SOUTHERN ENVIRONMENTAL LAW CENTER

Telephone 615-921-9470 | 2 VICTORY AVENUE SOUTH, SUITE 500 NASHVILLE, TN 37213 | Facsimile 615-921-8011

January 14, 2016

Via Certified Mail - Return Receipt Requested
The Hon. Regina McCarthy, Administrator
U.S. Environmental Protection Agency Ariel Rios Building
1200 Pennsylvania Avenue, N.W. Mail Code: 1101A
Washington, DC 20460

Via Certified Mail - Return Receipt Requested
Heather McTeer Toney, Regional Administrator
U.S. Environmental Protection Agency, Region 4
61 Forsyth Street, SW
Atlanta, GA 30303-3104

Via Certified Mail - Return Receipt Requested
Mr. Robert J. Martineau, Jr., Commissioner
Tennessee Department of Environment and Conservation
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 2nd Floor
Nashville, TN 37243

Via Certified Mail - Return Receipt Requested
Mr. Bill Johnson, President and Chief Executive Officer
Tennessee Valley Authority
400 West Summit Hill Drive
Knoxville, TN 37902-1499

RE: 60-Day Notice of Intent to Sue, 33 U.S.C. § 1365, for Violations of the Clean Water Act by Tennessee Valley Authority–TVA Cumberland Fossil Plant (CUF), NPDES No. TN0005789

To Whom It May Concern:

This letter is to notify the United States Environmental Protection Agency ("EPA"), the Tennessee Department of Environment and Conservation ("TDEC"), and the Tennessee Valley Authority ("TVA") of ongoing violations of the Clean Water Act ("CWA") at the Cumberland Fossil Plant ("the Cumberland Plant") in Cumberland City, Tennessee, owned and operated by

TVA. The Sierra Club ("the Conservation Group") and its members have identified serious and ongoing unpermitted violations of the CWA at the Cumberland Plant.

TVA has caused and continues to cause unauthorized point source discharges to Tennessee waters and navigable waters of the U.S., and to cause unpermitted pollutant discharges to flow from the coal ash disposal areas at the Cumberland Plant directly into the Cumberland River, as well as into groundwater that is hydrologically connected to the Cumberland River. Coal ash waste is widely known to contain harmful pollutants, including heavy metals, which can cause harm to human health and the environment. These illegal discharges include many harmful substances indicative of coal ash contamination, including aluminum, arsenic, boron, chloride, dissolved solids, iron, manganese, molybdenum, selenium, and sulfate.

Pursuant to 33 U.S.C. § 1365(b), the Conservation Group hereby gives notice of its intent to sue TVA for violations of the CWA unless, within 60 days of your receipt of this letter, TVA enters into a binding agreement to cease and to fully and promptly remediate all such violations.

I. History of the Cumberland Plant and Coal Ash Disposal.

A. Over Forty Years of Coal Ash Waste is Stored at the Cumberland Plant Site.

The Cumberland Plant is located in Cumberland City, Stewart County, Tennessee on the left banks of the Cumberland River, also known as Lake Barkley. It is about three (3) miles north of Erin, Tennessee, and ten (10) miles southwest of Clarksville, Tennessee.[1] The Cumberland Plant is adjacent to Barkley Wildlife Management Area, approximately one mile southeast of Cross Creeks National Wildlife Refuge, and roughly 10 miles southeast of Land Between the Lakes National Recreation Area. *See* **Exhibit 1**. The Cumberland River at mile 103 is classified for domestic and industrial use; fish and aquatic life; recreational purposes; livestock watering; and navigation. Tenn. Comp. R. & Regs. Ch. 0400-04-04. The Cumberland River and Wells Creek are both waters that support aquatic life and recreation-based uses. The Cumberland River/Lake Barkley miles 90.3-108 are included on Tennessee's list of Known Exceptional Tennessee Waters and Outstanding National Resource Waters, due to the Cross Creeks National Wildlife Refuge at river miles 60.3 to 102.6, and state endangered lake sturgeon at river miles 96.0 to 108. *See* TDEC, Exceptional Tennessee Waters & Outstanding National Resource Waters, available at
http://environment-online.state.tn.us:8080/pls/enf_reports/f?p=9034:34304:11336090639331
(last visited Jan. 12, 2016).

[1] TVA Cumberland Fossil Plant- Dry Fly Ash and Gypsum Disposal Areas (IDL 81-103-0086)- Groundwater Detection Monitoring Program Plan Submittal, Feb. 27, 2010, at 1.

TVA constructed the Cumberland Plant between 1968 and 1973, and it began coal-fired power operations there in 1972. The Cumberland Plant is the second largest coal fired steam plant in the TVA system, with a generating capacity of 1,300 megawatts, produced by two coal-fueled, steam-electric generators.[2] Each year, TVA burns over seven (7) million tons of coal and generates approximately 512,000 tons of coal ash at the Cumberland Plant.[3] It stores most of that ash in unlined disposal pits behind the Plant, adjacent to the Cumberland River.

B. Operational Permits for the Cumberland Plant.

In accordance with the terms of the CWA's National Pollutant Discharge Elimination System ("NPDES") program, in November 2007, TDEC issued NPDES Permit No. TN0005789 authorizing TVA to operate a wastewater treatment facility at the Cumberland site (herein "the NPDES Permit" or "the Permit"). The NPDES Permit is attached hereto as **Exhibit 2**.

After TVA burns coal at the Cumberland Plant, it mixes the resulting coal ash with water and sluices the coal ash and water mixture to various coal ash disposal areas. The Permit authorizes TVA to discharge coal ash wastewater into the Cumberland River only after it "treats" the water to remove solids. TVA's process for treating the wastewater is to put the water into settling ponds, where the solids should separate from the water and fall to the bottom. The Permit only authorizes TVA to discharge treated coal ash wastewater to the Cumberland River through one point, Outfall 001, located approximately at river mile 103.

TDEC also issued TVA a Solid Waste Disposal Permit, IDL 81-102-0086, to operate a Class II landfill for industrial waste ("the Solid Waste Permit") for the disposal of coal ash at the Cumberland Plant. Under the Solid Waste Permit, TVA must follow the Detection Monitoring Program mandated under TDEC Rule 0400-11-01-.04 (previously 1200-1-7-.04), requiring TVA to obtain and analyze samples from a groundwater monitoring system for certain enumerated constituents on a semi-annual basis. If a statistically significant increase over background is detected for one or more of the constituents, an "assessment monitoring," consisting of additional ground water sampling and reporting, is required. *Id*. If the "assessment monitoring" indicates a statistically significant level above groundwater protection standards, the owner or operator is required to initiate corrective measures. *Id*.

In 2011, TVA's Office of Inspector General ("OIG") issued a report finding that TVA was not in compliance with its NPDES Permit monitoring requirements at Cumberland because TVA was not monitoring for chemical oxygen demand. *See* **Exhibit 3**, Tennessee Valley Authority, Office of the Inspector General. TVA's Groundwater Monitoring at Coal Combustion Products Disposal Areas, (June 21, 2011), at 5. The OIG stated that groundwater sampling

[2] TDEC Hazardous Waste Generation Inspection, TVA Cumberland Plant, March 18, 2015.
[3] *Id.*

conducted in 2008 and 2009 showed that TVA had discharged unpermitted levels of various coal ash constituents from the Cumberland Plant into the groundwater, including arsenic, selenium, and vanadium. *Id*. at 7, 9. The OIG also noted that the pollutant discharge levels of selenium at Cumberland should have triggered a Groundwater Quality Assessment Plan, but the exceedance did not result in an assessment. *Id*. at 10. Selenium is a toxic pollutant found in coal ash that is deadly to fish and can damage the liver and other soft tissue in humans. The OIG stated that TDEC, under its own rules and guidance documents, should have required TVA to develop and submit to TDEC a Groundwater Quality Assessment Plan within 45 days after the exceedance, that TVA should have been required to initiate corrective measures within 90 days, and that TDEC should have issued it a Notice of Violation. *Id.* TDEC personnel told the OIG that these rules were discretionary, that it "would be impossible to meet the 45- and 90-day requirements," and that "they were not required to issue a Notice of Violation and chose not to as long as TVA was cooperative and working toward making a quality plan." *Id.* At the time of the OIG Report, a formal Groundwater Quality Assessment Plan for Cumberland had not been submitted to TDEC and no corrective actions had been identified. *Id.* at 8. To date, TVA has taken no actions to clean up the contaminated groundwater at the Cumberland Plant and TDEC has not taken any enforcement action against TVA.[4]

C. The Cumberland Fossil Plant Location is Not Suitable for Coal Ash Disposal and Storage.

The Cumberland Plant and its unlined coal ash disposal areas were constructed directly on top of a circular geologic feature known as the Wells Creek Structure. The Wells Creek Structure was formed by the impact of a meteor several hundred million years ago. The meteor impact fractured the bedrock underlying the site[5] to a depth of several thousand feet with a pattern of radial and longitudinal faults that have been mapped for several miles in all directions.[6] It is this shattered bedrock below the Cumberland Plant that forms Wells Creek Basin.[7]

TVA's own consultants have concluded that, "[b]ecause of the complexity of the bedrock structure, foundation conditions across the site are somewhat unpredictable and may vary

