WADING THROUGH THE GROUNDWATER OF CWA JURISDICTION: *MAUI*'S "FUNCTIONAL EQUIVALENT" STANDARD

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ABSTRACT

The U.S. Supreme Court created an imprecise retrospective test for determining Clean Water Act (CWA) jurisdiction when the Court fashioned a "functional equivalent of a direct discharge" test that emphasized time and distance that the pollutant traveled from a point source through a conduit to a navigable water body. The seven-factor hindsight test was established to address the circumstance where the pollutant travels through an intermediary (such as groundwater) to reach the navigable water. *County of Maui v. Hawaii Wildlife Fund*, 140 S. Ct. 1462 (2020).

How do we achieve the national objective of the CWA "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters" without undermining the states' jurisdictional right to regulate groundwater? Preserving this balance (without creating serious CWA loopholes) was at the heart of Justice Breyer's 6-3 majority decision in *Maui*. This article explains the reasoning of the Court and the pragmatic difficulties in applying its "functional equivalent of a direct discharge" test, in addition to examining the state and federal role under the CWA.

A hindsight test creates unnecessary costs and hurdles for determining CWA jurisdiction for citizen suit NGOs, businesses, and regulators. Businesses and municipalities need to know upfront whether their prospective discharges require CWA National Pollutant Discharge Elimination System ("NPDES") permits. The 47 states with delegated NPDES authority also need more specific guidance. The test hinders the proactive CWA goal of preventing and promptly mitigating contamination of our nation's waterways.

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INTRODUCTION

How do we achieve the national objective of the Clean Water Act (CWA) "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters" [1] without undermining the states' jurisdictional right to regulate groundwater? Preserving this balance (without creating serious CWA loopholes) was the goal of the majority decision in *County of Maui v. Hawaii Wildlife Fund et al.* ("*Maui*").[2] Justice

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1. Brief for Kinder Morgan Energy Partners, L.P. and Plantation Pipe Line Company, Inc. as Amici Curiae Supporting Petitioner at 6, *Cty. of Maui v. Hawaii Wildlife Fund*, 140 S. Ct. 1462 (2020) (No. 18-260).

2. Cnty. of Maui v. Hawaii Wildlife Fund et. al. ("*Maui*"), 140 S. Ct. 1462, 1477 (2020) ("Decisions should not create serious risks either of undermining state regulation of groundwater or of creating loopholes that undermine the statute's basic federal regulatory objectives.").

Bryer, writing for the 6-3 majority, established a "functional equivalent" test.[3] Under the new standard, a permit issued pursuant to § 301 of the CWA National Pollutant Discharge Elimination System (NPDES) is "applicable to a discharge (from a point source) of pollutants that reach navigable waters after traveling through groundwater if that discharge is the functional equivalent of a direct discharge from the point source into navigable waters."[4]

While admitting that the "functional equivalent" test was not a "bright line" test, the majority concluded that the analytical flexibility was necessary to protect the integrity of national waters from pollutants that reach national waters through a conduit.[5] To guide this analysis, the majority included a nonexclusive list of factors to be considered:

> (1) transit time;
> (2) distance traveled;
> (3) the nature of the material through which the pollutant travels;
> (4) the extent to which the pollutant is diluted or chemically changed as it travels;
> (5) the amount of pollutant entering the navigable waters relative to the amount of the pollutant that leaves the point source;
> (6) the manner by or area in which the pollutant enters the navigable waters; and
> (7) the degree to which the pollution (at that point) has maintained its specific identity.[6]

Of these factors, "time" and "distance" traveled are the most important in determining "[w]hether pollutants that arrive at navigable waters after traveling through groundwater are 'from' a point source depends upon how similar to (or different from) the particular discharge is to a direct discharge."[7] The Supreme Court vacated the Ninth Circuit judgment and remanded the case for application of that criteria.[8]

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3. *Id.* at 1468 (discussing the distribution of the court in *Maui*, Roberts, Ginsburg, Sotomayor, Kagan and Kavanaugh joined Breyer in the majority, with Thomas, Alito and Gorsuch dissenting). This has become the "Roberts' court," with Chief Justice Roberts siding with the majority in nearly all of the cases so far this term.
4. *Maui*, 140 S. Ct. at 1477.
5. *Id.* at 1477–78.
6. *Id*. at 1476–77.
7. *Id*. at 1476–77.
8. *Id.* at 1478.

This article discusses whether the Court's "functional equivalent" test adds clarity or confusion to the determination of CWA permitting jurisdiction and the costs of CWA compliance.

I. ANALYSIS OF MAUI AND RELATED CASES

The legal question before the Supreme Court in the *Maui* decision is "whether the Act [CWA] 'requires a permit when pollutants originate from a point source but are conveyed to navigable waters by a nonpoint source,' here groundwater."[9] In his majority opinion, Justice Breyer established a new standard: a permit issued under § 301 of the CWA NPDES is "applicable to a discharge (from a point source) of pollutants that reach navigable waters after traveling through groundwater if that discharge is the functional equivalent of a direct discharge from the point source into navigable waters."[10]

A person (including a business or municipality) must obtain a CWA NPDES permit to (1) discharge (2) a pollutant (3) to navigable waters (4) from a point source.[11] The interpretation of the interconnection of those components lies at the heart of the dispute in *Maui*. The CWA prohibits the "discharge of any pollutant by any person,"[12] defining the "discharge of a pollutant" as "any addition of any pollutant to navigable waters from any point source."[13] The CWA defines "pollutant" broadly.[14] Under the CWA and most relevant to the Court's decision, point sources expressly include "wells" under its definition, which applies to "any discernible, confined, and discrete conveyance, . . . from which pollutants are or may be discharged."[15] The Maui case specifically addressed discharges from wells.

In *Maui,* the municipal wastewater treatment plant for West Maui (Lahaina Wastewater Reclamation Facility) injected four wells (point sources) with 2.8 million to 5 million gallons of treated sewage effluent

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9. *Maui*, 140 S. Ct. at 1468 (citing Petition for Writ of Certiorari, *Maui*).
10. *Id.* at 1477.
11. Headwaters, Inc. v. Talent Irrigation Dist., 243 F.3d 526, 532 (9th Cir. 2001).
12. Clean Water Act (CWA), 33 U.S.C. § 1311(a) (2020).
13. 3 U.S.C. § 1362(12).
14. *See* 33 U.S.C. § 1362(6) (defining the term "pollutant" as "dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural wastes discharged into water," with some oil and gas exceptions).
15. *See* 33 U.S.C. § 1362(14) (defining the term "point source" as "any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged … not includ[ing] agricultural stormwater discharges and return flows from irrigated agriculture.").

daily.[16] A 2013 tracer dye study showed that 64% of the treated wastewater injected into wells 3 and 4 reached the Pacific Ocean, demonstrating a "hydrological connection."[17] The County of Maui did not obtain an NPDES permit.[18] All parties concede that the wells are point sources[19] and that some of the effluents reached the ocean after traveling through groundwater.[20] The Ninth Circuit Court of Appeals affirmed the district court ruling that the county violated the CWA, holding that: (1) the county discharged pollutants from a point source; (2) the 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; and (3) the pollutant levels reaching navigable water are more than de minimis.[21] Plaintiffs-respondents in the CWA citizen suit include the Hawai'i Wildlife Fund, Sierra Club-Maui Group, Surfrider Foundation, and the West Maui Preservation Association.[22] A half-million underground wastewater injection programs could be affected by the *Maui* decision.[23]

Justice Breyer created a conundrum by adopting the "functional equivalent" standard, while purporting to reject the "traceability" standard of the Ninth Circuit.[24] The Ninth Circuit linked the two together, finding a "fairly traceable" discharge to be "the functional equivalent of a direct discharge."[25] It cannot be said that traceability of the pollutant from its source to the navigable water is irrelevant, so traceability must be a necessary, but not a sufficient component in the analysis of what is a "functional equivalent" of a direct discharge.[26] It would have made more sense to adopt the Ninth Circuit's three-part test and add details related to the "functional equivalent" portion.

During oral arguments, Justice Roberts raised concerns that "traceability" as a technological issue was not a sufficient limitation on

16. Hawaii Wildlife Fund v. Cnty. of Maui ("*Hawaii Wildlife Fund*"), 886 F.3d 737, 742 (9th Cir. 2018).

17. *Id.* at 737, 742–43, 744, 749 (9th Cir. 2018) (noting the County essentially conceded the hydrologic connection that the treated sewage pollutant ultimately travels to a navigable water—the Pacific Ocean–once discharged from the point source injection wells into groundwater).

18. *Id.* at 752.

19. Transcript of Oral Argument at 6, *Maui*, 140 S. Ct. 1462 (2020) (No. 18-260) https://www.supremecourt.gov/oral arguments/audio/2019/18-260; *See generally* 33 U.S.C. § 1362(14) (defining "point source" under the CWA).

20. *See Hawaii Wildlife Fund*, 886 F.3d at 742–744 (noting the County had been aware that some of its effluent was reaching the ocean since at least 1991).

21. *Id*. at 749.

22. *Id.* at 742.

23. Transcript of Oral Argument at 6, *Maui*, 140 S. Ct. 1462 (No. 18-260).

24. *Id.* at 45.

25. *Id.* at 31.

26. *See id.* at 35 (arguing traceability and proximate cause are the sufficiently limiting principles).

permitting authority.[27] The dissenting judges concurred with the majority in its rejection of the "traceability" and "proximate cause" requirements[28] that were postured by the respondent environmental groups in the *Maui* oral arguments.[29]

Justice Breyer tried to find the middle ground in requiring federal permits to preserve the integrity of our nation's waters. He did not want a pipe owner to be able to use a loophole to avoid a permit requirement by "simply mov[ing] the pipe back, perhaps only a few yards, so that the pollution must travel through at least some groundwater before reaching the sea."[30] Nor did he want to impose permitting requirements on a business whose diluted pollutant took years and great distances to slowly and circuitously migrate toward navigable waters.[31] So Breyer's "functional equivalent of a direct discharge" standard that emphasizes time and distance (while considering five other nonexclusive factors)[32] seeks to strike that balance. The objective is to avoid "serious risks either of undermining state regulation of groundwater or of creating loopholes that undermine the statute's basic federal regulatory objectives"[33] to "restore and maintain the chemical, physical and biological integrity of the Nation's waters."[34]

The case focused on the linguistic interpretation of the prepositions "from" and "to." The CWA expressly prohibits the addition of a pollutant "from" a point source "to" navigable waters.[35] The majority opinion in *Maui* concludes that Congress was referring to the origin ("any point source") "from" which the pollutant originated and "to" the destination ("navigable waters") to which the pollution flowed.[36] Congress specified the pollutants must come from the point source, but did not specify that pollutants had to originate *directly* from a point source.[37] Justice Breyer adopted the "every

27. *Id.* at 36.

28. *Maui*, 140 S. Ct. 1462, 1470 (2020) (Breyer, J., majority); *Id.* at 1482 (Thomas, J., dissenting); *Id.* at 1490 (Alito, J., dissenting).

29. Transcript of Oral Argument at 35, *Maui,* 140 S. Ct. 1462 (2020) (No. 18-260).

30. *Maui*, 140 S. Ct. at 1473; *See also* Transcript of Oral Argument at 30, *Maui v.*, 140 S. Ct. 1462 (No. 18-260) (questioning from Justice Breyer what if the pipe does not discharge directly into the ocean, the pollutant will have to travel through air, over land or through groundwater to reach the ocean, when is that the "functional equivalent" of a direct discharge from a point source?).

31. *Maui*, 140 S. Ct. at 1470, 1476.

32. *Id*. at 1476–77, (listing relevant factors depending on particular circumstances of a case: (1) transit time, (2) distance traveled, (3) the nature of the material through which the pollutant travels, (4) the extent to which the pollutant is diluted or chemically changed as it travels, (5) the amount of pollutant entering the navigable waters relative to the amount of the pollutant that leaves the point source, (6) the manner by or area in which the pollutant enters the navigable waters, (7) the degree to which the pollution (at that point) has maintained its specific identity).

33. *Id*. at 1477.

34. CWA, 33 U.S.C. § 1251(a) (1977).

35. *See* 33 U.S.C. § 1312 (explaining the prohibition of discharges from a point source to navigable waters).

36. *Maui,* 140 S. Ct. at 1473–74.

37. Rapanos v. United States, 547 U.S. 715, 743 (2006).

day meaning . . . that the object of 'from' is a 'point source' – a source, again, connoting an origin."[38] In oral arguments, Justice Kagan noted that the CWA specifies "to," not "into" navigable waters, and the purpose of the law is to regulate the point source.[39] The function of the NPDES permits are to control and limit the discharge of pollutants from point sources to navigable waters that could compromise the integrity of those waters.[40] The CWA provisions do not include an express exception for discharges that travel through groundwater.[41] The means of conveyance of the pollutant from the point source to the navigable water alone should not preclude the necessity of obtaining a NPDES permit—contrary to the County of Maui's position that *how* the pollution got there is more relevant than *where* the pollution originated.[42]

In his concurring opinion, Justice Kavanaugh, attempts to reconcile the *Maui* majority position with that of Justice Scalia in the *Rapanos* decision[43] by recognizing that "the discharge into intermittent channels of any pollutant that naturally washes downstream likely violates § 1311(a), even if the pollutants discharged from a point source does not emit 'directly into' covered waters, but pass 'through conveyances' in between them."[44] Citing Justice Scalia, Justice Kavanaugh further emphasizes that polluters should not "evade the permitting requirement of §1342(a) simply by discharging their pollutants into noncovered intermittent watercourses that lie upstream of covered waters."[45] Justice Kavanaugh applied this test to the situation and concluded that "the fact that the pollutants from Maui's wastewater facility reach the ocean via an indirect route does not itself exempt Maui's facility from the Clean Water Act's permitting requirement for point sources."[46] Justice Kavanaugh is comfortable with the *Maui* majority's "functional

38. *Maui*, 140 S. Ct. at 1473–74.

39. Transcript of Oral Argument at 29, *Maui*, 140 S. Ct. 1462 (No. 18-260).

40. *NPDES Permit Basics*, ENVT'L PROT. AGENCY, https://www.epa.gov/npdes/npdes-permit-basics (last updated Aug. 3, 2020).

41. *See* 118 CONG. REC. 10,666-69 (1972) (rejecting the Aspin Amendment); *See* Allison 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, 979–80 (noting the CWA's lack of an explicit provision regulating discharges that travel through groundwater).

