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Oren, Craig N.

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When Must EPA Set Ambient Air Quality Standards? Looking Back at *NRDC v. Train*

Craig N. Oren*

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At our conference at UCLA on the Clean Air Act and climate change in April 2011, Kassie Siegel of the Center for Biological Diversity described what she thought could be accomplished if the United States Environmental Protection Agency (EPA) were to set national ambient air quality standards for greenhouse gases under the Clean Air Act (Act).¹ These standards, she explained, would establish a target concentration of greenhouse gases in the outside atmosphere we breathe (e.g., 350 parts of carbon dioxide per cubic meter of air).² States would then prepare State Implementation Plans (SIPs) that would detail the steps they would take to meet those standards, such as establishing controls on major sources like power plants or altering land

* Professor of Law, Rutgers (The State University of New Jersey) School of Law—Camden. I want to thank Professor David Schoenbrod for his generous help in referring me to the proper sources, but he is in no way responsible for, and would certainly not agree with, the views I express here. I also thank David Batista of the Rutgers-Camden Law Library for invaluable help in research. Thanks are also due to the UCLA School of Law and my fellow participants at the conference there on Perspectives on Climate Change, Pollution, and the Clean Air Act on April 15, 2011.

1. See generally Clean Air Act § 101–618, 42 U.S.C. § 7401–7671q (2006).

2. See generally § 109, 42 U.S.C. § 7409 (2006). I cite the number 350 because Ms. Siegel suggests it as a goal.

use laws and management to decrease reliance on the single-occupancy motor vehicle.³

As I have explained elsewhere, there are many disadvantages to setting ambient air quality standards for greenhouse gases.⁴ For example, the ambient standard system would take a long time—roughly ten years—to be put into place. There would be controversy and room for litigation about the exact level at which the standard should be set, a question over which there is already a great deal of debate. Once set, the standard would doubtless be challenged in court, further delaying implementation. SIPs would likewise be subject to administrative and legal challenges. One nationally-known expert on the Act, now a lawyer in private practice, has told me that if he were being paid to hinder regulation of greenhouse gases, he would want EPA to go down the ambient standard path.⁵

The difficulties of setting ambient air quality standards for greenhouse gases would be justifiable—just as ambient standards are for other important air pollutants—if the standards could be effectively implemented. But this is not the case. Ironically, both the Act's stringency and laxity play a role. Presumably, EPA would set both health-based and welfare-based ambient air quality standards (primary and secondary standards, respectively) because it has found that greenhouse gases endanger both health and welfare.⁶ Under the Act, states must demonstrate that nonattainment areas meet health-based standards within ten years after being designated as nonattainment.⁷ But decreasing concentrations of greenhouse gases takes much longer because some greenhouse gases, such as carbon dioxide, stay in the atmosphere for prolonged periods and even centuries.⁸ The consequence is that EPA would either have to approve plans that it knows will not meet the standard or demand plans with draconian measures that still might not be effective. In addition, the ten-year period for attainment would focus direction on short-

3. See generally § 110, 42 U.S.C. § 7410 (2006).

4. See Craig N. Oren, *Is the Clean Air Act at a Crossroads?*, 40 ENVTL. LAW 1231, 1246–1249 (2010).

5. *Id.* at 1246.

6. See Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, 74 Fed. Reg. 66496 (Dec. 15, 2009).

7. See Clean Air Act § 172(a)(2)(A), 42 U.S.C. § 7502(a)(2)(A) (2010).

8. See IPCC, CLIMATE CHANGE 2007: THE PHYSICAL SCIENCE BASIS 125–26 (2007), available at <http://oceanservice.noaa.gov/education/pd/climate/factsheets/ifemmission.pdf>.

term steps, such as energy efficiency initiatives, and not on long-term measures, such as altering land use policies, which might prove more effective over time.

The environmental community could possibly agree to ignore the ten-year deadline, although maintaining such an agreement among the large number of potential challengers to EPA would not be easy. But there is little that the community can do to cope with the other obstacle: section 179B of the Act.⁹ This provision—inserted at the behest of Texas Senator Phil Gramm in 1990 as solace to El Paso, which is near the Mexican city of Juarez¹⁰—requires EPA to approve a state plan if it would show attainment but for emissions emanating from outside of the United States. Thus, because foreign nations emit three-quarters of all greenhouse gases, a state could gain approval of a plan that would not do much to reduce emissions.¹¹

Therefore, setting and enforcing ambient air quality standards is likely to be a tail-chasing process that would gain little. Still, some have argued that under the statute EPA has a duty to go down this road.¹² While Ms. Siegel did not bring up this argument in urging the ambient air quality standard approach, her organization has asserted that EPA has a legal obligation to do so.¹³ I have sketched before why I believe EPA is under no such obligation. For instance, I have tried to refute the theory of one scholar that the relevant statutory provision contains a scrivener's error and in fact imposes on EPA a duty to follow the ambient standard approach.¹⁴

I want to take a different route here. I will look at *Natural Resources Defense Council v. Train (NRDC)*,¹⁵ the case authority for claiming such a duty. As I shall show, *NRDC* is a questionable decision that does violence to the language of the Act and makes dubious use of its legislative history. Furthermore, the subsequent history of the lead ambient air quality standard indi-

9. Clean Air Act § 179(a), 42 U.S.C. § 7509(a) (2010).

10. See 136 Cong. Rec. S2586-87 (daily ed. March 22, 1990). The amendment was not controversial.

11. Oren, *supra* note 4, at 1248–149.

12. *Id.* at 1249–1252.

13. Ctr. for Biological Diversity, Petition to Establish National Pollution Limits for Greenhouse Gases Pursuant to the Clean Air Act 25, available at http://www.biologicaldiversity.org/programs/climate_law_institute/global_warming_litigation/clean_air_act/pdfs/Petition_GHG_pollution_cap_12-2-2009.pdf.

14. Oren, *supra* note 4 at 1249–1252.

15. 545 F.2d 320 (2d Cir. 1976).

cates that it was a limited tool for reducing lead emissions. Perhaps that carries some lessons for regulating greenhouse gases. So I begin by discussing *NRDC* and its background, and then turn to the results of the *NRDC* decision.

I.

THE ORIGINS OF *NRDC* V. *TRAIN*

NRDC took up the question of whether EPA was required to set ambient standards for lead. The regulation of this pollutant has a long history; indeed, the saga continues to this day.¹⁶

Lead has had many uses (I recall my father, an electrical engineer, using lead solder around the home to repair TVs and radios), including as a constituent of paint. Lead paint can still be found in older homes, and children are often exposed to lead by eating the sweet paint chips.¹⁷ Lead was also used in water supply lines for many years, entering tap water as the line corrodes.¹⁸ Its primary use for many years was as a constituent of tetraethyl lead, which was used as a gasoline additive to increase the fuel's octane and permit higher-compression engines that would eliminate engine knock¹⁹ (i.e., the tendency of the air/fuel mixture in the cylinder to combust prematurely, thus damaging the engine and hindering performance).²⁰ Adding tetraethyl lead to gasoline resulted in large emissions into the atmosphere—200,000 tons per year in the early 1970s²¹—and accounted for over ninety per-

16. Anna Gorman, *Unsafe Levels of Lead Still Found in California Youths*, L.A. TIMES (Feb. 19, 2012, 5:27 PM), <http://www.latimes.com/news/local/la-me-lead-poisoning-20120219,0,738166.story>; Gabriel Nelson, *Greens Sue EPA Over Leaded Gasoline for Airplanes*, E&E NEWS PM (Mar. 7, 2012), <http://www.eenews.net/eenewspm/2012/03/07/archive/2?terms=Gabriel+Nelson>.

17. See *Lead in Paint, Dust and Soil: Basic Questions*, ENVTL. PROT. AGENCY, <http://www.epa.gov/lead/pubs/leadinfo.htm#where> (last updated Aug. 16, 2011); *Mid-Atlantic Lead Paint: Frequently Asked Questions About Lead*, ENVTL. PROT. AGENCY, <http://www.epa.gov/reg3wcmd/lp-faqhealth.htm>. (last updated Oct. 7, 2011).

18. *Lead in Plumbing*, CAL. DEP'T OF TOXIC SUBSTANCE CONTROL, <http://www.dtsc.ca.gov/pollutionprevention/leadinplumbing.cfm> (last visited Oct. 30, 2011). Lead is particularly a problem in Washington, D.C.'s water supply. See *Drinking Water: Advisors Say Partially Replaced Service Lines Ineffective at Cutting Lead Levels at Tap*, 42 ENV'T REP. (BNA) 763 (2011).

