

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER 86-48

WASTE DISCHARGE REQUIREMENTS
(SITE CLEANUP REQUIREMENTS) FOR:

SIEMENS COMPONENTS, INC.
OPTOELECTRONICS DIVISION
19000 HOMESTEAD ROAD
CUPERTINO
SANTA CLARA COUNTY

VALLCO PARK, LTD.
P.O. DRAWER V
CUPERTINO
SANTA CLARA COUNTY

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

1. Siemens Components, Inc., hereinafter called a discharger, operates a facility located at 19000 Homestead Road in Cupertino. At the request of the Regional Board staff, Siemens submitted a Report of Waste Discharge to the Board on May 23, 1986. The land is owned by Vallco Park, Ltd. also considered a discharger.
2. Groundwater investigations of organic solvent release are also occurring at the site neighboring Siemens occupied by Intersil. Two groundwater monitoring wells were installed at the site occupied by American Microsystems Inc. (AMI), to the northeast, and a subsurface investigation is also being conducted at the Hewlett Packard site to the west. The proximity of these facilities is shown on Attachment 1, Regional Map, hereinafter a part of this Order.
3. The Siemens site consists of two buildings as shown on Attachment 1. The facility houses semiconductor manufacturing operations which use or used several different organic solvents including 1,1,1 trichloroethane (TCA), methanol, isopropanol (IPA), n-butyl acetate, trichlorobenzene (TCB), and toluene, for processing semiconductors during production. Trichloroethylene (TCE) was previously used and was replaced by TCA.
4. Until 1982, when the tanks were removed, waste solvents were piped to four separate underground storage tanks before hauling to a Class I disposal site. In response to the Regional Board's underground tank leak detection program facility questionnaire, initial studies were conducted for the discharger by J. H. Kleinfelder and Associates. These studies detected the presence of solvents in the soil in Areas 1 and 3, named for the locations of Tanks 1 and 3, respectively (Attachment 1). Initial soil samples taken from beneath the tanks showed concentrations of solvents as high as 11,000 ppm TCA beneath Tank 3 and 21,000 ppm n-butyl acetate beneath Tank 1.
5. The subsurface geology beneath the Siemens property consists of a series

of alternating coarse-grained and fine-grained units, representing stream-channel deposits and associated overbank deposits. The first saturated materials were encountered at approximately 50 feet below the surface at some locations. The "A" aquifer appears to exist at levels of about 100 feet to 110 feet below the surface. Saturated materials at this depth have proven to be generally non-productive. The next deeper permeable zone, the "B" aquifer was encountered at a depth of approximately 130 feet. Water level measurements at this site and neighboring sites have not been definitive for determining the groundwater flow direction in the upper saturated zone. Data indicate that the primary gradient in the upper saturated zone is eastward with some movement to the north and south apparent as well.

6. Several groundwater monitoring wells have been installed upgradient, in the vicinity of, and downgradient from the former underground storage tanks in Areas 1 and 3. Organic solvents were found at significant levels in both source areas. The major organic solvents found in Area 1 groundwater is TCE at concentrations as high as 53,000 ppb, while the major organic solvent found in Area 3 groundwater is 1,1,1 TCA at concentrations as high as 27,000 ppb.
7. The continued movement of organic solvents from soils and from fine-grained sediments within the saturated zone to groundwater aquifers, and the potential for continued migration of these compounds to uncontaminated waters constitutes a discharge for purposes of Water Code Section 13263(a).
8. Investigations completed in December 1985 included the installation and sampling of shallow groundwater monitoring wells on the property boundaries and two "B" aquifer wells, one in Area 3 and one at the northeast corner of the property. The data obtained in this phase of the investigation indicates that contaminants may be moving offsite in the groundwater. TCA was found at the northeast corner of the property at 7,100 ppb in the shallow zone and at 84 ppb in the deeper "B" aquifer.
9. On February 7, 1986, Siemens submitted a proposal consisting of a "C" aquifer well to define the vertical extent of organic solvent migration, an upgradient "A" aquifer monitoring well, an "A" aquifer extraction well in Area 3, an offsite soil-gas investigation and subsequent installation of "A" aquifer monitoring wells to define the lateral extent of the organic solvent migration in the shallow zone, and installation of an additional "B" aquifer monitoring well to determine the extent of the plume in this zone pending receipt of water level data from the "B" zone. This proposal was approved by Regional Board staff (letter dated February 11, 1986) and work on this phase of the investigation is progressing on schedule.
10. Since November 1983, Siemens has operated a vacuum extraction system in Area 3. Recently, in November 1985, the capacity of the vacuum extraction system was significantly expanded, and in December 1985, the system was also connected to a well in Area 1. Monthly samples taken of the extracted soil-gas consistently show high levels of volatile organic compounds. As part of the current investigation, a groundwater extraction well has been constructed to prevent further

