
Reasonable Bases for Apportioning Harm under CERCLA

Robert M. Guo*

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) imposes joint and several liability on parties responsible for a single and indivisible incident of hazardous substances contamination. Joint and several liability may be avoided, however, by proving that there is a reasonable basis for determining the contribution of each party to a single harm. While there is no consensus as to what constitutes “a reasonable basis,” courts that have analyzed the “reasonable basis” question have rarely apportioned harm. However, in the Supreme Court’s recent decision in Burlington Northern & Santa Fe Railway Co. v. United States, the Court appears to have made it easier to obtain apportionment, and to avoid joint and several liability. Making apportionment easier to justify, and thereby making recovery of cleanup costs harder to obtain, contravenes CERCLA’s objective of placing the cost of cleanup on parties whose activities contributed to the contamination. Thus, Burlington Northern sets a bad precedent for future courts. In response, this Note proposes a four-part test as a normative alternative for determining whether a basis for apportionment is “reasonable.” Based on this proposed test, this Note concludes that the basis for apportionment in Burlington Northern was unreasonable.

Introduction	319
I. Background on the Comprehensive Environmental Response, Compensation, and Liability Act of 1980.....	320
A. Section 107 Liability for Cleanup Costs.....	322
1. Government Actions.....	322

Copyright © 2010 by the Regents of the University of California.

* J.D. Candidate, Berkeley Law, 2010; A.B., Computer Science, Economics, Cornell University, 2004. I would like to thank Holly Doremus, Bob Infelise, and Rachel Jones, for their helpful suggestions, and comments and Allison Watkins and Sara Clark provided excellent editorial feedback.

2.	Private Party Cleanup Cost Recovery.....	322
3.	Strict Liability.....	323
B.	Joint and Several Liability under Section 107.....	323
1.	Origin of Joint and Several Liability	324
2.	Rationale for Joint and Several Liability Underlying the Common Law.....	325
3.	Joint and Several Liability under Section 107.....	326
II.	The “Reasonable Basis” Standard for the Apportionment of Harm under Section 107 Prior to <i>Burlington Northern</i>	328
A.	Text of, and Comments to, Restatement Section 433A.....	328
B.	Cases Applying the “Reasonable Basis” Standard prior to <i>Burlington Northern</i>	330
1.	Early Cases.....	331
2.	Attempts to Introduce Equitable Principles into the Analysis.....	333
3.	Lowering the Evidentiary Burden Required to Justify Apportionment and Allowing “No Causation” Defenses	333
C.	Summary.....	336
III.	<i>Burlington Northern</i>	337
A.	An 8-1 Ruling Favoring Apportionment.....	337
B.	Relaxing the Evidentiary Burden of Proof of a Reasonable Basis for Apportionment.....	340
C.	Policy Reasons against Apportionment, and for Imposing Joint and Several Liability under CERCLA.....	342
IV.	Proposed Four-Part Test for Assessing Reasonableness of the Basis for Apportionment.....	344
A.	Element One: Whether Apportionment Will Preclude Recovery of a Significant Fraction of the Cleanup Costs	345
B.	Element Two: Whether the Records, or Other Evidence, upon Which the Basis for Apportionment Relies Are Substantially Complete	346
C.	Element Three: Whether the Evidence Shows the Quantity, or Discrete Sections, of Released Hazardous Substances Attributable to a Responsible Party’s Conduct, or to the Activities on That Party’s Land.....	347
D.	Element Four: Whether the Evidence Shows the Amount of Harm Caused by the Attributable Release.....	349
E.	The Basis for Apportionment in <i>Burlington Northern</i> Was Unreasonable	351
	Conclusion.....	352

INTRODUCTION

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA)¹ was enacted to compel the cleanup of sites contaminated by hazardous substances.² CERCLA imposes strict liability on certain classes of people responsible for contamination. Where two or more persons are liable under CERCLA for a single and indivisible incident of contamination, each person is liable for the full cleanup costs.³ That is, liability is joint and several. But joint and several liability may be avoided under CERCLA by proving that the harm is capable of apportionment.⁴ Apportionment of harm is proper when “there is a reasonable basis for determining the contribution of each cause to a single harm.”⁵ While there is no consensus as to what constitutes “a reasonable basis,”⁶ courts that have analyzed the “reasonable basis” question have rarely apportioned harm. However, in the Supreme Court’s recent decision in *Burlington Northern & Santa Fe Railway Co. v. United States*, the Court relaxed the level of proof needed to apportion harm by requiring only minimal support for apportionment as compared to prior cases.⁷ In short, the Supreme Court appears to have made it easier to obtain apportionment and to avoid joint and several liability.

Making apportionment easier to justify, and thereby making recovery of cleanup costs harder to obtain, contravenes CERCLA’s objective of placing the cost of cleanup on persons whose activities

1. Pub. L. No. 96-510, 94 Stat. 2767 (1980) (codified as amended at 42 U.S.C. §§ 9601–9675 (2006)).

2. Barbara J. Graves et al., *Allocating Responsibility for Groundwater Remediation Costs*, 23 TRIAL LAW. 159, 160 (2000).

3. See *United States v. Chem-Dyne Co.*, 572 F. Supp. 802, 810 (S.D. Ohio 1983) (“[E]ach [person] is subject to liability for the entire harm . . . where the conduct of two or more persons liable under [CERCLA] has combined to violate the statute . . .”).

4. *Burlington N. & Santa Fe Ry. Co. v. United States*, 129 S. Ct. 1870, 1881 (2009) (“Not all harms are capable of apportionment, however, and CERCLA defendants seeking to avoid joint and several liability bear the burden of proving that a reasonable basis for apportionment exists.”).

5. RESTATEMENT (SECOND) OF TORTS § 433A(1)(b) (1963–1964); *Burlington N.*, 129 S. Ct. at 1881.

6. *United States v. Twp. of Brighton*, 153 F.3d 307, 319 (6th Cir. 1998).

7. See 2 SUSAN M. COOKE, *THE LAW OF HAZARDOUS WASTE: MANAGEMENT, CLEANUP, LIABILITY, AND LITIGATION* § 14.01[6][c][i], at 14-172.1 (2009) (“Until [the *Burlington Northern*] decision, few courts had actually found the harm to be divisible.”); *id.* § 14.01[6][c][iii], at 14-172.22 to 14-172.23 (“[T]he [*Burlington Northern* Supreme Court majority] upheld the less rigorous standard adopted by the district court in *Burlington Northern* with respect to the level of proof needed to apportion harm.”); see also *O’Neil v. Picillo*, 883 F.2d 176, 178–79 (1st Cir. 1989) (“The practical effect of placing the burden on defendants [to demonstrate that the harm is divisible for apportioned damages] has been that responsible parties rarely escape joint and several liability.”).

contributed to the contamination.⁸ Accordingly, *Burlington Northern* upends prior case law that collectively formed a workable framework for determining whether a basis for apportionment is reasonable. This framework required substantial evidentiary support and was more aligned with CERCLA's objective.

Based on the cases prior to *Burlington Northern* that analyzed the "reasonable basis" question and the underlying objective of CERCLA, this Note proposes a normative four-part test to determine whether a basis for apportionment is reasonable. Part I provides background on CERCLA and Part II examines case law applying the reasonable basis standard. Part III discusses and critiques the Supreme Court's decision in *Burlington Northern*. Part IV proposes this new test for determining whether a basis for apportionment is reasonable and applies the proposed test to the basis for apportionment in *Burlington Northern*. This Note concludes that, based on the proposed test, the basis for apportionment in *Burlington Northern* was unreasonable.

I. BACKGROUND ON THE COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT OF 1980

Congress enacted CERCLA in 1980 in response to widespread public concern about the health and environmental threats posed by abandoned hazardous waste sites and to the perceived inability of existing environmental laws to address this problem.⁹ CERCLA had a relatively lengthy and tortuous legislative history, which culminated in the hasty drafting and enactment of a compromise bill.¹⁰ Consequently, CERCLA has numerous "ambiguities, omissions, and poorly drafted provisions."¹¹ Nevertheless, courts and commentators have uncovered some legislative objectives that pervade CERCLA and help in discerning the statute's meaning.¹² Two such objectives are to facilitate the cleanup

8. See *Burlington N.*, 129 S. Ct. at 1885 (Ginsburg, J., dissenting); see also *Marsh v. Rosenbloom*, 499 F.3d 165, 178 (2d Cir. 2007) ("CERCLA manifests Congress's intent that hazardous waste sites should be cleaned up and that those responsible for the contamination should bear the costs."); *United States v. Aceto Agr. Chem. Co.*, 872 F.2d 1373, 1380 (8th Cir. 1989) ("The two essential purposes of CERCLA [are] that the federal government be immediately given the tools necessary for a prompt and effective response to the problems of national magnitude resulting from hazardous waste disposal . . . [and] that those responsible for problems caused by the disposal of chemical poisons bear the costs and responsibility for remedying the harmful conditions they created.").

9. COOKE, *supra* note 7, § 12.02 [1], at 12-12.

10. *Id.*

11. *Id.*

12. *Id.*

of dangerous hazardous waste sites¹³ and to place the cost of cleanup on persons whose activities contributed to the contamination.¹⁴

Several key terms shape liability under CERCLA. Specifically, CERCLA premises liability on the existence of a “release” or “threatened release” of a “hazardous substance,” if that release or threatened release causes the incurrence of “response costs.”¹⁵ CERCLA broadly defines “release” to include “any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment.”¹⁶ Under that definition, “virtually any discharge . . . of a hazardous substance into the soil, surface water, groundwater, or air constitutes a release.”¹⁷ Further, the definition even covers the abandonment or discard of barrels and “other closed receptacles” containing hazardous substances.¹⁸

CERCLA generally defines “hazardous substance” to be any substance that may present substantial danger to the public health or welfare or the environment, with some exceptions.¹⁹

Finally, “response costs” generally means “the costs of investigating and remedying the effects of a release or threatened release of hazardous substances.”²⁰ The definition is expansive,²¹ and encompasses many actions related to protecting the public health or the environment.²² Less formally, “response costs” are called “cleanup costs.”²³

13. *United States v. CDMG Realty Co.*, 96 F.3d 706, 718 (3d Cir. 1996).

14. *Burlington N. & Santa Fe Ry. Co. v. United States*, 129 S. Ct. 1870, 1885 (2009) (Ginsburg, J., dissenting).

15. 42 U.S.C. § 9607(a)(4) (2006).

16. *Id.* § 9601(22).

17. COOKE, *supra* note 7, § 14.01[3][b], at 14-16.

18. 42 U.S.C. § 9601(22).

19. *Id.* §§ 9601(14), 9602. For instance, the term “hazardous substance” does not include petroleum, natural gas, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel. *Id.* § 9601(14).

20. *County Line Inv. Co. v. Tinney*, 933 F.2d 1508, 1512 n.7 (10th Cir. 1991) (citing 42 U.S.C. §§ 9601(23), (24), (25) (1982)). CERCLA does not define “response costs.” *Gussack Realty Co. v. Xerox Co.*, 224 F.3d 85, 91 (2d Cir. 2000). But under § 101(25) of CERCLA, “respond” or “response” is defined to mean “remove, removal, remedy, and remedial action.” 42 U.S.C. §§ 9601(25) (2006).

21. *W.R. Grace & Co. v. Zotos Int’l, Inc.*, 559 F.3d 85, 92 (2d Cir. 2009) (“Generally, response costs are liberally construed under CERCLA.”).

22. *Id.* (citing *Amoco Oil Co. v. Borden, Inc.*, 889 F.2d 664, 669 (5th Cir. 1989) (“Response costs are generally and specifically defined to include a variety of actions designed to protect the public health or the environment.”)).

23. *See R.E. Goodson Const. Co. v. Int’l Paper Co.*, C/A 4:02-4184-RBH, 2005 WL 2614927, at *7 (D.S.C. Oct. 13, 2005) (“[R]esponse costs . . . [are] often referred to as cleanup costs . . .”).