42. *Maui*, 140 S. Ct. at 1474–75; Transcript of Oral Argument at 67, *Maui*, 140 S. Ct. 1462 (2020) (No. 18-260), https://www.supremecourt.gov/oral_arguments/audio/2019/18-260.

43. *See Maui*, 140 S. Ct. at 1478 (Kavanaugh, J., concurring) (citing *Rapanos v. United States*, 547 U.S. 715, 743 (2006).). While Justice Kavanaugh confidently relies on *Rapanos*, Justice Scalia, who was describing conclusions reached by lower courts, might be surprised by this citation painting him as an environmentalist.

44. *Maui*, 140 S. Ct. at 1478 (Kavanaugh, J., concurring) (citing *Rapanos*, 547 U.S. at 743).

45. *Maui*, 140 S. Ct. at 1478 (Kavanaugh, J., concurring) (citing *Rapanos*, 547 U.S. at 742–743).

46. *Maui*, 140 S. Ct. at 1478 (Kavanaugh, J., concurring).

equivalent" test, because it "seeks to translate the vague statutory text into more concrete guidance," focusing on time and distance factors.[47]

Justice Scalia's plurality opinion in *Rapanos* expressly states that the Court in *Rapanos* was *not* deciding the issue of whether a polluter can evade CWA enforcement "by discharging their pollutants into noncovered intermittent watercourses that lie upstream of covered waters."[48] In dicta, however, Justice Scalia cited a Western District of Tennessee lower court decision that found CWA jurisdiction where the municipal sewer system point source was separated from the covered navigable waters.[49] To support this conclusion, Justice Scalia referenced appellate and lower court decisions in which those courts held an "intervening channel to be a point source,"[50] since the CWA does not expressly require that the addition of the pollutant be "directly" from the point source to the navigable water, but rather the CWA includes the "addition of any pollutant to navigable waters."[51] Using this reference as context, Justice Kavanaugh's concurring opinion emphasized this language from Justice Scalia's plurality decision in *Rapanos*. Kavanaugh acknowledged that "lower courts have held that the discharge into intermittent channels of any pollutant that naturally washes downstream likely violates § 1311(a), even if the pollutants discharged from a point source do not emit 'directly into' covered waters but pass 'through conveyances' in between." [52] Kavanaugh, therefore, concluded that pollutants from Maui's wastewater facility are not exempt from CWA permitting requirements, despite reaching the ocean via an indirect route. In doing so, he elevated that language to greater precedential value in his *Maui* concurrence, where the aforementioned issue of pollutants flowing through an intermediate conveyance was directly before the Court.

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47. *Id.* at 1479 (Kavanaugh, J., concurring), with emphasis on the time and distance factors.

48. Rapanos v. United States*,* 547 U.S. 715, 743 (2006). Instead, the issue before the Court in *Rapanos* was whether wetlands must have a continuous surface connection to bodies that are 'waters of the United States' in their own right to come within the CWA jurisdiction of the Army Corps of Engineers or whether the term "navigable waters" in the CWA includes wetlands that are not adjacent to waters that are navigable in fact. *Id.* at 740-742. Justice Scalia's plurality opinion rejected wetlands that were "physically isolated waters" with only an "intermittent, physically remote hydrologic connection to 'waters of the United States,'" as not being considered sufficiently "adjacent to" or "adjoin[ed to]" waters of the U.S. *Id.*

49. *See id.* at 743 (citing United States v. Velsicol Chemical Corp., 438 F. Supp. 945, 946–947 (W.D. Tenn. 1976)).

50. *Rapanos*, 547 U.S. at 743.

51. *Compare Maui*, 140 S. Ct. at 1478 (Kavanaugh, J., concurring) (citing *Rapanos*, 547 U.S. at 743), *with Maui*, 140 S. Ct. at 1482 (Thomas, J, dissenting), who concluded that the Court should not be bound by the dictum in the *Rapanos* plurality opinion or by the lower court opinions it cited; *see also* Transcript of Oral Argument at 15, *Maui*, 140 S. Ct. 1462 (No. 18-260) (containing transcript of oral arguments before the Supreme Court wherein David Henkin, attorney for the respondent environmental groups, also argued that the absence of a statutory requirement that the discharge be direct allows for the interpretation that it can flow through an intermediary conduit).

52. *Id*.

As far back as 1980, the Fifth Circuit concluded in *Sierra Club v. Abston Construction Company*[53] that a defendant is not relieved from liability just because they did not construct an actual conveyance to the navigable water, "so long as they are reasonably likely to be the means by which the pollutants are ultimately deposited into a navigable body of water."[54] In 1994, the Second Circuit concluded in *Concerned Area Residents for Environment v. Southview Farm*,[55] that "[t]he collection of liquid manure into tankers and their discharge on fields from which the manure directly flows into navigable waters are point source discharges under the case law."[56]

In their dissents, Justices Thomas and Alito criticized the majority opinion in *Maui* as exceeding the strict construction of the CWA language and creating a new nebulous standard: the "functional equivalent of a direct discharge."[57] For Justice Thomas, only a direct discharge from a point source to a navigable water would require a permit.[58] Any channeling through groundwater would cut off the necessity of obtaining a CWA permit for the discharge.[59] Justice Thomas fails to recognize that a point source already existed with the well, and nothing in the CWA requires two point sources or that the point source itself be so long that it extends directly into the navigable water.

The dissenting Justices also pointed out that there is nothing in the literal text of the CWA from which the "functional equivalent" standard can be derived.[60] Justice Alito emphasized that this standard is "too nebulous,"[61] creating great uncertainty in costs for businesses and homeowners[62] and little guidance for lower courts that will "invite arbitrary and inconsistent application."[63] According to Justice Alito, the "functional equivalent"

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53. Sierra Club v. Abston Constr. Co., Inc., 620 F.2d 41 (5th Cir. 1980).

54. *Id*. at 45.

55. *Concerned Area Residents for Environment v. Southview Farm* ("*Concerned Area Residents*"), 34 F.3d 114, 119 (2d Cir. 1994).

56. *Id.*

57. *Maui*, 140 S. Ct. at 1479, 1483.

58. *Maui*, 140 S. Ct. at 1479 (Thomas, J., dissenting) (with whom Justice Gorsuch joins), concluding that the statutory requirement of an "addition" of a pollutant "to" navigable waters requires a direct addition to navigable waters, echoing oral argument of Malcolm Stewart, Deputy Solicitor General for the United States, argued that ANY introduction of groundwater as a medium of conveyance removes federal CWA jurisdiction, Transcript of Oral Argument at 24, Cty. of Maui v. Hawaii Wildlife Fund, 140 S. Ct. 1462 (2020) (No. 18-260), https://www.supremecourt.gov/oral_arguments/audio/2019/18-260.

59. *Maui*, 140 S. Ct. at 1479-80 (Thomas, J., dissenting) and *Maui*, 140 S. Ct. at 1485 (Alito, J., dissenting).

60. *Id.* at 1483 (Alito, J dissenting).

61. *Id.* at 1486 (Alito, J., dissenting) (asking "How similar is sufficiently similar?" *Id*.).

62. *Maui*, 140 S. Ct. at 1489, 1491 (citing the high cost of CWA fines and the possibility that homeowners with septic tank systems might have to get permits); Transcript of Oral Argument at 40-41, Cnty. of Maui v. Hawaii Wildlife Fund, 140 S. Ct. 1462 (No. 18-260), https://www.supremecourt.gov/oral_arguments/audio/2019/18-260 (avoiding the permitting for septic tank systems was a major concern for Justices Alito, Gorsuch and Roberts).

63. *Maui*, 140 S. Ct. at 1483 (Alito, J., dissenting).

standard can lead to the absurd result that a pollutant that leaves a point source and travels toward navigable waters via a nonpoint source "is 'from' the point source for some portion of the journey, but once it has travelled a certain [undefined] distance or once a certain amount of time has elapsed, it is no longer 'from' a point source and is instead 'from' a non-point source."[64] This is why the authors of this article believe that a prospective "hydrological connection standard"[65] would be a better test for jurisdiction than the hindsight "traceability" test or the "functional equivalent" test adopted by the Supreme Court.

The Environmental Protection Agency ("EPA")--under different administrations--has contributed to the confusion. For many years the EPA applied the permitting requirements to pollution discharges from point sources that reached navigable water via groundwater, where there was a "direct hydrological connection" to surface water.[66] On the same day as the *Maui* opinion, the Trump administration issued a proposed interpretive statement, in which the EPA concluded that "the CWA is best read as excluding all releases of pollutants from a point source to groundwater from NPDES program coverage, regardless of a hydrological connection between the groundwater and jurisdictional surface water."[67] Because of the shift in position of the EPA from its long-standing policies,[68] the justices in *Maui*

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64. *Id*. at 1485.

65. *Id.* At various times, the courts and the EPA have used the terms "hydrologic" and "hydrological" interchangeably. In an effort to find consistency, the authors have opted to use the term "hydrological" unless referencing an actual quote.

66. *See* Revised NPDES Permit Regulation and Effluent Limitations Guidelines for CAFOs in Response to the Waterkeeper Decision, 73 Fed. Reg. 70,420 (Nov. 20, 2008) (noting "[EPA] believed that requirements limiting the discharge of pollutants to surface water via groundwater that has a direct hydrologic connection to surface water should be addressed on a site-specific basis"); *see also* National Pollutant Discharge Elimination System Permit Regulation and Effluent Limitations Guidelines and Standards for Concentrated Animal Feeding Operations, 66 Fed. Reg. 2960, 3015-17, 3061-62 (proposed Jan. 12, 2001) (to be codified at 40 C.F.R. pts. 122, 412) (proposing to require NPDES permits for Concentrated Animal Feeding Operations discharging pollutants to groundwater on a case-by-case basis when there is a direct hydrological connection to surface waters); National Pollutant Discharge Elimination System Permit Regulation and Effluent Limitations Guidelines and Standards for Concentrated Animal Feeding Operations (CAFOs), 68 Fed. Reg. 7215 (Feb. 12, 2003) (to be codified at 40 C.F.R. 9, 122, 123, 412); Amendments to the Water Quality Standards Regulation That Pertain to Standards on Indian Reservations, 56 Fed. Reg. 6879, 64,892 (Dec. 12. 1991) (to be codified at C.F.R. pt. 131); *but see* Amendment to Emergency Release Notification Regulations on Reporting Exemption for Air Emissions from Animal Waste at Farms; Emergency Planning and Community Right-to-Know Act, 84 Fed. Reg. 27,533 (June 13, 2019) (to be codified at 40 C.F.R. pt. 355) (reporting a Trump era exemption for CAFOs to bypass mandatory air toxic reporting requirements that had been aimed at protecting rural communities).

67. Proposed 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, 84 Fed. Reg. 16,810 (Apr. 23, 2020) [hereinafter Groundwater Proposed Rule].

68. Groundwater Proposed Rule, *supra* note 66 at 16,812. The Groundwater Proposed Rule is consistent with the EPA's change of position in 2019. *Id*.

did not give *Chevron* deference[69] to the current EPA interpretation, which differed from its former position.[70] While EPA's new interpretation of the CWA would jurisdictionally preclude CWA claims for discharges that were conveyed through groundwater to navigable waters, the administrative interpretation of the scope of the CWA must necessarily yield to the decision of the Supreme Court in *Maui*.

In *Upstate Forever v. Kinder Morgan Energy Partners, L.P.*,[71] the Fourth Circuit adopted the EPA's long-standing position that the CWA applies to discharges "from a point source via groundwater that has a direct hydrologic connection to surface water.[72] The court concluded that the "discharge need not be channeled by a point source until it reaches navigable water."[73] The factual inquiry of "direct hydrological connection" examines the time, distance geology, flow, and slope involved.[74] In *Kinder Morgan*, gasoline from an underground pipeline point source spill migrated through groundwater and soil to navigable water over two years after implementation of remediation and recovery measures to stop the discharge.[75] The court concluded that the "CWA's language does not require that the point source continue to release a pollutant for the violation to be ongoing.[76] The Fourth Circuit allowed the CWA citizen suit standing and vacated the district court's decision, because the point source was less than 1,000 feet from the

69. *See* Chevron U.S.A., Inc. v. Natural Resources Defense Council, Inc., 486 U.S. 837, 859-866 (1984) (developing the legal test for determining whether an agency decision is entitled to judicial deference).

70. *Maui*, 140 S. Ct. at 1474.

71. Upstate Forever v. Kinder Morgan Energy Partners, L.P. (*Kinder Morgan*), 887 F.3d 637, 651 (4th Cir. 2018).

72. *Id.* at 651.

73. *Id*.; NAT'L ASS'N CLEAN WATER AGENCIES, CLEAN WATER ACT POINT SOURCE LIABILITY FOR DISCHARGES VIA GROUNDWATER (2018), https://www.nacwa.org/docs/default-source/resources---public/clean-water-act-point-source-liability-for-discharges-via-groundwater-(11-13-18)83af94567b5865518798ff0000de1666.pdf?sfvrsn=2; *See also* Justin Rheingold, Comment, *Digging Deep: The Clean Water Act's Applicability to Groundwater Discharges*, 60 B.C. L. REV. 311, 311 (2019) (analyzing the existing circuit split and arguing that adherence to the CWA's broad purpose is an effective tool in holding polluters more accountable liable).

74. *Kinder Morgan*, 887 F.3d at 651.

75. *Id*. at 644; *but see Hamker v. Diamond Shamrock Chemical Co.*, 756 F.2d 392, 394, 397 (5th Cir. 1985) (concluding that the residual effects from a prior pipeline discharge of oil were insufficient for a CWA claim when they seeped through groundwater, where plaintiffs sought an injunctive order for monitoring of a pipeline, but failed to allege that Diamond Shamrock is "in violation" of an effluent standard, limitation or order and where one discharge occurred, but no continuing addition to the groundwater from a point source is alleged.).