19. *Lead Compounds*, ENVTL. PROT. AGENCY, <http://www.epa.gov/ttnatw01/hlthef/lead.html> (last updated Apr. 14, 2011).

20. *Antiknock Agent*, WIKIPEDIA, http://en.wikipedia.org/wiki/Antiknock_agent (last updated Nov. 29, 2011).

21. JOHN QUARLES, *CLEANING UP AMERICA: AN INSIDER'S VIEW OF THE ENVIRONMENTAL PROTECTION AGENCY* 121-22 (1976). Quarles was a high EPA official

cent of the lead in the air.²² This lead eventually fell to earth and was consumed by young children putting soil in their mouths; thus, children were indirectly as well as directly exposed to lead emissions.²³

Not long after lead's introduction into gasoline in the 1920s, concerns arose that lead might interfere with the synthesis of hemoglobin, which carries oxygen through the blood stream, and thus pose a danger to young children's health.²⁴ A separate concern about lead arose because vehicle manufacturers wanted to use catalytic converters to meet Congress's demands for a sharp reduction in automobile emissions. Lead poisons these converters, thus making it impossible to adequately control vehicular emissions of such important pollutants as hydrocarbons and carbon monoxide.²⁵

Congress, in the Clean Air Act Amendments of 1970, took a dual approach to lead, authorizing EPA to regulate or prohibit a fuel additive if it would either (a) impair pollution control equipment on motor vehicles or (b) itself harm health.²⁶ EPA took this provision seriously: less than a month after the signing of the Clean Air Act Amendments of 1970, the new agency issued an advance notice of proposed rulemaking announcing that it would make rules to carry out both halves of Congress's authorization.²⁷

But the two halves became separated. The agency acted with reasonable alacrity on the first part of this provision, requiring that all gasoline service stations offer unleaded gasoline and that cars equipped with catalytic converters be designed to accept

from 1971 to 1977, and his account is an excellent summary of the issue and its history.

22. *Ethyl Corp. v. Env'tl. Prot. Agency*, 541 F.2d 1, 8 (D.C. Cir. 1976) (en banc).

23. See Howard W. Pielke & Patrick A. Reagan, *Soil is an Important Pathway of Human Lead Exposure*, 106 ENVTL. HEALTH PERSP. 217 (1998), available at <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1533263/pdf/envhper00536-0227.pdf>.

24. *Id.* (citing studies). Scientists have since concluded that lead, even at very low levels, is responsible for neurological deficits, such as loss of IQ. See National Ambient Air Quality Standards for Lead, 73 Fed. Reg. 66964, 66976 (Nov. 12, 2008).

25. S. REP. No. 91-1196, at 34 (1970) (accompanying the Senate version of what became the Clean Air Act Amendments of 1970). I recall from my youth in New York City that one gasoline company promoted its gasoline as being lead-free, but I have been unable to find out what the motivation for this was, concerns about engine performance or about public health.

26. Clean Air Act Amendments of 1970, Pub. L. 91-604, § 9, 84 Stat. 1676, 1698-1700 (1970) (codified as amended at 42 U.S.C. § 7545(c) (2006)) (enacting section 211(c) of the Clean Air Act).

27. See Regulation of Fuel Additives, 36 Fed. Reg. 1486 (Jan. 27, 1971).

only unleaded gasoline.²⁸ This rule meant that lead, in the long run, was dead as a gasoline additive because the auto manufacturers planned to use catalytic converters to control emissions.²⁹ Indeed, new motor vehicles continue to use these converters.

The issue then became what would happen during the transition. This was of great importance not only to the lead additive industry but also to the petroleum industry because pipes and other distribution facilities contained large amounts of lead that had accumulated from the transport of leaded gasoline.³⁰ The regulations that would apply during lead's phase-out would thus make a considerable difference to industry's regulatory burden. In addition, there was great controversy about whether low levels of lead were indeed a health threat. Finally, lowering the amount of lead in leaded gasoline would require that more crude oil be used to produce gasoline, a special concern in 1973 when the Arab nations established an oil embargo on the United States.³¹

Thus, there was considerable resistance to EPA also acting to restrict the amount of lead in leaded gasoline, thereby stalling agency action.³² The Natural Resources Defense Council (NRDC) responded by suing EPA on the theory that EPA had unreasonably delayed regulating lead on health grounds.³³ This resulted in a thirty-day deadline for a decision no later than December 3, 1973.³⁴ EPA, after a sharp battle with other federal agencies—none of which supported EPA—and the Nixon-era Office of Management and Budget, made at least two last-minute relaxing changes and barely promulgated the regulations in time to meet the deadline.³⁵

28. Regulation of Fuels and Fuel Additives, 38 Fed Reg. 1253 (Jan. 10, 1973). The final regulations were published on January 10, 1973, barely two years after the passage of the 1970 Amendment. *Id.* It is not hard to imagine why they were a high priority, since catalytic converters were expected on 1975 model year vehicles. The rules were upheld against claims that they were arbitrary in *Amoco Oil v. Env'tl. Prot. Agency*, 501 F.2d 722 (D.C. Cir. 1974).

29. *Id.* at 738.

30. *Id.* at 726.

31. QUARLES, *supra* note 21, at 126.

32. *Id.* at 123. ("With the scientific debate over the health questions and the intense pulling and hauling from both directions, EPA might easily have postponed action indefinitely."). This is quite a confession for a high agency official.

33. E-mail from David Schoenbrod to author (July 22, 2011) (on file with author).

34. *Ethyl Corp. v. Env'tl. Prot. Agency*, 541 F.2d 1, 10 (D.C. Cir. 1976) (en banc) (citing *Natural Res. Def. Council v. Env'tl. Prot. Agency*, No. 72-2233 (D.C. Cir. 1973) (unpublished)).

35. QUARLES, *supra* note 21, at 123-39.

The regulations, known as the lead phase-down rules, were struck down the following year by a D.C. Circuit panel that thought EPA had not amassed enough evidence of the ill effects of lead in gasoline.³⁶ This decision was reversed by the circuit court sitting *en banc*, which concluded, by the narrowest of margins, that EPA had indeed made a sufficient case.³⁷ That decision, penned by Judge Skelly Wright, is a seminal one in environmental law, for it explicitly holds that the Clean Air Act allows EPA to make a policy choice to regulate even in the face of uncertainty about the need for regulation.³⁸

While EPA was preparing the leaded gasoline standards and litigating to uphold them, David Schoenbrod, then an attorney for the NRDC and now a law professor, sought to persuade EPA that it should set ambient air quality standards for lead. That would result in the states preparing SIPs to meet those standards, as summarized earlier.³⁹ Schoenbrod and then-EPA Administrator Russell Train engaged in a remarkable exchange of letters, preserved by Schoenbrod, about whether EPA had a legal obligation to set ambient standards for lead and whether setting these standards would be a good idea.⁴⁰ Schoenbrod urged that setting ambient air quality standards would make it easier to set lead additive standards by giving a clear health goal to be met, thus leading to tougher regulation of lead in gasoline.⁴¹ Schoenbrod emphasized the importance of providing such goals as a way of avoiding agency senescence.⁴² (The need for legislatures to establish firm goals has been a theme of his scholarly work.)⁴³ Moreover, he noted that EPA might conclude that the ambient air quality standards could be met only by a more rigorous lead additive standard and would therefore tighten the latter.

36. *Ethyl Corp. v. Envtl. Prot. Agency*, 5 *Envtl. L. Rep.* 20096 (D.C. Cir. 1975) (No. 73-2205), *vacated*, 541 F.2d 1 (D.C. Cir. 1976) (*en banc*).

37. *Ethyl Corp. v. Envtl. Prot. Agency*, 541 F.2d 1 (D.C. Cir. 1976) (*en banc*).

38. *Id.* at 12-29. For a summary of some of the key issues in the case, see R.S. MELNICK, *REGULATION AND THE COURTS: THE EXAMPLE OF THE CLEAN AIR ACT* 266-268 (1983).

39. See *supra* text accompanying notes 2-3.

40. Correspondence between Russell Train, EPA Adm'r and David Schoenbrod, NRDC attorney (Oct. 2, 1974; Nov. 25, 1974; Dec. 12, 1974; Jan. 20, 1975; Feb. 19, 1975), available at http://www.nyls.edu/faculty/faculty_profiles/david_schoenbrod/train-schoenbrod_correspondence.

41. Letter from David Schoenbrod to Russell Train 2 (December 12, 1974) available at http://www.nyls.edu/user_files/1/3/4/15/1112/NRDC%20letter%2012-74.pdf.

