Monthly
Jan 2014	001	Hourly Instream Temperature Change (F)	2	-2.1	Instantaneous Maximum
Mar 2014	001	Heat Rejection Rate (MBTUs/day)	91,870	112,814	Maximum Daily
June 2014	003	Total Residual Chlorine	2	2.60	Instantaneous Maximum
Nov 2014	003	Total Suspended Solids	30	125.00	Average Monthly
Dec 2014	003	Total Suspended Solids	30	45.00	Average Monthly
Jan 2015	003	Total Suspended Solids	30	75.00	Average Monthly
Mar 2015	001	Heat Rejection Rate (MBTUs/day)	91,870	148,277	Maximum Daily
June 2015	001	Total Residual Oxidants	0.2	0.28	Instantaneous Maximum
Oct 2015	001	Hourly Instream Temperature Change (F)	2	4.3	Instantaneous Maximum
Feb 2016	001	Hourly Instream Temperature Change (F)	2	3.8	Instantaneous Maximum
July 2016	003	Total Phosphorus	2	3.20	Average Monthly

July 2016	003	Total Suspended Solids	30	66.00	Average Monthly
Aug 2016	001	Total Residual Oxidants	0.2	0.29	Instantaneous Maximum
Dec 2016	001	Hourly Instream Temperature Change (F)	2	2.4	Instantaneous Maximum
Jan 2017	007	Total Suspended Solids	100	111.00	Daily Maximum
Jan 2017	007	Total Suspended Solids	30	75.00	Average Monthly
Mar 2017	001	Heat Rejection Rate (MBTUs/day)	91,870	110,269	Maximum Daily
July 2017	003	Total Phosphorus	2	2.90	Average Monthly
July 2017	003	Total Suspended Solids	30	50.00	Average Monthly
Jan 2018	001	Hourly Instream Temperature Change (F)	2	-2.6	Instantaneous Maximum

Each day a daily maximum or instantaneous maximum limit is exceeded is a separate violation for which a penalty can be assessed. In addition, each day of each month where a monthly discharge limit is exceeded is a separate violation for which a penalty can be assessed. Under the Clean Water Act, each day of noncompliance subjects Talen to injunctive relief to resolve the violations and to a civil penalty of up to \$37,500 per violation per day that occurred before November 2, 2015 and up to \$53,484 per violation per day that occurred after November 2, 2015. Any person found violating the Clean Streams Law, or a permit or regulation pursuant thereto, can be subject to injunctive relief to abate the noncompliance and to a civil penalty of up to \$10,000 per violation per day.

Claim 7: Talen Failed to Comply with the NPDES Permit Requirement to Report to PA DEP Instances of Unanticipated Noncompliance or Potential Pollution that Cause or Threaten to Cause Pollution.

Part A.X.C.3.a-d of the NPDES Permit requires Talen to report to PA DEP and provide details regarding instances of unanticipated noncompliance or potential pollution that cause or threaten to cause pollution pursuant to 25 Pa. Code § 91.33. These requirements, among others, also mandate that Talen take immediate steps to prevent injury to property and downstream users of the waters from pollution or a danger of pollution, and where warranted, remove the pollution from the ground and affected waters within fifteen days. Part A.X.C.4 requires that Talen report all other instances of noncompliance not reported under Part A.X.C.3.a at the time DMRs are submitted.

Based upon a review of documents at PA DEP, and upon information and belief, Talen has not reported the discharge of pollutants to surface waters on a site-wide basis generally, and in particular from Ash Basin 6, Disposal Area 8 and/or Ash Basin 5, or from seeps, the spring (at

the northeast corner of Ash Basin 6), or other saturated areas as required by the NPDES Permit. In addition, Talen has failed to report the unpermitted pipe discharge discovered by the Lower Susquehanna Riverkeeper Association in July 2017 (*see Claim 5*, above). Talen also has failed to take steps to prevent downstream users of the waters from pollution or a danger of pollution resulting from its unpermitted discharges. Last, Talen has failed to remove the pollution from the ground and affected waters within the timeframes described in the permit.

These violations are continuing and have occurred for at least the last five years. Every day that Talen continues to discharge pollutants from the Brunner Island facility to surface waters in violation of the requirements of Part A.X.C.3.a-d and Part A.X.C.4 of the NPDES Permit is a separate violation of the Clean Water Act subject to a civil penalty of up to \$37,500 per violation per day that occurred before November 2, 2015 and up to \$53,484 per violation per day that occurred after November 2, 2015. Violations of these permit provisions are also violations of the Clean Streams Law, for which injunctive relief to abate the noncompliance can be sought and a civil penalty of up to \$10,000 per violation per day can be imposed.

