
GLOBAL ELECTRONICS INFORMATION NEWSLETTER

Issue No. 44

US ISSN 0739-0416

July, 1984

POISONED WATER

This June Silicon Valley water and public health officials discovered that those residents in the North Bayshore section of Mountain View who have been taking their domestic water supply from private wells have been drinking and washing in water laced with extremely high concentrations of trichloroethylene. The likely source is a what appears to be a five-year old leak from an underground storage tank operated by nearby Teledyne Semiconductor. The company discovered and reported the leak to authorities in 1982, as part of a regional monitoring program, and its consultant warned in a 1983 report that private wells might become contaminated.

At about the same time, it was disclosed that an underground pool of TCE threatened the public water supply in nearby Sunnyvale. Public underground water supplies and storage basins in most of Silicon Valley - excluding the South San Jose area where Fairchild and IBM chemicals have poisoned several wells - have thus far been unaffected by the rash of leaks and spills from the electronics and gasoline industries.

However, officials and residents are worried that underground chemicals might penetrate the layer of clay separating the polluted near-surface aquifer - which supplies private wells like those in Mountain View - and contaminate

the deep aquifer exploited by public agencies. Silicon Valley contains thousands of abandoned agricultural wells which might channel the pollutants downward.

In Sunnyvale, the Regional Water Quality Control Board ordered Signetics, Advanced Micro Devices, and TRW to commence clean-up operations. Thus far, the companies, all of which have reported leaky tanks, appear to have carried out monitoring programs designed to limit their own liability for clean-up.

Area residents had been lulled into complacency by high-tech industry's apparent concern about groundwater contamination. Industry had cooperated in developing the prevention-oriented model ordinance for hazardous material handling and storage, now law in most of Santa Clara County. And high-tech firms, led by Fairchild and IBM, claim to have spent over \$70 million thus far on testing and clean-up.

The recent disclosures prompted widespread public reaction. The Silicon Valley Toxics Coalition began circulating petitions and a series of well attended public meetings. Ted Smith, head of the Coalition, has suggested that the entire underground water supply in Silicon Valley be declared a Federal Superfund site.

TAXES

The electronics industry lost out this year in its efforts to extend its pet tax measure, the research and development tax credit. Though the Senate approved, the House of Representatives blocked the extension. Congressmen felt that the marginal increase in R & D stimulated by the provision did not justify the \$2 billion annual cost the treasury. (See issue no. 40.)

The R & D credit extension is just one piece of high-tech's tax program. That program was highlighted in a January, 1984 report, "High Technology Tax Policies for the 1980's," by the Ad Hoc Electronics Tax Group. The Group included 20 electronics companies drawn from five trade associations.

In addition to supporting the R & D credit, with improvements, the Ad Hoc Group advocated that firms be allowed to expense investments in short-lived equipment, rather than take investment credits and accelerated depreciation deductions. This is important to high-tech companies, of course, since they change products and processes much more frequently than other manufacturers.

The Group also called for changes in U.S. international tax policy, including Federal legislation preventing states from using the unitary method of apportioning income.

In addition, the high-tech companies recommended modifications in Federal tax provisions dealing with incentive stock options. Stock options have been used by rapidly growing high-tech firms to attract key employees, and the industry supports tax rules which support the practice even when those rules increase Federal revenues from the companies.

At the top of its list of recommendations, the Group took its stand in the national debate on overall Federal tax policy, advocating a "transactions-based consumption tax." It wrote: "As a measure to reduce Federal deficits, if necessary, or to reduce or replace other Federal taxes, the group recommends that a transactions-based consumption tax, such as a value-added tax, be seriously considered. . . .

instead of other proposals, particularly corporate tax increases or surtaxes, which would effectively reduce incentives for savings and investment and increase existing disparities in corporate tax burdens." The Group also rejected proposals for an income-based consumption tax and a broad-base, reduced rate corporate tax, such as that proposed in the Bradley-Gephardt "flat-tax" bill.

DIRTY WORK

There is growing recognition that high-tech chemical use poses a serious threat to public health and the environment, but little attention has been paid recently to the hazards faced by electronics production workers. Industry has written off health and safety activism as a front for union organizing.

However, a cover story in the May-June, 1984 issue of MIT's **Technology Review** may place concern about high-tech working conditions back on the agenda. In "The Not-So-Clean Business of Making Chips," Dr. Joseph LaDou concludes, "the semiconductor industry, which uses large quantities of toxic metals, chemicals, and gases, may be creating significantly greater health and safety problems than heretofore realized." He describes several particular occupational hazards in detail. La Dou, who has practiced occupational medicine in Silicon Valley for years, is acting chief of the Division of Occupational and Environmental Medicine at the University of California at San Francisco.

