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Mining and the Environment: The Clean Air Issue in New Mexico, 1960–1980

CHRISTOPHER J. HUGGARD

Air pollution was a growing problem in the Southwest after World War II. Yet, because of the nearly century-long confidence in the smoke-stack industries in the United States, few citizens complained of the atmospheric toxins emitted by this economic leviathan. In New Mexico and other mining states in the West, people traditionally accepted these tradeoffs. Economic prosperity and jobs took precedence over protection of the environment. From their perspective, mining and other industries had propelled the United States to the top of the world power structure by 1945, and Cold War policies required a continuation of the United States industrial revolution that began in the late nineteenth century. In the post-World War II era, westerners continued to think in exploitative terms characteristic of an extractive, frontier society.

By the 1960s, however, environmentalists introduced a new awareness of the injustices against the atmosphere and lithosphere of the Earth. No longer was the West's mineral wealth seen solely in economic terms. And, with the increasing number of deaths to cancer, humans began to perceive themselves as vulnerable victims of industry's environmental irresponsibility. National, regional, and local environmental groups decided to alleviate these problems by protesting the release of toxins into the air. Congress also reacted by imposing regulations on industry. Among these remarkable measures was the Clean Air Act of 1967, and its amendments in 1970 and 1977. These laws established regulation of industrial and automobile emissions and initiated a national air pollution debate that trickled down to state and local levels in the Southwest.

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The environmental movement represented the second major confrontation that industry faced in the twentieth century. The first, of course, was the rise of labor. Clearly, both movements threatened the traditional power base of industry. And, just as industry fought to stifle the rise of labor in the 1930s and 1940s, it also fought to block environmental regulations in the 1960s and 1970s. When Congress announced intentions to amend the Clean Air Act in 1977, for example, the result was the greatest flurry of lobbying since the Taft-Hartley Act of 1947. Despite industrial delay tactics concerning labor in the 1940s and the environment in the 1970s, industry was required in the end to change its policies.

In the same year that copper workers of the International Union of Mine, Mill, & Smelter Workers (Mine-Mill) merged with the United Steel Workers to form a mega-union for mine laborers, Congress passed the 1967 Clean Air Act, which implemented the first ever federal air pollution regulations. Industry began to accept its responsibilities to the workers, agreeing to generous labor contracts that provided higher wages, safer working conditions, health care, and insurance. Industrialists had no intention, however, of giving in to environmentalism. From 1967 to 1977, in fact, industry did everything in its power to delay implementation of air quality controls.

In many ways, the air pollution battle in New Mexico paralleled the national fight. The state legislature, for instance, passed the Air Quality Control Act in 1967, paving the way for regulation of industrial emissions. The climax of New Mexico's air battle occurred in June 1975. At that time, the Kennecott Copper Corporation was pitted against the environmentalists of the New Mexico Citizens for Clean Air & Water (NMCCA&W) at an Environmental Protection Agency hearing in Silver City. Years of debating federal and state air standards were at stake in the emotion-filled meetings. The tension was so high that a local labor leader tried to pick a fight with John Bartlit, chair of the NMCCA&W. At the heart of the debate was whether to keep a copper smelter open, and how to insure clean air, two of the most salient economic features of New Mexico—industry and tourism.¹

The first of these economic factors, the mining industry, had long-standing roots in New Mexico. Since the late nineteenth century, mining flourished in Grant County. Initially, gold and silver dominated the county's mineral output through 1900. By 1910, however, precious metals gave way to copper production, a transition common to many mining districts in the American West.

As early as 1800, the Spanish mined the red metal at Santa Rita, the oldest copper mining camp in the continental United States. Yet Apache military resistance through the 1850s, lack of efficient transportation until the mid-1880s, and limited technology until the early 1900s delayed the development of low grade copper deposits. A new era was inaugu-

rated in 1906, however, when Daniel C. Jackling initiated open-pit mining at Bingham, Utah. Soon thereafter, copper pits were started throughout the West: the Ray pit in Arizona, the Ely in Nevada, and the Chino in Grant County, New Mexico.²

In 1932, the Kennecott Copper Corporation, with roots in Alaska and financial backing from the Guggenheim family, bought the Chino mine. Anticipating World War II demands, Kennecott built a smelter in 1939 at Hurley, the milltown of the original mine owner, the Chino Copper Company. Production at the mine, the fifth largest copper pit in the world at that time, jumped from 33 million pounds in 1938 to 152 million in 1942; from the end of World War II to 1987, the mine averaged more than 140 million pounds a year, peaking at 244 million in 1987. Such output warranted employment of nearly 2,000 workers, although these numbers gradually declined to about 1,300 with rising mechanization in the three decades after the war. Simultaneously, the average expenditure per copper worker rose from about \$5.50 an hour to nearly \$20 during this period. Grant County's per capita income, for example, was the highest in the state at \$168 a week in 1973 (copper workers actually averaged \$213), with Bernalillo ranked second at \$138. The copper operations, in essence, were a mainstay of the New Mexico economy by the 1950s, the county's producers alone contributing more than a million dollars annually in taxes, a figure that rose to six million by the late 1980s.³

The state allowed Kennecott's smelter to operate unregulated from 1939 through the 1960s. The company's tax revenues benefited both Grant County and the state, and there were no complaints about the toxic emissions. Regardless, workers and their families living in Hurley regularly experienced respiratory problems, especially in the cooler months from September through March. Herb McGrath, who worked in the smelter for thirty years (1953–1983), remembered in a 1993 interview that “there was usually a very thick layer of smoke from Santa Rita to Hurley until they began to correct it in the 1970s.” Likewise, Larry Himes, who “grew up in the shadow of the smokestack” in the 1940s and 1950s, recalled that winters were the worst time for bad air. Paint jobs on automobiles “went bad within two years. We accepted . . . [these things]. . . as part of living in Hurley.”⁴