42. *Id.*

43. See, e.g., DAVID SCHOENBROD, *POWER WITHOUT RESPONSIBILITY: HOW CONGRESS ABUSES THE PEOPLE THROUGH DELEGATION* (1993).

There was a special reason for Schoenbrod's concern. Several cities, including New York City, had passed ordinances banning (as opposed to limiting, as EPA had done) lead in gasoline.⁴⁴ The establishment of the leaded gasoline standards by EPA meant that such ordinances were preempted.⁴⁵ Further federal action would thus be needed to curb lead content in gasoline.

Schoenbrod pointed out as well that not all airborne lead came from gasoline. True, gasoline accounted for about ninety percent.⁴⁶ But smelters, such as the Bunker Hill smelter in Kellogg, Idaho, emitted lead in large quantities.⁴⁷ These concentrations resulted in very high concentrations of lead in the blood of local children.⁴⁸ EPA could control these emissions by setting new source performance standards for smelters (which EPA eventually did)⁴⁹ and then applying those standards to existing smelters under section 111(d).⁵⁰ But these standards would be based on what could be achieved using the best control technology. Consequently, they would not necessarily lead to the development of better controls or to the closing of smelters whose emissions could not be sufficiently controlled. By contrast, state plans to implement the air quality standards can even include measures that industry believes are technologically or economically infeasible.⁵¹

Train was unconvinced. He disputed NRDC's legal theory, discussed later, that the Act required that ambient air quality stan-

44. David Schoenbrod, *Saving Our City from D.C.*, N.Y. SUN, Dec. 12, 2006, available at <http://www.nysun.com/opinion/saving-our-city-from-dc/44972/>. Several other cities did likewise. See Vivian Elizabeth Thomson, *Understanding Environmental Success and Failure: The Political Momentum Model 85* (Jan. 1997) (unpublished Ph.D. dissertation, University of Virginia). The New York City Ordinance was held not to be preempted until EPA acted. *Exxon Corp. v. City of New York*, 356 F. Supp. 660 (S.D.N.Y. 1973).

45. See Clean Air Act Amendments of 1970, Pub. L. 91-604, § 9, 84 Stat. 1676, 1698-1700 (1970) (codified as amended at 42 U.S.C. § 7545(c) (2006)) (enacting section 211(c)(3) of the Clean Air Act).

46. QUARLES, *supra* note 21, at 121-22.

47. Letter from Russell Train to David Schoenbrod 2 (Jan. 20, 1975) available at http://www.nyls.edu/user_files/1/3/4/15/1112/EPA%20Letter%20001-75.pdf.

48. Letter from David Schoenbrod to Russell Train 2 (Dec. 12, 1974) available at http://www.nyls.edu/user_files/1/3/4/15/1112/NRDC%20letter%2012-74.pdf.

49. See Standards of Performance for Secondary Lead Smelters, 40 C.F.R. § 60.120-23 (2010); Standards of Performance for Primary Lead Smelters, 40 C.F.R. 60.180 (2010).

50. See Clean Air Act § 111(d), 42 U.S.C. § 7411(d) (2006). This provision authorizes EPA to require states to submit control programs for existing sources in a regulated category that emit a pollutant for which there are no ambient standards.

51. *Union Elec. Co. v. Env'tl. Prot. Agency*, 427 U.S. 246, 266 (1976).

dards be set for lead. Train also doubted that setting ambient standards for lead would be feasible given the multiple sources of lead in the body.⁵² The most Train was willing to do was consider ambient air quality standards if the D.C. Circuit panel decision disapproving EPA's lead in gasoline rules stayed in place.⁵³ NRDC thus brought suit to force Train down the road toward issuing ambient air quality standards for lead.

II.

THE NRDC LITIGATION AND OPINION

NRDC filed its suit in the U.S. District Court for the Southern District of New York. The group's theory was that EPA had failed to carry out its nondiscretionary duty to place lead on the Act's section 108(a)(1) list of pollutants for which ambient air quality standards must be set. Under section 304(a) of the Act, district courts have the authority to order EPA to perform any nondiscretionary act or duty required of the Administrator.⁵⁴ Thus, the language of section 108(a)(1) was critical: did it create a nondiscretionary duty? The provision states that the Administrator "shall" list for regulation a pollutant that meets certain criteria. As codified, section 108(a)(1) provides:

- (1) For the purpose of establishing national primary and secondary ambient air quality standards, the Administrator shall within 30 days after December 31, 1970 [the date of enactment of the Clean Air Act Amendments of 1970], publish, and shall from time to time thereafter revise, a list which includes each air pollutant—
 - (A) emissions of which, in his [sic] judgment, cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare;
 - (B) the presence of which in the ambient air results from numerous or diverse mobile or stationary sources; and
 - (C) for which air quality criteria had not been issued before December 31, 1970 but for which he plans to issue air quality criteria under this section.⁵⁵

52. Letter from Russell Train to David Schoenbrod 5–6 (Nov. 25, 1974) available at http://www.nyls.edu/user_files/1/3/4/15/1112/EPA%20letter%2011-74.pdf.

53. Letter from Russell Train to David Schoenbrod 2 (Jan. 20, 1975) available at http://www.nyls.edu/user_files/1/3/4/15/1112/EPA%20Letter%2001-75.pdf.

54. Clean Air Act § 304(a), 42 U.S.C. § 7604(a) (2006).

55. § 108(a)(1), 42 U.S.C. § 7408(a)(1) (2006). The session law differs from the codification in that the former uses the words "date of enactment" instead of "December 31, 1970," the date on which the amendments became law.

Once EPA lists a pollutant, it must issue criteria for that pollutant that summarize the scientific knowledge about it,⁵⁶ publish information about techniques to control the pollutant⁵⁷ and—simultaneously with the issuance of the criteria—propose primary and secondary ambient air quality standards for later promulgation.⁵⁸

On its face, the provision seems to create three criteria that must be met to list a pollutant: (1) the pollutant is dangerous, (2) it comes from numerous or diverse sources, *and* (3) EPA plans to issue criteria for it. The problem with this reading is that it gives EPA total discretion not to list a pollutant by not planning to issue criteria for it, even if, as EPA conceded was true of lead, it is dangerous and comes from numerous or diverse sources.⁵⁹ This interpretation effectively eliminates the mandatory “shall” in the introductory clause. But why would Congress have used “shall” if it intended to give EPA free rein?

To prevail, the plaintiffs had to find some way to separate subparagraph (C) from subparagraphs (A) and (B). They succeeded. The district court pointed out that subparagraph (C) refers to the date of enactment of the Clean Air Act Amendments of 1970. Prior to these amendments, EPA’s administrative predecessor in air pollution control, the National Air Pollution Control Administration, had concluded that a large number of substances had a deleterious effect on health or welfare.⁶⁰ Subparagraph (C) meant that EPA only had to issue criteria for those pollutants that it planned to regulate. Thus, the district court concluded that the discretion to list pollutants in section 108(a)(1)(C) applied only to deciding which pollutants to include on the initial list, not to deciding which pollutants to add to the list later.⁶¹ The Second Circuit affirmed on similar grounds.⁶²

The district court’s conclusion is questionable for several reasons. First, the district court attempted to buttress its analysis by citing the Senate committee report that accompanied the Senate’s bill to the floor. That report states that the three criteria

56. See § 108(a)(2), 42 U.S.C. § 7408(a)(2) (2006).

57. See § 108(b), 42 U.S.C. § 7408(b) (2006).

58. See § 109(a)(2), 42 U.S.C. § 7409(a)(2) (2006).

59. *Natural Res. Def. Council v. Train*, 545 F.2d 320, 325 (2d Cir. 1976).

60. See Letter from Russell Train to David Schoenbrod 2 (Nov. 25, 1974) available at http://www.nyls.edu/user_files/1/3/4/15/1112/EPA%20letter%2011-74.pdf.

61. *Natural Res. Def. Council v. Train*, 411 F. Supp. 864, 868 (S.D.N.Y. 1976).

62. *NRDC*, 545 F.2d at 325.

apply to the initial list.⁶³ But it says nothing about additions to the list, making it a slender reed for the district court to rely upon. I have been told that the Senate committee staff's intent was to adopt the district court's interpretation. But this does not necessarily establish the interpretation as correct if we take seriously the notion that Congress's language is the key guide to statutory interpretation.⁶⁴

More importantly, the district court's conclusion does considerable violence to the text. The district court read the statute as requiring that EPA regulate pollutants on the initial list if they meet the condition in subparagraph (C), but must add to the list only those pollutants that meet the conditions in subparagraphs (A) and (B). That is, to say the least, difficult to reconcile with the language that Congress actually enacted, which is conjunctive rather than alternative.

