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December 1, 2015

VIA EMAIL AND U.S. MAIL

Virginia Department of Environmental Quality
c/o Beverley Carver
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Re: Initial Comments on Draft VPDES Permit No. VA0004138, Bremo Power Station

Dear Ms. Carver,

We write to submit initial comments and request additional information regarding the Draft Virginia Pollution Discharge Elimination System ("VPDES") Permit for the Bremo Power Station. The Southern Environmental Law Center submits these comments on behalf of itself and the James River Association. Please note that we will be submitting additional, more detailed comments on or before the December 14, 2015 deadline. However, given the speed at which the Virginia Department of Environmental Quality ("VDEQ") is moving the permit process, and VDEQ's denial thus far of our requests to extend the comment deadline, we believe that it is important to submit initial comments for your early consideration. These include substantive and process-related comments.

As an initial matter, we wish to thank you and your colleagues for providing information to help us better understand the permit, and for meeting with us on Thursday, November 19. Based on our review thus far, it is clear that the draft permit fails to comply with the applicable statutory and regulatory requirements of the federal Clean Water Act and implementing regulations. We therefore offer the following initial comments.

1. The Draft Permit Fact Sheet is Incomplete in Violation of 9VAC25-31-280.

The Draft Permit Fact Sheet is missing important information that is needed to provide for review of the permit. The Virginia Administrative Code provides that fact sheets must specify "the type and quantity of wastes, fluids, or pollutants which are proposed to be or are being treated, stored, disposed of, injected, emitted, or discharged." 9VAC25-31-280(B)(2). The Bremo Fact Sheet does not contain information on the quantity of wastes that are stored at the Site, the actual

rate at which the pollutants will be discharged to the James River, or the time period over which such discharges are expected to occur.

As we discussed at the November 19 meeting, the Fact Sheet does not contain information respecting the overall volume of the water to be discharged at the proposed concentrations provided for on Page 9 of the Draft Permit. VDEQ staff conceded during our meeting that the Fact Sheet does not specify the overall volume of water expected to be released through the dewatering activities, nor does VDEQ even appear to have this information. The public cannot formulate adequate comments and propose appropriate revisions to the Draft Permit without an understanding of the volume of the stored wastewaters and the total expected volume of the discharges at issue. We therefore ask that VDEQ reissue or supplement the Fact Sheet to provide all of the required information, and that VDEQ thereafter extend the comment period to allow the public, at minimum, an additional 30 day review period with the benefit of this required information.

2. VDEQ Failed to Apply Technology-Based Effluent Limitations in Violation of the Clean Water Act and Implementing Regulations.

In the absence of EPA-promulgated effluent limitation guidelines, VDEQ must use best professional judgment to set technology standards for the coal ash discharges from the Bremo Plant based on the best available technology economically achievable ("BAT"). *See* 33 U.S.C. § 1311(a)(1)(B); 40 C.F.R. § 125.3; 9VAC25-870-460.A. The Clean Water Act provides that "such effluent limitations shall require the *elimination of discharges of all pollutants* if the Administrator finds . . . that such elimination is technologically and economically achievable." 33 U.S.C. § 1311(b)(2)(A) (emphasis added). EPA regulations further provide that "[t]echnology-based effluent limitations shall be established under this subpart for solids, sludges, filter backwash, and other pollutants removed in the course of treatment or control of wastewaters in the same manner as for other pollutants." 40 C.F.R. § 125.3(g). In these circumstances, best professional judgment in determining BAT "thus take[s] the place of uniform national guidelines, but the technology-based standard remains the same." *Texas Oil § Gas Assn. v. EPA*, 161 F.3d 923, 928-29 (5th Cir. 1998); *see also, Northern Cheyenne Tribe v. Montana Dept. of Environmental Quality*, 356 Mont. 296, 303 (Mont. 2010).