76. *Kinder Morgan*, 887 F.3d at 648.

navigable water[77] and the plaintiffs were able to allege a direct hydrological connection between the groundwater and the navigable water.[78]

In the *Maui* case, the Obama EPA actually augmented the record by submitting an amicus brief to the Ninth Circuit in which the United States forcefully argued that "discharges from a point source to jurisdictional surface waters that move through groundwater with a direct hydrological connection" are regulated by the CWA.[79] Moreover, the EPA reinforced its support for the "hydrological connection" standard by reference to documents dating back to 1991.[80] The Supreme Court in *Maui* summarily ignored the Trump administration's EPA's filing of a new final rule on April 21, 2020 (just six days prior to the decision issued by the Supreme Court) in which the EPA drastically re-defined its position on the scope of Waters of the United States.[81] While the majority opinion in *Maui* did not directly address how the Fourth Circuit analysis squares with its new "functional equivalent of a direct discharge" standard, the Supreme Court clearly focused on the origin of the pollution to determine whether there was a point source discharge rather than on the means of conveyance.[82]

Among the emerging questions is how the *Maui* decision will apply to pending consent decrees. This question is likely to be addressed directly in the *United States v. U.S. Steel Corporation*.[83] At the trial level in the U.S. District Court for Northern Indiana, a CWA violation by U.S. Steel involved a 2017 discharge (spill) into groundwater of at least 298 pounds of hexavalent chromium and 346 pounds of chromium into Burns Waterway a few feet from Lake Michigan.[84] Due to the chromium contamination, beaches were temporarily closed and public drinking water supplies were

77. *See id.* at 643 (noting that the pipeline broke 400 feet from Cupboard Creek and less than 1000 feet from Browns Creek, tributaries of the Savannah River).

78. *Id*. at 652–53; *but see* Sierra Club v. Va. Elec. & Power Co., 903 F.3d 403, 410 (4th Cir. 2018) (concluding that coal ash ponds were not sufficiently discernible conveyances to be point sources within the meaning of the CWA, while purporting to adopt the hydrologically connected standard of the *Kinder* case).

79. Brief for the United States as Amicus Curiae in Support of Plaintiffs-Appellees at 5, Hawaii Wildlife Fund v. Cnty. Of Maui, 886 F.3d 737, 744 (9th Cir. 2018) (No. 15-17447), 2016 WL 3098501, at *5.

80. *Id*. (citing to Amendments to the Water Quality Standard Regulations that Pertain to Standards on Indian Reservations, 56 Fed. Reg. 64,876, 64.982 (Dec. 12, 1991) (quoting, "[T]he affected ground waters are not considered 'waters of the United States' but discharges to them are regulated because such discharges are effective discharges to the directly connected surface waters.").

81. *See* Navigable Waters Protection Rule: Definition of Waters of the United States, 85 Fed. Reg. 22,250 (Apr. 21, 2020) (effective June 22, 2020); *Cf.* The Trump Administration has taken other anti-science-based positions such as limiting the type of dose response data that can serve as a basis for EPA regulations. Strengthening Transparency in Pivotal Science Underlying Significant Regulatory Actions and Influential Scientific Information, 86 Fed. Reg. 469 (Jan. 6, 2021) (codified at 40 C.F.R. 30).

82. *See Maui*, 140 S. Ct. at 1473–74 (rejecting the means of delivery test).

83. Complaint at 1, United States v. U.S. Steel Corp. (N.D. Ind. Apr. 2, 2018) (No. 2:18-cv-00127).

84. *Id*. at 18.

impacted.[85] The pending consent decree did not consider the CWA violation,[86] relying on the Seventh Circuit Court of Appeals decision in *Village of Oconomowoc Lake v. Dayton Hudson Corporation*,[87] which concluded that

water seeped from a retention pond into groundwater was not subject to CWA jurisdiction.[88] "Even though groundwater eventually reaches streams, lakes, and oceans, the court held, it is not part of the "waters of the United States."[89] In light of the *Maui* decision, an environmental group is asking the District Court to reject the pending proposed consent decree and to reevaluate the corrective action to be taken, after taking into consideration that the contamination traveled through the groundwater and an outfall pipe to reach Lake Michigan.[90]

II. FEDERALISM & GROUNDWATER

A. Waters of the United States

For purposes of the CWA, the term "navigable waters" means the "waters of the United States."[91] Congress, however, has not defined the term "waters of the United States" in the CWA and has, instead, left it to the courts and administrative agencies to provide that definition.[92] As early as 1986, the US Army Corps of Engineers articulated the traditional definition of "navigable waters of the United States" as "[t]hose waters that are subject to the ebb and flow of the tide and/or are presently used or have been used in the past or may be susceptible for use to transport interstate or foreign commerce."[93]

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85. Stan Maddux, *U.S. Steel Chemical Spill Closes Lake Michigan Beaches*, SOUTH BEND TRIBUNE, (Apr. 14, 2017), https://www.southbendtribune.com/news/local/u-s-steel-chemical-spill-closes-lake-michigan-beaches/article_afaed343-ccfd-5b30-af7f-fb6474013a2a.html.

86. *U.S. Steel Corp*., No. 2:18-cv-00127 (N.D. Ind.) (Revised Consent Decree filed Nov. 20, 2019).

87. Village of Oconomowoc Lake v. Dayton Hudson Corp., 24 F.3d 962 (7th Cir. 1994); *see* Plaintiff-Intervenor Surfrider Foundation's Reply to Defendant U.S. Steel's Response to Plaintiff-Intervenor's Notice of Suppl. Auth. at ¶ 3, *United States v. U.S. Steel Corp.* (N.D. Ind.) (No. 2:18-cv-00127) (stating that the Plaintiff Governments failed to consider the groundwater pathway as part of their CWA investigation).

88. *See Village of Oconomowoc Lake,* 24 F.3d at 966 (showing the holding of the case).

89. *Id*. at 963.

90. Complaint at 4, United States. v. U.S. Steel Corp. (N.D. Ind.) (No. 2:18-cv-00127); Lara Beaven, *Environmentalists Cite Maui to Push for Stricter CWA Permit Enforcement*, INSIDEEPA (May 25, 2020), https://insideepa.com/daily-news/environmentalists-cite-maui-push-stricter-cwa-permit-enforcement.

91. 33 U.S.C. § 1362(7).

92. *See* Sackett v. Environmental Protection Agency, 566 U.S. 120, 133 (2012) (Alito, J., concurring) (noting Congress did not define the term "waters of the United States" in the CWA).

93. 33 C.F.R. § 329.4 (2020).

Clarifying the 1985 ruling in *United States v. Riverside Bayview Homes, Inc.*,[94] the 2001 Supreme Court plurality decision in *Solid Waste Agency of Northern Cook County* recognized that jurisdiction extends to those wetlands that have a "significant nexus" to waters that are or were navigable, but concluded that the Corps cannot regulate isolated waters that are not adjacent to traditional navigable waters.[95] Consequently, abandoned sand and gravel pits that had evolved into seasonal ponds as habitat for migratory birds were beyond CWA's jurisdiction.[96] In the 2006 *Rapanos* Supreme Court case, Justice Scalia narrowed the definition to encompass "relatively permanent" bodies of water that are connected to traditional navigable waters and wetlands with continuous surface connection to such relatively permanent bodies of water.[97] Justice Kennedy's concurring opinion, however, added the "significant nexus test," that included bodies of water (and wetlands) as waters of the United States if they "either alone or in combination with similarly situated lands in the region, significantly affect the chemical, physical, and biological integrity of other covered waters more readily understood as 'navigable.'"[98] Although the majority of Justices apparently could agree that the definition should include some waters that are not navigable in the traditional sense, they could not reach consensus on a single rule.[99]

These competing articulations of the definition by the Court were problematic and left the impacted administrative agencies to announce their own definitions. In 2015, the U.S. Army Corp of Engineers (together with the EPA) published the "Clean Water Rule: Definition of 'Waters of the United States'" (WOTUS Rule).[100]

The agencies sought to synthesize the text of the CWA, the various plurality decisions by the Supreme Court, as well as peer-reviewed science, public input, and the agencies' experience implementing the statute.[101] After public comment, the 2015 WOTUS Rule included: the traditional navigable waters, interstate waters, the territorial seas, impoundments of jurisdictional

94. *See* United States v. Riverside Bayview Homes, Inc., 474 U.S. 121, 139 (1985) (ruling that the Corps reasonably acted in interpreting the CWA to require permits for the discharge of fill material into wetlands adjacent to jurisdictional waters).

95. Solid Waste Agency of N. Cook Cnty. v. U.S. Army Corps of Eng'rs, 531 U.S. 159, 167 (2001).

96. *Id.* at 168.

97. Rapanos v. United States, 547 U.S. 715, 742 (2006).

98. *Id*. at 759, 780 (Kennedy, J., concurring).

99. United States v. Acquest Transit LLC, 2020 WL 3042673, at *9 (W.D.N.Y. June 4, 2020) (assessing the competing views of the Justices in *Rapanos*).

100. Clean Water Rule: Definition of "Waters of the United States" (WOTUS), 80 Fed. Reg. 37,054 (June 29, 2015) (to be codified at 40 C.F.R. 110, 112, 116).

101. *Id*.

waters, covered tributaries, and covered adjacent waters.[102] The rule excluded certain bodies of water, like ditches, irrigated land, and stock tanks.[103] The 2015 rule also left the door open, however, to other bodies of water that may be deemed waters of the United States on a case by case basis such as isolated waters that are not connected to navigable waters, but are ecologically important (including California vernal pools or prairie potholes).[104]

Although the 2015 WOTUS rule was often criticized for its breadth, it did not include groundwater within its scope.[105] Some scholars thus criticized the 2015 rule as being too narrow, stating that "[t]here is no historical, textual, or functional basis for asserting jurisdiction over surface waters that are tributary to navigable waters while denying jurisdiction over groundwater that is tributary to those same surface waters."[106] Applying the *Rapanos* "significant nexus" test, it makes no sense to exclude groundwater from CWA jurisdiction.[107]

In his 2017 executive order, President Trump directed the agencies to replace the Obama administration's broader WOTUS Rule with one that was consistent with Justice Scalia's plurality opinion in the *Rapanos* case.[108] Two days before the Court handed down the *Maui* decision, the EPA published its final rule, called the Navigable Waters Protection Rule (NWPR),[109] to replace the Obama WOTUS Rule,[110] dealing with the scope of national jurisdiction under the CWA and its narrowed interpretation of "navigable waters." The new NWPR standard recognizes only permanent, standing, and flowing waters and wetlands that abut or are otherwise inseparably bound up with such relatively permanent waters as within CWA federal jurisdiction.[111] The NWPR also specifically rejects Justice Kennedy's "sufficient nexus" case-by-case standard from his *Rapanos* concurrence in favor of a narrower "bright-line rule" of what falls within the

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102. *See generally id.* at 37,065 (explaining the scope of the significant nexus analysis, and covering traditional navigable waters, interstate waters, and the territorial seas, and referencing the categories of waters determined to have a significant nexus, including covered tributaries, covered adjacent waters, and impoundments).

103. *Id.* at 37,098.

104. Farris Gilman, *WOTUS Redefined: New Definitions of Waters of the United States*, JDSUPRA (Apr. 23, 2020), https://www.jdsupra.com/legalnews/wotus-redefined-the-new-definition-of-78604/.

105. WOTUS, 80 Fed. Reg. 37,055.

106. Michael C. Blumm & Steven M. Thiel, *(Ground)Waters of the United States: Unlawfully Excluding Tributary Groundwater from Clean Water Act Jurisdiction*, 46 Env't. L. 333, 335 (2016).

107. *Id*. at 337.

108. Exec. Order No. 13,788, 82 Fed. Reg. 12,497 (Mar. 3, 2017).

109. Navigable Waters Protection Rule: Definition of "Waters of the United States," 85 Fed. Reg. 22,250.

110. *Id*. at 22,259.

111. *Id.* at 22,273.

definition of waters of the United States.[112] Language in Scalia's *Rapanos* decision recognizes the "hydrological connection" standard,[113] as do twenty other groundwater cases and the EPA's own interpretation prior to the Trump administration's directive.[114] Nevertheless, the EPA's most recent iteration rejects that "hydrological connection" standard as it applies to groundwater conduits.[115] The Biden Administration needs to restore the "hydrological connection" standard, consistent with its long history and its protection of the nation's waters, which was the primary congressionally-stated purpose of the CWA.[116] "Congress recognized, demanded broad federal authority to control pollution, for '[w]ater moves in hydrologic cycles and it is essential that discharge of pollutants be controlled at the source.'"[117] Moreover, reliance on the "hydrological connection" does not require that the EPA intrude on the traditional authority of the States to regulate groundwater, but rather to proscribe and address those discharges that actually impact jurisdictional waters.

The authors of this article believe that the repeal of the 2015 WOTUS Rule results in a substantially narrowed reach for CWA jurisdiction. As a result, CWA protection is removed from a significant number of water sources. In other words, the strides made to improve water quality across the United States since the passage of the CWA may be at risk. Governmental enforcement could revert back to a pre-CWA world where only total maximum daily loads (TMDLs)[118] are applied, and dilution may be deemed an acceptable means of satisfying state regulatory requirements. Therefore, highly concentrated discharges of pollutants may not be regulated until the subsequent level of dilution is determined and pollution is so pervasive that extensive remediation will be required after the fact, when it is most difficult and most expensive to achieve.

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112. *Id.*; Rapanos v. United States, 547 U.S. 715, 759, 781 (2006) (Kennedy, J., concurring).

113. *Rapanos*, 547 U.S. at 728.

114. *See* Kvien, *supra* note 41, 977–78 (summarizing the above-mentioned twenty groundwater cases).

115. 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, 84 Fed. Reg. 16,812 (Apr. 23, 2020) (Groundwater Proposed Rule).

116. *Id.* at 16,824.

117. United States v. Riverside Bayview Homes, 474 U.S. 121, 132–33 (1985) (citing Senate Report No. 92-414. p. 77 (1972).).

118. *See* CWA, 33 U.S.C. § 1313(d)(1)(A) (addressing impaired waters and TMDLs); *see also Statute and Regulations Addressing Impaired Waters and TMDLS*, EPA, https://www.epa.gov/tmdl/statute-and-regulations-addressing-impaired-waters-and-tmdls#:~:text=The%20objective%20of%20the%20Act,efforts%20to%20attain%20it%20continue (last visited Dec. 8, 2020) (addressing impaired waters and TMDLs in Section 303(d) of the Clean Water Act).

