

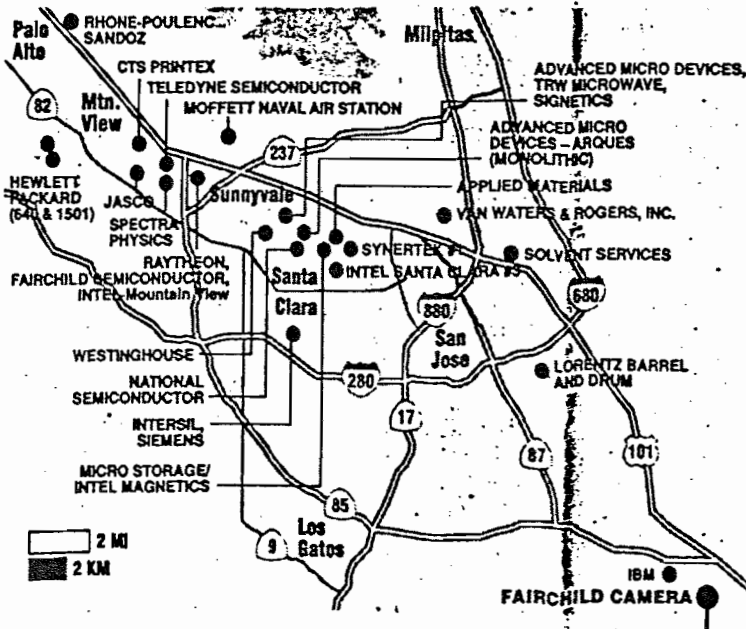
# SCIENCE & TECHNOLOGY

# from superfund to supermarket

After a 15-year groundwater cleanup, San Jose's Fairchild site is deemed safe enough to be reborn as a shopping center

## Federal Superfund sites in the South Bay

There are 28 South Bay sites on the U.S. Environmental Protection Agency's Superfund list. Nearly all involve chemicals that leaked from underground storage tanks in the 1960s, 1970s and 1980s. They are now being cleaned up, and although costly, pose minimal risk to human health.



BY PAUL ROGERS  
Mercury News Staff Writer

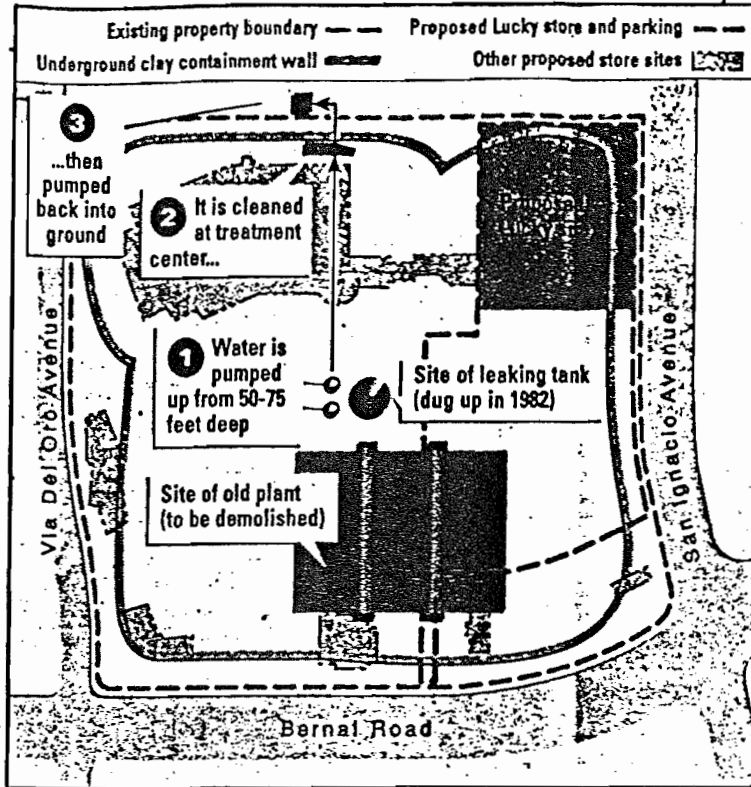
**I**MAGINE building a supermarket on a Superfund site.

That's right, shoppers: Milk, lettuce and lunch meat sold on land that remains classified by the U.S. Environmental Protection Agency among the nation's most serious hazardous waste sites.

