

Pennies From Hell: In Montana, the Bill For America's Copper Comes Due

By Edwin Dobb for Harper's Magazine, 1996

Rust-colored, reeking of sulfur, and surrounded by corroded earthen terraces so sterile they appear incandescent in strong light, the 600-acre lake that rests within the man-made cavity known as the Berkeley Pit looks nothing like a refuge, though it must have seemed like one to the ill-starred flock of snow geese that stopped there while passing through southwestern Montana last November. It is uncertain how many birds eventually rose from that bitter pool and flew over the rooftops of Butte, the town that borders and embraces this former strip mine, continuing their winter migration from Arctic Canada to California, but at least 342 of them did not. That is the number of carcasses Pit monitors found drifting in the lake and washed ashore in the weeks following the flock's stopover. Postmortems conducted under the auspices of the University of Wyoming later revealed what most people immediately suspected: that the geese had succumbed to the water, which is acidic enough to liquefy a motorboat's steel propeller, and to its poisonous mineral contents, principally copper, cadmium, and arsenic. In each bird autopsied, the oral cavity, trachea, and esophagus, as well as digestive organs like the gizzard and intestines, were lined with burns and festering sores. To even so much as sip from the Pit, it seems, is to risk being eaten alive, from the inside out.

A few days after the first dead snow geese were discovered, Steve Blodgett, a friend and neighbor, suggested that we visit the Pit ourselves to see the unprecedented kill at close range, and looking for any opportunity, no matter how oblique, to get reacquainted with my hometown, I eagerly accepted. Besides possessing a talent for grasping situations whole and summing them up in striking ways, Steve happens to be a reclamation specialist with the local city-county planning department, making him the ideal Virgil to lead this unusual descent. "The Pit is the receptacle of all our sins," he offered, half seriously, as we edged down the fearsome receptacle's back wall, foothold by handhold, one at a time. To be sure, there is a hellish air about the place. In 1982, after operating as a copper mine for twenty-seven years, the Berkeley Pit fell silent. It was then a yawning hole one mile wide, a mile and a half long, and more than a quarter-mile deep. About the same time, mine officials shut down the pumps that had removed groundwater from the huge excavation and the labyrinth of older, inactive shafts and tunnels adjoining it, inaugurating what may turn out to be the most extensive mine flood in the world and precipitating a staggering environmental problem that will haunt Butte long into the future.

On the Hill, the term locals use for the fifteen-square-mile slope that forms the north end of Summit Valley-- where the mining district is located, as well as what remains of Butte's original neighborhoods and business district--sulfur permeates the bedrock. When exposed to air and water, long-buried sulfide minerals produce sulfuric acid, a highly caustic compound that, given enough time, can dissolve almost any metal with which it comes into contact. Once the pumps were silenced and water began migrating back into the mine works, the Pit in effect became a mammoth chemical transformer, a highly dynamic, self-perpetuating machine yielding ever-increasing amounts of hazardous soup. Today, at about 28 billion gallons and rising millions more daily, it is without equal in the United States, threatening the alluvial aquifer beneath Summit Valley as well as the Flat--the central and southern parts of the valley where at least half of the town's 33,336 residents now live--along with the upper reaches of the Clark Fork River Basin, from Silver Bow Creek, which flows along the base of the Hill, to Milltown Dam, more than a hundred miles downstream of Butte. Already considerably contaminated after 130 years of mine waste runoff and smelter fallout, the entire flood-plain, from the Hill to the dam, has been included on the federal Superfund list, and is the largest such site in the country.

"That's Horseshoe Bend," Steve said, pointing toward a frayed ribbon of silver draped from the northeast corner of the Pit and down a steep, partially staircased slope to the lake several hundred feet below. Through binoculars the ribbon, about a mile away, resolved itself into a raging cataract, the confluence of long-buried creeks and seepages that surface at a nearby horseshoe-shaped waste dump and, until recently diverted, spilled 2.5 million gallons of surface water into the Pit every twenty-four hours. Like the ribbon, the terraces that form the walls of the Pit are much larger than they at first appear. Built to accommodate the comings and goings of house-size 170-ton haul trucks, each step is forty feet wide and at least that many feet high. The steps also are eerily lifeless, bleached of all color save the palest shades of yellow, gray, and red, and, more than any other part of the mining district, they are haunted by the odor of brimstone. My guide and I had by then clambered down a half-dozen of these infernal terraces, but we could descend no farther, the next cliff being too precipitous, too unstable. Still high above the water, we scanned the Pit for traces of the birds. "If we can clean up this," Steve said, "we can clean up anything." Two cloud-white bodies floated near the east shore, upside down in a reflected sky.

The snow geese were instantly canonized as martyrs to copper mining, yet another sacrifice demanded by the gods of extractive industry. The symbolism was easy to grasp and even easier to exploit, but it was nonetheless misleading because it suggested that innocence died in Summit Valley last November when in fact it had expired many generations earlier, when the mining camp was settled and its fallen character firmly and permanently cast. Whatever the West has stood for in the popular imagination, Butte has always stood for some thing else, splendid exception and tragic aberration all at once. Encircled by tremendous and

more-or-less unspoiled natural beauty, in a state that today some residents, no more troubled by modesty than they are by irony, call the last best place, it was from the start a place apart, far gone and then some, so much so that in 1943 the historian Joseph Kinsey Howard considered it "the black heart of Montana," and this despite a stubborn affection for the people of Butte and their way of life. Summit Valley earned this distinction after the United States entered the age of electricity, the age of house lights, telephones, and plug-in appliances, motors, and generators, to say nothing of the machinery and armaments required to prosecute two world wars, all of which were made with copper. Next to iron, the principal constituent of steel, no metal was more important to the economic growth of the country, and the enriched veins beneath Butte were thick with it. From the late 1800s through the first half of this century, the so-called Mining City yielded about 13.25 billion pounds of copper, which was a third of the total used in the United States during the period and a sixth of the world supply--all from a mining district covering only four square miles. Overall, the Hill has produced about 20 billion pounds of copper.

Now that the United States is fast developing a postindustrial economy, increasingly trading in such abstractions as service and information while leaving it to the rest of the world to extract, process, and render raw materials into tangible products, the history and fate of Butte may appear irrelevant to the world outside Summit Valley. But they are not, and precisely because we are so eager to shed our industrial past, well in advance of grasping the extent to which industry's shadow is still with us--indeed, is the very stuff of which we are made. The mines, mills, and factories upon which twentieth-century America was founded receive scant attention in the popular stories we tell about the period, and when they are acknowledged, it is usually from the perspective of heroic valorization or naive disdain. Especially regarding the use of such limited resources as timber, energy, and metals, public debate has become so fragmented that it obscures the connections that tie all Americans to places like the Berkeley Pit, thereby precluding well-considered, honest responses to the uncomfortable questions they raise about desire and complicity, capitalism and modern culture.