By the mid-1960s the toxicity of New Mexico's air began to concern citizens. State measurements revealed rising levels of sulfur oxides during the 1960s from a 250-kiloton average to more than 500 kilotons. By the mid-1970s, the figure peaked at about 975 kilotons.⁵ These high levels of sulfuric gases in part corresponded to the rapidly rising population of the Southwest (i.e., more automobile operators). But more important were the increasing emissions of the copper smelters in the industrial corridor from Douglas, Arizona, where Phelps Dodge had been operating a smelter since 1914, to El Paso, Texas, a lead-copper smelter

center since the late-nineteenth century. When weather systems pushed the "bad" air to the north, where it combined with smog from Los Angeles, Phoenix, and Albuquerque, and smoke from oil refineries of Texas and coal-burning utility plants of the Four Corners area, one of the nation's most treasured natural wonders, the Grand Canyon, was filled with polluted air. Southwesterners literally visualized the "blurring" of the open skies by the mid-1960s.⁶

At first, retirees and other newcomers to the area complained about the air pollution. But their complaints failed to move the copper industry to clean up the smelter emissions. Larger forces would be needed to confront the copper behemoth. The roots of the fight to clean up the Southwest's air began with a biologist-writer, Rachel Carson. Her best-selling book, *Silent Spring*, launched environmentalism into a new phase. Her graphic descriptions of the dangers of pesticides, especially of DDT, and the real and potential human loss of the carcinogenic sprays dramatically elevated public awareness of the threats of atmospheric toxins. Carson's pleas moved President John F. Kennedy in 1963 to appoint a special panel of the President's Scientific Advisory Committee to examine pesticide use. The committee agreed with Carson and criticized the industry and the federal government for allowing unregulated pesticide use. Eventually, Carson's efforts resulted in the Pesticide Control Act of 1972.⁷

Silent Spring galvanized the environmental movement in the United States and the rest of the western world. At the second quadrennial meeting of the National Conference on Air Pollution in 1962, for example, former U.S. surgeon general Dr. Luther L. Terry vociferously announced that the destruction of the atmosphere was a crime. "Who is to blame? Where are the culprits? . . . Where?" he queried, knowing the answer. "WE ARE ALL GUILTY—not health officials alone, nor legislators, nor businessmen—but ALL of us!" The environment was at the mercy of humans and "we cannot blame the vagaries of nature for its defects. The time is past [for such thinking]. WE are responsible. Let's get on with it! Let's clean the air!"⁸

As a result of such environmental concerns, Congress amended the 1955 Clean Air Act in 1963. But this act demonstrated the power of the smokestack industries in the United States by reiterating that air pollution, although becoming a national problem, was still a local responsibility. In large part, the law reflected the traditional authority of industry, and the still limited power of the nascent environmental movement. In addition, industrialists understood that they had greater sway over state legislatures than Congress, largely because of the monumental economic benefits in jobs and taxes that industry produced. Consequently, indus-

try—the Kennecotts and General Motors of America—won the first air battle, despite evidence that industrial stacks annually spewed more than 20 million tons of sulfur oxides into the atmosphere.⁹

By 1967, however, the tide began to turn as new environmental groups emerged and learned how to lobby effectively. National organizations, such as the Citizens Committee on Natural Resources, the National Wildlife Federation, and the Sierra Club, led the fight for federal emission and ambient air standards. Their power grew in lobbying, legal strength, and in numbers as membership in these organizations skyrocketed to nearly a million by the mid-1960s.¹⁰

Federal regulation and enforcement would have to wait, however, until 1970, despite support from President Lyndon B. Johnson, who had hoped to bolster his Great Society program with a stricter Clean Air Act. The chair of the Senate Subcommittee on Air and Water Pollution, Senator Edmund Muskie, did not support federal emission standards at this early date because he was unwilling to compromise his presidential hopes by antagonizing corporate America. Thus, an industrial conglomerate, headed by the American Mining Congress, the National Coal Association, and the American Petroleum Institute, staved off federal emissions controls in favor of ambient air standards beginning in 1967.¹¹

Attempts to curb New Mexico's air pollution began with little fanfare in 1962. While the city of Albuquerque did create a city-county board to address the growing automobile emissions problems that many western cities faced in the postwar era, the state legislature did not pass the Air Quality Control Act, the first of its kind, until 1967. Like the federal air laws of 1967 and earlier, no specific regulations or standards were established; the lack of scientific understanding, combined with strong industrial lobbying, resulted in a watered-down bill.¹²

Until 1970, air quality in New Mexico was under the jurisdiction of the Department of Health and Social Services. Yet, its air quality division had no qualified experts as late as the end of 1968, and only four air pollution monitors existed in the entire state; not a single state employee, in fact, knew how to interpret the monitors' readings, which only detected and did not measure contamination. The Board of Health also had limited air control in rural areas that requested state regulation; municipalities and Class B counties, like Grant County, were self regulated. As a result, Kennecott determined the "safe" quantities of sulfur dioxide and particulate matter (dust-like particles of smoke) to be emitted from its smelter.¹³

The federal ambient air standards established by the 1967 Clean Air Act amendment influenced New Mexico's similarly weak law. Instead of curbing the amount of pollution emitted from the stacks, which required new technology to capture the wastes for recycling, the ambient air regulations only enforced measurement of the concentration of toxins

such as sulfur dioxide (SO₂) in the area around the smelters. Weather and terrain greatly affected the parts per million (ppm) of SO₂ and particulates dispersed in the atmosphere. Because this standard did not measure the amount of material coming out of the stacks, but how it was dispersed in the atmosphere, new technology was not necessary. If alterations in the smelters were needed, Intermittent Control Systems (ICS) were available, at a far lower cost, which allowed near constant production (e.g., at the Hurley smelter), despite continued high levels of SO₂ and particulates.