Alison Bass, who wrote a **Technology Review** sidebar, "Defining Toxic Exposure: A Battle of Semantics," charges that the Semiconductor Industry unilaterally improved its health and safety record in 1981 by re-defining "one-time exposures" to toxic materials as occupational injuries rather than illnesses. By a stroke of the pen, employers reduced their historically high incidence of occupational illness without significantly increasing the reporting of injuries. Injuries not be reported to authorities if no work time is lost, but illnesses must be.

MILITARY CHIPS

The military no longer dominates the market for integrated circuits, as it did in the 1960's, but at seven to ten percent of the market it remains an important customer. Chips built to military specifications ("mil-spec") can be extremely profitable, since the additional testing and documentation required by the Pentagon keeps the prices high and the numbers of suppliers low.

Numerous merchant semiconductor firms have had problems with the military. Used to producing high reliability parts without paperwork or repeated testing, several chipmakers have allegedly bypassed testing requirements, in violation of Federal Law. This March, National Semiconductor plead guilty to charges that it had systematically falsified mil-spec testing records from 1979 to 1981.

In May, the Defense Logistics Agency announced that it planned to ban National from receiving military contracts because the company had not supplied the government with the names of all employees involved in the chip-fraud scheme. Some five percent of National's business comes from military contracts (*San Jose Mercury News*, June 30, 1984). The DLA has already banned seven people, allegedly involved in the scheme at National, from working on military projects.

Underlying the DLA action is the fear that untested chips may endanger the operation of key U.S. warning and weapons systems. *Electronics Week* (July 23, 1984) questions that assumption, suggesting that it is not backed by "solid statistical data." It cites internal study at Hughes Aircraft, which found that the company's military components failed at a much higher rate than its commercial devices.

Electronics Week reports that chipmakers consider mil-spec requirements counterproductive, because they stymie the "sort of innovation that characterizes commercial semiconductors." Mil-spec rules are rigid, and according to industry sources, they are enforced by officials who are not technically qualified.

It is not surprising, therefore, that many chipmakers are halting the production of certain technically obsolete, unprofitable mil-spec products. From October 1, 1983 through the end of May of this year, manufacturers had reported the cancellation of 82 separate product lines (*Peninsula Times Tribune*, May 30, 1984). Commercial buyers of integrated circuits are constantly updating their requirements, but the Pentagon tends to hold on to old designs and systems for years.

TRILOGY

Back issues of this newsletter are dotted with reports that yet another computer company had invested millions of dollars in the latest venture of Gene Amdahl, Trilogy. One of the largest start-up companies in history, Trilogy was developing wafer-scale-integration (WSI) technology in an attempt to build an IBM-compatible mainframe on a single, wafer-sized chip.

This June Trilogy announced, due to repeated delays, that it was shelving plans to build its own computer, but that it would continue its work on WSI. This outcome may have disappointed Trilogy's investors, but Digital Equipment, CII-Honeywell Bull, and Sperry may still earn back their investments. They fed dollars into Trilogy on the promise that they could use the firm's WSI in their own machines.

ELECTRICAL WORKERS

Those who believe that the high-tech electronics workforce will never be unionized may well benefit from an understanding of the history of one of North America's most progressive unions, the United Electrical, Radio, and Machine Workers of America (UE). In *The Electrical Workers: A History of Labor at General Electric and Westinghouse, 1923-1960* (University of Illinois Press, 1983), Ronald Schatz traces the rise of the UE, its policies during its period strength in the 30's and 40's, and its break-up during the McCarthy era.

IBM-MEXICO

IBM's plans to manufacture personal computers in Mexico has run into difficulties. The Mexican competition, which includes joint ventures with Apple and Hewlett-Packard, as well as licensed assemblers for other makes of microcomputers, have complained that IBM, which already dominates the Mexican market for larger machines, may be allowed to establish a wholly owned subsidiary. In addition, they charge that IBM would merely be assembling imported parts, with only 25% value-added in Mexico initially. Apple de Mexico says it will reach 54% value-added by next year.

Business Week (August 6, 1984) reports that IBM's proposed plant, operating where the minimum wage is \$5 per day, "would produce 600,000 personal computers in the first five years - 92% for export to the U.S. - and would earn debt-plagued Mexico more than \$100 million during that period." If Mexico does not approve the operation on IBM's terms, the company may set up shop in Argentina instead.

INTEL

Despite its widely publicized construction of an automated chip assembly plant in Chandler, Arizona, Intel is reportedly planning to spend "\$50 million over the next five years to triple its capacity to produce [assemble] integrated circuits" in Penang, Malaysia (**Business Week**, August 6, 1984). Meanwhile the firm is setting up a plant in Singapore to assemble single-board computers.

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