Butte also deserves the close attention of anyone concerned about recent attempts by the Republicans in Congress, abetted by key western Democrats, to weaken the pioneering environmental legislation of the past three decades, in particular the 1980 Superfund law, which established mechanisms for reclaiming the country's most hazardous waste sites. Especially alarming is a bill sponsored by the chairman of the Senate Environment and Public Works Committee, John Chafee, of Rhode Island, and fellow Republican Bob Smith, of New Hampshire, that would in effect absolve corporate polluters of responsibility for cleaning up about 15 percent of the approximately 1,200 sites now on the federal Superfund list, including Summit Valley. Chafee wanted a floor vote before the close of the 104th congressional session, but compromise negotiations stalled in committee. And although it is true that since the 1994 midterm elections the most extreme members of the majority party have been forced into retreat, environmentalists and corporate

executives alike believe that the original Superfund law is deeply flawed, certain of its liability provisions having provoked an enormous amount of expensive and time-consuming litigation and precious little reclamation since its passage. Reform, then, is likely, sooner or later. Whether this effort will accurately reflect the many complexities and persistent ambivalence that inhere in our relationship with the natural world is probably too much to hope for.

Meanwhile the Hill, set apart from the West yet intimately tied to the country as a whole, provides an ideal vantage point from which to view this relationship, to look beneath the surface of an extractive industry that has been both immensely beneficial and immensely destructive. Like Concord, Gettysburg, and Wounded Knee, Butte is one of the places America came from. Indeed, it can be looked upon as a national laboratory, in which the inner workings of a crucial kind of economic activity are laid bare and U.S. environmental policy is being put to one of its most severe tests. Butte is where we must return, in the manner of a pilgrimage, if we wish to grasp in full the implications of our appetite for metals--for everything from cars and computers to building materials and batteries--an appetite that remains unabated even as we grow more dependent on imports to satisfy it, conveniently displacing the costs and consequences overseas, beyond the reach of conscience.

"The Hill's had a helluva run," Steve said, before we began our ascent back to the rim of the Pit. Most mines are short-lived, encouraging a short-run outlook best expressed today in the hundreds of ghost towns that lie between the Great Plains and the Pacific Ocean. In Summit Valley, by contrast, mining has persisted, one run after another, considerably longer than almost anywhere else. Since 1864, when gold was discovered along Silver Bow Creek, the Hill has been the native home of hard-rock mining in the West, a place where hope favored nomadic gamblers, fickle speculators, and, in the end, financiers and entrepreneurs who would not dream of living here. Though the gold played out within a few years and the silver era that followed lasted little longer, beneath the ramshackle camp and beyond its boom-and-bust start-up lay something of far more enduring value: the largest known deposit of copper ore in the world. The vein that Marcus Daly, an uneducated but shrewd prospector, found at the 300-foot level of his Anaconda mine in 1882 ranged in width from 50 to 100 feet and in places was as much as 50 percent pure, and that was merely the high-grade tip of a subterranean iceberg extending at least a mile below the surface and containing more than 4 billion tons of copper ore. "The world does not know it yet," Daly is reputed to have said, "but I have its richest mine." He was right, and from his historic strike forward, geology was destiny in the place that came to be known as the "Richest Hill on Earth."

The social, economic, and political effects of the ensuing "red harvest," the term Dashiell Hammett used in his novel of the same name, which was set in the area, are difficult to overstate. In a region dominated by haystacks and cow towns, Butte soon became a boisterous island of urban depravity and unbridled

industrial capitalism, in its heyday home to between 75,000 and 100,000 people, the only mining camp in the West to undergo such a drastic transformation. There was nothing in New York or San Francisco that could not also be found in this remote corner of the mountainous West. The Hill produced staggering fortunes for a handful of ambitious, frequently ruthless capitalists, Daly among them, who are collectively remembered and sometimes reviled as the Copper Kings, and a consortium of bankers and investors on the East Coast and in Europe, including the Rockefellers of Standard Oil. It also undergirded a community of great ethnic breadth, a decidedly unwestern cosmopolitanism that drew from every wave of immigrant-Welsh, French, and German, Chinese, Lebanese, and Greek--to reach U.S. shores in the late nineteenth and early twentieth centuries; helped immensely to turn the labor movement into a progressive force in American life; and, finally, gave rise to one of the most powerful mining firms in the world--the Anaconda Copper Mining Company.

The Company. To the extent that Butte is an archetypal American town, it is so because many of the forces that shaped the country existed here in an undisguised and frequently extreme form, and in no instance was this more true than in the case of corporate power, whose center was the Hill but whose reach extended far beyond Summit Valley. As the late historian K. Ross Toole used to argue, Anaconda maintained a more comprehensive hold on Montana's natural resources, government, and people than any other corporation in any other state. One of the most egregious examples of the Company's willingness to wield this power with thoroughgoing ruthlessness occurred in 1903. Unable to obtain a favorable decision from local judges in a violent conflict over the ownership of certain ore veins, it shut down all of its operations on the Hill. Without warning, 6,500 men were thrown out of work. The Company then announced on the front page of Montana's major newspapers that if the governor were to convene a special session of the state legislature, and if the legislature were to pass a "fair trial" bill that allowed the Company to transfer its legal dispute to a more favorable court, then it would reopen the mines. The governor complied, as did the legislature.

To understand why the governor buckled so easily it helps to know that Butte was not the only town that suffered because of the shutdown. At the time, the Company employed three quarters of the wage earners in Montana, and all of them lost their jobs as well. It also helps to know that the Company owned all but one of the state's major dailies. Thus, when it came to coverage of issues pertaining to mining interests--the shutdown, for instance--it owned the allegiance of most mainstream journalists. By the end of the First World War the Company had taken control of the entire Hill. It owned the world's largest nonferrous smelter complex, in the neighboring town of Anaconda, twenty-three miles west of Butte, as well as numerous lumber mills and millions of acres of timber. City water systems, stores, hotels, banks, railroads--the Company reached into every realm of Montana life, including the capital, where it bought elected officials with suitcases full of cash, liquor by the caseload, women, whatever kind of "hospitality" it might take to swing policy and legislation its way. During boom times union miners made good money in Butte, it is true,

but that also served the Company's purposes by concealing the larger, alarming economic pattern: almost all of the wealth extracted from the Hill--some \$25 billion worth--left the state.

The Company's influence notwithstanding, geology had always been the final arbiter of events in Butte, and eventually geology was the undoing of Anaconda's corporate empire. As early as the 1920s, the labor-intensive underground mines in places like the Hill, where the copper sulfide might be located more than a mile below the surface, started to lose their competitive edge to the open-pit mines of corporations such as Kennecott and Phelps Dodge. In 1923 Anaconda purchased a controlling share of the Chile Copper Company, which by then owned the world's most extensive deposits. By that time Anaconda executives knew that if the Butte operations were to stay profitable they would soon have to switch to pit mining on the Hill; there remained only enough high-grade ore to last another thirty years or so. But it was a decision Company officials were reluctant to make, because it called for the destruction of most of the town's original neighborhoods, which had grown up around the mines and directly atop the ore body. Finally, in 1955, the Company announced to the people of the Mining City that it could continue to guarantee them a living wage only if it destroyed a large portion of the place where they lived. There was little anyone could do but get out of the way.