An episode of the Simpsons? Hardly. It's an upcoming possibility in San Jose.

On Wednesday, the San Jose planning commission is scheduled to consider zoning changes to allow Mountain View businessman Ray Ferrari and his brothers to build a Lucky supermarket and strip shopping center at the former Fairchild Camera and Instru-

San Jose officials this month are considering plans to build a Lucky supermarket and shopping center on the old Fairchild Camera plant site, where solvents leaked into groundwater 20 years ago. Two wells will pump and clean water for years to come at the now-safe site.



GRAPHICS BY REID BROWN — MERCURY NEWS

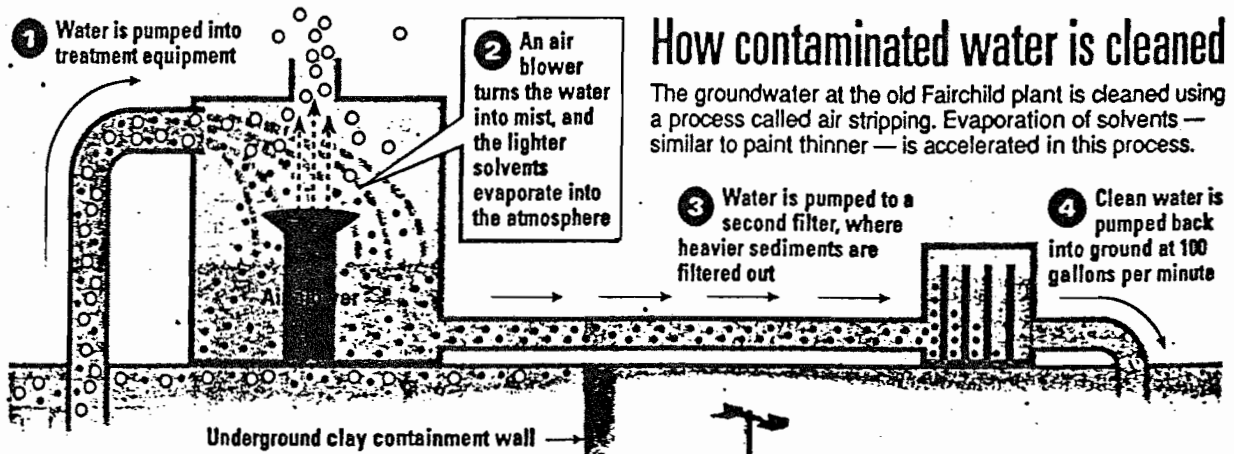
nal Road in South San Jose.

The site made headlines in 1981 when workers discovered that chemical solvents had leaked from underground storage tanks there and contaminated groundwater. During an exhaustive 15-year cleanup, the property has remained fenced off and abandoned since the Fairchild plant closed in 1983.

If given the go-ahead by the planning commission and San Jose City Council next month, the Ferraris may oversee the first Superfund-to-supermarket conversion in the United States.

But before you rush to call Woody Harrelson or Greenpeace in outrage, consider this: The government regulators charged with cleaning up Superfund sites in the Bay Area say the plan is perfectly safe.