Claim 8: Talen Failed to Take All Reasonable Steps to Minimize or Prevent Any Discharge in Violation of the NPDES Permit.

All of the information set forth above is incorporated herein. Part B.I.E of the NPDES Permit requires Talen to take all reasonable steps to minimize or prevent any discharge, sludge use or disposal in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment.

As alleged in **Claims 1- 4** above, Talen is discharging CCR pollutants to surface waters on a site-wide basis and more particularly, from Ash Basin 6, Disposal Area 8 and/or Ash Basin 5, and from seeps, the spring at the northeast corner of Ash Basin 6, and other saturated areas at concentrations so high as to pose a threat to fish and other aquatic species in the Susquehanna River and Black Gut Creek. The discharge of these pollutants is adversely affecting and will continue to adversely affect fish and aquatic species until the discharges cease. *See Tables 1 and 2*, above; *see also*, Appendices A-D.

Talen is aware of the concentration of CCR pollutants discharged to surface waters via hydrologically connected groundwater – as evidenced by monitoring required by its solid waste disposal permits and the CCR Rule and its repeated documentation of this fact (as referenced throughout this notice letter) in its CCR Rule compliance documents and other documents - but has taken no credible steps to minimize or prevent the discharges. In fact, Talen plans to continue depositing CCR and non-CCR wastewater in Ash Basin 6 until 2031 and in Disposal Area 8 throughout the active lifespan of the facility. *See Ash Basin 6 CCR Closure Plan*;¹⁸ *see also*, Talen Energy, 2017 Annual USEPA CCR Landfill Inspection Report, Brunner Island Ash Disposal Area No. 8 (Jan. 8, 2018). Talen also is aware that the seeps, the spring near the northeast corner of Ash Basin 6, and other saturated areas are discharging directly to surface waters.

Last, Talen is aware that it is discharging wastewater from an unpermitted outfall, as alleged in **Claim 5**, above. Talen is taking no steps to minimize or prevent what clearly is an unpermitted discharge from an unpermitted outfall to Black Gut Creek.

These violations are continuing and have occurred for at least the last five years. Every day that Talen continues to discharge each pollutant from the Brunner Island facility to surface waters in violation of the requirements of Part A.X.C.3.a-d and Part A.X.C.4 of the NPDES Permit is a separate violation of the Clean Water Act subject to a civil penalty of up to \$37,500 per violation per day that occurred before November 2, 2015 and up to \$53,484 per violation per day that occurred after November 2, 2015. A violation of this provision of the NPDES Permit is also a violation of the Clean Streams Law for which injunctive relief to abate the noncompliance can be sought and a civil penalty of up to \$10,000 per violation per day can be imposed.

III. IMPACTS OF CCR POLLUTANTS TO HUMAN HEALTH AND THE ENVIRONMENT

CCR pollutants discharged from Ash Basin 6 and Ash Basin 5/Disposal Area 8, as well as from seeps, the spring, and other saturated areas to surface waters, pose serious risks to health and the environment. As EPA acknowledged in its October 2009 Steam Electric Power Generating Point Source Category: Final Detailed Study Report, “[m]any of the common pollutants found in coal combustion wastewater (e.g., selenium, mercury, and arsenic) are known to cause environmental harm and can potentially represent a human health risk.” See EPA, *Steam Electric Power Generation Point Source Category: Final Detailed Study Report*, EPA 821-R-09-008 (Oct. 2009), available at https://www.epa.gov/sites/production/files/2015-06/documents/steam-electric_detailed_study_report_2009.pdf.

According to the report, pollutants in coal combustion wastewater are of “particular concern because they can occur in large quantities . . . and at high concentrations . . . in discharges and leachate to groundwater and surface waters.” *Id.* at 6-2. In addition, some pollutants in coal combustion wastewater present an increased ecological threat due to their tendency to persist in the environment and bioaccumulate, which often results in slow ecological recovery or organisms following exposure. *Id.*

The following table includes information, in part, from Table 6-1 of the above-referenced 2009 EPA Report:

Pollutant	Potential Environmental Concern
Arsenic	Frequently observed in high concentrations in coal combustion wastewater; causes poisoning of the liver in fish and developmental abnormalities; is associated with an increased risk of cancer in humans in the liver and bladder.” EPA estimates that nearly 140,000 people each year experience increased cancer risk due to arsenic in fish from coal-fired power plants.
Boron	Frequently observed in high concentrations in coal combustion wastewater; leachate into groundwater has exceeded state drinking water standards; human exposure to high concentrations can cause nausea, vomiting, and diarrhea. Can be toxic to vegetation.

