JOINT AND SEVERAL LIABILITY AFTER *BURLINGTON NORTHERN*: ALIVE AND WELL

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I. INTRODUCTION

Scholars, practitioners, and judges variably welcomed and bemoaned the Supreme Court's landmark 2009 decision in *Burlington Northern & Santa Fe Railroad v. United States*.[1] Some viewed the case as a

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reaffirmation of long-established jurisprudence supporting the liberal application of joint and several liability in cost recovery actions under § 107 of the Comprehensive Environmental Response, Cleanup, and Liability Act ("CERCLA").[2] Many others saw the Court's eight-to-one decision as a rebuke of a creeping expansion in CERCLA liability. Now, four years and over twenty lower court decisions later, there is sufficient evidence to make a preliminary evaluation of *Burlington Northern*'s impact. The results are unexpected. Predictions of a new age of apportionment made by most post-*Burlington Northern* scholarship appear overblown.

The stakes could not be higher. Congress designed CERCLA as a public-private partnership to address America's hazardous waste legacy. The costs of rehabilitating orphaned sites were to be borne primarily by the Superfund, an account created by CERCLA and augmented in 1986 by the Superfund Amendments and Reauthorization Act ("SARA"). Superfund was supported by short-term taxes on industry as well as government recoveries of public remediation expenditures from responsible private parties. Congress intended solvent private entities to ultimately assume the liability for cleanup costs at the majority of hazardous waste sites—where possible, polluters would pay for cleanup. Superfund was not designed to fully fund remediation, nor does it presently have the resources to do so, especially considering the burgeoning number of sites on the National Priorities List ("NPL").

At the end of the government's 2012 fiscal year, the NPL contained 1,313 contaminated facilities.[3] Current public funding to address these environmental and public health threats is inadequate. Remediation of NPL sites is an expensive and time-consuming proposition—the relatively small and straight-forward Brown and Bryant ("B&B") pesticide distribution facility at issue in *Burlington Northern* took over twenty years to remediate at a cost approaching $10 million.[4] Without adequate funding, the Environmental Protection Agency ("EPA") must

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question, his former colleagues at NewFields for introducing the interesting challenges of environmental law and, above all, his wife for her unwavering support.

1 Burlington N. & Santa Fe Ry. Co. v. United States, 556 U.S. 599 (2009).

2 Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. § 9607 (2006).

3 U.S. ENVTL. PROT. AGENCY, NATIONAL PRIORITIES LIST (NPL), http://www.epa.gov/superfund/sites/npl/index.htm (last visited Nov. 20, 2012). The federal government's fiscal year runs from October to September.

4 *See infra* note 52 and accompanying text.

often postpone cleanup actions.[5] CERCLA's public-private scheme can only work if solvent private entities pay for cleanup at their facilities, allowing EPA to focus its scarce resources on abandoned sites.

To increase the likelihood of private payment of remediation expenses, CERCLA creates a presumption of joint and several liability.[6] Only if a defendant affirmatively proves a reasonable basis to divide responsibility will a court apportion remediation costs among the parties. The extent to which private parties are held jointly and severally liable for remediation costs at a given facility therefore defines the effectiveness of the CERCLA public-private scheme. The more readily apportionment is available for § 107 defendants—especially against government plaintiffs seeking reimbursement for cleanup expenses—the less money is available to address the growing list of contaminated facilities.

Public funding is not a viable alternative. Considering inflation, total annual appropriations to EPA for cleanup expenses have declined over the past decade.[7] The General Accounting Office ("GAO") predicts that future costs at NPL sites will exceed funding levels.[8] The Superfund

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[5] *EPA's Costs to Remediate Existing and Future Sites Will Likely Exceed Current Funding Levels: Hearing Before the S. Subcomm. on Superfund, Toxics and Envtl. Health, Comm. on Env't and Pub. Works,* 112th Cong. 14 (2010) [hereinafter *Hearing*] (statement of John B. Stephenson, Dir. Natural Res. and Env't, U.S. Gov't Accountability Office) ("[L]imited funding for the Superfund program has caused delays in cleaning up some sites in recent years."); *see also* U.S. GOV'T ACCOUNTABILITY OFFICE, SUPERFUND, GAO-10-380, EPA'S ESTIMATED COSTS TO REMEDIATE EXISTING SITES EXCEED CURRENT FUNDING LEVELS, AND MORE SITES ARE EXPECTED TO BE ADDED TO THE NATIONAL PRIORITIES LIST 33 (2010) ("Not long after the authority for the taxes that served as its main source of revenue expired in 1995, Superfund trust fund started to diminish. Further, appropriated funding for cleanups has declined over time in real dollars, and the limited funding has caused delays in cleaning up some sites in recent years. The limited funding, coupled with increasing costs of cleanup, has forced EPA to choose between cleaning up a greater number of sites in a less time and cost efficient manner or cleaning up fewer sites more efficiently.").

[6] *Burlington Northern*, 556 U.S. at 613–14. Section 107 provides for recovery of response costs by both public and private plaintiffs, although litigation among private parties is more likely to be resolved by the use of equitable allocation of remediation expenses pursuant to CERCLA Section 113. Congress enacted § 113(f) to permit parties sued under §§ 106 or 107 to seek contribution from other entities responsible for site pollution. Cooper Indus. v. Aviall Serv., 543 U.S. 157, 160 (2004). Recovery under § 113 is a two-step process: first, the plaintiff must establish the defendant is liable under CERCLA; second, the court apportions the defendant's share in an equitable manner. Kalamazoo River Study Grp. v. Menasha Corp., 228 F.3d 648, 656–57 (6th Cir. 2000).

[7] U.S. GOV'T ACCOUNTABILITY OFFICE, SUPERFUND, GAO-08-841R, FUNDING AND REPORTED COSTS OF ENFORCEMENT AND ADMINISTRATION ACTIVITIES 3 (2008) [hereinafter GAO-08-841R].

[8] U.S. GOV'T ACCOUNTABILITY OFFICE, SUPERFUND, GAO-10-380, EPA'S ESTIMATED COSTS TO REMEDIATE EXISTING SITES EXCEED CURRENT FUNDING LEVELS, AND MORE SITES ARE EXPECTED TO BE ADDED TO THE NATIONAL PRIORITIES LIST 2 (2010).

began fiscal year 2009 with a $137 million balance, down from $4.7 billion in 1997.[9] Today, fund outflows substantially exceed inflows.

In recent years, Congress has resorted to appropriating general funds from the treasury to augment Superfund's diminishing contribution to EPA remediation expenses. Between 1981 and 1995—when Superfund taxing authority expired[10]—disbursements from the Superfund covered 68% of EPA's CERCLA cleanup costs; general appropriations comprised 17%, while fines, penalties, and recoveries such as § 107 actions made up only 6%.[11] The funding landscape is dramatically different today. Between 1996 and 2007,[12] Superfund allocations covered only 6% of remedial expenses. General fund appropriations rose to 59%, and the share from fines, penalties, and recoveries increased to 19%.[13] With Washington focused on the deficit, there is no reason to expect an increase in general fund appropriations for EPA. Consequently, cost recovery actions are poised to grow in relative importance.

CERCLA empowers EPA to identify, investigate, and remediate hazardous waste sites. EPA may attempt to compel legally responsible parties to initiate cleanup pursuant to § 106[14] or assume remediation efforts and seek cost recovery pursuant to § 107.[15] Private parties may also pursue § 107 cost recovery actions to seek reimbursement for voluntary or § 106 cleanups.[16] Whether the plaintiff is public or private, § 107 imposes strict liability on defendants found responsible for contamination, with a default joint and several liability scheme subject only to limited enumerated defenses.[17] Plaintiffs, especially public entities, depend on joint and several liability in § 107 actions.

The application of CERCLA's joint and several liability scheme also directly influences EPA's *ex ante* decision-making at NPL sites.[18]

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9 *Hearing*, *supra* note 5, at 3; GAO-08-841R, *supra* note 7, at 3.

10 GAO-08-841R, *supra* note 7, at 3.

11 *Id.*

12 I use data from 2007 to avoid the skewing effects of one-time stimulus expenditures. EPA's Superfund remedial program received an additional $600 million as part of the American Recovery and Reinvestment Act. *Hearing*, *supra* note 5, at 4.

13 GAO-08-841R, *supra* note 7, at 3.

14 42 U.S.C. § 9606; 2 SUSAN M. COOKE & CHRISTOPHER P. DAVIS, THE LAW OF HAZARDOUS WASTE: MANAGEMENT, CLEANUP, LIABILITY AND LITIGATION § 12.01[2] (1998).

15 42 U.S.C. § 9607; COOKE & DAVIS, *supra* note 14, at § 12.01[2].

16 *See infra* note 141 and accompanying text.

17 *See infra* Section II.A.

18 John C. Cruden, Acting Assistant Attorney Gen., Env't and Natural Res. Div., U.S. Dep't of Justice, The Supreme Court's Decision in *Burlington Northern & Santa Fe Railway Company v. United States*, Address at the Environmental Law Institute (May 29, 2009) [hereinafter Cruden Address], *available at* http://www.justice.gov/enrd/3076.htm.

Broader liability increases the probability that EPA will recover remediation costs from "covered persons."[19] The ability to obtain *ex post* judgments informs EPA's *ex ante* decision to expend scarce resources. Increased likelihood of *ex post* liability may also make defendants facing joint and several liability more amenable to settlement.[20]

In short, the scope of § 107 liability after *Burlington Northern* is immensely important, with impacts far beyond distributional effects. Contrary to much post-*Burlington* scholarship, this article contends that CERCLA's long-established joint and several liability scheme remains functionally intact. Section II examines the statutory and jurisprudential origins of joint and several liability under CERLCA and introduces the reader to *Burlington Northern*. Section III begins with an overview of scholarly responses to *Burlington Northern* and then explores recent lower court decisions that interpret and apply its holding. Finally, Section IV offers three theories to explain *Burlington Northern*'s limited impact.