B. Regulating Groundwater

Groundwater provides one-third of the public water supply in cities and 90% of drinking water in rural areas, as well as contributing 48% of water used for irrigation.[119] In addition, 29% of all fresh water came from groundwater.[120] Most state water laws focus on ownership, time and water allocation rules, but the complexity of the state rules make it difficult to have a universal policy regarding pollution that flows through groundwater.[121] Allocation systems for water use also complicate matters, with eastern states adopting riparian rights that allow a landowner to make reasonable use of the water resource, while western states generally have a prior appropriation system or a hybrid.[122]

A 2012 study by the Water Resources Research Center and the Udall Center for Studies in Public Policy at the University of Arizona revealed that groundwater is used for up to 95% of human water needs, depending on the state and region of the state.[123] It reports that "there is significant variance in terms of the role of state law in recognizing the connection between surface and groundwater, and consideration of the water needs of groundwater dependent ecosystems."[124] While 96% of the states regulate groundwater, 71% of states have separate agencies that manage water quantity versus water quality, further complicating coordinated management.[125] Public water supply sources and aquifers are more tightly regulated than private wells; only nineteen states regulated household or domestic wells.[126] Groundwater governance priorities emphasize water quality/contamination (90%); conflicts between water users (e.g., well interference) (72%); and declining groundwater levels (64%).[127] To manage groundwater quality, 76% rely on permits, 76% on monitoring, 57% on planning, and 50% on protected areas.[128] Some states have extensive regulatory guidance, such as

119. *See* Water Science School*, Water Questions & Answers: How Important is Groundwater?*, USGS, https://www.usgs.gov/special-topic/water-science-school/science/water-qa-how-important-groundwater?qt-science_center_objects=0#qt-science_center_objects (last visited Dec. 8, 2020).

120. *Id.*

121. *See* Blumm, *supra* note 106, at 340–342 (discussing the focus of state groundwater regulations and their lack of uniformity).

122. *Water Law: An Overview*, NAT. AGRIC. L. CENTER, https://nationalaglawcenter.org/overview/water-law/ (last visited Jan. 25, 2021).

123. ANDREA K. GERLAK ET AL., GROUNDWATER GOVERNANCE IN THE U.S. iii (2013).

124. *Id.*

125. *Id*. at 7.

126. *Id*. at 8–9.

127. *Id*. at 10.

128. *Id.* at 13.

California's Sustainable Groundwater Management Act (SGMA), where groundwater supplies two-thirds of the state's fresh water.[129]

California's SGMA provides for the creation of groundwater sustainability agencies (GSA) for each groundwater basin, as well as the assessment and ranking of these basins to determine the risks to basin integrity.[130] California has even begun to utilize Airborne Electromagnetic Surveys to determine the distribution and characterization of aquifers, aquitards, and relevant geologic formations necessary to inventory and plan for the long-term sustainable management of California's groundwater resources. [131] Each GSA is tasked with developing and adopting a groundwater sustainability plan for each basin that is deemed to be a medium-to-high priority.[132] Ultimately, the California legislature enacted the SGMA to accomplish key goals while not impairing the highly complex water rights that exist in California. These goals include: (1) managing local groundwater basins sustainably with minimal state intervention; (2) increasing groundwater storage and eliminating the over drafting of aquifers and thereby minimizing subsidence; (3) promoting design and development that promotes recharge of the aquifers; (4) improving data collection for enhanced management of subsurface resources; and (5) assuring the GSAs are empowered to act with the appropriate authority, technical guidance, and financial support to effectively manage the groundwater resources within their respective basins.[133] The importance of successfully implementing the SGMA is highlighted by the fact that twenty-one basins have been identified as critically over-drafted and all of them have adopted groundwater sustainability plans prior to the statutory target deadline.[134] The protection and sustainable management of groundwater is an essential component both in terms of water quantity and quality.

A 2019 Environmental Law Institute webinar reported that twenty-nine states regulate discharges into groundwater within WOTUS in an effort to

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129. Sustainable Groundwater Management Act, ch. 346, S. B. No. 1168, at 89 (2014) (codified at CAL. WATER CODE §§ 10720-10737.8); *Groundwater Management Program*, CAL. WATER BDS., https://www.waterboards.ca.gov/water_issues/programs/sgma/ (stating the need for groundwater management) (last visited Dec. 8, 2020); *Sustainable Groundwater Management*, U.S. GEOLOGICAL SERV., https://ca.water.usgs.gov/sustainable-groundwater-management/ (last visited Jan. 26, 2021) describing sustainability indicators and planning tools); *Groundwater Law*, WATER EDUC. FOUND., https://www.watereducation.org/aquapedia-background/groundwater-law (last visited Jan. 26, 2021) (giving California officials' statements on the reasons for proposing the SGMA).

130. *See* CAL. WATER CODE §§ 10723–24, 10722.4, 10933(b) (establishing and categorizing basins, and setting standards for the groundwater monitoring program).

131. Maven, *State Water Board: Update on SGMA Implementation*, MAVEN'S NOTEBOOK (June 10, 2020) https://mavensnotebook.com/2020/06/10/state-water-board-update-on-sgma-implementation-2/.

132. CAL. WATER CODE § 10720.7(a) (2016).

133. *Id.* § 10720.1.

134. *See* Maven, *supra* note 131.

protect groundwater quality.[135] Six states issued NPDES permits for groundwater discharges.[136] Eleven states used the Resource Conservation and Recovery Act (RCRA) and twenty-seven used the federal Safe Drinking Water Act (SDWA) and Underground Injection Control (UIC) programs as the primary vehicles to regulate groundwater contamination.[137]

The Resource Conservation and Recovery Act (RCRA) is the primary federal statute governing the disposal of solid and hazardous waste.[138] The EPA is delegated primary RCRA authority to regulate and set the minimum standards for the treatment, storage and disposal of listed hazardous waste,[139] as well as the basic standards for the management of non-hazardous municipal and industrial waste.[140] While retaining its enforcement and oversight authority, EPA has delegated responsibility to each state's hazardous waste regulatory agency to implement state RCRA programs in lieu of the EPA.[141] Under Subtitle D of the RCRA regulations, states assume the primary role in implementing non-hazardous waste programs which provide the criteria for design, location, operation, clean up, and closure of municipal and industrial landfills.[142] Under Subtitle C of the RCRA regulations, states assume responsibility for key components of the comprehensive and safe management of hazardous waste from "cradle to grave."[143] Subtitle C of RCRA not only provides specific lists and criteria to define "hazardous waste," but also sets standards applicable to: (a) generators and transporters of hazardous waste; and (b) owners and operators of hazardous waste treatment, storage and disposal facilities.[144] Subtitle C also establishes permit, inventory and reporting requirements relating to the treatment, storage, and disposal of hazardous waste.[145]

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135. Webinar: Groundwater Discharges: Getting to the Source of Concern, held by the Env't. L. Inst. (Sept. 10, 2019), 14:35, https://youtu.be/MA2XsHR_UpI?t=874; *see also* Presentation Slides: Groundwater Discharges: Getting to the Source of Concern, held by the Env't. L. Inst. (Sept. 10, 2019), https://www.eli.org/sites/default/files/media/19-09-10-/9-10-19-anastasioppt.pdf (containing presentation slides for webinar).

136. *Id.*

137. *Id.*

138. *See* Resource Conservation and Recovery Act of 1976 (RCRA), Pub. L. No. 94-580, 90 Stat. 2795 (codified at 42 U.S.C.§ 6901 *et seq.*) (governing the disposal of solid and hazardous waste).

139. *See* RCRA § 3004, 90 Stat. 2807–08 (codified at 42 U.S.C. § 6924) (governing hazardous waste identification, classification, generation, management, and disposal).

140. *See* 40 C.F.R. §§ 239-259 (2020) (RCRA, Subtitle D - regulations governing the storage, collection and management of non-hazardous solid waste); *see also* 40 C.F.R. §§ 280.10–280.52 (2020) (regulating underground storage tanks).

141. *See, e.g.*, 42 U.S.C. § 6946 (2012) (detailing the procedures States shall follow to develop and implement a plant for regional solid waste management).

142. *See* RCRA Subtitle D, 40 C.F.R. §§ 239-259 (2020) (explaining the RCRA program); *see also* 40 C.F.R. §§ 280.10–280.52 (regulating states implementation of non-hazardous waste programs).

143. *See* RCRA §§ 3003-3004 (governing the transportation, storage, and disposal of hazardous waste).

144. RCRA, 42 U.S.C. §§ 6921-6924 (1976).

145. RCRA, 42 U.S.C. §§ 6925-6939g.

Congress established a basic national standard by directing the EPA to develop minimum national technical standards and mandated state RCRA programs to be at least as stringent as these federal standards.[146] To assure compliance, Congress authorized broad enforcement authority that includes the power to issue compliance orders, civil and criminal penalties, and to issue interim corrective action orders to protect human health or the environment. [147] Recognizing the potential limitations and resources available for government enforcement, Congress also granted citizen suit authority if the EPA chooses not to pursue enforcement directly. [148] In enacting RCRA as amended, Congress intended to build a comprehensive and cooperative federal/state program to promote the protection of human health and the environment.[149]

Perhaps most relevant to the interpretation of RCRA as it relates to complimentary environmental statutes, Congress was explicit in its intent to require "that hazardous waste be properly managed in the first instance thereby reducing the need for corrective action at a future date."[150] Although RCRA empowers government regulators to require monitoring of groundwater at treatment, storage, and disposal facilities to prevent hazardous waste from compromising soil and groundwater quality,[151] the goal is to minimize the need for expensive and difficult corrective actions in favor of proactive and protective management.[152] Nonetheless, as discussed infra in part III with coal ash ponds, short-sighted or expedient waste management practices routinely result in contamination of the soil and groundwater that RCRA is intended to protect. In recognition of this reality, the EPA's Corrective Action Program provides guidance for industries to prevent and clean up exposure routes to groundwater.[153]

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146. *See State Authorization Under the Resource Conservation and Recovery Act (RCRA)*, ENVT'L PROT. AGENCY, https://www.epa.gov/rcra/state-authorization-under-resource-conservation-and-recovery-act-rcra (last updated Dec. 13, 2020) (explaining authority granted to RCRA waste program); *see also* Approved State Hazardous Waste Management Programs, 40 C.F.R. §§ 272.1–272.2849 (2020) (setting forth the applicable State hazardous waste management programs under § 3006(b) of the Resources Conservation and Recovery Act, 42 U.S.C. § 6929, and 40 C.F.R. § 260.10).

147. *See*, *e.g.*, RCRA, 42 U.S.C. § 6928 (federal enforcement authority regarding hazardous waste management).

148. RCRA, 42 U.S.C. § 6972 (permitting citizen suit authority and procedures).

149. *See Id.* § 6902 (explaining objectives and national policy).

150. *Id*. at § 6902(a)(5).

151. *Id.* § 6901-6992(k) (providing statutory guidance to prevent soil or groundwater pollution); *see also* 40 C.F.R. § 264.1 (2020) (establishing regulations to promote minimum national standards for the management of hazardous waste); *see* 40 C.F.R. §§ 261.31-261.33 (listing regulated hazardous wastes).

152. *Id.* § 6901(b)*See* RCRA, 42 U.S.C. § 6902(b) (National Policy).

153. *Guidance for Cleaning Up Groundwater, Soil and Air at Corrective Action Facilities, Guidance for Groundwater Cleanups*, ENVT'L PROT. AGENCY, https://www.epa.gov/hw/guidance-cleaning-groundwater-soil-and-air-corrective-action-facilities (last updated Feb. 18, 2020).

In addition to the protections afforded by RCRA, the federal Safe Drinking Water Act (SDWA)[154] provides some protection for the quality of groundwater, but only if that groundwater is used as drinking water.[155] When groundwater is used as municipal drinking water, the state regulates it through authority delegated from the SDWA.[156] Where aquifers are the primary source for drinking water, the SDWA requires states to develop plans to prevent contamination of the public water system.[157]
SDWA also regulates wellhead injection through the Underground Injection Control Program (UIC),[158] but exempts most hydraulic fracking fluids.[159] The UIC is a program promulgated under the SDWA (and RCRA) which imposes, technical standards for various classes (six of them) of injection wells.[160] These classes include, for example, Class I (industrial and municipal waste disposal wells) and class II (oil and gas related injection wells).[161] The goal is to protect public health by preventing injection wells from contaminating underground sources of drinking water.[162] It is limited to aquifers that are used by the public.[163] It also imposes certain restrictions as requirements on Class I hazardous waste injection wells.[164]

In addition, as another example of cooperative federalism, the UIC includes provisions that permit federal authority to be delegated to the states.[165] In California, for example, the delegation was done and (following audit) the EPA found that it was severely deficient.[166] The EPA imposed oversight and has been enforcing a corrective action plan to get the state back on track.[167] Finally, under the UIC, there are procedures to exempt whole

154. 42 U.S.C. § 300h-6(f).

155. *See About the Office of Water (OW),* ENVT'L PROT. AGENCY, https://www.epa.gov/aboutepa/about-office-water#ground. (last updated Jan. 29, 2021) (explaining how the Office of Ground Water (OGWDW) ensures safe drinking water and protects ground water).

156. Thomson Reuters, *50 State Regulatory Surveys: Envtl. Laws: Pollution - Permits for Groundwater and Surface Water Discharge*, Apr. 2020, West, 0070 REGSURVEYS 13 [hereinafter Groundwater Survey].

157. Safe Drinking Water Act (SDWA), 42 U.S.C. § 300h-6(a).

158. *See* 40 C.F.R. § 146 (2015) (establishing underground injection control program criteria and standards); 42 U.S.C. § 300g-9; *see also* 42 U.S.C. §§ 300h-1(b), 300h-3 (containing underground injection control program provisions requiring well operation permits).

159. *See id.* § 300g-9.

160. 40 C.F.R. §§ 146.1-146.2, 146.5 (2015).

161. 42 U.S.C. § 300h-1(a).

162. 42 U.S.C. §§ 300h(b).

163. 42 U.S.C. §§ 300h-3(e), 300h-6(a).

164. 42 U.S.C. § 300h-5.

165. *Id.*

166. *EPA's Oversight of California's Underground Injection Control (UIC) Program*, U.S. ENVT'L PROT. AGENCY, https://www.epa.gov/uic/epa-oversight-californias-underground-injection-control-uic-program#background (last updated Aug. 21, 2020).

167. *See id.* (discussing the EPA's oversight of state's oil and gas programs).

aquifers.[168] Note that the term "underground source of drinking water" (USDW) means an aquifer or its portion: "(a)(1) Which supplies any public water system; or (2) Which contains a sufficient quantity of ground water to supply a public water system; and (i) Currently supplies drinking water for human consumption; or (ii) Contains fewer than 10,000 mg/l total dissolved solids; and (b) Which is not an exempted aquifer."[169] As a result, there is heavy pressure from industry to have various aquifers exempted and therefore left without SDWA/UIC protection. In California, there are currently 30 aquifers for which UIC exemption applications are pending.[170] The potential for short-sighted protection with long-term impacts is enormous.[171] Implications for subsurface contamination of aquifers would potentially be irreversible during our lifetimes.