Cadmium	Elevated levels are characteristic of coal combustion wastewater-impacted systems; organisms with elevated levels have exhibited tissue damage and organ abnormalities.
Chromium	Elevated levels have been observed in groundwater receiving coal combustion wastewater leachate; invertebrates with elevated levels require more energy to support their metabolism and therefore exhibit diminished growth.
Lead	Concentrations in coal combustion wastewater are elevated initially, but lead settles out quickly; leachate has caused groundwater to exceed state drinking water standards. Human exposure to high concentrations of lead in drinking water can cause serious damage to the brain, kidneys, nervous system, and red blood cells.
Lithium	Risks from lithium ingestion include neurological and psychiatric effects, decreased thyroid function, renal effects, cardiovascular effects, skin eruptions, and gastrointestinal effects. <i>See EPA, Human and Ecological Risk Assessment of Coal Combustion Residuals</i> , at ES-2 (Dec. 2014).
Manganese	Coal combustion wastewater leachate has caused elevated concentrations in nearby groundwater and surface water; biota with elevated levels have exhibited sublethal effects including metabolic changes and abnormalities of the liver and kidneys.
Mercury	Biota with elevated levels have exhibited sublethal effects including metabolic changes and abnormalities of the liver and kidneys; can convert into methyl-mercury, increasing the potential for bioaccumulation; human exposure at levels above the MCL for relatively short periods of time can result in kidney damage.
Molybdenum	The ingestion of molybdenum is associated with higher levels of uric acid in the blood, gout-like symptoms, and anemia. <i>See EPA, Human and Ecological Risk Assessment of Coal Combustion Residuals</i> , at ES-2 (Dec. 2014)
Selenium	Frequently observed at high concentrations in coal combustion wastewater; readily bioaccumulates; elevated concentrations have caused fish kills and numerous sublethal effects (e.g., increased metabolic rates, decreased growth rates, reproductive failure) to aquatic and terrestrial organisms. Short term exposure at levels above the MCL can cause hair and fingernail changes; damage to the peripheral nervous system; fatigue and irritability in humans. Long term exposure can result in damage to the kidney, liver, and nervous and circulatory systems.
Sulfate	The EPA established a health-based drinking water advisory for sulfate (500 mg/L) to prevent against diarrhea-related water loss in infants. <i>U.S. EPA, Drinking Water Advisory: Consumer Acceptability Advice and Health Effects Analysis on Sulfate</i> (Feb. 2003).

IV. PERSONS RESPONSIBLE FOR VIOLATIONS

Brunner Island is owned and operated by Talen, a private corporation with headquarters in Allentown, Pennsylvania. Talen is the legal owner and operator of Brunner Island, is in control

of day to day operations, and is therefore a “person” as defined by the Clean Water Act and the Clean Streams Law who is responsible for the violations alleged herein.

V. PERSON GIVING NOTICE

The Lower Susquehanna Riverkeeper Association, located at 2098 Long Level Road, Wrightsville, PA 17368, and with a phone number of 609.571.5278, is a 501(c)(3) nonprofit watershed association licensed by the Waterkeeper® Alliance on September 15, 2005. The Lower Susquehanna Riverkeeper Association is dedicated to improving and protecting the ecological integrity of the Susquehanna Watershed and Chesapeake Bay by identifying sources of pollution and enforcing environmental laws. The Lower Susquehanna Riverkeeper Association also actively educates the public on current issues, works with decision-makers to emphasize the economic and social benefits of protecting our watershed, and, when necessary, enforces laws protecting communities and natural resources of the Susquehanna Watershed. Many of the Lower Susquehanna Riverkeeper Association’s members are avid kayakers, fishermen, bird-watchers, business owners, and other users of the Lower Susquehanna River and its tributaries, including Hartman Run, and the Lower Susquehanna River watershed. These members have been injured and continue to be injured by Talen’s pollution that violates environmental laws, as described herein, as these violations threaten members’ use and enjoyment of the Lower Susquehanna River and the groundwater and tributaries that flow into the Lower Susquehanna River.

