THE CONDUIT THEORY: PROTECTING NAVIGABLE WATERS FROM DISCHARGES TO TRIBUTARY GROUNDWATER

INTRODUCTION

Society's dependence on freshwater is pervasive, as it supplies water for drinking, irrigation, industry, and more.[1] With the looming consequences of climate change and increasing water shortages across the country, it is more important than ever to protect our freshwater resources.[2] Nonetheless, water contamination—including groundwater contamination—persists.[3] Often, groundwater contamination is problematic

1. MOLLY A. MAUPIN ET AL., U.S. DEP'T OF INTERIOR, U.S. GEOLOGICAL SURVEY, ESTIMATED USE OF WATER IN THE UNITED STATES IN 2010, at 14 (2014), https://pubs.usgs.gov/circ/1405/pdf/circ1405.pdf.

2. *See* Sarah Ferris & Peter Sullivan, *Clean Water Crisis Threatens US*, HILL (Apr. 25, 2016), http://thehill.com/policy/energy-environment/277269-a-nation-over-troubled-water (detailing water shortage problems in the U.S.); Neil McIntyre, *How Will Climate Change Impact on Fresh Water Security*, GUARDIAN (Dec. 21, 2012), https://www.theguardian.com/environment/2012/nov/30/climate-change-water (detailing the impacts climate change may have on freshwater resources).

3. COMM. ON FUTURE OPTIONS FOR MGMT. IN THE NATION'S SUBSURFACE REMEDIATION EFFORT, NAT'L RES. COUNCIL, ALTERNATIVES FOR MANAGING THE NATION'S COMPLEX CONTAMINATED GROUNDWATER SITES 1 (2013).

where aquifers supply drinking water.[4] Another, more obscure, problem occurs when contaminants in groundwater seep into surface waters.[5] Groundwater is commonly hydrologically connected to surface waters, serving as a source of recharge for waterbodies such as streams and lakes.[6] This input can be significant, providing as much as 90% of a waterbody's average flow.[7] Where this type of hydrological connectivity is present, water moving between ground and surface waters frequently carries pollutants along with it.[8]

Yet, despite the important connection between ground and surface waters, no federal law explicitly prohibits discharges to tributary groundwater.[9] Even the Clean Water Act (CWA), the most comprehensive water quality statute, fails to directly regulate groundwater.[10] The CWA only prohibits discharges to "navigable waters," the definition of which excludes groundwater.[11] But some courts have found CWA violations when facilities discharge pollutants to groundwater that is a tributary of a navigable surface water.[12] Rather than regulating groundwater itself, these courts view groundwater as a conduit between point sources and navigable waters.[13] Accordingly, this theory of jurisdiction is sometimes called *the conduit theory*.[14]

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4. *See, e.g.*, U.S. ENVTL. PROT. AGENCY, WELLHEAD PROTECTION: A GUIDE FOR SMALL COMMUNITIES 17 (1993) (describing a situation where a town spent $5 million rehabilitating an aquifer that was contaminated by "a leaking underground storage tank").

5. WINTER ET AL., U.S. DEP'T OF INTERIOR, U.S. GEOLOGICAL SURVEY, GROUND WATER AND SURFACE WATER: A SINGLE RESOURCE 1 (1999).

6. *Id.* at 1, 9, 18.

7. *See, e.g.*, *id.* at 12 (reporting that "about 90 percent of [the Sturgeon River's] average annual flow is contributed by ground water").

8. *Id.* at 1.

9. Mary Christina Wood, *Regulating Discharges into Groundwater: The Crucial Link in Pollution Control Under the Clean Water Act*, 12 HARV. ENVTL. L. REV. 569, 570 (1988).

10. *See* 40 C.F.R. § 122.2(2)(v) (2018) (exempting groundwater from CWA's definition of jurisdictional waters); Revised Definition of "Waters of the United States," 84 Fed. Reg. 4154, 4155 (proposed Feb. 14, 2019) (to be codified at 33 C.F.R. pt. 328 and 40 C.F.R. pts. 110, 112, 116, 117, 122, 230, 232, 300, 302, & 401) (indicating that the Army Corps of Engineers and EPA are proposing a rule redefining "waters of the United States," which exempts groundwater); *infra* Part II (explaining that groundwater is not a jurisdictional water of the United States under CWA regulations).

11. 33 U.S.C. §§ 1311, 1362(7), 1362(12) (2012); 40 C.F.R. § 122.2(2)(v); Revised Definition of "Waters of the United States," 84 Fed. Reg. at 4155; *see infra* notes 45–56 and accompanying text (explaining the definition of "navigable waters").

12. *See, e.g.*, Haw. Wildlife Fund v. Cty. of Maui, 886 F.3d 737, 749 (9th Cir. 2018) (holding the County of Maui liable under the CWA for discharging pollutants through groundwater to the Pacific Ocean), *cert. granted*, 139 S. Ct. 1164 (2019).

13. *See, e.g.*, Haw. Wildlife Fund v. Cty. of Maui, 24 F. Supp. 3d 980, 994 (D. Haw. 2014) ("[L]iability arises even if the groundwater . . . is not itself protected by the Clean Water Act, as long as the groundwater is a conduit through which pollutants are reaching navigable-in-fact water."), *aff'd*, 886 F.3d 737 (9th Cir. 2018), *cert. granted*, 139 S. Ct. 1164 (2019).

14. Ky. Waterways All. v. Ky. Utils. Co., 905 F.3d 925, 932–33 n.5 (6th Cir. 2018).

Recently, a circuit split has developed over the legitimacy of the conduit theory.[15] The Fourth and Ninth Circuits have each adopted the conduit theory; although, they applied different tests for determining when a hydrological connection is sufficiently proximate for CWA jurisdiction to exist.[16] The Sixth Circuit, on the other hand, has unequivocally rejected the conduit theory.[17] Petitions for certiorari have been filed in the Fourth,[18] Sixth,[19] and Ninth Circuits,[20] and the Supreme Court has announced that it will hear the Ninth Circuit case in its 2019–2020 term.[21] The Court therefore has the opportunity to resolve the circuit split and determine whether the conduit theory is an appropriate interpretation of the CWA.[22]

This Note evaluates the conduit theory of CWA jurisdiction over discharges to tributary groundwater. Part I highlights the elements of a CWA violation.[23] Part II outlines the three major theories of CWA jurisdiction over discharges to tributary groundwater.[24] Part III explains the validity of the conduit theory as a matter of law.[25] Part IV describes conduit theory case law, explaining the reasoning of various courts.[26] Finally, Part V provides the major challenges to practitioners attempting to hold dischargers liable under the conduit theory.[27]

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15. *Compare Haw. Wildlife Fund*, 886 F.3d at 749 (adopting the conduit theory), *and* Upstate Forever v. Kinder Morgan Energy Partners, L.P., 887 F.3d 637, 651 (4th Cir.) (adopting the conduit theory), *petition for cert. filed* (U.S. Aug. 28, 2018) (No. 18-268), *with Ky. Waterways All.*, 905 F.3d at 938 (rejecting the conduit theory).

16. *Compare Haw. Wildlife Fund*, 886 F.3d at 749 (requiring that pollutants be "fairly traceable from the point source to a navigable water"), *with Upstate Forever*, 887 F.3d at 652 (requiring a "direct hydrological connection").

17. *Ky. Waterways All.*, 905 F.3d at 933.

18. Upstate Forever v. Kinder Morgan Energy Partners, L.P., 887 F.3d 637 (4th Cir.), *petition for cert. filed*, (U.S. Aug. 28, 2018) (No. 18-268).

19. Tenn. Clean Water Network v. Tenn. Valley Auth., 905 F.3d 436 (6th Cir. 2018), *petition for cert. filed* (U.S. Apr. 15, 2019) (No. 18-1307).

20. *Haw. Wildlife Fund*, 886 F.3d 737 (9th Cir. 2018), *cert. granted*, 139 S. Ct. 1164 (2019).

21. *Id.* (granting certiorari on the first question in County of Maui's petition). The Fourth and Sixth Circuit petitions are still pending, and it is likely that the Supreme Court will ultimately remand the cases in light of its decision in the Ninth Circuit case. Patrick A. Parenteau, *Supreme Court to Visit Maui*, AM. C. ENVTL. LAW. (Feb. 21, 2019), http://www.acoel.org/post/2019/02/21/Supreme-Court-to-Visit-Maui.aspx [hereinafter, Parenteau, *Maui*].

22. Parenteau, *Maui*, *supra* note 21.

23. *See infra* Part I (explaining the elements of a CWA violation).

24. *See infra* Part II (describing the point source theory, the navigable waters theory, and the conduit theory).

25. *See infra* Part III (analyzing the support for the conduit theory).

26. *See infra* Part IV (providing cases in which courts adopted, rejected, or failed to consider the conduit theory).

27. *See infra* Part V (describing the challenges practitioners will face in conduit theory cases).

I. ELEMENTS OF A CLEAN WATER ACT VIOLATION

Congress passed the CWA in 1972 with the objective of "restor[ing] and maintain[ing] the chemical, physical, and biological integrity of the Nation's waters."[28] The Act also declared an aggressive goal of eliminating "the discharge of pollutants into . . . navigable waters . . . by 1985."[29] Section 301(a) of the Act prohibits "the discharge of any pollutant" except as allowed under specific regulatory programs.[30] Broadly, a § 301 violation has six elements: (1) the discharge (2) of a pollutant (3) from a point source (4) to a navigable water (5) by a person (6) without a permit.[31] The CWA defines each of these elements.[32]

"Discharge":

A "discharge" is "any addition of any pollutant to navigable waters from any point source."[33] Congress did not define the term "addition,"[34] but the Environmental Protection Agency (EPA) and the courts have construed the term broadly.[35] Furthermore, the CWA applies whether these additions are intentional or incidental, making the CWA a strict liability statute.[36]

"Pollutant":

Under the CWA, pollutants include, among other things, "sewage, garbage, . . . chemical wastes, . . . and industrial, municipal, and agricultural waste."[37] Some natural pollutants are covered as well, such as "biological materials, . . . heat, . . . rock, [and] sand."[38] Thus, the term "pollutant" is quite broad and includes almost anything that is not naturally present in a given navigable water.[39]

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28. 33 U.S.C. § 1251(a) (2012).

29. *Id.* § 1251(a)(1).

30. *Id.* § 1311(a).

31. *Id.* (prohibiting "the discharge of any pollutant by any person"); *id.* § 1362(12)(A) (defining "discharge of a pollutant" as "any addition of any pollutant to navigable waters from any point source"); *id.* § 1342(k) (allowing the discharge of pollutants with a NPDES permit); *id.* § 1344(p) (allowing the discharge of dredge and fill material with a permit).

32. *Id.* § 1362(5), (6), (7), 12(A), (14).

33. *Id.* § 1362(12)(A).

34. *See id.* (containing no definition of "addition").

35. JEFFREY G. MILLER, PLAIN MEANING, PRECEDENT, AND METAPHYSICS: INTERPRETING THE ELEMENTS OF THE CLEAN WATER ACT OFFENSE 1 (2017) [hereinafter MILLER, ELEMENTS].

36. 36 AM. JUR. PROOF OF FACTS 3D *Proof of Wrongful Discharge of Pollutant into Waterway Under Federal Clean Water Act* § 6 (2018).

37. 33 U.S.C. § 1362(6).

38. *Id.*

39. 36 AM. JUR. PROOF OF FACTS 3D, *supra* note 36, § 2.

"Point Source":

A "point source" is generally "any discernible, confined and discrete conveyance . . . from which pollutants are or may be discharged."[40] The CWA does not regulate nonpoint source pollution, which is diffuse and often takes the form of runoff.[41] For example, the CWA explicitly excludes the regulation of "agricultural stormwater."[42] Nonpoint source pollution is left to the states[43]—an example of the CWA's commitment to federalism.[44]

"Navigable Waters":

The term "navigable waters" has different definitions across federal and state law depending on the context in which it is used.[45] "Traditionally navigable waters" are those that "are used, or are susceptible of being used, in their ordinary condition, as highways for commerce," as well as those subject to the "ebb and flow of the tide."[46] Under the CWA, Congress departed from this traditional meaning, instead defining "navigable waters" as "the waters of the United States, including the territorial seas."[47] Courts have frequently invoked this decision as evidence that Congress intended to create broad federal authority under the CWA.[48]

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40. 33 U.S.C. § 1362(14).

41. *Id.* §§ 1311, 1362(12), 1362(14); James C. Buresh, *State and Federal Land Use Regulation: An Application to Groundwater and Nonpoint Source Pollution Control*, 95 YALE L.J. 1433, 1434 & n.6 (1986).

42. 33 U.S.C. § 1362(14). This term is problematic, however. Agricultural runoff can be a point source when farmers over apply fertilizer that runs off into a navigable water. *See* Concerned Area Residents for Env't v. Southview Farm, 34 F.3d 114, 121 (2d Cir. 1994) ("[T]he jury could properly find that the run-off was primarily caused by the over-saturation of the fields rather than the rain and that sufficient quantities of manure were present so that the run-off could not be classified as 'stormwater.'").

43. *See* 33 U.S.C. § 1329 (laying out state duties and providing a grant program for nonpoint source management).

44. *See id.* § 1251(b) ("It is the policy of the Congress to recognize, preserve, and protect the primary responsibilities and rights of States . . . .").

45. JEFFREY G. MILLER ET AL., INTRODUCTION TO ENVIRONMENTAL LAW: CASES AND MATERIALS ON WATER POLLUTION CONTROL 220 (2d ed. 2017) [hereinafter MILLER, WATER POLLUTION CONTROL].

46. The Daniel Ball, 77 U.S. (10 Wall.) 557, 563 (1870); Phillips Petroleum Co. v. Mississippi, 484 U.S. 469, 481 (1988) (affirming that "navigable waters" also includes waters subject to the ebb and flow of the tide).

