chapter 3

CLEAN LAND

The Superfund enforcement program reached legal settlements for past and future toxic site cleanup costs totalling more than $1 billion in Fiscal Year 2001, the largest one–year total ever in the Pacific Southwest. To reach this milestone, EPA employed several legal tools: unilateral orders, administrative settlements, judicial settlement, and litigation.

Polluters to Pay Over $1 Billion for Toxic Cleanups in Pacific Southwest

Four settlements of particular note, involving the Iron Mountain Mine, Operating Industries Inc., Stringfellow and Montrose Superfund cleanup sites in California marked the conclusion of several years of enforcement effort and restored millions of dollars to EPA's Superfund Program for cleanup of other sites.

Partnerships

Reuse of Closing Military Bases

EPA worked with the U.S. Army, Navy and Air Force to continue transferring clean portions of closing military bases to local communities, helping revitalize local economies while cleanup of toxic contaminants continues on other portions. Local reuse authorities at McClellan Air Force Base in Sacramento County, Calif., estimated that companies leasing space at the former base have created 2,400 jobs. By late 2001, there had been 36 leases of property that included 51 buildings, with a total area of 1.8 million square feet. At Monterey County's Ford Ord, EPA approved the transfer of 70 acres to the city of Marina for reuse. In

San Francisco, EPA and the Navy laid the groundwork for the first transfer of clean land from the former Hunters Point Naval Shipyard to the city.

EPA Emergency Response Tackles Toxics

When toxic waste poses an imminent threat to public health or the environment, state and local governments can call for assistance from EPA's emergency response program. In early 2001, for example, EPA removed and safely disposed of 1,500 drums of toxic dry cleaning chemicals at an abandoned facility in Vernon, Calif. (near East Los Angeles), at a cost of approximately $600,000.

The AAD Distribution and Dry Cleaning Services site was a storage facility for perchloroethylene, a toxic chemical used in dry cleaning. The facility's warehouse and open lot were filled with 1,500 corroding drums of waste, many of which were precariously double–and triple–stacked. EPA's on–scene coordinator removed these drums, cleaned the facility, and supervised the removal of 240 drums of hazardous waste associated with AAD from six other California locations. The city of Vernon and the California Department of Toxic Substances Control had revoked the facility's permits and asked for EPA's cleanup assistance. AAD's owner/operator has been indicted on criminal charges for violations of state and federal hazardous waste regulations; EPA is also pursuing restitution of cleanup costs.

EPA and Tribal Partners

EPA's Pacific Southwest regional office works in partnership with 147 federally–recognized Indian tribes, the Bureau of Indian Affairs, and the Indian Health Service to carry out federal environmental laws and programs on Indian lands. Nearly 50% of the tribal land in the U.S. is within EPA's Pacific Southwest Region. Last year, EPA cooperated with tribes on the following land cleanup projects, among others:

Navajo Abandoned Uranium Mines

Wenona Wilson and Andy Bain of EPA's San Francisco office travelled with tribal officials to inform 30 Navajo communities of the results of EPA testing of local water sources. EPA also demolished and removed two hogans (Navajo traditional earthen dwellings) that were found to have been built with radioactive mine tailings.

Opposite: Downtown Stockton waterfront area was redeveloped with assistance from EPA's Brownfields program. Photo by Gregory Blore, courtesy of Gregory Blore Photography, Sacramento, Calif.
Below: Removing hazardous waste from drums at AAD site in Vernon, Calif. EPA photo.

There are more than 1,150 abandoned uranium mine sites on the vast landscape of the Navajo Nation, whose territory includes the Four Corners, where Arizona, Utah, Colorado, and New Mexico intersect. These sites, and the unseen radiation and heavy metal contamination that remains in soil and water near many of them, are the legacy of Cold War Era uranium mining.

To learn more about EPA's land reuse and redevelopment partnerships in the Pacific Southwest, go to www.epa.gov/region09/waste/brown.

Above: EPA and the Navajo Tribe demolished and removed this traditional dwelling on the Navajo Nation because it was made of radioactive rock and soil from a uranium mining area. It was being used for storage. Photo by Andrew G. Sowder. Below: Supply Creek Open Dump before closure, on Hoopa Valley tribal land, Northern California. Photo courtesy of Hoopa Valley Tribe.