II. JOINT AND SEVERAL LIABILITY UNDER CERCLA

CERCLA was born in the waning days of the 96th Congress. The hurried compromises in the legislation left many details of the Act undefined and much of its text opaque. Not surprisingly, early judicial treatment of the text was resoundingly critical. The Supreme Court thought the statutory language was "at best inartful and at worst redundant."[21]

CERCLA's legislative history does not provide much interpretive assistance. Four precursor bills and two years of tortuous legislative efforts preceded the bill.[22] No definitive committee reports on the final version of CERCLA exist, only abbreviated debates, statements from the floor, and committee reports on related bills with similar provisions.[23] Courts are wary to rely on such sparse and tangential material:

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[19] 42 U.S.C. § 9607(a). CERCLA's definition of "covered persons" is extremely broad. *Burlington Northern* also addressed the scope of arranger liability, another important variable in the effective scope of joint and several liability. This Article primarily addresses the Court's divisibility holding in *Burlington Northern*.

[20] Cruden Address, *supra* note 18.

[21] Exxon Corp. v. Hunt, 475 U.S. 355, 363 (1986).

[22] COOKE & DAVIS, *supra* note 14, at § 12.03[1]-[2].

[23] *Id.*

> [T]he legislative history [of CERCLA] must be read with caution since last minute changes in the bill were inserted with little or no explanation. Because of the haste with which CERCLA was enacted, Congress was not able to provide a clarifying committee report, thereby making it extremely difficult to pinpoint the intended scope of the legislation.[24]

Nevertheless, CERCLA's silence on key provisions required courts to divine congressional intent. Most relevant to this discussion, CERCLA affords a right of recovery to those who have incurred qualified expenses in responding to releases or threatened releases of hazardous substances.[25] But, CERCLA's text does not provide the liability standard under which defendants are to be held. District courts handling early CERCLA actions were left without legislative guidance.

A. Judicial Recognition of Joint and Several Liability Under § 107

Chief Judge Rubin of the Southern District of Ohio was the first to read joint and several liability into § 107.[26] In *United States v. Chem-Dyne Corp.*, he looked to the legislative history of the Act and found what he believed to be an implicit mandate for joint and several liability in an otherwise jumbled congressional message.[27] Both the House and Senate sponsors of the bill—Senator Jennings Randolph and Representative James Florio—stated that issues of liability that were not resolved by the legislation were to be governed by "traditional and

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[24] United States v. Price, 577 F. Supp. 1103, 1109 (D.N.J. 1983) (citations omitted); *see also* Carson Harbor Vill., Ltd. v. Unocal Corp., 270 F.3d 863, 885 (9th Cir. 2001) ("Any inquiry into CERCLA's legislative history is somewhat of a snark hunt. Like other courts that have examined the legislative history, we have found few truly relevant documents."); Artesian Water Co. v. New Castle Cnty., 851 F.2d 643, 648 (3rd Cir. 1988) ("CERCLA is not a paradigm of clarity or precision."); Dedham Water Co. v. Cumberland Farms Dairy, Inc., 805 F.2d 1074, 1080 (1st Cir. 1986) (noting CERCLA's legislative history provides only "inconclusive guidance").

[25] United States v. Atl. Research Corp., 551 U.S. 128, 138–39 (2007). CERCLA provides three provisions under which parties can seek recovery: §§ 107(a), 113(f)(1) and 113(f)(3)(B). 42 U.S.C. §§ 9607(a), 9613(f)(1), 9613(f)(3)(B) (2006). The interplay between the provisions gives rise to much litigation but is beyond the scope of this Article. For a look at the Supreme Court's recent reinterpretations of §§ 107 and 113, *see* Steven Ferry, *The Superfund Cost Allocation Liability Conflicts Among the Federal Courts*, 11 VT. J. ENVTL. L. 249 (2009), and Kenneth K. Kilbert, *Neither Joint nor Several: Orphan Shares and Private CERCLA Actions*, 41 ENVTL. L. 1045 (2011). Section III.B, *infra*, discusses the interplay between the availability of § 113 counterclaims and courts' proscribed application of § 107 apportionment.

[26] United States v. Chem-Dyne Corp., 572 F. Supp. 802, 804 (S.D. Ohio 1983).

[27] *Id.* at 808 ("A reading of the entire legislative history in context reveals that the scope of liability and term joint and several liability were deleted to avoid a mandatory legislative standard applicable in all situations which might produce inequitable results in some cases.").

evolving principles of common law" such as "joint and several liability."[28]

CERCLA's text, however, omits any reference to "traditional and evolving principles of common law" or "joint and several liability."[29] Judge Rubin was not dissuaded. He interpreted Congress' omission as a conscious choice—an allowance for judicial flexibility to avoid harsh results.[30] According to this reading, joint and several liability is an implicit component of CERCLA, and the *Restatement (Second) of Torts* should guide the application of federal common law.[31]

Joint and several liability and the application of the *Restatement (Second) of Torts* was not an inevitable reading of CERCLA. Yet, *Chem-Dyne*'s interpretation of § 107 proved persuasive. Courts universally adopted Judge Rubin's joint and several liability opinion.[32] As the Supreme Court noted nearly thirty years later, "The *Chem-Dyne* approach has been fully embraced by the Courts of Appeals."[33]

Congress also explicitly approved of Judge Rubin's interpretation.[34] In 1986, Congress amended and augmented CERCLA.[35] SARA extended CERCLA's taxing authority and modified certain provisions of the original legislation. Congress did not, however, upset Judge Rubin's reading of § 107 liability. Rather, legislators expressly approved of *Chem-Dyne*. Representative John Dingell remarked, "[T]he liability of potentially responsible parties at Superfund sites is strict,

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[28] 126 Cong. Rec. 30,932 (1980) (statement of Sen. Jennings Randolph); 126 Cong. Rec 31,966 (1980) (statement of Rep. James Florio).

[29] COOKE & DAVIS, *supra* note 14, at §12.03[5]; 42 U.S.C. § 9607.

[30] *Chem-Dyne*, 572 F. Supp. at 810 ("The term joint and several liability was deleted from the express language of the statute in order to avoid its universal application to inappropriate circumstances.").

[31] *Id.* at 810. Lower courts universally looked to the *Restatement (Second) of Torts* even before the Court explicitly approved of the *Chem-Dyne* approach in *Burlington Northern*. Whether the *Restatement (Second) of Torts* should be the basis for CERCLA liability is another question. The Eighth Circuit, for example, held the *Restatement (Second) of Torts* to be merely "the starting point" but only "to the extent that it is compatible with the provisions of CERCLA." United States v. Hercules, Inc., 247 F.3d 706, 717 (8th Cir. 2001). Richard Epstein criticized the *Chem-Dyne* approach on a theoretical basis. He explained that tort law developed from simple factual scenarios; CERCLA requires a different set of rules. Richard A. Epstein*, Two Fallacies in the Law of Joint Torts*, 73 GEO. L. J. 1377, 1377–78 (1985).

[32] *See*, *e.g.*, *In re* Bell Petroleum Servs., Inc., 3 F.3d 889, 901–02 (5th Cir. 1993); United States v. Alcan Aluminum Corp., 964 F.2d 252, 268 (3rd 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).

[33] Burlington N. & Santa Fe Ry. Co. v. United States, 556 U.S. 599, 613 (2009).

[34] William C. Tucker, *All is Number: Mathematics, Divisibility and Apportionment under* Burlington Northern, 22 FORDHAM ENVTL. L. REV. 311, 314 (2011).

[35] Superfund Amendments and Reauthorization Act of 1986 (SARA), Pub. L. No. 99-499, 100 Stat. 1613 (codified as amended in scattered sections of Title 42 of the United States Code).

joint and several, unless the responsible parties can demonstrate that the harm is divisible . . . Nothing in this legislation is intended to change the application of the uniform Federal rule of joint and several liability enunciated in the *Chem-Dyne* case."[36]

B. Joint and Several Liability as the De Facto pre-Burlington Northern Norm

The *Restatement (Second) of Torts* permits apportionment of harm among two or more causes if the harms are distinct or if there is a reasonable basis to divide a single harm among two or more causes.[37] In the years after *Chem-Dyne*, courts rarely found that these conditions for apportionment had been met.[38] Professor Martha Judy examined 160 pre-*Burlington Northern* cases citing to *Chem-Dyne*.[39] She reported only four instances in which a court apportioned liability, representing less than two percent of available decisions over a period of thirty years.[40] Before *Burlington Northern*, apportionment was theoretically available but practically difficult, making it increasingly uncommon in practice.[41]

Once a court rules as a matter of law that "there is a reasonable basis for determining the contribution of each cause to a single harm,"[42] the defendant must only prove a *reasonable* basis for apportionment.[43] The burden of proof rests on the defendant.[44] Yet, the *Restatement (Second) of Torts* allows apportionment even in the face of some ambiguity. Comments to the *Restatement (Second) of Torts* suggest rough estimates are sufficient, so long as there is a reasonable assumption that the harm is "proportionate" to the available evidence.[45] The illustrations

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[36] 132 Cong. Rec. 29,716 (1986) (statement of Rep. John Dingell); *see also id*. at 29,737 (statement of Rep. Dan Glickman) (indicating SARA recognizes *Chem-Dyne* and "traditional and evolving principles of common law").

[37] RESTATEMENT (SECOND) OF TORTS, § 433A (1965).

[38] *In re* Bell Petroleum Servs., Inc., 3 F.3d 889, 896 (5th Cir. 1993) (quoting United States v. Monsanto Co., 858 F.2d 160, 171 (4th Cir. 1988)) ("Although joint and several liability is commonly imposed in CERCLA cases, it is not mandatory in all such cases.").

[39] Martha L. Judy, *Coming Full CERCLA: Why* Burlington Northern *is Not the Sword of Damocles for Joint and Several Liability*, 44 NEW ENG. L. REV. 249, 283 (2010).

[40] *Id.*

[41] John M. Barkett, Burlington Northern: *The Super Quake and Its Aftershocks*, CHEMICAL WASTE LITIG. REP. 5, 8–9 (2009).

[42] RESTATEMENT (SECOND) OF TORTS, § 433A(1)(b) (1965).

[43] *Id.*

[44] *Id.* § 433B. The *Restatement (Second) of Torts* places the burden of proving apportionment on the defendant because of the "injustice of allowing a proved wrongdoer who has in fact caused harm to the plaintiff to escape liability merely because the harm which he has inflicted has combined with similar harm inflicted by other wrongdoers . . . ." *Id.* § 433B, cmt. d.