47. 33 U.S.C. § 1362(7).

48. *See* United States v. Riverside Bayview Homes, Inc., 474 U.S. 121, 133 (1985) ("In adopting this definition of 'navigable waters,' Congress evidently intended to repudiate limits that had been placed on federal regulation by earlier water pollution control statutes and to exercise its powers under the Commerce Clause to regulate at least some waters that would not be deemed 'navigable' under the classical understanding of that term."); Nat. Res. Def. Council, Inc. v. Callaway, 392 F. Supp. 685, 686 (D.D.C. 1975) ("Congress by defining the term 'navigable waters' . . . to mean 'the waters of the United States' . . . asserted federal jurisdiction over the nation's waters to the maximum extent permissible under the Commerce Clause of the Constitution. Accordingly, as used in the Water Act, the term is not limited to the traditional tests of navigability." (citation omitted) (quoting 33 U.S.C. § 1362(7))).

The exact scope of "[w]aters of the United States" is unclear, however; the meaning of the term has been highly controversial.[49] In 2015, under the Obama Administration, EPA and the U.S. Army Corps of Engineers (the Corps) promulgated the Clean Water Rule, clarifying the meaning of "waters of the United States."[50] Two years later, President Trump signed an executive order requiring EPA and the Corps to review the Clean Water Rule,[51] and as a result, the agencies recently proposed to rescind it.[52] Then, in February 2019, the Agencies proposed a rule redefining "waters of the United States."[53] Thus, the meaning of the term is currently in limbo, and the controversy is ultimately beyond the scope of this Note.[54] Regardless, one thing is clear—the term does not encompass groundwater.[55] Both the 2015 Rule and the forthcoming revision explicitly exempt groundwater from the meaning of "waters of the United States."[56]

"Person":

Under the CWA, "person" includes more than individual people.[57] The term also means a "corporation, partnership, association, State, municipality, commission, or political subdivision of a State, or any interstate body."[58] A discharge by any of these entities constitutes a discharge by a "person."[59]

"Without a Permit":

There are two types of permits under the CWA: § 402 and § 404 permits.[60] Section 404 covers dredged and fill material and is not pertinent

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49. *See* Jeff Daniels, *Trump Executive Order Seeks to Roll Back Controversial Obama Water Rules*, CNBC (Feb. 28, 2017), https://www.cnbc.com/2017/02/28/trump-executive-order-seeks-to-roll-back-controversial-obama-water-rule.html (explaining that agricultural and industrial groups have been critical of the 2015 Clean Water Rule).

50. Clean Water Rule: Definition of "Waters of the United States," 80 Fed. Reg. 37,054, 37,054–55 (June 29, 2015) (to be codified at 33 C.F.R. pt. 328 and 40 C.F.R. pts. 110, 112, 116, 117, 122, 230, 232, 300, 302 & 401).

51. Exec. Order No. 13,778, 3 C.F.R. § 296 (2017).

52. Definition of "Waters of the United States"—Recodification of Pre-Existing Rules, 82 Fed. Reg. 34,899, 34,899 (July 27, 2017) (to be codified at 33 C.F.R. pt. 328 and 40 C.F.R. pts. 110, 112, 116, 117, 122, 230, 232, 300, 302 & 401).

53. Revised Definition of "Waters of the United States," 84 Fed. Reg. 4154, 4155 (proposed Feb. 14, 2019) (to be codified at 33 C.F.R. pt. 328 and 40 C.F.R. pts. 110, 112, 116, 117, 122, 230, 232, 300, 302 & 401).

54. *Id.*

55. Clean Water Rule: Definition of "Waters of the United States," 80 Fed. Reg. at 37,055; Revised Definition of "Waters of the United States," 84 Fed. Reg. at 4155.

56. Clean Water Rule: Definition of "Waters of the United States," 80 Fed. Reg. at 37,055; Revised Definition of "Waters of the United States," 84 Fed. Reg. at 4155.

57. 33 U.S.C. § 1362(5) (2012).

58. *Id.*

59. *Id.* §§ 1311(a), 1362(5).

60. *Id.* §§ 1342, 1344.

for discharges to groundwater.[61] On the other hand, § 402 is directly relevant here, as it broadly covers the discharge of pollutants.[62] Under § 402, EPA and federally approved state environmental agencies may issue permits that allow facilities to discharge specific pollutants at set levels.[63] The National Pollutant Discharge Elimination System (NPDES) program provides the federal permitting scheme and the approval process for State Pollutant Discharge Elimination System (SPDES) programs.[64] To gain EPA approval, state programs must be at least as stringent as the federal program.[65] EPA has approved a SPDES program in 46 states.[66] When a facility pollutes waters without a permit, or in violation of a permit, that facility is subject to an enforcement action by EPA or an authorized state.[67] The CWA also allows for enforcement via citizen suits.[68] Citizens can initiate a civil action against a person who violates the CWA and the Administrator of EPA for failing to fulfill their mandatory duties.[69]

II. THREE THEORIES OF CWA JURISDICTION OVER DISCHARGES TO TRIBUTARY GROUNDWATER

Although CWA regulation has historically focused on surface waters,[70] the statute is an effective federal tool for protecting surface waters from discharges to tributary groundwater.[71] To bring groundwater under the

61. *Id.* § 1344.

62. *Id.* § 1342.

63. *Id.*

64. *Id.*

65. *Id.* § 1342(b)–(c); Colburn T. Cherney & Karen M. Wardzinski, *State and Federal Roles Under the Clean Water Act*, 1 NAT. RESOURCES & ENV'T, Winter 1986, at 19.

66. *See NPDES State Program Information: Authority*, EPA, https://www.epa.gov/npdes/npdes-state-program-information (last visited Apr. 27, 2019) (listing states with an approved SPDES program).

67. 33 U.S.C. § 1319(a).

68. *Id.* § 1365(a).

69. *Id.*

70. Wood, *supra* note 9, at 572.

71. Other statutes that somewhat address groundwater contamination include the Safe Drinking Water Act (SDWA), the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), and the Resource Conservation and Recovery Act (RCRA). *Id.* at 570. However, these acts only address a limited scope of groundwater contamination. *Id.* First, SDWA only protects public water systems. Safe Drinking Water Act § 1411, 42 U.S.C. § 300g (2012). But pollution also affects groundwater that is not used for public drinking water. *See* Wood, *supra* note 9, at 570 (explaining that the SDWA "fails to reach a significant number of private wells which rely on pure groundwater"). Second, CERCLA is reactive; it does not prohibit future actions but merely provides the procedures for addressing contamination, or threats of contamination, that stem from past pollution. Comprehensive Environmental Response, Compensation, and Liability Act §§ 102, 104, 42 U.S.C. §§ 9602(a), 9604(a)(1) (2012). Finally, RCRA is limited to regulating facilities that treat, store, or dispose of hazardous waste. Resource Conservation and Recovery Act of 1976 § 3005, 42 U.S.C. § 6925(a) (2012).

purview of the CWA, it must fit within the major elements of a CWA violation: a discharge of pollutants *from a point source to a navigable water*.[72] Three competing theories exist regarding which CWA element provides jurisdiction over discharges to tributary groundwater: the point source theory, the navigable waters theory, and the conduit theory.[73] Generally, the navigable waters theory has been the least successful,[74] while the conduit theory has been the most successful.[75]

First, the "point source theory" asserts that groundwater is itself a point source.[76] The CWA definition of a point source includes terms such as "channel," "conduit," and "well,"[77] which could be liberally construed to encompass groundwater.[78] However, this theory is counterintuitive to traditional CWA analysis and stretches the statutory language too far. The CWA requires that point sources affirmatively convey a pollutant to water, as "'point source' means any discernible, confined and discrete

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This scope leaves out many other sources of groundwater contamination, and RCRA specifically exempts certain wastes covered by the CWA. *Id.* § 6903(27). Applying this exemption in the inverse, the Sixth Circuit determined that coal ash pits—which are regulated under RCRA—cannot also be regulated under the CWA (even when they discharge pollutants through groundwater to surface waters). *See* Ky. Waterways All. v. Ky. Utils. Co., 905 F.3d 925, 937–38 (6th Cir. 2018) ("Were we to read the CWA to cover [defendant]'s conduct here, [defendant]'s coal ash treatment and storage practice would be exempted from RCRA's coverage. But coal ash is solid waste, and RCRA is specifically designed to cover solid waste."). Yet the potential for overlap between RCRA and the CWA is limited. For example, RCRA does not cover "domestic sewage," 42 U.S.C. § 6903(27), only the CWA does, 33 U.S.C. § 1362(6). Consequently, RCRA could not regulate, for instance, discharges to tributary groundwater from a wastewater treatment facility (but the CWA could). *See* Haw. Wildlife Fund v. Cty. of Maui, 886 F.3d 737, 749 (9th Cir. 2018) (holding the County of Maui liable under the CWA for discharging effluent through groundwater to the Pacific Ocean), *cert. granted*, 139 S. Ct. 1164 (2019). Therefore, RCRA is limited in its ability to address groundwater contamination. Although SDWA, CERCLA, and RCRA are all powerful tools, none encompasses all types of groundwater contamination. The gaps in this regulatory scheme can, however, be filled by the CWA. *See infra* Part III (detailing why CWA jurisdiction encompasses discharges to tributary groundwater).

72. 33 U.S.C. § 1311(a) (prohibiting "the discharge of any pollutant"); *id.* § 1362(12)(A) (defining "discharge of a pollutant" as "any addition of any pollutant to navigable waters from any point source").

73. Ky. Waterways All. v. Ky. Utils. Co., 303 F. Supp. 3d 530, 542 (E.D. Ky. 2017), *aff'd in part*, 905 F.3d 925 (6th Cir. 2018).

74. *Id.* ("Courts have overwhelmingly found that groundwater, even if hydrologically connected to navigable waters, is not itself a navigable water under the CWA.").

75. *See* Upstate Forever v. Kinder Morgan Energy Partners, L.P., 887 F.3d 637, 651 (4th Cir.) (adopting the conduit theory), *petition for cert. filed* (U.S. Aug. 28, 2018) (No. 18-268); *Haw. Wildlife Fund*, 886 F.3d at 749 (adopting the conduit theory).

76. *Ky. Waterways All.*, 303 F. Supp. 3d at 542.

77. 33 U.S.C. § 1362(14).

78. Raritan Baykeeper, Inc. v. NL Indus., Inc., No. 09-CV-4117 (JAP), 2013 WL 103880, at *15 (D.N.J. Jan. 8, 2013) ("Plaintiffs have sufficiently pleaded that groundwater is a point source because it is hydrologically connected to the river.").

conveyance."[79] In *Hawai'i Wildlife Fund v. County of Maui*, the court relied on this specific language to hold that injection wells (rather than groundwater) were point sources of pollutants.[80] The wells were "discrete" and identifiable, and they "collect[ed] and inject[ed] pollutants . . . into groundwater connected to the Pacific Ocean."[81] Therefore, the wells constituted a point source.[82] This analysis more naturally fits with CWA interpretation than one that classifies groundwater as a point source. Because a point source must be a "discrete conveyance,"[83] and groundwater seepage is often diffuse, groundwater would not meet the definition of point source in a strong majority of cases.[84] Accordingly, courts have frequently held that the point source theory is invalid.[85]

The second theory, "the navigable waters theory," asserts that groundwater is a jurisdictional navigable water under the CWA.[86] This theory rests on a broad interpretation of "navigable waters" because the Act defines the term as "waters of the United States."[87] While "traditionally navigable waters" only include tidally influenced waters and waters capable of being used in commerce,[88] "waters of the United States" is more expansive.[89] The term includes some waters that are not traditionally

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79. 33 U.S.C. § 1362(14); *see* Sierra Club v. Va. Elec. & Power Co. (*Virginia Electric II*), 903 F.3d 403, 411 (4th Cir. 2018) (finding that coal ash pits were not point sources because they "were not discrete conveyances," but rather "static recipients of the precipitation and groundwater that flowed through them").

80. *Haw. Wildlife Fund*, 886 F.3d at 745.

81. *Id.*

82. *Id.*

83. 33 U.S.C. § 1362(14).

84. *See* Sierra Club v. El Paso Gold Mines, Inc., 421 F.3d 1133, 1140–41 n.4 (10th Cir. 2005) ("Groundwater seepage that travels through fractured rock would be nonpoint source pollution . . . .").

85. *See, e.g.*, Ky. Waterways All. v. Ky. Utils. Co., 905 F.3d 925, 933 (6th Cir. 2018) ("[T]he CWA's text forecloses an argument that groundwater is a point source.").

86. Ky. Waterways All. v. Ky. Utils. Co., 303 F. Supp. 3d 530, 542 (E.D. Ky. 2017), *aff'd in part*, 905 F.3d 925 (6th Cir. 2018).

87. *See* Wood, *supra* note 9, at 586 (asserting that "[t]he CWA . . . allows room for groundwater within the term 'navigable waters,' since navigable waters are defined . . . as 'waters of the United States'" (quoting 33 U.S.C. § 1362(7))).

