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MISSOURI CONFLUENCE WATERKEEPER®

WATERKEEPER® ALLIANCE

February 12, 2021

VIA CERTIFIED MAIL, RETURN RECEIPT REQUESTED

Ameren Corporation
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1901 Chouteau Ave
St. Louis, MO 63103

Union Electric Company
One Ameren Plaza
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CT Corporation
Registered Agent
120 S. Central Ave.
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Re: NOTICE OF INTENT TO FILE SUIT FOR VIOLATIONS OF THE FEDERAL CLEAN WATER ACT

Great Rivers Environmental Law Center ("GRELC"), on behalf of Missouri Confluence Waterkeeper ("MCW") and Waterkeeper Alliance ("WKA") hereby provides you with notice of MCW's and WKA's intent to file suit against Ameren Corporation and Union Electric Corporation d/b/a AmerenUE and/or Ameren Missouri ("Ameren") for significant and ongoing violations of the Clean Water Act, 33 U.S.C. § 1251 *et seq.*, at Ameren's Sioux Energy Center ("Sioux"), located at 8501 North State Route 94, West Alton, MO 63386-1009.

Ameren owns and operates Sioux, which is a coal and natural gas-fired electrical generation facility located in the floodplain of and adjacent to both the Mississippi River and the Missouri River (**Figure 1**, below). This facility is likewise located along an unnamed backwater chute of the Mississippi River (the "Chute") and Poeling Lake, which is connected to the backwater chute and the Mississippi River. Operations began at Sioux in 1968, when it was

under ownership by Union Electric Company ("UE"). In 1997, UE and Central Illinois Public Service Company merged into Ameren Corporation, which now does business as AmerenUE and Ameren Missouri, which are both fictitious names owned by Union Electric and registered with the Missouri Secretary of State.

During the process of burning coal, Sioux generates coal combustion residuals ("CCR")[1] and other waste, which it currently deposits in SCPA (bottom ash), SCPB (fly ash), SCPC (gypsum), and SCL4A (dry CCR disposal area) (all shown on Figure 1, above). This letter alleges that Ameren is actively discharging pollutants from SCPA into the Chute, Poeling Lake and the Mississippi River. According to the U.S. Energy Information Administration, Sioux currently generates over 286,000 tons of CCR annually, including fly ash, bottom ash, and flue gas desulfurization gypsum.[2]

Ameren was reissued a National Pollutant Discharge Elimination System Permit ("NPDES Permit") on April 1, 2017 by the Missouri Department of Natural Resources

[1] "CCR" when used in this notice letter refers to the regulatory definition of "Coal Combustion Residuals" found in 40 C.F.R. § 257.53 (2015).
[2] *See,* U.S. Energy Information Administration Form 923, Schedule 8A (2017).

("MDNR"). MDNR, Missouri State Operating Permit, NPDES Permit No. MO-0000353 (issued to Ameren, effective April 1, 2017, as amended November 1, 2020) [hereinafter "2017 NPDES Permit"]. The permit had previously been reissued on April 16, 2004 and administratively extended after it expired in April 15, 2009. *See* MDNR, Missouri State Operating Permit, NPDES Permit No. MO-0000353 (issued to Ameren) (effective April 16, 2004) [hereinafter "2004 NPDES Permit"]. Ameren's 2017 NPDES Permit and 2004 NPDES Permit only authorize the discharge of pollutants from designated outfalls, and subject to effluent limitations and other requirements designed to protect water quality.

As explained more fully below, Ameren is discharging CCR and/or non-CCR wastewater[3] from coal ash management units, specifically, SCPA to Poeling Lake, the Chute, the Mississippi River and its tributaries through groundwater that has a direct hydrological connection with the aforementioned surface waters, without permit authorization and in violation of the Clean Water Act. These discharges from SCPA into groundwater are the functional equivalent of discharges to surface water because of the direct hydrological connectivity between the two, as explained more fully below.

These unpermitted discharges are ongoing and are expected to continue until abated by Ameren. The proper remedial action (and the injunctive relief that will be sought by MCW and WKA) for these unpermitted discharges is the permanent removal (often referred to as "closure by removal") of the coal ash from unlined SCPA located in the floodplain between two of our nation's greatest river systems—the Mississippi River and Missouri River.

Unsafe management of coal ash pollutes rivers, streams, and creeks. Coal ash management practices such as those at Sioux are known to leach toxic pollutants into groundwater. Pollutants from contaminated groundwater associated with SCPA flow directly into surface waters through hydrologically connected groundwater. By failing to comply with the environmental laws detailed in this notice letter, Ameren has injured or threatened to injure, and will continue to injure or threaten to injure, the health, environment, aesthetic, and economic interests of MCW and WKA, as well as its members. These injuries or risks are traceable to Ameren's violations at Sioux and redressing these ongoing violations will redress MCW's and WKA's injuries or risks.

After providing notice, MCW and WKA are entitled to bring suit against "any person . . . alleged to be in violation" of an "effluent standard or limitation" established under the Clean Water Act. 33 U.S.C. § 1365(a)(1). Any person can be subject to a civil penalty of up to $37,500 per violation per day that occurred before November 2, 2015 and up to $53,484 per violation per day that occurred after November 2, 2015. 40 C.F.R. § 19.4 tbls. 1, 2; 42 U.S.C. §§ 6972(a) (authorizing suits and also authorizing a District Court to "apply any appropriate civil penalties under section 6928(a) and (g)"). This citizen suit provision also allows the recovery of

[3] For purposes of this notice letter, "non-CCR wastewater" refers to process wastewater or other byproducts of facility operations deposited by Ameren in SCPA and SPCB that do not meet the regulatory definition of CCR. Although not CCR, this wastewater may contain CCR constituents and is a "pollutant" as that term is defined in the CWA.

reasonable attorney and expert fees in addition to other costs by prevailing plaintiffs. Therefore, MCW may bring suit to obtain declaratory relief, enjoin illegal discharges of pollution, compel compliance with the conditions of Ameren's NPDES Permit, abate pollution, impose civil penalties, recover attorneys' fees and costs of litigation, and obtain other appropriate relief.