organic solvent migration from Area 3, and an additional "A" aquifer extraction well is being constructed in the northeast corner of the site.

11. There are five active municipal wells within a 1 mile radius of the site. Three of these, operated by the City of Santa Clara, are located in apparent downgradient locations. Under a joint agreement between the City, the discharger, and the neighboring Intersil facility, these wells are being sampled monthly. The well furthest away (approximately 3700 feet northeast of the site) has consistently shown 1 - 3 ppb Freon and two samples have shown .5 ppb TCA. No other chemicals have been detected in any of these wells.
12. Two private irrigation wells, the Marchese wells, are located within an area one mile downgradient from the site. The wells were sampled by Siemens in April 1986. One of these wells was found to contain low levels (less than 30 ppb) of TCE, Freon-113, and 1,1,1 TCA. Siemens plans to determine the source of organic solvents in this well using a down-hole camera to determine which saturated units are screened by the well and, if necessary, installing additional monitoring wells off site.
13. The Regional Board adopted a revised Water Quality Control Plan for the San Francisco Bay Region (Basin Plan) on July 21, 1982. The Basin Plan contains water quality objectives and beneficial uses for South San Francisco Bay and contiguous surface and groundwaters.
14. The beneficial uses of South San Francisco Bay and tributary water bodies are:
 - water contact recreation
 - non-contact water recreation
 - wildlife habitat
 - warm and cold fresh water habitat
 - fish migration
 - industrial service and process supply
 - navigation
 - agricultural water supply
15. The beneficial uses of the groundwaters are:
 - municipal and domestic water supply
 - industrial service and process supply
 - agricultural water supply
16. The Board has notified the dischargers and all interested agencies and persons of its intent to issue waste discharge requirements for the discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
17. The Board, at a public meeting, heard and considered all comments pertaining to this discharge.

18. This project constitutes a minor modification to land and such activity is thereby exempt from the provisions of the California Environmental Quality Act (CEQA) in accordance with Section 15304 of the Resources Agency Guidelines.

IT IS HEREBY ORDERED, that the dischargers, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, shall comply with the following:

A. PROHIBITIONS:

1. The discharge of wastes or hazardous materials in a manner which will degrade water quality or adversely affect beneficial uses of the waters of the State is prohibited.
2. Further significant adverse migration of pollutants 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 pollutants or adversely spread any pollutants from other sites is prohibited.

B. SPECIFICATIONS:

1. The storage, handling, treatment or disposal of polluted soil or groundwater shall not create a nuisance as defined in Section 13050(m) of the California Water Code.
2. The dischargers shall conduct monitoring activities as needed to define the local hydrogeological conditions, and the lateral and vertical extent of the soil and groundwater pollution in and contiguous to the zone of known pollution. Should monitoring results show evidence of plume migration additional plume characterization shall be required.