A. *Section 107 Liability for Cleanup Costs*

1. *Government Actions*

CERCLA gives the U.S. Environmental Protection Agency (EPA) two main tools to force responsible parties to clean up a site.²⁴ First, EPA may issue an administrative order directing a responsible party to take specific actions to clean up the site under section 106 of CERCLA.²⁵ Alternatively, EPA may clean up the site itself under section 104(a)(1), and then sue the responsible party to recover the cleanup costs under section 107(a)(4)(A).²⁶

Under section 107(a), four classes of persons, collectively called potentially responsible parties (PRPs), are liable for cleanup costs incurred by EPA: (1) current owners or operators of a site at which a release or threatened release of a hazardous substance occurred; (2) owners or operators of the site at the time of the disposal of the hazardous substance; (3) generators who arranged for disposal at the site; and (4) transporters of the hazardous substance to the site.²⁷

2. *Private Party Cleanup Cost Recovery*

Section 107(a)(4)(B) appears on its face to create a private cause of action, whereby any party that has incurred cleanup costs may recover such costs from other PRPs.²⁸ Permitting recovery of private cleanup costs is relevant where a hazardous waste site implicates multiple PRPs, and where one PRP takes the lead, at its own initiative or at the direction of a regulatory agency, to clean up the site.²⁹ The lead PRP may spend money exceeding what it perceives to be its fair share of cleanup responsibility.³⁰ To recover the excess, the lead PRP may attempt to bring a private cost-recovery action against other PRPs.

The text of section 107(a)(4)(B) suggests that *any* party may recover cleanup costs from other PRPs. Courts agree that innocent parties may

24. Ronald G. Aronovsky, *Federalism and CERCLA: Rethinking the Role of Federal Law in Private Cleanup Cost Disputes*, 33 *ECOLOGY L.Q.* 1, 16 (2006).

25. *Id.*; see also 42 U.S.C. § 9606(a).

26. Aronovsky, *supra* note 24, at 16; see also 42 U.S.C. §§ 9604(a)(1), 9607(a)(4)(A).

27. *United States v. Hercules, Inc.*, 247 F.3d 706, 715 (8th Cir. 2001) (citing 42 U.S.C. § 9607(a)(1)–(4)).

28. 42 U.S.C. § 9607(a)(4)(B) (“[PRPs shall be liable for] any other necessary costs of response incurred by any other person consistent with the national contingency plan.”); see also *Key Tronic Corp. v. United States*, 511 U.S. 809, 816 n.7 (1994) (“District Courts ‘have been virtually unanimous’ in holding that § 107(a)(4)(B) creates a private right of action for the recovery of necessary response costs.”).

29. Aronovsky, *supra* note 24, at 17.

30. *Id.*

recover private cleanup costs under the section.³¹ As for non-innocent parties, *i.e.*, PRPs, the Supreme Court has held that PRPs also may recover costs from other PRPs under the section.³²

3. *Strict Liability*

CERCLA imposes a strict liability standard on cost-recovery actions under section 107.³³ Accordingly, section 107 focuses on responsibility, not culpability.³⁴ Once a person is determined to be a PRP under section 107(a), she is liable for cleanup costs. Liability does not depend on whether the PRP intended to cause the contamination, or was unaware of the lawfulness of the acts causing the contamination.³⁵ The only relevant defenses are those listed in section 107(b),³⁶ and those defenses do not include ignorance of the law.³⁷

B. Joint and Several Liability under Section 107

CERCLA's text does not address whether liability under section 107 is joint and several in cases where multiple PRPs are liable for the same cleanup costs.³⁸ Joint and several liability is relevant where a person is identified as a PRP, but other PRPs are insolvent, unavailable, or not sued.³⁹ Under joint and several liability, each PRP is responsible for the

31. *See, e.g.*, *Bedford Affiliates v. Sills*, 156 F.3d 416, 424 (2d Cir. 1998) ("The language of CERCLA suggests Congress planned that an innocent party be able to sue for full recovery of its costs, *i.e.*, indemnity under § 107(a)."); *Centerior Serv. Co. v. Acme Scrap Iron & Metal Corp.*, 153 F.3d 344, 350 (6th Cir. 1998) ("Cost recovery actions by parties not responsible for site contaminations are joint and several cost recovery actions governed exclusively by § 107(a)."); *New Castle County v. Halliburton NUS Corp.*, 111 F.3d 1116, 1120 (3d Cir. 1997) ("Every court of appeals that has examined this issue has come to the same conclusion: a section 107 action brought for recovery of costs may be brought . . . by innocent parties that have undertaken clean-ups.").

32. *Cooper Indus. v. Aviall Servs.*, 543 U.S. 157, 170–71 (2004); *United States v. Atl. Research Corp.*, 551 U.S. 128, 141 (2007) ("[T]he plain terms of § 107(a)(4)(B) allow a PRP to recover costs from other PRPs . . .").

33. *See Burlington N. & Santa Fe Ry. Co. v. United States*, 129 S. Ct. 1870, 1878 (2009) ("CERCLA imposes strict liability for environmental contamination upon four broad classes of PRPs.").

34. *United States v. Mexico Feed & Seed Co.*, 980 F.2d 478, 484 (8th Cir. 1992).

35. *See id.* ("Ignorance or the lawfulness of the acts of persons causing the contamination are simply not available defenses according to the plain language of this statute.").

36. *Id.*; *see also* 42 U.S.C. § 9607(b) (2006). The defenses are (1) an act of God; (2) an act of war; and (3) an act or omission of a third party. 42 U.S.C. § 9607(b).

37. *See* 42 U.S.C. § 9607(b).

38. *United States v. Burlington N. & Santa Fe Ry. Co.*, 520 F.3d 918, 934 (9th Cir. 2008), *rev'd*, 129 S. Ct. 1870 (2009).

39. Paul Bargren, Comment, *Joint and Several Liability: Protection for Plaintiffs*, 1994 WIS. L. REV. 453, 454, 464 (1994) ("[J]oint and several liability is seen as a way to relieve plaintiffs of the risk of insolvent, unavailable or otherwise protected defendants.").

full cleanup costs, or any unpaid portion of it.⁴⁰ The successful plaintiff may choose to recover cleanup costs from all PRPs, from some, or from one, regardless of the PRPs' comparative culpability.⁴¹ In contrast to joint and several liability, under severable liability, cleanup costs at a single facility may be apportioned among PRPs on some basis.⁴² When a PRP cannot pay its apportioned cleanup costs, the EPA bears the loss.⁴³

Thus, whether liability is joint and several, rather than severable, is of great importance to PRPs because it determines whether the PRP will be liable for the entire cleanup cost, or just the portion spent in response to her contamination. While the text of CERCLA does not explicitly answer the question, courts agree that they may choose when to impose joint and several liability based on the evolving common law.⁴⁴ Currently, the common law principle holds that when two or more persons acting independently cause a single harm, damages for the harm are to be apportioned among the causes when "there is a reasonable basis for determining the contribution of each cause to a single harm."⁴⁵

1. *Origin of Joint and Several Liability*

Joint and several liability first was applied in English common law to "joint torts," situations where multiple tortfeasors injured a plaintiff by

40. See *id.* ("Under joint and several liability, each defendant is responsible for the full judgment or any portion of it."); *Burlington N.*, 520 F.3d at 934 ("Joint and several . . . mean[s] that each PRP responsible for all cleanup costs at a facility is liable for such costs.").

41. See Bargren, *supra* note 39, at 464 ("The successful plaintiff may choose to recover the judgment from all liable defendants, from some, or from one, regardless of the defendants' comparative negligence.").

42. *Burlington N.*, 520 F.3d at 934.

43. See Bargren, *supra* note 39, at 454 ("[W]hen a liable party cannot pay the damages it caused . . . [,] [w]ithout joint and several liability, the injured plaintiff bears the loss.").

44. *Burlington N. & Santa Fe Ry. Co. v. United States*, 129 S. Ct. 1870, 1880–81 (2009) ("Chief Judge Rubin [in *Chem-Dyne*] concluded that . . . [CERCLA] . . . did not mandate 'joint and several' liability in every case. Rather, Congress intended the scope of liability to 'be determined from traditional and evolving principles of common law[.]' The *Chem-Dyne* approach has been fully embraced by the Courts of Appeals." (citations omitted) (quoting *United States v. Chem-Dyne Co.*, 572 F. Supp. 802, 805, 807–08 (S.D. Ohio 1983)); see also *In re Bell Petroleum Servs.*, 3 F.3d 889, 901–02 (5th Cir. 1993) ("We therefore conclude that the *Chem-Dyne* approach is an appropriate framework for resolving issues of joint and several liability in CERCLA cases."); *United States v. Alcan Aluminum Co.*, 964 F.2d 252, 268 (3d Cir. 1992) ("[A]s the court explained in *United States v. Chem-Dyne Corp.*, . . . at the conclusion of an exhaustive review of statements made by the legislation's sponsors concerning the deletion of joint and several liability, . . . the term was omitted in order to have the scope of liability determined under common law principles."); *O'Neil v. Picillo*, 883 F.2d 176, 178 (1st Cir. 1989); *United States v. Monsanto Co.*, 858 F.2d 160, 171 (4th Cir. 1988).

45. RESTATEMENT (SECOND) OF TORTS § 433A(1) (1965); *Chem-Dyne*, 572 F. Supp. at 810.

acting in concert.⁴⁶ Later, joint and several liability was adopted in the United States and extended by American courts to apply to concurrent torts, where multiple tortfeasors, rather than acting in concert, commit independent torts that cause one indivisible injury to a plaintiff.⁴⁷ Each concurrent tortfeasor is liable for the entire harm caused, so each may be sued and held responsible for the entire amount of damages.⁴⁸

2. *Rationale for Joint and Several Liability
Underlying the Common Law*

Joint and several liability relieves plaintiffs from bearing “the risk of insolvent, unavailable, or otherwise protected defendants.”⁴⁹ This rationale was summarized by the California Supreme Court in its leading case supporting the rule, *American Motorcycle Association v. Superior Court of Los Angeles County*.⁵⁰ The court explained that liability attaches to a concurrent tortfeasor not because she is responsible for the acts of other independent tortfeasors, but because she is responsible for all damage of which her own negligence was a proximate cause.⁵¹ In the context of concurrent tortfeasors, “the law is loath to permit an innocent plaintiff to suffer as against a wrongdoing defendant.”⁵² If liability were not joint and several, “a completely faultless plaintiff, rather than a wrongdoing defendant, would be forced to bear a portion of the loss” if any concurrent defendant were unable to pay.⁵³ Even where a plaintiff is partially at fault for her own injury, the plaintiff’s negligence is not equivalent to the defendant’s.⁵⁴ Indeed, the plaintiff’s negligence relates only to a failure to use due care for her own protection, while a defendant’s negligence relates to a lack of due care for the safety of others.⁵⁵ Thus, joint and several liability permits an injured plaintiff to obtain full recovery for her injuries even when one or more tortfeasors

46. Bargren, *supra* note 39, at 455; *see also* W. PAGE KEETON ET AL., PROSSER AND KEETON ON THE LAW OF TORTS § 46, at 322–23 (5th ed. 1984).

47. Bargren, *supra* note 39, at 455.

48. *Id.* at 455–56.

49. *Id.* at 464.

50. *Am. Motorcycle Ass’n v. Super. Ct.*, 20 Cal. 3d 578 (1978). California voters eliminated the rule of joint and several liability for non-economic damages in a referendum in 1986. *Evangelatos v. Superior Court*, 44 Cal. 3d 1188, 1239 (1988) (“[Proposition 51] repeals the joint and several rule only as applied to *noneconomic* damages, i.e., pain and suffering, emotional distress, loss of consortium and the like.”); CAL. CIV. CODE § 1431.2 (1986).

51. *Am. Motorcycle*, 20 Cal. 3d at 587.

52. *Id.* at 588 (quoting *Finnegan v. Royal Realty Co.*, 35 Cal. 2d 409, 433–34 (1950)).

53. *Id.* at 589.

