CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER No. 96-085

ADOPTION OF SITE CLEANUP REQUIREMENTS AND RESCISSION OF ORDER NO. 89-112 FOR:

HEWLETT-PACKARD COMPANY

for the property located at

10900 NORTH WOLFE ROAD
CUPERTINO
SANTA CLARA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter Board), finds that:

1. **Site Location:** Hewlett-Packard (HP) has owned and occupied the facility located at 10900 North Wolfe Road in Cupertino since 1969. The site is about 95 acres and is located west of the Intersil/Siemens federal superfund site.

2. **Site History:** Historical operations such as integrated circuit board manufacturing at the site have resulted in soil and groundwater contamination. The site is currently being used for software development and administrative operations.

3. **Named Dischargers:** Hewlett-Packard is a discharger because it owns the property and caused the soil and groundwater contamination at the site.

   If additional information is submitted indicating that other parties caused or permitted any waste to be discharged on the site where it entered or could have entered waters of the state, the Board will consider adding that party's name to this order.

4. **Regulatory Status:** This site is subject to Site Cleanup Requirements (Order No. 89-112) adopted by the Board on June 21, 1989.

5. **Site Hydrogeology:** Three groundwater zones have been identified at the site. These zones are designated the A-Zone, B-Zone and the Regional Zone. The A-Zone is a perched groundwater zone located generally between 40 to 70 feet below ground surface. The B-Zone which has been intermittently perched in the past at the site is the first continuous groundwater in the area and is located approximately 90-125 feet

below ground surface. The Regional Zone is located approximately 130 to 200 feet below ground surface. Groundwater gradient is generally to the north/northeast.

6. **Remedial Investigation**: HP installed two underground storage tanks at this site in 1973: a 1,500 gallon steel waste solvent tank, and a 3,000 gallon epoxy coated steel waste hydrofluoric acid tank. The waste solvent tank was used for six years and no leaks were known to have occurred during this period. It is suspected that the waste acid tank may have leaked. HP estimates that a minimum of 6,000 gallons of waste acids leaked from this tank. Both tanks were abandoned in place by filling with concrete in 1979.

   Investigations at the waste solvent and acid tank began in early 1983. Site investigations indicated that the unsaturated zone soils, and the perched zone groundwater is contaminated. The chemicals found were trichloroethylene (TCE), perchloroethylene (PCE), and Freon 113.

   Chemicals detected in soil prior to remediation included TCE with concentrations ranging from 19 to 2,400 ppb, PCE up to 200 ppb, Freon 113 at 130 ppb, and TCA up to 98 ppb. The vertical extent of chemical contamination in the groundwater was limited to the perched zone and the B-zone, and laterally it was limited to the parking area and approximately 200 feet northeast of the abandoned tanks. TCE concentrations in perched groundwater were as high as 4,800 ppb, and PCE as high as 180 ppb. In the B-Zone TCE was detected at concentrations of up to 18 ppb and PCE as high as 1.9 ppb. Recent sampling has detected TCE concentrations of up to 660 ppb in the perched zone, and 2.7 ppb in the B-zone.

   No further investigation is needed at this time.

7. **Interim Remedial Measures**: HP installed a pilot soil vapor extraction system in 1987-88. In 1989 Regional Board allowed curtailment of the pilot soil vapor extraction system in place since the system was ineffective in removing the VOCs from the soil, and the risk to public health and environment was minimal. The SVE system removed approximately 11 pounds of TCE. HP estimated that approximately 9 pounds of TCE remains in soil. Confirmatory soil samples detected TCE at concentrations ranging from 80 to 2,900 ppb, PCE up to 200 ppb, Freon 113 up to 52 ppb, and TCA up to 98 ppb. The order also required HP to monitor the groundwater for five years to demonstrate that the contaminants in soil are not migrating further into the groundwater.

   The five year monitoring program ended in December of 1994. The final report which summarizes the monitoring results for five years (1989-94), indicated that concentration of chemicals in groundwater samples taken up to June of 1994 were consistently below detection limits in 3 wells screened in the B and the Regional Zones, which are the first continuous aquifers in the area. In December of 1994, HP

conducted another round of monitoring for 3 wells in the B and the Regional Zones. The data from December 1994 sampling detected TCE at 2.7 ppb in the B zone. Since all the samples were from either the B or the Regional Zones, Regional Board requested that HP sample the perched zone, and conduct a fate and transport study to predict chemical concentrations in the B-zone and the Regional aquifer. Perched zone groundwater monitoring was conducted in October of 1995. The result of the perched zone monitoring and the fate and transport report were submitted in November and December of 1995, respectively. Monitoring data showed that TCE exits in perched zone groundwater at concentrations of up to 660 ppb near the former underground tanks. The fate and transport study predicted that TCE concentrations in the B-Zone, which is the first continuous aquifer would most likely reach a maximum of 4.9 ppb in 9 years, and after that they will gradually decline. Soil concentrations used in the model are actual field data from 1989. Therefore, according to the model, TCE concentrations will reach maximum in 1998.