Thus began the final and nearly fatal stage of large-scale hard-rock mining in Butte. One by one the underground operations closed down. By 1975, when the sheave wheels ceased turning atop the last active headframe--the Mountain Consolidated, or Con, whose shaft was 5,291 feet deep--the workings included about 4 miles of vertical shafts, 2,500 miles of tunnels, and 7,000 miles of slopes, for a total of almost 10,000 miles of passageways. Meanwhile the Berkeley Pit had come into being--rather, non-being--an ever-expanding void on the east side of the Hill that had swallowed the Irish neighborhood known as Dublin Gulch; Meaderville, where the Italians lived; and most of Finntown; along with the sections where the Serbs, Croats, Montenegrins, and Albanians had settled; as well as the McQueen Edition, whose original residents were Austrian and Hungarian. In all, about one third of the Hill was depopulated. Destroyed, too, were the Columbia Gardens, a seventy-acre refuge of shade trees, flower displays, and broad lawns that included a large dance pavilion, Ferris wheel, merry-go-round, and elaborate wooden roller coaster--Butte's versions of Central Park and Coney Island joined together, and treasured no less.

The town might have continued to consume itself in this fashion, the entire Hill turned inside out, were it not for an historic election in Chile, by that time the location of the Company's most productive holdings. In the early 1970s, shortly after taking office, President Salvador Allende nationalized the country's foreign-owned mines, pushing Anaconda to the brink of bankruptcy. By 1977 Anaconda, to its relief, had found a buyer for its Montana holdings, the Atlantic Richfield Company, although the purchase fumed out to be a regrettable decision for ARCO, an oil and gas enterprise that had grown fat during the energy crisis but possessed

neither the savvy nor the stomach for hard-rock mining. Add to that a sudden drop in the price of copper to sixty-odd cents a pound, the lowest in years. By the summer of 1983, ARCO had lost all of the money it cared to lose and suspended operations in Butte. The western edge of the Berkeley Pit then lay only a few blocks from the heart of Butte's old business district, called Uptown, all of which had been slated for destruction. For the first time in more than a hundred years the Hill was completely idle.

Too busy digging ore to worry about appearances, Butte has never fit well in the gallery of wholesome outdoor portraits that makes up the postcard version of Montana. This is how Dashiell Hammett described the town, which in *Red Harvest* he called Poisonville: "An ugly city . . . set in an ugly notch between two ugly mountains that had been all dirtied up by mining. Spread over this was a grimy sky that looked as if it had come out of the smelters' stacks." The sky is clear now, and, given the mile-high altitude and quicksilver climate of Summit Valley, it frequently undergoes astonishing transformations. More days than not, the sun makes an appearance, perhaps briefly but almost always dramatically, whereupon the expanses of air that lie between the Hill and the mountain ranges lining the horizon grow immense with light, creating an acute, nearly tangible impression of volume. Sometimes the weather is especially restless, bringing to the valley swift-moving processions of broken clouds, often to such painterly effect that the spectacle overhead surpasses the landscape itself. The Hill, though, where the past is made of stone, not air and light, remains "all dirtied up."

While the Berkeley Pit may be Butte's most forbidding aspect, it is only one of many elements in an extensive and complex mining heritage. Because the acidic, lead-laden soil is in many places virtually devoid of organic matter, little vegetation grows in the mining district, nor does it fare so well on nearby mountainsides, which are largely barren after exposure to decades of smelter fallout. Scattered across the area are piles of waste rock, ranging from truckload heaps to a pyramid-size mound, the Alice Dump, that rests, truncated, at the top of the Hill, in the old village of Walkerville. Interspersed among the dumps are glory holes--gouges in the surface that once inspired dreams of overnight riches but never yielded enough ore to justify sinking a shaft. Add to this somber portrait the Yankee Doodle Tailings Pond, built to accommodate the waste produced by the processing of ore from the Pit and hanging immediately behind and above it. Well over 1,000 acres and at least 600 feet deep, this pond is not really a pond but a slate-gray sea of toxic sand and evaporating water, one of the most extensive dumps in the world. And consider Silver Bow Creek, which by skirting the Hill divides it from the Flat, and might run yellow or bronze or burnt orange, anything but the color of clean water, anything but a current for the living. As a youngster, I knew the stream only as Shit Creek. For many who live here the outstanding feature of the Hill is the mine yards, or, rather, the ruins they have become, especially the iconic headframes that straddle the flooded, crumbling shafts. Thirteen have survived--lampblack skeletons, five to eight stories high, brooding over the mining district. Locals call them gallows frames, and with more reverence than irony.

What may most surprise the visitor to Butte, however, given the environmental damage already wrought, is the presence of a second strip mine, the East Continental Pit, located between the Berkeley Pit and the mountain range, part of the Continental Divide, that forms the eastern boundary of Summit Valley. Now the only active mine here, the East Pit was inaugurated in 1980, shut down, along with everything else on the Hill, three years later, and revived in late 1985, when ARCO, poised to scrap everything it owned, sold the former Anaconda properties to Dennis Washington, a prosperous entrepreneur from nearby Missoula. Washington also had been thinking of the Hill as a salvage operation, until Frank Gardner, a third-generation miner and old Anaconda hand, devised a plan to streamline the East Pit that came to rely on a much smaller force of nonunion laborers. At the same time, Don Peoples, then chief executive of the Butte--Silver Bow local consolidated government, arranged a number of critical concessions: a three-year tax break, reduced power and freight costs, excluding the East Pit and the Yankee Doodle Tailings Pond from the Superfund site. The mine, it seemed, could once again turn a profit. A small one, to be sure, but a profit nonetheless. Not long after Washington purchased the East Pit, the copper market rebounded, and it has remained well above the mine's break-even point ever since, so much so that Forbes magazine recently estimated Dennis Washington's net worth at more than \$1 billion, the bulk of which he made in Butte, on an investment of only \$18 million, the fire-sale price ARCO accepted for the Richest Hill on Earth.

Reopening the East Pit put a partial brake on Butte's decline by providing good incomes for the more than 300 men who work in the mine and mill, or concentrator, which translated into additional jobs throughout the community, and by generating tax revenues, which have come to represent a sizable portion of the city-county budget. But even under the best of circumstances, the mineable reserves in the East Pit will be exhausted in about twenty-five years. As was true during Anaconda's reign, the threat of shutdown is omnipresent, never mentioned, of course, but always implied during disputes with regulatory agencies and a certainty if market conditions were to change drastically. The lasting physical legacy of Washington's Montana Resources will be the same as that of every mining company that has operated in Summit Valley--a landscape "all dirtied up." True, Washington's firm, working within a more demanding regulatory climate, has begun to cap and revegetate the waste rock and tailings it is producing and, as required, has posted a \$14.3 million bond with the state, a kind of environmental insurance policy, though a woefully inadequate one. But the mine itself will not be reclaimed. Given present market conditions and the state of excavation technology, the restoration of large hard-rock strip mines is prohibitively expensive, so it is simply not done.