EPA Region 4 recently explained the requirement to apply technology standards on a case-by-case basis to similar discharges in North Carolina. During our November 19 meeting, we provided VDEQ staff copies of a September 16, 2014 letter from Mark J. Nuhfer, Chief, Municipal and Industrial NPDES Section, EPA Region 4, to Mr. Jeff Poupart, Chief of the Permitting Section of the North Carolina Department of Environment and Natural Resources, in which EPA Region 4 stated as follows:

> The EPA notes that any permit modifications [for similar dewatering activities in North Carolina] should include additional technology-based effluent limitations on a case-by-case basis based on best professional judgment as required section by [sic] § 402(a) of the Clean Water Act, 40 CFR § 122.44(a), § 123.25, and § 125.3. In particular any additional technology-based effluent limitations should address pollutants discharged from the ash ponds that are not included in effluent guidelines for the steam electric power generating industry in 40 CFR Part 423.

Indeed, EPA recently promulgated revised Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category at 40 C.F.R. Part 423 on September 30, 2015 (hereinafter "Power Plant ELGs"). While the Power Plant ELGs do not directly apply to these discharges from coal ash ponds, the EPA's analysis and setting of ELGs for Flue Gas Desulfurization ("FGD") Wastewater are analogous and provide valuable analyses and information to assist VDEQ in setting ELGs for the Bremo coal ash pond discharges. EPA set the following ELGs for FGD wastewater.

Table 1: ELGs for FGD Wastewater

Pollutant	**Long-Term Average**	**Daily Maximum Limitation**	**Monthly Average Limitation**
Arsenic (µg/L)	5.98	11	8
Mercury (ng/L)	159	788	356
Nitrate/nitrite as N (mg/L)	1.3	17	4.4
Selenium (µg/L)	7.5	23	12

VDEQ should apply limits at least this strict here for arsenic, mercury and selenium. Indeed, North Carolina just issued a proposed final permit to regulate similar dewatering discharges from the L.V. Sutton Plant, imposing monthly average limits of 10 µg/l for arsenic, 2 µg/L for cadmium, and 47 ng/L (nanograms per liter) for mercury.[1] Similarly, VDEQ should set strict limits for these and the other parameters listed on Page 9 of the draft permit, and should impose strict limits for any additional parameters as appropriate to protect water quality. VDEQ's failure to apply technology-based effluent limits here simply does not comply with the law.

3. The Draft Bremo Permit Does Not Comply with the Clean Water Act and Implementing Regulations because VDEQ Improperly Relies on a "Complete Mix Assumption" even though VDEQ's own Analyses Show that Complete Mixing of the Coal Ash Pollution with the James River Will Not Occur for 9 to 11 Miles Downstream During Low Flow Conditions.

The draft Bremo Permit authorizes discharges at concentrations that exceed the applicable Virginia water quality standards to protect human health and the environment. For example, as set forth in Table 2 below, the permit authorizes the discharge of antimony at more than 5 times the public health standard (which is intended to make sure that fish are safe to eat) and at over 600 times the standard for waters designated as Public Water Supply. While the James River is apparently not used for drinking water in the immediate area of the discharge, the James River Water Authority is proposing a new water intake 8.7 miles downstream. (Permit Fact Sheet, page 1.)

[1] The L.V. Sutton Permit is available at: http://portal.ncdenr.org/c/document_library/get_file?uuid=fceb63a8-8b28-4ddc-a207-21cf0a438c05&groupId=14.

Table 2: Overview of "Dewatering" Limits Compared to Virginia Water Quality Standards