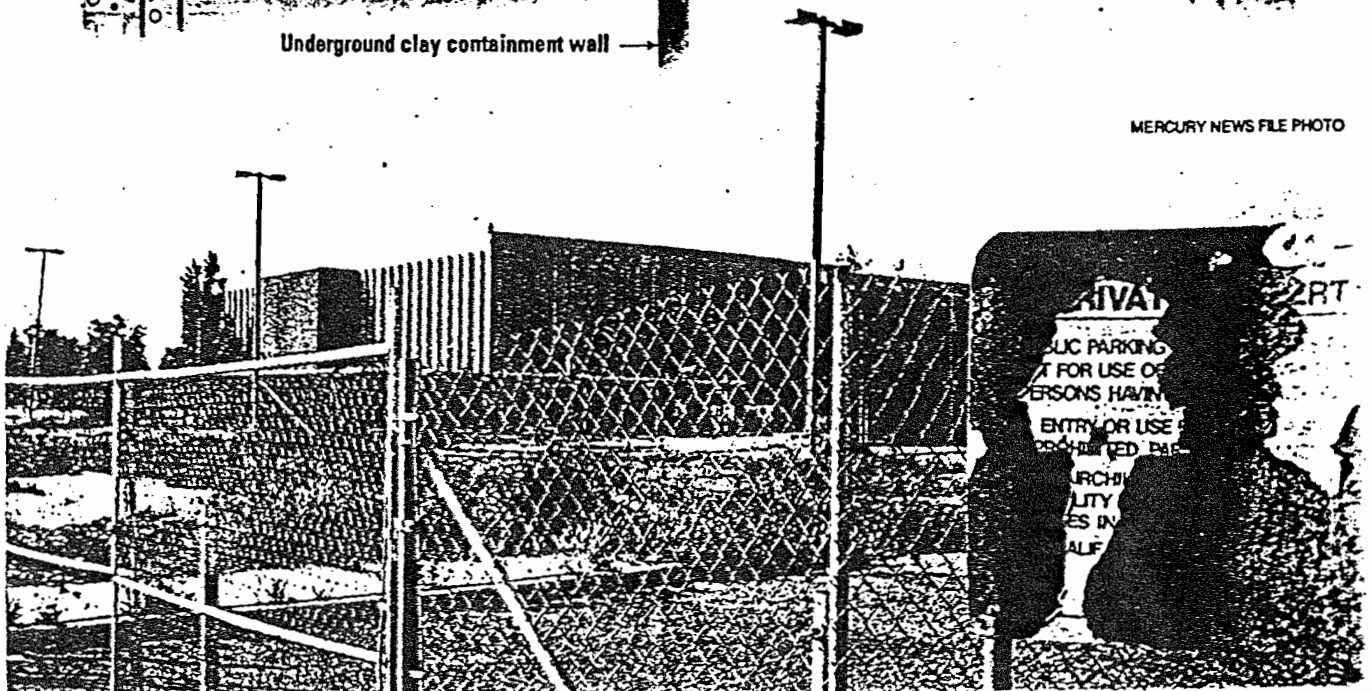
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## How contaminated water is cleaned

The groundwater at the old Fairchild plant is cleaned using a process called air stripping. Evaporation of solvents — similar to paint thinner — is accelerated in this process.

MERCURY NEWS FILE PHOTO



# Notorious S.J. toxic waste site may become strip mall

## ■ CLEANUP

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The science is good, they say. The measurements don't lie.

After \$40 million in cleanup work and billions of gallons of groundwater pumped and treated, the stigmatized site is so clean now they say they'd take their own kids to shop there.

"It will be a safe place to shop," said Loretta Barsamian, executive director of the San Francisco Bay Regional Water Quality Control Board, based in Oakland. "There's no risk unless you're going to let your kid dig through the parking lot down 50 feet deep."

Anyone worried about shopping one day on the Fairchild site should worry more about paint thinner in the garage first.

Then they should fret about their liquid paper and WD-40, which expose them to higher concentrations of the same types of solvents that exist in Fairchild's groundwater, said Stephen Hill, an environmental specialist with the regional water board.

"It would be impossible to be exposed to an unsafe level of solvents at this site because of all the work that has been done," said Hill.

Yet although scientists from the EPA and the regional water board say the Fairchild site is safe enough to be reborn as a supermarket, those same regulators also say that Fairchild isn't ready to be removed from the Superfund list just yet.

In fact, it might be decades until it comes off the list, said Hill.

How can that be?

The rules are tough. Some say too tough.

The Fairchild paradox — that a property can be clean enough for a supermarket yet not clean enough to leave the Superfund list — dramatically highlights what critics describe as the unrealistically strict, costly and confusing regulations that govern EPA's Superfund program.

But environmentalists maintain that polluters should be forced to return contaminated soil and water to their original state, regardless of the cost, as a deterrent.

In December 1996, the regional water board, which oversees most of the 28 Superfund sites in the South Bay, agreed with private engineers and said that trace amounts of solvents in groundwater at the Fairchild site do not present any human health risk.

Yet the Fairchild site remains trapped on a federal Superfund list that includes such infamous toxic horror stories as the Rocky Flats nuclear plant in Colorado and the dioxin-laced communities of Times Beach, Mo. and the Love Canal neighborhood of Niagara Falls, N.Y.