54. *Id.*

55. *Id.*

are unable to cover their liability.⁵⁶ The tortfeasors are left to debate among themselves apportionment of the liability.⁵⁷

Critics of joint and several liability argue that the rule encourages plaintiffs to seek redress against the most solvent defendant—the one who has the “deepest pocket”—rather than the one most at fault.⁵⁸ The plaintiff may receive the entire award from the one defendant regardless of that defendant’s degree of fault.⁵⁹ This consequence has spawned tort reform efforts, seeking to limit solvent defendants’ liability for damages apportioned to insolvent or otherwise protected defendants.⁶⁰

3. *Joint and Several Liability under Section 107*

CERCLA’s text does not mention joint and several liability.⁶¹ Both the House and Senate versions of the bill that became CERCLA contained language authorizing joint and several liability, but that language was removed shortly before passage.⁶² Nevertheless, the removal of the joint and several liability language from the bill has been interpreted not as a rejection of joint and several liability, but as a means to provide courts with flexibility in determining whether to apply it.⁶³

Indeed, in the seminal case *United States v. Chem-Dyne Corp.*, the Southern District of Ohio reviewed the legislative history of CERCLA and concluded that the phrase “joint and several liability” was deleted from the final version of CERCLA to allow the scope of liability to be determined under common law principles.⁶⁴ Common law principles provide flexibility by allowing a court to assess the propriety of applying joint and several liability on a case-by-case basis after evaluating the complex factual scenarios associated with typical waste sites.⁶⁵

56. *Id.* at 590.

57. *Summers v. Tice*, 33 Cal. 2d 80, 88 (1948).

58. Benjamin R. Civiletti, *Comments on Galanter: Zeroing in on the Real Litigation Crisis: Irrational Justice, Needless Delays, Excessive Costs*, 46 MD. L. REV. 40, 41 (1986).

59. *Id.* at 41–42.

60. See Bargren, *supra* note 39, at 456 (“The [tort] reform efforts sought to limit solvent tortfeasors’ responsibilities for the share of damages apportioned to tortfeasors who were judgment-proof.”).

61. See Aaron Gershonowitz, *Joint and Several Liability in Superfund Actions: When Is Environmental Harm Divisible? PRPs Who Want To Be Cows*, 14 FORDHAM ENVTL. L.J. 207, 209 (2003) (“The Superfund Law makes no reference to joint and several liability.”).

62. *Id.* The Senate amendments eliminating joint and several liability were passed on November 24, 1980. 126 CONG. REC. S14964 (daily ed. Nov. 24, 1980). The House amendments eliminating joint and several liability were passed on December 3, 1980. 126 CONG. REC. H11787 (daily ed. Dec. 3, 1980).

63. See *United States v. Chem-Dyne Co.*, 572 F. Supp. 802, 807–08 (S.D. Ohio 1983).

64. *Id.* at 808.

65. See *id.* (“[T]he term [joint and several liability] was omitted in order to have the scope of liability determined under common law principles, where a court performing a case by case

Additionally, the *Chem-Dyne* court concluded that Congress intended the federal courts to apply “federal common law” when determining whether to impose joint and several liability under CERCLA.⁶⁶ At that time, there was no federal common law on joint and several liability under CERCLA. However, there was well-developed state common law in torts. Thus, to begin developing this new federal common law, the court turned to the Restatement (Second) of Torts,⁶⁷ from which it derived the following federal common law principle:

[W]here two or more persons cause a single and indivisible harm, each is subject to liability for the entire harm. Furthermore, where the conduct of two or more persons liable under [section 107] has combined to violate the statute, and one or more of the defendants seeks to limit his liability on the ground that the entire harm is capable of apportionment, the burden of proof as to apportionment is upon each defendant.⁶⁸

After *Chem-Dyne*, courts generally agreed that liability under section 107 may be joint and several, and that the decision to impose joint and several liability should “be determined from traditional and evolving principles of [federal] common law.”⁶⁹ Currently, under federal common law, “[t]he universal starting point for divisibility of harm analyses in CERCLA cases is” section 433A of the Restatement (Second) of Torts.⁷⁰ Section 433A provides that when two or more persons acting independently cause a single harm, damages for the harm are to be apportioned among the causes when “there is a reasonable basis for determining the contribution of each cause to a single harm.”⁷¹ But not all harms are capable of apportionment, and CERCLA defendants seeking

evaluation of the complex factual scenarios associated with multiple-generator waste sites will assess the propriety of applying joint and several liability on an individual basis.”).

66. *See id.* at 808–09.

67. *Id.* at 810 (citing RESTATEMENT (SECOND) OF TORTS §§ 433A, 433B (1976)).

68. *Id.* (citations omitted); *see also* John M. Hyson, “Fairness” and Joint and Several Liability in Government Cost Recovery Actions under CERCLA, 21 HARV. ENVTL. L. REV. 137, 151 (1997).

69. *See* Burlington N. & Santa Fe Ry. Co. v. United States, 129 S. Ct. 1870, 1880–81 (2009) (“Chief Judge Rubin [in *Chem-Dyne*] concluded that although . . . [CERCLA] did not mandate ‘joint and several’ liability in every case. Rather, Congress intended the scope of liability to ‘be determined from traditional and evolving principles of common law[.]’ The *Chem-Dyne* approach has been fully embraced by the Courts of Appeals.” (quoting United States v. Chem-Dyne Co., 572 F. Supp. 802, 808 (S.D. Ohio 1983)) (citations omitted)); *see also* *In re* Bell Petroleum Servs., 3 F.3d 889, 901–02 (5th Cir. 1993); United States v. Alcan Aluminum Corp., 964 F.2d 252, 268 (3d Cir. 1992); O’Neil v. Picillo, 883 F.2d 176, 178 (1st Cir. 1989); United States v. Monsanto Co., 858 F.2d 160, 171–73 (4th Cir. 1988).

70. United States v. Hercules, Inc., 247 F.3d 706, 717 (8th Cir. 2001); *accord* Chem-Nuclear Sys., Inc. v. Bush, 292 F.3d 254, 259 (D.C. Cir. 2002).

71. RESTATEMENT (SECOND) OF TORTS § 433A(1) (1965); *Chem-Dyne*, 572 F. Supp. at 810.

to avoid joint and several liability bear the burden of proving that there is a reasonable basis for apportionment.⁷²

II. THE “REASONABLE BASIS” STANDARD
FOR THE APPORTIONMENT OF HARM UNDER SECTION 107 PRIOR TO
BURLINGTON NORTHERN

There is no consensus among courts as to what constitutes a “reasonable basis” for apportioning harm under section 433A of the Restatement.⁷³ It is clear that a reasonable basis cannot incorporate equitable considerations, such as comparative fault,⁷⁴ so at the very least, a reasonable basis must apportion causation, rather than blame in a normative manner.⁷⁵

The Restatement’s analysis of causation does not fit exactly with CERCLA’s treatment of causation in assigning liability, so courts have varied in how they have applied the Restatement’s criteria for determining when it is appropriate to apportion harm. In the first interpretations of CERCLA, courts strongly presumed that CERCLA harm was not divisible, although some later court decisions leading up to *Burlington Northern* relaxed that presumption.

A. *Text of, and Comments to, Restatement Section 433A*

Section 433A of the Restatement is entitled “Apportionment of Harm to Causes,” clearly indicating that harm is to be apportioned among “causes.”⁷⁶ But causation is not analyzed under a strict liability statute like CERCLA. Thus, it can be awkward to apply section 433A, which seeks to apportion liability among multiple causes of harm, to CERCLA’s liability scheme, where liability is imposed not because a person has caused harm but because the person falls within the four classes of persons outlined in section 107(a).⁷⁷ Courts have resolved this issue by applying section 433A and other sections of the Restatement discriminately, and by not following the Restatement to the extent that it contravenes CERCLA’s principles.⁷⁸

72. *Burlington N.*, 129 S. Ct. at 1881.

73. *United States v. Twp. of Brighton*, 153 F.3d 307, 318 (6th Cir. 1998).

74. *See Burlington N.*, 129 S. Ct. at 1881–82 n.9 (“Equitable considerations play no role in the apportionment analysis.”).

75. *Brighton*, 153 F.3d at 319.

76. Gershonowitz, *supra* note 61, at 230; *see also* RESTATEMENT (SECOND) OF TORTS § 433A (1965).

77. Hyson, *supra* note 68, at 157.

78. *See, e.g., O’Neil v. Picillo*, 883 F.2d 176, 179 n.4 (1st Cir. 1989).

Further, “harm” under CERCLA may mean either a release of a hazardous substance⁷⁹ or the danger that a hazardous substance poses to public health or the environment.⁸⁰ Both definitions of “harm” may be relevant when apportioning harm under CERCLA. In that context, section 433A provides,

- (1) Damages for harm are to be apportioned among two or more causes where
 - (a) there are distinct harms, or
 - (b) there is a reasonable basis for determining the contribution of each cause to a single harm.
- (2) Damages for any other harm cannot be apportioned among two or more causes.

Based on the text, apportionment is proper in only two circumstances.

The first is where there are distinct harms. Distinct harms are “by their nature . . . more capable of apportionment.”⁸¹ An example is provided in Comment (b) to section 433A, which states that if two defendants independently shoot a plaintiff at the same time, and one wounds the plaintiff in the arm and the other in the leg and the ultimate result is a badly damaged plaintiff, it is still possible to regard the two wounds as separate injuries and as distinct wrongs.⁸² Similarly, under CERCLA, “distinct harms” exist when there are “separate injuries.”⁸³ Separate injuries may occur where a site consists of non-contiguous areas of soil contamination⁸⁴ or where a site consists of distinct subterranean plumes of groundwater contamination.⁸⁵

79. See *United States v. Burlington N. & Santa Fe Ry. Co.*, 520 F.3d 918, 939 (9th Cir. 2008), *rev'd*, 129 S. Ct. 1870 (2009) (“In light of a CERCLA liability suit’s central purpose—recovering the cost of eradicating contamination—we conclude that it is most useful for purposes of determining divisibility to view the ‘harm’ under CERCLA as the contamination traceable to each defendant.”).

80. 42 U.S.C. § 9602(a) (2006) (“The [Environmental Protection Agency] shall promulgate and revise as may be appropriate, regulations designating as hazardous substances . . . elements, compounds, mixtures, solutions, and substances which, when released into the environment may present substantial danger to the public health or welfare or the environment.”).

81. RESTATEMENT (SECOND) OF TORTS § 433A cmt. b (1965).

82. *Id.*

83. *U.S. Bank Nat’l Ass’n v. U.S. EPA*, 563 F.3d 199, 208 (6th Cir. 2009).

84. See *Akzo Coatings, Inc. v. Aigner Corp.*, 881 F. Supp. 1202, 1210 (N.D. Ind. 1994) (“The court agrees that the harm is divisible based upon geographic location . . . Within the Site as a whole, a number of non-contiguous areas of contamination appear, including seven distinct areas of soil contamination, three distinct areas of groundwater contamination, and two distinct areas of suspected buried drums.” (citations omitted)).

85. *U.S. Bank Nat’l Ass’n*, 563 F.3d at 208. Once contaminants reach groundwater, they move with the flow of groundwater, and this flowing body of contaminated water is called a “plume.” ROGER D. GRIFFIN, *PRINCIPLES OF HAZARDOUS MATERIALS MANAGEMENT* 65 (1988).

The second circumstance is where there is a *single* harm that is “not so clearly marked out as severable into distinct parts,” but where the harm is nevertheless *divisible* “upon a reasonable and rational basis... among the causes responsible.”⁸⁶ Again, an example is provided in a comment to section 433A. Comment (d) states that where the cattle of two or more owners trespass upon the plaintiff’s land and destroy her crop, the aggregate harm is a lost crop.⁸⁷ But, Comment (d) continues, the aggregate harm may nevertheless be apportioned among the cattle owners on the basis of the number owned by each, and the reasonable assumption that the respective harm done is proportionate to that number.⁸⁸ The aggregate harm is a lost crop, and that harm does not divide into distinct parts. Nevertheless, portions of the harm are attributable to the cattle owners, after making a simplifying assumption. The example shows that apportionment in this circumstance is an estimate based on reasonable assumptions,⁸⁹ and that the estimate need not consider all relevant facts. For example, there is no requirement that the basis consider the age of the cows, as younger cows may be more rambunctious.⁹⁰ Under CERCLA, it is unclear whether a single harm—such as a plume containing commingled hazardous substances originating from multiple generators—should be divisible among the PRPs.⁹¹ However, as explained below, few courts have found such a harm to be divisible.⁹²

*B. Cases Applying the “Reasonable Basis”
Standard prior to Burlington Northern*

Section 107 cost-recovery actions typically cover a single harm that is not clearly severable into distinct parts,⁹³ as “most CERCLA cost-recovery actions involve numerous, commingled hazardous substances with synergistic effects and unknown toxicity.”⁹⁴ Therefore, it is difficult to determine how much harm is attributable to each substance. Few

86. RESTATEMENT (SECOND) OF TORTS § 433A cmt. d (1965).

87. *Id.*

88. *Id.*

89. Gershonowitz, *supra* note 61, at 231.

90. *See id.*

91. *See* United States v. Twp. of Brighton, 153 F.3d 307, 319 (6th Cir. 1998) (“[W]e cannot define for all time what is a reasonable basis for divisibility and what is not . . .”).