The Second Circuit in *NRDC* relied heavily on other indices of legislative intent. It quoted the summary of the provisions of the final conference bill furnished by Senator Edmund Muskie, the Senate floor manager. That summary said, "the agreement requires issuance of remaining air quality criteria for major pollutants within fifteen months of the date of enactment," and that Congress "expects criteria to be issued for . . . lead."⁶⁵ But there is a difference between describing what the bill does (as the first clause states) and simply stating what Congress "expects" will happen. The latter seems largely hortatory. It also seems significant that Senator Muskie's statement is in the summary, not in the conference report itself. Had the conferees agreed with Senator Muskie, then it would be indicated in the report.

A very similar statement appears in the Senate committee report, but again is entitled to limited weight because the statement did not appear in the conference report. Moreover, like Senator Muskie's summary, the committee report language falls short of requiring that criteria be issued for lead or other pollutants. Instead, it merely states that lead would be included on the list of pollutants to be regulated through ambient air quality standards. The language is descriptive rather than prescriptive.

63. S. REP. NO. 91-1196, at 54 (1990).

64. See Oren, *supra* note 4, at 1249.

65. *NRDC*, 545 F.2d at 326. It may also be worth noting that the second clause lists nitrogen oxides, fluorides, polynuclear organic matter, and odors. Except for nitrogen oxides, these pollutants have never been put on the list; a sign, perhaps, that the sentence does not carry much weight.

Both the district and court of appeals' opinions in *NRDC* seek to appeal to common sense. The courts observed that Congress had set out a firm timetable for achievement of health-based ambient air quality standards. Such a timetable did not exist for other EPA rules. Surely, they reasoned, Congress would not have meant for EPA to avoid setting an ambient standard—and thus avoiding triggering the SIP mechanism with its attainment deadlines—for a dangerous pollutant that comes from a multitude of sources. To the Second Circuit, this result would make the deadlines “an exercise in futility.”⁶⁶ Thus, both courts concluded that the lead phase-down standards could be considered supplementary to ambient air quality standards, but not an alternative.⁶⁷

The Second Circuit supported this conclusion by citing the Senate committee report's language relating to new source performance standards.⁶⁸ It is not clear why the court thought this language was relevant. Moreover, the language has to do with a provision that established a scheme for review of individual new and modified sources, a provision that was left on the cutting room floor by the conferees.

Even worse, it appears that Congress did indeed regard new source performance standards as an alternative way to regulate air pollutants. Section 111(d) of the Act, inserted by the 1970 Amendments, mandates that EPA set up a planning process by which states regulate pollutants that come from existing plants and are not regulated by ambient air quality standards.⁶⁹ Indeed, this was the way EPA planned to regulate smelters and other industrial sources of lead.⁷⁰ Thus it is not necessary for an ambient standard to exist for EPA to regulate a substance. The only response to this argument might be that Congress intended to limit section 111(d) to pollutants that do not come from numerous or diverse sources, but there seems little basis for such a conclusion.

In a sense, we have a clash between the will of the sponsors and the actual language of the Amendments. Senator Muskie believed strongly that Congress needed in the amendments to give administrative agencies firm guidance in implementing environ-

66. *Id.* at 327.

67. *NRDC*, 411 F. Supp. at 869; *NRDC*, 545 F.2d at 325.

68. *NRDC*, 545 F.2d at 327.

69. Clean Air Act § 111(d), 42 U.S.C. § 7411(d) (2006).

70. See National Primary and Secondary Ambient Air Quality Standards for Lead, 43 Fed. Reg. 46246 (Oct. 5, 1978).

mental statutes.⁷¹ On the other hand, it is not clear from the statutory language that Congress actually adopted this approach.⁷²

Rather, it appears that Congress was not as rational as the *NRDC* courts assumed, and the seemingly-logical position of the Senate committee staff was compromised along the way. Finally, if standards, like the leaded gasoline standards, were truly “supplementary” to ambient air quality standards, then EPA’s leaded gasoline standards were arguably void because they were established before EPA set ambient standards for lead. This position, though, had been summarily rejected as unsupported by the statute by the D.C. Circuit in upholding EPA’s leaded gasoline regulations.⁷³

Perhaps the strongest argument for the court’s result is that Congress ratified *NRDC* in the Clean Air Act Amendments of 1977.⁷⁴ This contention rests upon the language of the House report accompanying the House’s version of what became the Amendments. The House Committee on Interstate and Foreign Commerce remarked that a proposed new section of the Act would not “affect EPA’s authority or duty to regulate any other presently unregulated air pollutant” and that the language “is not intended to change existing law or to affect pending litigation respecting control of lead or other air pollutant” (citing *NRDC*).⁷⁵ But this language does not seem like a ratification of the *NRDC* holdings. The report seems to be denying that the new language

71. See Edmund S. Muskie & Eliot R. Cutler, *A National Environmental Policy: Now You See It, Now You Don't*, 25 ME. L. REV. 163, 167–69 (1973).

72. The possible clash between the sponsors’ intent and the language makes it difficult to use the mandatory/directory distinction. Generally, the word “shall” is treated as mandatory, but sometimes courts will hold that the legislative intent calls for a “directory” definition: that is, essentially a “may” rather than a “shall.” SUTHERLAND ON STATUTORY CONSTRUCTION § 57.1 (Norman J. Singer & J.D. Shambie Singer eds., 7th ed. 2007). But the ambiguity of the intent makes it almost impossible to apply this distinction.

A recent Supreme Court case, *Town of Castle Rock v. Gonzalez*, 545 U.S. 748, 758–66 (2005), while not couched in terms of the mandatory/directory distinction, illustrates the doctrine. There a statute specified that the police “shall” take law enforcement action under specified circumstances. *Id.* at 752. The Court narrowly held that the “shall” should not be taken as creating an obligation; to do so would deprive police of all discretion, a result the Court thought unlikely. *Id.* at 760–61. As difficult as that case is, *NRDC* is harder; clearly the sponsors wanted to limit EPA’s discretion, but the language used is, as we have seen, ambiguous.

73. *Ethyl Corp. v. Env’tl. Prot. Agency*, 541 F.2d 1, 53 (D.C. Cir. 1976) (en banc).

74. Clean Air Act Amendments of 1977, Pub. L. No. 95-95, 91 Stat. 685 (1977) (codified as amended in scattered sections of 42 U.S.C.).

75. H. REP. NO. 95-294, at 41 (1977).

would change anything, rather than stating that *NRDC* was a sound decision.

Thus, advocates of the ratification view can only argue that Congress's silence constitutes approval. Some Supreme Court cases do support this proposition,⁷⁶ although there are cases to the contrary.⁷⁷ But there is an additional consideration here. As we have seen, the *en banc Ethyl* opinion authorized EPA to take a preventive approach to environmental harm: to regulate even when there was uncertainty about whether a pollutant was risky to health.⁷⁸ Congress in the 1977 Amendments ratified this approach by expressly enacting it into the statute.⁷⁹ Thus, Congress knew well how to amend a statute to approve a judicial decision, which suggests that the *NRDC* decisions might not have commanded a majority in Congress.

The *NRDC* opinions are therefore not a firm basis for declaring that there is a duty to set ambient air quality standards for dangerous pollutants from diverse or numerous sources. Moreover, there are grounds to think that even courts that believe the *NRDC* opinions were well reasoned might not be prepared to follow them. First, as we have seen, some of the legislative history on which the two *NRDC* opinions relied is specific to lead, such as the Muskie statement about what Congress expects. Second, there is the vexing question, which I discuss elsewhere, of whether the *NRDC* opinions survive the U.S. Supreme Court's later decision in *Chevron v. NRDC*,⁸⁰ which holds that courts should defer to administrative constructions of silent or ambiguous statutes.⁸¹ I suggest that the *NRDC* opinions probably do not. In *National Cable & Telecommunications Association v. Brand X Internet Services*,⁸² the Court held that a pre-*Chevron* interpretation of a statute is controlling only where the interpretation was based on step one of the *Chevron* analysis, a finding that the statute speaks squarely to the issue, but not when based on step two, the filling in of a gap by a court that tries to apply its

76. See, e.g., *Forest Grove Sch. Dist. v. T.A.*, 129 S. Ct. 2484, 2492 (2009).

77. See WILLIAM N. ESKRIDGE, JR., PHILIP P. FRICKEY & ELIZABETH GARRETT, *LEGISLATION AND STATUTORY INTERPRETATION* 290-91 (2d ed. 2006).