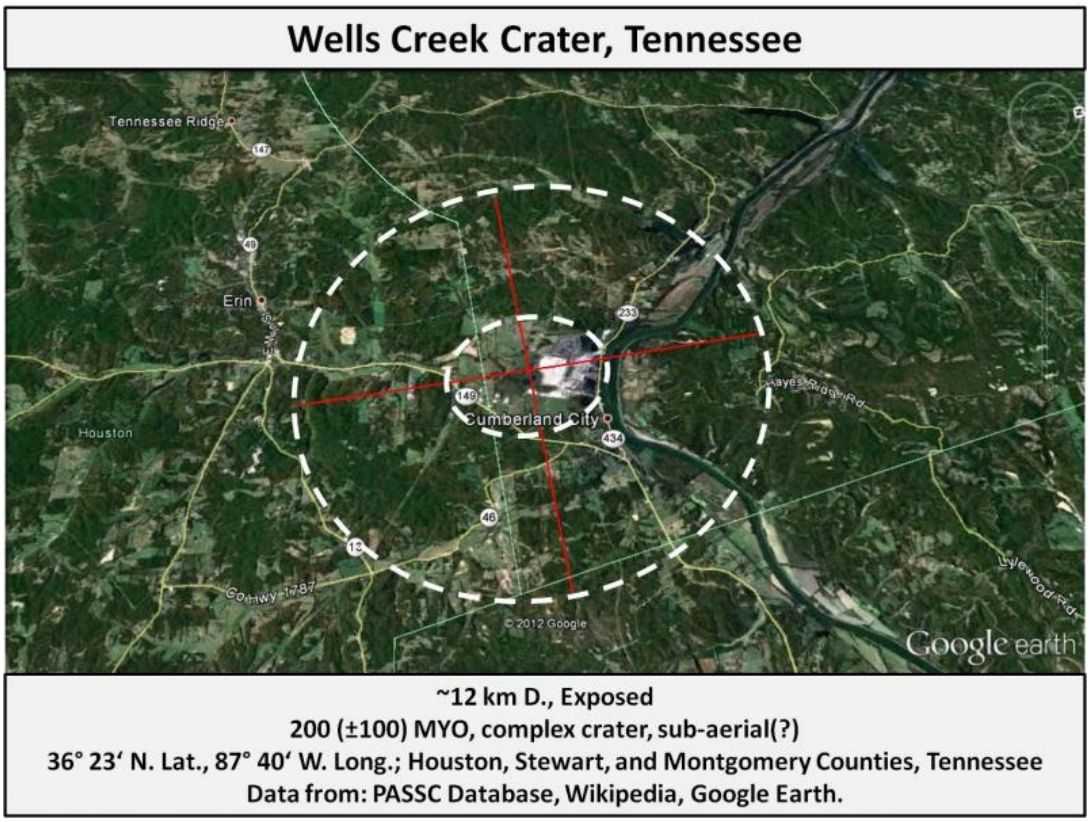
[4] TDEC issued a Commissioner's Order August 6, 2015. The Conservation Group does not regard the Order as enforcement because it does not require TVA to take any remedial action. Instead, it is self-described as having two purposes, both of which involve establishing a "process" for evaluating and complying with the law. To begin the process, the Commission's Order provides that an investigation conference "shall be scheduled" within 60 days and documents provided within 45 days. TVA requested that TDEC re-set the schedule, which TDEC did, and the first briefing on Cumberland is now scheduled for the week of May 16, 2016, more than 10 months after the Order was issued.

[5] TVA Cumberland Fossil Plant – GW Detection Monitoring Plan, Feb. 27, 2010, at 1.

[6] Stantec, TVA Disposal Facility Assessment Phase 1 Plant Summary, Cumberland Fossil Plant at 1.

[7] TVA Cumberland Fossil Plant – GW Detection Monitoring Plan, Feb. 27, 2010, at 1.

drastically over short distances."[8] Despite TVA's knowledge of the unpredictable and fractured nature of the bedrock at the Cumberland Plant, TVA has disposed of thousands of tons of coal ash there in unlined pits directly next to the Cumberland River for the past forty years.



In addition to the fractured bedrock at Cumberland, it is also considered to be within the New Madrid Seismic Zone, which produced a series of four earthquakes between December 1811 and February 1812 on the estimated orders of magnitude of 7.0-8.0.[9] TDEC's map, "Geologic Hazards Map of Tennessee- Environmental Geology Series No. 5" shows Cumberland to be located in Seismic Risk Zone 2, meaning that moderate damage from an earthquake is possible. Wells Creek Basin is also considered to be in the 100-year flood plain.[10]

[8] *Id*.
[8] *Id.* at 2.
[9] Stantec at 2.
[10] USEPA, Dam Assessment Report, Cumberland Fossil Plant, Aug. 2012, at 2-4.
[10] TVA Cumberland Fossil Plant – GW Detection Monitoring Plan, Feb. 27, 2010, at 2.

D. History of the Construction of the Coal Ash Disposal Facilities at the Cumberland Plant.

TVA has modified the ash disposal facilities at the Cumberland Plant over time. In 1969, TVA originally built one large ash disposal area at Cumberland, with an earthen perimeter dike at an elevation of 380 feet. TVA began sluicing coal ash into this area, known as Ash Disposal Area 1, in 1972. TVA constructed Ash Pond Disposal Area 1 on the footprint of Wells Creek, which it relocated to accommodate the Ash Pond. Currently, portions of the active Ash Pond and a Dry Ash Stack are located over the original location of Wells Creek, as seen in **Exhibit 4**.

The Coal Ash Complex at the Cumberland Plant currently encompasses approximately 330 acres consisting of the Ash Pond (approximately 50 acres), while the rest of the original pond was split into two dry storage areas—the Dry Fly Ash Stack (approximately 110 acres) and the Gypsum Disposal Area (170 acres). The Ash Pond is used to settle out bottom ash and to serve as a storm water detention basin for the storm water runoff for the Dry Flay Ash Stack and the Gypsum Disposal Area.[11] *See* **Exhibit 5**, attached. Water in the Ash Pond flows in a northwestern general direction and exits the stilling pond through a 100-foot wide opening in the dike where a floating boom spans the opening to aide in settlement of very fine solids. The spillway then empties "treated" water into a concrete discharge channel known as Outfall 001 that eventually leads to the Cumberland River.[12] There is also a small Bottom Ash Pond located at the north end of the divider dike between the Dry Fly Ash Stack and the Gypsum Disposal Area. TVA uses this Bottom Ash Pond to hold sluiced bottom ash directly from the Plant. TVA reclaims the bottom ash in the Ash Pond with excavators, dewaters the ash, and then stacks the now dry bottom ash in the Dry Ash Stack.

E. Potentially Unstable Conditions at the Cumberland Plant.

The December 23, 2008, coal ash disaster at TVA's Kingston Fossil Plant and the February 2014 spill into the Dan River near Eden, North Carolina demonstrate the potentially catastrophic consequences of structural failure at coal ash disposal sites constructed of earthen walls, similar to the one at the Cumberland Plant. Failure of the containment dikes at the Ash Pond, the Dry Fly Ash Stack, or the Gypsum Disposal Area could release significant amounts of coal ash off site into Wells Creek and the Cumberland River.[13] Indeed, on February 2, 1997, one-half to one million gallons of gypsum wastewater spilled into Wells Creek when heavy rainfall caused the internal gypsum dike to fail and wastewater passed over the exterior dike.[14]

[11] USEPA, Dam Assessment Report, Cumberland Fossil Plant, TVA, Aug. 2012, at 2-1.
[12] *Id*., at 2-2.
[13] *Id*., at ii.
[14] *Id*., at 3-1.

In a 2012 Dam Assessment Report by EPA, the Cumberland Ash Pond was rated "Fair," and the Dry Fly Ash Stack and the Gypsum Disposal Areas were rated "Poor" for continued safe and reliable operation.[15] EPA explained, "The rating for the Ash Pond is influenced by the need to implement remedial measures to improve safety against potential piping failure. The ratings for the Dry Fly Ash Stack and the Gypsum Disposal Area are influenced by lack of documentation showing satisfactory performance of their containment dikes under the design seismic event; available documentation infers that the dikes may not have adequate seismic stability. Performance of the dikes under potential liquefication scenarios is unknown, as no liquefaction potential analyses have been provided. In addition, there is some uncertainty regarding piping potential at the critical section of the Gypsum Disposal Area containment dike."[16]

Similarly, in 2009, after the Kingston disaster, a TVA consultant inspected the Cumberland disposal areas for stability. TVA's consultant concluded that, "The area beneath the Dry Ash Stack was initially operated as a wet ash disposal pond. Constructing embankments over hydraulically placed ash is a potential slope stability concern and requires engineering analysis and geotechnical exploration."[17] It also noted, "[t]he southeast face of the stack consists of exposed soil cover which is eroded throughout." It recommended that TVA conduct significant engineering studies of the Dry Ash Stack to "evaluate the stacking plan and slope stability."[18] Conservation Groups have been unable to find documentation that TVA followed the recommendation.

EPA has also determined that the Cumberland Plant Ash Pond and Gypsum Storage Area present a "significant hazard" in the event of dam failure or mis-operation. EPA's designation indicates that such a failure at the Cumberland Plant could cause economic loss, environmental damage, or other harmful impacts.[19]

F. Coal Ash is in Contact with the Groundwater.

The ground under the coal ash disposal areas at the Cumberland Plant is varyingly permeable, providing the potential for leachate from the coal ash waste to contaminate groundwater. According to TVA documents, "The first occurrence of groundwater beneath the dry fly ash stack is generally within the alluvium or within older ash deposits associated with

[15] *Id.*, at ii.
[16] *Id.*, at 1-3.
[17] Stantec, TVA Disposal Facility Assessment, Phase I Plant Summary, Cumberland Fossil Plant, Dry Ash Stack, at 5.
[18] *Id.*
[19] USEPA, Dam Assessment Report, Cumberland Fossil Plant, TVA, Aug. 2012, at 2-4.

former ash ponds."[20] Moreover, the "movement of any leachate that may enter solution cavities in the bedrock would be very difficult to determine because of the complex fracture network. Groundwater measurements are available for some of the soil borings which indicate that the water table is *in the ash pond."*[21] Therefore, according to TVA's own documents, the groundwater at Cumberland comes in contact with the coal ash and is hydraulically connected to Wells Creek and the Cumberland River.[22]

Also according to TVA, the Cumberland Plant is located in an area of "soluble carbonate rock where studies are difficult to conduct because groundwater flow patterns are difficult to determine, yet the potential for water resource impacts is relatively high."[23] TVA's retained consultants, as early as 1987, noted that carbonate rock formation like that at Cumberland are "particularly troublesome."[24] Although these types of rock formations (*i.e.*, limestone and dolomite) have low primary permeability similar to clay, they become fractured and are highly susceptible to chemical reaction. Water of low pH, such as that from coal ash, dissolves carbonate rock and forms solution cavities through which large quantities of water can flow. Consequently, large quantities of water can be rapidly conveyed through resultant solution cavities.[25]

G. TVA has Repeatedly Detected Coal Ash Contamination in its Groundwater Monitoring Wells at the Cumberland Plant.

TVA's groundwater monitoring system for the coal ash disposal area at Cumberland consists of four downgradient wells (CUF-93-1, CUF-93-2R, CUF-93-3 and CUF-93-4), and two off-site background surface water monitoring stations at Rye Spring (CUF-RS) and Wells Creek upgradient of the plant (CUF-WCUP). *See* **Exhibit 6**.