92. COOKE, *supra* note 7, § 14.01[6][c][i], at 14-172.1.

93. *In re* Bell Petroleum Servs., 3 F.3d 889, 903 (5th Cir. 1993) (“[M]ost CERCLA cost-recovery actions involve numerous, commingled hazardous substances with synergistic effects and unknown toxicity.”); RESTATEMENT (SECOND) OF TORTS § 433A cmt. d (1965) (“There are other kinds of harm which, while not so clearly marked out as severable into distinct parts, are still capable of division upon a reasonable and rational basis.”).

94. *Bell Petroleum*, 3 F.3d at 903.

courts have found such harm to be divisible upon a reasonable basis.⁹⁵ Indeed, courts generally have applied the “reasonable basis” standard quite restrictively, presuming joint and several liability in a section 107 cost-recovery action, and requiring a very high level of proof to justify apportionment.⁹⁶

1. Early Cases

Two early examples of restrictive application of the reasonable basis standard are *Chem-Dyne*⁹⁷ and *United States v. South Carolina Recycling & Disposal, Inc. (SCRDI)*.⁹⁸ In *Chem-Dyne*, the Southern District of Ohio suggested that apportionment would not be available in a complex section 107 action.⁹⁹ Specifically, in denying summary judgment to the PRPs, the court stressed that the site in question contained 608,000 pounds of material from 289 generators or transporters, that some of the wastes had commingled, and that many sources of those wastes had not been identified.¹⁰⁰ The court suggested that, given the complex facts, evidence of the volume of waste contributed by each generator was insufficient by itself to justify apportionment.¹⁰¹ The court reasoned that the volume of waste contributed by a generator does not estimate accurately the health or environmental harm caused by that generator, because different generators contributed different types of hazardous substances, and because hazardous substances vary in toxicity and migratory potential.¹⁰² By inference, the toxicity and migratory potential of a hazardous substance is relevant in determining the substance’s harm to public health or the environment, and in turn the harm caused by the PRP who disposed of the substance.

In *SCRDI*, the District Court of South Carolina even more explicitly suggested that apportionment was not available in a complex section 107 action.¹⁰³ The court stated that because “[t]here were thousands of corroded, leaking drums at the site not segregated by source or waste type,” and because “[u]nknown, incompatible materials comingled [sic]

95. See COOKE, *supra* note 7, § 14.01[6][c][i], at 14-172.1.

96. *Id.* § 14.01[6][c][iii], at 14-172.7.

97. *United States v. Chem-Dyne Co.*, 572 F. Supp. 802 (S.D. Ohio 1983).

98. *United States v. S.C. Recycling & Disposal (SCRDI), Inc.*, 653 F. Supp. 984 (D.S.C. 1984), *aff’d in part and vacated in part sub nom.*, *United States v. Monsanto Co.*, 858 F.2d 160 (4th Cir. 1988).

99. See *Chem-Dyne*, 572 F. Supp. at 811; COOKE, *supra* note 7, § 14.01[6][c][iii], at 14-172.8 (“[The *Chem-Dyne*] opinion[] emphasized the extreme difficulty of devising a suitable basis for apportionment.”).

100. See *Chem-Dyne*, 572 F. Supp. at 811.

101. See *id.*

102. See *id.*

103. See *SCRDI*, 653 F. Supp. at 994.

to cause fires, fumes, and explosions,” it was “impossible to divide the harm in any meaningful way.”¹⁰⁴ Moreover, the court followed *Chem-Dyne* by declining to apportion response costs among the PRPs by calculating their relative volumetric contributions from shipping documents.¹⁰⁵ *SCRDI* was affirmed by the Fourth Circuit in *United States v. Monsanto*.¹⁰⁶ There, the Fourth Circuit agreed with the district court that apportionment based on volume was unreasonable where the PRPs “presented no evidence . . . showing a relationship between waste volume, the release of hazardous substances, and the harm at the site.”¹⁰⁷ However, the court mentioned that under other circumstances, proportionate volumes of hazardous substances may well show contributory harm.¹⁰⁸ Specifically, the court noted that volumetric contributions provide a reasonable basis for apportioning liability only if it can be reasonably assumed, or it has been demonstrated, that no other factors are relevant in determining the harm caused by each PRP.¹⁰⁹

The analyses in *Chem-Dyne* and *SCRDI* seem to eliminate the possibility of apportionment in a typical multi-generator cost-recovery action.¹¹⁰ Both cases restrictively apply section 433A, holding that where wastes of varying degrees of toxicity and migratory potential commingle, it is impossible to determine the amount of harm caused by each PRP, and apportionment is therefore not appropriate.¹¹¹ Further, both cases hold that the relative volumes of waste contributed by each generator do not indicate the harm associated with each generator’s waste at a typical site, and thereby suggest that generators cannot demonstrate a reasonable basis for apportionment using volumetric evidence alone.

After *Chem-Dyne* and *SCRDI*, PRPs rarely escaped joint and several liability because of the heavy evidentiary burden to justify apportionment.¹¹² Especially where wastes of varying degrees of toxicity and migratory potential commingled, courts regularly found it impossible to determine the amount of harm caused by each PRP.¹¹³

104. *Id.*

105. *See id.*

106. *United States v. Monsanto Co.*, 858 F.2d 160 (4th Cir. 1988).

107. *Id.* at 172.

108. *Id.*

109. *Id.* at 172 n.27.

110. COOKE, *supra* note 7, § 14.01[6][c][iii] at 14-172.7 (“Both [*Chem-Dyne* and *SCRDI*] portray the Restatement provisions in a manner that imposed a heavy burden of proof on defendants seeking apportionment and suggested that the circumstances of a multi defendant Section 107 suit would almost always preclude apportionment.”).

111. *O’Neil v. Picillo*, 883 F.2d 176, 178–79 (1st Cir. 1989) (citing *United States v. Chem-Dyne Corp.*, 572 F. Supp. 802, 811 (S.D. Ohio 1983) and *Monsanto*, 858 F.2d at 172–73).

112. *Id.*

113. *Id.*; *see, e.g.*, *Chem-Nuclear Sys., Inc. v. Bush*, 292 F.3d 254, 259–61 (D.C. Cir. 2002); *United States v. Agway, Inc.*, 193 F. Supp. 2d 545, 552 (N.D.N.Y. 2002); *United States v. Vertac*

2. Attempts to Introduce Equitable Principles into the Analysis

A rigid application of the Restatement approach to joint and several liability in CERCLA may be “extremely harsh and unfair” if imposed on a PRP who contributed only a small amount of waste to a site because a PRP may be liable for a disproportionate share of the response costs.¹¹⁴ Thus, some early cases went beyond the language of the Restatement and concluded that equitable considerations should enter into the decision on apportionment.¹¹⁵ However, this “moderate approach” to joint and several liability has since been rejected by courts.¹¹⁶ Courts now agree that the apportionment inquiry may not be guided by equity considerations.¹¹⁷ Rather, the inquiry must be guided by principles of causation alone.¹¹⁸ Where causation is unclear, courts should not “split the difference” in an attempt to achieve equity.¹¹⁹

3. Lowering the Evidentiary Burden Required to Justify Apportionment and Allowing “No Causation” Defenses

While the courts in *Chem-Dyne* and *SCRDI* strongly presumed that CERCLA harm is not divisible, some later court decisions have lowered the evidentiary burden required to justify apportionment, or allowed PRPs to escape liability entirely through a “no causation” defense.¹²⁰ These approaches are exemplified by four notable federal appellate court decisions: *In re Bell Petroleum Services*,¹²¹ *United States v. Alcan Aluminum Corp. (Alcan-Butler)*,¹²² *United States v. Alcan Aluminum Corp. (Alcan-New York)*,¹²³ and *United States v. Township of Brighton*.¹²⁴

Chem. Corp., 966 F. Supp. 1491, 1504 (E.D. Ark. 1997); *Arizona v. Motorola, Inc.*, 805 F. Supp. 749, 752 (D. Ariz. 1992); *Chesapeake & Potomac Tel. Co. v. Peck Iron & Metal Co.*, 814 F. Supp. 1285, 1289–90 (E.D. Va. 1993).

114. *United States v. A & F Materials Co.*, 578 F. Supp. 1249, 1256 (S.D. Ill. 1984).

115. See, e.g., *A & F Materials*, 578 F. Supp. at 1256; *United States v. Stringfellow*, No. CV-83-2501-MML, 1984 WL 3206, at *4–5 (C.D. Cal. Apr. 5, 1984).

116. See *Burlington N. & Santa Fe Ry. Co. v. United States*, 129 S. Ct. 1870, 1881–82 n.9 (2009) (“Equitable considerations play no role in the apportionment analysis.”); see also *United States v. Hercules, Inc.*, 247 F.3d 706, 718 (8th Cir. 2001) (“The divisibility of harm inquiry, by contrast, is guided not by equity . . . but by principles of causation alone.”); *United States v. Rohm & Haas Co.*, 2 F.3d 1265, 1280–81 (3d Cir. 1993) (“[E]quitable considerations are not relevant to the apportionment inquiry under Restatement § 433A . . .”).

117. *Hercules*, 247 F.3d at 718.

118. *Id.*

119. *Id.* (quoting *United States v. Twp. of Brighton*, 153 F.3d 307, 319 (6th Cir. 1998)).

120. See Gershonowitz, *supra* note 61, at 213 (“[Four federal courts’] decisions . . . moved away from the Chem-Dyne/Monsanto presumption that environmental harm is not divisible.”).

121. *In re Bell Petroleum Services*, 3 F.3d 889 (5th Cir. 1993).

122. *United States v. Alcan Aluminum Corp. (Alcan-Butler)*, 964 F.2d 252 (3d Cir. 1992).

123. *United States v. Alcan Aluminum Corp. (Alcan-New York)*, 990 F.2d 711 (2d Cir. 1993).

In *Bell Petroleum*, the Fifth Circuit applied a low evidentiary burden to the justification of apportionment, by allowing apportionment based on incomplete and indirect evidence.¹²⁵ There, EPA sought to recover response costs for the cleanup of a site contaminated with chromium waste.¹²⁶ The chromium contamination resulted from chrome-plating operations conducted on the site by three successive operators.¹²⁷ All three operators were identified as PRPs.¹²⁸

The case involved only one hazardous substance—chromium—and no synergistic effects.¹²⁹ The chromium entered the groundwater as a result of similar operations by the PRPs, and the PRPs operated at mutually exclusive times.¹³⁰ Given the relatively simple facts, the court held that it was “reasonable to assume that the respective harm done by each of the defendants is proportionate to the volume of chromium-contaminated water each discharged into the environment.”¹³¹ Because there was no direct volumetric evidence, one PRP argued that the volumetric contribution of each PRP could be estimated from evidence on the amount of chrome-plating activity done by each PRP during its tenure as operator of the site.¹³² The PRP proffered several indicators of chrome-plating activity, including electrical usage during each PRP’s tenure, sales records, and chrome flake purchases.¹³³ Even though each indirect data source itself was woefully incomplete,¹³⁴ the court permitted apportionment.¹³⁵ Thus, the court seemingly relaxed “the [requisite] quality of the factual record on which this method of apportionment could operate.”¹³⁶

In *Alcan-New York* and *Alcan-Butler*, the Second and Third Circuits, respectively, suggested that section 433A not only allows PRPs to avoid joint and several liability, but also allows a PRP to avoid liability

124. *Brighton*, 153 F.3d at 307.

125. *See Bell Petroleum*, 3 F.3d at 903–04, 904 n.19; *see also* Hyson, *supra* note 68, at 179–80 (“[Plaintiff] presented expert testimony to estimate the volumetric contribution of each PRP to the . . . release on the basis of indirect evidence However, each indirect data source was itself incomplete; and the competing theories of apportionment were not entirely consistent with one another [Nevertheless, the Fifth Circuit] held that the district court had erred in concluding that the harm at the site was not capable of apportionment.”).

126. *Bell Petroleum*, 3 F.3d at 892.

127. *See id.* at 892–93.

128. *See id.* at 893.