[45] *Id.* § 433A, cmt. d.

accompanying the *Restatement (Second) of Torts* are replete with examples of courts apportioning liability in the face of crude measures of harm.[46]

In practice, CERCLA plaintiffs obtained joint and several liability as a matter of course before *Burlington Northern*. Courts offered various rationales for denying apportionment. Some identified an uneasy fit between traditional tort liability and CERCLA liability. To these courts, the *Restatement (Second) of Torts* guides apportionment in CERCLA actions "only to the extent that it is compatible with the provisions of CERCLA."[47] Other courts examined the policy behind CERCLA and found apportionment generally inconsistent with Congress' polluter-pays legislative intent.[48] In yet a third set of cases, the defendant's evidence simply proved an insufficient basis for apportionment "despite the fact that the defendant . . . was in fact responsible for only a fraction of the contamination."[49]

Whatever the reason—or reasons—joint and several liability was the norm before *Burlington Northern*. The remainder of this Article examines whether *Burlington Northern* actually increased the availability of apportionment.

C. A Small Pesticide Operation in the Central Valley of California Has its Day in the Sun

EPA listed the defunct B&B pesticide distribution facility in Arvin, California on the NPL in October of 1989.[50] Over the next nine years, EPA[51] and the California Department of Toxic Substance Control ("DTSC") spent more than $8.2 million remediating the site.[52] The state and federal governments sued three potentially responsible parties

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[46] *See id.* § 433A, cmt. b, illus. 3–5.

[47] United States v. Hercules, Inc., 247 F.3d 706, 717 (8th Cir. 2001) (citing O'Neil v. Picillo, 883 F.2d 176, 179 n.4 (1st Cir. 1989)).

[48] United States v. Stringfellow, 661 F. Supp. 1053, 1060 (C.D. Cal. 1987) ("Imposing joint and several liability carries out the legislative intent by insuring that responsible parties will fulfill their obligations to clean up the hazardous waste facility.").

[49] Fireman's Fund Ins. Co. v. City of Lodi, 302 F.3d 928, 945 (9th Cir. 2002) (refusing to apportion); *see also* Judy, *supra* note 39, at 283.

[50] United States v. Atchison, Topeka & Santa Fe Ry. Co., No. CV-F-92-5068 OWW, 2003 WL 25518047, at *17 (E.D. Cal. July 15, 2003), *rev'd sub nom*. United States v. Burlington N. & Santa Fe Ry. Co., 520 F.3d 918, 955 (9th Cir. 2008).

[51] Cynthia Wetmore was EPA's Project Manager for the B&B cleanup. She has no relation to the author.

[52] *Atchison*, 2003 WL 25518047, at *41–42. The Railroads, joint owners of the 0.9 acre leased parcel, spent an additional $3,057,700 remediating the facility pursuant to EPA's October 1991 § 106 Administrative Order. *Id.* at *2, *42–43, *88.

("PRP") to recover their response costs. B&B, the facility operator, closed in 1988 and was insolvent by the time the case was heard in 1999.[53] That left two PRPs from which EPA and DTSC could potentially recover: Shell Oil Company ("Shell") and the Atchison, Topeka & Santa Fe Railroad (together with the co-owner of the leased parcel, the Southern Pacific Transport Company, "Railroads").[54]

Judge Wanger of the Eastern District of California conducted a lengthy bench trial that lasted from March 3 to May 14, 1999. EPA and DTSC argued for joint and several liability.[55] Shell and the Railroads adopted a "scorched-earth" defense.[56] Neither defendant acknowledged any liability for remediation costs at the B&B facility, nor did either defendant propound evidence or theories in support of apportionment.[57] Notwithstanding, Judge Wanger undertook a *sua sponte* apportionment analysis,[58] a step he conceded was a "very difficult proposition."[59] Judge Wanger entered a judgment holding the Railroads responsible for only nine percent of the remediation costs and Shell responsible for six percent.[60]

Though available in theory, scant precedent existed to justify apportionment at the B&B facility. Judge Wanger's ruling recognized as much. He acknowledged responsible parties in § 107 actions "rarely escape joint and several liability"[61] because few can meet the "stringent burden placed on them by Congress."[62] Yet, Wanger's decision exhibits discomfort in applying joint and several liability to Shell and the Railroads, largely due to the substantial orphan share[63] created by

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[53] *Id.* at *26.

[54] *Id.* at *1. Both railroad parties changed names during the course of the litigation. The Atchison, Topeka & Santa Fe Railroad became the Burlington Northern and Santa Fe Railway Company, hence the name of the subsequent Court decision.

[55] Burlington N. & Santa Fe Ry. Co. v. United States, 556 U.S. 599, 61 (2009).

[56] *Id*.

[57] *Atchison*, 2003 WL 25518047, at *82.

[58] *Id.*

[59] *Id.* (quoting Control Data v. S.C.S.C. Corp., 53 F.3d 930, 934 n. 4 (8th Cir. 1995)).

[60] *Id.* at *94–95. Shell's nexus to the site was more attenuated. B&B packaged and sold Shell's pesticides, which were delivered by Shell to the site F.O.B. delivery. Judge Wanger held Shell was an "arranger" under § 107. Such broad arranger liability was extremely controversial. Both the Ninth Circuit and Supreme Court devoted substantial ink to the issue. While important, it is beyond the scope of this Article.

[61] *Id.* at *82 (citing United States v. Colorado & E. R.R. Co., 50 F.3d 1530, 1535 (10th Cir. 1995)).

[62] *Id.* (quoting O'Neil v. Picillo, 883 F.2d 176, 183 (1st Cir. 1989)).

[63] An "orphan share" is the portion of cleanup responsibility attributable to an entity that is unable to contribute to remedial costs due to insolvency, immunity, etc. *See, e.g.*, United States v. Kramer, 953 F. Supp. 592, 595–96 (D.N.J. 1997).

B&B's insolvency. It mentions equitable factors technically irrelevant to apportionment and appeals to a general sense of fairness.

> The concept that a passive owner of a contiguous parcel, not representing more than 19% in area of a CERCLA site, operated less than 44% of the time, where substantially smaller volumes of hazardous substance releases occurred, should be strictly liable for the entire site remediation, because no other responsible party is judgment-worthy, takes strict liability beyond any rational limit.[64]

Judge Wanger issued his lengthy opinion three years after the 1999 bench trial. His 507 detailed factual findings focused on the history of the site and the scope of the cleanup. B&B operated an agricultural chemical distribution facility serving the central valley of California from 1960 to 1989. In 1975, B&B leased an additional 0.9 acres from the Railroads to augment the original 3.8 acre site. B&B used the new portion of the facility for storage—the center of operations remained on the original parcel.[65] Moreover, only two of the three chemicals of concern ("COCs") addressed by the groundwater remedy were routinely handled on the leased parcel.[66] Considering site history and the extensive sampling data that delineated the vertical and horizontal distribution of COC contamination, Judge Wanger concluded that the Railroads could not have been responsible for more than ten percent of remediation costs at the B&B facility.[67]

Relying on this qualitative sense of the parties' relative contributions, Judge Wanger proceeded to offer an ostensibly simple formula to apportion harm. The Railroad parcel represented 19.1% of the B&B facility by area. B&B used the additional area only 45% of the time during which it operated. And sampling data indicated that activities on the leased parcel did not contribute to Nemagon—the third COC—groundwater contamination. Multiplying the three factors—19.1% area by 45% time by 66% COC contribution—gave a result of 6%. Judge

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64 *Atchison*, 2003 WL 25518047, at *87.

65 *Id.* at *2.

66 *Id.* at *4–9.

67 *Id.* at *88. Judge Wanger also apportioned harm with respect to Shell. Shell appealed. Ultimately, the Supreme Court reversed, holding Shell was not a liable party under § 107(a)(3). Shell's relationship with the B&B Site was not sufficient to make Shell an "arranger." Consequently, in discussing the apportionment holding in *Burlington Northern*, I focus primarily on the Railroads' nine percent share.

Wanger then applied a 50% uncertainty factor to increase the Railroads' responsibility to 9% of the response costs at the B&B facility.[68]

Appeals followed. After hearing the case in 2005, the Ninth Circuit issued a Second Amended Opinion accompanied by a vehement dissent from the Order Denying Rehearing En Banc on March 25, 2008.[69] The panel affirmed arranger liability for Shell but reversed with respect to Judge Wanger's apportionment analysis, holding Shell and the Railroads jointly and severally liable for EPA and DTSC response costs. The Ninth Circuit's opinion focused narrowly on the second prong of the apportionment analysis—whether the defendants proved a reasonable basis for dividing the harm. It framed the question by asking whether the parties seeking apportionment "submitted evidence sufficient to establish a reasonable basis for the apportionment of liability." [70] This is a surprisingly probing question for a court purportedly engaged in clear error review.[71]

The Ninth Circuit was especially troubled by the lower court's decision to undertake an apportionment analysis *sua sponte*. How, it asked, could the defendants have presented sufficient evidence for apportioning the government's response costs if they argued for zero percent liability?[72] The panel deemed the apportionment analysis below "factually correct but legally insufficient,"[73] a conclusion criticized by the dissent to the denial for rehearing as grossly misconstruing the standard of review.[74]

The Supreme Court granted certiorari and reversed. Justice Stevens wrote the opinion for an eight-justice majority.[75] He began his opinion by acknowledging *Chem-Dyne* as the "seminal opinion" on § 107 liability[76] and confirmed a role for the *Restatement (Second) of Torts*[77]—

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[68] *Atchison*, 2003 WL 25518047, at *90–91. For a scathing critique of Judge Wanger's treatment of the scientific data underlying his apportionment analysis, see Mark R. Misiorowski & Joel D. Eagle, *The Diminishing Role of Science in CERCLA After* Burlington Northern & Santa Fe, 40 ENV'T REP. (BNA) 1205 (May 22, 2009). For a comprehensive examination of the decision's mathematical shortcomings, see Tucker, *supra* note 34.

[69] United States v. Burlington N. & Santa Fe Ry. Co., 520 F.3d 918, 926 (9th Cir. 2008).

[70] *Id.* at 942.

[71] *Id.* at 941–43.

[72] *Id.* at 941–43.

[73] *Id.* at 945.

[74] *Id.* at 956.

[75] Burlington N. & Santa Fe Ry. Co. v. United States, 556 U.S. 599, 601 (2009).

[76] *Id.* at 613.