Parameter (all numbers expressed as total recoverable in µg/L – micrograms per liter)	**Monthly Average Limit in Dumping Permit**	**Maximum Limit in Dumping Permit**	**VA Human Health Standard for PWS[2]**	**VA Human Health Standard for Other Waters**	**VA Aquatic Life - Chronic**	**VA Aquatic Life – Acute**
Antimony	3,400	3,400	5.6	640		
Arsenic	500	740	10		150	340
Cadmium	4.5	6.6	5		1.1[3]	3.9
Chromium III	500	730	100 (total)		74	570
Chromium VI	24	35			11	16
Copper	16	24	1,300		9	13
Lead	73	110	15		120	14
Mercury	2	3			.77	1.4
Nickel	130	190	610		20	180
Selenium	29	43	170		5	20
Silver	3.5	5.1				3.4
Thallium	2.5	2.5	.24	.47		
Zinc	140	210	7,400	26,000	120	120
Chloride	1,300,000	1,900,000	250,000		230,000	860,000
Ammonia	9,600	14,000				

In order to justify the discharge of pollution at concentrations exceeding ambient standards, VDEQ is relying on a "complete mix assumption." This assumption, in turn, is based on a mixing analysis for the permit reflected at Appendix B, Page 14 of the Fact sheet. A map depicting this mixing analysis is attached as Exhibit A. According to VDEQ's mixing analysis, complete mixing

[2] PWS = Public Water Supply

[3] The acute and chronic whole effluent toxicity standards for Cd, Cr, Cu, Pb, Ni, and Ag are based on the hardness of the water. The figures given here are based on water hardness as calcium carbonate of $CaCO_3$ = 100 mg/l. The actual mean hardness of the water in the ash ponds is reported in the Bremo Draft Permit as 70.1 and in the James River as 62.5.

of the coal ash wastewater with the James River will not occur for many miles downstream from the discharge point during low flow conditions. The calculated, large mixing area extends almost 10 miles downstream during 7Q10 (*i.e.* the lowest 7 day flows expected to occur once every 10 years) flow conditions. The calculated mixing zone would be even larger during 1Q10 conditions, extending almost 10.7 miles downstream. However, at 1Q10 conditions, VDEQ determined that a complete mix assumption is only appropriate using a small percentage (3.54%) of the flow of the James River.

VDEQ's reliance on a "complete mix assumption" here based on this mixing analysis violates the applicable Virginia regulations. A "mixing zone" is defined in the Virginia Administrative Code as "**a limited area or volume of water** where initial dilution of a discharge takes place and where numeric water quality criteria can be exceeded but designated uses in the water body on the whole are maintained and lethality is prevented." 9VAC25-260-5 (emphasis added).

The Virginia Administrative Code at 9VAC25-260-20 (General Criteria) contains default limits on the use of mixing zones. For example, 9VAC25-260-20.B.1. provides that mixing zones: "evaluated or established by the board in fresh water shall not:

a. Prevent movement of or cause lethality to passing and drifting aquatic organisms through the water body in question;
b. Constitute more than one half of the width of the receiving watercourse nor constitute more than one third of the area of any cross section of the receiving watercourse;
c. Extend downstream at any time a distance more than five times the width of the receiving watercourse at the point of discharge."

However, based on the discussions at our November 19 meeting, we understand that VDEQ does not even have the technical capacity to calculate mixing zones that comply with these dimensional limits. Thus, VDEQ has no choice but to rely on an assumption of complete mixing under subsection B.10 of the regulations, which provide that the Board may waive the requirements of subsections b. and c. above on a "case by case" basis where "the board determines that a complete mix assumption is appropriate." 9VAC25-260-20.B.10.

According to a mixing analysis for the "Combined Dewatering Activities" contained at Appendix B – Page 14 of the Fact Sheet, the length of the area of the James River where mixing of the effluent and river water will occur is calculated as 52,772.32 feet – or almost 10 miles – using an effluent flow rate of 10.2912 MGD (million gallons per day) and the 7Q10 Flow of the James River at the point of discharge. The width of the James at the point of discharge is 400 feet. Thus, the generally-applicable maximum permitted length for a mixing zone here is 2,000 feet. However, VDEQ proposes that the Water Control Board waive these dimensional limitations by concluding that an assumption of complete mixing is appropriate here. (Again, for the 1Q10 flow, VDEQ determined that the "complete mixing" assumption is appropriate for only 3.54% of the 1Q10 flow.) Here the "complete mixing" assumption—upon which VDEQ's assertion that water quality standards will be maintained wholly depends—is unsupported by any evidence, much less the substantial evidence required by law, for a substantial reach of the James River. *See, e.g., Crutchfield v. State Water Control Bd.*, 45 Va. App. 546, 553, 612 S.E.2d 249, 253 (2005). In this