78. See *supra* text accompanying notes 36-37.

79. See Clean Air Act Amendments of 1977, Pub. L. No. 95-95 § 401, 91 Stat. 790 (1977) (codified as amended in scattered sections of 42 U.S.C.); H.R. REP. NO. 95-294, at 43-51 (discussing *Ethyl* at length).

80. *Chevron, U.S.A. v. Natural Res. Def. Council*, 467 U.S. 837 (1984).

81. *Oren, supra* note 4, at 1253-1254.

82. *Nat'l Cable & Telecomms. Ass'n v. Brand X Internet Servs.*, 545 U.S. 967 (2005).

notion of reasonableness.⁸³ The court draws this line by reviewing the agency's construction and asking whether the construction passes step one. Administering this test will not always be easy. For instance, in *NRDC*, the court's reading was not based on the text alone. But the need to analyze a combination of text, legislative history, and legislative purpose, as in *NRDC*, does not guarantee that the statute is silent or ambiguous under *Chevron*. Indeed, in a footnote too often ignored, the *Chevron* court emphasized that courts should use all traditional means of statutory construction in deciding whether statutes are silent or ambiguous.⁸⁴

In addition, the Second Circuit's language in deciding *NRDC* is not decisive either.⁸⁵ True, the court declared that "the structure of the Clean Air Act as amended in 1970, its legislative history, and the judicial gloss placed upon the Act leave no room for an interpretation which makes the issuance of air quality standards for lead under § 108 discretionary."⁸⁶ This appears to be *Chevron* step one language. But it is hard to imagine any court, even before *Chevron*, reversing an agency construction on the grounds that its own interpretation was more reasonable. When *Chevron* was decided, it was already well-settled law that a court should accept reasonable agency interpretations of statutes which it administered.⁸⁷ *Chevron* step one language could therefore characterize a decision that actually rested on step two considerations. And the numerous arguments that can be made about the meaning of section 108(a)(1) indicate that this is a paradigm of a silent or ambiguous provision.

III.

THE AFTERMATH

In one sense, the story ends here. But an account of the aftermath is appropriate. The subsequent history shows how difficult

83. *Id.* at 982–83.

84. *Chevron*, 467 U.S. at 843 n. 9.

85. For a contrary view, see David Schoenbrod & Melissa Witte, *Rescuing the Clean Air Act from Obsolescence*, ENERGY & ENV'T OUTLOOK, Mar. 1, 2010, app. at 2, available at <http://www.aei.org/files/2011/03/01/EEO-2011-03-No-2-Appendix.pdf>.

86. *Natural Res. Def. Council v. Train*, 545 F.2d 320, 328 (1976).

87. See, e.g., *Nat'l Labor Relations Bd. v. Hearst Publ'ns*, 322 U.S. 111, 131 (1944) (stating that the board's determination that specified persons are employees under this act is to be accepted if it has warrant in the record and a reasonable basis in law), *overruled on other grounds by* *Nationwide Mut. Ins. Co. v. Darden*, 503 U.S. 318 (1992); *Nat'l Labor Relations Bd. v. United Ins. Co.*, 390 U.S. 254 (1968).

it is to set ambient air quality standards and how the implementation of the standards, while positive in some ways, did not live up to NRDC's goals.

A. *Setting the Ambient Standard for Lead*

Now that EPA had been ordered to list lead, the agency's next task was to develop ambient air quality standards. Most importantly, EPA needed to set a primary standard "allowing an adequate margin of safety . . . requisite to protect the public health."⁸⁸ Such a standard needed to protect sensitive populations without regard to cost considerations.⁸⁹

One might think that setting a standard is a strictly scientific decision. In fact, policy considerations and perhaps even economic considerations play a large role in how the agency copes with uncertainty in the scientific data.⁹⁰ The lead standard illustrates this point well.⁹¹

In response to the Second Circuit, in 1978, EPA established a primary (health-based) and secondary (welfare-based) standard of 1.5 micrograms of lead per cubic meter of air.⁹² This figure represented a change of heart by EPA, which had thought that 2.0 micrograms per cubic meter was a safe level of airborne lead when it promulgated the lead gasoline standards.⁹³ At one time EPA had even thought a 5.0 microgram standard was adequate.⁹⁴

In setting this standard, EPA began by deciding that children aged one to five should be considered the sensitive population

88. Clean Air Act § 109(b)(1), 42 U.S.C. § 7409(b)(1) (2006).

89. ROY BELDEN, *THE CLEAN AIR ACT* 17-18 (2001). After Belden's book came out, the U.S. Supreme Court ruled unanimously that the agency may not use costs as a basis for setting these standards. *Whitman v. Am. Trucking Ass'ns*, 531 U.S. 457 (2001).

90. See Craig N. Oren, *Run Over by American Trucking Part I: Can EPA Revive Its Air Quality Standards*, 29 ENVTL. L. REP. 10653, 10660 (1999).

91. For contemporaneous commentary, see Barbara A. Finamore & Elizabeth E. Simpson, *Ambient Air Standards for Lead and Ozone: Scientific Problems and Economic Pressures*, 3 HARV. ENVTL. L. REV. 261, 262-267 (1979).

92. National Primary and Secondary Ambient Air Quality Standards for Lead, 43 Fed. Reg. 46,246 (1978). For a longer and more detailed account, see R.S. MELNICK, *supra* note 38, 270-281 (1983).

93. Compare Letter from David Schoenbrod to Russell Train 3 (Dec. 12, 1974), available at http://www.nyls.edu/user_files/1/3/4/15/1112/NRDC%20letter%2012-74.pdf (writing that the 2.0 standard was discredited), with Letter from Russell Train to David Schoenbrod 2 (Jan. 20, 1975), available at http://www.nyls.edu/user_files/1/3/4/15/1112/EPA%20Letter%2001-75.pdf (writing that EPA had come to the opposite conclusion in promulgating the final lead standard).

94. MELNICK, *supra* note 38, at 270.

that must be protected by the ambient air quality standards.⁹⁵ Arguably, the sensitive population should have been defined more specifically, as, for instance, children aged one to five who have high non-air exposure to lead, or another narrower definition that could have resulted in a more stringent standard. EPA, though, denied knowledge about such subgroups and claimed other portions of the standard took their possible existence into account.

Once EPA defined the sensitive population, it had to decide what health effects to protect against. EPA initially proposed that erythrocyte protoporphyrin (EP) elevation—a sign that the body's formation of heme, an element of hemoglobin, is being disrupted—be considered the key health effect against which the standards should protect.⁹⁶ Using EP elevation as a gauge would have meant that the target blood-lead level would be 15 micrograms per deciliter of blood. In the final rule, though, EPA said that it would only consider the effect to be harmful at 30 micrograms.⁹⁷ The agency did not explain why this was so, aside from stating that it considered relevant testimony and comments.⁹⁸

EPA then had to take account of the fact that not every child reacts the same way to lead. For some children, a given dose will lead to an unusually high blood-lead level.⁹⁹ Health surveys showed that the logarithms of children's blood-lead levels are normally distributed; that is, they form a bell curve.¹⁰⁰ But it was not clear how the curve looks: is it tightly bunched, or spread out? To solve this question, EPA looked at the survey results to determine the geometric standard deviation—a measure of dispersion—of the curve. The agency saw a range in the literature from 1.3 to 1.5. Utilizing the higher number would make the standard tougher because the higher the standard deviation—that is, the more spread out the curve—the greater the number of children with high exposures and thus the lower the target concentration could be.

95. National Primary and Secondary Ambient Air Quality Standards for Lead, 43 Fed. Reg. at 46,252.

96. *Id.* at 46,253.

97. *Id.* at 46,252. In the late 1970s, four percent of children between six months and five years old, but eighteen percent of those living in the inner city where lead exposures are high, had blood lead levels above 30 micrograms. See JONATHAN LASH ET AL., *A SEASON OF SPOILS* 132 (1984).

98. National Primary and Secondary Ambient Air Quality Standards for Lead, 43 Fed. Reg., at 46,253.

99. *Id.* at 46,247.

100. *Id.* at 46,253.

A study in New York City indicated a standard deviation of 1.4 to 1.5, yet the agency chose the less protective 1.3 figure. It said this was due to analytical and monitoring variance in the New York study.¹⁰¹ The reader is invited to consider whether this explanation is adequate. The National Research Council (NRC), the operating arm of the National Academy of Sciences (NAS), commented, "if the value chosen had been 1.5, which is equally supported by the meager available data, the tolerable exposure to lead in air could be calculated as zero."¹⁰² Given the likely costs of achieving such a level, setting the standard at zero was probably the last thing EPA wanted to do.