Further monitoring is needed at this site to validate the model and to demonstrate that the site does not pose a threat to water quality, public health, and the environment, prior to a closure action.

8. **Adjacent Sites:** Groundwater designations at Intersil/Siemens and AMI are different than designations used at HP. The following table summarizes groundwater designations at these sites.

GROUNDWATER DESIGNATIONS

APPROXIMATE GROUNDWATER DEPTH (feet bgs)	HEWLETT-PACKARD	INTERSIL/SIEMENS AND AMI
40-70'	A-zone	perched
90-125'	B-zone	A-zone
130-150'	Regional Zone	B-zone
180-200'	Regional Zone	C-zone

At Intersil/Siemens perched groundwater in addition to A, B and the C zones have been impacted by TCE and other chemicals at concentrations well above MCLs. At the American Microsystems Site, perched groundwater, and the A and B zone have been impacted by TCE at concentrations well above MCLs. The plumes originating at Intersil/Siemens and AMI have migrated offsite to the north and north east. There is no commingling of the HP plume with either the neighboring Intersil/Siemens plume or the AMI plume, and commingling is not anticipated. The plumes originating at Intersil/Siemens and AMI do not appear to be significantly commingled either. Intersil and AMI have completed soil remediation at their respective sites. Siemens is still

remediating the soil. Groundwater remediation in the A and B zones continues at all three sites.

9. **Basin Plan**: The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on June 21, 1995. This updated and consolidated plan represents the Board's master water quality control planning document. The revised Basin Plan was approved by the State Water Resources Control Board and the Office of Administrative Law on July 20, 1995, and November 13, 1995, respectively. A summary of regulatory provisions is contained in 23 CCR 3912. The Basin Plan defines beneficial uses and water quality objectives for waters of the State, including surface waters and groundwaters.

   The potential beneficial uses of groundwater underlying and adjacent to the site include:

   a. Municipal and domestic water supply
   b. Industrial process water supply
   c. Industrial service water supply
   d. Agricultural water supply

   At present, there is no known use of groundwater underlying the site at depths of 200 feet or less for the above purposes. However, groundwater beneath and downgradient of the site at depths of 300 feet or more is being used for municipal and domestic water supply. These aquifers do not appear to be impacted by the chemical releases at this site.

10. **Other Board Policies**: Board Resolution No. 88-160 allows discharges of extracted, treated groundwater from site cleanups to surface waters only if it has been demonstrated that neither reclamation nor discharge to the sanitary sewer is technically and economically feasible.

    Board Resolution No. 89-39, "Sources of Drinking Water," defines potential sources of drinking water to include all groundwater in the region, with limited exceptions for areas of high TDS, low yield, or naturally-high contaminant levels.

11. **State Water Board Policies**: State Water Board Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California," applies to this discharge and requires attainment of background levels of water quality, or the highest level of water quality which is reasonable if background levels of water quality cannot be restored. Cleanup levels other than background must be consistent with the maximum benefit to the people of the State, not unreasonably affect present and anticipated beneficial uses of such water, and not result in exceedance of applicable water quality objectives.

State Water Board Resolution No. 92-49, "Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304," applies to this discharge. This order and its requirements are consistent with the provisions of Resolution No. 92-49, as amended.

12. **Basis for 13304 Order**: The discharger has caused or permitted waste to be discharged or deposited where it is or probably will be discharged into waters of the State and creates or threatens to create a condition of pollution or nuisance.

13. **Cost Recovery**: Pursuant to California Water Code Section 13304, the discharger is hereby notified that the Board is entitled to, and may seek reimbursement for, all reasonable costs actually incurred by the Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this order.

14. **CEQA**: This action is an order to enforce the laws and regulations administered by the Board. As such, this action is categorically exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to Section 15321 of the Resources Agency Guidelines.

15. **Notification**: The Board has notified the discharger and all interested agencies and persons of its intent under California Water Code Section 13304 to prescribe site cleanup requirements for the discharge, and has provided them with an opportunity to submit their written comments.