When the East Pit ceases operation it, too, will begin filling with groundwater, not as toxic as that in the Berkeley but, when the level rises high enough, in need of treatment all the same. What is more, the East Pit will rival the Berkeley as the most prominent man-made feature in Summit Valley. If, as Montana Resources officials hope, the excavation continues for another two to three decades, the East Pit's eventual footprint

will be roughly half as large as that of the Berkeley. The two cavities are separated by the Continental Fault, however, the eastern, uplifted section forming the Continental Divide while the western section serves as the valley floor. Thus the bedrock and ore body on the Divide side of the fault are elevated by 3,500 feet, making the mine's terraced back walls considerably more visible. From some parts of the valley the two pits and the intervening waste seem to merge into a single colossal wound, fully occupying not only a third of the Hill but the lower half of the Continental Divide.

Wherever one may stand on the difficult issues raised by extractive industry, it is fair, I think, to say that the juxtaposition of these two holes, one the uppermost section of the largest Superfund site in the country, the other a productive mine whose fruits--molybdenum, used in lightweight alloy products such as surgical instruments, airplane parts, and mountain bikes, and, of course, copper--are today enjoyed by the residents of Missoula and Manhattan no less than by those of Butte, reflects the schizophrenic attitude the United States has adopted toward an appetite whose consequences it cannot yet face forthrightly. And like much else about Butte, what is transparent here tends to be obscured elsewhere, though it is no less problematic. Pit mining, mostly for gold, is increasing throughout the West--in Alaska, British Columbia, Nevada, even Montana. Fifteen years ago U.S. mines produced about one million ounces of gold. Last year the total approached 11 million, a tenfold increase. The rush is driven by consistently high prices for the metal and a new technology, cyanide heap-leaching, which enables mines to extract microscopic amounts of gold yet creates extraordinary volumes of hazardous waste rock. Almost three tons of ore is needed to produce enough gold for one small wedding band, and 76 percent of the gold refined throughout the world in 1995 was used to make exactly that--jewelry.

Outside the United States, in countries that lack conservation laws or the will to enforce them, pit mining has become the preferred method for extracting metals of all kinds, in some cases leading to ecological destruction on a scale that makes the scars on the Hill look like the backyard scratchings of children. A typical example is the Grasberg Mine, in Irian Jaya, Indonesia, the world's largest-known deposit of gold and the third-largest of copper. Creating acidic tailings at the rate of 120,000 tons per day, Grasberg has already produced more than 400 million tons, and plans call for the generation of another 2.8 billion. Members of the Amungme tribe have repeatedly protested the clogging and contamination of streams and the flooding of rain forest and agricultural lands. This March several thousand villagers rioted, closing the mine for two days; Indonesian President Suharto responded by flying in soldiers. At about the same time, an Australian human-rights group released a report contending that dozens of local people had been murdered or disappeared during the previous year. Such are the environmental and social legacies of large-scale pit mining in the international arena.

It has been a long time since anyone died in clashes with mining interests in Summit Valley or since troops

were called in to quell riots, but it did happen, and often. Ever a place of extremes, Butte was the site of one of the longest, costliest, and most influential battles in the modern American struggle between labor and industry. On June 8, 1917, an underground city labored day and night to provide copper for the American war machine, newly arrived in Europe. It was 11:45 P.M. At the adjoining Granite Mountain and Speculator mines, on the east end of the camp, a shift boss had descended to the 2,400-foot level of the main shaft to help untangle an electric cable that a rope crew had been trying to lower since late afternoon. Somehow his hand-held carbide light touched a frayed and oily edge of insulation, setting it on fire. With the cable serving as a fuse and the updraft acting like a chimney, flames shot toward the surface, igniting the surrounding timber and transforming the shaft into a 3,000-foot inferno. That night, 168 men perished in what turned out to be the worst hard-rock mining disaster in U.S. history.

Just three years earlier, a fight for control of the American Federation of Labor-backed Butte Local No. 1 had broken out between factions representing the militant Industrial Workers of the World, or Wobblies, and the moderate Western Federation of Miners. It led to ten days of mayhem during which Miners' Union Hall was obliterated by dynamite, Butte's socialist mayor was forced out of office, and Montana's governor declared martial law, sending the National Guard to enforce order in Summit Valley. Following the Granite Mountain fire, a new union, the Metal Mine Workers, immediately demanded additional safety measures. Rebuked by the Company, the union called a strike, and in response more than 15,000 men walked off the job. Once again martial law was invoked.

For the next sixteen months Butte was ruled by National Guard troops, surreptitious Pinkerton detectives (of which Dashiell Hammett was one), and gun-wielding Anaconda thugs. In the early hours of August 1, 1917, Frank Little, an especially persuasive IWW leader, was abducted from his boarding house by a half-dozen vigilantes, dragged behind a car until his kneecaps were scraped off, and hanged from a railroad trestle. Seven thousand mourners joined the funeral procession. A year later, alarmed by the increasing unrest and impatient with civil liberties, particularly when exercised by immigrant Sinn Feiners and Finnish anarchists who had no desire to fight the Germans and said so, the state legislature outlawed the IWW and passed the Montana Sedition Act, which banned, among other things, "disloyal, profane or scurrilous" antigovernment writing and speech, and legalized summary deportations. The act was considered such a sterling display of patriotic fervor that the U.S. Congress adopted similar terms in the federal version it passed later that year. The strikes and provocations continued. On April 21, 1920, Company guards opened fire with machine guns on IWW pickets gathered along Anaconda Road, at the gates of the Neversweat mine yard. Two men were killed, thirteen others wounded. This time the governor called in a contingent of regular U.S. Army troops to patrol the streets while work resumed on the Hill.

The inscription on Frank Little's headstone reads, "Slain by capitalist interests for organizing and inspiring

his fellow men." Although some may quarrel with that verdict? there is no question that the IWW organizer's death was an unusually violent instance of the sacrifice that ordinary men, under much less dramatic circumstances, made every day in Butte. Those killed in the Granite Mountain fire were among an estimated 2,000 whose lives ended underground before the Berkeley Pit came into being. At least ten times that number were seriously injured and disabled, and it is anyone's guess how many tens of thousands died prematurely from miner's lung and other occupational illnesses, to say nothing of the nonmining residents whose lives were shortened due to exposure to heavily polluted air. To honor the fire victims, along with all those the victims have come to represent, a memorial plaza, the Granite Mountain Overlook, was constructed recently, some eighty years after it was authorized. A prow-shaped battlement of concrete and brick, the Overlook is perched on the easternmost edge of the Hill, between the Berkeley Pit and the Yankee Doodle Tailings Pond, offering a bird's-eye view of the Granite Mountain headframe.

The day before I descended into the Pit in search of dead snow geese, I visited the Overlook with Mark Reavis, Butte-Silver Bow historic preservation officer. "Here we can tell the whole story of hard-rock mining in America," he said, explaining that the Overlook anchors a project known as the Anaconda-Butte Heritage Corridor. The idea, reduced to essentials, is this: In 1962, Uptown Butte, a six-square-mile district that contains several thousand structures, was designated a National Historic Landmark. In the 1980s, when the mining district, which overlaps Uptown, was added to the Superfund list, that designation took on unexpected significance; cleanup projects would now have to meet federal guidelines regarding the maintenance of historic resources. Instead of simply reducing the risks of waste dumps by covering them with a layer of clean soil, say, and planting hardy grasses, or erecting chain-link fences around mine yards, the dumps and mine yards would have to be made safe without doing damage to their historic character.