Because of the ineffectiveness of the 1967 amendment, Congress worked to formulate a scientific definition of pollutants and how to regulate them. That investigation culminated in the hearings before the Senate Subcommittee on Air and Water Pollution in 1970. Unlike previous legislation, however, the resulting amendments took on far greater significance because Congress had created the Environmental Protection Agency (EPA) on 1 January 1970, to define and enforce the new regulations. Furthermore, the environmental contingent—e.g., the Environmental Defense Fund and the Sierra Club—made a strong showing at the hearings.

Despite the public and federal call to clean up the air, the mining coalition reiterated its support for local control. In his statement to the Senate committee, David Swan, vice-president of technology for Kennecott and representative for the American Mining Congress (AMC), introduced his opposition to federal regulations in the following manner:

The environmental effects of . . . operations are carefully considered in the planning and engineering of every mining and processing facility developed [in America] . . . Industry, as a part of the community, accepts the obligation to operate in a socially responsible manner. Both through their own resources and those of manufacturing suppliers, AMC members have been at the forefront of the development of measures to protect environmental quality, including air quality, and of the technology needed to do so.¹⁴

In spite of this seemingly pro-environment pronouncement, Swan next stated his opposition to federal emissions control in the "air regions" established under the provisions of the 1967 law. "There is no reason," Swan argued, "to believe that the federal government is in a better position than state and local air pollution control agencies to promulgate emission standards or regulations. . . . Virtually every citizen—individual and institutional—is contributing to air pollution and

other environmental degradation.”¹⁵ The mining industry, therefore, viewed air pollution as a problem for local agencies, government institutions that either did not exist or were in the planning stages.

The mining industry’s attempts to curtail federal emissions standards in 1970 did not succeed, though, despite a hushed meeting between executives of the major copper corporations and White House officials. The new air quality amendment, in fact, redirected national resource policy. No longer did Congress allow unlimited production and growth. Rather, the nation’s legislators called for limitations on production, especially when air and other features of the environment were threatened. The new law, in effect, redefined the role of the federal government, represented by EPA, and initiated guidelines for states to devise implementation plans to meet the new standards. Each of the “copper” states—Arizona, Montana, Nevada, New Mexico, and Utah—followed the national example, establishing plans to meet the new standards and creating new environmental agencies to address the pressing problem.¹⁶

In the hope of protecting life and property, the 1970 amendments established primary and secondary standards. The primary standards protected “public health,” whereas the secondary protected “public welfare.” The former regulations defended against disease, while the latter category protected vegetation, animals, property, soil, and, extremely important for the scenic West, visibility. The law set the primary SO₂ standard at .03 ppm and the secondary at .02 ppm, and then EPA regulated compliance. The new agency gave the states until February 1972 to submit implementation plans to meet the federal guidelines, and established the last day of 1974 for attainment of primary standards, and the end of 1977 to meet secondary regulations.¹⁷

In 1970, New Mexico’s legislature created the Environmental Improvement Agency (EIA). During the next year and a half, the EIA set out to write an implementation plan to meet the federal guidelines. At public hearings, another state body, the Environmental Improvement Board (EIB), played a decisive role in setting emissions standards and granting variances to the mining companies. But the EIB, consisting of five governor-appointed members, often disappointed environmentalists because the board tended to decide in favor of industry, jobs, and taxes.¹⁸

To establish air quality standards, the state held several public hearings. The first important meeting occurred in Santa Fe in October 1971. Here the interested parties—Kennecott, the state, and environmentalists—defined their positions for what became a heated debate. One of the main issues was emissions at the Hurley smelter.

State air division official, Betty Perkins, initiated the debate. She told how the smelter poured nearly 300 tons of sulfur into the air daily and how there were no emissions controls at the Grant County plant. Furthermore, although Kennecott knew of and had even implemented

environmental technology to curb emissions in Arizona, the company had not done so in New Mexico. Something had to be done, she argued, to stop this abuse.

Kennecott's expert witness, Dr. Charles Hine of the University of California School of Medicine, responded that the problem was not as grave as Perkins suggested. The atmosphere safely processed sulfur emissions, Hine claimed, because the earth and its living creatures produced two-thirds of the sulfur in the air. Moreover, he asserted, the federal standards for SO_2 were far more stringent than needed. In fact, he argued, irritation did not occur until levels reached 2 to 3 ppm and that "most persons" could handle 8 to 12 ppm in the air.¹⁹

The pro-industry forces, however, met strong opposition at the meeting. Helen Gram, state president of the League of Women Voters, for example, argued that the EIA needed to set standards that were stricter than the federal regulations. After all, in an earlier statement the EIB declared New Mexico a "clean air" state. The League, therefore, she continued, urged "the board to adopt emission regulations that . . . reflect the wishes of the citizens of this state and prevent further degradation of New Mexico's environment."²⁰

At the next day's hearing, a longtime Grant County resident, LaVerne Herrington, voiced similar concerns. She complained of a regular cloud of smoke that socked in the Arena Valley where she lived. The Hatchita Mountains along the Mexican border, Herrington contended, were "rarely seen now, rather than rarely obscured." Many of the valley's residents viewed the bad air as "unpleasant smog," pollution they had escaped when they moved there from cities such as Los Angeles and Phoenix.²¹

On the third day of the hearings, "witnesses mixed the fine points of science with the rough edges of personal emotion."²² Most of the sparring pitted Kennecott lawyer William Dempsey of Washington, D.C., against Mike Williams, research coordinator for the John Muir Institute for Environmental Studies. Whereas Dempsey reiterated the company's argument that SO_2 emissions at Hurley were safe for workers and the plant life nearby, Williams attacked these assumptions. His calculations showed that as much as 650 tons of SO_2 poured daily out of the smokestacks. At these levels of discharge, he said, the smelter was "spewing more of the chemical into New Mexico skies than Houston, Texas, Marietta, Ohio, or Los Angeles, California." Furthermore, this measure of toxins was 60 percent of the daily emissions of New York City and "it should be observed that sulfur dioxide is . . . responsible—along with particulate matter—for the 168 excess deaths . . . in New York in November of 1966."²³