16. **Public Hearing**: The Board, at a public meeting, heard and considered all comments pertaining to this discharge.

IT IS HEREBY ORDERED, pursuant to Section 13304 of the California Water Code, that the discharger (or its agents, successors, or assigns) shall cleanup and abate the effects described in the above findings as follows:

A. PROHIBITIONS

1. The discharge of wastes or hazardous substances in a manner which will degrade water quality or adversely affect beneficial uses of waters of the State is prohibited.

2. Further significant migration of wastes or hazardous substances through subsurface transport to waters of the State is prohibited.

3. Activities associated with the subsurface investigation and cleanup which will cause significant adverse migration of wastes or hazardous substances are prohibited.

B. PROVISIONS

1. **No Nuisance**: The storage, handling, treatment, or disposal of polluted soil or groundwater shall not create a nuisance as defined in California Water Code Section 13050(m).

2. **Good Operation and Maintenance (O&M)**: The discharger shall maintain in good working order and operate as efficiently as possible any facility or control system installed to achieve compliance with the requirements of this Order.

3. **Cost Recovery**: The discharger shall be liable, pursuant to California Water Code Section 13304, to the Board for all reasonable costs actually incurred by the Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this Order. If the site addressed by this Order is enrolled in a State Board-managed reimbursement program, reimbursement shall be made pursuant to this Order and according to the procedures established in that program. Any disputes raised by the discharger over reimbursement amounts or methods used in that program shall be consistent with the dispute resolution procedures for that program.

4. **Access to Site and Records**: In accordance with California Water Code Section 13267(c), the discharger shall permit the Board or its authorized representative:

    a. Entry upon premises in which any pollution source exists, or may potentially exist, or in which any required records are kept, which are relevant to this Order.

    b. Access to copy any records required to be kept under the requirements of this Order.

    c. Inspection of any monitoring or remediation facilities installed in response to this Order.

    d. Sampling of any groundwater or soil which is accessible, or may become accessible, as part of any investigation or remedial action program undertaken by the discharger.

5. **Self-Monitoring Program**: The discharger shall comply with the Self-Monitoring Program as attached to this Order and as may be amended by the Executive Officer.

6. **Contractor / Consultant Qualifications**: All technical documents shall be signed by and stamped with the seal of a California registered geologist, a California certified engineering geologist, or a California registered civil engineer.

7. **Lab Qualifications**: All samples shall be analyzed by State-certified laboratories or laboratories accepted by the Board using approved EPA methods for the type of analysis to be performed. All laboratories shall maintain quality assurance/quality control (QA/QC) records for Board review. This provision does not apply to analyses that can only reasonably be performed on-site (e.g. temperature).

8. **Document Distribution**: Copies of all correspondence, technical reports, and other documents pertaining to compliance with this Order shall be provided to the following agencies:

   a. City of Cupertino
   b. City of Sunnyvale
   c. City of Santa Clara
   d. Santa Clara Valley Water District
   e. U.S. EPA - Region 9

   The Executive Officer may modify this distribution list as needed.

9. **Reporting of Changed Owner or Operator**: The discharger shall file a technical report on any changes in site occupancy or ownership associated with the property described in this Order.

10. **Reporting of Hazardous Substance Release**: If any hazardous substance is discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, the discharger shall report such discharge to the Regional Board by calling (510) 286-1255 during regular office hours (Monday through Friday, 8:00 to 5:00).

    A written report shall be filed with the Board within five working days. The report shall describe: the nature of the hazardous substance, estimated quantity involved, duration of incident, cause of release, estimated size of affected area, nature of effect, corrective actions taken or planned, schedule of corrective actions planned, and persons/agencies notified.

    This reporting is in addition to reporting to the Office of Emergency Services required pursuant to the Health and Safety Code.

11. **Rescission of Existing Order**: This Order supersedes and rescinds Order No. 89-112.

12. **Periodic SCR Review**: The Board will review this Order periodically and may revise it when necessary. The discharger may request revisions and upon review the Executive Officer may recommend that the Board revise these requirements.

I, Loretta K. Barsamian, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on June 19, 1996.