Not all of the tailings and headframes fall within this dual jurisdiction, of course, but the fact that some of them do has led Reavis and other community activists to an unusual vision of environmental reclamation, one that assumes that clean does not always mean pretty and that pretty is not always attractive. Butte's heart may indeed be black, but it would forfeit whatever heart it has if its mining past were erased or replaced by a sanitized theme park full of virtual mines and signs that explain away everything forbidding and controversial about the place. This is why a good part of the waste that lies before the Granite Mountain Overlook will not be reclaimed or, viewed from an historic angle, already has been reclaimed, but as a memorial to what actually happened here. This is also why, if the Anaconda-Butte corridor is acknowledged as a Labor History Landmark--the National Park Service recently added the area to its short list--the Wobblies and the gun-toting goons and Anaconda's century-long stranglehold on the community will be included in the official story of the Hill. And it is why some mine yards will be preserved as they are or restored to their original condition whereas others will be made to serve the social needs of the community; the Belmont hoist house, for example, which once contained the motors that raised and lowered cages into

the Belmont mine shaft, will soon be converted into a senior citizen center--a building inside a building, the present abiding within the past.

"History has to be usable," Reavis said, nodding toward the ravaged landscape below the Overlook. "If it's not usable, it's forgotten."

Mining the past is a theme that is almost as pervasive in Butte as the threat of shutdown, and no holdover from the past is more in need of attention than the water. The condition of streams, lakes, and aquifers is the surest gauge of the meaning we actually assign--through what we consume, not what we say we value--to the metals we extract from the ground, yet it is the only element in the mining equation that we literally cannot live without.

Water in the Upper Clark Fork River Basin, as in most hard-rock mining districts throughout the world, is everywhere contaminated, and where there is no water--in dumps, along stream banks, around and downwind of smelter sites--there is rainfall, and thus contaminated runoff, which eventually winds its way to existing streams. Follow the flow: The bedrock aquifer, lying some distance below the alluvial aquifer in Summit Valley, contains highly elevated levels of arsenic, lead, and cadmium, as well as copper. Although no one has ever devised a successful method for controlling the migration of groundwater through bedrock, much less for purifying it, the cost of merely trying to do so here has been estimated at between \$7 billion and \$10 billion. For all practical purposes, the aquifer is polluted beyond repair. (Having ruined all local sources, Butte early on built a pumping and diversion system that carries drinking water from a neighboring, undisturbed valley.) As for surface water, until 1911, when the Company constructed the first of three sedimentation ponds near Warm Springs, about twenty-five miles downstream of Butte, mine-waste runoff that flowed into Silver Bow Creek migrated as far as Milltown Dam, just outside Missoula. During spring floods, contaminated water often breached the pond dams anyway. It still does. Consequently, all of Silver Bow Creek is an industrial sewer. The Clark Fork River from Warm Springs to Missoula is laced with arsenic, manganese, lead, copper, and zinc, and some six million cubic yards of toxic-metal sediment rest at the bottom of Milltown Reservoir, behind the dam.

The site that best exemplifies the sorry condition of water in Summit Valley is, of course, the Berkeley Pit, and it always will, though only partly because of the size of its lake and the nature of its contaminants. More alarming still are the dynamics of the flooding; whereas the surface water entering from above, about half of the total flow, can be controlled, the groundwater seeping in from below cannot, not ever. Imagine that. Water will always migrate into the Pit from the highly fractured and heavily mined bedrock that surrounds it; the infernal receptacle will always be cursed. Not for a hundred years, not for a thousand, but always.

That is why Butte residents like Fritz Daily, school counselor, former state representative and all-around gadfly, have been losing sleep since the pumps were shut down fourteen years ago. "Mine flooding could easily destroy the town, environmentally, economically, and socially," he says, envisioning a catastrophe that would force the evacuation of a good part of the valley. Daily also insists on the following: "The most valuable resource in the Pit is the water, once you figure out how to make it water again." What he means is that the copper, iron, and other minerals are present in such large quantities that they would be worth something, perhaps a great deal, if extracted in a cost-effective manner--if, in other words, the mine water could be mined. Of all the schemes to repair the environmental damage in Summit Valley this is by far the most intriguing, because it holds out the hope that the biggest liability on the Hill might be transmuted directly into an asset, which is as close to realizing the alchemical dream of medieval times as we are likely to get in the late twentieth century. Whether this modern version of the dream can be fulfilled is far from certain, however.

Three years ago a Canadian firm, Metanetix, declared amid much fanfare that it was going to extract dissolved metals from the water in the Kelley shaft, west of the Pit. "What is perceived by everybody as a major disaster, we see as being a major opportunity," one official boasted to the local newspaper, while pledging to invest \$10 million in the facility and predicting that it would employ as many as 200 workers and turn an annual profit of \$50 million or more. But by last fall precious little metal had been shipped, all operations had been curtailed, and the firm was busy salvaging part of the Kelley headframe. More hopeful are the waste-treatment studies being conducted at several new businesses in the area. One of these is MSE, Inc. (formerly Mountain States Energy), a research-and-development firm headed by Don Peoples, now some seven years out of local government and determined to help the Mining City overcome its dependence on mining through the encouragement of businesses that specialize in innovative technologies. Butte would seem to be an ideal location for such an effort, not least because it is home to the Montana School of Mineral Science and Technology, long one of the outstanding engineering institutions in the world. But the most fitting new arena into which the local economy might expand is environmental cleanup. What better place to design and test reclamation strategies than the Hill? Under contract with the Department of Energy, MSE has to date studied six mineral-recovery technologies and is scheduled to examine several more, though no approach has yet proved capable of separating dissolved metals from mine water at anywhere near a profitable cost.

That the concept of mining water remains less a promise than a prayer could not have been more evident than in the fall of 1994, when the Environmental Protection Agency and the Montana Department of Health and Environmental Sciences (now the Montana Department of Environmental Quality) decided on a remedy for the flooding of the Berkeley Pit and other mines on the Hill. The plan calls for the diversion of surface water at Horseshoe Bend, between the back wall of the Pit and the rock impoundment that holds in place

the Yankee Doodle Tailings Pond. Assuming that the water within the Pit will not pose a threat to human health or the environment until it rises to an elevation of 5,410 feet 50 feet below where the EPA projects pit water could seep back into the groundwater system, the agency also ordered a pumping and treatment plant to be constructed by 2021, four years before the critical level likely will be reached. Although the plan allows for the use of new treatment technologies, should one ever prove feasible, the only method now available is considerably less than ideal adding lime to the water to neutralize its acid content and draw out metals en masse, a process that, ironically enough, would yield vast amounts of hazardous sludge--between 500 and 1,000 tons daily--that would have no economic value. Where the sludge would be disposed of, whether back into the Pit or in a nearby repository, would be determined later as well.