situation, where complete mixing will not occur for several miles at low flow conditions, the Board cannot reasonably support an assumption of "complete mixing." Thus, VDEQ's mixing analysis and the permit limits based on it fail to adequately protect the James River for many miles downstream of the discharge.

Additionally, Virginia regulations governing the use of mixing zones provide that "No mixing zone shall be used for, or considered as, a substitute for minimum treatment technology required by the Clean Water Act and other applicable state and federal laws." 9VAC25-260-20.B.7. This requirement is not subject to waiver. But that is exactly what the Draft Permit does: allow Dominion to use the James River to dilute its pollution in lieu of applying the best available technology economically achievable required by the Clean Water Act. *See* 33 U.S.C. § 1311(b)(2)(A); 40 C.F.R. § 125.3(g). As discussed above, technology exists to achieve stringent effluent limitations. Such limits should be applied here.

Finally, the Virginia Administrative Code provides that "[t]he board shall not approve a mixing zone that violates the federal Endangered Species Act of 1973, (16 USCA §§ 1531 – 1543) or the Virginia Endangered Species Act, Article 6 (§ 29.1- 563 et seq.) of Chapter 5 of Title 29.1 of the Code of Virginia." 9VAC25-260-20(B)(8). The Green Floater Mussel (*Lasmigona subviridis*) is listed as a threatened species under the Virginia Endangered Species Act and is known to exist in the James River in the area of the Bremo Plant and in downstream reach of the James River before complete mixing of the effluent with the James will occur, and where exceedances of ambient water quality criteria to protect aquatic species will occur within an as-yet-undefined portion of the James River. Additionally, the Federally Endangered James Spinymussel (*Pleurobema collina*) historically occurred in the James River. Yet VDEQ failed to even confer with the state and federal resource agencies regarding the impacts of the discharges of toxic water from coal ash ponds on listed species and their habitat in the James River prior to issuing the Draft Bremo Permit for public comment.

4. The Draft Permit Fails to Comply with Virginia's Tier 2 Antidegradation Policy at 9VAC25-260-30.A.2.

The Draft Permit does not comply with Virginia's Antidegradation Requirements, which—with respect to "Tier 2 waters"—provide as follows:

> Where the quality of the waters exceed water quality standards, **that quality shall be maintained and protected unless** the board finds, after full satisfaction of the intergovernmental coordination and public participation provisions of the Commonwealth's continuing planning process, that **allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located.** In allowing such degradation or lower water quality, the board shall assure water quality adequate to protect existing uses fully. **Further, the board shall assure that there shall be achieved the highest statutory and regulatory requirements applicable to all new or existing point source discharges of effluent** and all cost-effective and reasonable best management practices for nonpoint source control.

9VAC25-260-30.A.2 (emphases added).

The Fact Sheet summarizes the antidegradation analysis on Page 2. VDEQ determined that the James River is a Tier 2 water, such that "no significant degradation of the existing water quality will be allowed." (Fact Sheet – Introduction at 2.) The plain text of the regulation, however, requires that the existing water quality levels—the entirety of the existing level of water quality—"shall be maintained and protected" for Tier 2 waters, such that no lowering of water quality is permitted unless such lowering of water quality is necessary to support important social or economic development in the area where the waters are located. VDEQ disregards this requirement, and instead incorrectly concludes that the antidegradation policy will be met so long as the degradation of water quality for toxic parameters is not more than 25% of the unused "assimilative capacity" of the criteria for the protection of aquatic life and 10% for the protection of human health.