Kennecott even had to endure a tirade from one of its own stockholders, Valerie Kockelman of Santa Fe. She “delivered a vitriolic tongue lashing against Kennecott officials—who at first laughed at the presentation but grew more silent as the personal indictment became more severe”:

Kennecott does an awful lot of air polluting—besides the kind you do in your executive suites [in] New York City. . . . Kennecott owns, as a subsidiary, the Peabody Coal Co., which is engaged in coal mining operations on the Navajo Reservation at Black Mesa. That says a whole lot about you . . . Let the stockholders pay, and pay through the nose [for environmental technology], for their past unearned profits. Let them pay for your company's shortsightedness and for your company's mismanagement, and for your firm's lack of social conscience.²⁴

By going on the record and donating her dividends to conservation organizations, she hoped to alleviate her “distressing and embarrassing position” as a stockholder of the offending company.²⁵ Kockelman's belated environmental awareness was typical of what many Americans were going through who had long benefitted from the unchecked exploitation of the environment.

In the end, however, the mining industry made a most compelling argument. Its activities, it pointed out, although detrimental to the environment, were a large part of why Americans lived in such an affluent way. The exploitation of the environment benefitted everyone, as Kockelman's own confession suggested. Why at this late date, Chino's general manager Richard Leveille asked, did their company have to take the brunt of the costs of clean-up? This economic factor weighed heavily in the EIB's decision to set lenient regulations.

As of January 1972, the standard for SO₂ emissions for currently operating nonferrous smelters was 60 percent control; plants constructed after this date had to reach 90 percent control. In other words, for every 100 tons of sulfur dioxide produced at smelters already in operation, 60 tons had to be removed from stack emissions. These weak standards were a victory for the mining industry. And environmentalists were left blaming the EIB for giving in to the old fears “of economic disaster, unemployment, and curtailment of planned expansion.”²⁶

Environmentalists were successful, however, in Arizona, Montana, Utah, Nevada, and Washington. In each of these states, Kennecott, Phelps Dodge, and Anaconda painfully witnessed the passage of new air quality standards at 90 percent removal of SO₂. The costs to comply were staggering. Through 1971, Kennecott alone committed more than \$130 million, or upwards of 30 percent of the value of all its western

smelter plants and equipment, to the clean-up. The company spent \$67.5 million at its Utah Division, the largest amount of any single operation, and \$23.2 million at Chino. Kennecott fought back, filing lawsuits in Arizona and Nevada, arguing that the standards were too strict. Anaconda did the same in Montana. In the end, the states' regulations were more stringent than the federal controls set in 1970. To counter this apparent betrayal (and contrary to traditional support of the mining industry in the Rocky Mountain states), Kennecott and other copper corporations called for federal measures to negate the now more strict state regulations.²⁷

New Mexico, notwithstanding, the environmental movement had made its mark in the air pollution conflict of the Southwest. But environmentalists in New Mexico were not willing to give up, and leading the way was the New Mexico Citizens for Clean Air & Water.

The NMCCA&W was the inspiration of Nancy Bartlit. She, along with her husband John, who took a job as a chemical engineer at Los Alamos National Laboratory, moved to New Mexico in the early 1960s to live in the "splendor" of the American West. The Bartlits epitomized western environmentalists, who in general were newcomers, well educated, and concerned for the well-being of their families and the environment surrounding them. Hoping to raise their two children in the sparkling clear air of the Southwest, they became increasingly concerned with the heavy plume of smoke that regularly drifted into their area from the Four Corners utility plant. Nancy could only reminisce about the magnificent and untainted vistas of the Sangre de Cristo Mountains seen from their kitchen and living room windows. One occasion, in particular, etched the air pollution problem in the Bartlits' minds when friends from the Northeast were visiting. Instead of a clear panorama of the rugged and colorful peaks, they could hardly see beyond their valley, and nearby Bandelier National Monument was shrouded in a hazy mist, the kind of smog their guests were hoping to escape. "If you don't see the mountains in the West," Nancy later lamented, "what is there."²⁸

Nancy regularly discussed declining visibility at local meetings of the League of Women Voters. Her desire to begin a grassroots environmental group, however, originated with a local gadfly, Joe Devaney, who in speaking before the League "identified and publicized" the air problem and then "damned" the Arizona Public Service for the pollution its utility plant spewed into the southwestern skies. Consequently, Nancy convinced her husband John, Mike Williams, and others in 1969 to co-found the NMCCA&W.

Rooted in opposition to the utility plant emissions and a proposed paper mill in Albuquerque, the NMCCA&W soon took up the fight for clean air throughout the state. John became the chair and spokesperson for the group in 1971, while Nancy served as "troubleshooter" and

“behind-the-scenes organizer,” planning the “mission” from an office in their home. Mike Williams took on the role of the “scientific genius,” and Grove Burnett, trained in environmental law, served as the organization’s attorney. John brought national recognition to the NMCCA&W in 1972, when he testified before the Senate Subcommittee on Air and Water Pollution during hearings concerning state implementation of federal standards.²⁹

As chair, John Bartlit combined the aesthetic environmentalism of his wife with a scientific or technocratic version of his own. Although disconcerted with air pollution and its potential risks to human health, visibility, and plant and animal life, he had a strong faith in technology. “Citizens needed to bring technology to the forefront,” he argued, “to change the debate. That’s how I came to be an environmentalist.” As a technocratic environmentalist his biggest complaint was that the utility and mining companies had not implemented the most efficient environmental equipment available on the national and even international markets. His hope was to pressure Kennecott to install the best technology to meet 90 percent control of SO₂ and 99.7 percent clean-up of particulate matter. These standards could be met, he argued, because the converters, scrubbers, and modern furnaces were already in use in Japan, Canada, and Finland. Borrowing from traditional industrial rhetoric, Bartlit also argued that implementation of new technology created jobs in the manufacture and operation of the equipment. In a strong break from radical environmentalists, who called for eradication of the smokestack industries, Bartlit argued that the installation of air control systems would clean up the air and benefit the economy. Essentially, the NMCCA&W’s chairman called for the best facets of both worlds, an ideology that went a long way in bridging the interests of mining companies and the environmentalists.³⁰