[77] *Id.* at 614.

as opposed to the more apportionment-friendly *Restatement (Third) of Torts* discussed during oral argument.[78]

Justice Stevens then framed the apportionment question deferentially. He asked whether it was "reasonable for the court to use the size of the leased parcel and the duration of the lease as the starting point for its analysis."[79] Whereas the Ninth Circuit asked whether a legally sufficient factual basis existed for apportioning the harm, the Court asked whether Judge Wanger's analysis was reasonable. It held, "the District Court's ultimate allocation of liability is supported by the evidence."[80]

III. JOINT AND SEVERAL LIABILITY AFTER *BURLINGTON NORTHERN*

A. Scholarly Reponses to the Decision

Burlington Northern struck a chord. Scholars and practitioners rushed to interpret the opinion, and many dramatically predicted the imminent downfall of joint and several liability in § 107 actions.

Critics of the decision looked beyond the case's procedural oddities and the Court's explicit affirmation of *Chem-Dyne*. One article, ominously titled "The End of Joint and Several Liability in Superfund Litigation: From *Chem-Dyne* to *Burlington Northern*," argued that *Burlington Northern* represented a fundamental change in the law.[81] Alan Gershonowtiz spoke for many when he wrote, "joint and several liability in CERCLA actions will become the exception and not the rule."[82] Two other practitioners read the Court's pronouncement as a major blow to the effective operation of CERCLA, declaring that "*Burlington Northern* threatens to completely transform CERCLA into a 'taxpayer pays' law."[83]

Even those hesitant to interpret *Burlington Northern* as a change in the law predicted major ramifications. From the dearth of pre-

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78 Transcript of Oral Argument at 49, Burlington N. & Santa Fe Ry. Co. v. United States, 556 U.S. 599 (2009) (No. 07-1601).

79 *Burlington Northern*, 556 U.S. at 617.

80 *Id.* at 618.

81 Aaron Gershonowitz, *The End of Joint and Several Liability in Superfund Litigation: From* Chem-Dyne *to* Burlington Northern, 50 DUQ. L. REV. 83, 83–85 (2012).

82 *Id.* at 124; *see also* Barkett, *supra* note 41, at 15 ("After *Burlington Northern*, it will be the rare case that will lack the facts to make a reasonable basis for apportionment."); Rachel K. Evans, Case Comments, Burlington Northern & Santa Fe Railway Co. v. United States, 34 HARV. ENVTL. L. REV. 311, 319 (2010) (contending courts following *Burlington Northern* "will apportion harm in more cases"); Robert M. Guo, Note, *Reasonable Bases for Apportioning Harm Under CERCLA*, 37 ECOLOGY L. Q. 317, 317 (2010) (predicting liberalized apportionment in the wake of *Burlington Northern*).

83 Misiorowski & Eagle, *supra* note 68, at 2.

Burlington Northern apportionment cases, they reasoned that if § 107 cases nearly always resulted in joint and several liability before *Burlington Northern*, the lower courts must have set a high bar for proving apportionment. The handful of pre-*Burlington Northern* cases in which harm was apportioned were remarkable in their factual simplicity. Apportionment at the B&B site was far more complicated. Regardless, the *Burlington Northern* Court reinstated a divisibility analysis predicated on non-technical factors applied in a novel manner. Certainly, these authors argued, Justice Stevens was sending a message to the lower courts to engage in more liberalized apportionment. They concluded that *Burlington Northern* should result in district courts more frequently apportioning harm in the future.[84]

Not everyone was ready to pronounce a golden era of apportionment. Professor Judy preached caution. She thought *Burlington Northern* was best understood as a rebuke of the Ninth Circuit's overzealous appellate review.[85] The decision only "acknowledg[ed] district court authority to reasonably apportion harm when the facts support such an analysis."[86] Professor Judy suggested taking the Court's affirmation of *Chem-Dyne* and the *Restatement (Second) of Torts* at its word.[87] *Burlington Northern* was not a landmark apportionment decision in her opinion. At most, it warned lower courts against wielding joint and several liability indiscriminately.[88] To Professor Judy, the nearly thirty years of § 107 jurisprudence remained fundamentally intact after *Burlington Northern*.[89]

B. Lower Court Treatment of Burlington Northern

So which is it? Was *Burlington Northern* the death knell of joint and several liability or much ado about nothing? Analysis of lower court decisions since 2009 suggests the latter. Only two out of more than

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[84] Kevin A. Gaynor, Benjamin S. Lippard & Sean M. Lonnquist, *Unresolved CERCLA Issues After* Atlantic Research *and* Burlington Northern, 40 ENVTL L. REP. 11198, 11206, 11209 (2010).

[85] Judy, *supra* note 39, at 290.

[86] *Id.* at 255.

[87] *Id.* at 254–55, 290–91.

[88] *Id.* at 254.

[89] *Id.* at 254; *see also* Steve C. Gold, *Dis-Jointed? Several Approaches to Divisibility After* Burlington Northern, 11 VT. J. ENVTL. L. 307, 329 (2009) (arguing the B&B site was more complex than preceding examples of apportionment, but still rather straightforward, and thus *Burlington Northern* would not result in a landslide of apportionment cases—it only marginally eased defendant's burden in close cases).

twenty[90] cases citing to the apportionment holding in *Burlington Northern* divided harm pursuant to § 107.[91]

Lower courts initially struggled to understand the impact of *Burlington Northern*. The court in *Evansville Greenway and Remediation Trust v. S. Indiana Gas & Elec. Co.* surveyed scholarship on the Court's decision and concluded "[t]he full import of *Burlington Northern* is hotly debated."[92] But, even the *Evansville* court was not ready to conclude that *Burlington Northern* represented a sharp break with precedent. In setting a trial date for a "full airing of apportionment issues," the *Evansville* court characterized Justice Stevens's decisions as presenting "what *might* be called genuine questions of material law."[93]

Since 2009, the two courts that have apportioned harm have done so without acknowledging a change in law. The first decision followed mere months after *Burlington Northern*. In *Reichhold, Inc. v. United States Metals Refining Company*, [94] a district court in New Jersey apportioned harm at a site with a long history of metals and organics contamination. The trial took place before *Burlington Northern*, but Justice Stevens's decision apparently influenced the New Jersey court's apportionment analysis. Although the *Reichhold* court characterized *Burlington Northern* as an affirmation of *Chem-Dyne* and the *Restatement (Second) of Torts*,[95] it proceeded to apportion harm evenly between the plaintiff and defendant. It found that both parties individually caused adequate contamination to necessitate one aspect of the remediation: "The measurement is not the exact amount of metals contamination for which each was responsible . . . . [I]t is the circumstances that each was responsible for a sufficient amount of metals contamination that required the cap."[96] Because the case was litigated before *Burlington Northern*, the degree to which the Supreme Court's apportionment analysis influenced *Reichhold* is unclear. Moreover, the court's holding relies entirely on § 107, although the United States Metal Refining Company counterclaimed under § 113.[97]

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[90] *See infra* Appendix A.

[91] City of Gary v. Shafer, No. 2:07-CV-56-PRC, 2011 WL 3439239 (N.D. Ind. Aug. 5, 2011); Reichhold Inc. v. U.S. Metals Ref. Co., 655 F. Supp. 2d 400 (D.N.J. 2009).

[92] 661 F. Supp. 2d 989, 1012 (S.D. Ind. 2009).

[93] *Id.* at 1012–13 (emphasis added). The case settled before trial. Evansville Greenway and Remediation Trust v. S. Indiana Gas and Elec. Co., No. 3:07-cv-66-SEB-WGH, 2010 WL 3781565 (S.D. Ind. Sep. 20 2010).

[94] 655 F. Supp. 2d 400 (D.N.J. 2009).

[95] *Id.* at 449.

[96] *Id.*

[97] *See infra* text accompanying notes 141–143.

The other post-*Burlington Northern* apportionment opinion also appears unusual. In *City of Gary v. Shafer*, a court in the Northern District of Indiana bifurcated the liability and damages phases of the city's § 107 action. The liability phase was held in the fall of 2009.[98] On May 25, 2011, the court held a one-day damages hearing. The hearing was short because the issue was narrowly defined. All parties agreed to limit the damages phase to a determination of an "allocation" of one of the defendants' proportionate share.[99] Paul's Auto Yard owned the facility only briefly, and its activity at the site was limited to "*de minimus* moving of contaminated soil" over an exceedingly small portion of the site.[100] The court credited expert testimony indicating that Paul's Auto Yard moved no more than 0.24% of the total volume of contamination on only one part of the property.[101]

Whether a defendant's contribution is *de minimus* or substantial, § 107 liability is presumed to be strict, joint, and several. Unless it can prove an affirmative defense or successfully argue for apportionment, an entity identified as a PRP is liable for the entire costs of remediation incurred by the government.[102] The statute does not provide a *de minimus* exception. Equitable considerations are to "play no role in the determination of whether joint and several liability is appropriate or whether liability should be apportioned between the parties in a given case."[103] Regardless, the *City of Gary* court clearly relied on equitable factors to "apportion liability."[104] Elsewhere, the court classifies its holding as an "*allocation* of liability" premised on § 113 counterclaims and state law equitable analysis.[105] The overall tenor of the opinion suggests that the court did not engage in a pure § 107 apportionment analysis. Although it cited *Burlington Northern* for the proposition that "liability may be apportioned, if appropriate," *City of Gary* should not be viewed as a generally applicable example of a new era of liberalized apportionment under § 107.

Post-*Burlington Northern* jurisprudence generally indicates that joint and several liability continues to be the rule, while apportionment

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98 City of Gary v. Shafer, No. 2:07-CV-56-PRC, 2011 WL 3439239, at *1 (N.D. Ind. Aug. 5, 2011).

99 *Id.* at *1.

100 *Id.* at *2.

101 *Id.*

102 42 U.S.C. § 9607(a)(4)(A) (2006).

103 *Shafer*, 2011 WL 3439239, at *3 (citing Burlington N. & Santa Fe Ry. Co. v. United States, 556 U.S. 599, 615 n.9 (2009)).

104 *Id.* at *3.