129. *Id.* at 903.

130. *Id.*

131. *Id.*

132. *See id.* at 903–04.

133. *See id.* at 911 (Parker, J., dissenting).

134. *See id.* at 911–12.

135. *See id.* at 904 (majority opinion).

136. Hyson, *supra* note 68, at 185.

entirely.¹³⁷ A PRP can avoid liability when (1) a plaintiff sues only one of many PRPs, (2) that single PRP proves that the harm is capable of apportionment, and (3) that single PRP's apportioned harm is zero or negligible. Consequently, that single PRP can avoid liability, such that the plaintiff would recover no response costs from the action. In both *Alcan-New York* and *Alcan-Butler*, the government sought to impose joint and several liability on one of numerous PRPs, after the government had settled with the other PRPs.¹³⁸ In both cases, the non-settling PRP had arranged the disposal of oil emulsion containing hazardous substances.¹³⁹ The courts held in both cases that if "a responsible party . . . can demonstrate that its pollutants, when mixed with other hazardous wastes, did not contribute to the release or the resulting response costs," the responsible party should not be responsible for any response costs.¹⁴⁰ This holding injects causation into CERCLA through the "backdoor... after being denied entry at the frontdoor...."¹⁴¹ In other words, while causation is irrelevant at the "frontdoor" in determining liability under section 107(a), causation is relevant at the "backdoor" in determining joint and several liability under federal common law.¹⁴² If causation is absent, and a court declines to impose joint and several liability, the PRP will avoid liability entirely.

In *Brighton*, the Sixth Circuit followed the lead of the *Alcan* decisions, stating that in cases involving multiple generators, a generator can avoid joint and several liability by showing a lack of causal connection between the disposal of its hazardous waste and a portion of the harm.¹⁴³ Further, the court carved out a new acceptable basis for apportionment for operators.¹⁴⁴ In *Brighton*, a township operated a dump on part of a site.¹⁴⁵ The site was later found to contain hazardous substances.¹⁴⁶ The township operated the dump for only part of the period during which disposal occurred at the overall site.¹⁴⁷ To avoid liability, the township argued that the dump comprised only three acres in the southwest corner of the fifteen-acre site, and that those three acres

137. See *Alcan-New York*, 990 F.2d 711, 722 (2d Cir. 1993); *Alcan-Butler*, 964 F.2d 252, 270 (3d Cir. 1992) ("[O]ur result thus injects causation into the equation but, as we have already pointed out, places the burden of proof on the defendant instead of the plaintiff."); see also Gershonowitz, *supra* note 61, at 220–21, 224.

138. See *Alcan-New York*, 990 F.2d at 717; *Alcan-Butler*, 964 F.2d at 257.

139. See *Alcan-New York*, 990 F.2d at 717; *Alcan-Butler*, 964 F.2d at 256.

140. *Alcan-New York*, 990 F.2d at 717 (following *Alcan-Butler*, 964 F.2d at 267–71).

141. *Id.* at 722.

142. Hyson, *supra* note 68, at 174 (discussing *Alcan-New York*, 990 F.2d at 722).

143. *United States v. Twp. of Brighton*, 153 F.3d 307, 329 (6th Cir. 1998).

144. See *id.* at 320.

145. See *id.* at 312.

146. See *id.* at 311–12.

147. See *id.* at 317.

contained no hazardous substances.¹⁴⁸ Alternatively, the township argued that the hazardous substance at the dump was contributed by non-township sources after the township stopped its operations.¹⁴⁹

The *Brighton* court first stated that “the distinction between operator liability and other forms of liability is very important to consider when determining divisibility.”¹⁵⁰ Then the court acknowledged two ways an operator can show divisibility, and therefore that the harm is capable of apportionment.¹⁵¹ First, as in *Bell Petroleum*, the operator may present sufficient evidence from which the court can determine the portion of harm caused by the hazardous substances disposed of during the time of its ownership or operation of the facility.¹⁵² Second, the operator may present sufficient evidence showing that its “operating” activities were completely confined to a discrete section of the property, and that the releases were confined to the discrete section.¹⁵³ Ultimately, the *Brighton* court remand the case to the lower court, which was to examine the possible bases of apportioning operator liability, consistent with the guidelines set forth in the opinion.¹⁵⁴

C. Summary

Generally, early cases applying the Restatement’s reasonable basis standard to CERCLA presumed joint and several liability under section 107, and required a very high level of proof to justify apportionment. Because application of joint and several liability may be unfair to some PRPs, a few early cases attempted to introduce equitable considerations into the decision on apportionment. The use of equitable considerations has since been rejected by courts. More recent court decisions have

148. *Id.* at 312.

149. *Id.*

150. *Id.* at 320.

151. *See id.* at 320. If the harm is divisible, then it is capable of apportionment. *Burlington N. & Santa Fe Ry. Co. v. United States*, 129 S. Ct. 1870, 1876 (2009).

152. *Brighton*, 153 F.3d at 330–31 (Moore, J., concurring).

153. *See id.* at 320 (majority opinion) (“[I]f [the operator] could show (as it tried to do here) that its ‘operating’ activities were completely limited to a discrete and measurable section of the property, and that the releases onto or from that section represented a discrete and measurable harm, this would provide a reasonable basis for apportionment.”); *see also* *United States v. Vertac Chem. Corp.*, 364 F. Supp. 2d 941, 963–64 (E.D. Ark. 2005) (“[Defendant] also relies on ‘geographic considerations’ as a basis for limiting its harm [citing *Brighton*] The non-contiguous areas, according to [defendant], are the north and south sides of the . . . landfill, areas which were divided by a natural gas pipeline and opened for use at different times. It contends that it only deposited waste on the north side of the landfill, and it is therefore not responsible for the response costs associated with the waste on the south side of the landfill. . . . [But defendant] . . . cannot demonstrate that it is not the source of the contamination at the . . . [south sides of the] landfill.”).

154. *See Brighton*, 153 F.3d. at 320 (majority opinion).

lowered the evidentiary burden required to justify apportionment, or allowed PRPs to escape liability entirely through a “no causation” defense. Thus, the trend prior to *Burlington Northern* appeared to be the relaxation of the presumption of joint and several liability.

III. *BURLINGTON NORTHERN*

The Supreme Court in *Burlington Northern* further relaxes the evidentiary burden for a PRP trying to demonstrate a reasonable basis for apportionment. In an 8-1 ruling, the Court upheld a basis for apportionment that relied on the simplest of considerations.¹⁵⁵ Based on prior case law, those considerations alone were insufficient to support apportionment.¹⁵⁶ Further, there are strong policy reasons for not relaxing the level of proof needed to apportion harm under CERCLA.

A. *An 8-1 Ruling Favoring Apportionment*

The controversy in *Burlington Northern* arose out of the spilling and leaking of hazardous substances from an agricultural chemical distribution business.¹⁵⁷ Brown & Bryant, Inc. (B&B) operated the business, purchasing pesticides and other chemical products from suppliers such as Shell Oil Company (Shell).¹⁵⁸ In 1960, B&B opened its business on a 3.8-acre parcel of land in Arvin, California, and in 1975, expanded operations onto an adjacent 0.9 acre parcel of land owned jointly by the Atchison, Topeka & Santa Fe Railway Company and the Southern Pacific Transportation Company (now known respectively as the Burlington Northern and Santa Fe Railway Company and Union Pacific Railroad Company) (collectively, “Railroads”).¹⁵⁹ Over the course of B&B’s 28 years of operation, delivery spills, equipment failures, and the rinsing of tanks and trucks allowed hazardous substances, some purchased from Shell, to seep into the soil and groundwater of the Arvin facility.¹⁶⁰ In 1991, EPA issued an administrative order to the Railroads directing them, as owners of a portion of the property on which the Arvin facility was located, to perform certain remedial tasks in connection with the site.¹⁶¹ The Railroads did so, incurring expenses of more than \$3 million in the process.¹⁶² Seeking to recover some of their response costs,

155. See *United States v. Burlington N. & Santa Fe Ry. Co.*, 520 F.3d 918, 946 (9th Cir. 2008).

156. See *id.* at 943–46.

157. See *Burlington N. & Santa Fe Ry. Co. v. United States*, 129 S. Ct. 1870, 1874–75 (2009).

158. *Id.* at 1874.

159. *Id.*

160. *Id.* at 1875.

161. *Id.* at 1876.

162. *Id.*

the Railroads brought suit against B&B in 1992.¹⁶³ In 1996, that lawsuit was consolidated with two recovery actions brought by the California Department of Toxic Substances Control (“DTSC”) and EPA against Shell and the Railroads.¹⁶⁴

The district court held that both the Railroads and Shell were PRPs under section 107(a) of CERCLA and thus subject to CERCLA liability.¹⁶⁵ Although the district court held that both the Railroads and Shell were liable for contamination at the Arvin site, the court did not impose joint and several liability on the two parties for the total site response costs incurred by the government.¹⁶⁶ The court held that although the site contamination created a single harm, the harm was capable of apportionment.¹⁶⁷

To calculate the portion of harm attributable to the Railroads, the court looked at three numbers.¹⁶⁸ First, the court noted that the portion of the Arvin site owned by the Railroads constituted only 19 percent of the surface area of the overall site.¹⁶⁹ Second, the court noted that the Railroads had leased their parcel to B&B for 13 years, which was only 45 percent of the time that B&B operated the Arvin facility.¹⁷⁰ Finally, because only spills of two hazardous substances, Nemagon and dinoseb, occurred on the Railroads’ parcel, and because those two hazardous substances plus a third, D-D, constituted all the contamination at the overall site, the court found that two-thirds of the contamination at the overall site was attributable to activities on the Railroads’ parcel.¹⁷¹ In other words, the contamination of the overall site attributable to the Railroads’ parcel was approximated using the fraction of hazardous-substance *types* attributable to the Railroads’ parcel. There was no evidence that the three substances were present in equal proportion or necessitated equal response costs.¹⁷² Nevertheless, the court then

163. *Id.*

164. *Id.*

165. *See* United States v. Atchison, Topeka & Santa Fe Ry. Co., Nos. CV-F-92-5068 OWW, CV-F-96-6226 OWW, CV-F-96-6228 OWW, 2003 WL 25518047, at *52, *70 (E.D. Cal. July 15, 2003).

166. *Burlington N.*, 129 S. Ct. at 1876; *see also* *Atchison*, 2003 WL 25518047, at *84 (“This is a classic ‘divisible in terms of degree’ case, both as to the time period in which defendants’ conduct occurred, and ownership existed, and as to the estimated maximum contribution of each party’s activities that released hazardous substances that caused Site contamination.”).

167. *Burlington N.*, 129 S. Ct. at 1876; *see also* *Atchison*, 2003 WL 25518047, at *83–84.

168. *Burlington N.*, 129 S. Ct. at 1882.

169. *Id.*

170. *Id.*

171. *Id.*; United States v. Burlington N. & Santa Fe Ry. Co., 520 F.3d 918, 932, 932 n.10 (9th Cir. 2008), *rev’d*, 129 S. Ct. 1870 (2009).

172. *Burlington N.*, 129 S. Ct. at 1883 (“[T]he evidence adduced by the parties did not allow the court to calculate precisely the amount of hazardous chemicals contributed by the Railroad

multiplied 0.19 by 0.45 by 0.66 (two-thirds) and rounded up to determine that the Railroads were responsible for 6 percent of the remediation costs.¹⁷³ Then, to account for “calculation errors,” the court assumed a 50 percent maximum error rate and raised the Railroads’ proportion of the total liability to 9 percent.¹⁷⁴ In other words, the court found the Railroads liable for 9 percent of the response costs, using the following calculation:

Railroads’ Liability = (A × B × C) × 1.5, where

A = percentage of the overall site that was owned by the Railroads, based on surface area;

B = percentage of time that the Railroads leased their parcel to B&B relative to the total time period that B&B operated its business; and

C = fraction of hazardous-substance types attributable to the Railroad parcel.¹⁷⁵

Additionally, based on estimations of chemicals spills of Shell products, the court held Shell liable for 6 percent of the total site response costs.¹⁷⁶

The Court of Appeals for the Ninth Circuit reversed.¹⁷⁷ The Ninth Circuit found “no dispute” on the question of whether the harm caused by the Railroads and Shell was capable of apportionment.¹⁷⁸ Nevertheless, the court held that the district court erred in finding that the *record* established a reasonable basis for apportionment, for both the Railroads and Shell.¹⁷⁹ For the Railroads, the Ninth Circuit held that the district court “relied on the simplest of considerations”—percentages of land area, time of ownership, and types of hazardous substances—and that those considerations alone were insufficient to support apportionment.¹⁸⁰ For Shell, it was “a closer call,” but ultimately the court held that the evidence was insufficient to support apportionment.¹⁸¹ Thus, the Ninth Circuit reversed the district court’s apportionment of liability and held the Railroads and Shell jointly and severally liable for the

parcel to the total site contamination or the exact percentage of harm caused by each chemical . . .”).