Over a three–month period, the EPA/tribal team reached 1,028 individuals, most of whom lived near, or had family living near, abandoned uranium mine sites. At each community, the team explained — in most cases, in the Navajos' native language — the findings of the water sampling and how to reduce exposure to the contaminants. The team also informed residents about other abandoned uranium mine issues, such as radiation exposure, physical hazards and miner compensation claims.

Closing Down Open Dumps on Tribal Lands

Eighty open dumps were closed on tribal lands last year, 70 of them on the Navajo Nation alone. Open dump closures also included sites on lands of the Tuolumne Band of Me–Wuk in Calif., the San Carlos Apache Tribe, Ariz., and the Duckwater Reservation, Nev. EPA contributed $2.8 million towards cleaning up the highest risk sites and providing alternative disposal options. With EPA technical assistance and training, almost half of all tribes in the Pacific Southwest Region have drawn up solid waste management plans.

Tuba City Cleanup Progress

Cleanup at Tuba City, where leaking underground fuel storage tanks from two gas stations have contaminated soil and groundwater on the Navajo Nation and Hopi tribal lands, got a boost in September 2000 with the installation of a pilot subsurface volatilization and ventilation system (SVVS). The SVVS injects air into the ground, which then bubbles up through the contaminated ground water and soil, volatilizing and removing chemicals along the way. These volatalized chemicals are then removed by soil vapor extraction. The SVVS pilot system, paid for by responsible parties in compliance with an EPA order, has removed over 250 lbs. of benzene, over 1,200 lbs. of toluene, over 200 lbs. of ethylbenzene, over 1,800 lbs. of xylene, and over 350 lbs. of MTBE, and significantly reduced groundwater contamination in the test area.

To find out more about EPA's work with Indian tribes, go to *www.epa.gov/region09/indian*.

Redevelopment Partnerships

Brownfields

Brownfields are abandoned industrial properties where suspected toxic contamination may scare away potential purchasers and developers, hindering redevelopment. In some cases, a relatively inexpensive site assessment can remove this roadblock by demonstrating that the site is clean. More often, money provided by Brownfields grants is used to assess and clean up the property, and speed redevelopment. EPA's Pacific Southwest office has issued dozens of grants to local and tribal governments in the past few years, including:

- Stockton, Calif., where two EPA grants totalling $400,000 triggered cleanup of property which has been key to redevelopment of the city's historic downtown/waterfront area, including creation of a major new waterfront park.
- Emeryville, Calif., where an EPA revolving loan provided $300,000 for a private developer to complete a cleanup leading to commercial office development.
- Oakland, Calif., which received a $100,000 EPA grant to assess abandoned

sites where suspected petroleum contamination from leaking underground storage tanks may have thwarted redevelopment.

- West Hollywood, Calif., which leveraged $10 million in redevelopment funds from the Department of Housing and Urban development (HUD).
- The Ely (Nevada) Shoshone tribe, which obtained a $50 million commitment from the Public Health Service to clean up their abandoned landfill.
- EPA and state agencies conducted brownfields assessments that will clear the way for a day care center in Watts (Los Angeles); a community business incubator on Molokai (Hawaii); future park sites in Hawaii, Long Beach, and Kingsburg, Calif.; and an inter–modal transit site in Pasadena, Calif.
- Santa Fe Springs, Calif., which received a $100,000 EPA redevelopment grant to fund an industrial/office plan for the Waste Disposal Inc. Superfund cleanup site. The grant is also helping to relocate several landowners and tenants during cleanup.

For more information on EPA's redevelopment partnerships, go to *www.epa.gov/region09/waste/brown*.

Prospective Purchaser Agreements Ease Revitalization

In some cases, EPA can ease redevelopment of polluted properties by ensuring that prospective purchasers aren't forced to pay an unfair share of the cleanup costs. For a fair share, negotiated in a Prospective Purchaser Agreement (PPA), the purchaser receives a release from Superfund liability. Last year, EPA in the Pacific Southwest entered into PPAs with:

- Northrop Grumman Systems Corp., which purchased a 70–acre electronics facility at the San Gabriel Valley Superfund site in Azusa, Calif. Northrop is taking over the current Aerojet defense contracts there and plans to expand operations for the design and manufacture of satellites.
- Home Depot, which intends to build a retail outlet on a 10–acre parcel at the Glendale portion of the San Fernando Valley Superfund site.
- The City of Phoenix, which is planning a 400–acre runway expansion to its Sky Harbor International Airport, which lies partly within the Motorola 52nd Street Superfund site.
- The Nature Conservancy, which acquired Palmyra Atoll, a group of coral islets in the mid–Pacific Ocean, as a wildlife refuge. This property was used as a U.S. naval air base during World War II, but retains its unique biological diversity, being one of the few unpopulated atolls left in the tropical Pacific.