TVA conducted groundwater monitoring at the Cumberland Plant semiannually between April 1995 and July 2014 at compliance monitoring wells and background monitoring stations pursuant to its Solid Waste Permit (IDL 81-102-0086). TVA is also required to conduct groundwater monitoring according to a *Groundwater Detection Monitoring Plan* it submitted to TDEC on February 27, 2010, as required by its Solid Waste Permit. TVA samples are analyzed for the 17 inorganic constituents[26] mandated under Appendix I of TDEC's *Division of Solid*

[20] *Id.* at 3.
[21] Potential Groundwater Quality Impacts at TVA Steam Plants, Sept. 1982, at 5-6 (emphasis added).
[22] *See* TVA Cumberland Fossil Plant – GW Detection Monitoring Plan, Feb. 27, 2010, at 3 ("Most shallow groundwater originating as infiltration over the dry fly ash stack is ultimately expected to discharge into Wells Creek, with the remainder discharging to the Cumberland River.").
[23] TVA Power Plant Groundwater Assessment Plan, Phase I, April 1987) at 3-4.
[24] *Id.* at 16.
[25] *Id*.

Waste Management's Solid Waste Processing and Disposal Rules and in accordance with the facility operations permit (IDL 81-102-0086). These include the following 17 inorganic constituents: antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, fluoride, lead, mercury, nickel, selenium, silver, thallium, vanadium, and zinc.

Monitoring well CUF-93-2R replaced the original well at the same location labeled, CUF-93-2, which TVA reported as "damaged" in 2005. TVA's first sampling results at CUF-93-2R were reported to TDEC in its January 2006 groundwater monitoring report. In its July 2006 groundwater report, TVA indicated that parameter results for CUP-93-2 and 93-2R were similar for the 17 required inorganic constituents, and thus requested the closure of CUP-93-2. TVA requested closure of this well with each sampling report, and on multiple other occasions, from July 2006 until April 2011 when TDEC finally approved closure of this well.[27]

TVA's monitoring wells sampled between January, 2004 and July, 2014 show contaminants of coal ash pollutants in the groundwater in excess of state and federal standards. Maximum Contaminant Levels ("MCLs") are standards set by EPA for drinking water. An MCL is the legal threshold limit on the amount of a substance that is allowed in public water systems under the Safe Drinking Water Act. The limit is usually expressed as a concentration in milligrams or micrograms per liter of water. Standards referenced in Table 1 and Table 2 are attached as **Exhibit 7**.

Beginning in 2003, TVA started providing detection groundwater sampling results to TDEC for additional inorganic constituents and water quality parameters not listed in Appendix I of Rule 0400-11-01, including boron, iron, manganese, molybdenum, chlorides, and sulfates.

In its initial Groundwater Assessment Plant prepared in 1987, TVA noted that the most important coal ash indicator contaminants are "primarily iron and manganese."[28] TVA also noted that the parameters most commonly exceeded at its coal fired power plants are pH, total dissolved solids, sulfate, iron, and manganese. It acknowledged these constituents are the "characteristic signature contaminants associated with coal-combustion wastes."[29] With respect to heavy metals, TVA has recognized that iron and manganese "are the metals generally appearing in the highest concentrations in the ash pond effluents" and that arsenic, cadmium, and selenium occasionally appear in concentrations high enough to exceed standards for drinking water." *Id.* at 17. In other documents, TVA has admitted that boron is a coal ash signature. In every report over a ten year period from 2003 to 2013, TVA found exceedances of boron, iron, manganese, molybdenum, chloride, sulfate, and total dissolved solids in at least one test well

[27] TVA Cumberland Fossil Plant – GW Detection Monitoring Plan, Feb. 27, 2010, at 5.
[28] TVA Power Plant Groudwater Assessment Plan, Phase I, April, 1987, at 2.
[29] *Id*.

location. For unknown reasons, TVA discontinued monitoring for these coal ash indicator constituents beginning with its January 2014 groundwater monitoring report.

The following tables provide data groundwater monitoring reports TVA submitted to TDEC between January 2004 and July 2014. The tables include constituents that exceeded parameters for National Primary, Secondary MCLs, or EPA One-day Health Advisory MCL (MCLs are expressed in mg/L).

TVA did not test for aluminum, boron, chloride, total dissolved solids, iron, manganese, molybdenum or sulfate during sampling events in April 2009, April and July 2012, January 2013, and all sampling events in 2014. Because it is unknown whether these parameters would have exceeded the MCLs, the table denotes these omissions of data with a forward slash.

TABLE 1
MCL EXCEEDANCES
TVA GROUNDWATER SAMPLING LOCATIONS (2004-2014)

CUF-93-1	Parameters (mg/l)							
Date	Aluminum	Arsenic	Chloride	Dissolved Solids	Iron	Manganese	Selenium	Sulfate
MCL (mg/L)	**0.05**[**]	**0.01**[*]	**250**[***]	**500**[**]	**.3**[**]	**0.05**[**]	**0.08**[**]	**250**[**]
Jan 2004	**0.65**	**0.0123**			**10**	**7.0**		
Jan 2005	**0.61**	**0.011**			**8.1**	**6.4**		
July 2005	**1.0**				**8.3**	**7.4**		
Jan 2006	**0.32**				**10**	**7.9**		
July 2006	**0.6**				**11**	**8.0**		
March 2007	**0.6**				**11**	**7.9**		
July 2007	**1.4**			**1,100**	**12**	**8.0**		
Jan 2008	**2.3**	**0.014**	**280**	**1,300**	**12**	**9.7**		
July 2008	**0.92**	**0.017**	**270**	**1,200**	**10**	**9.0**		
Jan 2009	**0.35**	**0.013**	**300**	**1,000**	**11**	**9.2**		
April 2009								
July 2009	**0.48**	**0.014**	**330**	**1,400**	**3.5**	**9.2**		
Oct 2009	**0.60**		**350**	**1,500**	**5.0**	**9.1**		
Jan 2010			**370**	**1,200**	**5.4**	**9.5**		
April 2010	**0.27**		**350**	**1,400**	**4.6**	**6.5**		
Oct 2010	**0.24**		**430**	**1,700**	**1.6**	**3.1**		
Jan 2011	**0.22**		**440**	**1,400**	**9.0**	**14**		
April 2011	**0.59**		**430**	**1,400**	**1.9**	**2.7**		
July 2011	**0.20**		**450**	**1,900**	**1.9**	**5.0**		
Oct 2011	**0.54**	**0.013**		**1,600**	**8.9**	**7.7**		
Jan 2012	**0.24**		**540**	**1,200**	**1.6**	**1.0**		
April 2012								
July 2012								
Oct 2012	**0.40**	**0.011**	**510**	**2,000**	**6.8**	**11**		
Jan 2013		**0.028**						
April 2013	**0.56**		**490**	**1,200**	**1.9**	**3.5**		
July 2013								
Oct 2013	**<0.5**		**543**	**1,670**	**2.0**	**6.64**		
Jan 2014								
April 2014								
July 2014								

[*] Nat'l Primary MCL; [**] Nat'l Secondary MCL; [***] EPA One-day Health Advisory

CUF-93-2	Parameters									
Date	Aluminum	Arsenic	Boron	Chloride	Dissolved Solids	Iron	Manganese	Molybdenum	Selenium	Sulfate
MCL(mg/l)	**0.05****	**0.01***	**3*****	**250****	**500****	**0.3****	**0.05****	**0.08*****	**0.02***	**250****
Jan 2004			25	1,200		3.0	1.6	0.62		1,800
Jan 2005		0.010	23	980		6.0	2.5	0.57		1,790
Jul 2005		0.014	36	1,400	6,100		2.8	0.48	0.064	2,000
Mar 2005			35	1,400		3.5	2.0	0.55		1,932
Mar 2005			25	1,300		4.4	1.8	0.61		
Jan 2006	0.08		34	1,500		3.3	2.1	0.56		2,030
July 2006			31	1,500		3.2	1.8	0.55		2,000
Mar 2007			34	1,600		5.7	2.9	0.51		2,005
Jan 2007	0.73		13	1,300	6,000	2.5	16			1,800
Jan 2008	0.11	0.013	35	1,600	6,400	4.1	2.3	0.49	0.098	2,000
July 2008		0.021	38	1,500	6,100	5.6	2.8	0.52		1,900
Jan 2009			38	1,500	5.500		2.6	0.55		1,900
April 2009	0.010								0.05	
July 2009		0.022	35	1,600	6,300	4.5	2.8	0.50		1,900
Oct 2009		0.014	38	1,500	6,600	4.6	2.7	0.54	0.091	2,000
Jan 2010		0.015	37	1,400	6,000	4.4	2.6	0.49	0.06	2,000
April 2010	0.19		34	1,400	6,200	11	4.9	0.42		2,100
July 2010	0.23		34	1,300	6,200	13	4.9			1,900
Oct 2010	0.64	0.017	34	1,400	5,900	12	4.8	0.43		2,000
Jan 2011	0.21		34	1,300	4,800	7.8	3.3	0.47		
April 2011	0.44	0.012	34	1,400	5,400	7.6	3.5	0.51		1,800