173. *Id.* at 1882.

174. *Id.*

175. *Id.*; Mark R. Misiorowski & Joel D. Eagle, *The Diminishing Role of Science in CERCLA After Burlington Northern & Santa Fe*, 40 *Env’t Rep.* (BNA) 1205 (2009).

176. *Burlington N.*, 129 S. Ct. at 1882.

177. *See United States v. Burlington N. & Santa Fe Ry. Co.*, 520 F.3d 918, 946 (9th Cir. 2008), *rev’d*, 129 S. Ct. 1870 (2009).

178. *Id.* at 942.

179. *Id.* at 952.

180. *Id.* at 943.

181. *Id.* at 952.

government's cost of responding to the contamination of the Arvin facility.¹⁸²

The Supreme Court reversed the Ninth Circuit.¹⁸³ For the Railroads, the Supreme Court held that the size of the leased parcel, the time period during which leasee B&B's conduct occurred relative to the duration of the lease, and the fraction of all disposed substances that actually required remediation, could serve collectively as a reasonable basis for apportioning liability,¹⁸⁴ rendering joint and several liability was unnecessary.¹⁸⁵ The Supreme Court also held that Shell was not a PRP under section 107(a), and was thus not subject to CERCLA liability.¹⁸⁶

B. Relaxing the Evidentiary Burden of Proof of a Reasonable Basis for Apportionment

The Supreme Court in *Burlington Northern* relaxed the level of proof needed to apportion harm under CERCLA.¹⁸⁷ Specifically, it adopted the standard used by the district court, which, as stated by the Ninth Circuit, relied on the "simplest of considerations": percentages of land area, time of ownership, and types of hazardous substances.¹⁸⁸ Those considerations alone should have been insufficient to support apportionment according to cases before *Burlington Northern*.¹⁸⁹

The Supreme Court applied an extremely relaxed standard even relative to the more recent cases that cut back on *Chem-Dyne's* strong presumption that CERCLA harm is not divisible.¹⁹⁰ Those cases all required evidence tracing a specified portion of the harm to a PRP's conduct or land.¹⁹¹ Such evidence was generally sophisticated.¹⁹² For example, in *Bell Petroleum*, the Fifth Circuit allowed apportionment based on volumetric evidence, but noted that generally volumetric evidence must be supplemented with additional evidence, such as

182. *Id.*

183. *See* *Burlington N. & Santa Fe Ry. Co. v. United States*, 129 S. Ct. 1870, 1883 (2009).

184. *See id.* at 1882–83.

185. *Id.* at 1883.

186. *Id.* at 1880.

187. COOKE, *supra* note 7, § 14.01[6][c][iii] at 14-172.22 to 14-172.23 (“[T]he Court upheld the less rigorous standard adopted by the district court in *Burlington Northern* with respect to the level of proof needed to apportion harm.”).

188. *See* *United States v. Burlington N. & Santa Fe Ry. Co.*, 520 F.3d 918, 943 (9th Cir. 2008), *rev'd*, 129 S. Ct. 1870 (2009).

189. *See id.* at 943–46.

190. *See* *United States v. Chem-Dyne Co.*, 572 F. Supp. 802, 811 (S.D. Ohio 1983).

191. *See, e.g., In re Bell Petroleum Servs.*, 3 F.3d 889, 903 (5th Cir. 1993).

192. *See, e.g., id.* at 900 (“[U]nder [simple] circumstances, volume could be a reasonable basis for apportioning liability, in a situation in which independent factors had no substantial effect on the harm to the environment.”).

synergistic effects of the hazardous substances.¹⁹³ Similarly, in *Brighton*, the Sixth Circuit stated that an operator may show divisibility by presenting sufficient evidence showing that its operating activities, and the releases from those activities, were completely confined to a discrete section of the property.¹⁹⁴ But the Railroads in *Burlington Northern* did not present evidence of the quantity of waste spilled on the two parcels, or even the quantity of hazardous substances stored, but not necessarily spilled, on the Railroad parcel relative to the other parcel.¹⁹⁵ The Railroads also failed to show that the releases from activities on their land were confined to their land.¹⁹⁶

Finally, the district court implicitly acknowledged that its basis for apportionment was not well-grounded in evidence when it applied a 50 percent error rate. Yet, the Supreme Court still apportioned the harm. As a result of the Court's decision, DTSC and EPA will be unable to recover the vast majority of their response costs.¹⁹⁷

Because *Burlington Northern* has not been interpreted by the lower courts, its impact is unclear.¹⁹⁸ The language of the holding, however, is sufficiently vague to allow a broad or narrow interpretation.¹⁹⁹ If *Burlington Northern* is read broadly, future parties may not need to present sophisticated scientific evidence to demonstrate a reasonable basis for apportionment.²⁰⁰ Under this broad interpretation, parties may more easily apportion liability and avoid joint and several liability.²⁰¹ A narrow interpretation of *Burlington Northern* suggests that, because each apportionment analysis will depend on the specific facts in the record, a simple equation to apportion liability will work only for very simple fact patterns.²⁰² Thus, while the Supreme Court upheld a simple apportionment analysis in *Burlington Northern*, which involved three

193. *Id.* at 903 (“[T]his case involves only one hazardous substance—chromium—and no synergistic effects. The chromium entered the groundwater as the result of similar operations by three parties who operated at mutually exclusive times. Here, it is reasonable to assume that the respective harm done by each of the defendants is proportionate to the volume of chromium-contaminated water each discharged into the environment.”).

194. *United States v. Twp. of Brighton*, 153 F.3d 307, 320 (6th Cir. 1998).

195. *See United States v. Burlington N. & Santa Fe Ry. Co.*, 520 F.3d 918, 944 (9th Cir. 2008), *rev'd*, 129 S. Ct. 1870 (2009).

196. *Id.* (“After the 1978 windstorm, tanks were stored all over the facility, including on the Railroad parcel. A simple calculation of land ownership does not capture any data that reflect this dynamic, unitary operation of the single Arvin facility.”).

197. *See David R. Berz & Annemargaret Connolly, Supreme Court Reins in the Reach of Superfund*, METROPOLITAN CORP. COUNSEL, June 2009, at 34.

198. Misiorowski & Eagle, *supra* note 175.

199. *Id.*

200. *Id.*

201. *Id.*

202. *Id.*

parties and three chemicals, another court may not consider such an equation “reasonable” for more complex CERCLA sites.²⁰³

C. Policy Reasons against Apportionment, and for Imposing Joint and Several Liability under CERCLA

First, by precluding recovery of the vast majority of the response costs, the Supreme Court’s decision in *Burlington Northern* contravenes the legislative objective of CERCLA: “to place the cost of remediation on persons whose activities contributed to the contamination rather than on the taxpaying public.”²⁰⁴ Congress intended those responsible for the release to bear the costs of, and responsibility for, remedying the condition.²⁰⁵ In cases where some defendants are insolvent, unavailable, or otherwise protected, apportioning harm may require the government to bear the response costs attributable to the protected defendants. This result directly contravenes congressional intent.

Second, recovering response costs is necessary to finance EPA’s future cleanup activities. To pay for EPA cleanups, CERCLA established the Superfund.²⁰⁶ Superfund monies initially came from a tax on the petroleum and chemical industries.²⁰⁷ The tax expired in December 1995, and Congress has not renewed the tax.²⁰⁸ However, the Superfund continues to receive revenue from interest accrued on the invested Superfund balance, the recovery of response costs from responsible parties, and the collection of fines and penalties.²⁰⁹ The Superfund also receives revenue from Congressional general fund appropriations.²¹⁰ Despite the numerous sources of revenue, though, the Superfund balance is dwindling.²¹¹ Historically, EPA’s principal source of funding for

203. *Id.*

204. *Burlington N. & Santa Fe Ry. Co. v. United States*, 129 S. Ct. 1870, 1885 (2009) (Ginsburg, J., dissenting).

205. *United States v. Chem-Dyne Corp.*, 572 F. Supp. 802, 805–06 (S.D. Ohio 1983) (citing 5 U.S. CODE CONG. & AD. NEWS 6119, 6119 (1980)).

206. See 42 U.S.C. § 9611(a) (2006) (“The President shall use the money in the [Hazardous Substance Superfund] for the following purposes: (1) Payment of governmental response costs incurred pursuant to section 9604 of this title . . .”).

207. Joanna M. Fuller, Note, *The Sanctity of Settlement: Stopping CERCLA’s Volunteer Remediators from Sidestepping the Settlement Bar*, 34 COLUM. J. ENVTL. L. 219, 221–22 n.10 (2009); see 42 U.S.C. § 9631 (1982), repealed by Superfund Amendments and Reauthorization Act of 1986, Pub. L. No. 99-499, § 517(c)(1), 100 Stat. 1613, 1774 (1986).

208. U.S. GEN. ACCT. OFFICE, GAO-03-850, SUPERFUND PROGRAM CURRENT STATUS AND FUTURE FISCAL CHALLENGES 2 (2003).

209. *Id.*

210. *Id.*

211. See *id.* at 8 (“The balance of the Superfund trust fund available for future appropriations has significantly decreased since fiscal year 1996 and at the end of fiscal year 2002 stood at \$564 million. Further, revenues into the Superfund trust fund from taxes, cost

cleanup activities in a given year was the Superfund balance carried over from the previous year.²¹² But with a dwindling Superfund balance, EPA has relied less on the Superfund balance, and more on general fund appropriations.²¹³ Thus, because the Superfund balance is dwindling, and because the Superfund derives significant revenue from the recovery of response costs from responsible parties, it is critical that EPA recovers response costs.²¹⁴ Otherwise, EPA's ability to address hazardous waste sites in the future will depend heavily on uncertain general fund appropriations.²¹⁵

Third, the threat of joint and several liability is necessary for CERCLA's successful operation.²¹⁶ To respond to a hazardous waste site, EPA may (1) clean up the site itself and then pursue a cost-recovery action, (2) order PRPs to undertake the cleanup, or (3) compel a PRP to settle its liability by agreeing either to undertake the cleanup or to help pay for the cleanup costs.²¹⁷ For CERCLA to work successfully, EPA must be able to obtain settlements in all three situations.²¹⁸ When EPA settles disputes with PRPs, it avoids lengthy litigation and expenditures of public funds on such litigation.²¹⁹ Consequently, settlements save time and money that would otherwise be devoted to litigation, and this time and money can be allocated to the cleanup of hazardous waste sites.²²⁰ Additionally, if the settlement requires PRPs to clean up a site themselves, EPA avoids expending public funds on the cleanup. Alternatively, if the settlement requires PRPs to help pay for the cleanup costs incurred or anticipated to be incurred by EPA, EPA is assured that some money is recovered from the PRPs, and immediately receives that

recoveries, fines, penalties, and interest have steadily decreased, from over \$2 billion in fiscal year 1995 to less than \$370 million in fiscal year 2002, when presented in constant 2002 dollars.”).

212. *See id.* at 26 (“[T]he balance of the Superfund trust fund available for future appropriations . . . historically [has been] the program’s principal source of funding In previous years, funds remained in this balance to carry over into the next year.”).

213. *See id.* at 7 (“[T]he Superfund program has increasingly relied on revenue from the general fund appropriations to supplement its trust fund”).

214. *See id.* at 10 (“[R]evenues from cost recoveries and interest have provided the greatest portion of the income to the Superfund trust fund . . . , excluding revenues from general fund appropriations.”).

215. *See id.* at 31 (“As the Superfund program continues to add [hazardous waste] sites to the NPL and funding sources shift toward general revenues, the effect of EPA’s actions to address future program challenges remains uncertain.”).

216. Hyson, *supra* note 68, at 144.

217. *Id.* at 144–45; *see also* 42 U.S.C. §§ 9604(a)(1), 9606(a), 9607(a)(4)(A), 9622(d) (2006).