Through the 1970s, NMCCA&W played an extremely important role in keeping air quality issues before governmental agencies, the mining companies, and the general public. Bartlit, Williams, and Burnett skillfully cross-examined the industry’s expert witnesses at hearings to prove, for example, that the technology was available to change emissions levels at Hurley. Initially designed to discredit and fluster witnesses, especially nonprofessional and untrained environmentalists, the right to cross-examine participants at public hearings was put into state law at the insistence of industrialists. Bartlit, however, turned the stratagem on the mining industry and himself cross-examined corporate experts to reveal deception and contradictions in their statements from time-to-time just as the corporate henchmen had done with the unwitting citizen on occasion.

In 1975, the air debate reached a climax in New Mexico. By this time, the environmentalists were at full strength and the mining companies were fighting for their economic lives because of the recession, the energy crisis, growing operational costs, and rising global competition. In addition, the EPA and Congress were reassessing the Clean Air Act, amendments, beginning in 1975, to devise standards capable of ensuring cleaner air that were not too costly to industry. As a result, the EPA hearing at Silver City, from 19–21 June 1975, took on added importance for the interested parties. At stake was the survival of one of New Mexico's most lucrative, longstanding industries, as well as clean air and visibility.

The tension was high as the participants gathered for the meeting. Everybody of any importance in Grant County was there: state representatives Murray Ryan (Republican) and Thomas Foy (Democrat), Chino manager Richard Leveille and his assistants, Juan Chacón, and Chano Merino of the United Steel Workers (USW), and any number of concerned citizens both for and against stricter air standards; most Grant County residents, however, supported relaxation of the regulations (65 percent according to one poll).³¹

The scene had been set in the months before the summer meeting. Clearly, the state and its highest officials sympathized with the mining industry. In 1974, for example, the EIB awarded Kennecott a variance, extending the deadline to comply with the 90 percent particulate standard (the 60 percent SO₂ standard was still enforced) as late as 1979. When the state Council on Environmental Quality recommended tougher air standards to Governor Bruce King in early 1974, he opposed the measure and announced: "Many of my advisors feel the proposal [for stricter standards] would be unduly restrictive. I like to see a balanced approach which doesn't degrade the environment or hamper the economy to provide jobs for people raised in New Mexico."³² Only three months before the EPA hearing, the state legislature killed an environmental quality act, despite support from King's successor, Governor Jerry Apodaca. Frustrated with the bill's defeat, Sally Rodgers, lobbyist for the Central Clearing House, a confederation of environmental groups, blamed "raw political pressure by the large industrial lobbyists" and irrational fear of the bill by some "legislators who believed the horror stories" of the total collapse of the state's mining industry.³³

The EPA and the NMCCA&W confronted a "hostile audience" at the 19 June hearing. More than a hundred people showed up to taunt the environmentalists, called "petty despots and their little friends" by Grant County Chamber of Commerce manager Jim Elliott. John Bartlit opened the meeting reiterating the NMCCA&W's stance for higher standards. Amid booing and jeering in front of a pro-company crowd, Bartlit announced that:

[the] reputation of Kennecott is one of bad faith and foot dragging in their actions toward pollution control. Sixty percent sulfur oxides is enough to meet state and federal regulations, but greater control is necessary [to keep New Mexico's air clean]. . . we again recommend 90 per cent [for SO₂] today. Our position has not changed.³⁴

But, unlike the earlier hearing in Santa Fe, the pro-company forces collectively protested the economic hardships they attributed to environmental regulations. For Grant County residents, the EPA and the environmentalists were outsiders threatening their tax revenues and their jobs. Jim Elliott, in fact, protested the loudest. He warned the EPA officials of how "unbridled power to a team of anti-industry enthusiasts . . . would shut . . . down" an industry, even after it had spent hundreds of millions of dollars on new environmental technology. The Chamber of Commerce manager then asked,

[Do] anti-business [and] anti-industry people have other jobs lined up for those workers in some Utopia where the air is pure and the streams are brimming with clear water the year 'round and where it's against the law for the sun to hide its face. Who will foot the bill? Who picks up the tab for unemployment, for investment losses in both industry and commerce, and for straggling migration of a trained labor force to the food stamp lines and dole offices in already over-crowded cities?³⁵

Leveille and other Chino officials could not have been more pleased with this display of support. Elliott was echoing the sentiments that Kennecott espoused in its testimony before the Senate Subcommittee on Air and Water Pollution.

Other witnesses testified in favor of the copper corporation. Ruth Graham, a rancher in the Mimbres River Valley, northeast of the smelter, testified that during fifteen years of residence in the area air pollution was not a problem. "I moved here from Los Angeles County, [California]," she proudly attested, "and my eyes haven't burned and I haven't coughed, and I know it is because of the good clean air." On the other hand, Local 890 representative Chano Merino was less concerned with air pollution and more interested in securing jobs for members in the USW union:

We don't need a lot of outsiders coming in and telling us what to do, but we are concerned about jobs. We are not in love with Kennecott, but we negotiate in good faith. When somebody says Kennecott is not of good faith I resent it. It isn't the [smelter] smoke that bothers us, it's when we don't see the smoke that it bothers us.³⁶

Ironically, the corporation and its workers, only a generation earlier at odds, were now allied against the environmentalists who, they believed, threatened profits and jobs.