Partners Join Forces For Low–Income Community

Just as cleanup work was about to begin at the Purity Oil Superfund site near Fresno, Calif., California Rural Legal Assistance, a nonprofit group, raised an environmental justice concern on behalf of residents of the Tall Trees Trailer Park, adjacent to the contaminated site. The whole area is zoned as "heavy industrial" by Fresno county. An auto wrecking yard, a recycling firm, a scrap metal lot, and a propane business were in close proximity. The trailers

Supply Creek Dump after closure, on Hoopa Valley tribal land, Northern California. Photo courtesy of Hoopa Valley Tribe.

themselves were very old, in disrepair, and unmoveable. The county government allowed the trailer park to stay because the residents could not afford to move. All of the residents were low–income families of farm workers or retired farm workers, many from Oaxaca, Mexico, whose first language was Mixtecan. To overcome this language barrier, EPA broadened its usual bilingual (English and Spanish) community outreach efforts to include Mixtecan.

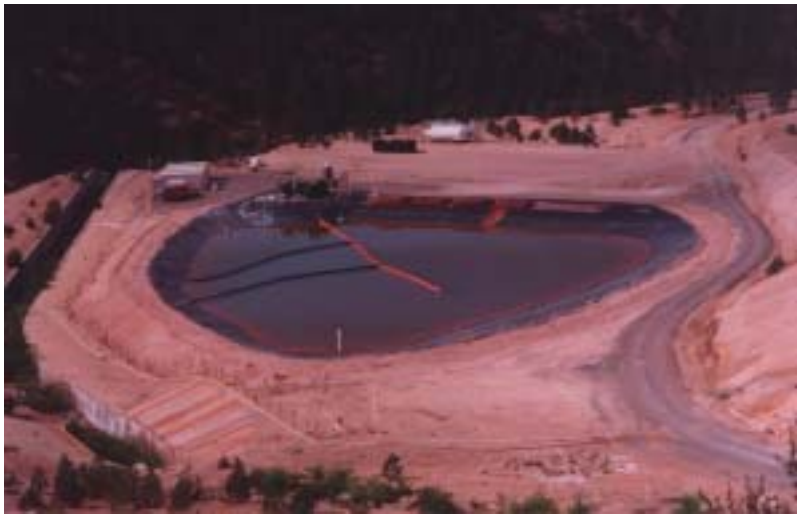
EPA's Purity Site Team decided to re–examine the cleanup plan. They brought together staff of federal and state elected officials, the federal Department of Housing and Urban Development, Fresno County, the site's responsible parties (including Chevron), and others. With perseverance and patience, the group developed an innovative solution: to come up with funding levels above and beyond what could be mandated for the Superfund cleanup, making it possible to relocate the entire community. Funding from private and public sources was pooled. The Mixtecan community has been relocated, as a group, to new housing in the Fresno area. Cleanup of the Purity site is underway.

Broad–Based Partnership at Leviathan Mine Gets Results

Since the 1950s, acidic runoff from sulfur mining had rendered Leviathan and Bryant Creeks bright orange, very acidic and virtually lifeless, throughout their course from the mine site high in the Sierra Nevada, through National Forest land and Washoe tribal land. In 2001, EPA coordinated water treatment efforts by California's Lahontan Regional Water Quality Control Board, former mine owner Atlantic Richfield (ARCO) and the University of Nevada–Reno, dramatically improving the creek's water quality. By August, trout were populating the clear, clean water two miles downstream from the mine.

Partnerships were also key to resolving EPA's claim that ARCO had failed to achieve goals set in a 1998 cleanup agreement. In November 2001, EPA announced a settlement with ARCO in which the company paid $720,000 for 480 acres of meadows, streams, and forest north of Stampede Reservoir in Sierra County, California. The Washoe Tribe now holds title to the land, and the Nature Conservancy holds a conservation easement on it, assuring that it will remain undeveloped. The tribe plans to operate a summer program there to educate their children about the Washoe culture.

"We thought that the community that had been most damaged by Leviathan and the pollution should be the community that most benefits," commented EPA attorney Joshua Wirtschafter, who negotiated the settlement.