C. PROVISIONS:

1. In order to comply with Specification B.2, the dischargers shall complete the following tasks according to the following compliance time schedule:

TASK	COMPLETION DATE
a. Submit an interim report acceptable to the Executive Officer on the results (boring logs, chemical analyses), and conclusions, of the following tasks, as provided in the proposal discussed in Findings 9 and 12:	August 29, 1986

- (1) Construction and operation of the shallow zone extraction well in Area 3.
- (2) Installation of a shallow zone extraction well in the northeast corner of the property.
- (3) Construction and sampling of an upgradient "A" aquifer well in the southwest corner of Siemen's property.
- (4) Offsite soil-gas monitoring and construction and sampling of downgradient "A" aquifer monitoring wells.
- (5) Construction and sampling of a downgradient "A" and "B" aquifer well pair, including the rationale used to select the appropriate location for this well.
- (6) Construction and sampling of a "C" aquifer well.
- (7) Quarterly sampling of all existing and new wells.
- (8) Continuous monitoring of the water level in the "C" aquifer monitoring well to determine any influence from nearby pumping wells (preliminary evaluation based on data through August 1986). This monitoring will continue through September 1986 and will be used to determine the location of additional "C" aquifer wells.

b. Submit a report acceptable to the Executive Officer on the results and conclusions, of the following tasks to determine the source of the Marchese well contamination:

August 29, 1986

- (1) Sampling and analysis of well water, soil, standing water, and cherries at the

Marchese orchard northeast of the Siemens site.

- (2) Camera logging of the Marchese well northeast of the Siemens site.
 - (3) If Tasks 1.b(1) and 1.b(2) are not successful at determining which saturated unit is the source of contamination in the Marchese well submit a proposal acceptable to the Executive Officer detailing the additional work to be completed to make this determination.
- c. Submit a proposal acceptable to the Executive Officer for additional work to define the vertical and lateral extent of the pollutant plume. This proposal will include construction and sampling of at least two additional "C" aquifer wells to determine the gradient in this zone and additional offsite wells screened in other zones, as determined necessary. August 29, 1986
(The proposed location for the "C" aquifer wells will be submitted in an interim report by October 14, 1986 after completion of Task 1.a(8).)
- d. Submit a final report acceptable to the Executive Officer on the results (boring logs, chemical analyses), and conclusions of the tasks outlined in 1.b and 1.c. January 16, 1987
- e. If the pollutant plume remains undefined after completion of Task 1.d., complete the following tasks:
- (1) Submit a proposal acceptable to the Executive Officer for further investigation of the lateral and vertical extent of the organic solvent plume. To the extent feasible, this proposal shall attempt to complete the definition of the lateral and vertical extent of migration. January 16, 1987
 - (2) Submit a report acceptable to the Executive Officer Within twenty weeks after receiving the

describing the results of the approved proposal. If the plume has not been defined, this report shall include a proposal to complete the definition of the extent of organic migration.

Executive Officer's approval of the Task 1.e(1) proposal.

2. In order to comply with Prohibitions A.1 and A.2 the dischargers shall meet the following compliance time schedule:

TASKS	COMPLETION DATE
a. Submit a report which evaluates interim cleanup alternatives and which contains or recommends an interim cleanup strategy for the site acceptable to the Executive Officer.	
(1) If plume definition is completed after Task 1.d -	April 17, 1987
(2) If plume definition is completed after Task 1.e -	Three months after submission of last technical report regarding plume definition
b. Complete construction and implement approved cleanup alternative.	
(1) If plume definition is completed after Task 1.d -	October 16, 1987
(2) If plume definition is completed after Task 1.e -	Six months after submission of Task 2.a(2) report.

3. In order to comply with Prohibition 1, the following information will be submitted in a report for Board consideration no later than fourteen months after completion of Tasks 2.b(1) or 2.b(2), whichever is appropriate.

a. An evaluation of final remedial measures and a recommendation on which measures should be implemented.

b. An evaluation of the effectiveness of the interim remedial measures.

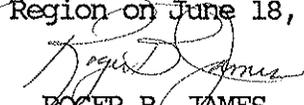
The evaluation of final remedial measures will include a projection of the cost, effectiveness, and benefits of each measure and will be based upon Section 25350, Subpart F of the National Oil and hazardous Substances Pollution contingency Plan (40 CFR, Part 300, Subpart F).