Among the arch enemies of the company and the union was Sierra Club representative Brant Calkin, who testified in favor of stricter standards. Yet, contrary to local gossip, he promised that his group had no intentions of forcing a shutdown at the smelter. Instead he recommended to EPA officials that Kennecott produce the "economic data, put it into the record, and . . . take a look at it" before making the final decision about air quality measures. A seemingly innocuous statement, this remark was an indictment of Kennecott's claims of closing down; threats that one pro-environment state legislator called "economic blackmail," despite promises to Governor Apodaca and U.S. Senator Pete Domenici to the contrary.³⁷

The June hearing in Grant County set the stage for the national showdown over the 1977 amendments to the Clean Air Act. Among the major players in the debate was Senator Domenici of New Mexico. The traditional importance of the copper industry was not lost on the powerful Republican, who served on the oversight hearings in 1974, the implementation hearings in 1975, and the amendment hearings in 1977. He also directed the "Copper Caucus," a Washington, D.C.-based lobbying coalition designed to bail out the ailing industry during the 1970s. In these capacities, he wanted to provide relief for Kennecott and the other major copper corporations.

Although nominally in favor of clean air, Domenici understood the hardships the industry was facing during the recession of the mid-1970s. Moreover, the energy crisis was overshadowing environmentalism. Congress, therefore, decided to reintroduce the air debate. As a result, industrialists and environmentalists alike initiated the greatest flood of lobbying since the Taft-Hartley Act; the environmental movement era undoubtedly ranked with the rise of unionism as one of the strongest threats to corporate hegemony in American industry in the twentieth century.

At the Senate hearings, mining representatives complained of the high costs to comply with governmental standards. The expenditures for environmental technology, Kennecott's President Frank Milliken testified, increased costs by five to six percent, placing American producers at a disadvantage in the world market. Peruvian, Zambian, Zairean, and Chilean companies, which produced higher grade copper at lower costs, did not have to answer to an environmental bureaucracy whose rules cut deep into corporate profits.³⁸

To air the mining industry's financial concerns Domenici and Senator Gary Hart of Colorado, elicited information from Kennecott's officials about the temporary alternatives for controlling smelter emissions.

Although present for the Sierra Club's arguments in favor of immediate implementation of abatement controls, Domenici showed more interest in the testimony of David Swan, vice-president of technology for Kennecott, who called for continued use of Supplementary Control Systems (SCS, equivalent to the Intermittent Control Systems). Swan argued that the technological costs—an estimated \$245 million more than already spent—were not commensurate with the environmental benefits. Abatement controls were too expensive to install at older plants such as the Hurley smelter. To give the industry time to plan for the transition to these measures, Swan contended, the SCS must be allowed or production would plummet. Furthermore, he declared, energy consumption would increase dramatically. And during the energy crisis, the estimated 22 million gallons of additional fuel oil needed to operate abatement controls could not be justified. These arguments hit a high note for the senators concerned with national Cold War strategy during the mid-1970s.³⁹

Laurence I. Moss, president of the Sierra Club, countered industry's complaints about costs with a plea for human safety:

What the argument really comes down to [Moss stated] is whether we should give . . . industries the option of saving money by not putting in the . . . equipment that they could put in, and polluting the air and jeopardizing the public health and welfare in the process. I don't believe that we should give them that option.⁴⁰

But more than implementing the technology available, Moss was concerned with "the question of prevention of significant deterioration" of the atmosphere in "clean air" regions, especially in the American West. Continued use of towering smokestacks and intermittent systems was not enough, he continued, because these techniques still "spread pollution over thousands of square miles, impairing visibility and increasing the acidity of the rainwater."⁴¹

The environmental opposition made clear where they stood. The environmentalists—who garnered support from numerous governmental and private organizations, among them the League of Women Voters, the American Lung Association, and the Natural Resource Defense Council—wanted the best technology installed in western smelters. They also called for a limit to the number of new smokestacks in the region to protect visibility in national forests, national parks, and national monuments. For them, protection of the air in the West was preservation of one of America's most cherished natural resources. Just as old growth forests, spotted owls, and scenic rivers of the public domain were protected, so too should clean air be coveted and preserved for future gen-

erations. With the Clean Air Act, the federal government categorized the nation's atmosphere among one of its principal environmental treasures, and the environmentalists meant to keep it that way.⁴²

The industrial coalition fought back by proposing specific antienvironment amendments to the Clean Air Act in the mid-1970s. First, the coalition recommended that Congress limit emission controls to primary ambient air standards only, and that intermittent pollution control systems be allowed in favor of abatement measures. Second, they requested a five-year delay for compliance (to 1982) with the 90 percent clean-up measures. Third, the industrialists audaciously called for elimination of state implementation plans and termination of the current system for establishing emissions standards. In its place, they argued for controls based on "available technology" and not on "arbitrary" health standards. Finally, they lobbied to eliminate the no significant deterioration criteria altogether.⁴³

Such reasoning convinced Senator Domenici in 1976 to introduce legislation to alleviate the copper industry's economic woes. As part of the 1977 amendments, therefore, Domenici proposed allowing use of the SCS at least until 1982. The senate committee then passed the amendment by a seven to six vote. The continued "use of these controls," New Mexico's senator argued, was "essential to the copper industry's future. . . . [and although the measure will not give] the industry as much flexibility as it needs, [it] will at least give them an alternative to having to close many older plants entirely."⁴⁴