88. The Daniel Ball, 77 U.S. (10 Wall.) 557, 563 (1870).

89. *See* United States v. Riverside Bayview Homes, Inc., 474 U.S. 121, 133 (1985) ("In adopting this definition of 'navigable waters,' Congress evidently intended to repudiate limits that had been placed on federal regulation by earlier water pollution control statutes and to exercise its powers under the Commerce Clause to regulate at least some waters that would not be deemed 'navigable' under the classical understanding of that term."); Nat. Res. Def. Council, Inc. v. Callaway, 392 F. Supp. 685, 686 (D.D.C. 1975) ("Congress by defining the term 'navigable waters' . . . to mean 'the waters of the United States' . . . asserted federal jurisdiction over the nation's waters to the maximum extent permissible under the Commerce Clause of the Constitution. Accordingly, as used in the Water Act, the term is not limited to the traditional tests of navigability." (citation omitted) (quoting 33 U.S.C. § 1362(7))).

navigable—including tributaries and adjacent waters, such as wetlands.[90] As follows, the theory suggests that tributary groundwater, though not traditionally navigable, could fit within the Act's jurisdiction.[91]

However, the regulatory definition of "waters of the United States" excludes groundwater.[92] In 2015, EPA and the Corps explicitly excluded groundwater in their definition of "waters of the United States" when they promulgated the Clean Water Rule.[93] The Agencies recently proposed to rescind this rule[94] and subsequently proposed a new rule redefining "waters of the United States."[95] This proposed rule also excludes groundwater from CWA jurisdiction.[96] Because the regulatory definition of "waters of the United States" does not, and likely will not, encompass groundwater, the navigable waters theory is futile. In fact, many courts rejected this theory even before EPA promulgated the Clean Water Rule.[97]

The third theory, "the conduit theory," has been more successful.[98] Under this theory, groundwater is not a point source or a navigable water but rather a conduit between the two.[99] As EPA has explained, "discharges to [tributary groundwater] are regulated because such discharges are

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90. *See* 40 C.F.R. § 122.2(1)(v) (2018) (defining "waters of the United States" to include tributaries of navigable waters); *id.* § 122.2(1)(vi) (defining "waters of the United States" to include "waters adjacent to" navigable waters, "including wetlands"); *see also* Revised Definition of "Waters of the United States," 84 Fed. Reg. 4154, 4155 (proposed Feb. 14, 2019) (to be codified at 33 C.F.R. pt. 328 and 40 C.F.R. pts. 110, 112, 116, 117, 122, 230, 232, 300, 302 & 401) (defining "waters of the United States" to include tributaries of navigable waters); *id.* (defining "waters of the United States" to include wetlands adjacent to navigable waters).

91. *See* Wood, *supra* note 9, at 619 (summarizing the navigable waters theory).

92. 40 C.F.R. § 122.2(2)(v); Revised Definition of "Waters of the United States," 84 Fed. Reg. at 4155. Additionally, the Supreme Court has held that the term "navigable" must be given effect, and groundwater is not navigable in any sense of the term. Solid Waste Agency of N. Cook Cty. v. U.S. Army Corps of Eng'rs, 531 U.S. 159, 172 (2001).

93. Clean Water Rule: Definition of "Waters of the United States," 80 Fed. Reg. 37,054, 37,114 (June 29, 2015) (to be codified at 33 C.F.R. pt. 328 and 40 C.F.R. pts. 110, 112, 116, 117, 122, 230, 232, 300, 302 & 401).

94. Definition of "Waters of the United States"—Recodification of Pre-Existing Rules, 82 Fed. Reg. 34,899, 34,899 (proposed July 27, 2017) (to be codified at 33 C.F.R. pt. 328 and 40 C.F.R. pts. 110, 112, 116, 117, 122, 230, 232, 300, 302 & 401).

95. Revised Definition of "Waters of the United States," 84 Fed. Reg. at 4155.

96. *Id.*

97. *See, e.g.*, Wash. Wilderness Coal. v. Hecla Mining Co., 870 F. Supp. 983, 990 (E.D. Wash. 1994) ("[C]ourts that have considered the issue agree that 'waters of the United States' do not include 'isolated/nontributary groundwater.'").

98. *See* Upstate Forever v. Kinder Morgan Energy Partners, L.P., 887 F.3d 637, 651 (4th Cir.) (adopting the conduit theory), *petition for cert. filed* (U.S. Aug. 28, 2018) (No. 18-268); Haw. Wildlife Fund v. Cty. of Maui, 886 F.3d 737, 749 (9th Cir. 2018) (adopting the conduit theory), *cert. granted*, 139 S. Ct. 1164 (2019).

99. Ky. Waterways All. v. Ky. Utilities Co., 303 F. Supp. 3d 530, 542 (E.D. Ky. 2017), *aff'd in part*, 905 F.3d 925 (6th Cir. 2018).

effectively discharges to the directly connected surface waters."[100] The theory relies largely on a textualist interpretation of the CWA, as the statute prohibits the discharge of pollutants "to navigable waters"—not the discharge of pollutants *directly into* navigable waters.[101] As follows, the CWA applies when groundwater transports pollutants from an initial point source *to* a navigable surface water.[102] The conduit theory therefore requires facilities to obtain a NPDES permit when they discharge pollutants to tributary groundwater.[103] Ultimately, the conduit theory is the best argument for regulating discharges to groundwater, and courts have been more accepting of this theory than others.[104] The next Part presents evidence that the conduit theory is a valid interpretation of the CWA.

III. SUPPORT FOR THE CONDUIT THEORY

The conduit theory finds support in several places. First, the CWA's plain text suggests that it encompasses indirect discharges.[105] Second, the purpose of the CWA is broad and would be defeated if the CWA excluded discharges to tributary groundwater.[106] Third, several preambles to NPDES regulations indicate that EPA has historically supported the conduit theory.[107]

A. The Text of the CWA

The CWA's plain language affirms that it encompasses discharges to tributary groundwater. The Act prohibits any discharge of pollutants from a

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100. Amendments to the Water Quality Standards Regulation That Pertain to Standards on Indian Reservations, 56 Fed. Reg. 64,876, 64,892 (Dec. 12, 1991) (to be codified at 40 C.F.R. pt. 131).

101. *See Upstate Forever*, 887 F.3d at 650 ("[T]he CWA's definition of a discharge of a pollutant does not require a discharge directly to navigable waters . . . ." (citation omitted) (citing Rapanos v. United States, 547 U.S. 715, 743 (2006))).

102. *See* WINTER ET AL., *supra* note 5, at 66 (describing how a pollutant could travel from a point source discharge through groundwater to a surface water).

103. Non-tributary groundwater would still fall outside CWA jurisdiction, as it does not result in a discharge to a navigable water. Idaho Rural Council v. Bosma, 143 F. Supp. 2d 1169, 1179 (D. Idaho 2001). Yet this is not a flaw in the conduit theory. It is widely accepted that the CWA does not regulate non-tributary groundwater; instead, that regulatory authority falls to individual states. *See id.* (noting that courts agree the CWA does not encompass non-tributary groundwater).

104. *See Upstate Forever*, 887 F.3d at 651 (adopting the conduit theory); Haw. Wildlife Fund v. Cty. of Maui, 886 F.3d 737, 749 (9th Cir. 2018) (adopting the conduit theory), *cert. granted*, 139 S. Ct. 1164 (2019).

105. *See infra* Part III.A (discussing how the CWA's text supports the conduit theory).

106. *See infra* Part III.B (discussing how the CWA's purpose supports the conduit theory).

107. *See infra* Part III.D (discussing EPA interpretations that support the conduit theory).

point source *to* a navigable water.[108] It does not prohibit discharges directly *into* a navigable water.[109] This word choice implies that there need not be an immediate connection between a point source and surface water. Merriam-Webster defines "to" as "a function word . . . suggestive of *movement toward* a place, person, or thing reached."[110] On the other hand, Merriam-Webster defines "into" as "a function word *to indicate entry*, introduction, insertion, superposition, or inclusion."[111] Thus, Congress's intentional use of the word "to" suggests that the CWA reaches discharges that move toward navigable waters through an indirect channel. Even Justice Scalia—noted for his strict construction of statutory text[112]—acknowledged this distinction in his plurality opinion in *Rapanos v. United States*:

> The Act does not forbid the "addition of any pollutant *directly* to navigable waters from any point source," but rather the "addition of any pollutant *to* navigable waters." Thus, . . . lower courts have held that the discharge into intermittent channels of any pollutant *that naturally washes downstream* likely violates [the CWA], even if the pollutants discharged from a point source do not emit "directly into" covered waters, but pass "through conveyances" in between.[113]

Admittedly, Justice Scalia only contemplated surface waters in *Rapanos*.[114] Still, he perfectly articulated the textual support for the conduit theory and provided a useful foundation for its future application to

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108. 33 U.S.C. § 1311(a) (2012) (prohibiting "the discharge of any pollutant"); *id.* § 1362(12) (defining "discharge of a pollutant" as "any addition of any pollutant to navigable waters from any point source").

109. *See id.* § 1362(12) (defining "discharge of a pollutant" to mean "any addition of any pollutant *to navigable waters* from any point source" (emphasis added)); Rapanos v. United States, 547 U.S. 715, 743 (2006) (plurality opinion).

110. *To*, MERRIAM-WEBSTER, https://www.merriam-webster.com/dictionary/to?src=search-dict-box (last visited Apr. 27, 2019) (emphasis added).

111. *Into*, MERRIAM-WEBSTER, https://www.merriam-webster.com/dictionary/into (last visited Apr. 27, 2019) (emphasis added).

112. Jonathan R. Siegel, *Legal Scholarship Highlight: Justice Scalia's Textualist Legacy*, SCOTUSBLOG (Nov. 14, 2017), https://www.scotusblog.com/2017/11/legal-scholarship-highlight-justice-scalias-textualist-legacy/.

113. *Rapanos*, 547 U.S. at 743 (citations omitted) (first quoting 33 U.S.C. § 1362(12)(A); then quoting United States v. Velsicol Chem. Corp., 438 F. Supp. 945, 946–47 (W.D. Tenn. 1976)).

114. *See id.* at 730 (determining whether certain wetlands were waters of the U.S. under the CWA).

groundwater.[115] This interpretation indicates that discharges to tributary groundwater do fall within CWA jurisdiction because tributary groundwater transmits pollutants "to" a navigable water.

CWA jurisdiction also requires that discharges stem "from a point source."[116] As the Fourth Circuit explained, "[j]ust as the CWA[] . . . does not require a discharge directly to navigable waters, neither does the Act require a discharge directly from a point source."[117] The word "from" is "used as a function word *to indicate a starting point* of a physical movement."[118] When a facility discharges pollutants to groundwater, the pollutants *start* at the facility—the point source.[119] Though the pollutants may continue to travel through groundwater before reaching navigable waters, they nonetheless come *from* a point source.[120] The plain text of the CWA does not require any element of directness,[121] nor does it require that groundwater itself "separately channelize[]" pollutants.[122] But for a point source discharge to tributary groundwater, there would be no discharge of pollutants to surface waters. Therefore—despite a brief journey through groundwater—discharges can still come from point sources.[123]

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115. *See, e.g.*, Upstate Forever v. Kinder Morgan Energy Partners, L.P., 887 F.3d 637, 650 (4th Cir.) (relying on Justice Scalia's plurality opinion in *Rapanos* to support a reading of the CWA that encompasses indirect discharges through groundwater), *petition for cert. filed* (U.S. Aug. 28, 2018) (No. 18-268); Haw. Wildlife Fund v. Cty. of Maui, 886 F.3d 737, 748–49 (9th Cir. 2018) (relying on Justice Scalia's plurality opinion in *Rapanos* to support a reading of the CWA that encompasses indirect discharges through groundwater), *cert. granted*, 139 S. Ct. 1164 (2019). *But see* Ky. Waterways All. v. Ky. Utils. Co., 905 F.3d 925, 936 (6th Cir. 2018) (finding that Justice Scalia's opinion in *Rapanos* was not binding, and that, regardless, the opinion "sought to make clear that intermediary point sources do not break the chain of CWA liability[, but said] nothing of point-source-to-nonpoint-source dumping like that at issue [with groundwater]").

116. 33 U.S.C. § 1311(a) (prohibiting "the discharge of any pollutant"); *id.* § 1362(12)(A) (defining "discharge of a pollutant" as "any addition of any pollutant to navigable waters from any point source").

117. *Upstate Forever*, 887 F.3d at 650 (citation omitted).

118. *From*, MERRIAM-WEBSTER, https://www.merriam-webster.com/dictionary/from (last visited Apr. 27, 2019) (emphasis added).

119. Karl S. Coplan, *Citizen Litigants Citizen Regulators: Four Cases Where Citizen Suits Drove Development of Clean Water Law*, 25 COLO. NAT. RESOURCES, ENERGY & ENVTL. L. REV. 61, 70 (2014), http://digitalcommons.pace.edu/lawfaculty/934/.

120. Waterkeeper All., Inc. v. U.S. Envtl. Prot. Agency, 399 F.3d 486, 511 (2d Cir. 2005).

121. *See* 33 U.S.C. § 1362(12)(A) (defining "discharge of a pollutant" as "any addition of any pollutant to navigable waters from any point source").

122. *Waterkeeper All., Inc.*, 399 F.3d at 511 (reasoning that requiring otherwise "would be, in effect, to impose a requirement not contemplated by the Act: that pollutants be channelized not once but twice before the EPA can regulate them").