Acidic runoff treatment pond at Leviathan Mine Superfund site, Alpine County, Calif. EPA Photo.

Infrastructure

Groundwater Treatment Plant Completed at Motorola Site in Phoenix

In arid Arizona, where groundwater is a precious resource, EPA, Arizona, Motorola Inc. and Honeywell International Inc. officials in October 2001 celebrated the opening of a new treatment plant designed to decontaminate groundwater at the Motorola 52nd Street Superfund Site in Phoenix (see photo, next page). The new groundwater treatment plant is part of an ongoing cleanup which started in 1992, when the site's first treatment plant began operating. Both will need to operate continuously for the next ten to twenty years.

The new treatment plant will remove chlorinated solvents, mainly trichloroethylene, or TCE, first discovered in the groundwater in 1982. The clean water will be used for agricultural irrigation. Motorola and Honeywell built

the second groundwater treatment plant under an EPA order. Construction took 18 months. The two companies are paying for construction, operation, and maintenance of these facilities.

Cleanup Finished at Oroville Site

Just over ten years after EPA placed the Western Pacific Railroad site in southern Oroville, Calif., on the Superfund National Priorities List for cleanup, the job is complete. Groundwater cleanups often take much longer.

From 1920 through 1982, Western Pacific used a portion of the property to fuel, repair and maintain rail cars, which resulted in soil and groundwater contaminated with waste solvents, oils, grease and heavy metals. Under separate orders from the state and EPA, the site's current owner, Union Pacific Railroad Co., removed contaminated soils in 1989 and again in 1998.

Based on a decade of groundwater monitoring data, EPA determined in 2001 that an on–site groundwater treatment system had cleaned up the water to acceptable levels. Land use controls now in place allow for commercial and industrial uses, so the site can be redeveloped.

Enforcement

$340 Million Settlement to Clean Up Oil Landfill

EPA negotiated a $340 million settlement last year with over 160 companies to pay for further cleanup work at the Operating Industries Inc. (OII) site, a 190–acre landfill in Monterey Park, California, about 10 miles east of downtown Los Angeles. From 1948 to 1984, the landfill accepted municipal, commercial and industrial solid and hazardous wastes, including at least 300 million gallons of liquid waste. EPA found that nearly 4,000 different parties sent wastes to the landfill. Over the past two decades, EPA has reached settlements with more than 1,250 of them to pay for cleanup work. The recent $340 million settlement brings the responsible parties' commitments for cleanup costs to more than $600 million, one of the largest sums ever raised for a toxic cleanup. Under the federal Superfund law, any and all responsible parties must pay for cleanup – tax funds are used only as a last resort. This is known as the "polluter pays" principle.

The landfill towers hundreds of feet over the community of Montebello. There are approximately 53,000 homes near the landfill, including many adjacent to it. Earlier problems at the site have included leachate (contaminated water) runoff into neighborhoods, unstable slopes threatening to slump onto houses, and methane and odors migrating to nearby homes.

Past cleanup work has included installing a leachate containment and treatment system, building gas extraction and destruction systems, and capping the landfill with geo–textile fabrics along the slopes for stability and a clay quilt on top to reduce formation of leachate. The settlement covers future operation and maintenance needs, and continued groundwater monitoring.

Below: Left to right – EPA's Viola Cooper, Nadia Hollan, Brent Maier, Keith Takata, and Sean Hogan at the October 2001 opening of a new groundwater treatment plant at the Motorola 52nd Street Superfund Site in Phoenix, Ariz.

State to Reimburse EPA for Stringfellow Cleanup

Last summer, the State of California agreed to reimburse EPA $99 million for cleanup costs associated with the Stringfellow Acid Pits Superfund site, in Riverside County. The agreement is also significant because the state consented to take responsibility for future cleanup work at the site with EPA oversight.

The Stringfellow site had served as a repository for industrial liquid hazardous wastes for over 15 years before it was shut down in the 1970s, when residents of the neighboring

community of Glen Avon became increasingly vocal about their polluted well water. Over the past two decades, numerous cleanup actions have stopped wastes and groundwater contamination on the Stringfellow site from migrating.

Gila River Tire Fire Site Cleaned Up

In 1997, a fire burned a pile of over two million used tires on Gila River Indian Community land near Phoenix, Ariz.. When the fire was out, it left a gooey mess of hundreds of thousands of unburned and partially–burned tires, and contaminated soil. The Indian community was having trouble getting responsible parties to clean up the site, so they called EPA for backup. EPA issued an order to the 14 Arizona county governments that were the sources of the used tires, informing them that as potentially responsible parties they would have to pay for the cleanup.