* Nat'l Primary MCL; ** Nat'l Secondary MCL; *** EPA One-day Health Advisory

CUF-93-2R	Parameters									
Date	Aluminum	Arsenic	Boron	Chloride	Dissolved Solids	Iron	Manganese	Molybdenum	Selenium	Sulfate
MCL(mg/l)	0.05**	0.01*	3***	250**	500**	0.3**	0.05**	0.08***	0.02*	250**
Jan 2006	1.9		16	920		9.6	18			1,322
July 2006	0.3		12	930		3.9	15			1,200
Mar 2007	3.2		12	1,100		6.5	16			1,183
July 2007			37	1,000	4,200	4.0	2.2	0.62		1,200
Jan 2008	0.48		10	1,000	4,200	1.9	18		0.022	1,200
July 2008	1.5	0.016	14	1,000	4,500	3.6	18			1,200
Jan 2009	0.35		15	1,100	3,900	2.2	18			
April 2009									0.029	
July 2009	0.25	0.025	14	1,100	4,300	1.3	16			1,300
Oct 2009	0.54	0.011	15	1,100	4,800	2.0	18	0.54	0.030	1,300
Jan 2010	0.12	0.012	13	1,100	3,900	1.3	14			1,400
April 2010	0.21		12	1,100	4,200	1.3	14			1,300
July 2010	0.23		13	1,100	4,700	1.1	12			1,300
Oct 2010	0.64	0.014	16	1,200	4,700	1.5	15			1,400
Jan 2011	0.70		16	1,100	3,900	1.5	14	0.47		1,300
April 2011	0.44		14	1,200	4,300	1.3	13			1,300
July 2011	0.39		14	1,200	4,300	1.4	12		0.027	1,300
Oct 2011	0.48		14	1,200	4,800	1.2	14			1,300
Jan 2012	0.24		14	1,200	4,000	1.4	13			1,300
April 2012										
July 2012										
Oct 2012	0.43		14	1,200	5,100	1.4	11			1,300
Jan 2013		0.058								
April 2013	0.14	0.011	13	1,200	2,800	1.2	13			1,300
July 2013										
Oct 2013	<0.5		13	1,170	4,400	<5	12.9			1,220
Jan 2014										
April 2014										
July 2014										

* Nat'l Primary MCL; ** Nat'l Secondary MCL; *** EPA One-day Health Advisory

CUF-93-3	Parameters								
Date	Aluminum	Arsenic	Boron	Chloride	Dissolved Solids	Iron	Manganese	Molybdenum	Sulfate
MCL (mg/l)	**0.05****	**0.01***	**3*****	**250****	**500****	**0.3****	**0.05****	**0.08*****	**250****
Jan 2004	**2.5**					**3.0**	**0.96**		
Jul 2004	**2.8**		**6.5**		**800**	**6.6**	**1.1**		
Jan 2005	**.15**		**5.6**			**3.0**	**1.1**		
Mar 2005		**0.010**	**23**	**980**		**3.0**	**1.1**	**0.57**	**1,790**
Jan 2006	**0.5**					**2.6**	**0.92**		
Mar 2007						**2.6**	**0.92**		
July 2007	**0.17**				**770**	**2.8**	**0.92**		
Jan 2008	**0.17**				**770**	**2.7**	**0.96**		
July 2008	**0.64**				**780**	**3.4**	**0.87**		
April 2009									
July 2009	**2.5**				**820**	**4.6**	**1.0**		
Oct 2009	**1.1**		**6.2**		**810**	**4.2**	**1.1**		
April 2010	**0.82**		**5.7**		**800**	**3.8**	**1.0**		
July 2010	**2.2**		**5.9**		**830**	**5.1**	**0.94**		
Oct 2010	**4.5**		**5.8**		**800**	**6.1**	**1.1**		
Jan 2011	**0.45**		**6.0**		**770**	**3.4**	**1.1**		
April 2011	**7.6**		**5.8**		**840**	**7.3**	**0.95**		
July 2011			**6.0**		**830**	**3.0**	**1.2**		
Oct 2011			**5.8**		**830**	**3.0**	**1.2**		
Jan 2012					**830**	**3.1**	**1.3**		
April 2012									
July 2010									
Oct 2012	**0.71**		**6.2**		**850**	**3.3**	**1.3**		
Jan 2013		**0.012**							
April 2013			**5.8**		**1700**	**3.0**	**1.6**		
July 2013									
Oct 2013	**<2.5**		**5.5**		**818**	**2.6**	**1.8**		
Jan 2014									
April 2014									
July 2014									

* Nat'l Primary MCL; ** Nat'l Secondary MCL; *** EPA One-day Health Advisory

CUP-93-4	Parameters							
Date	Aluminum	Arsenic	Boron	Chloride	Dissolved Solids	Iron	Manganese	Sulfate
MCL (mg/l)	**0.05****	**0.01***	**3*****	**250****	**500****	**0.3****	**0.05****	**250****
Jan 2004	**4.7**					**2.7**	**0.40**	
Jan 2005	**2.1**					**2.5**	**0.32**	
Mar 2005								
Jan 2006	**0.83**					**0.93**	**0.11**	
July 2006	**2.0**					**2.3**	**0.29**	
Mar 2007	**2.5**					**2.4**	**0.31**	
July 2007	**1.4**				**1,600**	**0.94**	**0.16**	
Jan 2008	**1.3**			**270**	**1,200**	**0.87**	**0.18**	**260**
July 2008	**1.4**			**280**	**1,700**	**2.6**		**290**
Jan 2009	**0.69**			**300**	**1,400**	**0.94**	**0.47**	**350**
April 2009								
July 2009	**1.4**	**0.01**		**350**	**2,100**	**2.6**	**0.72**	**470**
Oct 2009	**1.2**			**360**	**2,300**	**1.8**	**0.26**	**650**
Jan 2010	**0.46**		**4.5**	**390**	**2,400**	**1.0**	**0.32**	**840**
April 2010	**0.26**			**390**	**2,600**	**0.46**	**0.073**	**810**
July 2010	**0.39**			**380**	**2,700**	**0.80**	**0.10**	**750**
Oct 2010	**0.70**		**6.2**	**400**	**2,800**	**0.42**	**0.16**	**900**
Jan 2011	**0.54**		**6.9**	**420**	**2,500**	**0.34**	**0.14**	**970**
April 2011	**0.31**		**6.3**	**420**	**2,500**			**850**
July 2011	**0.44**			**360**	**2,500**	**0.81**	**0.12**	**620**
Oct 2011	**0.34**		**3.8**		**2,500**	**0.54**	**0.19**	**390**
Jan 2012	**1.2**			**440**	**2,800**	**1.4**	**0.51**	**1,100**
April 2012								
July 2010								
Oct 2012	**0.41**		**6.0**	**470**	**2,900**		**0.33**	**1,100**
Jan 2013		**0.034**						
April 2013	**0.20**		**7.2**	**430**	**1,700**		**0.092**	**1100**
July 2013								
Oct 2013	**<2.5**		**8.7**	**455**	**3,000**	**<2.5**	**0.28**	**1240**
Jan 2014								
April 2014								
July 2014								

* Nat'l Primary MCL; ** Nat'l Secondary MCL; *** EPA One-day Health Advisory

An additional indication that coal ash pollutants are leaking into the groundwater is evident when comparing groundwater monitoring test results from TVA's upgradient monitoring station at CUF-WCUP (located upstream along Wells Creek) and CUF-RS to groundwater monitoring test results at the four downgradient wells located along the boundaries of the Coal Ash Complex- CUF-93-1, CUF 93-2R, CUF 93-3, and CUF 93-4. The following data is from TVA's test results provided in its April 2013 Groundwater Monitoring Report, which provides the most recent and complete data available at all groundwater locations for the parameters that saw consistent exceedances from 2004 to 2014. MCL exceedances are denoted in red.

TABLE 2
BASELINE COMPARISON OF GROUNDWATER SAMPLING UPGRADIENT SAMPLING WELLS (WCUP AND CUP-RS) AND FOUR DOWNGRADIENT WELLS WITH MCL LEVELS FROM APRIL 2013

	MCL (mg/l)	CUF WCUP	CUF-RS	CUF-93-1	CUF-93-2R	CUF-93-3	CUF-93-4
Aluminum	**0.05**	BDL	BDL	0.56	0.14	BDL	0.20
Arsenic	**0.01**	BDL	BDL	0.0075	0.011	0.0020	0.0062
Boron	**3**	BDL	BDL	0.48	13	5.8	7.2
Chloride	**250**	9.8	11	490	1,200	62	430
Dissolved Solids	**500**	860	1,400	1,200	2,800	1,700	1,700
Iron	**0.3**	BDL	0.14	1.9	1.2	3.0	0.19
Manganese	**0.04**	BDL	0.034	3.5	13.0	1.6	0.092
Molybdenum	**0.05**	BDL	BDL	0.0087	BDL	0.024	BDL
Selenium	**0.02**	BDL	0.0022	BDL	0.015	0.0027	0.0057
Sulfate	**250**	7.0	57	220	1,300	160	1,100

BDL (Below Detection Limit)

H. Pollutants Leaking Directly to Surface Waters from the Coal Ash Complex

In addition to the unpermitted discharges into groundwater at locations documented and described above, TVA illegally discharges pollutants from the Cumberland Plant coal ash dumps into the Cumberland River despite the fact that the NPDES Permit only allows TVA to discharge waste water from Outfall 001. Conservation Groups have identified various holes in the perimeter dikes from which TVA is discharging coal ash in violation of its Permit. One such hole on the west perimeter dike along the banks of Wells Creek at the Dry Ash Stack location is depicted below. The discharge from this seep was tested and found to contain extremely high levels of contaminants, including aluminum, boron, iron, manganese, and sulfate, as set forth in Table 5 below.

TVA documents, including Annual Inspections performed by TVA personnel, indicate a history of seepage along the banks of Wells Creek near two sections at the toe berm of the ash pond dikes. In 1974, TVA placed a clay blanket on the interior of the ash pond in that vicinity in an attempt to remediate the problem.[30] Seeps have also been identified by TVA's consultants below the west perimeter dike along the banks of Wells Creek at the Dry Ash Stack location.[31] It is unclear whether the seep depicted above is the same seep that TVA's consultant detected.

TVA is authorized by the Permit to discharge pollutants from the Coal Ash Complex only via Outfall 001. TVA is violating the Permit by operating a wastewater treatment facility that leaks polluted and untreated water, rather than discharging only treated wastewater through the permitted outfall. TVA is also violating the Permit by allowing pollutants removed during treatment to escape the treatment facility and flow into the Cumberland River, thereby violating the fundamental purpose of the Permit: to treat wastewater and contain the pollutants removed during treatment in the wastewater facility. All of TVA's ongoing point source discharges of coal ash pollutants are unpermitted discharges in violation of its NPDES Permit and the CWA.