The agency then had to find the average blood-lead level needed to keep children below the target blood-lead level of 30 micrograms per deciliter of blood. Because children's blood-lead levels vary so much, there was no way to keep all children below 30 micrograms without setting the lead exposure standard at zero. Even at that standard there would still be children exceeding the target level just from non-airborne lead exposure. EPA thus had to choose what percentage of children would not be limited to blood-lead levels below 30 micrograms.

Ultimately, EPA opted to protect 99.5 percent of children aged one to five.¹⁰³ The agency defended the 99.5 percent figure as "not excessive" given that twenty percent of the population was children under age five, of which twelve million lived in urban areas and five million in center-city areas.¹⁰⁴ Yet EPA's standard leaves about 25,000 center-city children (.05 percent of five million) unprotected without any explanation. Obviously, the agency made a policy decision, but the basis for that decision is unknown.

Using the 99.5 percent figure and the 1.3 standard deviation, EPA calculated that it needed to ensure that children's average blood-lead level not be higher than 15 micrograms per deciliter. EPA decided, quite reasonably, that it had to take into account non-air sources of lead and subtract the amount of blood-lead due to these sources.¹⁰⁵ The contribution of non-air sources varies around the nation; for instance, inner-city or rural children

101. *Id.*

102. COMM. ON LEAD IN THE ENV'T, NAT'L RES. COUNCIL., LEAD IN THE HUMAN ENVIRONMENT 214-215 (1980) [hereinafter NRC LEAD REPORT].

103. National Primary and Secondary Ambient Air Quality Standards for Lead, 43 Fed. Reg. at 46,253.

104. *Id.*

105. *Id.*

living near smelters get more non-air lead than other children. Thus, the “national average” was theoretical only.¹⁰⁶

The higher the estimated average of non-air contribution, the tighter the air quality standards for lead would have to be. Scientific studies were in conflict, showing a possible range of 10 to 14 micrograms of contribution of non-air sources to children’s blood level. Isotopic studies suggested that one-third of blood-lead in children comes from non-air sources, thus allowing air to contribute 5 micrograms to the 15-microgram target.¹⁰⁷ EPA, though, picked a 12-microgram average, the mid-point of isotopic and non-isotopic studies, stating that this was the blood-lead level found when air contributions of lead were low.¹⁰⁸ The agency acknowledged that population averages might exceed this figure. Yet it dismissed the possibility of adopting a higher non-air contribution, writing:

EPA is aware that actual population blood lead levels, either individually or as a population mean, may exceed this benchmark. However, if EPA were to use a larger estimate of non-air contribution to blood lead, the result would be an exceptionally stringent standard, which would not address the principal source of lead exposure.¹⁰⁹

This is a remarkable statement, indicating that EPA used more than science in arriving at what would seem to be a scientific conclusion. Rather, it appears that the agency made the judgment that the lead standard ought to be strict, but not too strict, and that, where uncertainty exists, the agency’s empirical conclusions should be guided by that judgment. This is an uncomfortable position for an agency that is supposed to be guided by science in making policy, not by policy in deciding questions of science. Moreover, it seems odd for the agency to have picked the mid-point of the range, rather than the protective end, in determining what to do in the face of scientific uncertainty. EPA acknowledged that uncertainty existed, and the NRC commented that

106. One prominent commentator has questioned whether uniform national standards are a good idea, given the variance around the country in costs and benefits of a given standard. See James E. Krier, *The Irrational National Air Quality Standards*, 22 UCLA L. REV. 323, 323–328 (1974).

107. National Primary and Secondary Ambient Air Quality Standards for Lead, 43 Fed. Reg. at 46,254.

108. *Id.*

109. *Id.*

EPA's estimate "certainly could be in error by plus or minus 3 [micrograms]."¹¹⁰

EPA thus calculated that 3 micrograms of blood-lead could be allowed to come from air sources. So the final step was for the agency to calculate the relationship between lead in the air and lead in the blood; that is, the ambient standard level that would permit an air contribution of no more than 3 micrograms per deciliter to children's blood. Here, EPA displayed a different attitude toward uncertainty. The studies were not conclusive, but instead ranged from ratios of 1 to 1 (suggesting that a standard of 3 micrograms in the air would be sufficient) to 2 to 1 (suggesting the air standard should be 1.5, considerably lower).¹¹¹ EPA decided to choose the protective end, thus necessitating a standard of 1.5 micrograms for lead in the air.¹¹² The NAS's judgment later was that "the assumed 2-1 ratio between lead in air and lead in blood is based on very few data on children, and might easily be 50% high or low."¹¹³

It is difficult not to speculate that the agency first decided that a 1.5-microgram standard was all that could be reached without severe economic disruption and then essentially back-calculated the standard. Indeed, EPA did perform an analysis of the costs.¹¹⁴ It found that the lead phase-down rules made it possible to meet and maintain the 1.5 standard in urban areas without additional controls.¹¹⁵ On the other hand, EPA said, its analysis indicated that there could be "significant problems in attainment of the standard in the vicinity of nonferrous smelters and other large industrial sources of lead emissions."¹¹⁶ Evidently EPA was willing for it and the states to take on these sources, but no more; analysis by the agency showed that the cost of a 1.5 standard was

110. NRC LEAD REPORT, *supra* note 102, at 214. Indeed, EPA noted that the Federal Food and Drug Administration found its conclusion "disturbingly narrow." National Primary and Secondary Ambient Air Quality Standards for Lead, 43 Fed. Reg., at 46,257.

111. National Primary and Secondary Ambient Air Quality Standards for Lead, 43 Fed. Reg., at 46,254.

112. *Id.*

113. NRC LEAD REPORT, *supra* note 102, at 214.

114. National Primary and Secondary Ambient Air Quality Standards for Lead, 43 Fed. Reg., at 46,256.

115. *Id.* at 46,247.

116. National Primary and Secondary Ambient Air Quality Standards for Lead, 43 Fed. Reg. at 46,247. The agency promised to do the best it could to alleviate these impacts. *Id.*

\$200 million greater than for a 2.0 standard, and that a 1.5 standard would raise compliance costs by fifty percent.¹¹⁷

Given the possible impacts and rising marginal costs, perhaps it is understandable why EPA did not want to insist on a standard tighter than 1.5 and thus force the control of more large industrial sources of lead emissions. And it is quite possible that the Administrator “peeked” at costs in deciding the level of the standards. Then-Assistant Administrator for air, David Hawkins, testified later that, in his experience, the Administrator had cost data before him in deciding the levels of the various air quality standards.¹¹⁸ It has also been suggested that the 1.5 figure was the standard “that gave some peace of mind” to scientific researchers.¹¹⁹ At any rate, we can see that the standard’s level was, like other ambient standards, the result of, in Senator Muskie’s words, “a pragmatic judgment”¹²⁰ in which science was not the only factor.¹²¹

NRDC was critical of EPA’s proposed standard in part because of EPA’s selection of the sensitive population. Yet NRDC did not sue, viewing the existence of any standard as superior to having none at all.¹²² The lead industry challenged the standard, saying that EPA had erroneously failed to consider cost and that the evidence did not justify some of EPA’s scientific conclusions. But this challenge was rebuffed by the D.C. Circuit, which held that EPA need not consider costs and that it should defer to EPA’s reading of the evidence.¹²³

B. *Implementation of the Ambient Air Quality Standards*

Did setting ambient air quality standards and making the difficult judgments about what the standard should be accomplish anything? Yes, but less than NRDC hoped. Interestingly enough,

117. See MELNICK *supra* note 38, at 276. (The one-half increase is derived by assuming a total compliance cost of \$600 million, \$200 million of which would be saved through the laxer standard. That means the cost of a 2.0 standard would have been \$400 million, and an additional \$200 million amounts to a fifty percent increase.)

118. Oren, *supra* note 90, at 10662 n. 103.

119. MELNICK, *supra* note 38, at 271.

120. 123 CONG. REC. 18,463 (1977).

121. NRC LEAD REPORT, *supra* note 102, at 215 (remarking that “uncertainties about relationships between lead in the environmental and lead in the body make it difficult to defend any specific environmental standard on purely scientific grounds”).