In accordance with section 505(b)(1)(A) of the Clean Water Act, this letter serves to notify Ameren that MCW and WKA intend to file suit in federal district court at any time beginning 60 days after the postmarked date of this letter.[4]

I. Description of Ameren's SCPA

According to Ameren, "SCPA was built as part of the original design of the Sioux facility in 1967. Earthen material excavated from SCPA was used to construct the embankment dam and for plant fill. The SCPA is bound to the east and northeast by plant fill."[5] SCPA is bound the west and northwest by Poeling Lake and the Chute. SCPA is unlined and Ameren's Engineer has certified that it "does not meet the liner requirements of 40 C.F.R. § 257.71 because it does not have a 2 foot layer of compacted soil with hydraulic conductivity of less than 1 X10-7 cm/sec," which means that groundwater flows through SCPA's berm within the alluvial aquifer.[6] SCPA has an area of approximately 46 acres and has a maximum storage capacity of 3,338,000 cubic yards of CCR storage.[7] The estimated maximum depth of CCR in SCPA is between 45 and 70 feet.[8] SCPA is located within the alluvial floodplain and is surrounded by alluvium that is 100 to 125 feet deep, such that the SCPA is surrounded below and on all sides by groundwater within the alluvial aquifer.[9]

Under the CCR Rule, "[t]he existing CCR surface impoundment SCPA at the Sioux Energy Center was evaluated to determine if it was constructed with a base that is located no less than 5 feet above the upper limit of the uppermost aquifer, or if it can be demonstrated that there will not be intermittent, recurring, or sustained hydraulic connection between any portion of the base of the CCR unit and the uppermost aquifer due to normal fluctuations in groundwater elevations (including the seasonal high water table) to meet the requirements of §257.60, Placement Above the Uppermost Aquifer for Existing CCR Surface Impoundments."[10] In its report, Ameren's engineer stated that neither of these characteristics were met at SCPA.[11] This means that at SCPA there is intermittent, recurring or sustained hydraulic connection between the CCR unit and the alluvial aquifer because the CCR constituents in SCPA are located within the alluvial aquifer resulting in horizontal groundwater flow.

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[4] 40 C.F.R. § 135.2(c).
[5] Ameren Missouri, *Structural Integrity Criteria & Hydrologic/Hydraulic Capacity Assessment,* Sioux Energy Center (date unknown, approx. Oct. 2016).
[6] *Id.*
[7] Ameren Missouri, *Sioux Energy Center SCPA CCR Impoundment Closure Plan*, Page 2 (date unknown).
[8] *Id*. See also SCPA 2019 CCR Annual Inspection.
[9] Ameren Missouri, *Location Restrictions SCPA*, Sioux Energy Center (date unknown, approximate date Oct. 2018).
[10] *Id.*
[11] *Id*.

The maximum height of SCPA is 470 feet above sea level.[12] The average height of pool water within SCPA is 435 feet above sea level.[13] The average height of the Mississippi River is 418 feet above sea level and is always lower than the water level in SCPA. The top of SCPA is open to precipitation. Based on these conditions, there is undeniable vertical flow of groundwater from SCPA to the alluvial aquifer.

II. Violations of the Clean Water Act

Section 101(a) of the Clean Water Act, 33 U.S.C. § 1251(a), states that the central objective of the Act is "[t]o restore and maintain the chemical, physical, and biological integrity of the Nation's waters." Section 301(a) of the Act, 33 U.S.C. § 1311(a), makes unlawful the discharge of any pollutant into waters of the United States by any person except in compliance with certain other enumerated sections of the Act.[14] Section 402 of the Act, 33 U.S.C. § 1342, created the national pollutant discharge elimination system (NPDES), under which EPA may issue NPDES permits for point source discharges to waters of the United States. Section 402(b) of the Act, 33 U.S.C. § 1342(b), authorizes the Administrator of EPA to delegate to the states the authority to issue NPDES permits. The State of Missouri through MDNR was delegated the authority to issue NPDES permits on October 30, 1974 and has been implementing the federal permitting program since that date.[15]

Through the CCR Rule process, Ameren has released various reports required to be publicly disseminated that demonstrate that CCR and non-CCR wastewater in SCPA discharges to groundwater that is directly and hydrologically connected to Poeling Lake, the Chute, and the Mississippi River. These discharges are unpermitted and constitute violations of the Clean Water Act.

Claim: Ameren's Discharge of Pollutants from SCPA without a Permit Violates the Clean Water Act

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

1. Ameren Corporation is a corporation and therefore is a "person(s)" pursuant to section 502(5) of the Clean Water Act.

[12] SCPA 2019, 2018, 2017, and 2016 CCR Annual Inspections.
[13] *Id*.
[14] MDNR issues permits, including Ameren's 2017 NPDES Permit and 2004 NPDES Permit, pursuant to this authority under the Clean Water Act. See, e.g., section 402 of the Clean Water Act (33 U.S.C. § 1342); 33 U.S.C. § 1342(i)).
[15] See 39 Fed. Reg. 40067.

2. CCR is a "pollutant," and CCR and non-CCR wastewaters deposited in SCPA contain "pollutants," as that term is defined in section 502(6) of the Clean Water Act including, but not limited to, Appendix III and Appendix IV constituents such as Boron, Sulfate, and Molybdenum.

3. SCPA is a "point source" because the basin is a "discernible, confined, and discrete conveyance . . . . from which pollutants are or may be discharged." 33 U.S.C. § 1362(14). "The term 'point source' has been taken beyond pipes and ditches and now includes less discrete conveyances, such as cesspools and ponds." *N. Cal. River Watch v. City of Healdsburg*, 2004 U.S. Dist. LEXIS 1008 (N.D. Cal. 2004) (citing *Cmty. Ass'n for Restoration v. Bosma Dai*ry, 305 F.3d 943, 955 (9th Cir. 2002); *Wash. Wilderness Coal. v. Hecla Mining Co.*, 870 F. Supp. 983, 988 (E.D. Wash. 1994)), aff'd, 496 F.3d 993 (9th Cir. 2007).

4. The Mississippi River is a "water of the United States" as that term is defined by 40 C.F.R. § 120.2(1)(i) pursuant to section 502(7) of the Clean Water Act because it is a "navigable water".[16] 33 U.S.C. § 1362. Because Poeling Lake and the Chute are tributaries of the Mississippi River as per 40 C.F.R. § 120.2(1)(ii), these surface waterbodies (and other Mississippi River tributaries) also are "waters of the United States" and therefore also "navigable water(s)" pursuant to the Clean Water Act. *Id*.

5. The leaking or other conveyance of pollutants from SCPA to groundwater constitutes a "discharge of pollutants" under section 502(12) of the Clean Water Act because the groundwater beneath the basin is directly and hydrologically connected to the Mississippi River and its tributaries, Poeling Lake and the Chute and discharges in this context are the functional equivalent of discharges directly to surface water. See *County of Maui v. Hawaii Wildlife Fund*, 590 U.S. _____ (2020) (Slip Opinion, No. 18-260, issued April 23, 2020 at Page 15). The Mississippi River, the Chute, and Poeling Lake are "waters of the United States" and therefore "navigable waters" pursuant to section 502(7) of the Clean Water Act.