218. Hyson, *supra* note 68, at 145.

219. *See Fuller, supra* note 207, at 247 (“By encouraging settlements, CERCLA reduces the inefficient expenditure of public funds on lengthy litigation”).

220. *See* 132 CONG. REC. H9561-03 (daily ed. Oct. 8, 1986) (statement of Rep. Lent) (“Costly, protracted litigation threatens the effectiveness of the Superfund Program and consumes resources better spent on cleanup.”).

money.²²¹ The money is then available for any EPA cleanup activities. The threat of joint and several liability, and hence the threat of disproportionate liability, helps EPA obtain settlements by making it more risky for sued PRPs to challenge EPA's allegations in litigation.²²² With more settlements, more hazardous waste sites will be cleaned up.

Finally, the *Burlington Northern* decision is a significant departure from well-developed case law. Under prior case law, if a strict application of section 433A of the Restatement and its "reasonable basis" standard justified apportionment, but directly contravened CERCLA's objective, the Restatement likely would not be followed.²²³ This rational approach mandated that the "reasonable basis" standard should be applied while minding CERCLA's objective. Not doing so misses the forest for the trees.

In summary, the Supreme Court in *Burlington Northern*, by apportioning harm, (1) contravenes the legislative objective of CERCLA, (2) decreases the money available to finance future cleanup activities, (3) hinders the successful operation of CERCLA by reducing the likelihood that responsible parties will settle, and (4) ignores prior well-developed case law. These four shortcomings suggest that there should be an alternative approach to apportioning harm.

IV. PROPOSED FOUR-PART TEST FOR ASSESSING REASONABLENESS OF THE BASIS FOR APPORTIONMENT

Because of the shortcomings of the Supreme Court decision in *Burlington Northern*, the decision sets a bad precedent for future courts. Accordingly, this Note proposes a four-part test as a normative alternative in determining whether a basis for apportionment is "reasonable": (1) whether apportionment will preclude recovery of a significant fraction of the cleanup costs; (2) whether the records, or other evidence, upon which the basis for apportionment relies are substantially complete; (3) whether the evidence shows the quantity, or discrete sections, of released hazardous substances attributable to a responsible

221. See Fuller, *supra* note 207, at 247–48 ("Settlements provide funds that the government can immediately put to best use at the hazardous waste sites of highest priority, and they also assure that monies are recovered from responsible parties.").

222. *Id.*

223. Cf. *O'Neil v. Picillo*, 883 F.2d 176, 179 n.4 (1st Cir. 1989) ("Even assuming that a strict application of the Restatement rule would allow appellants to escape joint and several liability in a situation such as this—something which is far from clear . . . —we would nonetheless decline to place this . . . burden on the government in CERCLA actions. . . . While courts generally have looked to the Restatement for guidance, they have declined to place the burden of showing that defendants are 'substantial' contributors on the government, recognizing Congress' concern that cleanup efforts not be held hostage to the time-consuming and almost impossible task of tracing all of the waste found at a dump site.").

party's conduct, or to the activities on that party's land; and (4) whether the evidence shows the amount of harm caused by the attributable release. Each element of the four-part test must be met for the basis for apportionment to qualify as reasonable. The application of this test would result in holdings consistent with the legislative objective of CERCLA and the prior case law, increase the amount of cleanup costs that may be recovered, and promote settlement of cost recovery suits.

A. Element One: Whether Apportionment Will Preclude Recovery of a Significant Fraction of the Cleanup Costs

The first step is to determine whether apportioning harm will preclude the government from recovering a significant fraction of the cleanup costs. CERCLA classifies PRPs as persons *responsible* for the release of hazardous substances.²²⁴ Congress intended PRPs to bear the costs of, and responsibilities for, remedying the harm caused by such releases.²²⁵ If apportioning harm causes the government to bear a significant fraction of the costs of remedying the condition of a site, the apportionment directly contravenes legislative intent. Contravening legislative intent should be avoided, and may be accomplished by holding that the apportionment fails the "reasonable basis" standard. In sum, the "reasonable basis" standard should be applied in a manner that effectuates legislative intent.²²⁶

Because the term "significant" is fuzzy, this Note suggests applying a numerical threshold of 10 percent of cleanup costs. Some threshold is necessary for clarity, and a threshold on the lower end of the scale ensures almost complete cost recovery in section 107 actions by EPA, thereby increasing revenue for the Superfund. This increased revenue will help curb the dwindling of the Superfund balance and the Superfund's consequent reliance on general fund appropriations.²²⁷

Of course, any bright-line threshold will be arbitrary and lead to unfair results at the margins.²²⁸ For example, if apportionment precludes

224. See 42 U.S.C. § 9607(a) (2006).

225. *United States v. Chem-Dyne Corp.*, 572 F. Supp. 802, 805–06 (S.D. Ohio 1983) (citing 5 U.S. CODE CONG. & AD. NEWS 6119, 6119 (1980)).

226. *Cf. United States v. Katz*, 271 U.S. 354, 357 (1926) ("All laws are to be given a sensible construction; and a literal application of a statute, which would lead to absurd consequences, should be avoided whenever a reasonable application can be given to it, consistent with the legislative purpose.").

227. U.S. GEN. ACCT. OFFICE, *supra* note 208, at 7 ("The Superfund trust fund revenues from taxes, cost recoveries, interest, fines, and penalties have decreased [Thus] the Superfund program has increasingly relied on revenue from the general fund appropriations to supplement its trust fund").

228. See *In re McDonald*, 205 F.3d 606, 613 (3d Cir. 2000) ("Bright-line rules that use a seemingly arbitrary cut-off point are common in the law. A day beyond the statute of limitations

recovery of 11 percent of the cleanup costs, apportionment is barred, even if PRPs meet the other three elements of the proposed test. Conversely, if apportionment precludes recovery of 9 percent of the cleanup costs, apportionment may be permitted. Nevertheless, explicitly setting a low, bright-line threshold will make clear that EPA should bear only a small fraction of the cleanup costs.²²⁹

B. Element Two: Whether the Records, or Other Evidence, upon Which the Basis for Apportionment Relies Are Substantially Complete

Because apportionment is inherently a quantitative task²³⁰—the goal is to assign a percentage of liability to the defendants—quantitative evidence is necessary to justify apportionment. Quantitative evidence relevant to CERCLA apportionment includes records of the volume of

and the plaintiff must lose, even if the claim was otherwise unquestionably a winning one. If the evidence is just over a preponderance, the plaintiff wins full damages; just under, the plaintiff gets nothing.”).

229. Numerical thresholds have been implemented to clarify the term “significant” in other areas of environmental law. For example, under the Kyoto Protocol to the United Nations Framework Convention on Climate Change (“Kyoto Protocol”), signatory countries commit to limiting their greenhouse gas emissions to their assigned amounts. *See* Kyoto Protocol to the United Nations Framework Convention on Climate Change, Conference of the Parties, Dec. 10, 1997, 3d Sess., art. 3, U.N. Doc. FCCC/CP/1997/L.7/Add.1 (Dec. 10, 1997), *reprinted in* 37 I.L.M. 22 (1998), which are set individually for each country. *See id.* at Annex B. To limit emissions, a signatory country may engage in domestic action, or by offsetting emission credits from the international emissions-trading market. *See id.* at arts. 6, 17; Andrew Schatz, Note, *Discounting the Clean Development Mechanism*, 20 GEO. INT’L ENVTL. L. REV. 703, 707 (2008) (“To assist . . . countries in their compliance efforts, the Kyoto Protocol . . . [allows] countries . . . [to] meet their targets by purchasing emissions offsets or credits abroad through international carbon markets.”). Despite having two options, a country’s domestic action must “constitute a significant element of the effort” made to limit emissions to the country’s assigned amount. United Nations Framework Convention on Climate Change, Conference of the Parties, Report of the Conference of the Parties on Its Seventh Session, Held at Marrakesh from 29 October to 10 November 2001, Addendum, Decision 15/CP.7 ¶ 1, U.N. Doc. FCCC/CP/2001/13/Add.2 (Jan. 21, 2002). Because the term “significant” lacks numerical connotation, countries have discretion and thus may shirk their duties to reduce domestic emissions by heavily relying on emission credits. Schatz, *supra* note 229, at 708. To alleviate this issue, certain countries have agreed to offset no more than 12 percent of their emissions through emission credits. *See id.* (“[C]oncern that . . . nations may shirk their duties to reduce domestic emissions . . . have largely been alleviated as several of the largest European Union (EU) polluter states have limited their use of [offsetting emission credits] to no more than twelve percent of their emissions.”).

230. *See In re Bell Petroleum Servs.*, 3 F.3d 889, 903 (5th Cir. 1993) (“Essentially, the question whether there is a reasonable basis for apportionment depends on whether there is sufficient evidence from which the court can determine the *amount* of harm caused by each defendant.” (emphasis added)); *id.* at 910 (Parker, J., concurring in part and dissenting in part) (“[T]o evade joint and several liability, Farmer A or B must meet the burden of proving that [quantitative] apportionment is reasonable on some basis, such as the *number* of cows in the field belonging to each farmer or the *amount of time* each farmer’s cows were in the field.” (emphasis added)).

waste of a particular operator or generator, amount of time (of ownership or operation), or surface area (owned or occupied).²³¹

Records and other evidence may be incomplete, however, because they are lost or destroyed, or because PRPs refuse to produce them. Relying on incomplete records may distort or underestimate a PRP's contribution, and, correspondingly, using complete records would result in more accurate estimates.²³²

The issue of incomplete records arose in *Bell Petroleum*, where the Fifth Circuit allowed apportionment on a volumetric basis, although the volumetric records were substantially incomplete.²³³ The dissent retorted that allowing apportionment meant that “a standard of proof of *less than* a preponderance of the evidence” was sufficient to substantiate a reasonable basis for apportionment.²³⁴ In line with the dissent, where a basis for apportionment relies on records, such records should be substantially complete for the basis to be reasonable. Accordingly, if records have been lost, destroyed, or unproduced, apportionment should be less likely to be reasonable. Otherwise, the incomplete records may distort or underestimate a PRP's contribution, making the apportionment inherently unfair and unreasonable.

C. Element Three: Whether the Evidence Shows the Quantity, or Discrete Sections, of Released Hazardous Substances Attributable to a Responsible Party's Conduct, or to the Activities on That Party's Land

The apportionment inquiry ultimately seeks to apportion harm.²³⁵ “Harm” means the danger that a hazardous substance poses to the public health or the environment.²³⁶ The harm associated with one hazardous substance relative to another is not determined solely by the quantity of each hazardous substance released into the environment, as hazardous

231. See *United States v. Burlington N. & Santa Fe Ry. Co.*, 520 F.3d 918, 936 n.18 (9th Cir. 2008), *rev'd*, 129 S. Ct. 1870 (2009).

232. See *United States v. Kramer*, 19 F. Supp. 2d 273, 281–82 (D.N.J. 1998) (“It is the nature of the allocation process that reasonable parties may disagree about the facts and assumptions underlying the assigned shares, especially where . . . many records were lost or destroyed. Although [the third-party defendant] is the only party to object to the allocation process, one suspects many settling parties also may believe they are being asked to pay too much, given other plausible views of their potential liability.”).

233. See *Bell Petroleum*, 3 F.3d at 904.

234. *Id.* at 912.

235. See RESTATEMENT (SECOND) OF TORTS § 433A(1) (1965) (“Damages for harm are to be apportioned . . .”).

236. See 42 U.S.C. § 9602(a) (2006) (“The [Environmental Protection Agency] shall promulgate and revise as may be appropriate, regulations designating as hazardous substances . . . elements, compounds, mixtures, solutions, and substances which, when released into the environment may present substantial danger to the public health or welfare or the environment.”).

substances vary in toxicity or migratory potential.²³⁷ Thus, the quantity of hazardous substances attributable to a PRP is a starting point in determining the amount of harm attributable to that PRP, but quantity alone may be insufficient to determine the harm.