TVA's coal ash facilities are permitted to operate as a wastewater treatment facility, which remove various suspended pollutants through settling and containing them within the ash ponds. Instead, TVA is operating a vast ash pond complex that leaks coal ash contaminants into groundwater continually and through various reported seeps, illegally discharging untreated wastewater and pollutants to Wells Creek, the Cumberland River, and the hydraulically connected groundwater. Results of independent testing of the water from these seeps and elsewhere around the parameter of the impoundment are set forth below.

[30] TVA, Report of Geotechnical Exploration and Slope Stability Evaluation, Ash Pond, Cumberland Fossil Plant, March 2010, at 31.
[31] Stantec, TVA Disposal Facility Assessment Phase 1 Plant Summary, Dry Ash Stack, at 5.

TABLE 4
MCL EXCEEDANCES
INDEPENDENT SURFACE WATER SAMPLING LOCATIONS (April 27, 2015)

	Parameters (mg/l)							
LOCATION	**Aluminum**	**Molybdenum**	**Chloride**	**Dissolved Solids**	**Iron**	**Manganese**	**Boron**	**Sulfate**
MCL (mg/L)	**0.05****	**0.04±**	**3*****	**250****	**0.3****	**0.3****	**0.05****	**250****
Beaver Pond Outfall	**0.074**	**0.063**		**1200**		**3.2**	**4.5**	**610**
2 Upper Quarry Channel	**0.64**		**70**	**820**		**2.5**		**380**
4 Quarry Channel at Mouth	**0.24**		**120**		**8.3**			**480**
Upstream	**0.24**		**3.5**					

TABLE 5
MCL EXCEEDANCES
INDEPENDENT SURFACE WATER SAMPLING LOCATIONS (May 21, 2015)

LOCATION	**Aluminum**	**Chloride**	**Dissolved Solids**	**Iron**	**Manganese**	**Sulfate**
MCL (mg/L)	**0.05****	**3*****	**250****	**0.3****	**0.3****	**250****
2nd Rip-Rap Repair	**0.42**		**290**	**2.1**	**0.57**	**610**
Quarry Channel Discharge	**0.10**	**70**	**850**		**1.2**	**380**

TABLE 6
MCL EXCEEDANCES
INDEPENDENT SURFACE WATER SAMPLING LOCATIONS (June 16, 2015)

LOCATION	Aluminum	Chloride	Dissolved Solids	Iron	Manganese	Boron
MCL (mg/L)	**0.05****	**3*****	**250****	**0.3****	**0.3****	**0.05****
Seep at rip rap		**8.18**				**.139**
Seep at tressel	**.219**	**51.57**			**14.66**	**40.621**
Seep		**8.01**				**.099**
Downstream seep	**.879**	**52.87**		**20.67**	**68.31**	**12.866**
Seep		**7.43**				**.117**
Middle of rip rap		**11.08**		**.640**	**1.44**	**4.315**
lagoon		**12.68**		**.631**		**3.310**
lagoon outfall		**8.00**		**.644**	**.784**	**3.162**
upstream		**5.65**				**.051**
upstream		**6.38**				

I. Toxic Effects of Pollutants

Coal ash is highly toxic. EPA estimates that over one half of all toxins in rivers come from permitted and unpermitted discharges of coal ash. The 2012 TVA commissioned study found that beryllium, cadmium, nickel and zinc existed in the groundwater at levels that "may pose a risk" to fish and aquatic life in the Cumberland River and that this risk will continue into the future. The toxins impact aquatic life in numerous ways, and more importantly, adversely impact human health.

Arsenic is a known carcinogen linked to cancers of the skin, bladder, kidneys, and other organs. It is also a toxic pollutant, 40 C.F.R. § 401.15, and a priority pollutant, 40 C.F.R. Part 423 App'x A. Arsenic is also associated with non-cancer skin and nervous system health effects. Barbara Gottlieb, *et al.*, *Coal Ash: The Toxic Threat to Our Health and Environment*, 2 (Sept. 2010). "According to the Agency for Toxic Substances and Disease Registry (ATSDR), there is some evidence that in childhood, long-term exposure to arsenic may result in lower IQ scores

and exposure to arsenic in the womb and early childhood may increase mortality in young adults." *Id.*

Boron occurs in nature as an essential plant nutrient, and it is used in a variety of products including detergents and cleaning production, and also the production of glass, fiberglass, and ceramics. Ingestion of large amounts of boron through eating or drinking can result in damage to the testes, intestines, liver, kidney and brain. Oral exposure to boron has also led to developmental and reproductive toxicity in multiple species, and can harm developing fetuses. Specific effects include testicular atrophy, reduced sperm count, reduced birth weight, and birth defects. Exposure to large amounts of boron for extended periods of time can eventually result in death. Children living near coal ash wastes sites containing boron and boron compounds are likely to be exposed to higher-than-normal levels through inhaling boron-contaminated dust, and touching and potentially swallowing contaminated soil.[32]

Iron can render water unusable by imparting a rusty color and a metallic taste and causing sedimentation and staining.

Manganese is known to be toxic to the nervous system. Manganese concentrations greater than 50 µg/L render water unusable by discoloring the water, giving it a metallic taste, and causing black staining. Exposure to high levels can affect the nervous system and cause musculoskeletal impairments; very high levels may impair brain development in children.

Chronic exposure to molybdenum through inhalation of dust or ingestion can result in excess fatigue, headaches and joint pains. Some molybdenum compounds have been shown to be toxic to rats. Human toxicity data is unavailable; however, chronic ingestion of more than 10 mg/day of molybdenum can cause diarrhea, slowed growth, low birth weight and infertility, and can affect the lungs, kidneys, and liver.[33]

High concentrations of total dissolved solids can make drinking water unpalatable and can cause scale buildup in pipes, valves, and filters, reducing performance and adding to system maintenance costs.

Selenium is an element that is used by the body in various cellular functions; however, too much selenium can be harmful. Animals exposed to excess levels of selenium can develop a condition called "the blind staggers" with symptoms including depressed appetite, impaired vision, and staggering in circles. Humans are predisposed to similar effects as well as neurological impacts. Short-term oral exposure to high concentrations of selenium may cause

[32] Gottlieb, Barbara, Gilbert, Steven G., Ph.D, and Gollin Evans, Lisa. Coal Ash: The toxic threat to our health and environment. Physicians for Social Responsibility and EarthJustice. 2 (Sept. 2010).
[33] *Id.* at 3.

nausea, vomiting, and diarrhea. Chronic oral exposure to high concentrations of selenium compound can produce a disease called selenosis. The major signs of selenosis are hair loss, nail brittleness, and neurological abnormalities (such as numbness and other odd sensations in the extremities). Selenium exposure also has severe impacts on fish populations. Selenium accumulation can cause developmental abnormalities in fish and amphibians and has caused deaths of entire local fish populations.[34]

Exposure to sulfate, to which infants are especially sensitive, may cause diarrhea.

Concurrent exposure to multiple contaminants may intensify existing effects of individual contaminants, or may give rise to interactions and synergies that create new effects. Where several coal ash contaminants share a common mechanism of toxicity or affect the same bodily organ or organ system, exposure to several contaminants concurrently produces a greater chance of increased risk to health.

II. Legal Background

Section 301(a) of the CWA, 33 U.S.C. § 1311(a), prohibits the discharge of pollutants from a point source to waters of the United States except in compliance with, among other conditions, a National Pollutant Discharge Elimination System ("NPDES") Permit issued pursuant to § 402 of the CWA, 33 U.S.C. § 1342. Each violation of the Permit, and each discharge that is not authorized by the Permit, is a violation of the Clean Water Act.

The CWA defines a "point source" as "*any* discernible, confined, and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, [or] container . . . from which pollutants are or may be discharged." 33 U.S.C. § 1362(14) (emphasis added). Under this broad definition, the discharge of pollutants from mining pits, slurry ponds, sediment basins, and mining leachate collection systems has been held to be point sources. *E.g.*, *United States v. Earth Sciences, Inc.*, 599 F.2d 368, 374 (10th Cir. 1979) ("[W]hether from a fissure in the dirt berm or overflow of a wall, the escape of liquid from the confined system is from a point source."); *Consolidation Coal Co. v. Costle*, 604 F.2d 239, 249-50 (4th Cir. 1979) (finding regulation of "discharges from coal preparation plant associated areas," which in turn included slurry ponds, drainage ponds, and coal refuse piles, was within CWA definition of point source), *rev'd on other grounds*, 449 U.S. 64 (1980).

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

[34] *Id.* at 4.

F.3d 159, 168 (4th Cir. 2010) (Permits are required for discharges from point sources that "merely convey the pollutants to navigable waters"); *United States v. Lucas*, 516 F.3d 316, 332-33 (5th Cir. 2008) ("[B]y the language of the [CWA] the septic systems…are point sources that discharged pollutants into waters of the United States"). Thus, ditches and channels that convey pollutants but are themselves not the original source constitute point sources. This includes unintentional conveyance of pollutants, for example, through natural-formed fissures, gullies, or ditches. *See Sierra Club v. Abston Constr. Co.*, 620 F.2d 41, 45 (5th Cir. 1980) (discharge from mining pits and spoil piles through naturally formed ditches caused by gravity flow at a coal mining site are point sources); *Earth Sciences*, 599 F.2d 368 (holding unintentional discharges of pollutants from a mine system designed to catch runoff from gold leaching site during periods of excess melting met the statutory definition of a point source); *N.C. Shellfish Growers Ass'n v. Holly Ridge Assocs., LLC*, 278 F. Supp. 2d 654, 679 (E.D.N.C. 2003) ("Notwithstanding that it may result from such natural phenomena as rainfall and gravity, the surface run-off of contaminated waters, once channeled or collected, constitutes discharge by a point source."); *O'Leary v. Moyer's Landfill, Inc.*, 523 F. Supp. 642, 655 (E.D. Pa. 1981) (intent of the discharging entity is irrelevant); *see also Dague v. City of Burlington*, 935 F.2d 1343, 1354-55 (2d. Cir. 1991) (definition of point source to be interpreted broadly), *rev'd in part on other grounds*, 505 U.S. 557 (1992).

Tennessee defines "waters" as "any and all water, public or private, on or beneath the surface of the ground, that are contained within, flow through, or border upon Tennessee or any portion thereof" except bodies of water contained within the limits of private property in single ownership which do not effect a junction with any natural surface or underground waters. Tenn. Code Ann. § 69-3-103(44). Therefore, the groundwater beneath and around the Cumberland Plant is water of the State of Tennessee. Likewise, the Cumberland River and Wells Creek are waters of the State of Tennessee, in addition to being waters of the United States.