Since many states have regulatory programs to address at least some aspects of groundwater, the *Maui* majority couched its "functional equivalent" standard in the context of not unduly infringing on states' rights.[172] "Decisions should not create serious risks either of undermining state regulation of groundwater or of creating loopholes that undermine the [CWA] statute's basic federal regulatory objectives."173 The dissenting justices in *Maui* raise federalism issues, arguing that the "functional equivalent" test impinges on the states' traditional authority to regulate groundwater and nonpoint sources.[174] They noted that nothing in the text of the CWA grants federal jurisdiction over isolated groundwater,[175] but rather Congress intended the States to have the "primary responsibilities and rights … to prevent, reduce, and eliminate pollution."[176]

When Congress rejected the Aspin Amendment to the CWA, it decided not to include groundwater as per se jurisdictional, but it also did not enact clarifying language that would exclude its regulation per se where groundwater is hydrologically connected to waters of the U.S.[177] When

168. *See* SDWA, 42 U.S.C. § 300g-4 (allowing injections of unregulated pollutants that would so degrade exempted aquifers as to make them unusable for future use).

169. 40 C.F.R. § 146.3.

170. *See* Letter from Cal. State Water Control Bd. to David Albright, EPA Region IX (Mar. 23, 2020), https://www.conservation.ca.gov/calgem/Documents/Aquifer%20Exemptions/EPA-AE-Compliance-Update-ADA.pdf (providing an update to the EPA regarding the status of aquifer exemption proposals under consideration by the California Geologic Energy Management Division).

171. *Colorado River Compact, 1922*, U.S. BUREAU RECLAMATION, https://www.usbr.gov/lc/region/g1000/pdfiles/crcompct.pdf (creating the Colorado River compact which divvied up water without anticipating the population growth in southern Colorado and northern Arizona; resulting in grossly inadequate water resources allocated to the upper Colorado Compact states).

172. *Maui*, 140 S. Ct. 1462, 1476 (2020).

173. *Maui*, 140 S. Ct. at 1477.

174. *Id*. at 1490.

175. Kvien, *supra* note 41, at 958.

176. *Maui*, 140 S. Ct. at 1480 (Thomas, J., dissenting, citing 33 U.S.C. § 1251(b)).

177. *See* Kvien, *supra* note 41, at 979–80; *See also* 118 Cong. Rec. H10,669 (daily ed. Mar. 28, 1972) (rejecting the Aspin Amendment).

SDWA was enacted, there was some legislative history indicating that groundwater and deep well injection could be regulated under the CWA, but only if it discharges into navigable water.[178] Where a state has approval to administer and issue NPDES permits, it can regulate those permits to address discharges into wells that impact groundwater.[179]

C. Cooperative Federalism under CWA

Federal laws such the CWA and RCRA are crafted to achieve "cooperative federalism" to balance the needs of both federal and state stakeholders in protecting groundwater and surface water from pollutants.[180] Prior to the enactment of the CWA, states were primarily responsible for water quality regulation and there was virtually no federal enforcement. The results were predictably poor. On October 2, 1965, President Lyndon Johnson made the following remarks at the signing of the Water Quality Act of 1965:

> Today, we proclaim our refusal to be strangled by the wastes of civilization. Today, we begin to be masters of our environment. But we must act, and act swiftly. The hour is late, the damage is large. The clear, fresh waters that were our national heritage have become dumping grounds for garbage and filth. They poison our fish; they breed disease; they despoil our landscapes. No one has a right to use America's rivers and America's waterways that belong to all the people as a sewer. The banks of a river may belong to one man or even one industry or one State, but the waters which flow between those banks should belong to all the people. There is no excuse for a river flowing red with blood from slaughterhouses. There is no excuse for papermills pouring tons of sulphuric acid into the lakes and the streams of the people of this country. There is no excuse--and we should call a spade a spade--for chemical companies and oil refineries using our major rivers as pipelines for toxic wastes. There is no excuse for communities to use other people's rivers as a dump for their raw sewage.[181]

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178. *See discussion* H.R. REP. NO. 93-1185, pt. 2 at 4 (1974) (discussing regulating ground water under the CWA).

179. *See* CWA, 33 U.S.C. § 1342(b)(1)(D) (authorizing State permit programs to issue permits which control the disposal of pollutants into wells).

180. Ky. Waterways All. v. Ky. Util. Co., 905 F.3d 925, 929 (6th Cir. 2018).

181. *Lyndon B. Johnson: Remarks at the Signing of the Water Quality Act of 1965*, AM. PRESIDENCY PROJECT, https://www.presidency.ucsb.edu/documents/remarks-the-signing-the-water-quality-act-1965 (last visited Jan. 26, 2021).

The CWA was passed seven years later and marked the start of an effective partnership between state and federal governments to clean up the nations water resources. The foundation for this partnership relies on the establishment of national standards as a floor which permits states to impose more stringent requirements as the states may deem appropriate. The CWA continued the use of water quality standards for the receiving waters but added a federally mandated permitting and treatment process to address point source pollution using the best practicable control technology or best conventional pollutant control technology available before these discharges contaminate the receiving waters.[182]

To make this form of cooperative federalism work, the EPA and the Army Corps of Engineers (Corps) share delegated authority under the CWA, with the EPA establishing the standards and the Corps serving as the primary federal permitting authority.[183] Cooperative efforts of federal, state and local governments, and regional organizations are needed to accomplish water quality goals.

> For waters that do not meet quality standards, states use two additional anti-pollution methods to ensure impaired water bodies ultimately meet standards. First, states will set Total Maximum Daily Loads (TMDLs), which are the maximum allowable amounts of a pollutant in impaired bodies of water. TMDLs are set with the goal of reducing pollution so a body of water can meet quality standards. Second, states will divide the maximum allowable amount of a pollutant discharge into an impaired water among various pollution sources.[184]

The states with delegated authority from the EPA implement regulations that satisfy minimum federal requirements and adopt permitting procedures.[185]

Pursuant to § 303(d) of the CWA, states are to establish a list of impaired waters based on the severity of the pollution and the designated use of the

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182. *See* 40 C.F.R. § 125.3 (1990) (outlining discharger's technology-based treatment requirements in permits).

183. *See Permit Program under CWA Section 404*, U.S. ENVT'L PROT. AGENCY, https://www.epa.gov/cwa-404/permit-program-under-cwa-section-404 (last updated June 17, 2020) (listing the roles and responsibilities of EPA and Army Corps of Engineers under CWA).

184. *Id.*; *see also New Vision for Implementing the CWA Section 303(d) Impaired Waters Program Responsibilities, State Partnerships*, U.S. ENVT'L PROT. AGENCY, https://www.epa.gov/tmdl/new-vision-implementing-cwa-section-303d-impaired-waters-program-responsibilities (last updated Sept. 7, 2018) (announcing a collaborative framework for implementing CWA Section 303(d) impaired waters program with states).

185. *Id.*

waterbody.[186] States assess the water quality of rivers, lakes, streams and creeks within their boundaries. States establish TMDL requirements for each type of pollutant in each type of water body.[187] First, the state must identify the beneficial uses of each water body; second, establish criteria for those uses; and third, establish an anti-degradation policy.[188] For example, when the water body needs to be clean enough that it is fishable and swimmable, the TMDL limits must be set lower than if the primary use is industrial use. In assessing how clean is clean, beneficial use categories include: I. Protection of Aquatic Life, II. Human Health & Fish Consumption, III. Public Drinking Water, IV. Irrigation, V. Livestock watering, VI. "Fishable/Swimmable" whole body contact, VII. Groundwater, and VIII. Industrial Use.[189] The states develop watershed plans and implementation plans to restore the impaired water bodies,[190] commensurate with § 303(d) of the CWA TMDL list. The states also establish standards for publicly owned waste (sewage) treatment facilities (POWT).[191]

The purpose of adopting water quality standards is to determine which waters are healthy, which need to be restored, and how much restriction is needed per pollutant. Pollutants include conventional pollutants, [192] nonconventional pollutants, [193] toxic pollutants, [194] and biological contaminants (including sewage).[195] The maximum amount of a pollutant allowed to enter a waterbody is calculated to determine the pollutant loading capacity that each water body can assimilate without exceeding state water

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186. *See Statute and Regulations Addressing Impaired Waters and TMDLs*, EPA, https://www.epa.gov/tmdl/statute-and-regulations-addressing-impaired-waters-and-tmdls#:~:text=The%20objective%20of%20the%20Act,efforts%20to%20attain%20it%20continue (last updated Sept. 10, 2018).

187. *See* CWA, 33 U.S.C. § 1313(d)(1)(C) (mandating states establish TMDLs for each identified pollutant).

188. *See* MO. DEP'T NAT. RES., MISSOURI ANTIDEGRADATION RULE AND IMPLEMENTATION PROCEDURE 10 (2008) (defining and explaining the TMDL process); *See generally Impaired Waters and Total Maximum Daily Loads*, MO. DEPT. NAT. RES., https://dnr.mo.gov/env/wpp/tmdl/index.html (last visited Jan. 27, 2021) (defining and explaining the TMDL process).

189. *See* MO. CODE REGS. ANN. tit. 10 § 20-7.031(2)(A)4(D)1 (2019) (using the beneficial use categories in Table G, Lake Classifications and Use Designations).

190. *See id*. § 20-7.031, at 11 (referencing the CWA requirement for the States to develop priorities in implementing plans to restore water quality).

191. *See* MO. CODE REGS. ANN. tit. 10, § 20-7.015(2)(A) (2020) (establishing POTWs effluent limitations).

192. *See* 40 C.F.R. §§ 401.16, 122.44(d)(1) (2020) (recognizing conventional pollutants include: pH, oil and grease, total suspended solids, fecal coliform, and biochemical oxygen demand).

193. *See* 40 C.F.R. § 122.44(d)(1)(i) (2020) (recognizing non-conventional pollutants are subject to State requirements and limitations).

194. *See* 40 C.F.R. § 401.15 (2020) (listing sixty-five classes of toxic pollutants).

195. *See* 40 C.F.R. §§ 401.15, 122.23(a), 122.44 (b)(2) (2020) (establishing that State NPDES permitting applies to concentrated animal feeding operations and to standards for sewage sludge use or disposal).

quality standards.[196] The loading capacity is the TMDL, which takes into account federal guidelines.[197] After TMDL implementation plans are developed, water quality-based discharge limits in NPDES permits are authorized under section 402 of the CWA, with quantity and duration limits.[198] The government agency (Department of Natural Resources in Missouri, for example) allocates the load to point sources in the permitting process. In setting the limits for point sources, the agency needs to take into account that the estimated load of pollutants or nutrients from nonpoint sources (that may impact the TMDL but may not require obtaining permits).[199]

Under the CWA, the EPA can delegate CWA authority to "each State desiring to administer its own permit program for discharges into navigable waters within its jurisdiction."[200] Once the EPA approves the state permitting program, federal NPDES permitting is suspended. Nonetheless, the CWA does not expressly grant exclusive authority to either the EPA or the administering state agency to determine CWA violations.[201] Under this schema, the EPA issues NPDES water quality permits in Massachusetts, New Hampshire, New Mexico, the District of Columbia, and U.S. territories, but has delegated authority to the other states to issue their own permits.[202] The EPA website provides charts detailing the extent of delegated authority and whether the authority applies to state NPDES permit programs, state pretreatment programs, general permit programs, and regulation of federal facilities and biosolid (sludge) programs.[203] For example, both Missouri and

196. *See Overview of Total Maximum Daily Loads (TMDLs)*, U.S. ENVT'L PROT. AGENCY, https://www.epa.gov/tmdl/overview-total-maximum-daily-loads-tmdls (last updated Sept. 13, 2018) (showing calculations for the TMDL).

197. *See* CWA, 33 U.S.C. § 1313(d)(1)(D) (LexisNexis 2020) (demonstrating that under federal regulations at 40 C.F.R. § 130.7, a TMDL must comply with the following requirements: (1) be designed to attain and maintain the applicable water quality standards, (2) include a total allowable loading and as appropriate, waste load allocations (WLAs) for point sources and load allocations for nonpoint sources, (3) consider the impacts of background pollutant contributions, (4) take critical stream conditions into account (the conditions when water quality is most likely to be violated), (5) consider seasonal variations, (6) include a margin of safety (which accounts for uncertainties in the relationship between pollutant loads and instream water quality), and (7) be subject to public participation).

198. *See* 33 U.S.C. § 1342(o) (establishing limits through an anti-backsliding provision and applying that provision to 33 U.S.C. § 1313 (d), the provision identifying state TMDLs).

199. *See, e.g.*, 33 U.S.C. § 1344(f)(1)(A) (listing certain exempted agricultural activities).

200. CWA, 33 U.S.C. § 1342(b) (LexisNexis 2020).

201. *See generally id.* § 1342(b) (demonstrating the NPDES-State-Federal relationship in Hawaii Wildlife Fund, 886 F.3d 737, 750).

202. *See NPDES Permits Around the Nation*, U.S. ENVT'L PROT. AGENCY, https://www.epa.gov/npdes-permits (last updated May 22, 2020) (clicking on each state shows whether the permits are issued by the EPA or the delegated to the individual state).

203. *See id*. (showing the various programs when clicking on each state).

California have delegated authority to regulate all except their biosolid programs.[204]

The states normally have primary jurisdiction over groundwater, while the federal government regulates navigable water.[205] States set standards for groundwater, especially to protect drinking water, livestock watering, and irrigation.[206] Nevertheless, pollutants disposed in wells that "alter the water quality" of surface waters are "subject to NPDES permitting requirements."[207] The states "cannot create exemptions to the CWA whether or not the EPA has delegated permitting authority to the state."[208] Only Congress can create exemptions to the CWA permitting requirements.[209] In so ruling, the 9th Circuit in the Northern Plains Reservation Council case held that:

> Just as the EPA does not have the authority to create an exemption for unaltered groundwater, neither does the State of Montana, as the EPA cannot delegate to a state more authority than the EPA has under the CWA. Moreover, absent statutory authority in the CWA for Montana to create such exemptions, it cannot possibly be urged that Montana state law in itself can contradict or limit the scope of the CWA, for that would run squarely afoul of our Constitution's Supremacy Clause. U.S. Const. art. VI, cl. 2.[210]

Under the Trump Administration's recently finalized regulatory definition of Waters of the United States, however, groundwater is specifically exempted from the scope of Waters of the United States.[211] The

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204. *National Pollutant Discharge Elimination System (NPDES): NPDES State Program Authority*, U.S. ENVT'L PROT. AGENCY, https://www.epa.gov/npdes/npdes-state-program-authority (last updated Aug. 31, 2020).