Accordingly, as a preliminary threshold, whether there is a reasonable basis for apportionment depends on whether there is sufficient evidence to identify hazardous substances released by a PRP. For generators and transporters, it is sufficient to present evidence on the quantity of hazardous substances such persons disposed of or transported.²³⁸ Similarly, operators may present evidence on quantity of hazardous substances produced.²³⁹ Alternatively, operators may present evidence showing that their “operating” activities were completely limited to a discrete section of the overall site, and that the releases were confined to the discrete section.²⁴⁰

A wrinkle arises where there is an owner PRP who is not concurrently an operator, generator, or transporter, otherwise known as an “innocent owner.” In such situations, because hazardous substances do not appear spontaneously, but rather from operating, generating, or transporting activities, the direct cause of the released hazardous substances necessarily must be an operator, generator, or transporter.²⁴¹ Unlike this operator, generator, or transporter, the innocent owner may be described as an indirect causer of harm. For example, the innocent owner may have rented her land to an operator or failed to prevent a generator from disposing of hazardous substances onto the land.

Where *only* innocent owners are sued, it may be that each defendant sequentially owned the same land, or concurrently owned a percentage of the overall hazardous waste site, or some combination of the two circumstances. Regardless, the defendants are all innocent owners and hence not directly responsible for the hazardous substances on, or

237. See *United States v. Chem-Dyne Corp.*, 572 F. Supp. 802, 811 (S.D. Ohio 1983) (“[T]he volume of waste of a particular generator is not an accurate predictor of the [health or environmental] risk associated with the waste because the toxicity or migratory potential of a particular hazardous substance generally varies independently with the volume of the waste.”).

238. Cf. *United States v. Hercules, Inc.*, 247 F.3d 706, 719 (8th Cir. 2001) (“[I]t is also possible to prove divisibility of single harms based on volumetric . . . evidence.”).

239. Cf. *Bell Petroleum*, 3 F.3d at 903 (“Here, it is reasonable to assume that the respective harm done by each of the [operators] is proportionate to the volume of chromium-contaminated water each discharged into the environment.”).

240. See *United States v. Twp. of Brighton*, 153 F.3d 307, 320 (6th Cir. 1998); see also *United States v. Vertac Chem. Corp.*, 364 F. Supp. 2d 941, 963–64 (E.D. Ark. 2005).

241. *United States v. Burlington N. & Santa Fe Ry. Co.*, 520 F.3d 918, 938 (9th Cir. 2008), *rev’d*, 129 S. Ct. 1870 (2009) (“PRP status premised on ownership of a facility does not require any involvement in the disposal of hazardous substances. Thus, to speak of a PRP ‘causing’ contamination of its land simply by owning land on which *someone else* disposes of hazardous wastes is to indulge in metaphor.” (emphasis added)).

originating from but migrating beyond, their land. Those directly responsible for the hazardous substances, such as generators, likely possess the evidence on the quantity of hazardous substances disposed of on or transported to the land. Conversely, because the defendants are innocent owners, and not directly responsible for the hazardous substances, they likely do not possess evidence on quantity, and may have difficulty producing such evidence. Nevertheless, each innocent owner should be required to produce the evidence on quantity even though the operator, generator, or transporter responsible for the hazardous substances on, or originating from, the innocent owner's land has not been sued and is more capable of producing the necessary evidence.

D. Element Four: Whether the Evidence Shows the Amount of Harm Caused by the Attributable Release

Essentially, the question of whether there is a reasonable basis for apportionment depends on whether there is sufficient evidence to determine the amount of harm caused by, or attributable to, each PRP.²⁴² Attributing harm—here, the danger the release of a hazardous substance poses to the public health or the environment—is generally difficult, because most section 107 cost-recovery actions involve numerous, commingled hazardous substances with varying toxicity, migratory potential, and synergistic effects.²⁴³

For example, “[c]ommon sense counsels that a million gallons of certain substances could be mixed together without significant consequences, whereas a few pints of others improperly mixed could result in disastrous consequences.”²⁴⁴ In such situations, much of the harm is attributable to the person responsible for the “few pints.” But to reach that result, the court needs evidence on synergistic effects, not merely evidence on the volume of waste contributed by each person. The volume of waste of a particular generator says nothing about a hazardous substance's synergistic effect, toxicity, or migratory potential.²⁴⁵ Such characteristics are necessary to distinguish the portion of harm associated

242. *Bell Petroleum*, 3 F.3d at 903.

243. *Id.*

244. *Id.* at 900.

245. See *United States v. Manzo*, 279 F. Supp. 2d 558, 572 (D.N.J. 2003) (“[V]olumetric apportionment is . . . inappropriate where independent factors, such as relative toxicity, migratory potential, or synergistic capacities of hazardous substances, might have had a substantial effect on the harm to the environment.”); see also *United States v. Odabashian*, No. 95-2361 G/BRE, 1999 U.S. Dist. WL 33944059, at *9 (W.D. Tenn. May 18, 1999) (“In the present case, the court finds that volume is not an adequate indicator of harm. An allocation on the basis of volume fails to take into account the relative toxicity, migratory potential, or effect of commingling of different hazardous substances.”).

with a hazardous substance that has mixed with other hazardous substances. Of course, where the hazardous substances are identical, or where they have not mixed, knowledge of a hazardous substance's synergistic effect, toxicity, and migratory potential is superfluous. In such situations, it is acceptable to attribute harm simply using volumetric evidence.²⁴⁶ Further, where the hazardous substances are not mixed, but rather confined to discrete sections, it is acceptable to attribute harm using geography.²⁴⁷

Where the hazardous substances are commingled with varying toxicity, migratory potential, or synergistic effects, cases prior to *Burlington Northern* required evidence showing the individual and interactive qualities of the substances deposited at the site.²⁴⁸ Such evidence is necessary to estimate accurately the amount of harm caused by, or attributable to, each PRP. Indeed, because the typical section 107 action is factually complex, it is usually difficult to estimate the amount of harm caused by, or attributable to, each PRP.²⁴⁹ Consequently, PRPs rarely escaped joint and several liability prior to *Burlington Northern*.²⁵⁰

When applying this part of the test, a problem occurs where operators, generators, or transporters are sued along with "innocent owners." If an operator's business activities cause spills of hazardous substances, those spills will be attributable to the operator, because the operator's conduct directly caused the spills. But when the operator rents the land from an owner, and the operator's conduct occurred on the owner's land, the spills will be attributable to the owner as well. In such situations, where there is a direct cause—either an operator, generator, or transporter—and an indirect cause—a uninvolved owner—and a harm concurrently is attributable to both the direct and indirect cause, the direct cause ideally should bear the entire apportioned harm if the direct cause can pay. Thus, to satisfy this element, a preponderance of the evidence must show the amount of harm attributable to each PRP's conduct, or to the activities on that party's land.

246. See *United States v. Vertac Chem. Corp.*, 966 F. Supp. 1491, 1504 (E.D. Ark. 1997) ("Where . . . hazardous substances are commingled, a defendant cannot rely on merely volumetric evidence.").

247. See *United States v. Twp. of Brighton*, 153 F.3d 307, 320 (6th Cir. 1998); see also *United States v. Vertac Chem. Corp.*, 364 F. Supp. 2d 941, 963–64 (E.D. Ark. 2005).

248. See, e.g., *United States v. Monsanto Co.*, 858 F.2d 160, 172 (4th Cir. 1988).

249. See *United States v. Chem-Dyne Co.*, 572 F. Supp. 802, 810–11 (S.D. Ohio 1983) ("Typically . . . there will be numerous hazardous substance generators or transporters who have disposed of wastes at a particular site. . . . The question of whether the defendants are jointly or severally liable for the clean-up costs turns on a fairly complex factual determination.").

250. *O'Neil v. Picillo*, 883 F.2d 176, 178 (1st Cir. 1989).

E. The Basis for Apportionment in Burlington Northern Was Unreasonable

Based on this normative test, the basis for apportionment in *Burlington Northern* was unreasonable. The basis failed to meet three of the test's four elements. The first element was unmet because the apportionment precluded recovery of a significant fraction of the cleanup costs. Specifically, the apportionment allowed EPA to recover only 9 percent of its cleanup costs, and consequently precluded recovery of 91 percent of those costs.²⁵¹ Ninety-one percent is clearly a significant fraction, regardless of whether the 10 percent threshold is used.

There was not an issue of incomplete records in *Burlington Northern*, so the second element was satisfied. The basis relied on three numbers: percentages of land area owned by the Railroads, time of ownership, and types of hazardous substances attributable to the Railroad parcel.²⁵² Those numbers were ascertainable and complete. Generally, such numbers are easily ascertained, and not susceptible to loss, unlike volumetric evidence.

The third element of the test was unmet, because the three numbers did not indicate the quantity of released hazardous substances attributable to the activities on the Railroads' parcel. Only volumetric evidence could do this. Similarly, the Railroads presented no evidence showing that the releases attributable to activities on the Railroads' parcel were confined to the parcel. The releases may have migrated beyond the parcel, rather than remained confined to that discrete section of the property.

Finally, the apportionment basis in *Burlington Northern* failed the fourth element of the test, because the Supreme Court required very little evidence tracing a specified portion of the harm at the site to the activities occurring on the portion of the site owned by the Railroads.²⁵³ There were multiple hazardous substances²⁵⁴ on the Railroad parcel which may have mixed, and the basis did not consider whether such mixing would have synergistic effects. Such effects, among other characteristics of the substances, are necessary to distinguish the portion of harm associated with a hazardous substance that has mixed with other hazardous substances. Indeed, while tracing harm generally requires

251. See *Burlington N. & Santa Fe Ry. Co. v. United States*, 129 S. Ct. 1870, 1884 (2009).

252. See *id.* at 1883.

253. See *id.* at 1882–83.

254. *Id.* at 1882 (“[O]nly spills of two chemicals, Nemagon and dinoseb (not D-D), substantially contributed to the contamination that had originated on the Railroad parcel.”).

volumetric evidence, the Court did not require such evidence.²⁵⁵ In doing so, the Court may have allowed a standard of proof of less than a preponderance of the evidence.

CONCLUSION

Adopting the proposed test would amount to overruling *Burlington Northern*, a Supreme Court case. Because the lower courts are unable to overrule a Supreme Court decision,²⁵⁶ and because the Supreme Court is reluctant to overrule itself,²⁵⁷ it is unlikely that the courts will adopt the proposed test without action from the one of the political branches. In contrast, because Congress can amend CERCLA²⁵⁸ and has done so in the past²⁵⁹ Congress could amend CERCLA to adopt the test. The test is superior to current law because the test (1) furthers the legislative objective of CERCLA, (2) increases the money available to finance future cleanup activities, and (3) promotes the successful operation of CERCLA by increasing the likelihood that responsible parties will settle, allowing EPA to avoid lengthy litigation and expenditures of public funds on such litigation. As such, Congress should respond to the Supreme Court's move in *Burlington Northern* and restore apportionment under CERCLA to its rightful role.

255. See *United States v. Burlington N. & Santa Fe Ry. Co.*, 520 F.3d 918, 944 (9th Cir. 2008), *rev'd*, 129 S. Ct. 1870 (2009).

256. See *Rodriguez de Quijas v. Shearson/American Exp., Inc.*, 490 U.S. 477, 484 (1989) ("If a precedent of this Court has direct application in a case, yet appears to rest on reasons rejected in some other line of decisions, the Court of Appeals should follow the case which directly controls, leaving to this Court the prerogative of overruling its own decisions.").

257. See Sara R. Benson, *Reviving the Disparate Impact Doctrine to Combat Unconscious Discrimination: A Study of Chin v. Runnels*, 31 T. MARSHALL L. REV. 43, 62 (2005) ("Although the Supreme Court is reluctant to reverse its prior jurisprudence, it occasionally does so when the law so requires.").

258. See *Rivers v. Roadway Exp., Inc.*, 511 U.S. 298, 313 (1994) ("Congress, of course, has the power to amend a statute that it believes [the courts] have misconstrued."); *United States v. Weaselhead*, 36 F. Supp. 2d 908, 914 (D. Neb. 1997) ("It is axiomatic that the legitimacy of a the federal common law is contingent upon the presence of a connection, however tenuous, to a determination of congressional intent. Accordingly, if a judicial body errs in determining congressional intent, Congress can permissibly legislate a correction.").

259. See, e.g., Superfund Amendments and Reauthorization Act of 1986, Pub. L. No. 99-499, 100 Stat. 1613 (1986).

We welcome responses to this Note. If you are interested in submitting a response for our online companion journal, *Ecology Law Currents*, please contact ecologylawcurrents@boalt.org. Responses to articles may be viewed at our website, <http://www.boalt.org/elq>.