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Toxics at deep level

New data from Fairchild test well reveal cancer-causing chemicals

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Mercury News Staff Writers

For the first time, cancer-causing chemicals have been found in the deepest aquifers that supply public drinking water in the Santa Clara Valley, according to a memo obtained by the Mercury News.

Although no public drinking water wells near the contamination site in Mountain View have been found to be polluted, engineers said Saturday that the finding increases the chance that such contamination could occur.

"This is the one thing I've been afraid of the most," said Tom Iwanura, a Santa Clara Valley Water District engineer-

ing geologist considered an expert on the valley's underground water basin.

The new discovery of deep contamination was made at a test well at Fairchild Semiconductor Corp., the site of a underground leak of toxic chemicals detected in 1982. The site near Moffett Field is being cleaned under federal supervision because state officials decided Fairchild and four other firms were acting too slowly.

Until now, experts had counted on a thick layer of clay to shield deeper aquifers from contamination. But it now appears that abandoned agricultural wells may have served as

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Cancer-causing toxics found

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trapdoors through which contaminants have dropped to lower aquifers, experts say.

News of the contamination was contained in a memo dated Friday from David Morell, Santa Clara County's toxics expert, to the county board of supervisors and County Executive Sally Reed.

"The new evidence involves relatively high concentrations of contamination at deep layers in the aquifer system," Morell wrote. "This is the first confirmed finding of such contamination ever in the deep aquifers of Santa Clara Valley."

Morell said he received the news Friday afternoon from the Environmental Protection Agency.

Other tainted wells in the county — such as those discovered near the Fairchild and IBM plants in South San Jose — drew their water from shallower aquifers.

Worries

Engineers and environmentalists worry that the latest findings mean that drinking water supplies throughout the county could be threatened.

"The danger is that if this can happen in Mountain View, it can happen anywhere in the valley," said Ted Smith, executive director of the Silicon Valley Toxics Coalition, an environmentalist group.

Just seven months ago, a briefing paper on an EPA study dismissed water contamination as a serious health threat in the county in part because "a clay confining layer protects public water supplies in much of the valley."

Santa Clara County Supervisor Rod Drivdon said the contamination discovery "drastically changes the conclusions of the Integrated Environmental Management Study recently conducted by EPA.... If pollution has penetrated into the deep aquifer, we must have some serious concern about our primary drinking water source."

EPA spokesman Terry Wilson said Saturday that he had no information on the contamination.

In his memo, Morell said concentrations of trichloroethylene, an industrial cleaning solvent known to cause liver cancer in mice, have

How the chemicals may have spread

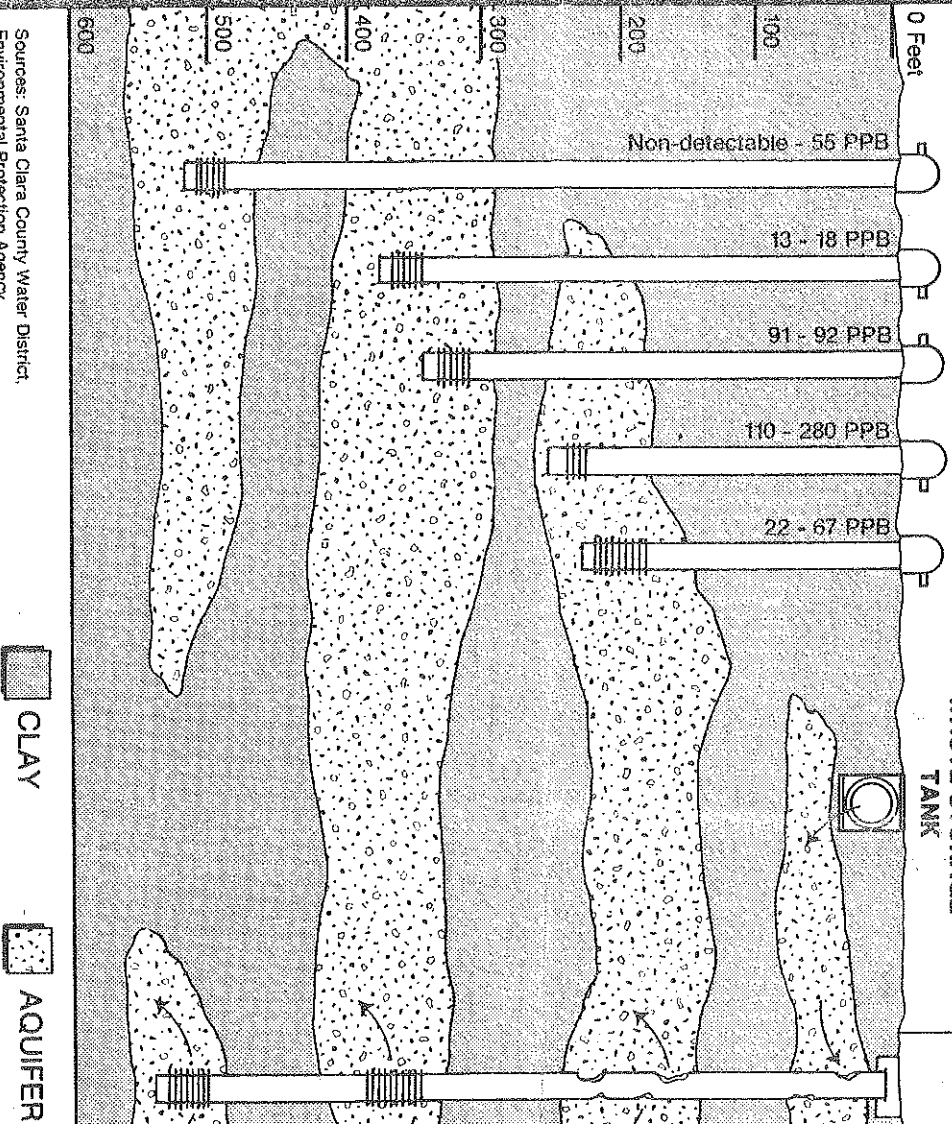
Chemicals leaking from storage tanks buried just below the surface may have hit lower drinking water aquifers by spreading through abandoned agricultural wells. Chemicals can enter the abandoned wells through corroded casings, then drop to lower drinking water aquifers. In Mountain View, experts suspect that TCE may have seeped into lower aquifers through three abandoned wells below a Fairchild Semiconductor Corp. parking lot.