Loretta K. Barsamian
Executive Officer

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FAILURE TO COMPLY WITH THE REQUIREMENTS OF THIS ORDER MAY SUBJECT YOU TO ENFORCEMENT ACTION, INCLUDING BUT NOT LIMITED TO: IMPOSITION OF ADMINISTRATIVE CIVIL LIABILITY UNDER WATER CODE SECTIONS 13268 OR 13350, OR REFERRAL TO THE ATTORNEY GENERAL FOR INJUNCTIVE RELIEF OR CIVIL OR CRIMINAL LIABILITY

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Attachments: Site Map
Self-Monitoring Program

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM FOR:

HEWLETT-PACKARD COMPANY

for the property located at

10900 NORTH WOLFE ROAD
CUPERTINO
SANTA CLARA COUNTY

1. **Authority and Purpose**: The Board requests the technical reports required in this Self-Monitoring Program pursuant to Water Code Sections 13267 and 13304. This Self-Monitoring Program is intended to document compliance with Board Order No. 96-085 (site cleanup requirements).

2. **Monitoring**: Beginning on August 1, 1996 and ending on July 31, 2000, the discharger shall measure groundwater elevations and shall collect and analyze representative samples of groundwater according to the schedule in Table 1.

3. **Annual Monitoring Reports**: The discharger shall submit the annual monitoring reports to the Board no later than 30 days following the end of the second quarter, except for the first year (1996) where this date has already passed. In 1996, sampling will be done in the fourth quarter (October 1 - December 31), and the report shall be submitted on January 31, 1997. The reports shall include:

   a. Transmittal Letter: The transmittal letter shall discuss any violations during the reporting period and actions taken or planned to correct the problem. The letter shall be signed by the discharger's principal executive officer or his/her duly authorized representative, and shall include a statement by the official, under penalty of perjury, that the report is true and correct to the best of the official's knowledge.

   b. Groundwater Elevations: Groundwater elevation data shall be presented in tabular form, and a groundwater elevation map should be prepared for each monitored water-bearing zone. Historical groundwater elevations shall be included in the report.

   c. Groundwater Analyses: Groundwater sampling data shall be presented in tabular form. The report shall indicate the analytical method used, detection limits obtained for each reported constituent, and a summary of QA/QC data.

The report shall describe any significant increases in contaminant concentrations since the last report, and any measures proposed to address the increases. Historical groundwater sampling results shall be included in the last report only. Supporting data, such as lab data sheets, need not be included (however, see record keeping - below).

4. **Violation Reports**: If the discharger violates requirements in the Site Cleanup Requirements, then the discharger shall notify the Board office by telephone as soon as practicable once the discharger has knowledge of the violation. Board staff may, depending on violation severity, require the discharger to submit a separate technical report on the violation within five working days of telephone notification.

5. **Other Reports**: The discharger shall notify the Board in writing prior to any site activities, such as construction or underground tank removal, which have the potential to cause further migration of contaminants or which would provide new opportunities for site investigation.

6. **Record Keeping**: The discharger or his/her agent shall retain data generated for the above reports, including lab results and QA/QC data, for a minimum of six years after origination and shall make them available to the Board upon request.

7. **SMP Revisions**: Revisions to the Self-Monitoring Program may be ordered by the Executive Officer, either on his/her own initiative or at the request of the discharger. Prior to making SMP revisions, the Executive Officer will consider the burden, including costs, of associated self-monitoring reports relative to the benefits to be obtained from these reports.

I, Loretta K. Barsamian, Executive Officer, hereby certify that this Self-Monitoring Program was adopted by the Board on June 19, 1996.

Loretta K. Barsamian

Loretta K. Barsamian
Executive Officer

TABLE 1

Well #	Sampling Frequency	Sampling Period	Analyses
5A	A	second quarter	8010
9B	A	second quarter	8010
14R	A	second quarter	8010
3A	LY	second quarter	8010
4A	LY	second quarter	8010
10A	LY	second quarter	8010
16A	LY	second quarter	8010
17A	LY	second quarter	8010
18A	LY	second quarter	8010
19A	LY	second quarter	8010
6B	LY	second quarter	8010
7B	LY	second quarter	8010
8B	LY	second quarter	8010
11B	LY	second quarter	8010
20B	LY	second quarter	8010
21B	LY	second quarter	8010
22B	LY	second quarter	8010
23B	LY	second quarter	8010
13R	LY	second quarter	8010
15R	LY	second quarter	8010
24S	LY	second quarter	8010
25S	LY	second quarter	8010
26S	LY	second quarter	8010

Key: Q = Quarterly
SA = Semi-Annually
A = Annually

8010 = EPA Method 8010 or equivalent
8020 = EPA Method 8020 or equivalent
8240 = EPA Method 8240 or equivalent

LY = Last year (2000)

8010/8240 = EPA Method 8240 in lieu of 8010 for fourth quarter

Second quarter = April 1 to June 30