Having waited since 1987, the year the Pit was added to the federal Superfund list, everyone in Butte was pleased that the EPA and the state had finally selected a remedy, though many interpreted the plan as a decision not so much to take action as to postpone it. Granted, this past spring ARCO and Montana Resources began diverting water at Horseshoe Bend, reducing pit flooding by about half. On April 15, Jack Lynch, the current chief executive of Butte-Silver Bow, pushed the button at a new pumping station, diverting the stream through an eighteen-inch pipe to the Yankee Doodle Tailings Pond, where lime was added to remove metal and reduce acidity. The water was then discharged into the pool at the far end of the impoundment, to be recycled through the concentrator, and this should continue as long as the East Pit remains active. But the more incorrigible and unpredictable source of flooding, groundwater--about 2.5 million gallons of it every day--will not be addressed for some thirty years. This is what disturbs Daily, who is skeptical of all forecasts of water behavior on the Hill, especially those based on the assumption that the hydrologic system in Summit Valley is now resuming to a natural, pre-mining state. "Everything underground has been altered," he says. "Nature's gone." In this view, allowing the flooding to continue--specifically, allowing the Pit water, already more than 800 feet deep, to rise another 300 feet, as the EPA proposes--is to gamble with the future of Butte in a way that is more reckless, because potentially more ruinous, than Anaconda ever did. If the water were to enter the alluvium, the layer of soil that rests on top of the bedrock, it would tend to flow downward, off the Hill, to ward the eastern side of the Flat, percolating into basements; making former wetlands, now neighborhoods, wet again; and eventually contaminating the alluvial aquifer.

Risks aside, this much is certain: once the new pumps start they can never be stopped. The Pit was excavated in one generation, the dozens of underground mines that surround it in five or so, but the aftereffects of these engineering feats will be felt for hundreds of generations, until the next ice age or geologic cataclysm, a perpetual problem in need of a perpetual solution. Just as there is no foreseeable end to the flow of toxic water, there is, under the EPA remedy, no end to the production of toxic sludge. Holding this image in mind may be unsettling for the residents of Summit Valley, but it is now the backdrop to everything that happens here.

Novelist Lawrence Durrell has written that a place expresses itself through the people who inhabit it, that a community bears the impress of the land no less than the land is molded by human ambition. If he is right, and in matters of geography Durrell's instincts seem to me unerring, then as hopeless as the Hill may sometimes appear, there could scarcely exist a better place to find something more valuable than hope--clarity. For it is those whose lives begin and end in Summit Valley, whose dead are buried here, who are in the best position to take the full measure of hard-rock mining--by virtue of their long intimacy with it. When the bills come due for the metals the country consumes, the costs are not apportioned according to use; they are paid in Butte, and in places like Butte. The Hill is unique among such sites in that it is both a mining district and a town, a culture as well as a highly disturbed geological formation, and the two are inseparable. Larger hard-rock strip mines certainly exist--Bingham Canyon, southwest of Salt Lake City, is more than twice as large as the Berkeley--but none so dangerous rests so near the heart of an urban center.

For Butte, the chief implication of this precarious arrangement concerns how it might continue to live, and even flourish, in the presence of a legacy that could well betray it, and at any time, for as long as anyone dares imagine. As Jack Lynch puts it, "Butte not only has to live with the problem, it has to live with the solution." For those who live outside Summit Valley but nonetheless benefit from mining, the implications of Butte's twofold nature revolve around recognition--acknowledging that the Hill also is America's unsettling backdrop, that we all live on the edge of the Pit, and taking that often overlooked connection into account when rendering judgment of extractive industry. Almost everyone who re' sides here today either worked underground or knows someone who did. There is nothing quite like the hair-raising tension that gathers in a bar full of Anaconda retirees, say, when someone, outsider or not, glibly states that the Hill is an abomination. You cannot long survive as an environmentalist in Summit Valley without arriving with or coming to a respect for mining and miners, and not only because you may be ostracized but, more important, because it is so transparently hypocritical not to admit your indebtedness.

For those who do acknowledge that indebtedness and wish to grasp what it means in human terms, the challenge lies not in finding people willing to talk freely about themselves but in sorting through the welter of tales, fables, and downright lies they tell about the place. As the longtime residents of Butte continue to mine history, reworking their memories for images of themselves and of the town, the past remains ever on the verge of revealing itself, but without ever fully and finally doing so. This is surely true in the Silver Dollar Saloon, a haven of easy conviviality and large tolerance located at the corner of Main and Mercury, in the center of Butte's Uptown. Since its construction in 1894, the Dollar building, a handsome two-story structure of red brick and forest-green wood trim, has housed several bars, a carriage works, Chinese retailers, and a brothel, called the Lucky Seven, after its address, 1 West Mercury, the notorious street that still served as Butte's red-light district when I attended high school, only a few blocks away. One recent evening I found

myself on a stool there, accompanied by half-glimpsed ghosts, listening to Dan Price, an eighty-year-old resident, who paused now and again, squinting, as if to assay each stone he had-quarried from his life before revealing it to the stranger beside him. "I was a ten-day man," he said. "I'm not proud of it, but that's how it was." Whenever he was broke, Dan rustled a job on the Hill, usually underground, worked through his first payday, then went on a binge until the money ran out again.

Dan's self-induced boom-and-bust habits afforded him the opportunity to see the insides of more mines than most of his contemporaries; it also gave him the leisure to explore the insides of a great many books. Well acquainted with Western literature and always poised to recite favorite passages, Dan evidently read, and continues to read, as enthusiastically as he once drank. He reserves a particular fondness for deceased writers who shared his double passion for the alcoholic and verbal arts and who, more often than not, were undone by it, Thomas Wolfe most fondly and most tragically. "You know that Baudelaire poem, Ed, the one about drinking?" Sorry to say, I had not committed the lines of "Get Drunk" to memory, but somehow I unloosed a couple of hobbled fragments, enough to satisfy his wish to revisit the poem's meaning, if not its music: "It is Time to get drunk! If you are not to be the martyred slaves of Time, be perpetually drunk! With wine, with poetry or with virtue, as you please."

Baudelaire's advice seemed at home in the Silver Dollar Saloon, or, for that matter, Butte as a whole. Though now considerably less rambunctious than it once was, the town has little use for the neo-Puritanism that has recently swept across the country. And that tolerance is of a piece with the wide-open atmosphere of its early years, when Butte not only exercised exceptional leniency in the matter of debauchery and dissipation among its citizens but openly promoted them, as Carry Nation learned when she brought her temperance crusade here in 1910. Nation chose Mae Malloy's Dance Hall and Cafe, located at 9 East Mercury, as her starting point, a decision whose consequences everyone in the Mining City but she could foresee, and surely would see, such entertainment being too rich to miss. A rowdy crowd fell in step behind Nation as she marched along Mercury to the brothel, where Madame Malloy, informed that the patron saint of sobriety: was headed her way, stood waiting atop the front stairway. Ignoring Malloy's repeated warnings to take her crusade elsewhere, Nation marched up the stairs and straight into the arms of a conviction more formidable than her own. Malloy ripped the habit from Nation's head. then slammed her against a wall and pummeled her with her fists. The crowd cheered. When Nation collapsed to the floor the crowd roared again. Just as Malloy was about to demonstrate an exceedingly painful two-step called the Mercury Street Stomp the police arrived to escort the battered missionary back to her hotel. For Nation, who was sixty-three years old at the time, the incident marked the end of a colorful if bizarre career; she never again set foot in a saloon. For the people outside Mae Malloy's Dance: Hall and Cafe, the thrashing of the country's leading advocate of abstinence was a delicious moment, one that warranted immediate celebration--with drinks all around.