FILE PHOTOGRAPH

Nearby residents sued Fairchild over contamination at the site. The plant was abandoned and closed in 1983.

"It's very frustrating," said Tom Jones, a Mountain View environmental engineering consultant who has worked on the Fairchild site for 15 years.

"There are some sites in the United States that are going to be contaminated for 50 or 100 years," he said. "Those are toxic dump sites. You wouldn't build on them. You wouldn't take your kids to them."

A sense of exasperation creeps into his voice.

"But we're not talking about that here," Jones said. "We're talking about groundwater. And this site has been cleaned up."

San Jose's city environmental compliance officer agrees.

"There's nothing irrational about being afraid of chemical exposure, but people need to recognize relative risk," said Gary Lynch, a San Jose State University professor with a master's degree in public health and a doctorate in environmental engineering, said many people have a phobia of concepts like Superfund and chemicals because they don't understand science enough to differentiate between types, amounts and exposures.

Nor does the public often consider all types of risks, he said.

"The average person gets in a car, smokes a cigarette and drives without a seat belt to go to the store to buy a bottle of bottled water," said Lynch. "When you look at the risks, it's laughable."

Nearly two decades ago, the Fairchild leak touched off a major controversy and led to tough new laws about hazardous chemicals in California.

After the leak was first discovered in 1981, investigators found that a public drinking water well

run by Great Oaks Water Co. had been contaminated.

A 1986 state health department study indicated a higher-than-normal incidence of birth defects and miscarriages the South San Jose neighborhood near Fairchild from 1977 to 1983, but found no conclusive link between the contamination and health problems.

Nevertheless, about 500 residents sued Fairchild and other defendants. In 1986, Fairchild and the others agreed to pay them an undisclosed, multimillion-dollar settlement. Today, Fairchild Semiconductor is headquartered in Maine, and owned by National Semiconductor.

The contaminated Great Oaks drinking water well was sealed long ago and no other public drinking water has been affected. Meanwhile, Fairchild's underground plume of contaminated water has shrunk substantially because of pumping and natural decomposition.

The main chemical solvent that leaked — a substance similar to paint thinner — remains in trace amounts roughly 50-75 feet below the ground.

Known as TCA, or trichloroethane, the chemical was used at Fairchild to clean semiconductors and other electronics parts.

After the contamination was discovered, workers dug up the leaking storage tank and removed it in 1982. Then crews hauled away nearly 500 dump trucks full of contaminated soil. Afterward, they built a clay containment wall, three feet thick, and sunk down to 100 feet, around the perimeter of the site, to keep solvents from moving.

"I don't think there's any piece of ground in California — if not the nation — that's been put through so much remedial cleanup work," said Ferrar.

Since then, wells have pumped the groundwater 24 hours a day and removed the TCA in a process known as "air stripping," which blows air through the contaminated water to speed up the evaporation of solvents.

Two wells pump and treat 100 gallons of water a minute. That adds up to more than 50 million gallons of water a year — enough to fill 2,000 backyard swimming pools. That clean water is then re-injected into the ground on the other side of the containment wall.

After 15 years, samples taken this summer show that in almost every area around the abandoned old plant, the groundwater is so clean it now meets state drinking water standards. A few spots near the tank site show higher levels of TCA.

But none are good enough to meet government rules.

Fairchild's cleanup order, issued in 1989 by the regional water board and approved by EPA, says that solvents in the groundwater must be cleaned around the site to an almost pristine level

— a standard the agency's own regulators today concede may be impossible to meet.

Inside the plant's 22-acre boundary, the groundwater must be cleaned to California drinking water standards — even though no one is proposing drinking it. And underneath the neighboring lots, the groundwater must be made four times cleaner than the drinking water now coming out of millions of Bay Area faucets, even though, again, no one is proposing drinking that underground water either.

Officials for Schumberger Ltd., the French oil equipment company that bought Fairchild in 1979 in what proved to be a disastrous business move, say that after spending \$40 million, they are still spending \$483,000 a year to squeeze the first parts per billion from groundwater no one drinks.

"If this site was discovered now in its present form, it wouldn't be added to the Superfund list," said Eric Haddock, a consultant with Locus Technologies of Mountain View, the firm overseeing the cleanup. "It has been a great success."

Dozens of other high-tech companies across Silicon Valley, including Intel, IBM and Hewlett-Packard, are caught in similar debates over tainted groundwater on their property and are growing increasingly frustrated.