123. Upstate Forever v. Kinder Morgan Energy Partners, L.P., 887 F.3d 637, 650–51 (4th Cir.), *petition for cert. filed* (U.S. Aug. 28, 2018) (No. 18-268); Haw. Wildlife Fund v. Cty. of Maui, 886 F.3d 737, 746–47 (9th Cir. 2018), *cert. granted*, 139 S. Ct. 1164 (2019); *cf.* Peconic Baykeeper, Inc. v. Suffolk Cty., 600 F.3d 180, 188 (2d Cir. 2010) (finding CWA jurisdiction where trucks and helicopters discharged pesticides through air to water and holding "[t]he pesticides were discharged 'from' the

B. The Purpose of the CWA

The CWA's broad purpose implies that courts should construe it to cover discharges to tributary groundwater. Congress passed the CWA with the broad objective of "restor[ing] and maintain[ing] the chemical, physical, and biological integrity of the Nation's waters."[124] The Act also ambitiously set a goal of eliminating "the discharge of pollutants into . . . navigable waters . . . by 1985."[125] Excluding tributary groundwater from CWA jurisdiction would frustrate the purpose of the CWA.[126] Pollutants in navigable waters harm ecosystems, whether those pollutants directly entered a navigable water or traveled through groundwater first. As the court said in *Idaho Rural Council v. Bosma*, "whether pollution is introduced by a visible, above-ground conduit or enters the surface water through the aquifer matters little to the fish, waterfowl, and recreational users which are affected by the degradation of our nation's rivers and streams."[127]

Additionally, the failure to regulate tributary groundwater would be a significant loophole in the CWA. Companies could simply discharge pollutants into groundwater, thereby avoiding the need for a NPDES permit and escaping CWA regulation.[128] Nevertheless, those pollutants could eventually reach and contaminate navigable waters.[129] Take for example the following hypothetical: "Imagine a factory located adjacent to a river. To avoid the cost of water pollution control, the owner removes the pipe used to discharge waste to the river and instead pumps the waste through another pipe into a deep hole dug 50 feet from the river."[130] This alternative outlet might discharge pollutants into groundwater.[131] That groundwater could then migrate and become a source of recharge for the river, carrying the

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source, and not from the air"); *Waterkeeper All., Inc.*, 399 F.3d at 510 (upholding CWA regulation of Concentrated Animal Feeding Operations that discharge pollutants across fields to water and holding that "any discharge from a land area under the control of a CAFO is a point source discharge subject to regulation because it is a discharge from a CAFO"). *But see* Ky. Waterways All. v. Ky. Utils. Co., 905 F.3d 925, 934 (6th Cir. 2018) ("[W]hen the pollutants are discharged to the lake, they are not coming *from* a point source; they are coming from groundwater, which is a non-point-source conveyance.").

124. 33 U.S.C. § 1251(a).

125. *Id.* § 1251(a)(1).

126. *See* Sierra Club v. Va. Elec. & Power Co. (*Virginia Electric I*), 247 F. Supp. 3d 753, 762 (E.D. Va.) (concluding that the goal of the CWA "would be defeated if the CWA's jurisdiction did not extend to discharges to [tributary] groundwater"), *appeal dismissed*, No. 17-1537, 2017 WL 5068149 (4th Cir. July 13, 2017), *aff'd in part*, 903 F.3d 403 (4th Cir. 2018).

127. Idaho Rural Council v. Bosma, 143 F. Supp. 2d 1169, 1180 (D. Idaho 2001).

128. MILLER, ELEMENTS, *supra* note 35, at 54.

129. WINTER ET AL., *supra* note 5, at 66.

130. MILLER, ELEMENTS, *supra* note 35, at 54.

131. *See* WINTER ET AL., *supra* note 5, at 66 (discussing point source contamination of groundwater).

waste along with it.[132] Ultimately, the river ecosystem would be harmed regardless of whether the pollutants came from the pipe or the hole.[133] Yet by digging a hole, the factory would avoid CWA regulation and enforcement.[134] Unless, that is, the CWA extends to tributary groundwater.

C. The Legislative History of the CWA

The legislative history of the CWA does not shed much light on the issue of discharges to tributary groundwater. The most frequently invoked pieces of legislative history are the Aspin Amendment and the Senate Public Works Committee Report.[135] In 1972, Representative Les Aspin proposed an amendment to the CWA that would have added jurisdiction over groundwater.[136] The amendment failed to pass, and some courts have cited this failure as evidence that Congress did not intend for the CWA to cover groundwater.[137] However, its failure is not dispositive for the conduit theory. The Supreme Court has generally suggested that legislative inaction is not reliable evidence of Congressional intent because "[a] bill can be proposed for any number of reasons, and it can be rejected for just as many others."[138] For example, here, the Aspin Amendment would have also removed certain exemptions for oil and gas wells.[139] Accordingly, members of Congress may have voted against the amendment because they opposed the portion pertaining to oil and gas, rather than the portion pertaining to groundwater.[140] Additionally, the amendment would have extended CWA jurisdiction to both tributary and non-tributary groundwater.[141] Some legislators may have disagreed with the extension of jurisdiction to isolated

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132. *Id.* at 12, 23.

133. *See id.* at 66 ("[I]f the [groundwater] discharge of the contaminant plume is large or has high concentrations of contaminant, it could significantly affect the quality of the receiving surface-water body.").

134. MILLER, ELEMENTS, *supra* note 35, at 54.

135. Allison L. Kvien, Note, *Is Groundwater That Is Hydrologically Connected to Navigable Waters Covered Under the CWA?: Three Theories of Coverage & Alternative Remedies for Groundwater Pollution*, 16 MINN. J. L. SCI. & TECH. 957, 965 (2015).

136. 118 CONG. REC. 10,666 (1972).

137. *See, e.g.*, United States v. GAF Corp., 389 F. Supp. 1379, 1384 (S.D. Tex. 1975) ("The failure of the proposed amendment 'strongly militates against a judgment that Congress intended a result that it expressly declined to enact.'" (quoting Gulf Oil Corp. v. Copp Paving Co., 419 U.S. 186, 200 (1974))).

138. Solid Waste Agency of N. Cook Cty. v. U.S. Army Corps of Eng'rs, 531 U.S. 159, 170 (2001).

139. 118 CONG. REC. 10,666.

140. *See* Wood, *supra* note 9, at 614 ("Th[e oil and gas] part of the amendment spurred considerable controversy and likely caused the amendment's demise.").

141. *See* 118 CONG. REC. 10,666 (outlining a proposed amendment, which would have extended the CWA's jurisdiction to "navigable waters" and "ground waters").

groundwater. Others may have thought the CWA already covered tributary groundwater.[142] Because members of Congress could have had diverse motivations for striking down the Aspin Amendment, it is not a reliable source for discerning Congressional intent regarding CWA jurisdiction over discharges to tributary groundwater.[143]

The Senate Report is also frequently cited as evidence of Congressional intent, but similarly fails to provide concrete guidance here.[144] The report on the 1972 amendments to the CWA explains that the Senate Public Works Committee declined to incorporate bills that "provided authority to establish Federally approved standards for groundwaters . . . . Because the jurisdiction regarding groundwaters is so complex and varied from State to State."[145] Like the Aspin Amendment, this report generally references all groundwater, not just tributary groundwater.[146] Thus, the Senate Committee may have only intended to decline CWA jurisdiction over isolated groundwater.[147] Furthermore, the report later states that "[t]he importance of groundwater in the hydrological cycle cannot be underestimated," which suggests that Congress appreciated the significance of tributary groundwater and its capacity to affect surface waters.[148] However, this evidence is not particularly robust or revealing. The Senate Report is ultimately unclear and does not speak directly to the conduit theory.[149] As one court put it, "[i]n short, the interpretive history of the CWA only supports the unremarkable proposition with which all courts agree—that the CWA does not regulate 'isolated/nontributary groundwater' which has no [effect] on surface water."[150] The legislative history of the CWA therefore does not clarify whether its jurisdiction encompasses discharges to tributary groundwater.

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142. *See* Wood, *supra* note 9, at 614 ("[M]embers of Congress could have assumed that groundwater was implicitly included within the definition of 'navigable waters' in section 402, thus rendering Aspin's amendment unnecessary.")

143. *Id.* at 613–14.

144. *See* Kvien, *supra* note 135, at 965–66 (discussing the legislative history of the CWA and suggesting that although the Senate Report is widely cited, it does not "foreclose the possibility of regulating [tributary] groundwater").

145. S. REP. NO. 92-414, at 73 (1971), *reprinted in* 1972 U.S.C.C.A.N. 3668, 3739.

146. *See id.* (referencing the whole "hydrological cycle").

147. *See* Wood, *supra* note 9, at 616 (noting that the Senate Committee may have simply "refrained from applying standards of any sort to isolated groundwater").

148. S. REP. NO. 92-414, at 73.

149. *See id.* (discussing groundwater generally and not distinguishing between tributary and isolated groundwater).

150. Idaho Rural Council v. Bosma, 143 F. Supp. 2d 1169, 1180 (D. Idaho 2001) (quoting Wash. Wilderness Coal. v. Hecla Mining Co., 870 F. Supp. 983, 990 (E.D. Wash. 1994)).

D. Agency Interpretation of the CWA

While the legislative history of the CWA fails to provide useful interpretive guidance, EPA's position on the conduit theory has been clear and consistent for many years.[151] In several preambles to CWA regulations, EPA has explicitly recognized jurisdiction over discharges to groundwater with a hydrological connection to navigable waters.[152] Like legislative history for statutes, preambles provide guidance for interpreting regulations.[153] Because preambles outline an agency's position and reasoning, courts often afford them some deference.[154]

First, in a preamble to a regulation establishing permit standards for stormwater discharges from point sources, EPA specified that "ground waters are not covered by this rulemaking (unless there is a hydrological connection between the ground water and a nearby surface water body)."[155] This preamble marks the first indication that EPA believes tributary groundwater falls within CWA jurisdiction.[156] Though, at this point, EPA did not explain its stance or provide any specificity.[157]

One year later, EPA took its position a step further by explicitly asserting CWA jurisdiction over tributary groundwater under the conduit theory.[158] In its preamble to a regulation for water quality standards on Native American reservations, EPA affirmed that the CWA requires NPDES permits for discharges to tributary groundwater.[159] The Agency further explained: "In these situations, the affected groundwaters are not

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151. Shortly before this Note was published, EPA issued an interpretive statement on the conduit theory, concluding that the CWA does not cover the discharge of pollutants through tributary groundwater. MATTHEW Z. LEOPOLD & DAVID P. ROSS, ENVTL. PROTECTION AGENCY, INTERPRETIVE STATEMENT ON APPLICATION OF THE CLEAN WATER ACT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PROGRAM TO RELEASES OF POLLUTANTS FROM A POINT SOURCE TO GROUNDWATER 7 (Apr. 12, 2019), https://www.eenews.net/assets/2019/04/16/document_gw_02.pdf.

152. National Pollutant Discharge Elimination System Permit Application Regulations for Storm Water Discharges, 55 Fed. Reg. 47,990, 47,997 (Nov. 16, 1990) (to be codified at 40 C.F.R. pts. 122, 123, & 124); Amendments to the Water Quality Standards Regulation That Pertain to Standards on Indian Reservations, 56 Fed. Reg. 64,876, 64,892 (Dec. 12, 1991) (to be codified at 40 C.F.R. pt. 131); National Pollutant Discharge Elimination System Permit Regulation and Effluent Limitations Guidelines and Standards for Concentrated Animal Feeding Operations, 66 Fed. Reg. 2960, 3015 (proposed Jan. 12, 2001) (to be codified at 40 C.F.R. pts. 122 & 412).

153. Kevin M. Stack, *Preambles as Guidance*, 84 GEO. WASH. L. REV. 1252, 1260 (2016).

154. *Id.* at 1281.

155. National Pollutant Discharge Elimination System Permit Application Regulations for Storm Water Discharges, 55 Fed. Reg. at 47,997.

156. *Id.*

157. *Id.*

158. Amendments to the Water Quality Standards Regulation That Pertain to Standards on Indian Reservations, 56 Fed. Reg. 64,876, 64,892 (Dec. 12, 1991) (to be codified at 40 C.F.R. pt. 131).

159. *Id.*

considered 'waters of the United States' but discharges to them are regulated because such discharges are effectively discharges to the directly connected surface waters."[160] Here, EPA added specificity to its position. The Agency clarified that it is not regulating groundwater itself.[161] Instead, it is regulating discharges that reach navigable waters via groundwater.[162] In this way, EPA expressed clear support for the conduit theory.

Most recently, EPA reiterated its position in a preamble regarding NPDES permits for Concentrated Animal Feeding Operations.[163] The Agency reiterated its prior assertions and added: "EPA has made a determination that, in general, collected or channeled pollutants conveyed to surface waters via ground water can constitute a discharge subject to the Clean Water Act."[164] EPA also appeared to set itself up for a deference argument, explaining that in making this determination, it "utilized its expertise" by relying on matters of both science and policy.[165] Overall, these three preambles establish an increasingly definitive line of evidence that tributary groundwater falls within the purview of the CWA. As a result, EPA's position adds meaningful weight to the conduit theory. Indeed, several courts have relied on EPA's preambles in interpreting the CWA.[166] This reliance, in conjunction with other analyses, has convinced many courts to adopt the conduit theory.[167]

EPA further affirmed its opinion in an amicus brief to the Ninth Circuit in *Hawai'i Wildlife Fund v. County of Maui*.[168] In its brief, EPA supported Plaintiff-Appellee Hawai'i Wildlife Fund and asserted that the CWA covers discharges to tributary groundwater.[169] The Agency definitively stated:

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160. *Id.*

161. *See id.* (acknowledging that groundwater is not a "water[] of the United States" under the CWA).

162. *See id.* (explaining that the CWA protects surface waters from discharges to hydrologically connected groundwater).

163. National Pollutant Discharge Elimination System Permit Regulation and Effluent Limitations Guidelines and Standards for Concentrated Animal Feeding Operations, 66 Fed. Reg. 2960, 3015 (proposed Jan. 12, 2001) (to be codified at 40 C.F.R. pts. 122 & 412).

164. *Id.* at 3015, 3017.

165. *Id.* at 3018.

166. *See, e.g.*, Upstate Forever v. Kinder Morgan Energy Partners, L.P., 887 F.3d 637, 651 (4th Cir.) ("This interpretation by the EPA of its statutory authority 'warrants respectful consideration,' especially in the context of a 'complex and highly technical regulatory program.'" (quoting Wis. Dep't of Health & Family Servs. v. Blumer, 534 U.S. 473, 497 (2002))), *petition for cert. filed* (U.S. Aug. 28, 2018) (No. 18-268); Wash. Wilderness Coal. v. Hecla Mining Co., 870 F. Supp. 983, 990–91 (E.D. Wash. 1994) ("[T]he preamble explains EPA's policy to require NPDES permits for discharges which may enter surface water via groundwater . . . .").

167. *See infra* Part IV.A (detailing cases in which courts have adopted the conduit theory).

168. Brief for the United States as Amicus Curiae in Support of Plaintiffs-Appellees at 12, Haw. Wildlife Fund v. Cty. of Maui, 886 F.3d 737 (2018) (No. 15-17447), 2016 WL 3098501, at *12.