Hydrological Connection of Groundwater to Surface Waters

According to Ameren's consultants "…groundwater flow direction within the uppermost aquifer is dynamic and directly controlled by the river stages of the Mississippi and Missouri Rivers, since *the alluvial aquifer is hydraulically connected to these water bodies*."[17] (emphasis

[16] MCW and WKA allege that violations for unpermitted discharges have been ongoing and continuous for at least the last five (5) years. As such, under either the old definitions of "waters of the United States" (the 1986/1988 regulations, the Obama Administration regulations) or the new definition promulgated by the Trump Administration, all surface waters discussed herein meet the definition of "waters of the United States" and are, therefore, jurisdictional waters subject to the requirements of the Clean Water Act, including the prohibition against unpermitted discharges. The new definition of WOTUS promulgated by the Trump Administration became effective on June 22, 2020. 85 Fed. Reg. 22250 (Apr. 21, 2020).

[17] Golder Associates, Inc., *2017 Annual Groundwater Monitoring Report*, *SCPA, Sioux Energy Center, St. Charles County, Missouri, USA* dated January 2018 ("2017 GMR").

added). Moreover, according to Ameren's consultants: "[w]ater flows into and out of the alluvial aquifer as a result of fluctuating river water levels that produce "bank recharge" and "bank discharge" conditions.[18] At this facility, groundwater can flow north and south towards the Mississippi and Missouri Rivers, depending on river levels."[19] The Primary Flow Path identified in Hydraulic Assessment in Ameren's 2017 Groundwater Monitoring Report ("2017 GMR") demonstrates that groundwater within and around SCPA primarily flows to the Chute and the Mississippi River or Poeling Lake.[20]

There is no doubt that CCR wastes are located within the SCPA and in the alluvial aquifer that is hydrologically connected to Poeling Lake, the Chute, and the Mississippi River. According to Ameren's contractors conducting requirements under the CCR rule, as mentioned above, it cannot be demonstrated that "…there will not be intermittent, recurring, or sustained hydraulic connection between any portion of the base of the CCR unit and the uppermost aquifer due to normal fluctuations in groundwater elevations (including the seasonal high water table) to meet the requirements of §257.60, Placement Above the Uppermost Aquifer for Existing CCR Surface Impoundments."[21]

Ameren's Potentiometric Surface Maps show groundwater flow directly into Poeling Lake on most dates, with groundwater flowing from higher elevation within SCPA into Poeling Lake.[22] Furthermore, Ameren's consultants have identified that there is a "localized radial pattern of flow from the bottom ash pond toward the Mississippi River and Poeling Lake."[23] Piezometers PZ-2S/D and PZ-4S/D, which are located along the interface between SCPA's earthen bank and Poeling Lake are both identified by Ameren as having upward groundwater flow, meaning that wastewater/groundwater in SCPA carrying CCR pollutants flows towards surface waters into Poeling Lake and the Chute a majority of the time.[24]

According to Ameren, in 2017 "the compliance wells surrounding the SCPA [had] an estimated net annual groundwater velocity of approximately 13 feet per year."[25] In 2018, "[h]orizontal gradients calculated by the program range from 0.0002 to 0.0011 feet/foot with an estimated net annual groundwater velocity of approximately 11 feet per year."[26] In 2019, "[h]orizontal gradients calculated by the program range from 0.0001 to 0.001 feet/foot with an

[18] *Id*.
[19] *Id*.
[20] Haley Aldrich, *Human Health and Ecological Assessment of the Sioux Energy Plant*, dated February 2018 ("HHEA"), Figure 1.
[21] See *supra*, Note 9.
[22] 2017 GWR, Figures P1 through P6.
[23] Gredell Engineering Resources, Inc., A*meren Missouri-Sioux Energy Center Site Characterization Report Missouri State Operating Permit #MO-0000353* dated July, 2019 at Page 20.
[24] 2019 Site Characterization Report at Page 22.
[25] 2017 GWR, Pages 4-5.
[26] Golder Associates, Inc., *2018 Annual Groundwater Monitoring Report, SCPA, Sioux Energy Center, St. Charles County, Missouri, USA* dated January 31, 2019 ("2018 GWR"), Page 3.

estimated net annual groundwater velocity of approximately 4 feet per year.[27] However, Ameren's consultants have opined that groundwater velocity "in the immediate vicinity of the ash pond sites" at the site can be as high as 190 feet/year and that "groundwater velocity may range from 22 to 2,651 ft/yr north of the ash pond site..."[28]

Images of SCPA demonstrate that the proximity of the outer boundary of SCPA to Poeling Lake and the Chute is often less than 75 feet. Given this short distance from SCPA to surface water in combination with: (1) the lack of a liner for SCPA; (2) a range of groundwater velocity of ranging from 2,651 (or conservatively 190) to 4 feet per year; (3) the preferential flows of groundwater towards the Chute and Poeling Lake; (4) the 46 acre size of SCPA; (5) the 45 to 70 foot deep presence of CCR in groundwater within SCPA; (6) the 3,338,000 cubic feet of CCR in groundwater within SCPA; (7) the admitted presence of CCR constituents in the alluvial aquifer; (8) the admitted hydrological connection between the alluvial aquifer and surface waters; and (9) the height of the pool water in SCPA compared to groundwater heights outside SCPA -- all coalesce to the unavoidable conclusion that groundwater within and around SCPA and surface waters of Poeling Lake and the Chute are hydrologically connected.

These facts irrefutably demonstrate that the CCR pollutants Ameren stores in unlined SCPA that are freely floating in the alluvial aquifer approximately 75 feet from Poeling Lake and the Chute are being discharged into these surface waters. These same physical characteristics demonstrate that discharges to groundwater are the functional equivalent of discharges to surface waters. In addition to the aforesaid physical conditions demonstrating hydrological connection between SCPA groundwater and surface water, data disseminated by Ameren demonstrate that CCR pollutants are discharged to groundwater and hydrologically connected surface water.