IMPROPER ABANDONED WELLS

TEST WELLS

With TCE concentrations found at each site, in parts per billion (PPB)

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Sources: Santa Clara County Water District, Environmental Protection Agency

s found in deep aquifers

year by the bickering.

He said the findings of TCE and traces of three other carcinogenic chemicals — dichloroethane, dichloroethylene and trichloroethane — in test wells "means that more cleanup should have been done earlier."

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Kolb added that the Mountain View Five site became the only contamination site out of dozens in the Santa Clara Valley to be turned over to the EPA after regional water board officials decided that "the process wasn't happening fast enough."

IMPROPERLY
ABANDONED
WELL

However, Plaza stressed that "there is no current threat to Mountain View drinking water."

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Tom Fruthey, Mountain View maintenance director, said the closest public drinking well — less than a mile from the Fairchild site — has been shut down since early March for routine maintenance.

At that time, tests of the well showed no contamination, he said. Mountain View's four other public wells are much farther from the contamination site, he said.

More test wells

Plaza said Fairchild plans to drill two more clusters of monitoring wells between Mountain View's closest drinking water well and the test well that showed the contamination.

"We found it, we reported it, we have a solution in progress," Plaza said.

Although county officials question whether the cleanup should have been started sooner, Plaza said, "that's conjecture. We're acting responsibly in investigating and fixing the situation."

Despite's Fairchild's efforts, Kolb and Iwamura agreed that the latest findings could increase the chances that pollution will reach drinking water wells.

County officials say they plan to act quickly to measure the threat posed by the deep contamination. County Executive Reed said officials must determine "how quickly the contamination is moving, in what direction, and in what concentration."

Susanne Wilson, chairwoman of the board of supervisors, said a new county program to test unregulated private wells will be regi-

How toxics affect people

Dichloroethane: DCA is a cleaning solvent that can cause damage to the liver and kidneys as well as central nervous system depression. It also can cause skin irritation and drowsiness. DCA has been shown to cause cancer in at least one series of animal tests.

Dichloroethylene: DCE is a cleaning solvent that can cause damage to the respiratory system. It also can irritate eyes and cause central nervous system depression. DCE has been shown to cause cancer in at least one series of animal tests.

Trichloroethylene: TCE is a degreasing solvent that can affect the central nervous system, the respiratory system and the cardiovascular system. Acute and chronic exposure at very high doses has resulted in liver toxicity and possible kidney damage. The National Cancer Institute concluded that TCE is a liver carcinogen in mice.

Trichloroethane: TCA is a degreasing solvent that can cause damage to the central nervous system, the liver and the cardiovascular system if taken in large doses. It also can cause loss of coordination, eye irritation and dizziness. In a draft report, the National Toxicology Program found that TCA is a liver carcinogen in mice but not in rats.

of about 1,200 private wells is under way, Wilson said.

County officials estimate that 5,000 private wells throughout the county provide drinking water for about 90,000 people.

Meanwhile, Morell on Friday afternoon asked officials in the county health department to locate and count public and private wells in the area and to determine when they were last tested.

"We have no reason to believe that this new contamination of the ground water has reached any drinking water wells," he wrote in his memo to the board, "but we want to assure that this is so."