169. *Id.* at 5.

"EPA's longstanding position is that a discharge from a point source to jurisdictional surface waters that moves through groundwater with a direct hydrological connection comes under the purview of the CWA's permitting requirements."[170] Moreover, EPA argued that its interpretation warranted *Chevron* deference.[171] This firm endorsement of the conduit theory cements EPA's position in favor of CWA jurisdiction.

The Agency's interpretation is subject to change however. In February 2018, EPA published a notice seeking comment on the conduit theory.[172] The notice asked for input on whether EPA has the authority to regulate discharges to tributary groundwater and, if so, "whether those releases would be better addressed through other federal authorities as opposed to the NPDES permit program."[173] At this point, it is unclear whether the Agency plans to propose a regulation or issue a policy statement (or if it will ultimately decide not to act).[174] Until EPA acts, it is too speculative to contemplate what the ultimate outcome of this notice will be. For now, EPA's preambles remain its voice on the conduit theory.[175]

IV. CONDUIT THEORY CASE LAW

Courts have applied the conduit theory for some time and have been more willing to recognize it than other theories.[176] Generally, courts adopting the conduit theory have done so because it is consistent with the CWA's purposes, EPA's position, and persuasive precedent.[177] Courts that have rejected the conduit theory have typically done so because they believe groundwater regulation should be left to the states.[178] Other courts

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170. *Id.* (citing Amendments to the Water Quality Standards Regulation That Pertain to Standards on Indian Reservations, 56 Fed. Reg. 64,876, 64,892 (Dec. 12, 1991) (to be codified at 40 C.F.R. pt. 131)).

171. *Id.* at 24 ("EPA's interpretation is entitled to *Chevron* deference." (citing Chevron, U.S.A., Inc. v. Nat. Res. Def. Council, Inc., 467 U.S. 837, 842–43 (1984))).

172. Clean Water Act Coverage of "Discharges of Pollutants" Via a Direct Hydrologic Connection to Surface Water, 83 Fed. Reg. 7126, 7126 (proposed Feb. 20, 2018) (to be codified at 40 C.F.R. pt. 122).

173. *Id.* at 7128.

174. *See id.* ("EPA seeks comment on what format or process EPA should use to revise or clarify its previous statement (*e.g.*, through memorandum, guidance, or in the form of rulemaking) if the Agency pursues further action in response to this request for comment.").

175. *See supra* note 151 and accompanying text (noting that shortly before this Note was published, EPA issued an interpretive statement rejecting the conduit theory).

176. MILLER, WATER POLLUTION CONTROL, *supra* note 45, at 223; *see, e.g.*, Wash. Wilderness Coal. v. Hecla Mining Co., 870 F. Supp. 983, 990 (E.D. Wash. 1994) (applying the conduit theory to groundwater more than two decades ago).

177. *See infra* Part IV.A (detailing cases in which courts have adopted the conduit theory).

178. *See infra* Part IV.B (detailing cases in which courts have rejected the conduit theory).

were seemingly confused by the difference between the conduit theory and the navigable waters theory.[179] Adding to this muddle, although the Fourth and Ninth Circuits recently agreed that the conduit theory is valid, they disagreed over the appropriate test to apply.[180]

A. Why Courts Have Adopted the Conduit Theory

Many courts that adopted the conduit theory did so in part because of the CWA's purpose. For example, in *Upstate Forever v. Kinder Morgan Energy Partners, L.P.*, the Fourth Circuit emphasized the CWA's sweeping goal and its strict liability regime.[181] The court found that it would frustrate the purpose of the CWA if facilities could avoid liability by discharging to groundwater.[182] Similarly, in *Northern California River Watch v. Mercer Fraser Co.*, the Northern District of California found that because the CWA applies to people who discharge pollutants directly into a navigable water, it should also apply to people who discharge those "same pollutants into a man-made settling basin . . . and then allow[] the pollutants to seep into the river via the groundwater."[183] Likewise, in *Idaho Rural Council v. Bosma*, the District of Idaho explained that water pollution would harm the environment, whether it enters surface waters directly or travels indirectly though groundwater.[184] These cases exemplify the reasoning of many courts that have adopted the conduit theory. They agree that the purpose of the CWA is to protect the nation's waters, and that it would be impossible to fulfill that goal without regulating discharges to tributary groundwater.

A number of courts have also relied on EPA's preambles to justify the conduit theory. For example, in *Upstate Forever*, the Fourth Circuit cited two EPA preambles that assert jurisdiction over hydrologically connected groundwater.[185] The court decided that EPA's position "'warrant[ed]

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179. *See infra* notes 220–37 and accompanying text (detailing cases in which courts failed to consider the conduit theory).

180. *Compare* Upstate Forever v. Kinder Morgan Energy Partners, L.P., 887 F.3d 637, 651 (4th Cir.) (requiring a direct connection between a point source, groundwater, and navigable waters), *petition for cert. filed* (U.S. Aug. 28, 2018) (No. 18-268), *with* Haw. Wildlife Fund v. Cty. of Maui, 886 F.3d 737, 749 (9th Cir. 2018) (requiring that a pollutant be "fairly traceable . . . such that the discharge is the functional equivalent of a discharge into the navigable water"), *cert. granted*, 139 S. Ct. 1164 (2019); *see also infra* Part IV.C (explaining the different tests offered by the Fourth and Ninth Circuits).

181. *Upstate Forever*, 887 F.3d at 652.

182. *Id.*

183. N. Cal. River Watch v. Mercer Fraser Co., No. C–04–4620, 2005 WL 2122052, at *2 (N.D. Cal. Sept. 1, 2005).

184. Idaho Rural Council v. Bosma, 143 F. Supp. 2d 1169, 1179 (D. Idaho 2001).

185. *Upstate Forever*, 887 F.3d at 651 (first citing National Pollutant Discharge Elimination System Permit Regulation and Effluent Limitations Guidelines and Standards for Concentrated Animal Feeding Operations, 66 Fed. Reg. 2960, 3015 (proposed Jan. 12, 2001) (to be codified at 40 C.F.R. pts.

respectful consideration,' especially in the context of a 'complex and highly technical regulatory program.'"[186] The court in *Sierra Club v. Virginia Electric & Power Co.* also looked to EPA's preambles.[187] There, the Eastern District of Virginia found that "even viewing the preamble as simply persuasive authority, the combination of the case law and minimal deference" was sufficient evidence that CWA jurisdiction extends to tributary groundwater.[188] Additionally, in *Washington Wilderness Coalition v. Hecla Mining Co.*, the Eastern District of Washington rejected another court's opinion that these preambles were merely a "collateral reference to a problem."[189] Instead, the court found the preambles to be a clear and convincing statement of policy.[190] The reasoning in these cases is characteristic of the courts that relied on EPA's preambles in assessing the conduit theory. Even without any clear deference to EPA, these courts found EPA's position persuasive.

In addition to the CWA's purpose and EPA's preambles, many courts looked to precedent. For example, in *Hawai'i Wildlife Fund v. County of Maui*, the Ninth Circuit recently held that discharges to tributary groundwater fall within the CWA.[191] In that case, the Ninth Circuit applied the conduit theory, which it called the "indirect discharge theory," to hold the County of Maui liable for discharging effluent to the ocean via groundwater.[192] The court relied largely on prior case law.[193] For instance, the court looked to Justice Scalia's interpretation of the CWA in *Rapanos*, where he explained that the Act covers indirect discharges.[194] The court also cited cases finding CWA jurisdiction over discharges that traveled

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122 & 412); then citing Amendments to the Water Quality Standards Regulation That Pertain to Standards on Indian Reservations, 56 Fed. Reg. 64,876, 64,892 (Dec. 12, 1991) (to be codified at 40 C.F.R. pt. 131)).

186. *Id.* (quoting Wis. Dep't of Health & Family Servs. v. Blumer, 534 U.S. 473, 497 (2002)).

187. Sierra Club v. Va. Elec. & Power Co. (*Virginia Electric I*), 247 F. Supp. 3d 753, 762 (E.D. Va.), *appeal dismissed*, No. 17-1537, 2017 WL 5068149 (4th Cir. July 13, 2017), *aff'd in part*, 903 F.3d 403 (4th Cir. 2018).

188. *Id.*

189. Wash. Wilderness Coal. v. Hecla Mining Co., 870 F. Supp. 983, 990–91 (E.D. Wash. 1994) (quoting Village of Oconomowoc Lake v. Dayton Hudson Corp., 24 F.3d 962, 966 (7th Cir. 1994)).

190. *Id.*

191. Haw. Wildlife Fund v. Cty. of Maui, 886 F.3d 737, 749 (9th Cir. 2018), *cert. granted*, 139 S. Ct. 1164 (2019).

192. *Id.* at 747, 749.

193. *Id.* at 747–48 (first citing Concerned Area Residents for Env't v. Southview Farm, 34 F.3d 114, 119 (2d Cir. 1994); then citing Sierra Club v. Abston Constr. Co., 620 F.2d 41, 45 (5th Cir. 1980); and then citing Peconic Baykeeper, Inc. v. Suffolk Cty., 600 F.3d 180, 188 (2d Cir. 2010); and finally citing Rapanos v. United States, 547 U.S. 715, 743 (2006) (plurality opinion)).

194. *Id.* at 748 (citing *Rapanos*, 547 U.S. at 743); *see supra* Part III.A (discussing Justice Scalia's opinion in *Rapanos*).

indirectly through non-aqueous mediums.[195] One of these cases, *Peconic Baykeeper Inc. v. Suffolk County*, held that the CWA applied to discharges of pesticides from trucks and helicopters when the pollutants traveled through the air before reaching jurisdictional waters.[196] By analogy, the Ninth Circuit found the CWA must also extend to discharges that move through groundwater.[197] To decide otherwise, the court said, would be to render previous conduit cases meaningless.[198]

B. Why Courts Have Rejected the Conduit Theory

While some courts have adopted the conduit theory, others have rejected it, finding that the CWA does not extend to discharges to tributary groundwater. In a pair of cases, the Sixth Circuit departed from its sister circuits and dubbed the conduit theory invalid.[199] The court primarily provided its reasoning in *Kentucky Waterways Alliance v. Kentucky Utilities Co*.—holding that jurisdiction is unsupported by the CWA's text and its commitment to cooperative federalism.[200]

First, the Sixth Circuit found that the text of the CWA requires that point sources discharge pollutants directly into navigable waters.[201] Whereas the Fourth and Ninth Circuits interpreted the term "discharge,"[202] the Sixth Circuit interpreted the term "effluent limitation,"[203] which appears in a different part of the statute.[204] The CWA defines "effluent limitation" as a restriction on discharges "from point sources into navigable waters."[205] The court found that the use of the word "into" in this definition "indicates directness" and "leaves no room for intermediary mediums to carry . . . pollutants."[206] Discharges through groundwater would be

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195. *Haw. Wildlife Fund*, 886 F.3d at 747–48.

196. *Id.* (citing Peconic Baykeeper, Inc. v. Suffolk Cty., 600 F.3d 180, 188 (2d Cir. 2010)).

197. *Id.*

198. *Id.* at 748.

199. Ky. Waterways All. v. Ky. Utils. Co., 905 F.3d 925, 938 (6th Cir. 2018); Tenn. Clean Water Network v. Tenn. Valley Auth., 905 F.3d 436, 446 (6th Cir. 2018), *petition for cert. filed* (U.S. Apr. 15, 2019) (No. 18-1307).

200. *Ky. Waterways All.*, 905 F.3d at 934, 936–37.

201. *Id.* at 934.

202. *See* Upstate Forever v. Kinder Morgan Energy Partners, L.P., 887 F.3d 637, 650 (4th Cir.) (citing 33 U.S.C. § 1362(12) (2012)) (referencing the definition of "discharge"), *petition for cert. filed* (U.S. Aug. 28, 2018) (No. 18-268); Haw. Wildlife Fund v. Cty. of Maui, 886 F.3d 737, 748 (9th Cir. 2018) (citing Rapanos v. United States, 547 U.S. 715, 743 (2006) (plurality opinion)) (referencing Justice Scalia's interpretation of "discharge" in *Rapanos*), *cert. granted*, 139 S. Ct. 1164 (2019).

203. *Ky. Waterways All.*, 905 F.3d at 934 (citing 33 U.S.C. § 1362(11)).

204. 33 U.S.C. § 1314(b).

205. *Id.* § 1362(11).

206. *Ky. Waterways All.*, 905 F.3d at 934.

incompatible with this interpretation of the CWA's text, and thus, the conduit theory could not stand.[207]

Next, the Sixth Circuit looked to the CWA's prohibition against discharges "from" point sources.[208] The court noted that groundwater is not a point source and determined that when discharges travel through groundwater, they come "from" the groundwater.[209] Even if a point source initially discharged pollutants, the groundwater would be the ultimate—nonpoint—conveyance.[210] The Eastern District of Kentucky (the lower court in this case) expressed the same concern.[211] The court feared that adopting the conduit theory would lead to the regulation of nonpoint sources, theorizing that many nonpoint discharges could be "reformulated . . . by going up the causal chain to identify the initial point sources."[212] In this way, the conduit theory would extend CWA jurisdiction too far, effectively eliminating the point source requirement.[213]

Moreover, the Sixth Circuit found that its decision was consistent with the CWA's commitment to cooperative federalism.[214] The court noted that the Act has two purposes: (1) to protect navigable waters and (2) to protect states' rights.[215] The CWA leaves some regulation solely to the states, such as non-navigable waters and nonpoint sources.[216] Therefore, the court determined it was logical that the CWA would also leave to the states the regulation of indirect discharges.[217] The Eastern District of Kentucky applied a similar analysis, reasoning that "[i]f the CWA pursued the goal of protecting surface water quality at all costs . . . . the distinction between point- and non-point sources would appear untenable."[218] But the court did not intend to protect navigable waters "at all costs"—it left much regulation to the states.[219] The court accordingly rejected the argument that the CWA must cover discharges to tributary groundwater or else the CWA's purpose would be frustrated.[220] It held that under the Act's cooperative federalism

207. *Id.*

208. *Id.* (quoting 33 U.S.C. § 1362(12)(A)).