105 *Id.* (emphasis added).

remains the exception. Since 2009, the majority of lower courts considering divisibility arguments cite *Burlington Northern* as support for applying *Chem-Dyne* in the traditional fashion, not as a change in law. In *United States v. Iron Mountain Mines*, the court held that "*Burlington Northern* simply reiterated the law as established in 1983 by *Chem-Dyne*" and did not constitute a change in law.[106] A South Carolina district court also undertook an in-depth analysis of the *Burlington Northern* decision. In *Ashley II of Charleston, LLC v. PCS Nitrogen, Inc.*, the court thoroughly examined pre-2009 case law and *Burlington Northern*, as well as intervening scholarship and court decisions.[107] It concluded that "*Burlington Northern* did not change the law with regard to divisibility, but merely recognized a reasonable basis for apportionment based on the facts of that particular case."[108]

At most, *Burlington Northern*'s precedential effect appears to be limited to evidentiary concerns. Even with respect to these issues, *Burlington Northern* reiterated the status quo. It was not a mandate to adopt the *Restatement (Third) of Tort*'s more liberal apportionment analysis.[109] The Court may have eased the burden on defendants seeking to avoid joint and several liability. But, if it did so, it was only "by allowing courts more leeway in determining whether the damage in question is capable of being apportioned and, then, in divvying up the damage."[110] A proportional relationship between defendants' evidence and the amount of harm caused remains the basis for divisibility, though perhaps the degree of fit between the variables has been relaxed.[111] Tellingly, even the courts that interpreted *Burlington Northern* as a charge to accept less precise factual bases for apportionment have held defendants jointly and severally liable.[112]

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106 United States v. Iron Mountain Mines, Inc., No. 91-0768-JAM-JFM, 2010 WL 1854118, at *3 (E.D. Cal. May 6, 2010).

107 791 F. Supp. 2d 431, 482–84 (D.S.C. 2011).

108 *Id.* at 483. After submitting this article, but prior to publication, the Fourth Circuit affirmed, holding "*Burlington Northern* neither mandates these 'simplest of considerations,' nor establishes their presumptive propriety in every case . . . [f]or the factual scenario in *Burlington Northern* was relatively simple." PCS Nitrogen, Inc. v. Ashley II of Charleston, LLC, 714 F.3d 161, 183 (4th Cir. 2013).

109 Burlington N. & Santa Fe Ry. Co. v. United States, 556 U.S. 599, 614 (2009).

110 Appleton Papers Inc. v. Whiting, No. 08-C-16, 2009 WL 3931036, at *1 (E.D. Wis. Nov. 18, 2009) (recognizing a potentially liberalized burden of proof but refusing to apportion harm).

111 3000 E. Imperial, LLC v. Robertshaw Controls Co., No. 08-3985, 2010 WL 5464296 (C.D. Cal. Dec. 29, 2010).

112 *Id.* at *9–11; *Appleton Papers*, 2009 WL 3931036, at *1–2.

Additionally, courts continue to cite pre-*Burlington Northern* cases in analyzing § 107 apportionment defenses.[113] If *Burlington Northern* was the earthquake scholars predicted, cites to pre-2009 apportionment decisions would no longer be persuasive.

IV. THREE THEORIES FOR THE RESILIENCE OF JOINT AND SEVERAL LIABILITY AFTER *BURLINGTON NORTHERN*

Why have the predictions of joint and several liability's demise proven to be greatly exaggerated? First, courts have overwhelmingly treated *Burlington Northern* as factually and procedurally unique. Second, policy arguments in favor of public plaintiffs seeking to hold private defendants jointly and severally liable remain compelling. Third, plaintiffs have likely been effective in blunting any post-*Burlington Northern* liberalization of the defendant's burden of proving a factual basis for divisibility.

A. Unique Facts and a Unique Standard of Review in Burlington Northern

Burlington Northern is not remarkable because of what it *says*. The decision, if anything, is surprising because of what it *does*—reinstating a district court's *sua sponte* apportionment analysis for a site more complicated than any site for which divisibility had previously been held appropriate. Justice Stevens's discussion of CERCLA apportionment comports with lower court practice. He held the *Restatement (Second) of Torts* applies to § 107 actions[114] and described *Chem-Dyne* as the "seminal opinion" on the subject.[115] Taken at face value, *Burlington Northern* is an affirmation of thirty years of § 107 jurisprudence.

To find support in *Burlington Northern* for a more liberal approach to divisibility requires reading between the lines of the decision. It requires an examination of the factual underpinnings of the B&B site. This is a tall order.

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[113] Pakootas v. Teck Cominco Metals, Ltd., 868 F. Supp. 2d 1106, 1123 (E.D. Wash. 2012); *Ashley II of Charleston, LLC*, 791 F. Supp. 2d at 481–82; Bd. of Cnty. Comm'rs v. Brown Grp. Retail, Inc., 768 F. Supp. 2d 1092, 1117–18 (D. Colo. 2011); ITT Indus., Inc. v. Borgwarner, Inc., 700 F. Supp. 2d 848, 877–78 (W.D. Mich. 2010); United States v. Saporito, 684 F. Supp. 2d 1043, 1061–62 (N.D. Ill. 2010); *3000 E. Imperial*, 2010 WL 5464296, at *8–9; *Appleton Papers*, 2009 WL 3931036, at *4.

[114] Burlington N. & Santa Fe Ry. Co. v. United States, 556 U.S. 599, 614 (2009).

[115] *Id.* at 613.

Moreover, even if a court proves willing to undertake an in-depth analysis of *Burlington Northern*'s factual basis, liberalized apportionment does not necessarily follow. For *Burlington Northern* to presage the rise of an era of apportionment, plaintiffs must demonstrate factual similarity between the B&B facility and cases that follow. As the discussion below indicates, this is unlikely.

Only three solvent parties—the EPA/DTSC, Shell, and the Railroads—were involved in *Burlington Northern*. Many NPL sites, especially landfills, are contaminated with a veritable toxic soup from dozens or even hundreds of PRPs. The B&B facility covered a small area in a relatively undeveloped location around which there were no neighboring facilities contributing to site contamination. In addition, EPA's B&B cleanup focused on only three related COCs which could all be remediated using the same method.[116]

Soil sampling data from the B&B site offered a surprising degree of certainty regarding the sources of groundwater contamination. Vertical gaps in soil contamination indicated that spills on the Railroad parcel likely did not reach groundwater and thus did not contribute to the costly groundwater remedy. There was scant evidence to suggest any residual soil contamination on the Railroad parcel would later reach groundwater due to the arid climate and the volatile nature of the COCs. In short, the B&B site presented an atypical set of circumstances.[117]

Even assuming that a court was willing to thoroughly study Judge Wanger's analysis, it would be a mistake to read the Supreme Court's holding as an explicit affirmation of his approach. *Burlington Northern* was an appellate standard of review decision. It did not hold *de novo* that a three-part apportionment formula (time of operation by area of operation by COC contribution) is a *per se* reasonable basis to divide harm. Rather, the Court held that Judge Wanger did not commit clear error in apportioning B&B remediation expenses according to such factors.

The *Restatement (Second) of Torts* emphasizes that apportionment is appropriate where a *reasonable* factual basis exists for dividing a single harm between multiple causes.[118] District court fact-finders are best positioned to analyze, question, and interpret the complicated data and

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[116] Reply Brief for Petitioners at 19–20, Burlington N. & Santa Fe Ry. Co. v. United States 556 U.S. 599 (2009) (No. 07-1601) 2009 WL 1261924.

[117] Judy, *supra* note 39, at 287; *see also Teck Cominco*, 868 F. Supp. 2d 1119 ("In *BNSF*, the Supreme Court found that a single harm was capable of apportionment (divisible), but this was because of unique facts.").

[118] RESTATEMENT (SECOND) OF TORTS, § 433A (1965).

theories inherent in such an analysis. Appellate courts are ill equipped for such tasks, especially where the apportionment analysis hinges on detailed factual findings.[119]

Courts spend years—if not decades—familiarizing themselves with CERCLA sites. Understanding which parties caused what portion of contamination is extremely challenging. Sampling of site media (soil, soil-gas, groundwater, surface-water, etc.) presents at best an incomplete picture. Disposition of contaminants depends on indeterminate variables such as the rate of migration through various site media, attenuation from natural processes, and synergistic chemical interactions. Experts often present competing theories. Rarely, if ever, do models based on site sampling data offer definitive proof of the source of contamination.

Even if the source of contamination is known, it does not necessarily follow that definitive proof is available to demonstrate which party is responsible. Historical records of site operations are rarely complete. Understanding what happened on a site, when, and who was responsible requires painstaking reconstruction of operational practices. Soil sampling may prove leakage from a drum storage area, but determining how much of a given chemical spilled in any one year may prove difficult. Anecdotal evidence is frequently the only information available. Apportioning harm among successive owners is therefore functionally impossible at the vast majority of hazardous waste sites. Moreover, disputes can and do arise with respect to the choice of remedy and whether one party's release would have been sufficient to necessitate the cleanup.[120]

Many post-*Burlington Northern* articles reasoned from this uncertainty that the *Restatement (Second) of Torts* could not countenance apportionment at most hazardous waste sites. To these authors, the *Burlington Northern* decision is inexplicable.[121] Despite his detailed factual findings, Judge Wanger could not offer any degree of certainty, a fact he acknowledged by including a fifty percent uncertainty factor.[122] Many scholars misinterpreted the Court's approval of this rough apportionment analysis. They ignored the deferential standard of appellate review applied to fact-bound reasonability

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119 Judy, *supra* note 39, at 290.

120 *See, e.g.*, Reichhold Inc. v. U.S. Metals Ref. Co., 655 F. Supp. 2d 400, 448–49 (D.N.J. 2009); Gold, *supra* note 89, at 345–58.

121 *See supra* text accompanying notes 81–84.

122 United States v. Atchison, Topeka & Santa Fe Ry. Co., No. CV-F-92-5068 OWW, 2003 WL 25518047, at *91 (E.D. Cal. July 15, 2003).

analyses and instead viewed *Burlington Northern* as a significant liberalization of evidentiary requirements.[123]

Long before *Burlington Northern*, the Third Circuit recognized "the intensely factual nature of the 'divisibility' issue."[124] As discussed above, § 107 apportionment litigation is highly nuanced. It is a well-established rule that appellate deference increases in proportion to the factual complexity of a lower court holding.[125] This suggests appellate courts should tread with caution in questioning lower courts' fact-intensive reasonability analyses.

In *Burlington Northern*, the Ninth Circuit took a more active approach. It asked whether Shell and the Railroads "submitted evidence sufficient to establish a reasonable basis for the apportionment of liability" rather than whether the district court had abused its discretion in holding that the parties had met their burden.[126] Ultimately, the Ninth Circuit deemed Judge Wanger's analysis "factually correct but legally insufficient."[127]

Judge Bea filed a vigorous dissent to the denial for rehearing *en banc*. Eight other justices joined—including Chief Judge Kozinski.[128] The dissent criticized what it viewed as impermissible appellate fact-finding.[129] It argued that the court had misconstrued the standard for appellate review of § 107 apportionment analyses and, in so doing, had created an artificially high standard of proof for demonstrating a reasonable basis to apportion harm.[130]

Justice Stevens and seven other members of the Court agreed with the dissent below that the Ninth Circuit's review of Judge Wanger's apportionment analysis was too stringent.[131] He framed the question

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123 Professor Judy was one of the only scholars to explain the Court's decision in *Burlington Northern* by using an appellate standard of review analysis. Judy, *supra* note 39, at 290.