Unless authorized by an NPDES permit, the CWA prohibits "*any* addition of any pollutant to navigable waters from any point source." 33 U.S.C. § 1362(12) (emphasis added). In light of this, EPA has exercised its CWA authority to regulate the leaching of contaminants to groundwater that is hydrologically connected to jurisdiction surface water – not to protect groundwater quality per se, but to protect jurisdictional surface waters from discharges through groundwater. *See* Part III, *infra*.

Each separate violation of the Permit is a violation of the Clean Water Act. Each unpermitted discharge is a separate violation of the Clean Water Act. For each violation, every day of violation constitutes a separate violation. Each separate violation of the Clean Water Act subjects the violator to a penalty of up to $37,500 per day for all violations occurring after January 12, 2009, pursuant to Sections 309(d) and 505(a) of the Clean Water Act. 33 U.S.C. §

1319(d) (Availability of Civil Monetary Penalties); 40 C.F.R. § 19.4 (Adjustment of Civil Monetary Penalties for Inflation).

III. Description of Violations

TVA has violated, and continues to violate, the Clean Water Act and the Permit by:

A. Unauthorized Point Source Discharges to Waters of the United States: Discharges from Berms

TVA is violating the CWA by discharging pollutants into navigable surface waters of the United States from unpermitted point sources at the Cumberland Plant. As explained above, any point source discharge that is not authorized by a NPDES Permit is a violation of the CWA. 33 U.S.C. § 1311(a). The Permit authorizes the following discharges only: ash transport water, treated chemical and nonchemical metal cleaning wastewaters, coal pile runoff, low volume wastes, and storm water runoff through Outfall 001, once through condenser cooling water, miscellaneous equipment cooling and lubricating water, and storm water through Outfall 002, intake screen backwash water through Outfall 004, and chemical and nonchemical metal cleaning wastewaters through Outfall 007 to Cumberland River at mile 103.

Yet additional, unpermitted point source discharges from the coal ash ponds at the Cumberland Plant into the Cumberland River – navigable waters of the United States – are occurring from locations other than these permitted outfalls. TVA's own reports to TDEC identify at least eight seeps it is monitoring for discharges from the ash ponds.

These flows constitute unpermitted point source discharges of pollutants from the coal ash ponds to the Cumberland River other than through Outfall 001. None of these continuing discharges are authorized by the Cumberland Plant's NPDES Permit. TVA has violated Section 301(a) of the Clean Water Act by discharging pollutants to waters of the United States without an NPDES permit on each and every day from at least January 13, 2011 to the present, and these violations are continuing.

Despite these unpermitted discharges, TDEC has taken no action to compel TVA to cease these illegal discharges. Because these discharges into the navigable waters of the United States are continuous and ongoing, they will continue after the date of this letter and the subsequent filing of the lawsuit.

B. Illegal Discharges of Removed Substances to Waters of Tennessee and the United States

TVA is violating the CWA by failing to comply with an express condition in the Permit barring pollutants removed through process in the Coal Ash Complex from entering Tennessee waters and navigable waters of the United States. The Permit requires that:

> Sludge or any other material removed by any treatment works must be disposed of in a manner, which *prevents its entrance into or pollution of any surface or subsurface waters.* Additionally, the disposal of such sludge or other material must be in compliance with the Tennessee Solid Waste Disposal Act, TCA 68-31-101 et seq. and the Tennessee Hazardous Waste Management Act, TCA 68-46-101 et seq.

Permit Part 1.A (emphasis added). The active Ash Pond receives and purports to treat discharge bottom ash sluice water (including bottom ash slurry and fireside washwater), flue gas desulfurization dewatering wastes, coal yard runoff wastes (including raw service cooling water, absorber building raw cooling water, coal yard basin runoff, filter plant sump, barge unloader sump wastewater, and precipitation and car wash runoff), treated chemical and non-chemical metal cleaning wastes, yard drainage, fly ash sump discharge wastewater, storm water runoff, and other waste streams from the Cumberland Plant. These waste streams are treated only by allowing settling in the active Ash Pond. "Pollutants" that have been removed in the course of this settling treatment are stored in relevant portions of the Cumberland Plant's Coal Ash Complex. Subsection (c) therefore prohibits TVA from allowing these pollutants to enter any surface or subsurface waters. Subsurface waters (groundwater) are included in the Tennessee Water Quality Control Act's definition of waters of the state. Tenn. Code Ann. § 69-3-103(44). Moreover, there is groundwater beneath the Cumberland Plant that is hydrologically connected to the Cumberland River, a navigable water of the United States.

Pollutants, solids, and sludges from TVA's Cumberland Plant Coal Ash Complex have for years been entering surface and subsurface waters that are state waters and waters of the United States and continue to do so. Most significantly, pollutants from TVA's Coal Ash Complex have been found in groundwater under, at, and around the Cumberland Plant. Data from TVA's own nearby monitoring wells show elevated levels of pollutants in the groundwater surrounding the Coal Ash Complex, including levels that are frequently in excess of National Primary and Secondary MCLs, and also Tennessee groundwater standards, as shown in Table 1. Although exceedances of groundwater standards are not necessary to show a violation of the removed substances provision, this evidence indicates that pollutants from TVA's wastewater treatment system are entering the groundwater, in violation of the Permit and, in turn, the CWA.

In addition to the unpermitted discharges whose location is described above, TVA has violated Part I.A item (c) (page 6) of its NPDES permit (quoted above), and thus violated the CWA, by discharging pollutants, including coal ash constituents such as aluminum, arsenic, boron, chloride, iron, manganese, molybdenum, and selenium, from throughout its Coal Ash Complex into the groundwater at the Cumberland Plant and from there into Tennessee waters and navigable waters of the United States. TVA's unauthorized discharges are prohibited by the Permit and the CWA.

The active Ash Pond is permitted as a wastewater treatment system; its purpose is to remove solids, sludges, and pollutants prior to discharge through Outfall 001 to the Cumberland River. Instead, in violation of an express provision of its Permit, TVA has been and is allowing the unpermitted and uncontrolled entrance of solids, sludges, and pollutants–including aluminum, arsenic, boron, chloride, iron, manganese, molybdenum, selenium, and sulfate–into the waters of the State and navigable waters of the United States. TVA's actions are a straightforward violation of Part I.A item (c) (page 6) of the Permit.

Under the CWA, "[a]ny Permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action." 40 C.F.R. § 122.41(a); 33 U.S.C. §§ 1365(f)(6), 1342(a); Permit No. TN0005789 (Cumberland Permit), Part II.C.1 ("Any Permit noncompliance constitutes a violation of applicable State and Federal laws and is grounds for enforcement action . . . ."); *Friends of the Earth, Inc. v. Laidlaw Environmental Services (TOC), Inc.*, 528 U.S. 167, 172 (2000) ("Noncompliance with a Permit constitutes violation of the [CWA]."); *Friends of the Earth, Inc. v. Gaston Copper Recycling Corp.*, 204 F.3d 149,152 (4th Cir. 2000) (confirming citizens are "authorized to bring suit against any NPDES Permit holder who has allegedly violated its Permit."). This is true even for Permit conditions that are more stringent than federal CWA requirements. *See* 33 U.S.C. § 1370 (allowing states to adopt and enforce more stringent state limitations in CWA Permits than the federal government); 33 U.S.C. § 1311(b)(1)(B) (stating that more stringent state limitations in furtherance of the objectives of the CWA include "those necessary to meet water quality standards"); *Nw. Envtl. Advocates v. City of Portland*, 56 F.3d 979, 986 (9th Cir. 1995) ("The plain language of CWA § 505 authorizes citizens to enforce all Permit conditions"); *Stephens v. Koch Foods, LLC*, 667 F. Supp. 2d 768, 783 (E.D. Tenn. 2009) ("[T]he plaintiffs have standing to sue based upon allegations of specific NPDES Permit violations."); *Culbertson v. Coats Am.*, 913 F. Supp. 1572, 1581 (N.D. Ga. 1995) (holding that "[t]he CWA authorizes citizen suits for the enforcement of all conditions of NPDES Permits").

Accordingly, TVA's discharges of removed solids, sludges, and pollutants to U.S. and Tennessee waters—including the Cumberland River, Wells Creek, and groundwater of Tennessee—constitute violations of the Permit and thus of the CWA, making TVA subject to citizen suit enforcement. TVA has violated Part I.A Permit Part I.A item (page 4) of the Permit by discharging pollutants from identified seeps in the dikes and berms surrounding the Coal Ash

Complex, and throughout its unlined pond system to groundwater that is hydrologically connected to navigable waters of the United States on each and every day from at least January 13, 2011 to the present, including but not limited to the specific dates identified in Tables 1 and 2. Because these permit violations and discharges from the unlined ash ponds to the waters of the State and to navigable waters of the United States are continuous and ongoing, they will continue after the date of this letter and the subsequent filing of a lawsuit.

C. Illegal Discharges Detrimental to Humans, Livestock, Wildlife, Plant Life, or Fish and Aquatic Life in the Receiving Stream

TVA is violating the CWA by failing to comply with an express condition in the Permit that prohibits discharges that will be hazardous or otherwise detrimental to fish or aquatic life in the receiving stream. Part I.A (page 4) of the Permit requires that:

> The wastewater discharge *shall not contain pollutants in quantities that will be hazardous or otherwise detrimental to humans, livestock, wildlife, plant life, or fish and aquatic life in the receiving stream.*

The discharges through the contaminated groundwater underneath the Coal Ash Complex are detrimental to fish and aquatic life in the discharge zone of the Cumberland River. TVA's own groundwater sampling data indicates that groundwater beneath the Coal Ash Complex contains metals that can be harmful to humans, livestock, wildlife, plant life, or fish and aquatic life in the Cumberland River, including aluminum, arensic, boron, chloride, iron, manganese, molybdenum, selenium, and sulfate. This discharge, then, violates the Permit provision cited above, that the discharge "shall not contain pollutants in quantities that will be hazardous or otherwise detrimental to humans, livestock, wildlife, plant life, or fish and aquatic life in the receiving stream." Due to the complex geology underlying the Cumberland Plant site, the movement of any leachate that may enter solution cavities in the bedrock would be difficult to determine because of the complex fracture network. Even TVA makes the assumption that the groundwater under the Cumberland Plant flows towards Wells Creek and the Cumberland River. As a result, the contaminants from the Cumberland Plant discharged through the groundwater are likely navigating to the Cumberland River, creating a risk of harm both in and around the Cumberland Plant site and downstream to "humans, livestock, wildlife, plant life, or fish and aquatic life in the receiving stream."