209. *Id.*

210. *Id.*

211. Ky. Waterways All. v. Ky. Utils. Co., 303 F. Supp. 3d 530, 544 (E.D. Ky. 2017), *aff'd in part*, 905 F.3d 925 (6th Cir. 2018).

212. *Id.* (quoting 26 Crown Assocs., LLC v. Greater New Haven Reg'l Water Pollution Control Auth., No. 3:15-cv-1439, 2017 WL 2960506, at *8 (D. Conn. July 11, 2017)).

213. *Id.*

214. *Ky. Waterways All.*, 905 F.3d at 936–37.

215. *Id.*

216. *Id.* at 937 (citing 33 U.S.C. §§ 1311(a), 1342(b), 1362(12)).

217. *Id.*

218. *Ky. Waterways All.*, 303 F. Supp. 3d at 545 (citation omitted).

219. *Id.*

220. *Id.*

regime, Congress intended that states regulate all discharges to groundwater.[221]

While some courts rejected the conduit theory due to the CWA's text and purpose, others simply appeared to misunderstand the conduit theory. These courts conflated regulating groundwater itself with regulating discharges that travel through groundwater.[222] The district court in *Hawai'i Wildlife Fund v. County of Maui* noticed this pattern, explaining:

> While there appears to be a split in authority over whether groundwater pollution violates the Clean Water Act, this split may largely flow from a lack of clarity by [the] courts as to whether they are determining that groundwater itself may or may not be regulated under the Clean Water Act or are determining that groundwater may or may not be regulated when it serves as a conduit to water that is indeed regulated.[223]

For instance, in the district court opinion in *Upstate Forever v. Kinder Morgan Energy Partners, L.P.*, the court failed to see the difference between cases rejecting the navigable waters theory and cases adopting the conduit theory.[224] Instead, the court grouped together the two lines of interpretation in a long string of citations.[225] For example, it cited *Cape Fear River Watch, Inc. v. Duke Energy Progress, Inc.*, which considered the navigable waters theory and found the CWA does not regulate groundwater as a "water of the United States."[226] Then, the court cited *Yadkin Riverkeeper, Inc. v. Duke Energy Carolinas, LLC*, which considered the conduit theory and found the CWA "regulates the discharge of pollutants to navigable waters via groundwater."[227] However, the court in *Upstate Forever* did not see the difference between these two cases.[228] It summarily decided that "a narrower interpretation of 'navigable waters' is more persuasive," indicating that the court believed all the cited cases

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221. *Id.*

222. Haw. Wildlife Fund v. Cty. of Maui, 24 F. Supp. 3d 980, 996 (D. Haw. 2014), *aff'd*, 886 F.3d 737 (9th Cir. 2018), *cert. granted*, 139 S. Ct. 1164 (2019).

223. *Id.*

224. Upstate Forever v. Kinder Morgan Energy Partners, L.P., 252 F. Supp. 3d 488, 497 (D.S.C. 2017), *vacated and remanded*, 887 F.3d 637 (4th Cir.), *petition for cert. filed* (U.S. Aug. 28, 2018) (No. 18-268).

225. *Id.*

226. Cape Fear River Watch, Inc. v. Duke Energy Progress, Inc., 25 F. Supp. 3d 798, 805, 810 (E.D.N.C. 2014).

227. Yadkin Riverkeeper, Inc. v. Duke Energy Carolinas, LLC, 141 F. Supp. 3d 428, 445 (M.D.N.C. 2015).

228. *See Upstate Forever*, 252 F. Supp. 3d at 497 (grouping together, erroneously, navigable waters and conduit theory cases).

applied the navigable waters theory.[229] The district court also suggested that the cited cases evidenced a split on whether groundwater is navigable, when in fact, the cases were split on which theory courts applied.[230] Because the court failed to see this discrepancy, it missed the chance to consider the conduit theory.[231] In the end, the Fourth Circuit corrected this error on appeal, analyzing and adopting the conduit theory.[232]

The Central District of Illinois has also missed the distinction between the navigable waters theory and the conduit theory. In *Prairie Rivers Network v. Dynegy Midwest Generation, LLC*, the court relied on a Seventh Circuit case to reject CWA jurisdiction.[233] The Seventh Circuit case, however, merely rejected the navigable waters theory.[234] The court's analysis frequently invoked the term "waters of the United States" and only held that the CWA does not "assert[] authority over ground waters" themselves.[235] The plaintiff in *Prairie Rivers Network* attempted to point this out to the Central District of Illinois: "Plaintiff responds that *Oconomowoc* is inapposite . . . because that case 'governs discharges *into groundwater itself*, absent evidence that the groundwater discretely conveys pollution into a navigable water.' Plaintiff contends that 'is a separate question not at issue here.'"[236]

Nonetheless, the court still failed to comprehend this nuanced distinction. It merely concluded that "[t]he Seventh Circuit affirmatively

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229. *Id.*

230. *Compare Cape Fear River Watch*, 25 F. Supp. 3d at 810 (rejecting CWA jurisdiction over groundwater under the navigable waters theory), *and* Chevron, U.S.A., Inc. v. Apex Oil Co., 113 F. Supp. 3d 807, 816–17 (D. Md. 2015) (rejecting Oil Pollution Act jurisdiction over groundwater under the navigable waters theory), *with* Sierra Club v. Va. Elec. & Power Co. (*Virginia Electric I*), 247 F. Supp. 3d 753, 762 (E.D. Va.) (finding CWA jurisdiction over tributary groundwater under the conduit theory), *appeal dismissed*, No. 17-1537, 2017 WL 5068149 (4th Cir. July 13, 2017), *aff'd in part*, 903 F.3d 403 (4th Cir. 2018), *and Yadkin Riverkeeper, Inc.*, 141 F. Supp. 3d at 445 (finding CWA jurisdiction over tributary groundwater under the conduit theory), *and* Ohio Valley Envtl. Coal. Inc. v. Pocahontas Land Corp., No. 3:14-11333, 2015 WL 2144905, at *8 (S.D. W. Va. 2015) (finding CWA jurisdiction over tributary groundwater under the conduit theory).

231. *See Upstate Forever,* 252 F. Supp. 3d at 497 (rejecting the navigable waters theory of CWA jurisdiction without considering the conduit theory).

232. Upstate Forever v. Kinder Morgan Energy Partners, L.P., 887 F.3d 637, 651 (4th Cir.), *petition for cert. filed* (U.S. Aug. 28, 2018) (No. 18-268).

233. Prairie Rivers Network v. Dynegy Midwest Generation, LLC, No. 18-CV-2148, 2018 WL 6042805, at *6 (C.D. Ill. Nov. 14, 2018) (citing Village of Oconomowoc Lake v. Dayton Hudson Corp., 24 F.3d 962 (7th Cir. 1994)), *appeal docketed* (7th Cir. Dec. 14, 2018) (No. 18-3644).

234. *Village of Oconomowoc Lake*, 24 F.3d at 965.

235. *See id.* (stating, for example, that "[t]wo courts have held that ground waters are not part of the (statutory) 'waters of the United States'" (first citing Exxon Corp. v. Train, 554 F.2d 1310 (5th Cir. 1977); then citing Kelley v. United States, 618 F. Supp. 1103 (W.D. Mich. 1985))).

236. *Prairie Rivers Network*, 2018 WL 6042805, at *5 (quoting Plaintiff's Response in Opposition to Motion to Dismiss with Inc. Memorandum of Law at 2, *Prairie Rivers Network*, No. 18-CV-2148 (C.D. Ill. Sept. 26, 2018)).

held that the CWA did not assert authority *over groundwaters*."[237] The court never considered whether the CWA asserts authority *over navigable waters* when pollutants arrive indirectly through groundwater.[238] However, the plaintiff filed an appeal with the Seventh Circuit, which will have the opportunity to correct this error and analyze the conduit theory.[239]

C. Circuit Court Tests for the Conduit Theory

CWA jurisdiction over discharges to tributary groundwater is currently ambiguous at best, given that courts are split over the validity of the conduit theory. Adding to this uncertainty, the courts finding jurisdiction simultaneously disagree over how far that jurisdiction reaches.[240] The Fourth and Ninth Circuits have each offered their own test for determining whether a hydrological connection is sufficiently proximate.[241] The Ninth Circuit created a broad "fairly traceable" standard, while the Fourth Circuit created a narrower "direct hydrological connection" test.[242]

The Ninth Circuit was the first circuit court to address the issue of discharges through tributary groundwater.[243] The court found that CWA jurisdiction includes discharges to groundwater when pollutants are "fairly traceable from the point source to a navigable water such that the discharge is the functional equivalent of a discharge into the navigable water."[244] Furthermore, the quantity of pollutants reaching navigable waters must be "more than *de minimis*."[245] The court borrowed its traceability test from Article III standing requirements.[246] It cited *Spokeo v. Robins*,[247] in which the Supreme Court held that plaintiffs only have standing if they allege an injury that is "fairly traceable to the challenged conduct of the defendant."[248] The Ninth Circuit found that the principles of standing "are especially relevant in the CWA context because the law authorizes citizen

237. *Id.* at *6 (emphasis added).

238. *Id.*

239. *Id.* at *6.

240. Haw. Wildlife Fund v. Cty. of Maui, 886 F.3d 737, 749 (9th Cir. 2018), *cert. granted*, 139 S. Ct. 1164 (2019); Upstate Forever v. Kinder Morgan Energy Partners, L.P., 887 F.3d 637, 651 (4th Cir.), *petition for cert. filed* (U.S. Aug. 28, 2018) (No. 18-268).

241. *Haw. Wildlife Fund*, 886 F.3d at 749; *Upstate Forever*, 887 F.3d at 651–52.

242. *Haw. Wildlife Fund*, 886 F.3d at 749; *Upstate Forever*, 887 F.3d at 651.

243. *See Haw. Wildlife Fund*, 886 F.3d at 745–49 (analyzing whether the CWA encompasses discharges to groundwater that is hydrologically connected to surface water).

244. *Id.* at 749.

245. *Id.*

246. *Id.* at 749 n.3.

247. *Id.* (citing Spokeo, Inc. v. Robins, 136 S. Ct. 1540, 1547 (2016)).

248. *Spokeo*, 136 S. Ct. at 1547.

suits to enforce its provisions."[249] The court also noted that this test is consistent with the CWA's distinction between point and nonpoint sources of pollution, which is "based on whether pollutants can be 'traced' or are 'traceable' back to a point source."[250]

In adopting the "fairly traceable" standard, the Ninth Circuit explicitly rejected another narrower test offered by EPA.[251] The Agency wrote an amicus brief in *Hawai'i Wildlife Fund*, suggesting that the Ninth Circuit adopt a "rule requiring a 'direct hydrological connection' between the point source and the navigable water."[252] The court declined this suggestion, concluding that even if EPA's position was entitled deference, the rule would not stand.[253] The court explained that, in its view, the test added the words "direct" and "hydrological" into the CWA.[254] Accordingly, the Ninth Circuit adopted its "fairly traceable" test instead.[255]

The Fourth Circuit, however, adopted EPA's "direct hydrological connection" test.[256] The court noted that EPA used the terminology in its preambles to NPDES programs discussing the conduit theory.[257] The court effectively deferred to EPA in light of its CWA authority and the complexity of the subject matter.[258] Additionally, the Fourth Circuit acknowledged that it was departing from the Ninth Circuit's standard.[259] The court stated that there is "no functional difference between [the two tests]," except that the Fourth Circuit's test is narrower.[260] In applying the "direct hydrological connection" test, the Fourth Circuit emphasized the short 1000-foot distance that the pollutants traveled through groundwater.[261]

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249. *Haw. Wildlife Fund*, 886 F.3d at 749 n.3 (citing 33 U.S.C. § 1365 (2012)).

250. *Id.*

251. *Id.*

252. *Id.*

253. *Id.*

254. *Id.*

255. *Id.* at 749.

256. Upstate Forever v. Kinder Morgan Energy Partners, L.P., 887 F.3d 637, 651–52 (4th Cir.), *petition for cert. filed* (U.S. Aug. 28, 2018) (No. 18-268).

257. *Id.* at 651 (first citing National Pollutant Discharge Elimination System Permit Regulation and Effluent Limitations Guidelines and Standards for Concentrated Animal Feeding Operations, 66 Fed. Reg. 2960, 3015 (proposed Jan. 12, 2001) (to be codified at 40 C.F.R. pts. 122 & 412); then citing Amendments to the Water Quality Standards Regulation that Pertain to Standards on Indian Reservations, 56 Fed. Reg. 64,876, 64,892 (Dec. 12, 1991) (to be codified at 40 C.F.R. pt. 131)).

258. *See id.* ("This interpretation by the EPA of its statutory authority 'warrants respectful consideration,' especially in the context of a 'complex and highly technical regulatory program.'" (quoting Wis. Dep't of Health & Family Servs. v. Blumer, 534 U.S. 473, 497 (2002))).

259. *Id.* at 651 n.12.

260. *Id.* ("[T]he direct hydrological connection concept may be viewed as a narrower application of the [Ninth Circuit's test].").

261. *Id.* at 652.

While the exact bounds of the test remain undefined, the test does appear quite narrow—and certainly narrower than the Ninth Circuit's test.