122. Finamore & Simpson, *supra* note 91, at 266.

123. Lead Indus. Ass’n v. Env’tl. Prot. Agency, 647 F.2d 1130, 1147–1151 (D.C. Cir. 1980), *cert. denied* 449 U.S. 1042 (1980).

environmentalists made virtually no attempt to use *NRDC* as precedent to force the listing of additional substances until the recent interest in greenhouse gas regulation. Not a single substance has been placed on the section 108(a)(1) list since lead. The Environmental Integrity Project and other groups have petitioned EPA to list ammonia, but there has been no decision and hence no litigation.¹²⁴

Nor has the lead standard itself been important. When EPA issues an ambient air quality standard, states, as we have seen earlier, must prepare plans to show how the standard will be attained and maintained. In the case of the primary (health-based) standards, each plan must show that attainment will take place by a given deadline.¹²⁵

Thus, EPA and environmentalists had to press states to submit plans. This was not easy. The lead air quality standard was set in the spring of 1978, not long after the enactment of the Clean Air Act Amendments of 1977.¹²⁶ Those amendments obligated states to comprehensively revise their plans to meet new requirements for other air pollutants or face a ban on the construction of new major sources of air pollution.¹²⁷

Because of that workload, the last thing the states wanted was to go through the steps required to develop a plan for lead. Such a plan would entail figuring out where to monitor and model to learn which areas, if any, were in violation; developing an inventory of which sources emitted airborne lead; calculating whether the unleaded gasoline rules were adequate to demonstrate attainment in time; and then, if necessary, coming up with a control strategy.¹²⁸ All this seemed like a massive paper-pushing opera-

124. See Brief of Petitioner, *Envtl. Integrity Project, et al. v. Lisa Jackson*, Petition for the Regulation of Ammonia as a Criteria Pollutant under Clean Air Act Sections 108 and 109 (Apr. 6, 2011), available at <http://www.environmentalintegrity.org/documents/PetitiontoListAmmoniaasaCleanAirActCriteriaPollutant.pdf>.

125. See *supra* text accompanying notes 1-8.

126. Clean Air Act Amendments of 1977, Pub. L. No. 95-95, 91 Stat. 685 (codified as amended in scattered sections of 42 U.S.C.).

127. Clean Air Act Amendments of 1977, Pub. L. No. 95-95, § 129, 91 Stat. 685 (codified as amended at 42 U.S.C. §§ 7501-7509 (2006)) (inserting new subsection 110(a)(2)(I) (since rewritten) and inserting sections 171-179 into the Act).

128. For a sample of the kind of issues that come up in developing a lead SIP, see Approval and Promulgation of Implementation Plans: New Jersey Lead Plan, 48 Fed. Reg. 57,311 (Dec. 29, 1983) (proposed rule); Approval and Promulgation of Implementation Plans: New Jersey Lead Plan, 51 Fed. Reg. 42,565 (Nov. 25, 1986) (final rule). Note that it took three years to get from the proposed rule to the final rule, even though EPA had committed itself to acting on the proposed rule within less than a year. Approval and Promulgation, 48 Fed. Reg. at 57,333.

tion given the likelihood that the plans would not show a need for further controls. Nor did EPA's air office—with a staggering workload of its own—want to supervise such a process. Thus, implementation lagged until NRDC threatened more litigation.¹²⁹

C. *Did the Standard Accomplish the Goals of NRDC?*

Contrary to NRDC's hope, having an ambient air quality standard had little, if any, effect on the leaded gasoline standard. True, this standard was later radically tightened, but the existence of the ambient air quality standard for lead was not important.¹³⁰ We have already seen the probable reason for this: EPA's belief that in most places, the lead phasedown rules would themselves bring about attainment of the ambient air quality standard.¹³¹ Indeed, EPA did tighten those rules, but for other reasons, including a political storm and a favorable cost-benefit analysis.¹³²

The Reagan administration that took office in 1981 was not favorably disposed to the leaded gasoline standards, and then vice president George H.W. Bush instructed EPA to consider relaxing or even repealing the rules.¹³³ There was a particular reason for the Administration's concern. EPA's leaded gasoline rules gave small refiners extra time to meet the standards, and the Clean Air Act Amendments of 1977 postponed the small refiners' deadline to 1982.¹³⁴ As the deadline approached, some small refiners became troubled. Officials of Thriftway Refinery

129. See MELNICK, *supra* note 38, at 280 n. 61. To quote Melnick, "One cannot help but wonder whether state and federal regulators have sometimes thought, 'NRDC and the courts have their standard, now let *them* enforce it.'" *Id.* at 281.

130. See E-mail from Joel Schwartz, senior epidemiologist at EPA, to author (July 28, 2011) (on file with author).

131. See *supra* text accompanying note 115.

132. This account is based on LASH, *supra* note 96, at 139–41 (1984); ANNE M. BURFORD, *ARE YOU TOUGH ENOUGH?* (1986); E-mails from Brian Mannix, official at the Office of Management and Budget, and Joel Schwartz, senior epidemiologist at EPA (July 2011) (on file with author). Ms. Burford was the former Anne M. Gorsuch, administrator of EPA from mid-2001 to 2003. At the Office of Management and Budget, Mannix dealt with rulemaking packages from EPA. These sources are not entirely consistent, but the general pattern of events can be discerned.

133. LASH, *supra* note 96, at 140. Lash adds that the Office of Management and Budget wanted the standards abolished; by contrast, Mannix, who was at the Office of Management and Budget, wrote that "a few folks advocated no limits at all, but not seriously." E-mail from Brian Mannix to author (July 27, 2011) (on file with author).

134. Jonathan Martel, *Regulation of Fuel and Fuel Additives*, in *THE CLEAN AIR ACT HANDBOOK* 353, 374 (Robert J. Martineau & David P. Novello eds., 2d ed., 2004).

in New Mexico met with EPA officials, including then-Administrator Anne M. Gorsuch, to express concerns that the refinery would lose money if it had to comply. According to a sworn statement, Gorsuch told the Thriftway officials that the leaded gasoline rules were “a high priority to EPA” and expressed hope that the rules would be abolished in 1982.¹³⁵ She also indirectly promised Thriftway that it need not fear enforcement action because the standard was likely about to change. According to one participant, Gorsuch told Thriftway’s attorney as the meeting broke up that “I can’t tell your client to break the law, but I hope he got the message.”¹³⁶

Less than two months later, EPA proposed new lead rules and said it would consider rescinding the leaded gasoline regulations. Now that unleaded gasoline accounted for a majority (albeit a small majority) of gasoline sold, the agency questioned whether a standard was needed and invited comment on the issue.¹³⁷ But EPA quickly abandoned those plans under fire from legislators, medical authorities, newspaper editorials, and its own professionals.¹³⁸ Instead, the agency came up with a rule that actually tightened the leaded gasoline standard.¹³⁹ Eventually, after William Ruckelshaus succeeded Gorsuch in 1983, his staff developed a cost-benefit analysis showing that the benefits of getting rid of lead in gasoline far outweighed the costs.¹⁴⁰ The Office of Man-

135. LASH, *supra* note 97, at 140–41.

136. See E-mail, *supra* note 130. Ms. Gorsuch has not disputed the facts of what happened at the meeting, but vehemently denies there was anything wrong with her conduct. BURFORD, *supra* note 132, at 127–28.

137. See Regulation of Fuel and Fuel Additives, 47 Fed. Reg. 7,812, 7,813 (Feb. 22, 1982).

138. See Regulation of Fuels and Fuel Additives, 47 Fed. Reg. 38,070 (Aug. 27, 1982). On the reasons, see Philip Shabecoff, *Environment Agency Won't Relax Rules on Lead in Gasoline*, N.Y. TIMES, Mar. 30, 1982 at A14; Philip Shabecoff, *When a Zigzag is Really a Straight Line*, N.Y. TIMES, Apr. 11, 1982 at E7; Editorial, *The Hard Politics of Lead*, N.Y. TIMES, Aug. 10, 1982 at A18; LASH, *supra* note 97, at 141–144; Eva Hoffman & Margot Slade, Editorial, *Gorsuch Promise Raises Questions*, N.Y. TIMES, Apr. 18, 1982.