<u>Data Indicating Pollutants from SCPA are Discharging to Groundwater that is Hydrologically Connected to Surface Water and, therefore, the Functional Equivalent of Discharges to Surface Water</u>

The following data demonstrate that: (1) Ameren's CCR pollutants are present in groundwater at the boundary of SCPA; (2) Ameren's CCR pollutants are present in groundwater outside the boundary of SCPA; and (3) Ameren's CCR pollutants are present in surface waters in the Chute and, most likely, Poeling Lake.[29] Because of the presence of these CCR pollutants in

[27] Golder Associates, Inc., *2019 Annual Groundwater Monitoring Report, SCPA, Sioux Energy Center, St. Charles County, Missouri, USA* dated January 31, 2020 at Page 4 ("2019 GWR").
[28] 2019 Site Characterization Report at Page 6 (Golder's conclusion) and Page 26 (Gredell's conclusion).
[29] Shockingly, Ameren either did not conduct, or perhaps did not report, any surface water samples in Poeling Lake when it hired Golder Associates, Inc. to investigate surface water around Sioux in 2017. Because Poeling Lake is located almost entirely on Ameren's property, MCW has not sampled this area despite arguably having such right in the State of Missouri under the recreational use doctrine for non-navigable waterways. See *Elder v. Delcour*, 269 S.W.2d 17, 24 (Mo. 1954) (en banc) (concluding that a private landowner could not prevent the public from floating down a stream and fishing its waters, even though he owned bed to non-navigable stream under the federal navigation-for-title test). On information and belief, MCW believes that surface water samples from this waterbody will undoubtedly show pollutants from SCPA in surface water perhaps at levels higher than those collected in the

groundwater in significant quantities and their indisputable presence in hydrologically connected surface waters well above background levels, Ameren's discharges of CCR pollutants from SCPA into groundwater are the functional equivalent of discharges to surface water and are, therefore, in violation of the CWA.[30]

Groundwater Samples

Under the CCR Rule, Ameren has done significant testing of groundwater in and around SCPA. **Table 1**, below, presents concentrations of three (3) representative CCR constituents -- boron, sulfate, and molybdenum identified in the 2018 GMR-- present in the groundwater beneath SCPA at locations along Poeling Lake and the Chute (i.e. UMW-2D, UMW-3D, UMW-4D, and UMW-5D) compared to background levels set by Ameren from other sampling locations.[31] Boron and sulfate are the leading indicators of CCR contamination because they are present in CCR leachate, are unlikely to occur together as a result of any other industrial practice, and are mobile in groundwater (not binding to the geologic substrate). As EPA noted in the preamble to the 2015 CCR Rule, "[t]he high mobility of boron and sulfate explains the prevalence of these constituents in damage cases that are associated with groundwater impacts."[32] Boron and sulfate are both "detection monitoring" constituents in the CCR Rule, 40 C.F.R. § 257, Appendix III. Boron also was one of nine constituents presenting unacceptable risks in the Risk Assessment that EPA prepared for the 2015 CCR Rule, and the only constituent presenting unacceptable risks to both human and ecological receptors.[33] Molybdenum is an "assessment monitoring" constituent in the CCR Rule, 40 C.F.R. § 257, Appendix IV, because it is a "risk driver," according to EPA.[34]

TABLE 1

CCR Constituent	Background	UMW-2D	UMW-3D	UMW-4D	UMW-5D
Boron (ug/L)	140	18,400	31,900	16,800	5,530
Sulfate (mg/L)	27.5	522	994	459	12
Molybdenum (ug/L)	Non-detect	1,590	4,600	4,380	179

In its Correct Measures Assessment Report ("CMA") for Sioux, Ameren has identified several groundwater monitoring wells that demonstrate that groundwater in and around SCPA is contaminated with CCR pollutants, primarily Molybdenum. These monitoring wells with

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Chute. Pursuant to Rule 34 of the Federal Rules of Civil Procedure, if litigation results from this Notice Letter, MCW intends to inspect Ameren's property to determine surface water quality of Poeling Lake through sampling.

[30] See *County of Maui v. Hawaii Wildlife Fund*, 590 U.S. _____ (2020).

[31] In determining background levels, this Notice Letter gives Ameren the benefit of using the highest calculated background levels for these pollutants under the 2018 GMR. These concentrations are based upon a representative sampling event in November 2018 for Boron and Sulfate and April 2018 for Molybdenum.

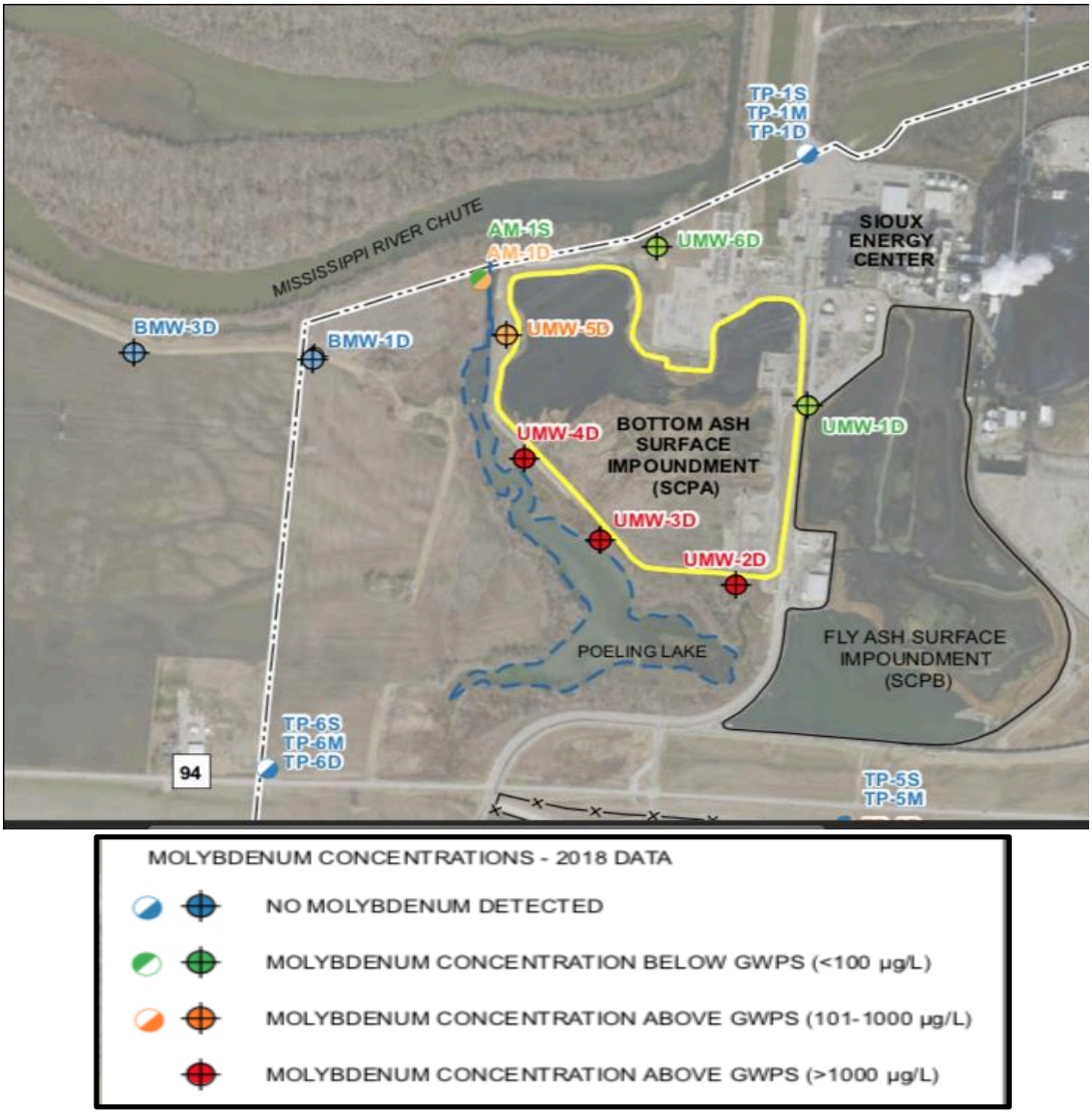
[32] 80 Fed. Reg. at 21,456.