Petitions for certiorari have been filed in the Fourth,[262] Sixth,[263] and Ninth Circuits,[264] and the Supreme Court has decided it will hear the Ninth Circuit case in its 2019–2020 term.[265] The Fourth and Sixth Circuit petitions are still pending, likely so the Court can remand them in light of a decision in the Ninth Circuit case.[266] With many changes to the Court since its last major case regarding CWA jurisdiction, one can only speculate as to what the Court's decision will be.[267] The Court may decidedly come down on one side of the issue, clearly stating whether the conduit theory is valid, and if so, which test applies. On the other hand, the Court could produce a *Rapanos*-like plurality[268] that only perpetuates the "spaghetti jungle" of conduit theory case law.[269]

V. MAJOR CHALLENGES FOR PRACTITIONERS

Practitioners arguing cases under the conduit theory will primarily face three challenges. First, they will need adequate evidence showing the groundwater is proximately hydrologically connected to a navigable water.[270] Second, in order to acquire that evidence, they will likely need access to private property (which will be especially challenging in citizen

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262. Upstate Forever v. Kinder Morgan Energy Partners, L.P., 887 F.3d 637, 651 (4th Cir.), *petition for cert. filed* (U.S. Aug. 28, 2018) (No. 18-268).

263. Tenn. Clean Water Network v. Tenn. Valley Auth., 905 F.3d 436 (6th Cir. 2018), *petition for cert. filed* (U.S. Apr. 15, 2019) (No. 18-1307).

264. Haw. Wildlife Fund v. Cty. of Maui, 886 F.3d 737, 749 (9th Cir.), *petition for cert. filed* (U.S. Aug. 27, 2018) (No. 18-260), *cert. granted*, 139 S. Ct. 1164 (2019).

265. Parenteau, *Maui*, *supra* note 21.

266. *Id.*

267. David S. Rauf, *Clean Break: Kennedy Supreme Court Exit Could Upend Environmental Safeguards*, SCI. AM. (Jul. 3, 2018), https://www.scientificamerican.com/article/clean-break-kennedy-supreme-court-exit-could-upend-environmental-safeguards/.

268. Patrick A. Parenteau, *Channeling Scalia: Does the Clean Water Act Regulate Indirect Discharges 'to' Navigable Waters Via Groundwater?*, AM. C. ENVTL. LAW. (Dec. 11, 2018), http://www.acoel.org/post/2018/12/11/Channeling-Scalia-Does-the-Clean-Water-Act-Regulate-Indirect-Discharges-%E2%80%9Cto%E2%80%9D-Navigable-Waters-Via-Groundwater.aspx.

269. Amena H. Saiyid, *Groundwater Pollution 'Spaghetti Jungle' Tees Up High Court Review*, BLOOMBERG ENV'T & ENERGY REP. (Sept. 25, 2018), https://www.bna.com/groundwater-pollution-spaghetti-n73014482804/ [https://webcache.googleusercontent.com/search?q=cache:D6h6hc0jl20J:https://www.bna.com/groundwater-pollution-spaghetti-n73014482804/+&cd=1&hl=en&ct=clnk&gl=us] (quoting Professor Patrick Parenteau of Vermont Law School); *Supreme Court to Decide Limits of Clean Water Act*, WATER & WASTES DIG. (Sept. 26, 2018), https://www.wwdmag.com/groundwater/supreme-court-decide-limits-clean-water-act?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+Wwdmagnews+%28WWDmag.com+News%29.

270. *See infra* Part V.A (explaining the evidentiary challenges in conduit theory cases).

suits).[271] Third, they may struggle to obtain meaningful remedies, even when courts adopt the conduit theory.[272]

A. Evidence of a Hydrological Connection

Whether the CWA encompasses discharges to tributary groundwater "ultimately involves an ecological judgment about the relationship between surface waters and groundwaters."[273] Accordingly, the most important facet of the conduit theory is evidence. All groundwater cases will necessarily include fact-based inquiries into the hydrological connection at issue.[274] Plaintiffs will need to show: (1) that there is a hydrological connection and (2) that it is sufficiently proximate.[275]

First, plaintiffs must provide evidence that the groundwater at issue is hydrologically connected to a navigable surface water.[276] The "mere possibility" of a hydrological connection "is an insufficient basis for regulation."[277] Speculation will not suffice.[278] Furthermore, the connection must lead to a specific navigable water.[279] A hydrological connection cannot be established by asserting that all waters are ultimately connected.[280] Instead, the pollutants must travel along a "fairly traceable" or "direct" path starting at the point source, migrating through the groundwater, and ending in a navigable surface water.[281] This connection

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271. *See infra* Part V.B (explaining the challenges with accessing private property to support a claim under the conduit theory).

272. *See infra* Part V.C (demonstrating the difficulty of obtaining a useful remedy under the conduit theory).

273. Town of Norfolk v. U.S. Army Corps of Eng'rs, 968 F.2d 1438, 1451 (1st Cir. 1992).

274. *See, e.g.*, Haw. Wildlife Fund v. Cty. of Maui, 886 F.3d 737, 749 (9th Cir. 2018) (relying on a tracer dye study to determine that a hydrological connection existed between a point source and the Pacific Ocean), *cert. granted*, 139 S. Ct. 1164 (2019).

275. *See id.* (finding liability because the pollutants were "fairly traceable from the point source to a navigable water" but suggesting that in some cases the connection could be "too tenuous to support liability").

276. *See, e.g.*, Wash. Wilderness Coal. v. Hecla Mining Co., 870 F. Supp. 983, 990–91 (E.D. Wash. 1994) (requiring evidence of a hydrological connection).

277. N. Cal. River Watch v. Mercer Fraser Co., No. C–04–4620, 2005 WL 2122052, at *3 (N.D. Cal. Sept. 1, 2005) (citing Village of Oconomowoc Lake v. Dayton Hudson Corp., 24 F.3d 962, 965 (7th Cir. 1994)).

278. *Id.*

279. *Wash. Wilderness Coal.*, 870 F. Supp. at 990.

280. *Id.*

281. *See* Haw. Wildlife Fund v. Cty. of Maui, 886 F.3d 737, 749 & n.3 (9th Cir. 2018) (requiring a "'fairly traceable' connection"), *cert. granted*, 139 S. Ct. 1164 (2019); Upstate Forever v. Kinder Morgan Energy Partners, L.P., 887 F.3d 637, 652 (4th Cir.) (requiring a "direct hydrological connection"), *petition for cert. filed* (U.S. Aug. 28, 2018) (No. 18-268).

does not need to be mapped perfectly and in its entirety.[282] But there should be evidence of its existence.[283]

Second, plaintiffs must prove that the hydrological connection is relatively direct. The directness of the connection "will be affected by many site specific factors, such as geology, flow, and slope,"[284] as well as "topography, climate, [and] distance to surface water."[285] Thus, the conduit theory is ultimately a question of time and space. At this time, it is unclear precisely how direct a connection must be.[286] The Ninth and Fourth Circuits have issued different tests, creating significant ambiguity.[287] Practitioners will need to keep abreast of case law as the courts continue to refine the conduit theory.

In fact, many conduit theory cases have failed for lack of concrete evidence. For example, in *Rice v. Harken Exploration Co.*, the Fifth Circuit considered the conduit theory, but determined that there was no concrete evidence of a hydrological connection.[288] The plaintiffs only provided a "general assertion" from their expert witness who stated that the groundwater would eventually seep into navigable surface waters.[289] There was no evidence of the groundwater's path or that the pollutants had actually contaminated the navigable water.[290] Practitioners should be cautious to avoid the mistake in *Rice* by providing the court with material evidence of a hydrological connection.

Plaintiffs can provide this evidence by mapping groundwater or completing tracer studies.[291] The amount of evidence required will likely

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282. *See Haw. Wildlife Fund*, 886 F.3d at 749 (finding a tracer dye study to be sufficient evidence of a fairly traceable hydrological connection).

283. *See Upstate Forever*, 887 F.3d at 652 ("The traceability of a pollutant in measurable quantities is an important factor in the determination whether a particular discharge is covered by the CWA.").

284. Greater Yellowstone Coal. v. Larson, 641 F. Supp. 2d 1120, 1138 (D. Idaho 2009), *aff'd sub nom.*, Greater Yellowstone Coal. v. Lewis, 628 F.3d 1143 (9th Cir. 2010), *as amended*, (Jan. 25, 2011).

285. Waterkeeper All., Inc. v. U.S. Envtl. Prot. Agency, 399 F.3d 486, 515 (2d Cir. 2005).

286. *See supra* Part IV.C (explaining the different tests offered by the Fourth and Ninth Circuits).

287. *Haw. Wildlife Fund*, 886 F.3d at 749; *Upstate Forever*, 887 F.3d at 652.

288. Rice v. Harken Expl. Co., 250 F.3d 264, 267–68 (5th Cir. 2001). Although this case was about the Oil Pollution Act, some language in the Oil Pollution Act mirrors that of the CWA, and interpretations of each act can enlighten the other by analogy. *See id.* ("[T]he existing case law interpreting the CWA is a significant aid in our present task of interpreting the OPA.").

289. *Id.* at 272.

290. *Id.*

291. *See* U.S. DEP'T OF INTERIOR, U.S. GEOLOGICAL SURVEY, U.S. GEOLOGICAL SURVEY GROUNDWATER MODELING SOFTWARE: MAKING SENSE OF A COMPLEX NATURAL RESOURCE 2–3 (2009), https://pubs.usgs.gov/fs/2009/3105/pdf/2009-3105.pdf (providing methods for modeling

vary based on the complexity of the system. Some groundwater travels over hundreds of miles and multiple centuries before it reaches a navigable water.[292] For these complex systems, gathering enough evidence to prove the directness of a hydrological connection can be extremely expensive and time-consuming.[293] On the other hand, some groundwater travels quickly over short distances.[294] For these more direct connections, a less expensive (yet qualitative) method of proof is a tracer test.[295] These tests either trace naturally occurring properties of water[296] or dye dispensed at the point source and measured at the navigable water.[297] For now, tracer tests appear to be enough to pass at least the Ninth Circuit's "fairly traceable" standard of proof.[298] Indeed, the plaintiffs in *Hawai'i Wildlife Fund* relied on a tracer dye study to prove a hydrological connection existed between the point source and the ocean.[299] However, if courts adopt a more demanding test in the future (e.g., requiring groundwater mapping) the burden of proof could become too high, making it difficult for plaintiffs with limited resources to bring CWA suits.

B. Access to Private Property

To complete the evidentiary tests described above, practitioners will sometimes require access to private property. For typical CWA cases, access is often unnecessary.[300] For example, when a pipe discharges directly to a navigable water, plaintiffs can lawfully reach that pipe due to the benefits of the public trust doctrine.[301] In contrast, this will not be true for

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groundwater flow); WINTER ET AL., *supra* note 5, at 30 (explaining that tracer studies can help identify sources, measure flow, and calculate how long a chemical has been dissolved in water).

292. James W. Hayman, *Regulating Point-Source Discharges to Groundwater Hydrologically Connected to Navigable Waters: An Unresolved Question of Environmental Protection Agency Authority Under the Clean Water Act*, 5 BARRY L. REV. 95, 123 (2005).

293. *Id.* at 124 ("For more complex situations, the time and cost of connecting pollutant source to pollutant impact can be measured in years and seven- or eight-digit dollar figures.").

294. *Id.* at 123.

295. George F. Arsnow et al., *Dye Tracer Study—Tried and True Method Yields Surprising Results*, 15 PROC. ANN. INT'L CONF. ON SOILS, SEDIMENTS, WATER & ENERGY 337, 350 (2010).

296. WINTER ET AL., *supra* note 5, at 30.

297. *See* Haw. Wildlife Fund v. Cty. of Maui, 886 F.3d 737, 749 (9th Cir. 2018) (using a tracer dye study to prove a groundwater connection between the defendant's wells and the Pacific Ocean), *cert. granted*, 139 S. Ct. 1164 (2019).

298. *See id.* at 749 (requiring a "fairly traceable" connection between a point source and a navigable water).

299. *Id.*

300. Coplan, *supra* note 119.

301. *Id.* The public trust doctrine holds that states own the beds and banks of navigable waters in trust for public use. Ill. Cent. R.R. v. Illinois, 146 U.S. 387, 458 (1892). Accordingly, members of the public have a right to use public trust waters and lands for navigation, recreation, and other activities.

groundwater cases when the discharge occurs on private property and subsequently moves underground.[302] Therefore, plaintiffs in groundwater cases will likely require access to private property to obtain evidence.

This step will be easier for EPA than for citizens, as EPA has a right of entry under the CWA (subject to limitations, such as the Fourth Amendment).[303] However, access is not guaranteed; private landowners retain the right to deny entry to EPA.[304] In those cases, EPA must issue a compliance order or commence a civil action to gain access.[305] These processes add steps that require additional time and resources, thereby delaying enforcement. Moreover, EPA's right of entry does not extend to citizens.[306] As a result, citizens will likely struggle to obtain access to private property. Without access, citizens may be unable to reach the point source, effectively impeding tracer dye studies. Thus, one of the biggest struggles for citizen suits will be obtaining evidence.

C. Cautionary Tales from Sierra Club v. Virginia Electric

Although courts have generally been increasingly responsive to the conduit theory,[307] several cautionary tales demonstrate major challenges in this field. *Sierra Club v. Virginia Electric* illustrates two significant obstacles that practitioners will face when arguing cases under the conduit theory.[308] First, the case reveals that convincing courts to adopt the conduit theory is only the first step.[309] Although the district court found CWA jurisdiction, it also declined to issue the requested injunction.[310] Second, the

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See Donna Sheehan Fitzgerald, *Extending Public Trust Duties to Vermont's Agencies: A Logical Interpretation of the Common Law Public Trust Doctrine*, 19 VT. L. REV. 509, 514 (1995) (listing the public rights protected within the traditional scope of the public trust doctrine).

302. Even in Hawaii, where the public trust includes groundwater, it does not protect *public access* to groundwater. *See In re* Water Use Permit Applications (*Waiāhole Ditch*), 9 P.3d 409, 447–48 (Haw. 2000) (explaining that the public trust doctrine applies differently to groundwater than to navigable waters and holding that the public trust doctrine imposed a duty on the state to protect groundwater as a consumptive resource).