139. Regulation of Fuel and Fuel Additives, 47 Fed. Reg. 49,322, 49,332 (Oct. 29, 1982). The regulation stipulated that refiners could no longer count their unleaded gasoline in determining whether they had met the standard. *Id.* Rather, the lead limits would be based on what was present in leaded gasoline. *Id.* Without this change, refiners would have been able to increase the amount of lead in leaded gasoline as unleaded gasoline became more prevalent. *Id.*

140. See E-mail, *supra* note 130; E-mail from Brian Mannix to author (July 28, 2011) (on file with author). I have been told that OMB congratulated EPA on “producing the best cost-benefit analysis we’ve ever seen.” Schwartz won a McArthur genius grant based on his contributions to the analysis. Thomson, *supra* note 44, at 101 n.54.

agement and Budget then endorsed removing lead from gasoline, and EPA instituted a ban on leaded gasoline in 1985.¹⁴¹ In all, the leaded gasoline rules were the chief cause of a ninety-nine percent reduction in lead emissions to the air from 1970 to 2005, clearly a record of success.¹⁴²

Thus, the existence of the ambient air quality standard was virtually irrelevant to the leaded gasoline program. So did the setting of the lead standard have any benefit? The answer is “yes” for some remote locations. Lead concentrations in the air were particularly high in areas close to lead smelters. These were either primary smelters, which derive lead from ore or secondary smelters which recycle lead, mostly from automobile batteries. These smelters were generally located in isolated areas in small towns with no other employment opportunities. The ambient air quality standards for lead meant that the states or EPA had to require emissions limits—even limits that could not be reached through current technology—that were sufficient to show that the source’s vicinity would meet the ambient air quality standards.¹⁴³

When EPA set the lead standard in 1978, there were six primary lead smelters and over fifty secondary smelters in the United States.¹⁴⁴ By the end of 2013, the last domestic primary smelter, located in Herculaneum, Missouri, will close, ending more than a century of exposure for the town’s three thousand inhabitants.¹⁴⁵ There are now fewer than twenty secondary smelt-

141. Regulation of Fuels and Fuel Additives, 50 Fed. Reg. 9,386, 9,397 (Mar. 7, 1985).

142. Oren, *supra* note 4, at 1235–1236.

143. In one case of which I know, the required controls were beyond the smelter’s capabilities, and the source closed permanently to the distress of at least some local residents. See Approval and Promulgation of State Implementation Plan: Idaho, 40 C.F.R. § 52.670 (2011) (stating that the overwhelming majority of comments had been opposed to EPA’s proposed emissions limits). The best that could be done was to postpone for two years the deadline for attaining the lead standard in the Silver Valley. *Id.* While this outcome is unfortunate for those who hoped to work in the smelter, the result really cannot be blamed on the ambient air quality standard; any regulation can cause specific losers among those affected.

144. See Press Release, Env’tl. Prot. Agency, EPA Sets New National Pollution Standard for Lead (Sept. 29, 1978), available at <http://www.epa.gov/history/topics/caa70/08.html>.

145. See Press Release, Env’tl. Prot. Agency, North America’s Largest Lead Producer to Spend \$65 Million to Correct Environmental Violations at Missouri Facilities (Oct. 8, 2010), available at <http://yosemite.epa.gov/opa/admpress.nsf/d0cf6618525a9efb85257359003fb69d/1510175059ac92c3852577b6005e1e47!OpenDocument>.

ers.¹⁴⁶ It is hard to know how many of the closures are due to the ambient standards and how many to the generally poor economics of operating non-ferrous smelters in the United States. Aside from the Doe Run vicinity, there is now only one area classified as nonattainment in violation of the 1978 standards.¹⁴⁷

This impact on big lead emitters will likely continue because in 2008, EPA tightened the lead ambient air quality standards to 0.15 micrograms per cubic meter, a ninety percent reduction.¹⁴⁸ The new health-based standard is not based chiefly on the interference with heme synthesis that motivated the 1978 standard, but rather on neurological effects such as reduction of children's IQs and other intellectual abilities.¹⁴⁹ The new standards mean that more sources will be pushed to install new technology. Sixteen areas, mostly small communities, have been designated as in nonattainment of the standard.¹⁵⁰ And EPA's research assessment indicates that the ambient air quality standard might be tightened again in 2014.¹⁵¹

Even for smelters, though, EPA has reduced emissions through mechanisms other than the state implementation plans established to carry out the lead ambient air quality standards. Section 112 of the Act authorizes EPA to set standards for categories of stationary sources (factories and power plants, for instance) that emit any of the approximately 190 pollutants listed by Congress as hazardous.¹⁵² These standards apply to existing as well as new sources and require that the source meet the emissions limit that can be achieved using "maximum available control technology."¹⁵³ EPA has promulgated standards under this section for both primary and secondary lead smelters.¹⁵⁴ Earlier this year, EPA proposed to tighten its standards for secondary lead smelt-

146. Air Toxics Emissions Standards for Secondary Lead Smelters, BUILDINGS (May 3, 2011), <http://www.buildings.com/tabid/3334/ArticleID/11953/Default.aspx>.

147. See ENVTL. PROT. AGENCY, CLASSIFICATIONS OF LEAD NONATTAINMENT AREAS (2011), <http://www.epa.gov/oaqps001/greenbk/lnc.html>.

148. See National Ambient Air Quality Standards for Lead, 73 Fed. Reg. 66,964, 66,964 (Nov. 12, 2008).

149. See *id.* at 66,975, 66,984.

150. See ENVTL. PROT. AGENCY, LEAD 2008 STANDARD NONATTAINMENT AREAS (2011), <http://epa.gov/airquality/greenbk/mnc.html>.

151. See Andrew Childers, *Air Toxics: EPA Assessment Finds Stronger Links. Between Lead Exposure, Health Effects* 42 ENV'T REP. (BNA) 1033 (2011).

152. Clean Air Act § 112(d), 42 U.S.C. § 7412(d) (1996).

153. For a good exposition of the program, see Martineau, *supra* note 134, at 227-79.

154. See 40 CFR § 63.1541 (2010) (primary lead smelters); 40 C.F.R. § 63.541 (2010) (secondary lead smelters).

ers.¹⁵⁵ These proposed standards would require more than the maximum available control technology to protect public health and instead would mandate even tighter controls. The hazardous pollutant regulations offer an opportunity beyond the ambient standards and state implementation plans to force smelters to find better control technology.

Finally, the leaded gasoline rules may emerge again as an important regulatory tool. The largest single source of lead in the United States is aviation fuel, and environmentalists are pressing EPA to regulate it under its authority to control fuel additives.¹⁵⁶ These rules represent again a mechanism other than the ambient air quality standards that EPA can use to control a significant source of airborne lead.

IV. CONCLUSION

There are two lessons to be drawn. First, *NRDC* is a weak reed for finding a mandatory duty to list greenhouse gases and starting the process of setting ambient air quality standards under the Act. It was probably wrongly decided, and even if correct, might well not apply to greenhouse gases. Second, setting ambient air quality standards is not easy, nor is it a panacea for air pollution problems; sometimes other mechanisms of the Act are better tools. In the case of lead, EPA had to go through a long and difficult process of standard setting and persuading the states to implement that standard. The net return—the closing of some lead smelters and the imposition of controls at others—has been worthwhile, but the ambient air quality standards were not the primary tool to reduce exposure to airborne lead.

155. See 76 Fed. Reg. 29,032 (May 19, 2011) (to be codified at 40 C.F.R. pt. 63). For a brief general description, see Press Release, Env'tl. Prot. Agency, EPA Proposes Stronger Air Toxics Emission Standards for Secondary Lead Smelters (May 2, 2011), available at http://www.epa.gov/agingepa/press/epanews/2011/2011_0502_2.htm. A reader who knows the Act well might wonder how EPA can set these standards, since section 112(b)(7) bars EPA from listing lead as a hazardous air pollutant. 42 U.S.C. § 7412(b)(7) (2006). The answer is that EPA considers lead to be a surrogate for metallic hazardous pollutants, and regulates lead as a way of controlling the metallic substances that are on the list of hazardous air pollutants. See National Emissions Standards for Hazardous Air Pollutants From Secondary Lead Smelters, 62 Fed. Reg. 32,209, 32,210 (June 13, 1997).

156. See *Environmental Organization Intends to Sue EPA Over Lead Emissions from Aviation Fuel*, 42 ENV'T REP. (BNA) 1208 (2011). EPA has issued an advance notice of proposed rulemaking but has gone no further. 75 Fed. Reg. 22,440 (Apr. 28, 2010) (to be codified at 40 C.F.R. pt. 87).

The advocates of ambient air quality standards for greenhouse gases thus ought to hesitate. The legal case that EPA must set such standards is weak. And advocates must be conscious that sometimes other tools in the Act can play a much more important role in reducing emissions at considerably less administrative cost. For instance, an article resulting from our symposium suggests that EPA ought to use section 111's new source performance program to control new and existing stationary sources.¹⁵⁷ The agency might also continue to press for tougher fuel economy standards, which limit gasoline consumption and hence emissions of greenhouse gases. Both of these techniques offer a more promising path than ambient air quality standards.

157. M. Rhead Enion, *Using Section 111 of the Clean Air Act for Cap-and-Trade of Greenhouse Gas Emissions: Obstacles and Solutions*, 30 UCLA J. ENVTL. L. & POL'Y 1 (2012).