The New Mexico senator still understood the importance of visibility and clean air in New Mexico. Because of the extraordinary natural wonders, combined with the presence of viable smokestack industries such as copper smelting and electricity generation, the state played a "featured role" in the air debate. This dichotomous and unique characteristic of New Mexico and the rest of the Southwest did not escape Domenici's attention. Consequently he introduced a "new clean air package" to the 1977 amendments (along with proposals to extend emission's compliance) to protect national forests, monuments, and wilderness areas from excessive air pollution. Known as the "no-degradation" bill, this legislation created new clean airsheds designed to encapsulate New Mexico's coveted natural spots—the Gila National Forest and Wilderness Area, Bandelier, Bosque del Apache, Carlsbad Caverns, and other national resorts in the state and throughout the West. The new measure, for example, restricted growth of new industries near the designated airsheds, while also requiring already operating plants to curtail emissions when weather systems threatened to push bad air into the protected areas.⁴⁵

In August 1977, President Jimmy Carter signed into law the newest version of the Clean Air Act. In it, Domenici's provisions for protecting the airsheds appeared as did his pro-industry amendment. For Kennecott and its Hurley smelter, the Non-ferrous Smelter Order (NSO) of the act was most important. The NSO generously gave the copper industry five more years to meet the mandatory 90 percent sulfur dioxide and particulate matter controls. Likewise, the act required the states to declare air regions as either attainment or non-attainment areas. The New Mexico Environmental Improvement Division was given until 1 January 1979, to classify air regions in one of the categories.⁴⁶

In 1982, Kennecott finally met the 90 percent standards. To do so, the Hurley smelter was revamped with a new acid plant and a flash furnace. These changes, however, did not completely eliminate the air pollution problem of New Mexico. Although the state and federal standards are in place to control high levels of toxicity, abuses still exist. The Hurley smelter, for example, on occasion emits measures of sulfur dioxide and particulate matter above the standards; as a result, the furnaces are sometimes shut down, largely because of weather systems that sock in the toxic atmospheric wastes. On a larger scale, as a recent American Lung Association (ALA) report revealed, the Southwest's industrial smokes daily place millions of Americans at risk. The industrial corridor from El Paso to Phoenix, in particular, blurs the open skies of the borderlands region. In addition, major western cities pollute the western skies at unacceptable levels largely because of automobile emissions. Los Angeles' and Denver's air is especially toxic. Throughout the United States, the ALA predicts, 23 million people are subject to "dangerous" levels of noxious gases.⁴⁷

Despite this gloomy picture, the efforts of environmentalists have made a dramatic difference in the quality of the Southwest's skies. In 1991, John Bartlit experienced a pleasant encounter with Hurley's smelter manager at a state environmental regulation meeting. To the environmentalist's surprise, the young mining official had never seen a smelter without some measure of sulfur controls, and he had been in the business since 1975. Bartlit immediately reflected on this fact, thinking back to the hearings in Silver City, where he was booed for his call to clean up the air. He also reminisced of the decade-and-a-half of hard work and dedication to convince the state and the mining companies that 90 percent or higher air pollution control was both economically and socially better for the people of New Mexico. And even though Kennecott was a casualty of the air war, having sold out to Mitsubishi of Japan and Phelps Dodge by 1986, a rejuvenated smelter now stood as tribute to his technocratic environmentalism, which Bartlit claimed was

pro-environment and pro-industry. The philosophy created jobs and cleaned up the air. As the cofounder of the NMCCA&W recently stated, "I am for industry. And I am for clean air."⁴⁸

The clean air fight in New Mexico was indicative of a regional and even national movement to limit the toxins that Americans breathed on an everyday basis. Just as the New Mexico Environmental Improvement Board, the NMCCA&W, and the United States Environmental Protection Agency jostled and jostled in the debate the battle raged in Arizona, Montana, and Nevada in the West and in Pennsylvania, Ohio, and New York in the East. Congress led a national environmental movement with passage of the Clean Air Act amendments in 1967, 1970, and 1977 (and later in 1990). As a result, state governments implemented and enforced plans to reduce automobile and industrial emissions in America. In large measure, these events reflected grassroots efforts—such as Rachel Carson's pleas in *Silent Spring* and the activities of the NMCCA&W—to initiate the environmental movement. Now, nature—its terrain and the living creatures—had a voice. The atmosphere, air, had become a national treasure. Regulatory agencies at the federal and state level were in place to safeguard the new item on America's endangerment list.

For the mining industry, the air battle was a hard lesson learned. By 1990, more than \$3.5 billion had been spent on environmental controls during the preceding two decades. There were casualties as well. The copper corporations closed down smelters in Montana, Arizona, and Nevada. Ironically, Mitsubishi constructed a 250-million ton copper smelter with the required environmental technology on the Houston ship canal at Texas City, Texas, in the early 1990s. Likewise, two of the nation's, the world's, largest copper producers, Anaconda Copper and Kennecott Copper corporations, vanished into thin air by 1986—in fact, they no longer existed. And, even though they chose sale of their property over bankruptcy, they might have been forced into the latter choice if they had stayed in the business. If these corporate giants, which went nearly unregulated before the late 1960s, had listened to the winds of change in that decade and acted on those hints immediately by installing environmental technology, they might still be here today running cleaner and profitable mining ventures in the American West.

NOTES

1. John Bartlit interview, 14 December 1993; *Silver City Daily Press*, 27 October 1975.

2. See George H. Hildebrand and Garth L. Mangum, *Capital and Labor in American Copper, 1845–1990: Linkages Between Product and Labor Markets* (Cambridge, Massachusetts: Harvard University Press, 1992).

3.. Kennecott Copper Corporation, *Annual Reports (1945–1987)*; Energy, Minerals and Natural Resources Report, *Annual Report, 1991* (Santa Fe: Energy, Minerals, and Natural Resources Dept., 1992), 54.

4. Herb McGrath interview, 20 December 1993; Larry Himes interview, 19 December 1993. (All interviews for this article were conducted by the author.)

5. See "History of Air Pollutant Emissions in New Mexico, 1940–1980," Appendix B (Papers of the Air Quality Division of the Environment Department, State of New Mexico, Santa Fe).