124 United States v. Alcan Aluminum Corp., 964 F.2d 252, 269 (3rd Cir. 1992).

125 DAVID G. KNIBB, FEDERAL COURT OF APPEALS MANUAL § 31:4 (5th ed. 2007).

126 United States v. Burlington N. & Santa Fe Ry. Co., 520 F.3d 918, 942 (9th Cir. 2008).

127 *Id.* at 945.

128 *Id.* at 952 (Bea, J., dissenting).

129 *Id.* at 959.

130 *Id.* at 953–54.

131 Scholars and practitioners have argued that the Court must have intended to fundamentally alter apportionment jurisprudence. Why would the court have granted *certiorari* merely to affirm the importance of *Chem-Dyne*? This argument overlooks two key elements of *Burlington Northern*. First, the Court chastised the Court of Appeals for the Ninth Circuit for second guessing a fact-intensive lower court ruling. Second, the Court was concerned with the Ninth Circuit's extremely broad conceptualization of arranger liability. Transcript of Oral Argument at 1–6, Burlington N. & Santa Fe Ry. Co. v. United States, 556 U.S. 599 (2009) (No. 07-1601); *see also* United States v. Burlington N. & Santa Fe Ry. Co., 520 F.3d 918, 952–54 (Bea, J., dissenting) (noting that the panel's holding creates both inter- and intra-circuit splits regarding the

quite differently than the Ninth Circuit. He pointed to the district court's extensive factual findings and asked: do the facts in the record reasonably support apportionment?[132] The Court had little difficulty holding in the affirmative. Even Justice Ginsburg in dissent did not approve of the Ninth Circuit's searching appellate review. She would not have affirmed the Ninth Circuit's joint and several liability holding; she only voiced discomfort with *sua sponte* apportionment. Justice Ginsburg preferred remand in order to "give all parties a fair opportunity to address [the district court's] endeavor to allocate costs."[133]

Burlington Northern did not upend settled apportionment law nor mandate the curtailment of joint and several liability at the district court level. Rather, the decision cautioned appellate courts not to disturb lower court opinions built on thorough analysis of site-specific data. The Court signaled that appellate review should ensure the sufficiency of the fact-finding underlying apportionment but should not directly question the result, as the Ninth Circuit did in *Burlington Northern*.[134] If anything, *Burlington Northern* empowered lower courts at the expense of courts of appeals.

B. CERCLA's Polluter-Pays Policy is Still Persuasive

Nearly four years after *Burlington Northern*, there is no evidence of a golden era of apportionment in the newly empowered district courts, in part because the polluter-pays congressional intent of CERCLA remains relevant.

Any party with even a short and attenuated nexus to a hazardous waste site may be liable for 100% of cleanup costs pursuant to § 107.[135]

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scope of arranger liability). Many *amici* solely addressed the arranger issue. *See, e.g.*, Brief for Gen. Elec. Co. as Amicus Curiae Supporting Petitioner, Burlington N. & Santa Fe Ry. Co. v. United States 556 U.S. 599 (2009) (No. 07-1601) 2008 WL 5417430; Brief for Chamber of Commerce of the U.S. as Amici Curiae Supporting Petitioner, Shell Oil Co. v. United States 556 U.S. 599 (2009) (No. 07-1607) 2008 WL 2900040; Brief for Int'l Ass'n. of Def. Counsel as Amicus Curiae Supporting Petitioner, Shell Oil Co. v. United States 556 U.S. 599 (2009) (No. 07-1607) 2008 WL 2961328.

132 Burlington N. & Santa Fe Ry. Co. v. United States, 556 U.S. 599, 617 (2009).

133 *Id.* at 623 (Ginsburg, J., dissenting).

134 The Fourth Circuit appears to remain deferential to lower court apportionment analyses. After submitting this article, but prior to publication, the Fourth Circuit affirmed a district court's refusal to apportion, holding "[c]learly, after *Burlington Northern,* apportionment necessarily remains a fact-intensive, site-specific determination." PCS Nitrogen, Inc. v. Ashley II of Charleston, LLC, 714 F.3d 161, 183 (4th Cir. 2013).

135 COOKE & DAVIS, *supra* note 14, at § 12.03[4][d]; ROBERT L. GLICKSMAN ET AL., ENVIRONMENTAL PROTECTION: LAW AND POLICY 894–95 (5th ed. 2007).

Even though this joint and several liability raises fairness concerns, the policy behind CERCLA actually envisions such a result. Despite CERCLA's legislative shortcomings, the statute's primary aim is apparent: Congress meant to create a scheme to address hazardous waste sites in which private and public parties would each play important roles in remediating the past excesses of American industrialization. The Second Circuit recognized as much in 2010, emphasizing that "Congress made past and present owners, and others, liable for the hazardous material they contributed."[136] Where entities with past involvement with the site remain solvent, Congress evinced a preference for the polluter to shoulder the financial burden.[137] The Superfund was created primarily to fund EPA's cleanup of orphaned sites.

Before *Burlington Northern*, courts emphasized the polluter-pays undercurrent of CERCLA. As early as 1982, a federal court in Minnesota strained to interpret CERCLA so as to hold solvent responsible parties liable: "CERCLA should be given a broad and liberal construction. The statute should not be narrowly interpreted to . . . limit the liability of those responsible for cleanup costs beyond the limits expressly provided."[138] Nothing in *Burlington Northern* upsets this reading. Courts continue to discuss the remedial nature of CERCLA in apportionment decisions. Polluter-pays remains a powerful undercurrent of CERCLA jurisprudence. Section 107 actions still proceed under the theory that the cost of cleanup should be assigned "to those responsible for creating or maintaining the hazardous conditions presented."[139]

To pursue a § 107 action, a plaintiff must have incurred response costs.[140] A private plaintiff will spend money on investigation and remediation—whether voluntarily, as part of a settlement with government agencies, or pursuant to an Administrative Order—only if it has a sufficient nexus to the site.[141]

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136 Niagara Mohawk Power Corp. v. Chevron U.S.A., Inc., 596 F.3d 112, 130 (2d Cir. 2010).

137 126 CONG. REC. S14,964 (daily ed. Nov. 24, 1980) (statement of Sen. Jennings Randolph); 126 CONG. REC. S14,973 (daily ed. Nov. 24, 1980).

138 United States v. Reilly Tar & Chem. Corp., 546 F. Supp. 1100, 1112 (D. Minn. 1982).

139 N.Y. State Elec. & Gas Corp. v. FirstEnergy Corp., 808 F. Supp. 2d 417, 486 (N.D.N.Y. 2011).

140 United States v. Atl. Research Corp., 551 U.S. 128, 131 (2007).

141 *Id.* at 134 (explaining that such a private plaintiff would likely face a § 113 contribution counterclaim and that as a practical matter, nearly all non-governmental § 107 plaintiffs face § 113 counterclaims).

Therefore, CERCLA's polluter-pays policy is not implicated to the same degree where a private entity is situated to bring a § 107 action. When a private plaintiff seeks cost recovery, both the plaintiff and defendant are likely responsible to some degree for past site contamination. Requiring private defendants to prove a reasonable basis of apportionment with a high degree of evidentiary certainty in order to avoid joint and several liability may be harsh (assuming a § 113 counterclaim is not available). But, CERCLA does not evince a preference between two or more private parties responsible for site contamination because both are polluters. A polluter pays no matter how the cleanup costs are divided. While more liberal apportionment may avert the severe decree of joint and several liability, the availability of a § 113 counterclaim moots the point.

A more flexible and equitable allocation analysis for private litigants may give "fairer" results than apportionment. Unlike § 107, § 113 permits a court to engage in equitable allocation of liability between the parties. Section 113 "affords the court broad discretion to deal with each situation by creative means, considering all of the equities and balancing them in the interests of justice."[142] The analysis is less factually demanding, less technical, and less likely to be overturned on appeal. A court could undertake a § 107 apportionment analysis and then determine whether to equitably allocate harm under the defendant's § 113 counterclaim. In practice, courts do not take this additional step. The simplest route to assigning liability is to hold defendants jointly and severally liable and then allocate harm using equitable factors.[143] Plaintiffs' § 107 claims become "purely academic."[144] It is therefore unsurprising that most § 107 cases involving private parties are decided on equitable § 113 bases.

Government plaintiffs are less likely to face § 113 counterclaims. Defendants can successfully argue a § 113 claim only if the governmental plaintiff is also legally responsible for harm at the site (such as a Department of Defense facility that was later privatized or a private facility purchased and converted to public use). As a result,

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142 New York v. Solvent Chem. Co., 685 F. Supp. 2d 357, 425–26 (W.D.N.Y. 2010).

143 *See, e.g.*, Bd. of Cnty. Comm'rs v. Brown Grp. Retail, Inc., 768 F. Supp. 2d 1092, 1119 (D. Colo. 2011) (finding insufficient evidence to apportion but proceeding to allocate harm equitably); United Alloys, Inc. v. Baker, 797 F. Supp. 2d 974, 999, 1001 (C.D. Cal. 2011) (using equitable factors to allocate harm).

144 N.Y. State Elec. & Gas Corp., 808 F. Supp. 2d at 489; *see also Board of Cnty. Comm'rs*, 768 F. Supp. 2d at 1119 (holding the defendant jointly and severally liable and then allocating harm pursuant to a § 113 counterclaim).

divisibility may be the only viable defense when a public entity brings a § 107 cost recovery action.

CERCLA policy strongly encourages joint and several liability in favor of public plaintiffs. First, a court must necessarily find the private defendant(s) liable for at least some harm at the site for an apportionment defense to even be relevant. Joint and several liability then places the entire responsibility for cleanup at the feet of the private party. Apportionment, on the other hand, forces the public to shoulder some of the burden. Even if *Burlington Northern* arguably empowered lower courts to apportion more liberally, the Court did not require divisibility. The absence of widespread apportionment in the years since *Burlington Northern* may be in part the result of policy implicitly coloring courts' analyses.[145] Pure § 107 actions pit the public against a culpable defendant; in such situations, joint and several liability remains an attractive result even after *Burlington Northern*.