Waterkeeper Alliance unites more than 300 Waterkeeper Organizations and Affiliates, including the Lower Susquehanna Riverkeeper Association, that are on the frontlines of the global water crisis, patrolling and protecting more than 2.5 million square miles of rivers, lakes, and coastal waterways on 6 continents. The Waterkeeper movement defends the fundamental human right to drinkable, fishable, and swimmable waters, and combines firsthand knowledge of local waterways with an unwavering commitment to the rights of communities. Within the United States, Waterkeeper Alliance, Inc. works with more than 170 Waterkeeper Organizations and Affiliates. The offices for Waterkeeper Alliance are at 180 Maiden Lane, Suite 602, New York, NY 10038 and the main phone number is 212.747.0622. One of Waterkeeper Alliance’s member organizations is the Lower Susquehanna Riverkeeper Association, whose members’ use and enjoyment of the Lower Susquehanna River and its tributaries and groundwater are injured and will continue to be injured by Talen’s pollution of these waterways in violation of the Clean Water Act and the Clean Streams Law.

PennEnvironment, is a Pennsylvania non-profit corporation organized for the purpose of conducting public interest research, policy development, and analysis, public education, litigation, and advocacy to protect the environment and people of Pennsylvania, including the quality of Pennsylvania’s waters. PennEnvironment has long been concerned about pollution in the Susquehanna River, including the Lower Susquehanna River and its tributaries, and released a report, in November 2017, regarding the impacts of budget cuts to the Susquehanna Riverkeeper. Its principal place of business is 1420 Walnut Street, Suite 650, Philadelphia, PA 19102, with a contact number of (215) 732-5897. PennEnvironment was formed in 2002 to carry on the environmental work previously conducted by the Pennsylvania Public Interest Research Group. PennEnvironment currently has approximately 15,000 members in Pennsylvania. Many

of PennEnvironment's members live near, work near, fish in and along, swim in, kayak in, or enjoy the wildlife along the Susquehanna River near the Brunner Island Plant, and its members are very concerned about the quality of the water and impacts to wildlife from pollution at the Brunner Island Station. PennEnvironment's members' use and enjoyment of the Lower Susquehanna River has been impaired and will continue to be impaired by Talen's environmental violations (detailed herein) from the Brunner Island Station.

To remedy the violations described herein, Talen must cease discharging pollutants and pollution as alleged herein and take all reasonable steps to abate the continued release of pollutants and the impact of those pollutants on human health and the environment. If unable to reach an enforceable settlement agreement within the 60-day notice period, the Waterkeepers and PennEnvironment, through their counsel, are prepared to file suit in the United States District Court for the Middle District of Pennsylvania pursuant to section 505(a) of the CWA after 60 days from the date of this letter. This lawsuit will seek injunctive relief, appropriate monetary penalties, fees and costs of litigation, and such other relief as the court deems appropriate.

VII. CONCLUSION

Talen has violated and will continue to violate the federal Clean Water Act and Pennsylvania's Clean Streams Law at the Brunner Island Steam Electric Station. Accordingly, Citizens intend to file suit in the Middle District of Pennsylvania to obtain declaratory relief, enjoin the violations described above, ensure sustained compliance with federal and state law, obtain civil penalties, recover attorneys' fees and costs of litigation, and obtain other appropriate relief.

If you have any questions regarding the allegations in this notice, believe any of the foregoing information to be in error, or would otherwise like to discuss a resolution of this matter prior to the initiation of litigation, please contact Mary E. Greene, Deputy Director, as per below, Lisa Hallowell, Senior Attorney, at (202) 294-3282 or lhallowell@environmentalintegrity.org, or Abel Russ, Senior Attorney, at (802) 482-5379 or aruss@environmentalintegrity.org.

Sincerely,

A handwritten signature in cursive script that reads "Mary E. Greene". The signature is written in black ink and is positioned above a horizontal line.

Mary E. Greene
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cc:

Ted Evgeniadis
Lower Susquehanna Riverkeeper Association

Via Electronic Mail

Larissa Liebmann, Staff Attorney
Waterkeeper Alliance

Via Electronic Mail

David Masur, Executive Director
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Via Electronic Mail

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