The encounter between Nation and Malloy is nothing to be proud of, certainly, but that is how it was on the Hill--flamboyant, promiscuous, grotesque, cruel, the heart revolving ever blacker and turn by turn ever harder in a crucible of copper ore. Mining made it so, historians agree, by forging a bond between corporate self-interest and a certain kind of human temperament. The ready availability of bars, gambling halls, and whorehouses served Anaconda's needs by distracting miners from the manifold hazards of their labor and keeping them in financial circumstances so precarious that quitting to kind safer, more reliable work was unthinkable. By the same token, underground hard-rock mining tended to attract men with a high tolerance for uncertainty, physical danger, and uprootedness, men for whom the prospect of disabling injury or crushing indigence was always present, instilling in them an almost religious devotion to the pleasures of the moment. While timbering a shaft or dynamiting a drift somewhere in the oppressive recesses of the Con, Lexington, or Neversweat, the miner may have been time's martyred slave, but not after the shift whistle blew.

Although miners now make up only one percent of the population, people here still answer the call of the mine whistle, and it is good that they do, because, like the revelry at an old-fashioned Irish wake, such spirited celebration helps dispel the demons that would otherwise plunder the soul--dispel them only temporarily, of course, but long enough to enable one to face the morning, when the clock starts again. It is no accident that in a town where for decades the communal dream was striking it rich but more often than not the reality was impoverishment, there still exists, on the one hand, a degree of levity and romanticism out of proportion to circumstances, and, on the other, a fatalism so thorough it induces passivity, even paralysis, especially in the face of large, outside entities capable of delivering the ultimate threat: shutdown. When the two tendencies are combined, however, something very different emerges--a talent for fully recognizing a troublesome situation while at the same time not being bested by it--and it is the most promising example of mining's impress on the Mining City.

"My biggest fear is that cleanup will go undone," Jack Lynch told me. We were sitting in his spacious office in the county courthouse, discussing the many different bills that have been proposed in Congress since the Superfund law came up for reauthorization six years ago. Lynch, a slender, energetic man in his late forties, knows full well that Butte is once again facing the threat of shutdown--in this instance, the sudden end of reclamation projects--but he and his staff are determined to stay in the high-stakes poker game that goes by the name Superfund, as long as the game lasts.

Included at the table with Lynch are ARCO, Montana Resources, EPA, the Montana Department of Environmental Quality, businessmen and business developers, and an array of city-county officials. One game, several conflicting interests and competing loyalties. For ARCO and Montana Resources the risks are

largely economic; after years of disputing overlapping liabilities, they wish most to settle their differences and meet federal requirements while losing as little money as possible. The regulatory agencies have a different aim: to fulfill the mandate of the Superfund law--to protect "human health and the environment." And the entrepreneurs, for their part, are betting on any form of reclamation they believe will make Summit Valley more attractive to new business and, in some instances, on specific remedies that might benefit them directly, through construction contracts, for example, or the leasing of waste-treatment technologies. The gamble is by far the most perilous for Lynch and his staff, because they represent the people who have the most to lose--the residents of Butte, those alive today and those who will be living here long after ARCO and the EPA have departed.

Further complicating the Superfund game are the plays made away from the table. To take the most significant example, ARCO, which in its local publications and advertisements calls itself a "partner in responsible reclamation," tried mightily to dissolve that very partnership by lobbying for changes to the original Superfund legislation that, taken together and in their most extreme form, would have allowed the corporation to walk away from Montana without having to spend another dime on reclamation. Three features of the law that ARCO has always found particularly objectionable are "retroactive liability," by which a corporation can be forced to pay for pollution that occurred prior to the passage of a law forbidding it; "joint and several liability," which stipulates that all responsible parties, regardless of the size of their contribution to an environmental problem, must share cleanup costs; and "successor liability," by which the purchaser of a site is required to assume the liabilities associated with that site. When Sandy Stash, ARCO general manager in Montana, says, "Superfund's been a failure," she is referring to the practical results of these provisions--a muddle of suits and counter-suits that has consumed corporate resources while stalling reclamation efforts throughout the country. Stash believes that ARCO, having taken control of the Hill in 1977, three years before Superfund was enacted and following a hundred years of intensive mining, should not be held liable for the actions of Anaconda. The EPA's position, by contrast, is that in an imperfect world the only way to guarantee that big polluters pay for the environmental damage they cause is to make them pay for the costs of reclaiming any damaged site they own. Buy an asset, in this view, and you buy all associated liabilities.

ARCO's position may be extreme, but the corporation is far from alone in its dissatisfaction with the Superfund law. For several years critics of all persuasions have been charging that the program has produced little beyond the enrichment of lawyers and technical consultants. As frustrated as anyone else, Montana senator Max Baucus, a Democrat, led an effort in 1993 and 1994, when he was chairman of the Environment and Public Works Committee, to amend the act by exempting from liability small businesses and municipalities, setting up a more equitable allocation system to resolve multiparty disputes, and allowing local communities a larger role in the selection of remedies. Stash was a member of the advisory group that

had worked for more than a year to reach agreement on these compromises, as were other industry leaders, along with insurance company representatives, EPA scientists, and local government officials, including don Sesso, director of the Butte-Silver Bow Planning Department. But anticipating the outcome of the midterm elections, Republicans refused to entertain Democratic initiatives of any kind, merit be damned. In September 1994, when Baucus's carefully crafted reauthorization bill finally made it out of committee, Bob Dole, soon to become Senate Majority Leader and now the Republican presidential candidate, prevented it from reaching the floor for debate.

The reauthorization bill that Republican John Chafee, Baucus's successor to the chair of the Environment and Public Works Committee, and Bob Smith introduced this past April envisions a very different solution to the problem of costly, protracted litigation--eliminating all sites contaminated prior to December 11, 1980, when the original Superfund law was enacted. Fewer sites, fewer disputes, a proposition of impeachable logic and disastrous implication. Here in Summit Valley the Chafee-Smith bill would absolve ARCO of all responsibility for areas it has not already signed agreements with the EPA to clean up, including the metal-laden sediment behind the Milltown dam, all of the Upper Clark Fork River, and, most worrisome to Lynch, the contaminated soils on the Hill. ARCO has promised to honor decisions already reached regarding mine flooding, the tailings alongside and pollution within the stretch of Silver Bow Creek in Summit Valley and within the creek floodplain between Butte and Warm Spring Ponds. But if Congress were to open the door by deleting the retroactive liability provision, ARCO might have the grounds to contest the decisions in court, since they, too, address environmental problems created before 1980. Estimated costs of remedies already negotiated or presently under design are well in excess of \$250 million and likely will climb much higher in the coming years. "The county doesn't have the money," Lynch told me, "nor does the state."