[33] See EPA, *Human and Ecological Risk Assessment of Coal Combustion Residuals* (Dec. 2014) [hereinafter 2014 Risk Assessment]; see also EPA, Hazardous and Solid Waste, Management System: Disposal of Coal Combustion Residuals From Electric Utilities; Amendments to the National Minimum Criteria (Phase One); Proposed Rule, 83 Fed. Reg. 11,584, 11,589 (Mar. 15, 2018).

[34] 83 Fed. Reg., at 11,589.

statistically significant levels ("SSL") of Molybdenum are UMW-2D, UMW-3D, UMW-4D, and UMW-5D, which are all wells located along Poeling Lake and the Chute.[35] Ameren was required to notify the public of the SSLs for Molybdenum, and did so on its Managing CCR website in 2018.[36] Additionally, Ameren stated to the public at the public notification sessions required by CCR Rule that it "knows it has a Molybdenum problem" in groundwater at Sioux. There is no avoiding the conclusion that groundwater both in and around SCPA are contaminated with CCR pollutants. **Figure 2**, below, illustrates the primary areas of CCR groundwater contamination identified by Ameren around SCPA:

Figure 2



[35] 2019 GWR at Page 4.
[36] Ameren Missouri, *Notification of the Detection of Statistically Significant Levels Above CCR Groundwater Protection Standards* (dated unknown in 2018).

Because of the presence of SSLs for Molybdenum in groundwater at the boundary of SCPA, Ameren's was required by the CCR Rule to determine the Nature & Extent ("N&E") of the groundwater contamination. The closest N&E wells to UMW-2D, UMW-3D, UMW-4D, and UMW-5D where there is known groundwater contamination are AM-1D and AM-1S.[37] These new N&E wells show results in 2019 of 446 ug/L and 58 ug/L for molybdenum, respectively. These wells demonstrate that groundwater is contaminated with Molybdenum beyond the boundary of SCPA and in the vicinity of Poeling Lake and the Chute in both deep and shallow groundwater.

Surface Water Samples

In 2017, Ameren hired Golder Associates, Inc. to perform surface water sampling around Sioux.[38] The results of this surface water sampling by Golder throughout 2017-2018 led to the production of a separate report by Ameren's consultant, Haley Aldrich, called the Human Health and Ecological Assessment of the Sioux Energy Plant dated February 2018 ("HHEA"), which was incorporated into the CMA for Sioux. The purpose of the HHEA was an attempt by Ameren to demonstrate that the placement of CCR in SCPA does not pose a threat to human health or the environment. Despite concluding that no health or ecological risks are posed by Sioux in the HHEA, the limited data revealed in the report demonstrates that CCR pollutants are being discharged directly to surface waters from hydrologically connected groundwater into Poeling Lake and the Chute.

Notably, the purpose of the Haley Aldrich report was not to assess whether groundwater pollutants are being discharged to surface waters. Rather, it was an attempt by Ameren to demonstrate that no imminent and substantial endangerment to human health or the environment was being caused by the migration of pollutants from SCPA to surface waters under the Resource Conservation and Recovery Act ("RCRA"), which at the time Ameren believe was its only source of liability related to CCR pollutants located in, and being released from, SCPA.

Unfortunately for Ameren, the risk assessment in the HHEA does not bear on liability for unpermitted discharges under the CWA. While MCW and WKA disagree that the sampling results do not demonstrate human health risks, nevertheless, such risk analysis is not the measure of the mark for compliance with the CWA. In its HHEA, Ameren adopted the EPA CCR standard (100 ug/L) for Molybdenum instead of the EPA Health Advisory Level (HA) (40 ug/L). Utilizing the more lenient standard, Ameren concluded there was no risk to human health posed by discharges of CCR pollutants from SCPA. However, if the limited data provided in the CMA about these surface water samples is compared against these two standards, such data demonstrates that, in fact, Ameren's CCR pollutants are being discharged to groundwater in quantities that exceed the EPA HA and may create human health risks.

[37] 2019 GWR, Appendix F.
[38] Notably, this report is not available online on Ameren's "Managing CCR's" website. MCW intends to obtain copies of this report through the discovery process during any litigation resulting from this Notice Letter.

Figure 3 demonstrates the locations of various surface water sampling locations conducted by Ameren in 2017 and 2018:

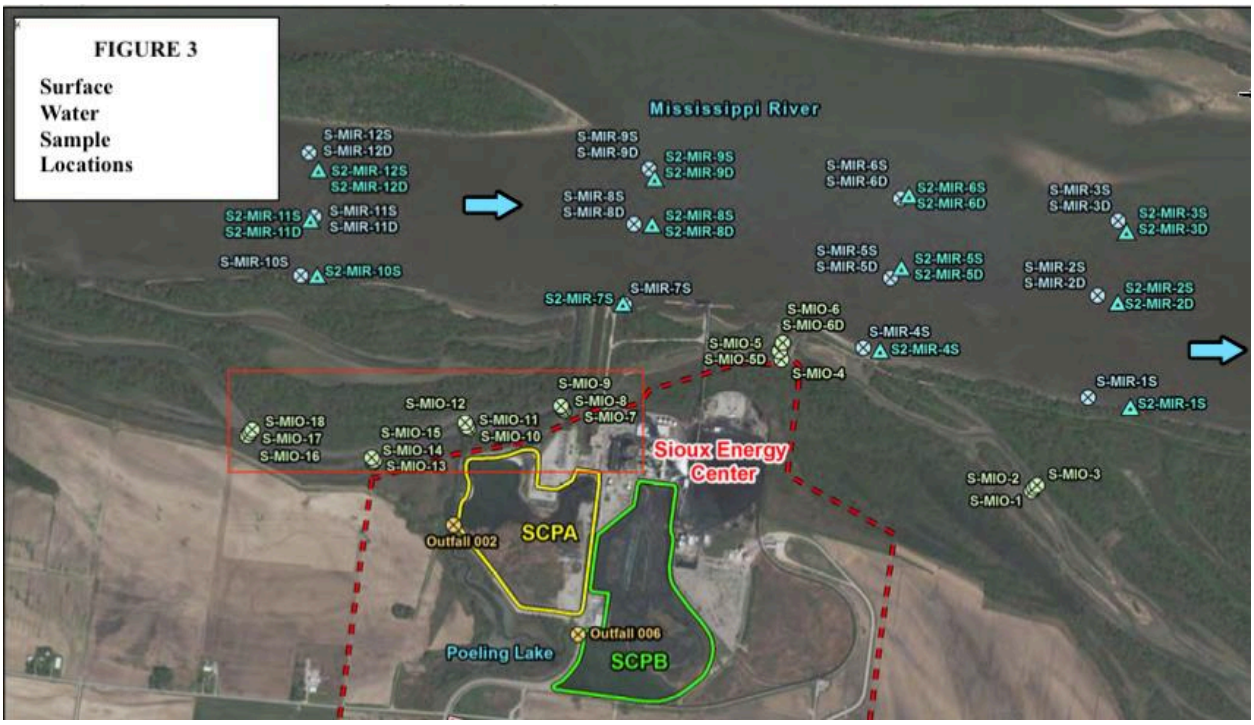


Table 2, below, demonstrates the vast difference between the presence of Molybdenum in background waters (or waters that are either subject to a 90,000 percent dilution factor from the Mississippi River or located far from SCPA), and surface water in the Chute.[39]

In the Mississippi River the highest "background" sample of Molybdenum in surface water in 2018 according to the Haley Aldrich report was 0.0018 mg/L (1.8 ug/L). In the Mississippi the highest "background" sample of Molybdenum in surface water in 2017 was 0.0023 mg/L (2.3 ug/L). Similarly, the highest surface water samples in 2017 from other chute locations on the eastern side of the property and the furthest distances from SCPA (MIO-1, MIO-2, MIO-3, MIO-4, and MIO-5) are representative of background with the highest reported levels of 0.0018 mg/L (1.8 ug/L). In stark contrast, the samples from MIO-7, MIO-8, MIO-9, MIO-10, MIO-11, MIO-12, MIO-13, MIO-14, MIO-15, MIO-16, and MIO-17 (within the Chute and Poeling Lake where there is known groundwater contamination from SCPA, and located within the red box in **Figure 3**) indicate levels in surface water ranging from 0.0499 mg/L (49 ug/L) to 0.0683 mg/L (68 ug/L).

[39] These figures were taken directly from the HHEA, Appendix A of the Sioux CMA, Tables 4a (Mississippi River 2018 Unfiltered) and 4c (Mississippi River Chute 2017 Unfiltered and Mississippi River 2017 Unfiltered).

All of these samples in the Chute are above EPA's Health Advisory Level of 40 ug/L. The samples from MIO-7 through MIO-17 are more than an order of magnitude greater than background concentrations, with the samples from MIO-10, MIO-11, and MIO-12 (located closest to SCPA) having the highest concentrations (all above 65.6 ug/L). Based on Ameren's own data, CCR pollutants are being discharged from SCPA into Poeling Lake, the Chute, and the Mississippi River. Not surprisingly, these surface water samples above EPA's Health Advisory Level of 40 ug/L in the Chute are in line with the shallow groundwater samples taken at the nearby N&E well AM-1S (58 ug/L).

* * *

TABLE 2- Molybdenum (Ameren Sampling)

Mississippi River 2018

Mississippi River Upstream					Mississippi River Adjacent										Mississippi River Downstream				
S2-MIR-10S	S2-MIR-11M	S2-MIR-11S	S2-MIR-12M	S2-MIR-12S	S2-MIR-4S	S2-MIR-5M	S2-MIR-5S	S2-MIR-6M	S2-MIR-6S	S2-MIR-7S	S2-MIR-8M	S2-MIR-8S	S2-MIR-9M	S2-MIR-9S	S2-MIR-1S	S2-MIR-2M	S2-MIR-2S	S2-MIR-3M	S2-MIR-3S
0.001 J		0.00098 J	0.0011 J	0.0011 J	0.0011 J	0.0012 J	0.0011 J	0.0014 J	0.0018 J	0.0012 J		0.0013 J	0.0012 J	0.0012 J	0.0012 J	0.0015 J	0.001 J	0.0018 J	0.0018 J

Chute 2017

Mississippi River Chute River Upstream			Mississippi River Chute River Adjacent												Mississippi River Chute River Downstream			
S-MIO-16	S-MIO-17	S-MIO-18	S-MIO-4	S-MIO-5	S-MIO-5D	S-MIO-6	S-MIO-6D	S-MIO-7	S-MIO-8	S-MIO-9	S-MIO-10	S-MIO-11	S-MIO-12	S-MIO-13	S-MIO-14	S-MIO-15	S-MIO-1	S-MIO-2	S-MIO-3
0.0527	0.0516	0.0499	0.0018 J	0.0032 J	0.0017 J	0.0018 J	0.0017 J	0.0633	0.0635	0.0553	0.0683	0.0667	0.0656	0.0481	0.0501	0.0546	0.0015 J	0.0015 J	0.0014 J

Mississippi River 2017

Mississippi River River Upstream					Mississippi River River Adjacent										Mississippi River River Downstream				
S-MIR-10S	S-MIR-11D	S-MIR-11S	S-MIR-12D	S-MIR-12S	S-MIR-4S	S-MIR-5D	S-MIR-5S	S-MIR-6D	S-MIR-6S	S-MIR-7S	S-MIR-8D	S-MIR-8S	S-MIR-9D	S-MIR-9S	S-MIR-1S	S-MIR-2D	S-MIR-2S	S-MIR-3D	S-MIR-3S
	0.0018 J			0.0017 J	0.0019 J	0.0023 J	0.002 J	0.0021 J	0.0021 J	0.0013 J			0.0014 J	0.0018 J	0.002 J	0.0021 J	0.0022 J	0.0023 J	0.0021 J

On June 12, 2020, MCW sampled the Chute from locations near MIO 7 though MIO 17 that were tested by Ameren in 2017 and 2018. See **Figure 4**. Not surprisingly, these samples demonstrate that Molybdenum levels in the Chute remain in excess of the EPA's Health Advisory limit of 40 ug/L for Molybdenum, with the highest levels present near the interface of SPCA, Poeling Lake and the Chute and ranging throughout the Chute between 18 and 55 ug/L. **Table 3** contains the results of MCW's sampling of the Chute for Molybdenum.