205. *See Maui*, 140 S. Ct. 1462, 1476 (2020) (implying the relative roles of the state and federal governments).

206. *See, e.g.*, MO. CODE REGS. ANN. tit. 10 § 20-7.031(6)(A) (showing statutory protections for groundwater and uses).

207. Northern Plains Res. Council v. Fid. Expl. & Dev. Co., 325 F.3d 1155, 1161–62 (9th Cir. 2003) (citing CWA, 33 U.S.C. § 1362(6)(B)). Fidelity Exploration & Development Company ("Fidelity") extracted methane gas for commercial sale from coal seams located deep underground in the Powder River Basin, Montana. *Id.* The Montana Department of Environmental Quality (MDEQ) advised Fidelity that no permit was required to discharge the coal bed methane groundwater because Montana state law (Water Quality Act, Montana Code § 75-5-401(1)(b)) exempts unaltered groundwater from state water quality requirements. The court held that no such exemptions are permissible under the CWA. *Id.* at 1157–58. Wells are specifically listed as a type of point source under the CWA, 33 U.S.C. § 1362(14).

208. *Northern Plains Res. Council*, 325 F.3d at 1157–58.

209. *See id.* at 1165 (citing the Supremacy Clause preempting Montana's ability to make exemptions and holding that Montana cannot create an exemption to something subject to federal statutory authority).

210. *Id.* at 1164–65.

211. *See* Navigable Waters Protection Rule, 85 Fed. Reg. 22,251, 22,275 (April 20, 2020) (limiting interpretation of the text and the legislative history to exclude groundwater).

Trump administration has narrowed the definition of WOTUS in an effort to "limit" federal jurisdiction under the CWA under the guise of cooperative federalism. This simultaneously restricted the states' ability to regulate pollutant discharges by preemptively preventing states from exercising permitting authority on water quality grounds,[212] especially where infrastructure projects are concerned.[213] This EPA takes the position that it lacks CWA authority to regulate point source discharges where such polluted discharges flow into "groundwater" and subsequently migrate to "navigable waters,"[214] in part because groundwater is within the jurisdiction of the state. But this position blunts the tools available for the states to address the problem.

In addition, the Trump administration's EPA obfuscates the importance of the "hydrological connection"[215] between these water resources and the pollutants that are "fairly traceable"[216] from the point source to the navigable water as a nexus for federal CWA jurisdiction.[217] The goal of CWA cooperative federalism is to prevent pollution of waterways and to clean up water quality throughout the United States.[218] This goal should not be circumvented by narrow jurisdictional construction.

III. IT IS MORE THAN GROUNDWATER

In *Maui*, the Supreme Court addressed the question of "whether the Act [CWA] 'requires a permit when pollutants originate from a point source but

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212. *See* Updating Regulations on Water Quality Certification, 84 Fed. Reg. 44080, 44099, 44081 (proposed Aug. 22, 2019) (to be codified at 40 C.F.R. pt. 121) (denying states and tribes the ability to block pipeline construction to assure "predictability and timeliness" of CWA § 401 certification).

213. *See* Jake Levine and Paulina Slagter, *The Environmental Protection Agency's (EPA) Proposed Changes to State and Tribal Certification Authority Under Clean Water Act Section 401*, LEXOLOGY (Sept. 26, 2019), https://www.lexology.com/library/detail.aspx?g=85def4a6-f872-4c96-89ea-6c2d8af6dcf4 (concluding that narrowing of the certification's scope would delay infrastructure projects).

214. Interpretive Statement on Application of the CWA NPDES Program to Releases of Pollutants From a Point Source to Groundwater, 84 Fed. Reg. 16,810, 16,810 (Apr. 23, 2019) (to be codified at 40 C.F.R. pt. 122), https://www.federalregister.gov/documents/2019/04/23/2019-08063/interpretive-statement-on-application-of-the-clean-water-act-national-pollutant-discharge, [hereinafter Interpretive Statement] (concluding that the CWA is best interpreted to exclude from the NPDES program's coverage all releases of pollutants from a point source to groundwater, regardless of a hydrological connection between the groundwater and jurisdictional surface water).

215. *See Kinder Morgan*, 887 F.3d 637, 652–53 (4th Cir. 2018) (showing how NPDES permitting is required for waterways when gasoline from a pipeline migrated through groundwater).

216. *See Hawaii Wildlife Fund*, 886 F.3d at 749 (concluding that a NPDES permit was required for the treated sewage injected into wells that migrated through groundwater to the Pacific Ocean).

217. *See* Interpretive Statement, *supra* note 214, 84 Fed. Reg. at 16,810 (concluding that the CWA excludes all pollutants from a point source to groundwater); *see also* Kentucky Waterways All. v. Ky. Util. Co., 905 F.3d 925, 932–33 (6th Cir. 2018) (concluding that discharges to groundwater from coal ash point sources are not regulated under the CWA).

218. *See* Interpretive Statement, *supra* note 214, 84 Fed. Reg. at 16,812-13 (describing the cooperative federalism goals of the CWA).

are conveyed to navigable waters by a nonpoint source,'" referencing groundwater as the example, but not limiting the scope of its decision to groundwater conveyance.[219] The Court intended a broader application. As the *Maui* decision is applied to other intermediary conduits, two additional issues may arise. The first issue is whether the discharge was originally from a discrete point source. The second issue is whether the pollutant ended up going to what is still within the definition of WOTUS under the Trump administration's narrowed definition.[220]

In the *Maui* decision, all parties conceded that the well was a point source and the ocean was navigable water.[221] When groundwater is the conduit (instead of the point source), it does not have to be "confined and discrete," as long as there is the "functional equivalent of a direct discharge."[222] Therefore, the conduit role also avoids having to classify groundwater as "water of the United States."

Pre-*Maui* case law also supports the reasoning that Congress did not intend to create a loophole for polluters when pollutants migrate from a stormwater settling basin through groundwater, because the objective of the CWA "is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters."[223] "[I]t would hardly make sense for the CWA to encompass a polluter who discharges pollutants via a pipe running from the factory directly to the riverbank, but not a polluter who dumps the same pollutants into a man-made settling basin some distance short of the river and then allows the pollutants to seep into the river via the groundwater."[224]

How will the "functional equivalent to a direct discharge" standard be applied to discharges from concentrated animal feeding operations (CAFOs), [225] industrial wastewater treatment facilities, and potentially leaking or leaching treatment or coal ash ponds? The CWA includes an exemption for agricultural return flows, as well as for "any introduction of

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219. *Maui*, 140 S. Ct. at 1468 (citing Petition for Writ of Certiorari, *Maui,* 140 S. Ct. at 1462 (No. 18-260).

220.*See* Navigable Waters Protection Rule, 85 Fed. Reg. 22,250, 22,296–97 (April 20, 2020) (showing ambiguities on the scope of the final rule regarding Congressional intent).

221. *See* Vinson & Elkins LLP, *Justices Find That the Clean Water Act Applies to Pollutants Passing Through Groundwater*, INSIGHT: V&E ENVT'L LAW UPDATE (May 5, 2020), https://www.velaw.com/insights/justices-find-that-the-clean-water-act-applies-to-pollutants-passing-through-groundwater/ (showing the County of Maui's concessions in court).

222. *Maui*, 140 S. Ct. at 1477.

223. 33 U.S.C. § 1251(a).

224. *Northern. California. River Watch v. Mercer Fraser Co.*, No. C-04-4620 SC, 2005 WL 2122052, at *2 (N.D. Cal. Sept. 1, 2005).

225. *See* 40 C.F.R. § 122.23(b)(1)-(2), (4), (6) (defining "CAFO" as an animal feeding operation ("AFO") with a lot or facility that contains a specified number and type of animals, e.g., as many as or more than 700 mature dairy cattle, and confines the animals for a total of forty-five days or more out of a 12-month period).

pollutants from non-point source agricultural activities."[226] This agricultural exemption, however, does not encompass CAFOs, which are deemed to be point source operations that result in point source discharges which are subject to the CWA.[227] Percolation ponds, treatment ponds, and surface application runoffs from municipal or industrial bio-sludge applied to land in sludge drying beds are also potentially implicated by this standard. They may leak, especially if not adequately lined, and may be vulnerable in flooding conditions.[228] "No discharge" mining ponds are intentionally located near streams so they can percolate to the stream;[229] so is that the "functional equivalent" of a direct discharge?

The point source issue has also arisen in recent appellate cases involving coal ash. The Circuit split that led to the Supreme Court's grant of a writ of certiorari in the Maui case included the Fourth Circuit's 2018 decision in *Sierra Club v. Virginia Electric & Power Company*,[230] and the Sixth Circuit's 2018 decisions in *Kentucky Waterways Alliance v. Kentucky Utilities Company*[231] and *Tennessee Clean Water Network v. TVA*.[232] In its 2018 decision of *Sierra Club v. Virginia Electric & Power Company*, the Fourth Circuit declined to find coal ash ponds to be "point sources," concluding that they were not sufficiently discernible conveyances within the meaning of the CWA.[233] The Dominion coal ash storage facilities in the *Sierra Club* case were unlined.[234] Although coal ash settling ponds and landfills may allow leachate to percolate into groundwater, the court did not

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226. *See* Clean Water Act, 33 U.S.C. § 1342 (l)(1) (setting limitations on permits for agricultural return flows from irrigated agriculture); *see also* 40 C.F.R. § 122.3(e) (listing agricultural exclusions).

227. *See e.g. Concerned Area Residents*, 34 F.3d 114, 115 (2nd Cir. 1994) (holding that the liquid manure spreading operations are a point source within the meaning of CWA section 1362(14) because defendant farm falls within the definition CAFO and is not subject to the agricultural exemption).

228. *See* Climate Policy Watcher*, Wastewater Sludge*: *Drying Beds*, https://www.climate-policy-watcher.org/wastewater-sludge/drying-beds.html (last visited Jan. 24, 2021) (noting the time the sludge must remain on the bed depends on the amount of water that must be removed by evaporation).

229. Webinar Video, A.B.A. Virtual SEER 49th Spring Conference, *Surf's Up! What the Supreme Court's Maui Ruling Means for the Clean Water Act*, A.B.A. (June 17, 2020), https://www.americanbar.org/groups/environment_energy_resources/events_cle/49thspring/ [hereinafter A.B.A. Virtual SEER].

230. *See generally Sierra Club v. Va. Elec. & Power Co.*, 903 F.3d 403 (4th Cir. 2018) (showing how the Clean Water Act regulates groundwater).

231. *Maui*, 140 S. Ct. 1462, 1469-70 (2020) (citing *Ky. Waterways All. v. Ky. Utils. Co.*, 905 F. 3d 925, 932-938 (6th Cir. 2018)).

232. *See Tenn. Clean Water Network v. Tenn. Valley Auth.*, 905 F.3d 436, 441-42, 446 (6th Cir. 2018) (rejecting the "hydrological connection" theory posed in a citizen suit challenging unauthorized discharges of coal ash pollutants though karst sinkholes to groundwater and then to Old Hickory Lake and the Cumberland River).

233. Sierra Club, 903 F.3d at 410-11 (4th Cir. 2018) (noting that a point source is "any discernible, confined and discrete conveyance."); 33 U.S.C. § 1362(14).

234. *See* Therese Wilkerson, *Sierra Club v. Virginia Electric & Power Co.: How A Clean Water Act Misinterpretation May Open the Floodgates to Future Groundwater Polluters*, 21 Vermont J. Env. L. 442, 461 (2020).

recognize them as point sources.[235] The Fourth Circuit reached this conclusion, despite purportedly adopting its Fourth Circuit's 2018 *Kinder Morgan* position that hydrologically connected groundwater is covered by the CWA.[236] Instead, the court concluded that RCRA (not CWA) regulates the treatment and storage of solid waste like coal ash and its effects on surface waters and groundwaters.[237]

Both Sixth Circuit cases also related to pollution of waterways from coal ash. The Kentucky Utilities Company stored coal ash in man-made ponds sitting on top of an aquifer; chemicals from that source reached Herrington Lake surface waters after traveling through groundwater.[238] In the *Kentucky Waterways Alliance* case, the Sixth Circuit rejected both the "point source" theory and the "hydrological connection" theory,[239] concluding instead that the pollutant must make its way to navigable water directly through a point source conveyance.[240] The Sixth Circuit then decided that groundwater and the karst topographic through which the pollutant flowed did not constitute "discernable, discrete, nor confined" point sources under the CWA.[241]

In concluding that the diffuse nature of groundwater prevents it from being a point source,[242] and thus not subject to CWA jurisdiction, the Sixth Circuit emphasized that Congress intended to "recognize, preserve, and protect the primary responsibilities and rights of the States to prevent, reduce, and eliminate pollution [and] to plan the development and use . . . of land and water resources."[243] The states regulate non-point source pollution through waste treatment management and disposal of solid wastes (including coal ash) through RCRA management plans.[244] The Sixth Circuit further concluded that CWA and RCRA jurisdiction were mutually exclusive and recognized plaintiffs' standing to pursue a RCRA claim.[245] In reaching its conclusion, the Sixth Circuit relied on flawed assumptions that belied its recognition of the important role of cooperative federalism and the essential

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235. *Id.* at 458.

236. *Sierra Club*, 903 F.3d at 409.

237. *Id.*; *see also* Resource Conservation and Recovery Act (RCRA), 42 U.S.C. § 6901 (1976) (stating Congressional findings on solid waste, its disposal, and its impact on the environment and public health).

238. *See Ky. Waterways All. v. Ky. Util. Co.* 905 F. 3d at 931 (citing the plaintiff's concerns about arsenic, lead, calcium, boron, and selenium being among the chemicals found in coal ash).

239. *Id*. at 932; *Tenn. Clean Water Network*, 905 F.3d at 441, 446.

240. *Ky. Waterways All.,* 905 F.3d at 933-934.

241. *Id*. at 934.

242. *Id*. at 934, 936 (interpreting Justice Scalia's opinion in *Rapanos*, 547 U.S. 715, 729-30 (2006) to mean that pollutants can travel through multiple intermediary point sources to reach the ultimate jurisdictional waterway, rather than that pollutants can travel through nonpoint sources en route. In reaching this conclusion, the Sixth Circuit also rejects the reasoning of the Ninth Circuit in *Hawaii Wildlife Fund*, 886 F.3d 737, 748-49 (9th Cir. 2018)).

243. *Ky. Waterways All*., 905 F.3d at 929 (quoting 33 U.S.C. § 1251(b).