Under no illusions about the motives of the other players at the Superfund table, Lynch hopes only that the game will continue long enough to allow him to negotiate lasting solutions to the valley's problems. He and his staff have already managed to gain a measure of control over the decision-making process, in particular persuading the EPA and ARCO that land use should be taken into account in cleanup remedies. In keeping with the philosophy behind the Anaconda-Butte Heritage Corridor, Lynch is trying to merge reclamation and economic development into a single ambition, in the hope that the remedies will produce outcomes a good deal more useful to the community than fields of weeds and locked mine yards, especially on the Hill, where the targeted fields and yards are of a piece with the old parts of town.

But "lasting" no longer means what it did when Congress enacted the original Superfund law. Later that day I met with don Sesso, Lynch's point man in the Superfund negotiations. "What everyone is starting to realize," he told me, a slightly pained look on his face, "is that most cleanups will need long-term maintenance of some kind." The Pit remedy--pumping and treating ever-rising toxic water--is not the only

one that will continue long after ARCO and the EPA have forgotten the Hill. So will several of the others, requiring a range of responses, from neutralizing the aftermath of unexpected erosion to filling in and securing cave-ins, a problem that can only get worse over time, given the thousands of miles of failing shafts and tunnels beneath the Hill. Thus, Lynch and Sesso argue, Summit Valley needs an insurance policy, in the form of a trust fund, say, large enough to provide the county with the staff, equipment, and other resources it needs to oversee the remedies--in perpetuity. This is another reason why Lynch has insisted on a place at the Superfund table, and is willing to run the risk that the local government's give-and-take style of advocacy will be viewed by environmentalists as capitulation. The truth is that without ARCO's financial help neither "responsible reclamation" nor an insurance policy to maintain reclamation measures is even remotely possible. ARCO may be a reluctant partner in the Superfund program and, at times, a conniving one, but it has been willing to compromise, repeatedly, it has already spent a great deal of money, and it will continue to do so as long as the Superfund process remains intact. The gamblers in the courthouse know better than to turn away a player with such deep pockets.

As in any game, it must be remembered, chance, too, may assume a critical role, and it is increasingly likely to do so as time passes. What if Fritz Daily is right, and water leaves the Pit before it reaches the level the EPA and ARCO deem critical? And what impact would an earthquake have? The Continental Fault, which runs underneath the middle of Yankee Doodle Tailings Pond, has been silent for as long as anyone can remember. To some seismologists that means Summit Valley is very stable. To others it means that the area is long overdue for a nasty tremor. Would the impoundment hold? The engineers at Montana Resources say yes, unequivocally, and doubtless they believe it. This is their home, too. But if Dennis Washington lived in Butte, within the shadow of his dam, within sight of his mine, might there now be in place some kind of early warning system and evacuation plan, as has been recommended by at least two consulting firms? Were the dam to collapse, some of the fine-grained waste would behave like a liquid, surging into the Berkeley Pit, possibly displacing a toxic tidal wave, while the rest slid down the Hill. If either the water or the sand reached the Flat, the damage to property could be catastrophic. If either arrived without warning, in the middle of the night, say, people could be injured or killed. Failure may indeed be unlikely, but the enormity of the consequences would seem to call for extraordinary protective measures. My guess is that if those who really benefit from mining, not just stockholders but consumers, lived beside the pits, waste piles, and contaminated water, like the people of Butte, there would be more enthusiasm for erring on the side of caution in this and all other environmental matters in Summit Valley.

Since moving back to Butte three and a half years ago, I have lived near the top of the Hill, in one of the frontier zones where mine ruins adjoin the remnants of mine-side neighborhoods, headframes towering above rooftops, tailings lapping at back doors. From my three-room shanty in Walkerville it is less than a quarter-mile to the Granite Mountain Overlook. I go there often, following my crooked, one-lane street, past

a row of empty lots, all but two of the original houses having been destroyed to make room for the Berkeley Pit. I walk through the expanse of rolling dumps that separates Walkerville from the back wall of the pit, toward the Granite Mountain mine, the fire-darkened axis of the mining district. All that can be seen today is the top half of its headframe, resting within a recess in a randomly stepped cascade of waste rock. To the north, where the waves of tailings crest, lies the high berm of the Yankee Doodle pond, a constantly expanding delta of hardened slurry, and beyond that Sunflower Hill, often sunlit but never in flower. Visible to the south are the uppermost levels of the Berkeley Pit, the concentrator, and the back wall of the East Pit where the ore zone resembles a massive blue-gray stain on the flesh-colored foundation of the Continental Divide and the mammoth trucks that creep along the terraces newly carved in its side seem in the distance like toys. Only after several visits to the Overlook did I notice midway between the Berkeley and East pits an acre or less of flat, mostly undisturbed land where a few scrawny pine trees yet grow, all that remains of the east-side neighborhoods. If the earth has ends, this surely is one of them.

Sometimes a crow will appear, loud and raucous, angling across the bow of the Overlook, then gliding over the waste sea that stretches to the Divide. The crow, I have come to believe, is to the Hill what the albatross is to the ocean--bearer of omens, the essence of the place embodied, black heart aloft. Making its home on the Hill year round, living well in a dangerous landscape, the crow is much more emblematic of Butte than the snow goose, a migratory bird that passes through the valley twice a year, rarely stopping and, rarer still, staying, not unlike the tourists who travel Interstate 90 all summer long, in search of innocence and prettiness. Western Montana has of late induced a kind of lightheadedness in people long gone from wild places, and the romance is not misplaced. Raw natural beauty is here, in abundance, on an overwhelming scale, and it can sweep one away. But every moon has its dark side, and Butte is Montana's dark side, as necessary as night, as necessary as the nocturnal work that took place here.

Like whiskey straight, the Hill is an acquired taste, but it is well worth cultivating, even if one goes no further than to contemplate the American landscape from the perspective of the Granite Mountain Overlook. Today, bearing the social and physical scars of one of the most long-lasting and lucrative mining runs in the world, a run that is not yet over, the Hill contradicts some of our most cherished beliefs: that history is necessarily progressive; that any problem is fixable, given enough goodwill and technical ingenuity; and, closest to home, that it is possible to consume immense quantities of raw materials without creating ethical and environmental dilemmas of immense consequence. Not one of these notions will survive the corrosive waters of the Berkeley Pit.

WATER QUALITY COMPARISON

	EPA DRINKING WATER STANDARD LIMITS (MG/L)	BERKELEY PIT (MG/L)
ALUMINUM	0.050	287.000
ARSENIC	0.050	0.740
BARIUM	2.000	<0.010
CADMIUM	0.005	2.183
CHROMIUM	0.010	0.062
COPPER	1.000	204.000
IRON	0.300	1138.000
LEAD	0.015	0.109
MANGANESE	0.050	210.000
MERCURY	0.002	<0.100
NICKEL	0.100	1.069
SILVER	0.100	<0.005
ZINC	5.000	619.000
CHLORIDE	250.000	20.000
FLUORIDE	4.000	40.000
NITRATE	10.000	<0.250
SULFATE	250.000	9000.000
SILICON	250.000	112.000
PH	6.5-8.5	2.310

Edwin Dobb was born and raised in Butte, Montana, to which he recently returned after a twenty-five-year absence. His last piece for Harper's Magazine, "A Kiss Is Still a Kiss," appeared in the February issue. Dobb passed away in 2019.

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