C. Courts Adapt, Defendants Adapt, So Why Wouldn't Plaintiffs?

Predictions of a golden era of apportionment following *Burlington Northern* are premised on an eased evidentiary burden for proving apportionment. As a result, defendants may seek divisibility more aggressively. Judges may even be empowered to divide harm more freely on a given set of facts. But, plaintiffs have not rested on their laurels. If defendants are ready to propound apportionment more aggressively, plaintiffs are prepared to argue with equal fervor for joint and several liability.

The defendants' litigation posture in *Burlington Northern* was unusual. Neither Shell nor the Railroads presented a divisibility defense.[146] Both took a "scorched earth" approach, vehemently opposing any liability for harm at the B&B facility.[147] The defendants argued they

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[145] Post-*Burlington Northern* courts do not appear to explicitly rely on CERCLA's polluter-pays policy objective in evaluating apportionment defenses levied against public plaintiffs. But, the issue is not far beneath the surface. Non- public entities often cite policy supporting joint and several liability in their briefs. *See, e.g.*, La Plata's Motion for Summary Judgment on RCRA and CERCLA Liability at 1, Bd. of Cnty. Comm'rs v. Brown Grp. Retail, Inc., 768 F. Supp. 2d 1092 (D. Colo. 2011) (No. 08-cv-00855 LTB-KMT) ("This case is about making the polluter pay for the investigation costs of environmental contamination and for the costs to remediate the contamination."); United States' Memorandum in Support of Motion for Partial Summary Judgment on Liability Against Defendants James Y. Saporito and Paul Carr at 8, United States v. Saporito, 684 F. Supp. 2d 1043 (N.D. Ill. 2010) (No. 107CV03169) ("As Congress intended when it enacted CERCLA, taxpayers should not bear the burden of [cleanup] cost[s].").

[146] United States v. Atchison, Topeka & Santa Fe Ry. Co., No. CV-F-92-5068 OWW, 2003 WL 25518047, at *82 (E.D. Cal. July 15, 2003).

[147] *Id.* at *82.

should be responsible for zero percent of the cleanup costs.[148] This litigation strategy informed the government plaintiffs' litigation posture. No apportionment defense meant no rationale for presenting evidence against divisibility. As a result, the parties "effectively abdicated providing any helpful arguments to the court and . . . left the court to independently perform the equitable apportionment analysis" the court deemed to be "demanded by the circumstances of the case."[149]

Apportionment under the *Restatement (Second) of Torts* is intensely factual. Some uncertainty is acceptable, but the proponent must be able to demonstrate that the variable proposed as the basis for divisibility is at least "proportionate" to the harm.[150] This is no easy task. Typical measures such as the length of time a party is involved with the site, area of operation, or geographic extent of chemical storage might initially appear attractive. Such variables could conceivably offer a reasonable basis for apportionment, as they did in *Burlington Northern*.[151] Yet, a measure only approximates the resulting harm if the proponent can demonstrate that other variables remain relatively constant. This is easier said than done at complex hazardous waste facilities, especially if the plaintiff seeking joint and several liability is prepared to rebut an apportionment defense.

Parties litigating a CERCLA cost recovery action have access to reams of site information, even before discovery commences. Investigation and remediation at NPL sites can last decades.[152] Consultants compile site histories using company records, old aerial photographs, and interviews with individuals having a connection to the site (former employees, contractors, neighbors, delivery personnel, etc.). Environmental data are collected. Engineers build, test, and rebuild contaminate fate and transport models. Stakeholders design remediation, discuss plans at public hearings, implement those designs, and then often reconfigure.[153] EPA makes volumes of data and detailed plans available to the public.[154]

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148 Burlington N. & Santa Fe Ry. Co. v. United States, 556 U.S. 599, 615 (2009).

149 *Id.*

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

151 *See supra* text accompanying notes 54–67.

152 EPA added the B&B facility to the NPL on October 4, 1989. The site remains listed today. *Pacific Southwest, Region 9: Superfund, Brown & Bryant, Inc. (Arvin Plant)*, U.S. ENVTL. PROT. AGENCY, http://yosemite.epa.gov/r9/sfund/r9sfdocw.nsf/7508188dd3c99a2a8825742600743735/2d7630cfb88e354b88257a47005fc05f!OpenDocument (last visited Nov. 25, 2012) [hereinafter B&B Site Overview].

153 *See, e.g.*, U.S. ENVTL. PROT. AGENCY, EPA SUPERFUND RECORD OF DECISION: BROWN & BRYANT, INC. (ARVIN PLANT) § III (1993), *available at*

If site data support a colorable claim, a defendant facing the prospect of joint and several liability can be expected to plead a divisibility defense. Environmental remediation of NPL sites is costly, and the liability at stake is potentially enormous.[155] Both sides will be incentivized to invest heavily in discovery, retaining experts, and litigating disputed apportionment defenses. Courts generally permit extensive discovery due to the factually intensive nature of apportionment analyses, making summary judgment unusual.

Even assuming apportionment is theoretically available, it is the defendants' burden to persuade the court of a reasonably proportionate measure of harm.[156] The analysis is intensely factual and site specific. As the Seventh Circuit emphasized in 2012, "there is not necessarily one universal way that we should approach apportionment in pollution cases. Instead, apportionment will vary depending on how the harm that flows from pollution is characterized."[157] Burdens of production and persuasion rest with the proponent of apportionment. To prove apportionment, defendants will generally need to offer expert witnesses. The Federal Rules of Civil Procedure ("FRCP") mandate the filing of expert reports and call for expert depositions.[158] As a result, plaintiffs have ample opportunity to explore each expert's opinion. Forewarned plaintiffs will have an opportunity to contest divisibility theories both procedurally and factually.

Plaintiffs facing an apportionment defense built on the foundation of expert testimony will often have a powerful procedural weapon in their arsenal, one that was unused by the government plaintiffs in *Burlington Northern—Daubert* motions. Judge Wanger apportioned harm at the B&B facility *sua sponte*, using extremely simplified measures of apportionment. He ignored confounding variables, which were potentially fatal to the validity of his analysis. The Railroads and Shell did not argue divisibility. Consequently, neither defendant presented expert testimony in support of a theory of apportionment.[159]

Such a litigation posture is unlikely to be repeated. Post-*Burlington Northern*, defendants will almost certainly offer apportionment experts.

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www.epa.gov/superfund/sites/rods/fulltext/r0994108.pdf.

154 B&B Site Overview, *supra* note 152.

155 Remediation of the relatively straightforward B&B facility cost well north of $10 million. *See supra* text accompanying note 52.

156 Burlington N. & Santa Fe Ry. Co. v. United States, 556 U.S. 599, 614 (2009); Chem-Nuclear Sys., Inc. v. Bush, 292 F.3d 254, 259–61 (D.C. Cir. 2002).

157 United States v. NCR Corp., 688 F.3d 833, 841 (7th Cir. 2012).

158 FED. R. CIV. P. 26.

159 *See supra* note 148.

Plaintiffs will in turn challenge these experts with *Daubert* motions.[160] An expert who fails to provide sufficient scientific support for his theory of divisibility risks exclusion. He must offer an adequate basis and methodology for suggesting that his proposed measure (time, area, etc.) is proportionate to the harm. Simple apportionment formulas might be attractive to post-*Burlington Northern* defendants, but overly simplified measures may never reach the fact-finder if the propounding expert ignores confounding variables or makes mathematical errors like those seen in *Burlington Northern*.[161] *Daubert* provides a practical limitation on the degree to which apportionment analyses can be simplified.

Assuming defendants' experts survive *Daubert* challenges, apportionment still does not necessarily follow. If *Burlington Northern* encouraged defendants to pursue apportionment more aggressively, the decision also alerted plaintiffs to the risk of divisibility. John C. Cruden, Acting Assistant Attorney General for the Environment and Natural Resources Division of the Department of Justice, warned prospective defendants that the federal government is prepared to vigorously challenge apportionment defenses.[162] He emphasized *Burlington Northern*'s procedural anomalies—the government "never had the opportunity to offer proof to the District Court of the defendant's joint and several liability."[163] Now on notice, the government will "be prepared to back up our position with scientific evidence."[164]

In order for the defendant to be held jointly and severally liable, a § 107 plaintiff need not affirmatively prove that harm at the hazardous waste site is incapable of apportionment.[165] Joint and several liability is the default rule. Once a § 107 plaintiff meets its burden, joint and several liability lies, unless a defendant proves apportionment (assuming a § 113 counterclaim is unavailable). This procedural nuance is critical.

Defendants seeking apportionment have traditionally been held to shoulder both the burden of production and the burden of persuasion.[166]

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[160] Misiorowski & Eagle, *supra* note 68, at 1–3 (criticizing the lower court's decision in *Burlington Northern* for, among other errors, using a crude non-technical formula).

[161] Tucker, *supra* note 34, at 327–36.

[162] Cruden Address, *supra* note 18.

[163] *Id.* at 7.

[164] *Id.*

[165] United States v. Saporito, 684 F. Supp. 2d 1043, 1061 (N.D. Ill. 2010); RESTATEMENT (SECOND) OF TORTS, § 433B (1965).

[166] *Burlington Northern* recognized the burden of proving apportionment remains at all times on the party seeking apportionment, but the Court did not specify the precise nature of the

Any defense theory of apportionment must prove a proportional fit between the proposed measure of divisibility and the resulting harm. Plaintiffs aware of *Burlington Northern* and forewarned of the defense theory of apportionment will be in a position to respond. Plaintiffs need not prove an alternative theory of apportionment. Joint and several liability will lie so long as plaintiffs can undermine defendants' burden of proving the reasonability of each proposed measure of apportionment. Plaintiffs' rebuttal could take the form of evidence regarding changes in plant production volumes or waste disposal practices. Synergistic contaminant interactions, uncertain chemical migration pathways, or off-site pollutant contributions are but a few examples of potential confounding variables. With the burden of proof resting on the defendants' shoulders, plaintiffs hold the high ground.