244. *Ky. Waterways All*., 905 F.3d at 929.

245. *Id*. at 940.

protections afforded when RCRA and the CWA are applied in coordination.[246] Instead, the Court focused solely on the viability of the RCRA claim. Under RCRA, coal combustion residuals (CCRs) from electric utilities and their impoundments were regulated under the 2015 CCR Rule[247] to minimize the likelihood of groundwater contamination.[248]

To provide context as to the importance of how this new standard is to be applied, the EPA has identified over 1,000 coal ash slurry ponds, containing 112 million pounds of coal ash, 46% of which were unlined.[249] A 2007 EPA study reported in the New York Times estimated that 67 towns in 26 states had groundwater contamination from heavy metals, such as lead, chromium, nickel, and arsenic.[250] Runoff and seepage pose significant environmental dangers to waterways, exacerbated by flooding incidents in recent years. In the aftermath of Hurricane Florence in 2018, floodwaters rose, breaching a Duke Energy coal ash pond's retaining wall.[251] The North

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246. *See id.* at 928-30, 37. Despite recognizing that RCRA is "designed to work in tandem with other federal environmental protection laws, including the CWA" and that RCRA expressly "excludes industrial discharges which are point sources subject to NPDES permits under the CWA", the court ruled that no discharge that reached navigable waters via groundwater could support a claim under the CWA. *Id.* at 929, 937. The court focused solely on the damages to soil and groundwater, without considering that the discharges could extend beyond and into navigable waters that are protected by the CWA. As the Supreme Court later ruled in *Maui*, the fact that a discharge is conveyed through groundwater to navigable waters does not by itself bar application if the CWA. In fact, given the exclusion of industrial discharges from the reach under RCRA, the CWA is precisely the statutory program that should be applied to address damages that extend beyond the soil and groundwater. *Id.* at 940-947 (Clay, Cir. J. dissenting).

247. Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities, 80 Fed. Reg. 21,302 (Apr. 17, 2015) (to be codified in 40 C.F.R. pts. 257, 261). *But see* Trump era amendment creating work arounds and closure exemptions that create alternative requirements for how facilities respond to and remediate releases from landfills and surface impounds, providing provide greater flexibility in determining locations for CCR landfills or surface impoundments; Hazardous and Solid Waste Management System: Disposal of CCR; A Holistic Approach to Closure, 85 Fed. Reg. 12,456 (Mar. 3, 2020) (to be codified 40 C.F.R. pt. 257); *see* Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals from Electric Utilities, 83 Fed. Reg. 11,584-11,585 (proposed Mar. 15, 2018) (providing supplementary information on the background of the CCR rule)*; But see* News Release, U.S. Envt'l Prot. Agency, EPA Proposes First of Two Rules to Amend Coal Ash Disposal Regulations, Saving Up To $100M Per Year in Compliance Costs (Mar. 1, 2018) (on file with EPA) (creating work arounds and closure exemptions that create alternative requirements for how facilities respond to and remediate releases from landfills and surface impounds, providing greater flexibility in determining locations for CCR landfills or surface impoundments); *see also* Carol Miller, *For a Lump of Coal & a Drop of Oil: An Environmentalist's Critique of the Trump Administration's First Year of Energy Policies*, 36 VA. ENV'T. L. J. 185, 227-230 (2018) (discussing CCR rule's regulation of disposal of coal ash generated by electric utilities and independent power producers).

248. Hazardous and Solid Waste Management System: Disposal of CCR; A Holistic Approach to Closure, 85 Fed. Reg. 12,456 (proposed Mar. 3, 2020) (to be codified at 40 C.F.R. pt. 257).

249. Thomas McGarity, *EPA at Helm's Deep: Surviving the Fourth Attack on Environmental Law*, 24 FORDHAM ENV'T. L. REV. 205, 234 (2013).

250. Shaila Dewan, *Coal Ash Spill Revives Issues of Its Hazards*, N.Y. Times (Dec. 24, 2008), https://www.nytimes.com/2008/12/25/us/25sludge.html.

251. *See* Glenn Thrush and Kendra Pierre-Louis, *Florence's Floodwaters Breach Defenses at Duke Energy Plant, Sending Toxic Coal Ash Into River*, N.Y. Times, (Sept. 21, 2018),

Carolina Department of Environmental Quality ordered Duke Energy to stop capping coal slurry ponds, and instead dry them and send the coal ash to lined landfills.[252] An impoundment wall at the Tennessee Valley Authority's Kingston coal ash impoundment wall broke in 2008, spilling 300 million to one billion gallons of coal ash slurry, contaminating land and waterways and burying fifteen houses.[253] This 2009 Superfund site served as a catalyst for new coal ash legislation and regulation.

The 2016 Water Infrastructure for Improvements to the Nation Act (WIIN) grants states authority to administer RCRA subtitle D operating permit programs,[254] pursuant to the 2015 Coal Combustion Residuals Rule (CCR) or its successor.[255] CCR regulates the management and disposal of coal ash generated by electric utilities and independent power producers pursuant to subtitle D of RCRA.[256] The rule governs location, design, and operating criteria, as well as record keeping for facility expansions. It also requires lining for both new and existing landfills and surface impoundments, which are required to implement groundwater protection and monitoring. [257] Facilities that are unlined or have groundwater contamination above the regulated protection standard must stop receiving CCR wastes, adopt corrective action, and either retrofit or close.[258] The Trump Administration, however, has continually extended closure dates.[259] Both industry and environmentalists challenged the CCR rule in cases that were consolidated into the Utility Solid Waste Activities case.[260]

In 2018, the Trump administration adopted modified regulations that allow states greater flexibility and alternative ways to achieve compliance.[261] The 2018 revisions to the CCR Rule also modified the regulation of on-site storage practices and inactive surface impoundments, in addition to

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https://www.nytimes.com/2018/09/21/climate/florences-floodwaters-breach-defenses-at-power-plant-prompting-shutdown.html (describing the flooding as a result of Hurricane Florence).

252. Yessenia Funes, *A Year After Hurricane Florence, Coal Ash is Still a Huge Concern For North Carolina*, EARTHER (Sept. 14, 2019), https://earther.gizmodo.com/a-year-after-hurricane-florence-coal-ash-is-still-a-hu-1838105226.

253 . HARV. ENV'T. & ENERGY L. PROGRAM, *Coal Ash Rule* (Dec. 15, 2017) http://environment.law.harvard.edu/2017/12/coal-ash-rule/.

254. Water Infrastructure for Improvements for the Nation Act, Pub. L. No 114-322 (2016).

255. Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals from Electric Utilities ("CCR Rule"), 80 Fed. Reg. 21,301 (Oct. 14, 2015) (to be codified at 40 C.F.R. pt. 257, 261).

256. CCR Rule, 80 Fed. Reg. at 21,310; *See generally*, Resource Conservation and Recovery Act, 42 U.S.C. §§ 6901-6992(k) (detailing the management of hazardous and non-hazardous solid waste).

257. CCR Rule, 80 Fed. Reg. at 21,310.

258. *Id.* at 21,303–21, 21,304.

259. *Id.*at 21,414.

260. *See generally* Utility Solid Waste Activities v. Environmental Protection Agency, 901 F.3d 414, 420 (D.C. Cir. 2017) (consolidating seven cases challenging CCR rule).

261. Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals from Electric Utilities, 80 Fed. Reg. 21,301 (Apr. 17, 2015) (to be codified 40 C.F.R. pts. 257, 261).

extending closure dates by 18 months for sites that do not meet water protection standards.[262] The Trump administration adopted rules that provide a less safe alternative and prolong closure of sites without liners.[263]

President Trump's Executive Order for Prompting Energy Independence and Economic Growth prioritizes protection for fossil fuel industries.[264] Consistent with this policy, EPA Secretary Wheeler bragged that this regulatory change would save the coal industry $30 million annually.[265] A question remains as to whether RCRA subpart C and D regulation of permitted landfills and the revised CCR rules are adequate to protect waterways if CWA jurisdiction does not apply.

In the *Maui* decision, all parties conceded that the injection well was a point source.[266] By contrast, coal ash ponds pose an additional threshold issue of whether or not they qualify as CWA point sources, since the Fourth and Sixth Circuits have concluded that they are not. Assuming arguendo that they are point sources, the migration of chemicals from those locations are now governed by the "functional equivalent of a direct discharge" standard set forth in *Maui*.[267]

The *Prairie Rivers Network (PRN) v. Dynegy Midwest* case in federal Central District Court in Illinois may be among the first cases to consider the application of the *Maui* decision to coal ash leaks.[268] From the mid-1950s until 2011, the Vermilion plant burned coal and generated millions of tons of coal combustion residuals ("coal ash").[269] *Dynegy* and its predecessors mixed the coal ash generated at the plant with water in three unlined coal ash pits.[270] The claim further asserts that:

> Coal ash, such as that in the coal ash pits at the Vermilion plant, contains heavy metals and other toxic pollutants that are harmful and at times deadly to people, aquatic life, and animals. Among the contaminants found in coal ash are arsenic, barium, boron,

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262. *Id.* at 27,371.

263. Hazardous and Solid Waste Management System: Disposal of CCR; A Holistic Approach to Closure, 85 Fed. Reg. 12,456 (Mar. 3, 2020) (to be codified 40 C.F.R. pt. 257).

264. *See generally* Exec. Order No. 13,783, Promoting Energy Independence and Economic Growth, 82 Fed. Reg. 16,093, 16,096 (Mar. 31, 2017) (reviewing fossil fuel guidance, regulations, and rules).

265. Matthew Brown, *U.S. Coal Ash Pollution Rules Eased After Industry Balks*, AP NEWS (July 18, 2018), https://www.apnews.com/8c1f81c6e0d64d16ac35c1a013af9b19.

266. *Hawaii Wildlife Fund*, 886 F.3d 737, 744 (9th Cir. 2018).

267. *Maui*, 140 S. Ct. 1462, 1476 (2020).

268. *See Prairie Rivers Network v. Dynegy Midwest Generation, LLC*, 350 F.Supp.3d 697, 706 (C.D. Ill. 2018) (granting motion to dismiss and holding that the discharges into groundwater—not directly into navigable waters—is not within CWA jurisdiction); *see also* Beaven, *supra* note 40.

269. *Prairie Rivers Network, LLC*, 350 F.Supp.3d at 706.

270. *See Prairie Rivers Network*, 350 F.Supp.3d at 699-700 (detailing how Dynegy and its predecessors sluiced 3.3 million cubic yards of coal ash between 1950 and 2011).

> chromium, lead, manganese, molybdenum, nickel, and sulfate. These contaminants can inflict severe harm, including brain damage, cancer, learning disabilities, birth defects, and reproductive defects. They are also dangerous to aquatic ecosystems, which is a significant concern where that contaminated groundwater is migrating into adjacent surface water bodies.[271]

Arguably, coal ash ponds are a discernible and discrete conveyance from which pollutants are discharged.[272] In light of *Maui*, courts addressing coal ash contamination claims need to reconsider whether coal ash contaminants that flow thorough groundwater to reach navigable water are within the jurisdiction of the CWA.

IV. PRACTICAL IMPLICATIONS

What will be the impact of the *Maui* decision on industry, citizen group challenges and regulators' determination of when a CWA NPDES permit is required? The majority in *Maui* included a nonexclusive list of seven factors to be considered in evaluating whether a discharge was the "functional equivalent" of a direct discharge:

> (1) transit time,
> (2) distance traveled,
> (3) the nature of the material through which the pollutant travels,
> (4) the extent to which the pollutant is diluted or chemically changed as it travels,
> (5) the amount of pollutant entering the navigable waters relative to the amount of the pollutant that leaves the point source,
> (6) the manner by or area in which the pollutant enters the navigable waters,
> (7) the degree to which the pollution (at that point) has maintained its specific identity. [emphasis added][273]

"Time" and "distance" traveled were referenced as the most important in determining "[w]hether pollutants that arrive at navigable waters after traveling through groundwater are 'from' a point source depends upon how

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271. *Id.*

272. *See* Jay Crowder, *Notice to SCOTUS: Coal Ash Should be a Point Source Discharge under the Clean Water Act*, 19 VT. J. ENVT'L L. 89, 112 (2018) (describing why coal ash ponds are discernable).

273. *Maui*, 140 S. Ct. at 1476-77.

similar to (or different from) the particular discharge is to a direct discharge."[274] The Court, however, did not provide any guidance on how to weigh the other factors.[275] Fact-driven analysis in courts with differing emphasis on the various factors will lead to widely varying results. Whether it is the EPA or a state-delegated agency, they "will be required to develop an administrative record to support its permitting decision using this standard so that permitting decisions survive expected litigation."[276] Litigation over what information is needed to support a standard application is likely, and litigants in the remanded *Maui* case have already filed briefs on whether additional discovery is warranted.[277]

To assess the collective impact of these factors, studies and reports by geologists will be necessary. Chemical transport and groundwater flow models will be developed to determine how long the transit time is for a particular physical nature of pollutant materials traveling through a particular medium. For example, liquids travel through sand and gravel much more quickly than they travel through silty media; karst topography is more porous. Hence time and distance are affected by the third factor: the nature of the material (soil type) through which the pollutant travels. Whether the pollutant enters navigable waters via a spring, a well, or over land (factor six) also affects time and distance, as does the elevation and slope of the land. What may appear as inconsistent application of the "functional equivalent" standard may instead result from factual differences in the medium. The amount that enters navigable waters (factor five) is in part informed by the extent the pollutant is diluted (factor four) and the extent to which it maintains its initial identity (factor seven). In tracing the flow of the pollutant from the point source to the navigable water, one method is to use an airborne thermal infrared imaging spectrometer that measures temperature at the point source and at the navigable water acceptance point.[278]

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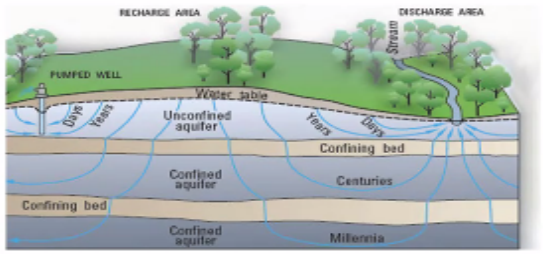
274. *Id.* at 1476.

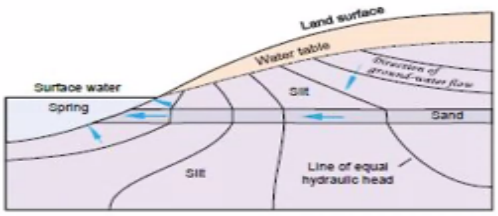
275. *See generally id.* (lacking any discussion on how to weigh the appropriate factors).