6. William W. Little interview, former Phelps Dodge manager at Tyrone, 20 December 1993; Steve Hinchmen, "The Blurring of the West," *High Country News* 25 (28 June 1993), 10.

7. John McCormick, *Reclaiming Paradise: The Global Environmental Movement* (Bloomington: Indiana University Press, 1989), 55–56; Kirkpatrick Sale, *The Green Revolution: The American Environmental Movement, 1962–1992* (New York: Hill & Wang, 1992), 4, 32.

8. U.S. Senate, Committee on Public Works, Hearings Before the Subcommittee on Air and Water Pollution, *Air Pollution—1970*, 91st Cong., 2d sess., March—May 1970, 1537.

9. Richard H. K. Vietor, *Environmental Politics and the Coal Coalition* (College Station: Texas A&M University Press, 1980), 127–54; U.S. Senate, Committee on Public Works, Hearings Before the Subcommittee on Air and Water Pollution, *Implementation of the Clean Air Act Amendments of 1970—Part 2*, 92nd Cong., 2d sess., February–April, 1972, 435.

10. Sale, *The Green Revolution*, 23; also, see Duane A. Smith, *Mining America: The Industry and the Environment, 1800–1980* (Niwtot: University Press of Colorado, 1993), 136–48.

11. Vietor, *Environmental Politics*, 143–48.

12. *Albuquerque Journal*, 19 September 1968.

13. *Albuquerque Journal*, 10 August 1969.

14. U.S. Senate, Committee on Public Works, Hearings Before the Subcommittee on Air and Water Pollution, *Air Pollution—1970 Part 4*, 91st Cong., 2d sess., March–May 1970, 1566–67.

15. U.S. Senate, Committee on Public Works, Hearings Before the Subcommittee on Air and Water Pollution, *Air Pollution—1970 Part 4*, 91st Cong., 2d sess., March–May 1970, 1568.

16. U.S. Senate, *Implementation of the Clean Air Act Amendments of 1970—Part 2*, 506–07, 554–61.

17. Vietor, *Environmental Politics*, 162; interview of Bruce Nicholson, administrator, Air Quality Division of the New Mexico Environment Department, 7 July 1992.

18. Nancy Bartlit interview, 24 February 1994. Also, see Ira G. Clark, *Water in New Mexico: A History of Its Management and Use* (Albuquerque: University of New Mexico Press, 1987), 471–72, for a discussion of the composition and duties of the Environmental Improvement Board.

19. *Albuquerque Journal*, 19 October 1971.

20. *Albuquerque Journal*, 19 October 1971.

21. *Albuquerque Journal*, 20 October 1971; Jolane Culhane interview, history professor, Western New Mexico University, 15 December 1993.

22. *Albuquerque Journal*, 21 October 1971.

23. John Bartlit interview, 14 December 1993; *Albuquerque Journal*, 21 October 1971.

24. *Albuquerque Journal*, 21 October 1971.

25. *Albuquerque Journal*, 21 October 1971.

26. *Albuquerque Journal*, 21 October 1971.

27. U.S. Senate, *Implementation of the Clean Air Act Amendments of 1970—Part 2*, 554–61, 461; *Albuquerque Journal*, 13 January 1973; *Silver City Daily Press*, 29 August 1973, 10 May, 20 May 1974, 20 July 1976.
28. Nancy Bartlit interview, 14 December 1993.
29. John Bartlit interview, 14 December 1993; unpublished statement of the New Mexico Citizens for Clean Air & Water, "The Role of Nongovernmental Organizations, New Mexico Citizens for Clean Air and Water, A Case Study," (unpublished, 1993), 2; U.S. Senate, *Implementation of the Clean Air Act Amendments of 1970—Part 2*, 905.
30. John Bartlit interview, 14 December 1993; Vietor, *Environmental Politics*, 163.
31. *Silver City Daily Press*, 20 June 1975.
32. *Silver City Daily Press*, 28 January, 4 April, 20 April 1974.
33. *Silver City Daily Press*, 4 March 1974.
34. *Silver City Daily Press*, 20 June 1975; interview of John Bartlit, 14 December 1993.
35. *Silver City Daily Press*, 20 June 1975.
36. *Silver City Daily Press*, 20 June 1975.
37. *Silver City Daily Press*, 20 June 1975; memorandum from Governor Jerry Apodaca to Roy Walker, chair of the New Mexico Environmental Improvement Board, 8 October 1975, 1, in the Governor's Council of Economic Adviser's Collection at the Bureau of Business and Economic Research, University of New Mexico; U.S. Senate, Committee on Public Works, Hearings Before the Subcommittee on Environmental Pollution, *Clean Air Act Oversight*, 93rd Cong., 2d sess., May, 1974, 239; John Bartlit, "Cock-and-Bull Story," *Los Alamos Monitor*, 19 October 1975.
38. U.S. Senate, *Clean Air Act Oversight*, 250.
39. U.S. Senate, Committee on Public Works, Hearings Before the Subcommittee on Environmental Pollution, *Implementation of the Clean Air Act—1975*, 94th Cong., 1st sess., April–May, 1975, 1312.
40. U.S. Senate, *Clean Air Act Oversight*, 599.
41. U.S. Senate, *Clean Air Act Oversight*, 612.
42. See Samuel P. Hays with Barbara D. Hays, *Beauty, Health, and Permanence, Environmental Politics in the United States, 1955–1985* (Cambridge, England: Cambridge University Press, 1987), 73–76, 159–62.
43. Vietor, *Environmental Politics*, 210–14.
44. *Silver City Daily Press*, 6 February 1976.
45. NMCCA&W, *Newsletter* 27 (September 1975), 1; *Silver City Daily Press*, 5 August 1977.
46. *Silver City Daily Press*, 10 December 1977, 5 January 1978.
47. Cable News Network, "Coverage of the American Lung Association Report," 29 April 1994.
48. John Bartlit, interview, 14 December 1993.