303. 33 U.S.C. § 1318(a)(B)(i) (2012); *see* New York v. Burger, 482 U.S. 691, 699–700 (1987) (providing that the Fourth Amendment applies to searches by administrative agencies).

304. EPA, THE CLEAN WATER ACT: COMPLIANCE/ENFORCEMENT GUIDANCE MANUAL 3-12 (1985).

305. 33 U.S.C. § 1319(a)–(b).

306. *See id.* § 1318(a)(A) (providing a right of entry and access to "the Administrator" of EPA).

307. *See supra* Part IV.A (highlighting decisions in which courts adopted the conduit theory).

308. Sierra Club v. Va. Elec. & Power Co. (*Virginia Electric I*), 247 F. Supp. 3d 753, 764–65 (E.D. Va.), *appeal dismissed*, No. 17-1537, 2017 WL 5068149 (4th Cir. July 13, 2017), *aff'd in part*, 903 F.3d 403 (4th Cir. 2018).

309. *Id.* at 763–65 (declining to issue an injunction despite finding a violation of the CWA under the conduit theory).

310. *Id.*

case serves as an important reminder that the conduit theory is not separate from other elements of a CWA offense.[311] On appeal, the Fourth Circuit remanded this case because it determined that coal ash pits—the source of pollution—were not a point source.[312]

First, in *Virginia Electric I*, the Eastern District of Virginia adopted the conduit theory.[313] Relying on the purpose of the CWA and EPA's preambles, the court held that "discharges to groundwater [that is] hydrologically connected to surface water are covered by the CWA."[314] Applying this theory, the court found that the Virginia Electric Power Company (VEPCO) violated the CWA because its coal ash pits leaked pollutants into groundwater that fed into a nearby river.[315]

Nonetheless, the court declined to impose civil penalties or a permanent injunction.[316] The court in *Virginia Electric I* found that an injunction would force VEPCO to remove more than three million tons of coal ash from its facility, which would cost over $600 million.[317] If VEPCO had to pay such a price, it would likely raise its utility rates and require its customers to pay more for services.[318] Because VEPCO would transfer the cost of compliance onto consumers, the court concluded that a permanent injunction would not be in the public interest.[319] Instead, the court merely ordered VEPCO to conduct monitoring at the coal ash pit and nearby waters.[320]

This part of the court's decision should caution practitioners. Removal costs are frequently high,[321] as is the bar for a permanent injunction.[322] The test for a permanent injunction allows courts to balance the hardships between the parties and to consider the public interest.[323] Courts will be

311. Sierra Club v. Va. Elec. & Power Co. (*Virginia Electric II*), 903 F.3d 403, 411 (4th Cir. 2018).

312. *Id.*

313. *Virginia Electric I*, 247 F. Supp. 3d. at 762.

314. *Id.*

315. *Id.* at 763.

316. *Id.* at 764–65.

317. *Id.* at 760, 764–65.

318. *Id.* at 765.

319. *Id.*

320. *Id.* at 766.

321. *See* U.S. ENVTL. PROTECTION AGENCY, RESOURCE DOCUMENT FOR THE GROUND-WATER MONITORING STRATEGY WORKSHOP X-3 (1985) [hereinafter GROUND-WATER MONITORING] (noting that "corrective action can be tens of millions of dollars or more" for groundwater contamination at a single site).

322. *See Virginia Electric I*, 247 F. Supp. 3d at 765 ("Injunctive relief . . . is a 'drastic and extraordinary' remedy, available only in unusual situations." (first quoting Monsanto Co. v. Geertson Seed Farms, 561 U.S. 139, 165 (2010); then quoting Vollette v. Watson, 978 F. Supp. 2d 572, 583 (E.D. Va. 2013))).

323. *See* eBay Inc. v. MercExchange, L.L.C., 547 U.S. 388, 391 (2006) (providing the test for a permanent injunction).

able to use this test to deny permanent injunctions[324] and, instead, simply order monitoring like in *Virginia Electric I* or opt for no remedy at all.[325]

Another hurdle practitioners may face is convincing courts that removal projects are viable. For example, the court in *Virginia Electric I* was concerned with the feasibility of removing millions of tons of coal ash to a landfill.[326] The court feared that the coal ash would spill out of trucks as it moved locations or that the trucks would crash and disperse waste across roads and motorists.[327] The court also added that Sierra Club did not provide evidence that a landfill would accept VEPCO's coal ash waste.[328] Because Sierra Club did not address these concerns, the court determined that the requested remedy raised too many uncertainties, and thus it denied injunctive relief.[329]

Practitioners can overcome this hurdle by providing suggestions for removal that reduce uncertainty. However, practitioners should also argue that *Virginia Electric I*'s concerns about removal costs were unreasonable. In 2016, EPA oversaw 226 removal actions at Superfund sites alone,[330] despite the inherently associated risks.[331] And while removal may bear risks, it removes the threat of further environmental contamination. As another court explained, "[a]s long as the ash remains where it is . . . there is every reason to think that the dangers, uncertainties, and conflicts giving rise to this case will survive another twenty years, forty-five years, or more."[332] By addressing upfront the risks associated with removal and non-removal, practitioners may be able to convince courts that the balance falls in favor of an injunction.[333] Then again, as illustrated by *Virginia Electric I*,

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324. *See, e.g.*, *Virginia Electric I*, 247 F. Supp. 3d at 765 (finding that the "factors [of the permanent injunction test] weigh against the drastic injunctive relief sought by the plaintiff").

325. *See id.* at 766 ("The Court, therefore, will grant an injunction adopting a middle course . . . . Dominion will conduct more extensive monitoring of the CEC site . . . .").

326. *Id.* at 764–65.

327. *Id.* at 765.

328. *Id.* at 764–65.

329. *Id.* at 765.

330. Superfund, also known as "CERCLA[,] is a comprehensive federal law governing the remediation of sites contaminated with pollutants." Consol. Edison Co. of New York v. UGI Utils., Inc., 423 F.3d 90, 94 (2d Cir. 2005); Resource Conservation and Recovery Act of 1976 § 102, 42 U.S.C. § 9602.

331. *Superfund Remedial Annual Accomplishments: Fiscal Year 2016 Superfund Remedial Program Accomplishments Report*, U.S. ENVTL. PROTECTION AGENCY, https://www.epa.gov/superfund/superfund-remedial-annual-accomplishments#metrics (last visited Apr. 27, 2019) (follow "2016" hyperlink; then follow "Superfund Annual Accomplishment Metrics" hyperlink).

332. Tenn. Clean Water Network v. Tenn. Valley Auth., 273 F. Supp. 3d 775, 846 (M.D. Tenn. 2017), *rev'd*, 905 F.3d 436 (6th Cir. 2018), *petition for cert. filed* (U.S. Apr. 15, 2019) (No. 18-1307).

333. In this way, plaintiffs can add weight to their argument that removal is in the public interest and thereby support their request for a permanent injunction. *See Virginia Electric I*, 247 F. Supp. 3d at

courts may remain uncomfortable with uncertainties, and many practitioners will face challenges in persuading courts to permanently enjoin polluters.[334]

Overall, the decision in *Virginia Electric I* indicates that even if courts accept the conduit theory, they may still be reluctant to afford practitioners significant relief.[335] The court found jurisdiction, but it also declined to issue an injunction.[336] The court applied a cost-benefit analysis test that allows companies to escape liability easily,[337] as remediating contaminated sites often costs millions of dollars.[338] Therefore, practitioners should view *Virginia Electric I* as a cautionary tale for obtaining remedies under the conduit theory.

The second phase of this case illustrates an additional forewarning for practitioners. On appeal, the Fourth Circuit reversed the decision in *Virginia Electric I*.[339] The court held that although the conduit theory was valid,[340] it did not apply in this case.[341] VEPCO's coal ash pits were leaching pollutants, but the pits did not constitute point sources under the CWA.[342] According to the court, "the landfill and ponds were not created to convey anything."[343] Instead, they were merely "static recipients of the precipitation and groundwater that flowed through them."[344] Consequently, these coal ash pits were not discrete conveyances of pollutants as required by the definition of point source.[345]

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765 (identifying the balancing test for granting a permanent injunction, in which the fourth factor is "that the public interest would not be disserved by a permanent injunction").

334. *Id.* at 764 (calling Sierra Club's request for injunctive relief "draconian").

335. *See id.* at 764–65 (denying Sierra Club's request for civil penalties and a permanent injunction).

336. *See id.* at 763, 765 (giving considerable weight to the economic burden on the defendant under the test for a permanent injunction).

337. *See id.* at 764–65 (comparing the effect of arsenic discharges against the cost and time that remediation would require).

338. GROUND-WATER MONITORING, *supra* note 321 (noting that "corrective action can be tens of millions of dollars or more" for groundwater contamination at a single site).

339. Sierra Club v. Va. Elec. & Power Co. (*Virginia Electric II*), 903 F.3d 403, 411 (4th Cir. 2018).

340. *Id.* at 409.

341. *Id.* at 411.

342. *Id.*

343. *Id.*

344. *Id.*

345. *Id.* Even if coal ash pits are not point sources (and are therefore outside the scope of the CWA), other tactics may exist for practitioners. The Fourth Circuit noted in *Virginia Electric II* that the plaintiffs "could have sought to employ . . . RCRA's citizen-suit provision." *Id.* at 415. Similarly, the Sixth Circuit has found that RCRA is an appropriate tool when coal ash pits discharge pollutants to tributary groundwater. Ky. Waterways All. v. Ky. Utils. Co., 905 F.3d 925, 940 (6th Cir. 2018). RCRA may thereby provide a workaround in cases that fall outside CWA jurisdiction. However, it will not always apply. Take for example the Ninth Circuit's *Hawai'i Wildlife Fund* case. There, a wastewater treatment plant was discharging effluent—pollution that is exempt from regulation under RCRA.

This case should remind practitioners that the conduit theory is only one piece of the puzzle in a CWA case. When courts adopt the conduit theory, it simply opens the door to proving the elements of a CWA violation.[346] Plaintiffs still must show that the discharger is a point source and that the pollutants end up in a navigable water.[347] Though the conduit theory is essential for imposing liability, in practice it requires more than a theoretical consideration of jurisdiction.[348] It requires evidence substantiating each individual element under § 301.[349]

CONCLUSION

The current system of environmental law does not plainly regulate the discharge of pollutants to tributary groundwater.[350] However, tributary groundwater should fall within CWA jurisdiction, as it provides a conduit for pollution to travel from point sources to navigable waters. Several courts have embraced this theory, including most notably and recently the Fourth and Ninth Circuits.[351] Nonetheless, challenges remain. Some courts, including the Sixth Circuit, have rejected CWA jurisdiction, favoring state authority over groundwater protection.[352] Other courts have conflated the conduit theory and the navigable waters theory, missing the nuanced distinction between the two.[353] These issues may soon be resolved by the Supreme Court, which will hear a conduit theory case in its 2019–2020 term.[354] If it determines that CWA jurisdiction exists, the next era of litigation will likely focus on evidence. It can be extremely difficult and expensive to prove the existence of a hydrological connection between

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Resource Conservation and Recovery Act of 1976 § 1004, 42 U.S.C. § 6903(27); Haw. Wildlife Fund v. Cty. of Maui, 886 F.3d 737, 742 (9th Cir. 2018), *cert. granted*, 139 S. Ct. 1164 (2019).

346. *See, e.g.*, *Virginia Electric II*, 903 F.3d at 409, 411 (recognizing the conduit theory but nevertheless concluding that "the landfill and ponds" were not point sources).

347. 33 U.S.C. §§ 1311(a), 1362(12) (2012).

348. *See supra* Part V.A (detailing the evidence plaintiffs need to show a hydrological connection).

349. *See supra* note 31 and accompanying text (explaining that plaintiffs must prove each element of a CWA violation).

350. Wood, *supra* note 9.

351. Upstate Forever v. Kinder Morgan Energy Partners, L.P., 887 F.3d 637, 651 (4th Cir.), *petition for cert. filed* (U.S. Aug. 28, 2018) (No. 18-268); Haw. Wildlife Fund v. Cty. of Maui, 886 F.3d 737, 749 (9th Cir. 2018), *cert. granted*, 139 S. Ct. 1164 (2019).

352. *See, e.g.*, Ky. Waterways All. v. Ky. Utils. Co., 905 F.3d 925, 937–38 (6th Cir. 2018) (rejecting the conduit theory).

353. *See* Haw. Wildlife Fund v. Cty. of Maui, 24 F. Supp. 3d 980, 996 (D. Haw. 2014) (noting that some courts appear confused about the theories of CWA jurisdiction over tributary groundwater), *aff'd*, 886 F.3d 737 (9th Cir. 2018), *cert. granted*, 139 S. Ct. 1164 (2019).

354. *Id.*; Upstate Forever v. Kinder Morgan Energy Partners, L.P., 887 F.3d 637, 651 (4th Cir.), *petition for cert. filed* (U.S. Aug. 28, 2018) (No. 18-268).

groundwater and surface waters.[355] To make matters more difficult, some courts have declined to award substantial relief, despite adopting the conduit theory.[356] Even so, this area of law has quickly flowed in a positive direction. If this trajectory continues, we will be one step closer to protecting our nation's waters—surface and sub-surface alike.

–Kathrine Klaus[*†]

355. *See supra* Part V.A (describing the challenges associated with proving a hydrological connection).

356. *See, e.g.*, Sierra Club v. Va. Elec. & Power Co. (*Virginia Electric I*), 247 F. Supp. 3d 753, 762–65 (E.D. Va.) (finding VEPCO violated the CWA under the conduit theory, but refusing to award civil penalties or order a permanent injunction), *appeal dismissed*, No. 17-1537, 2017 WL 5068149 (4th Cir. July 13, 2017), *aff'd in part*, 903 F.3d 403 (4th Cir. 2018).

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