Accordingly, TVA's discharges of pollutants to U.S. and Tennessee waters—including the Cumberland River, Wells Creek and groundwater of Tennessee—constitute a violation of its Permit and thus of the Clean Water Act, making TVA subject to citizen suit enforcement. TVA has violated Part I.A, Subsection (b) of its NPDES Permit by discharging pollutants in amounts detrimental to humans, livestock, wildlife, plant life, or fish and aquatic life in the receiving stream on each and every day from at least January 13, 2011 to the present. Because these

discharges from the unlined ash pond to the waters of the State and to navigable waters of the United States are continuous and ongoing, they will continue after the date of this letter and the subsequent filing of a lawsuit.

D. Improper Operation of a Wastewater Treatment Facility

TVA's Permit authorizes it to operate its Coal Ash Complex as a wastewater treatment facility. The Permit authorizes treatment of polluted wastewater through a system of settling, which is designed to remove pollutants from the water and discharge only the top layer of water, from which pollutants in solid form have settled out. That cleaner top layer of water is authorized to be discharged into the Cumberland River through Outfall 001. The wastewater facility is permitted to remove and retain the pollutants, and to keep them out of the Cumberland River and other waters.

Instead, in violation of the Permit, TVA is operating a facility that discharges polluted wastewater through unpermitted flows through the dikes and through groundwater into the Cumberland River. Further, as TVA operates this coal ash facility, it does not contain and retain the pollutants, but instead discharges them through groundwater and leaks and flows into the Cumberland River and other waters. This defective and improper operation of the TVA coal ash facilities violates the fundamental design, terms, conditions, and purpose of the Permit.

In particular, TVA's operation of the Cumberland Plant Coal Ash Complex violates Part II A. of the Permit which provides:

4. Proper Operation and Maintenance

    a. The permittee shall at all times properly operate and maintain all facilities and systems (and related appurtenances) for collection and treatment which are installed or used by the permittee to achieve compliance with the terms and conditions of the permit.

TVA's failure to properly operate the treatment system and its discharge of polluted wastewater through unpermitted flows through the dikes and groundwater into the Cumberland River is a violation of this Permit provision, as well as the purpose and scope of the Permit, and therefore a violation of the Clean Water Act. TVA has violated Part II.A.4.a. of the Permit on each and every day from at least January 13, 2011 to the present. This violation is ongoing and likely to continue.

E. Prohibited Overflows

TVA is violating the provision of its Permit that prohibits overflows. Part II.C.3 is entitled "Sanitary Sewer Overflows" and provides, in pertinent part:

> a. "***Sanitary Sewer Overflow"*** means the discharge to land or water of wastes from any portion of the collection, transmission system other than Permitted outfalls.
>
> b. Sanitary Sewer Overflows are prohibited.

TVA's Permit authorizes the discharge of treated water from the ash ponds via Outfall 001 only. TVA's discharge of polluted wastewater either through seeps in the earthen dams or through the groundwater are illegal overflows. These overflows violate the express terms of the Permit and violate the Clean Water act. TVA has violated the Permit's prohibition on overflows on each and every day since at least January 13, 2011. Such prohibited overflows are ongoing and likely to continue.

F. Improper Use of a Water of the United States as a Wastewater Treatment Facility

Wells Creek—located to the west and south of the Cumberland Plant—is a water of the United States. 40 C.F.R. § 122.2 (definition of "Waters of the United States" at (a) to include waters "currently used" and "used in the past" and (e)). An "impoundment[] of waters otherwise defined as waters of the United States," it is itself a water of the United States. 40 C.F.R. § 122.2 ("waters of the United States" at (d)).

The current Wells Creek configuration adjacent to the Cumberland Plant is not in its original state. During construction of the Cumberland Plant, TVA relocated Wells Creek to construct the original ash pond disposal area. Maps from the 1930's confirm this hydrological shift. Historical topographic maps indicate open water in the location of the current Coal Ash Complex, connecting the coal ash site with the Cumberland River. Earlier maps label at least one stream: Wells Creek. The earthen dams that now offer a degree of separation between the Coal Ash Complex and Wells Creek/Cumberland River appear to have been constructed sometime after the plant began operating.

Because Wells Creek is a water of the State and United States, it is not a component of a wastewater treatment facility. The Fourth Circuit has affirmed that waters of the United States remain waters of the United States even if they are impounded for waste treatment. *West Virginia Coal Ass'n v. Reilly*, 932 F.2d 964 (4th Cir. 1991), *aff'g* 728 F. Supp.1276, 1290 (S.D. W.Va. 1989) (waste treatment exception to definition of waters of the United States does not apply to treatment ponds constructed in United States waters).

Wells Creek is a water of the State and a water of the United States subject to the full protections of the CWA. Further, the permit states that its issuance does not authorize "any infringement of Federal, State, or local laws or regulations." Permit Part I.A, Subsection 6 ("Property Rights").

The Cumberland NPDES Permit authorizes only one point source discharge connected to the Ash Ponds and Gypsum Disposal areas into waters of the United States: the discharge from Outfall 001 into the Cumberland River consisting of ash transport water, chemical and nonchemical metal cleaning wastes, coal pile runoff, low volume wastes and storm water runoff.

Accordingly, TVA's point source discharges resulting from seeps and groundwater congruence from its Coal Ash Complex into Wells Creek/Cumberland River, consisting of ash sluice water, coal pile runoff, low volume wastes, and other pollutants are not authorized under the CWA. These unauthorized discharges contain toxic pollutants including arsenic, selenium, mercury, antimony, cadmium, chromium, lead, and zinc; as well as other pollutants including sulfate, copper, ammonia, nitrogen, phosphorus, iron, manganese, total dissolved solids, and total suspended solids.

The Cumberland NPDES Permit effectively treats the discharges of these waste streams from the Coal Ash Complex into Wells Creek as internal outfalls within a waste treatment system. It contains no limits for toxic pollutants such as selenium and arsenic.

Because the Permit does not protect water quality, and instead treats Wells Creek as an internal component of a wastewater treatment system, it does not and cannot validly authorize TVA's highly contaminated toxic discharges to this water of the United States. Where the permitting authority "has failed to fulfill its duties under the Act by issuing NPDES permits that do not comply with the Clean Water Act and its implementing regulations," the permit is not valid. *Miccosukee Tribe of Indians of Fla. v. U.S.*, 706 F. Supp. 2d 1296, 1320 (S.D. Fla. 2010), *aff'd* 498 Fed. App'x 899 (11th Cir. 2012) (per curiam).

It is beyond dispute that an NPDES permit cannot deliberately fail to protect water quality by erroneously declaring a water of the United States and a water of Tennessee to be a waste treatment facility. Such an absurd result would directly contradict the CWA's objective of restoring and maintaining the chemical, physical, and biological integrity of the Nation's waters and the NPDES permitting program's goal of eliminating discharges of pollutants into navigable waters. 33 U.S.C. § 1251(a). *See also* Pub. L. No. 80-845, 62 Stat. 1155 (1948) (Federal Water Pollution Control Act); Pub. L. 89-234, 79 Stat. 903 (1965) (Water Quality Act of 1965); Pub. L. 92-500, 86 Stat. 816 (1972) (Clean Water Act); 33 U.S.C. § 1342(a)(4) (Permits issued under 1899 Rivers and Harbors act deemed Permits under 1972 Act and vice versa); 33 U.S.C. § 407 (1899 Act requiring Permit for certain activities).

These discharges into Wells Creek are ongoing and will continue after the date of this letter and the subsequent filing of a lawsuit.

G. Unauthorized Discharges Through Close Hydrologic Flow into Waters of the United States

TVA is violating the CWA by discharging pollutants through groundwater into navigable waters of the United States via close hydrologic connections. As discussed above, the CWA prohibits "any addition of any pollutant to navigable waters from any point source." 33 U.S.C. § 1362(12)(A). "[T]he touchstone for finding a point source is the ability to identify a discrete facility from which pollutants have escaped." *Wash. Wilderness Coal. V. Hecla Mining Co.*, 870 F. Supp. 983, 987 (E.D. Wash. 1994).

Because there is a direct hydrologic connection between the Coal Ash Complex and the Cumberland River, TVA's discharges from the Coal Ash Complex via the groundwater to the river are point source discharges that violate the CWA. This is not just slow pore-space seepage of contaminants, but also conduit flow through unpredictable and unknown fractures in the geography that can provide rapid connectivity with little to no pollutant attenuation. As with the groundwater contamination described in Part II, the pollutants include arsenic, aluminum, boron, iron, manganese, molybdenum, sulfates, chlorides, and total dissolved solids, among others.

EPA has stated repeatedly that the CWA applies to such hydrologically-connected groundwater discharges. 66 Fed. Reg. 2960, 3015 (Jan. 12, 2001) ("EPA is restating that the Agency interprets the Clean Water Act to apply to discharges of pollutants from a point source via ground water that has a direct hydrologic connection to surface water."); a*ccord* 56 Fed. Reg. 64876-01, 64892 (Dec. 12, 1991) ("[T]he Act requires NPDES Permits for discharges to groundwater where there is a direct hydrological connection between groundwaters and surface waters."); 55 Fed. Reg. 47990, 47997 (Nov. 16, 1990) (announcing stormwater runoff rules and explaining that discharges to groundwater are covered by the rule when there is a "hydrological connection between the groundwater and a nearby surface water body.").

In a 1998 site report, EPA stated that "[a] documented ground water hydrological connection between a source and surface water discharge may be viewed as a conduit; or a discernible, confined, and discrete conveyance," *i.e.*, a point source. U.S. EPA, Report on Hydrological connection Associated with Molycorp Mining Activity, Questa, New Mexico, at 3 (Feb. 13, 1998). As a result, EPA has identified and regulated as point sources impoundments leaching into groundwater that discharge directly to a neighboring river, exactly as with the Cumberland Plant.