How can plaintiffs' preparation influence the success of an apportionment defense? Consider a hypothetical wood treating plant that has been operated for 100 years on a five-acre site. The plant's location is unique. It is situated on a spit of land jutting out into a little-used bay, isolated from all other industrial operations. Three entities owned and operated the facility. All three owner-operators produced the same creosote treated wood products. Company A built the plant and ran operations for the first twenty-five years. Company B purchased the facility and continued operations for another twenty-five years. Company C then owned and operated the facility for the final fifty years before shutting the business down on the plant's 100th anniversary. Shortly thereafter, Company C filed for bankruptcy. Successors in interest to Companies A and B remain solvent.

Area residents began noticing oily seeps along the shoreline in the years after Company C shuttered the facility. Site sampling data indicate widespread creosote contamination but no other COCs. Due to the plant's remote location, any contamination on or near the site can definitively be traced to the wood treating operation. Additional investigations by EPA and state agencies reveal widespread creosote contamination of soil and groundwater at the former plant. With no viable current owner, government agencies remediate the site and bring a § 107 cost recovery action against companies A and B. Defendants

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burden—a preponderance of the evidence, clear and convincing, more probable than not, etc. Burlington N. & Santa Fe Ry. Co. v. United States, 556 U.S. 599, 614 (2009). The *Restatement (Second) of Torts* default standard is preponderance of the evidence. There is nothing in CERCLA to suggest a departure from the norm. In fact, district courts have recently described defendants' burden of proving apportionment as being a preponderance of the evidence. ITT Indus., Inc. v. Borgwarner, Inc., 700 F. Supp. 2d 848, 888 (W.D. Mich. 2010); *Saporito*, 684 F. Supp. 2d at 1062.

respond with an apportionment defense, seeking to prove that the costs of remediating creosote contamination at the wood treating plant are capable of divisibility.

Is apportionment appropriate on these simple facts? Perhaps. EPA has identified only one COC. Companies A and B each used the chemical in their operation. Evidence strongly suggests that the observed creosote contamination resulted solely from the successive operations of the three companies. Each company owned the facility for one-quarter of the plant's total operational life. It would appear at first glance that the defendants could readily prove time of operation is a reasonable basis for apportionment. But even on these simple facts, a plaintiff forewarned by the harsh result in *Burlington Northern* may have ample opportunity to rebut.

Time of operation is only a reasonable basis for apportionment at the hypothetical plant if the defendants can prove the resulting harm is proportionate to each company's period of operation. The complexities of even a seemingly straightforward hazardous waste site means such proof is unlikely. A prepared plaintiff makes the defendants' task even more daunting.

Many factors common to hazardous waste sites could disqualify time of operation as a reasonable measure of apportionment. An examination of company records, aerial photographs of the amount of treated wood at the facility over time, and/or interviews with former employees could show production volumes varied significantly over the course of the plant's 100 year history; the amount of creosote used—and ultimately spilled or discharged—almost certainly varied with production volume. If the plaintiff could demonstrate that production volume changed over time, defendants would likely fail to carry their burden of proving that time is a reasonable basis for apportionment.[167] A change in production techniques or disposal practices would have the same effect. Time is proportionate to creosote contamination at the wood treating plant only if other variables remain constant.[168]

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[167] The change in production volume would need to be systematic and more than merely *de minimus* in significance. In other words, if production increased (or decreased) period to period, time of ownership/operation would no longer be proportionate to the harm. By contrast, year to year variance around a steady production level would not be problematic. *See, e.g.*, Bd. of Cnty. Comm'rs v. Brown Grp. Retail, Inc., 768 F. Supp. 2d 1092, 1118–19 (D. Colo. 2011) (holding defendant failed to prove releases at the site were proportionate to the parties' periods of ownership/operation).

[168] Judge Wanger attempted to address concerns regarding the sufficiency of any one measure of divisibility by multiplying three components (time by area by percent of COC contribution). Post-*Burlington Northern* plaintiffs would likely be prepared to argue the weakness of each

A plaintiff will no doubt be likely to raise any colorable claims capable of undermining the fit between the defendant's proposed measure of apportionment and the harm to be apportioned. The result in *Ashley II of Charleston, LLC v. PCS Nitrogen, Inc.* demonstrates the real-world challenge of proving apportionment against a prepared post-*Burlington Northern* plaintiff.[169] In *Ashley II,* defendant PCS presented the court with five proposed methods of apportionment and a litany of experts to support each alternative method.

PCS had reason to believe the site was a promising candidate for divisibility. The 33.95 acre parcel contained a shuttered plant which produced phosphate fertilizer from 1906 to 1972.[170] Various parties owned the land after 1972, with the first major environmental assessment conducted in 1990. Subsequent EPA investigations delineated widespread metals and organics contamination in the soil column, though arsenic was the primary COC. Ashley and the EPA agreed on a plan to remove highly contaminated soil and construct a cap over less impacted areas. No other environmental media were significantly impacted; only soil required remediation. As a result, the distribution of arsenic effectively defined the scope of the soil remedy. The court found that cleanup costs were "directly related to the volume of contaminated soil on the Site."[171] To avoid joint and several liability, PCS only needed to prove a reasonable basis to apportion the volume of contaminated soil among the parties.

PCS first sought to apportion harm based on the amount of material added to the site during each PRP's ownership period. As PCS reasoned, if the volume of contaminated soil at the site drove remediation, the volume of soil attributable to each PRP should be a reasonably proportionate measure of harm. To prove the amount of material added during each period of operation, PCS first offered testimony by aerial photography expert Wayne Grip. Mr. Grip

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component as well as the mathematical inappropriateness of multiplying variables in such a manner. *See* Tucker, *supra* note 34, at 312–13 (criticizing the use of dependent variables and the failure to account for 100% of the harm). In our hypothetical plant, other potential confounding variables might include a change in method of delivery and storage of creosote, altered practices for storing treated wood, or site improvements.

169 791 F. Supp. 2d 431, 481–90 (D.S.C. 2011). Defendants plead § 113 contribution counterclaims against the private plaintiff. After thoroughly analyzing and ultimately rejecting apportionment, the court allocated liability among the parties pursuant to § 113. *Id.* at 439, 481–92. Nonetheless, the case remains a poignant example of dueling apportionment experts. The Fourth Circuit recently affirmed the lower court's refusal to apportion. PCS Nitrogen, Inc. v. Ashley II of Charleston, LLC, 714 F.3d 161 (4th Cir. 2013).

170 *Ashley II of Charleston,* 791 F. Supp. 2d at 441, 443–44.

171 *Id.* at 443.

examined a series of historic photographs and compared the surface elevation observable in each photograph to identify changes over time. Increases in surface elevation could then be multiplied by the area of increase to provide a fairly precise measure of the volume of material added to the site in the period between each photo.[172]

At first glance, Mr. Grip's analysis appeared to be an attractive measure for apportioning site contamination, but his analysis was later shown to have serious weaknesses during cross-examination. The amount of material added turned out not to be a proportionate measure of harm. Aerial photography cannot detect whether fill material contains metals contamination, let alone indicate the concentration. The court stressed that "no evidence has been presented . . . indicating that all or even most changes in elevation or new materials identified in aerial photography were contaminated."[173] Cross-examination also revealed significant time gaps in Mr. Grip's aerial photograph collection.[174] Ultimately, the court was not persuaded that the amount of fill added during each PRP's period of operation—even if such a measure could be sufficiently proven at a facility built only three years after the Wright Brothers first flew—was reasonably proportionate to the volume and distribution of contaminated soil at the site. Mr. Grip's seemingly persuasive apportionment methodology proved grossly inadequate in the face of cross-examination by a prepared plaintiff.

PCS also proposed to apportion harm based on the amount of time each entity owned the site. The court was not convinced by this theory either. Even though *Burlington Northern* embraced time as a reasonable basis for apportionment, Ashley offered evidence showing the volume of contaminated soil was not proportionate to the length of time each PRP operated the facility.[175] PCS failed to prove "that contamination occurred at reasonably constant levels over time."[176] Ashley successfully argued that the presence of confounding variables meant that the length of operation was not proportionate to soil contamination. Unlike the B&B facility, two different companies operated the phosphate plant. Ashley presented evidence indicating that plant operations differed over time and that the two companies had different waste disposal practices.[177] Even apart from evidence of site re-grading after 1972, PCS

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172 *Id.* at 484.
173 *Id.*
174 *Id.*
175 *Id.* at 486–87.
176 *Id.* at 487.
177 *Id.*

could not prove that time of operation was a reasonable basis to apportion harm in the face of a prepared plaintiff.

If the *Burlington Northern* decision could influence judges and embolden defendants to aggressively seek apportionment, it could likewise induce plaintiffs to adapt. Apportionment is intensely factual and exceedingly difficult at complex hazardous waste sites. Post-*Burlington Northern* defendants must prove their proposed reasonable basis for apportionment against forewarned plaintiffs. Ample opportunities will often exist to undermine defendants' proportionality arguments. It would be a mistake to ignore plaintiffs' incentives to avail themselves of each and every opportunity to argue for joint and several liability.

V. CONCLUSION

Although joint and several liability was the norm, apportionment was available before *Burlington Northern*. Apportionment remains theoretically available today, but the predictions of a rapid demise for joint and several liability as a result of the Court's much discussed 2009 decision appear greatly exaggerated. Lower courts have not treated *Burlington Northern* as the dawning of an age of apportionment. Rather, the majority of courts appear to interpret *Burlington Northern* as an affirmation of decades of jurisprudence dating back to *Chem-Dyne*.

This result is unsurprising. In reversing an activist Ninth Circuit, *Burlington Northern* may have empowered district courts, but opportunities to reproduce Judge Wanger's result in *Burlington Northern* are rare. *Burlington Northern* was factually and procedurally unique. Moreover, the availability of § 113 counterclaims against non-innocent plaintiffs severely limits the universe of applicable cases. District court judges prefer the flexible, equitable-factor analysis of § 113 allocation. Generally speaking, courts will directly evaluate apportionment defenses only when made by culpable defendants against innocent government plaintiffs seeking recovery of public funds. The clear polluter-pays policy undergirding CERCLA militates against apportionment in such cases. Lastly, as with any change in the law, all parties can be expected to adapt to *Burlington Northern*. Early scholarship predicting a golden era of apportionment disregarded the incentive for plaintiffs to vigorously challenge divisibility defenses. These doomsday theorists also failed to recognize the practical limitations *Daubert* imposes on experts offering overly simplified theories of apportionment.

Nearly four years after *Burlington Northern*, the early uproar over the decision appears to have been overblown. Joint and several liability in § 107 cost-recovery actions remains alive and well.