EPA negotiated with the counties, and reached an agreement in which Pinal and Maricopa Counties, the sources of most of the tires, and Blackwater Industrial Development Corp., which had overseen the tire dump, paid for the cleanup. The site has now been restored to its original (pre–tire) condition.

EPA Science

U.S.–Vietnam Joint Study of Agent Orange

Though the Vietnam War ended over 25 years ago, there are still places in Vietnam so contaminated with the U.S. military's chemical defoliant Agent Orange that even weeds won't grow. And the extremely toxic dioxin that was a contaminant in Agent Orange may be a continuing cause of health problems there. In July 2001, Vance S. Fong, P.E., Quality Assurance Manager for EPA's Pacific Southwest Region, travelled to Vietnam as part of a U.S. negotiating team, and came back with a U.S.–Vietnam Agent Orange Research Agreement that commits both countries to cooperate in scientific research on monitoring technologies and the health effects of Agent Orange.

Under the Agreement, the two countries will collaborate on research to find the fastest, most economical ways to find dioxin hot spots, and evaluate various cleanup, containment, and risk management methods, to reduce human exposure to the toxins and improve public health.

McFarland Air Study

As part of a comprehensive environmental investigation in McFarland, an agricultural community in California's San Joaquin Valley, EPA is studying whether local residents are exposed to pesticides and other chemicals in the air they breathe. EPA has installed air monitoring stations at two schools in separate residential areas. Air sampling is being conducted 24 hours a day during four three–week intervals at different agricultural seasons of the year. With over 150 chemicals being monitored, this is one of the most comprehensive community air toxics studies ever done.

Data will be used to assess health risks to children and others in the community. This study is expected to have significance for other agricultural communities throughout the Pacific Southwest. Scientific benefits include improved air sampling and analysis methods for a wide range of airborne contaminants.

Leviathan Mine Stream Monitoring

At the Leviathan Mine Superfund site in Alpine County, Calif., where EPA's goal is to prevent acid runoff from polluting streams, EPA is monitoring the chemical and biological health of the surrounding watershed to assess the impacts of acid mine drainage. Chemical levels in streams can vary tremendously in response to daily and seasonal weather changes, such as rain, sun, temperature, and snowmelt rates, so samples are taken hourly.

Confluence of clean water in Mountaineer Creek (left) and acid-tainted water in Leviathan Creek (right), two miles downstream from Leviathan Mine in September 1999, before water treatment system began operating. EPA photo.

EPA People

Jeff Dhont and the Montrose Cleanup

The Montrose Chemical Company operated the West Coast's largest DDT manufacturing plant in Torrance, California, from 1947 to 1982. DDT–contaminated runoff went into a stormwater ditch which ultimately left contaminated soil buried in the front yards of a two–block residential area on Kenwood Avenue, near the former DDT plant. Jeff Dhont, EPA project manager for this site, worked with a team of EPA staff and contractors in 2001 to clean up and restore the yards of 22 homes.

Jeff has been a project manager with EPA since 1983. While focused on the Montrose site for the past six years, he has also worked on many other toxic cleanup sites. Jeff is known for his excellent planning skills, tireless attention to detail, perseverance, and the ability to work effectively with a large team of contractors and EPA staff, as well as community members. He has superior knowledge of Superfund technical and regulatory requirements, and takes innovative approaches to problem–solving.

These qualities were essential for the yard excavation project. Jeff's team carried out an extensive dust suppression and air monitoring program. They removed 1,500 truckloads of contaminated soil and replaced it with clean soil. They made sure residential yards were re–landscaped according to plans that EPA developed with the residents of each house. They kept residents informed every step of the way, and provided them free housing in local hotels during the construction work.

By January 2002, the job was done, and EPA Regional Administrator Wayne Nastri called it ". . . a huge success. We have left this neighborhood cleaner and safer by permanently removing the possible health threat from DDT and making the yards as clean or cleaner than yards elsewhere in Los Angeles." For more information on the Montrose cleanup, call Jeff Dhont at 415–972–3020.

Ecosystem health is also being assessed through analysis of water, sediments, and aquatic invertebrates. This bioassessment work is done by University of California researchers. Combining field ecology and chemical analysis this way is expected to give EPA a better understanding of ecological risks and potential ecosystem recovery after cleanup.