In its response to a comment questioning EPA's jurisdiction to regulate such discharges, EPA stated, "[t]hat a point source may transmit the pollutants to those surface waters through directly connected groundwater *does not deprive EPA of jurisdiction over that addition . . . to protect jurisdictional surface waters from discharges through groundwater*, not to protect groundwater quality per se." U.S. EPA, Response to Comments on the Proposed National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges from Concentrated Animal Feeding Operations (CAFOs) in New Mexico (NMG010000) (emphasis added).

In its fact sheet for another NPDES permit, EPA explained, "[i]n most surface waters flow is sustained throughout much of the year by groundwater inflow. As a result, pollutants which may leak from containment structures . . . to the groundwater will typically move toward nearby surface waters where they will be discharged and [a]ffect water quality in the receiving waters." U.S. EPA NPDES Permit # LA0068420 Statement of Basis. As a result, EPA reiterated its authority to regulate such groundwater discharges "[t]o *protect surface water quality* from the deleterious effects of these discharges." *Id*. (emphasis added).

Moreover, because the CWA prohibits "*any* addition of any pollutant to navigable waters from any point source," 33 U.S.C. § 1362(12) (emphasis added), EPA has exercised its CWA authority to regulate the leaching of contaminants to hydrologically-connected groundwater even where the receiving surface water did not exceed applicable surface water quality standards ("WQS") and insufficient information existed to document that direct discharges to those surface waters exceeded the applicable WQS. *See* U.S. EPA, Report on Hydrological Connection Associated with Molycorp Mining Activity, *supra*, at 3; *see also Committee to Save Mokelumne River v. East Bay Mun. Utility Dist.*, 13 F.3d 305, 309 (9th Cir. 1993) (CWA "does not impose liability only where a point source discharge creates a net increase in the amount of pollution.").

EPA's interpretation of the scope of the CWA is entitled to deference. *Chevron U.S.A. Inc. v. Natural Res. Def. Council*, 467 U.S. 837 (1984); *U.S. v. Mead*, 533 U.S. 218, 226-28 (2001); *accord U.S. v. W.R. Grace & Co.*, 429 F.3d 1224, 1237 (9th Cir. 2005).

In addition to EPA, "[t]he majority of courts have held that groundwaters that are hydrologically connected to surface waters are regulated waters of the United States, and that unpermitted discharges into such groundwaters are prohibited under section 1311." *Friends of Santa Fe County v. LAC Minerals, Inc.*, 892 F. Supp. 1333, 1358 (D.N.M. 1995). *See, e.g., N. Cal. River Watch v. City of Healdsburg*, 496 F.3d 993 (9th Cir. 2007) (finding CWA coverage from hydrologic connection), *aff'g* No. C01-04686WHA, 2004 WL 201502 (N.D. Cal. Jan. 23, 2004), *cert. denied*, 552 U.S. 1180 (2008); *Quivira Mining Co. v. U.S. EPA*, 765 F.2d 126, 130 (10th Cir. 1985) (finding CWA coverage where discharges ultimately affected navigable-in-fact streams via underground flows); *U.S. Steel Corp. v. Train*, 556 F.2d 822, 852 (7th Cir. 1977) (CWA "authorizes EPA to regulate the disposal of pollutants into deep wells, at least when the

regulation is undertaken in conjunction with limitations on the permittee's discharges into surface waters."); *Hawai'i Wildlife Fund v. County of Maui*, Civ. No. 12-00198 SOM/BMK, 2014 WL 2451565, *18 (D. Haw. May 30, 2014) (discharge into injection wells of pollutants which migrate through groundwater to the ocean violates the CWA); *Raritan Baykeeper, Inc. v. NL Indus., Inc.*, No. 09-4117, 2013 WL 103880, *15 (D.N.J. Jan. 8, 2013) (plaintiffs adequately alleged groundwater was a point source); *Greater Yellowstone Coal. v. Larson*, 641 F. Supp. 2d 1120, 1138 (D. Idaho 2009) ("there is little dispute that if the ground water is hydrologically connected to surfacewater, it can be subject to" the CWA); *Nw. Envtl. Def. Ctr. v. Grabhorn, Inc.*, No. CV-08-548-ST, 2009 WL 3672895, *11 (D. Or. Oct. 30, 2009) ("In light of the EPA's regulatory pronouncements, this court concludes that . . . the CWA covers discharges to navigable surface waters via hydrologically connected groundwater."); *Hernandez v. Esso Std. Oil Co. (Puerto Rico)*, 599 F. Supp. 2d 175, 181 (D.P.R. 2009) ("the CWA extends federal jurisdiction over groundwater that is hydrologically connected to surface waters that are themselves waters of the United States"); *Coldani v. Hamm*, No. Civ. S-07-660 RRB EFB, 2007 WL 2345016, *7 (E.D. Cal. Aug. 16, 2007) (a claim of pollution of groundwater hydrologically connected to surface waters that constitute navigable waters falls within the purview of the CWA); *Northern California Riverwatch v. Mercer Fraser Co.*, No. C-04-4620 SC, 2005 WL 2122052, *2 (N.D. Cal. Sept. 1, 2005) ("the regulations of the CWA do encompass the discharge of pollutants from wastewater basins to navigable waters via connecting groundwaters"); *Idaho Rural Council v. Bosma*, 143 F. Supp. 2d 1169, 1180 (D. Idaho 2001) ("the CWA extends federal jurisdiction over groundwater that is hydrologically connected to surface waters that are themselves waters of the United States"); *Mutual Life Ins. Co. v. Mobil Corp.*, No. Civ. A. 96-CV1781, 1998 WL 160820, *3 (N.D.N.Y. Mar. 31, 1998) (allegation of "a hydrological connection between the contaminated groundwater and navigable waters" was sufficient to state a claim); *Williams Pipe Line Co. v. Bayer Corp.*, 964 F. Supp. 1300, 1319-20 (S.D. Iowa 1997) (where groundwater flows toward surface waters, there is "more than the mere possibility that pollutants discharged into groundwater will enter 'waters of the United States,'" and discharge of petroleum into this hydrologically-connected groundwater violates the CWA); *Wash. Wilderness Coal. v. Hecla Mining Co.*, 870 F. Supp. 983, 990 (E.D. Wash. 1994) ("since the goal of the CWA is to protect the quality of surface waters, any pollutant which enters such waters, whether directly or through groundwater, is subject to regulation" under the CWA); *Sierra Club v. Colo. Ref. Co.*, 838 F. Supp. 1428, 1434 (D. Colo. 1993) ("discharge of any pollutant into 'navigable waters' includes such discharge which reaches 'navigable waters' through groundwater"); *McClellan Ecological Seepage Situation (MESS) v. Weinberger*, 707 F. Supp. 1182, 1196 (E.D. Cal. 1988) (groundwater that is "naturally connected to surface waters that constitute 'navigable waters' under the Act" is covered by CWA), *vacated on other grounds*, 47 F.3d 325 (9th Cir. 1995).

The United States District Court for the Middle District of Tennessee has embraced the logic of these decisions, stating that it "elects to follow those courts holding groundwater is

subject to the CWA provided an impact on federal waters." *Association Concerned Over Resources and Nature, Inc. v. Tennessee Aluminum Processors, Inc.*, No. 1:10-00084, 2011 WL 1357690, *17 (M.D. Tenn. Apr. 11, 2011). The reasoning behind these decisions is straightforward:

> Congress has explicitly stated that the objective of the CWA "is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." Therefore, *it would hardly make sense for the CWA to encompass a polluter who discharges pollutants via a pipe running from the factory directly to the riverbank, but not a polluter who dumps the same pollutants into a man-made settling basin some distance short of the river and then allows the pollutants to seep into the river via the groundwater*.

N. Cal. Riverwatch, 2005 WL 2122052, at *2 (internal citation omitted) (emphasis added). That is precisely the situation at the Gallatin Plant, and accordingly the CWA applies to TVA's unpermitted discharges from the Coal Ash Ponds that discharge contaminated groundwater into the Cumberland River.

TVA has violated the Permit on each and every day from at least January 13, 2011 to the present by these unpermitted discharges. Because these hydrologically connected discharges from the Coal Ash Complex to navigable waters of the United States are continuous and ongoing, they will continue after the date of this letter and the subsequent filing of a lawsuit.

IV. Persons Responsible for Violations

The Cumberland Plant is owned and operated by the Tennessee Valley Authority, Inc., a federally owned corporation. TVA is responsible for all violations at the Gallatin Plant.

V. Person Giving Notice

The person giving notice is the Sierra Club, a member-based organization which may be contacted through the Southern Environmental Law Center. The name, address, and phone number of the persons giving notice are:

Zachary M. Fabish
Staff Attorney
50 F Street, NW - 8th Floor
Washington, DC 20001
(202) 675-7917
(202) 547-6009 (fax)
zachary.fabish@sierraclub.org

VI. Conclusion

The Conservation Groups believe that a negotiated settlement of these violations, codified through a court-approved consent decree, would be preferable to protracted litigation. However, if we are unable to reach an enforceable settlement agreement, the Conservation Groups are prepared to file suit in the United States District Court for the Middle District of Tennessee pursuant to § 505(a) of the CWA, 33 U.S.C. § 1365(a)(1), after sixty 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.

If you have any questions concerning this letter or the described violations, or if you believe this notice is incorrect in any respect, please contact the undersigned counsel, the Southern Environmental Law Center, at (615) 921-9470. During the notice period, we are available to discuss this matter with you, but suggest if you desire to institute negotiations in lieu of a civil action that you do so immediately as we do not intend to delay prosecution of this suit once the notice period has expired. Please be advised that the failure to remedy any of the violations set forth in this letter can result in a court order enjoining further violations and imposing civil penalties of $37,500 per violation, per day, for each violation of the CWA.

Sincerely,

_____

Delta Anne Davis, Managing Attorney
Elizabeth A. Alexander, Senior Attorney
Anne E. Passino, Staff Attorney
Southern Environmental Law Center
2 Victory Avenue, Suite 500
Nashville, TN 37213
615-921-9470
adavis@selctn.org
balexander@selctn.org
apassino@selctn.org