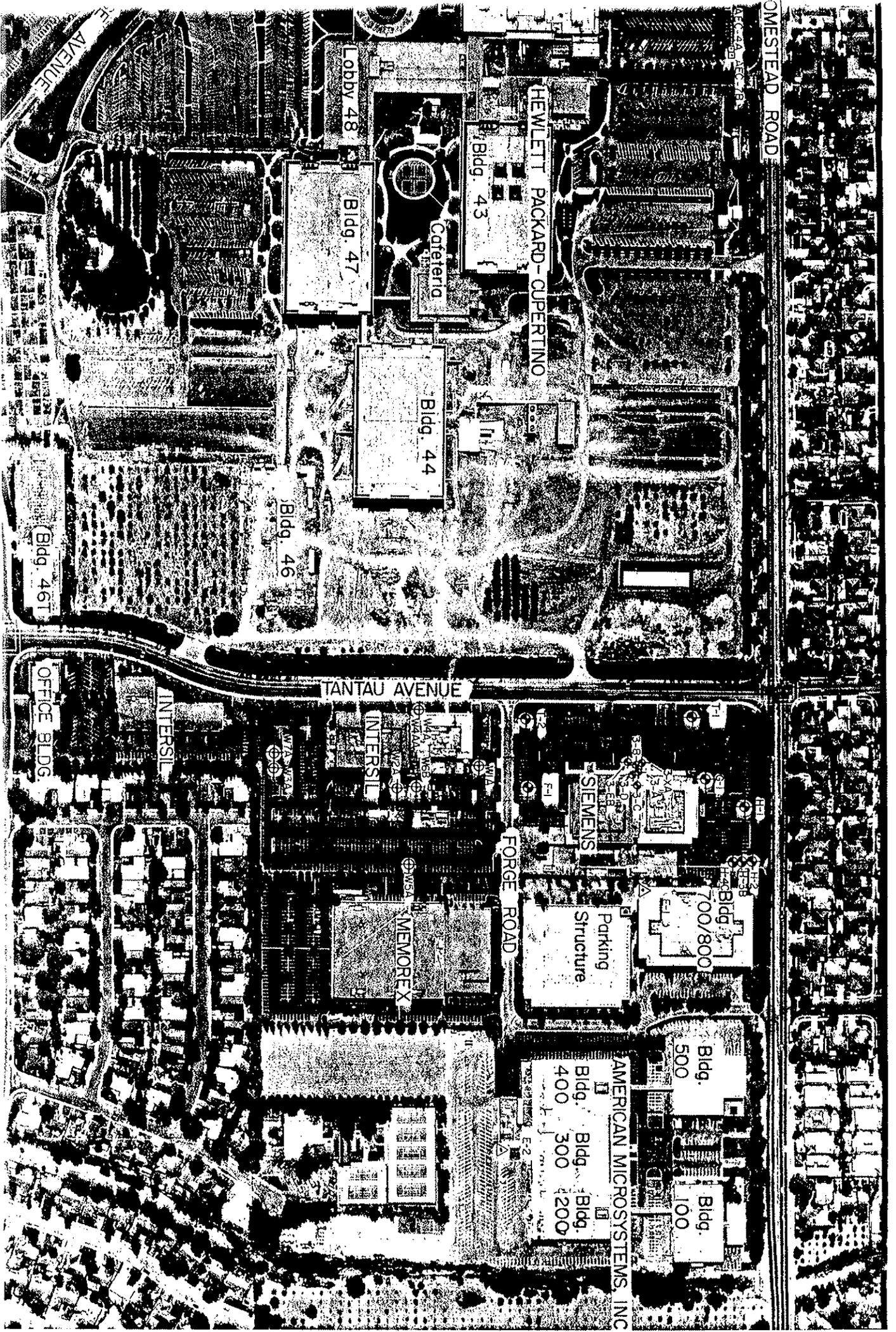
4. The dischargers shall submit to the Board quarterly reports summarizing

their progress toward compliance with the Provisions specified in this Order, including specific actions taken and actions proposed prior to the next report. Reports will be submitted within 45 days of the end of each calendar quarter, however, the first report will be due by July 18, 1986. These quarterly reports will also contain the information specified in the attached self-monitoring program and any subsequent modifications of the self-monitoring program the Executive Officer may make.