Moreover, VDEQ's calculation of the use of assimilative capacity is also predicated on the "complete mix assumption.' Thus, VDEQ's antidegradation-based limits consume more than the calculated portions of the "assimilative capacity" of the James within a reach of river extending about 10 miles downstream at low flow conditions. It does not make sense for VDEQ to have concluded that this discharge is only consuming 10% of the purported ability of the James River to absorb toxins that accumulate in fish tissue and are harmful to human health or 25% of the purported "assimilative capacity" of the river to absorb toxic pollution that can harm and kill aquatic species, when the actual levels of pollutants proposed to be discharged far exceed water quality standards at the point of discharge. In fact, because the permit authorizes pollution discharged at levels in excess of ambient water quality criteria, the Draft Permit would allow for consumption of more than 100% of the assimilative capacity of an undefined portion of the James River for a suite of toxic parameters without any showing that the discharge is necessary to important economic or social development in the area where the waters are located.

In short, despite the requirement that the agency only allow lowering of water quality to allow for important economic or social development in the area where the waters are located, neither the permit nor the supporting fact sheet contain any analysis to support VDEQ's conclusion that lower of water quality is permissible under the antidegradation policy here. Indeed, these discharges will not support *any* economic or social development, nor are the proposed discharges at the permitted levels necessary given the availability of treatment technologies that can substantially reduce the levels of metals in the discharged water. The Bremo Power Station is no longer burning coal, and so the discharges are not associated with any benefit to the citizens of Virginia: this permit would merely allow Dominion to avoid the expense of cleaning up its coal ash pollution. Indeed, an investment in pollution control would not only help protect the James River but it would surely generate economic benefits.

5. The Failure to Place Any Limits on the Volume of the Discharge of Polluted Waters to the James River is Unacceptable.

Because the Draft Permit fails to place any limits on the volume of polluted water discharged to the James, even the weak limits it contains are illusory. The permit is predicated on an expected discharge rate of nearly 10.3 million gallons per day. However, the permit itself does not place any limits on the total loading of metals discharged to the James River or how quickly Dominion may discharge this polluted water to the James River. Obviously, the larger the discharge, the greater the dimensional area of the James River in which water quality criteria will be

exceeded. Additionally, as a general matter, the faster the rate of discharge of water from the coal ash ponds the greater the risk of catastrophic failure of the impoundments that are holding back tons of coal ash and millions of gallons of polluted water at the Bremo Power Station. (The Fact sheet at Page 2 notes that the North Ash Pond is created by a 102 foot dam and the West Ash Pond is created by a 19 foot dam). VDEQ should confer with the Virginia Department of Conservation and Recreation Dam Safety Program regarding dam safety issues, and place limits on the volume of discharges from the coal ash ponds into the James River to protect the water quality of the James River and the integrity of the dams that are holding back high volumes of coal ash and polluted water.

CONCLUSION

In closing, based on only an initial review and incomplete information, it is clear that the proposed permit suffers from fatal flaws, that it does not conform to applicable legal requirements, and that it is based on insufficient information. As a result, we ask VDEQ to immediately withdraw the Draft Permit, revise it to address the identified flaws, and thereafter reissue the revised draft permit and a complete fact sheet for public comment. In the alternative, we ask that VDEQ update the fact sheet for the permit to address the missing information identified above, and extend the comment period for at least an additional 30 days. Any final permit approved by the Virginia Water Control Board must: (1) place sufficiently stringent limits on toxic metals and other pollutants to protect the James River; (2) require the application of the best available technology to treat the effluent before it is discharged to the James River; (3) appropriately limit the volume of water that may be discharged at any time and the total loading of pollution to the James River; and, (4) disallow or further restrict the discharge of coal ash wastewater during low flow conditions when the impacts to the James River will be greatest.

Thank you for your consideration of these initial comments

Sincerely,

Bradford T. McLane
Gregory Buppert

Encls: Exhibit A: Map Illustrating VDEQ Mixing Analysis

cc (by e-mail):

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