276. Andrew Otis, *Preparing for Water Permitting After the Supreme Court's County of Maui Decision*, JDSUPRA (June 30, 2020), https://www.jdsupra.com/legalnews/preparing-for-water-permitting-after-36111/.

277. *Id.*

278. *See* A.B.A. Virtual SEER, *supra* note 229 (featuring Robert Young exploring the technical strategies for implementing groundwater regulation after the *Maui* decision).





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The *Maui* Court's opinion should not be viewed as a rejection of the "hydrological connection" standard in that it adopts the same basic factors for consideration as those that were articulated in the *Kinder Morgan* decision that was based on the hydrological connection standard.[280] The "hydrological connection" standard in that case included an examination of time, distance geology, flow, and slope.[281] The fact that the *Maui* majority did not give deference to the EPA's recent alternative viewpoints further supports this position.

The geological methods, reports, and expert testimony will also be subject to *Daubert* prerequisites[282] in federal court and 32 states.[283] Federal Rules of Evidence Rule 402 provides that evidence is admissible only if it is relevant.[284] Rule 401 defines "relevant evidence" as that which has "any tendency to make the existence of any fact that is of consequence to the

279. *Id.*

280. *See Kinder Morgan,* 887 F.3d at 647 (discussing the *Maui* opinion).

281. *Id.* at 651 (citing National Pollutant Discharge Elimination System Permit Regulation and Effluent Limitations Guidelines and Standards for Concentrated Animal Feeding Operations, 66 Fed. Reg. 2960, 3017 (Jan. 12, 2001) (to be codified at 40 C.F.R. pts. 122 and 412)).

282. *See generally* Daubert v. Merrell Dow Pharm., *Inc.*, 509 U.S. 579 (1993) (determining the standard for admitting expert testimony in federal courts).

283. Robert Ambrogi, *Two More States Adopt Daubert, Bringing Total to 32*, IMS EXPERT SERVICES, https://www.ims-expertservices.com/insights/two-more-states-adopt-daubert-bringing-total-to-32/ (last visited Dec. 8, 2020).

284. *Daubert*, 509 U.S. at 587.

determination of the action more probable or less probable than it would be without the evidence."[285] Rule 701 further provides that "[i]f scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise."[286] It is the duty of the trial judge to determine scientific testimony and evidence is admitted only if it is both relevant and reliable.[287] The earlier *Frye* standard just focused on whether the expert's opinion was generally accepted by the relevant scientific community.[288] The *Daubert* case established a five-part test to aid in assessing whether testimony or evidence was admissible:

1. Whether the theory or technique employed by the expert is generally accepted in the scientific community;
2. Whether it has been subjected to peer review and publication;
3. Whether it can be and has been tested;
4. Whether the known or potential rate of error is acceptable; and
5. Whether the research was conducted independent of the particular litigation or dependent on an intention to provide the proposed testimony.[289]

Scientifically valid data questions and data with quality assurance will be needed. If the amount of the pollutant reaching the navigable water cannot be accurately quantified, can the analysis satisfy the Daubert standard? If scientists and engineers weigh the seven factors of the *Maui* test, how will that be evaluated under the *Daubert* criteria? Ultimately, will the impact of the pollutant on the navigable water drive the outcome with some judges rather than the details? Should such a complicated process be applied to a jurisdictional question?[290] Elber Lin, arguing for the County of Maui in oral arguments, urged that the after-the-fact examination of the "traceability" standard is too unpredictable as a trigger for CWA permitting.[291] Mr. Lin's argument makes clear that because of the potential substantial fines associated with noncompliance, "regulated entities need to know beforehand whether a permit is required."[292]

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285. *Id.*
286. *Id*. at 588.
287. *Id*. at 589.
288. Frye v. U.S., 293 F. 1013, 1014 (D.C. App. 1923).
289. *Daubert*, 509 U.S. at 589–594.
290. A.B.A. Virtual SEER, *supra* note 229.
291. Transcript of Oral Argument at 4, *Maui*, 140 S. Ct. 1462 (No. 18-260).
292. *Id.*

The cost implications of the testing, reports, and expert testimony are exacerbated when they must occur to establish jurisdiction or satisfy a summary judgment versus if they are only needed if the case is actually tried. The Supreme Court could have established a standard that allowed jurisdiction if the traceable pollutant reached the navigable water through a hydrological connection, but it chose not to do so. By requiring analysis of these seven factors as a precursor to establishing CWA jurisdiction, the analysis becomes much more complex and costly at the threshold. The Kinder Morgan Amici Curiae brief in the *Maui* case projects the substantial burdens and costs on industries of implementing an unpredictable standard:

> Given the enormous costs of compliance and sizable penalties for noncompliance, there must be a clear line that will enable potentially regulated entities to determine in advance whether a NPDES permit is required—not an utterly unpredictable standard that will force them to choose between obtaining a costly permit they should not need and risking massive fines for discharges the CWA was not meant to cover.[293]

Some state authorities believe, however, that the functional equivalent standard will not make a substantial change in their permitting processes.[294]

Other legal scholars and opponents argue that "the 'functional equivalent' standard could require NPDES permitting obligations for activities related to the construction of pipelines, injection wells associated with oil and gas production, chemical and industrial manufacturing, and even agricultural production."[295] The majority opinion in *Maui* downplays the risk that 650,000 wastewater reclamation facilities and over 20 million septic systems[296] used in residential homes will need a permit, stating that

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293. Brief for Kinder Morgan Energy Partners, L.P. et al. as Amici Curiae Supporting Petitioner at 28–29, *Maui*, 140 S. Ct. 1462 (2020) (No. 18-260).

294. Joel Reschly, Missouri Department of Natural Resources Legal Counsel, Environment & Energy Committee meeting Zoom presentation, Nov. 16, 2020 (notes on file with authors).

295. Brett A. Miller & Margaret A. Viator, *Supreme Court's New "Functional Equivalent" Standard Means Regulatory Uncertainty Under an Expanded Clean Water Act*, PHELPS (May 4, 2020), https://www.phelps.com/supreme-courts-new-functional-equivalent-standard-means-regulatory-uncertainty-under-an-expanded-clean-water-act-5-4-2020.

296. *See e.g.*, REPORT TO THE TWENTY-NINTH LEGISLATURE STATE OF HAWAII, 2018 REGULAR SESSION RELATING TO CESSPOOLS AND PRIORITIZATION FOR REPLACEMENT (Dec. 2017), https://health.hawaii.gov/opppd/files/2017/12/Act-125-HB1244-HD1-SD3-CD1-29th-Legislature-Cesspool-Report.pdf (stating "Hawaii has nearly 88,000 cesspools that put 53 million gallons of raw sewage into the State's groundwater and surface waters every day. Cesspools are an antiquated technology for disposal of untreated sewage that have the potential to pollute groundwater."); *See also* Stuart Coleman, *Finally Tackling a Crappy Situation*, HAW. BUS. MAG. (2019),

states can "mitigate the harms through general permits and judges 'can mitigate any hardship or injustice . . . with broad discretion to set a penalty'".[297]

CWA citizen suits[298] are likely to be the primary vehicle for raising the issue of whether a permit is necessary and could be quite costly with the geological reports necessary to establish jurisdiction. Citizen suits provide a mechanism to assure compliance and enforcement when the administering agencies either fail to act or choose not to act. During the Trump administration, has been unlikely that the EPA would raise the issue when the overarching priority of the administration was to lessen regulatory burdens on businesses. The new Trump rule excluding groundwater from the scope of WOTUS[299] also makes the application of the "functional equivalent to a direct discharge" standard even more murky to apply.

CONCLUSION

The CWA (1972) envisioned a partnership between the states and federal government to clean up America's waterways. It was not intended to be a jurisdictional competition to facilitate businesses' circumvention of that goal. After all, the original expectation—be it naïve—was to have all U.S. waterways fishable and swimmable by the mid-1980s.[300] Any standard that hinders the basic goal of the CWA needs to be reevaluated. Clearly, the Trump administration's abandonment of the "hydrological connection" standard and its declaration that pollutants that migrate through groundwater to reach navigable water are immune from federal NPDES permitting is counterintuitive to the goal of the CWA.

The "functional equivalent to a direct discharge" standard articulated by the Supreme Court in *Maui*—while well-intended and initially hailed as a pro-environmental decision—may devolve into an analysis that lets businesses avoid their role in preventing or minimizing pollution. If the financial burden of proving jurisdiction is moved away from the discharger, then there is a high likelihood that polluters will be able to discharge without

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https://www.hawaiibusiness.com/tackling-a-crappy-situation/ (discussing scientific studies on sewage waste in Hawai'i). According to Joss Hill (Associate Program Director at the Coral Reef Alliance), "[d]ye tracer studies conducted by the University of Hawai'i at Hilo found that sewage from cesspools, septic tanks and ATUs enters the marine environment through groundwater along the shore within five hours to 10 days – and there is no difference between systems." *Id.* Further, according to Professor Roger Babcock, "[d]ye tracer studies conducted by the University of Hawaii at Hilo found that sewage from cesspools, septic tanks and ATUs enters the marine environment through groundwater along the shore within five hours to 10 days – and there is no difference between systems." *Id.*

297. *Maui*, 140 S. Ct. at 1477.

298. 42 U.S.C. § 7604.

299. Navigable Waters Protection Rule*, supra* note 108 at 22,251.

300. CWA, 33 U.S.C. § 1251(a) (1977).

full accountability. As a practical matter, this shift in burden also would eviscerate the viability of the citizen suit provisions of the CWA, as it would impose an enormous financial burden on the non-discharging party.[301] This consequence is especially possible if the business can convince a sympathetic judge that time and distance are too great—even though their pollutants are clearly traceable to the contamination of the waterway. In addition, the time to develop and decide the threshold jurisdictional issues with an ongoing leak or migration of a pollutant is contrary to the goal and necessity for prompt mitigation. The burden is properly borne by the discharger to either refrain from polluting or to take all steps necessary to comply with the CWA standard that require treatment at the point of discharge using the best available technology.[302]

If any of the pollution can get to the sea from a point source, its progress must be prevented or mitigated. The seven factors should not be insurmountable barriers to jurisdiction. Factors such as dilution should not be relevant to the question of jurisdiction, but instead should be related to the remedy imposed. In fact, an essential benefit of the CWA structure is that it addresses treatment of pollutants at the point of discharge as well as in the receiving waters. This eliminated the pre-CWA reliance on dilution as a solution to highly concentrated discharges. Those factors may be relevant to determining the best way to stop or treat pollution, or relevant to assessing cleanup costs, but those factors should not be a prerequisite to jurisdiction.

To foster the CWA's goal of restoring the integrity of the nation's waterways, the following measures should be adopted:

1. Clarify that the pollutant does not have to be directly discharged into a navigable water to necessitate a permit.
2. Clarify (both in regulations and in legislative amendments to the CWA) that pollutants reaching waters of the U.S. can be regulated even if the pollutant travels through groundwater or other conduits or conveyances.[303]
3. Re-adopt the "hydrological connection" standard in regulatory policy and statutory language.
4. Link the importance of the hydrological connection to the evaluation of the "functional equivalent of a direct discharge" (if that standard is maintained).
5. Place the burden of proof on a business to demonstrate that its discharge is not the functional equivalent of a direct discharge.

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301. *See generally* RCRA, 42 U.S.C. § 6972 (incorporating citizen suit authority and procedures).

302. *See* 40 C.F.R. § 125.3 (1990) (outlining discharger's technology-based treatment requirements in permits).

303. *See* 118 CONG. REC. H10,666 (daily ed. Mar. 28, 1972) (statement of Rep. Aspin) (explaining ambiguities in the language of CWA and the aims of the amendment).

6. Re-broaden the scope of waters subject to CWA jurisdiction, rather than narrowing the definition of WOTUS, with necessary legislative changes. The definition of WOTUS should not be left to a regulatory agency, but rather should be affirmatively articulated by Congress.
7. Reinforce cooperative federalism rather than jurisdictional policies that undermine the purpose of the CWA of maintaining, restoring, and fostering integrity of water quality.

Justice Stevens' *Rapanos* dissent emphasized that "Congress' intent in enacting the [CWA] was clearly to establish an all-encompassing program of water pollution regulation."[304] In passing the CWA, Congress emphasized that it is "essential that discharge of pollutants be controlled at the source."[305] As Justice Breyer said in his dissent in the *Rapanos* case, where he criticized the "sufficient nexus" standard, if there is not sufficient guidance for administrative agencies, "courts will have to make ad hoc determinations that run the risk of transforming scientific questions into matters of law."[306] Unfortunately, that risk of insufficient guidance reemerges with Breyer's "functional equivalent" standard in the *Maui* decision.[307] While the impact on navigable waters could drive the outcome of cases, the *Maui* case may lead to an analytical quagmire that could benefit industries that hope to circumvent permits.[308] Jurisdictional nuances should not obstruct the goal of minimizing pollutants that contaminate water.

To prevent and minimize pollution, and to improve the quality of the waters throughout the United States, consistent, scientific-based standards need to be applied that recognize the interconnectedness of watersheds and use of water resources beyond individual state boundaries. Where contaminants in groundwater significantly affect the quality of navigable waters, there should be jurisdiction to regulate the discharge of those contaminants. If the contamination has already occurred, a "traceability" standard makes sense. It is counterintuitive to use a hindsight test to determine jurisdiction through the "functional equivalent of a direct discharge," where the goal is to prevent the pollution of groundwater and navigable water.

A hindsight test creates unnecessary costs and hurdles for determining CWA jurisdiction for citizen suits, businesses, and regulators. Businesses and municipalities need to know up front whether their prospective

304. Milwaukee v. Illinois, 451 U.S. 304, 318 (1981).
305. Rapanos v. United States*,* 547 U.S. 715, 803 (Stevens, J., dissenting) (citing S. Rep. No. 92-414, at 77 (1972).).
306. *Rapanos*, 547 U.S. at 812.
307. *Maui*, 140 S. Ct. at 1481 (Thomas, J., dissenting).
308. *See id.* (establishing that the Court gives no guidance for apply the standard).

discharges require CWA NPDES permits and the 47 states with delegated NPDES authority also need more specific guidance. The hindsight test hinders the proactive CWA goal of preventing and promptly mitigating contamination of our nation's waterways. If the pollutant is likely to reach navigable waters that are hydrologically connected, the source should be regulated.