FIGURE 4

TABLE 3- Molybdenum (MCW Sampling)

Location	Site 1	Site 2	Site 3	Site 4
Result (ug/L)	18	**55**	**45**	**40**

Applying this same analysis to both Boron and Sulfate demonstrates that surface water samples from MIO-7, MIO-8, MIO-9, MIO-10, MIO-11, MIO-12, MIO-13, MIO-14, MIO-15, MIO-16, and MIO-17 are drastically higher than samples taken from any Mississippi River location or any chute location on the eastern side of the property and the furthest distances from SCPA (MIO-1, MIO-2, MIO-3, MIO-4, and MIO-5). **Table 4** demonstrates that Boron, like molybdenum, has concentrations over a magnitude greater in surface water samples in the Chute compared to the Mississippi River and chute locations on the eastern side of the property and the furthest distances from SCPA. **Table 5** demonstrates that Sulfate levels in the Chute near SCPA and Poeling Lake are around 4 times higher than surrounding areas on the eastern side of the property and the furthest distances from SCPA.

TABLE 4 – Boron

Mississippi River 2018 Unfiltered

Mississippi River Upstream					Mississippi River Adjacent										Mississippi River Downstream				
S2-MIR-10S	S2-MIR-11M	S2-MIR-11S	S2-MIR-12M	S2-MIR-12S	S2-MIR-4S	S2-MIR-5M	S2-MIR-5S	S2-MIR-6M	S2-MIR-6S	S2-MIR-7S	S2-MIR-8M	S2-MIR-8S	S2-MIR-9M	S2-MIR-9S	S2-MIR-1S	S2-MIR-2M	S2-MIR-2S	S2-MIR-3M	S2-MIR-3S
0.0296 J	0.0276 J	0.0301 J	0.0285 J	0.0309 J	0.0313 J	0.0303 J	0.0289 J	0.0461 J	0.0437 J	0.0312 J	0.0286 J	0.0285 J	0.0366 J	0.0367 J	0.0338 J	0.0337 J	0.0273 J	0.0465 J	0.047 J

Chute 2017 Unfiltered

Mississippi River Chute River Upstream			Mississippi River Chute River Adjacent												Mississippi River Chute River Downstream			
S-MIO-16	S-MIO-17	S-MIO-18	S-MIO-4	S-MIO-5	S-MIO-5D	S-MIO-6	S-MIO-6D	S-MIO-7	S-MIO-8	S-MIO-9	S-MIO-10	S-MIO-11	S-MIO-12	S-MIO-13	S-MIO-14	S-MIO-15	S-MIO-1	S-MIO-2	S-MIO-3
0.75	0.746	0.718	0.0402 J	0.0461 J	0.0379 J	0.041 J	0.034 J	0.805	0.782	0.705	0.859	0.839	0.838	0.651	0.654	0.715	0.0361 J	0.0351 J	0.0358 J

Mississippi River 2017 Unfiltered

Mississippi River River Upstream					Mississippi River River Adjacent										Mississippi River River Downstream				
S-MIR-10S	S-MIR-11D	S-MIR-11S	S-MIR-12D	S-MIR-12S	S-MIR-4S	S-MIR-5D	S-MIR-5S	S-MIR-6D	S-MIR-6S	S-MIR-7S	S-MIR-8D	S-MIR-8S	S-MIR-9D	S-MIR-9S	S-MIR-1S	S-MIR-2D	S-MIR-2S	S-MIR-3D	S-MIR-3S
0.0271 J	0.033 J	0.0274 J	0.0404 J	0.0412 J	0.0391 J	0.0362 J	0.0328 J	0.0492 J	0.0513 J	0.0279 J	0.0348 J	0.0303 J	0.0404 J	0.0369 J	0.0404 J	0.0385 J	0.0387 J	0.0534 J	0.0599 J

TABLE 5 - Sulfate

Mississippi River 2018 Unfiltered

Mississippi River Upstream					Mississippi River Adjacent										Mississippi River Downstream				
S2-MIR-10S	S2-MIR-11M	S2-MIR-11S	S2-MIR-12M	S2-MIR-12S	S2-MIR-4S	S2-MIR-5M	S2-MIR-5S	S2-MIR-6M	S2-MIR-6S	S2-MIR-7S	S2-MIR-8M	S2-MIR-8S	S2-MIR-9M	S2-MIR-9S	S2-MIR-1S	S2-MIR-2M	S2-MIR-2S	S2-MIR-3M	S2-MIR-3S
33.6	33	32.8	33.8	33.7	33.9	33.4	33.2	40.1	39.1	34	33.4	33.1	37.3	36.6	34.5	34	33.4	40.3	40.5

Chute 2017 Unfiltered

Mississippi River Chute			Mississippi River Chute												Mississippi River Chute				
River Upstream			River Adjacent												River Downstream				
S-MIO-16	S-MIO-17	S-MIO-18	S-MIO-4	S-MIO-5	S-MIO-5D	S-MIO-6	S-MIO-6D	S-MIO-7	S-MIO-8	S-MIO-9	S-MIO-10	S-MIO-11	S-MIO-12	S-MIO-13	S-MIO-14	S-MIO-15	S-MIO-1	S-MIO-2	S-MIO-3
143	144	144	31.3	32	32.3	31.7	31.5	162	157	143	177	173	169	135	133	146	30.2	30.2	30

Mississippi River 2017 Unfiltered

Mississippi River					Mississippi River										Mississippi River				
River Upstream					River Adjacent										River Downstream				
S-MIR-10S	S-MIR-11D	S-MIR-11S	S-MIR-12D	S-MIR-12S	S-MIR-4S	S-MIR-5D	S-MIR-5S	S-MIR-6D	S-MIR-6S	S-MIR-7S	S-MIR-8D	S-MIR-8S	S-MIR-9D	S-MIR-9S	S-MIR-1S	S-MIR-2D	S-MIR-2S	S-MIR-3D	S-MIR-3S
31.3	30.4	31.9	32.4	36.3	31.6	29.9	31.4	35.1	37.7	31.7	30.5	33.1	32.3	34.3	31.8	30.5	32.1	35.5	39.6

The inescapable conclusion from these surface water samples when compared to background groundwater samples nearby is that CCR pollutants from SPCA are constantly being discharged from SPCA, through groundwater into surface water, without a permit and in violation of the CWA.