Of the 28 Superfund sites in the South Bay, all but two are cases in which high-tech companies leaked solvents into groundwater during the 1960s, 1970s and 1980s. Many of the solvents have been replaced by soapy water or citrus-based liquids in modern-day chip operations, and new laws require stricter handling of hazardous chemicals.

Yet the EPA and the regional water board has never removed one South Bay site from the Superfund list.

EPA officials say the standards are not unreasonable.

"Even though that groundwater isn't being used now, it could be in the future," said Lois Grunwald, a spokeswoman for the U.S. EPA in San Francisco. "Water is a valuable resource, especially in the West."

Many environmental groups say tough standards are sometimes the only way to make companies clean up their acts.

"It may be an expensive endeavor, but what we're trying to get across to corporations is that they should be thinking about this on the front end," said Denny Larson, a program director with Communities for a Better Environment based in San Francisco. "They need to be thinking about the tremendous cost of cleaning pollution up before they pollute. The debate is nationwide."

There are 1,200 Superfund sites in America, but only 130 have been removed from the list since Congress and President Carter created the program in 1980.

## Numbers for Fairchild site indicate significant progress

BY PAUL ROGERS  
Mercury News Staff Writer

A look in the numbers illustrates the Fairchild story in stark terms.

When the cleanup job first began in the 1980s, levels of the solvent TCA were as high as 250,000 parts per billion in some groundwater samples around the plant.

California drinking water standards, which set allowable health levels for more than 50 types of natural and synthetic substances, allow 200 parts per billion of the solvent TCA in drinking water.

Those standards are set by the state health department using a risk formula that assumes if 1 million people drink two liters of the water every day for 70 years, one person will get cancer.

How safe is one in a million? By comparison, the EPA estimates the risk of getting struck by lightning at 1 in 30,000.

Yet government regulators deemed even that one in a million standard as too risky for the Fairchild site.

In its 1989 cleanup order,

the San Francisco Bay Regional Water Quality Control Board set TCA targets of 50 parts per billion for the groundwater around the Fairchild site — four times tougher than drinking water levels even though the water in the shallow aquifers is not used for drinking.

And on the Fairchild property itself, the regional water board allowed a level equal to the drinking water standard.

Progress so far has been dramatic. After more than a decade of pumping and treating, the highest TCA level recorded off-site this summer was 15 parts per billion — a 99.9994 percent improvement and easily within the drinking water standard. The highest level on the 22-acre Fairchild property today is 750 parts per billion — about three and a half times that standard.

But in the final hoozestretch, progress is now more difficult to achieve. Unless new technologies are invented, the pumps could run for years and never remove the last traces of TCA from the groundwater.

**"If this site was discovered now in its present form, it wouldn't be added to the Superfund list. It has been a great success."**

— Eric Haddock of Locus Technologies of Mountain View, the firm overseeing the cleanup

Critics argue that Superfund program wastes money.

"An industrial park does not need to be as clean as a playground," argued environmental analyst John Shanahan in a 1996 report by the Heritage Foundation, a conservative Washington D.C. think tank.

On average, EPA has estimated that it takes companies 12 years and about \$25 million to clean up Superfund sites nationwide, Mort Mullins, vice president of the Chemical Manufacturers Association, noted last year at a toxics conference.

"America put a man on the moon in less time than it takes to put a Superfund site back into productive use," he argued.

The law also requires that "polluters pay," an idea popular with the public. But often, pollution was caused over decades, by dozens of companies, sometimes dating back to the 1800s. Cleanup has been delayed at hundreds of sites while various companies

and the EPA have sued each other.

California Gov. Pete Wilson and President Clinton have worked to ease some of the programs' burdens.

Under a new state policy designed to help return contaminated properties to productive uses, last February the regional water board promised not to hold American Stores liable for cleanup costs if it buys six acres of the Fairchild site for the Lucky supermarket. That liability stays with Schumberger.

Ferrar had trouble getting loans for his project because of the infamous reputation of the Superfund list. Now, he said, he hopes city leaders will view the old Fairchild site as an opportunity for renewal.

"We're getting rid of an old building, and bringing in a community shopping center," he said. "This is the best thing that could happen for the neighbors' property values."