Functional Equivalent

The Supreme Court in *Maui* has defined a discharge to groundwater as being the functional equivalent of a discharge to surface water "when the discharge reaches the same result through roughly similar means."[40] There is no doubt that discharges of CCR pollutants in wastewater over the top of SCPA would be illegal in the absence of a NPDES permit. In fact, Ameren has such a NPDES permit and is authorized to discharge a certain amount of wastewater flow from SPCA subject to effluent limitations designed to protect surface water quality. As demonstrated above by the unassailable conclusion from Ameren's own sampling which demonstrates that Molybdenum is present in the Chute at levels more than an order of magnitude greater than background, Ameren's ability to discharge these pollutants indirectly through groundwater underneath SCPA (as opposed to over the top directly via an outfall) into surface waters "reaches the same result through roughly similar means."[41]

Ameren's groundwater discharges from SCPA are further supported as being the functional equivalent of direct discharges under the Supreme Court's various factors relevant to such inquiry: (1) transit time, (2) distance traveled, (3) the nature of the material through which the pollutant travels, (4) the extent to which the pollutant is diluted or chemically changed as it

[40] *Maui*, Slip Opinion at 15.
[41] *Id*.

travels, (5) the amount of pollutant entering the navigable waters relative to the amount of the pollutant that leaves the point source, (6) the manner by or area in which the pollutant enters the navigable waters, (7) the degree to which the pollution (at that point) has maintained its specific identity.[42]

First, "[t]ime and distance will be the most important factors in most cases, but not necessarily every case."[43] As discussed above, the extreme proximity of the boundary of SCPA to the Chute and Poeling Lake (approximately 75 feet in many locations) combined with the self-reported fact that groundwater is moving at a rate of 190 to 2,651 feet per year near the bottom ash pond means that Ameren is constantly and continually discharging CCR pollutants into surface waters while avoiding permitting requirements designed to ensure protection of water quality. Because of this short time and distance, the discharge reaches the same result through similar means, as would discharges over the top of SPCA. Similarly, the manner by or area in which the CCR pollutants enters the Chute and Poeling Lake is so close and obvious that this scenario is the exact policy resulting in what the Supreme Court in *Maui* suggested would support a finding of functional equivalency to prevent "creating loopholes that undermine the statute's basic federal regulatory objectives."[44] The Mississippi River is the Nation's foremost navigable waterway. Ameren's discharges to the Mississippi River from its banks should be regulated under the Clean Water Act and does not "undermin[e] state regulation of groundwater."[45]

Second, the CCR pollutants travel through nothing more than the berm built by Ameren in 1967, which does not meet the liner requirements of the CCR Rule and is located where the alluvial aquifer has permanent hydrological connection to SCPA.

Third, while Ameren has tried to hide behind the 90,000 percent dilution factor of the Mississippi River to argue that SCPA does not pose a risk-based threat to human health and the environment, Ameren's own surface water samples demonstrate that surface water in the Chute has levels of Molybdenum that are more than an order of magnitude greater than background and other nearby surface waters that may in an unfortunate sense benefit from the extreme dilution factor of the Mississippi River to mask the discharge of pollutants from SCPA.

Finally, as mentioned above, Boron, Sulfate, and Molybdenum are pollutants specific to the coal combustion industry. No other sources of these pollutants exist in rural St. Charles County floodplain lands. The Molybdenum, Boron and Sulfate in high concentrations detected by Ameren in the Chute and Poeling Lake have maintained their specific identity and have not been commingled with other pollution sources.

[42] *Id*. at 16.
[43] *Id*.
[44] *Id*. at 17.
[45] Id.

The inescapable conclusion is that Ameren's discharges from SCPA are the functional equivalent of discharges to surrounding surface waters and are illegal absent an NPDES permit under the CWA.

III. Conclusion

In November 2018, Ameren made the following statement regarding mitigating legal risks:

> Environmental groups have also attempted to use the Clean Water Act (CWA) to compel certain utilities to remove CCR from their ash basins. However, appellate courts in three recent decisions have rejected those efforts. The courts have concluded that such claims should be based on the Resource Conservation and Recovery Act (RCRA) and the CCR Rule, not the CWA. Under RCRA, a litigant must establish the existence of an 'imminent and substantial endangerment. These decisions provide further support for Ameren's decision to close our ash basins in-place.[46]

Ameren rolled the dice in its CMA in selecting closure in place instead of closure by removal based on its now erroneous assessment of environmental laws. MCW advised Ameren in its comment letter on the CMA that it should not rely on this legal strategy and demanded that Ameren remove the CCR from SCPA. Under current Supreme Court precedent, Ameren is in violation of the CWA based on its unpermitted and illegal discharges from SCPA into groundwater that are the functional equivalent of discharges to surface water.

Discharges from Ameren's SCPA have consistently violated and continue to violate the CWA and present a direct and substantial threat to the water quality of the Mississippi River and its tributaries. The violations identified in this notice letter are based upon the best information currently available to MCW and WKA. There is more than a reasonable likelihood of separate violations and MCW and WKA expect that discovery will result in additional information, including information in Ameren's possession, such as samples from Poeling Lake, that may reveal additional CWA violations at the Facility. This letter covers all such violations occurring within the five years immediately preceding the service of this notice letter to the full extent contemplated by the law.

MCW and WKA intend to file suit against Ameren in the U.S. District Court for the Eastern District of Missouri to secure appropriate relief under federal and state law for these violations, and for any similar violations that occur after the date of this notice letter. In doing so, MCW and WKA seek to improve the water quality of Missouri's waters surrounding Sioux by securing Ameren's long-term compliance with the CWA.

[46] Report on Our Responsible Management of Coal Combustion Residuals, November 2018, Page 7.

If, during the 60-day notice period, representatives of Ameren wish to discuss any aspect of this notice or explore options for resolving the issues described, please contact the undersigned. Moreover, the 60-day notice period would be the appropriate time for Ameren to inform MCW and WKA of any steps it has already taken to remedy the violations discussed in this Notice. Because MCW and WKA does not presently intend to delay the filing of a Complaint past the end of the 60-day period—even if settlement negotiations are in progress at that time—any interest in such discussions should be communicated at your earliest possible convenience.

Sincerely,

Robert H. Menees
Attorney for Missouri Confluence Waterkeeper and Waterkeeper Alliance

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