5. All samples shall be analyzed by State-approved laboratories using approved EPA methods for the type of analysis to be performed. All laboratories shall maintain quality assurance/quality control records for Board review.
6. The dischargers shall permit the Board or its authorized representative in accordance with Section 13267(c) of the California Water Code:
 - a. Entry upon the Siemens Optoelectronics and Vallico facility premises on which any pollution sources exist, or may potentially exist, or on which any records required by this Order are kept;
 - b. Access to copy any records required to be kept under terms and conditions of this Order.
 - c. Inspection of any monitoring equipment or methods required by this Order.
 - d. Sampling of any groundwater or soil which is accessible, or may become accessible to the dischargers as part of any investigation or remedial action program required by this Order.
7. The dischargers 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.
8. The Board will review this Order periodically and may revise the requirements when necessary. This may include further investigation and remedial measures if warranted by monitoring results and other considerations.

I, Roger B. James, Executive Officer, do hereby certify 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 18, 1986.


ROGER B. JAMES
Executive Officer



CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

T E N T A T I V E
SELF-MONITORING PROGRAM
FOR

Siemens Components, Inc. _____

Vallco Park, Ltd. _____

WDR NO. _____

ORDER NO. 86-48

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM

A. GENERAL

Reporting responsibilities of waste dischargers are specified in Sections 13225(a), 13267(b), 13268, 13383, and 13387(b) of the California Water Code and this Regional Board's Resolution No. 73-16.

The principal purposes of a monitoring program by a waste discharger, also referred to as self-monitoring program, are: (1) to document compliance with waste discharge requirements and prohibitions established by this Regional Board, (2) to facilitate self-policing by the waste discharger in the prevention and abatement of pollution arising from waste discharge, (3) to develop or assist in the development of effluent or other limitations, discharger prohibitions national standards of performance, pretreatment and toxicity standards, and other standards, and (4) to prepare water and wastewater quality inventories.

B. SAMPLING AND ANALYTICAL METHODS

Sample collection, storage, and analyses shall be performed according to the latest edition of Standard Methods for the Examination of Water and Wastewater prepared and published jointly by the American Public Health Association, American Water Works Association, and Water Pollution Control Federation, or other methods approved and specified by the Executive Officer of this Regional Board.

C. REPORTS TO BE FILED WITH THE REGIONAL BOARD

1. Violations of Requirements

In the event the discharger is unable to comply with the conditions of the waste discharge requirements and prohibitions due to:

- (a) maintenance work, power failures, or breakdown of waste treatment equipment, or
- (b) accidents caused by human error or negligence, or
- (c) other causes such as acts of nature,
- (d) poor operation or inadequate system design,

The discharger shall notify the Regional Board office by telephone as soon as he or his agents have knowledge of the incident and confirm this notification in writing within two weeks of the telephone notification. The written report shall include pertinent information explaining reasons for the noncompliance and shall indicate what steps were taken to prevent the problem from recurring.

The discharger shall file a written technical report at least 15 days prior to advertising for bid on any construction project which would cause or aggravate the discharge of waste in violation of requirements; said report shall describe the nature, costs and scheduling of all action necessary to preclude such discharge.

In addition, if the noncompliance caused by items (a), (b), (c) or (d) above is with respect to any of the effluent limits, the waste discharger shall promptly accelerate his monitoring program as required by the Board's Executive Officer for those constituents which have been violated. Such analysis shall continue until such time as the effluent limits have been attained, or until such time as the Executive Officer determines to be appropriate. The results of such monitoring shall be included in the regular Self-Monitoring Report.

2. Bypass Reports

Bypassing reporting shall be an integral part of regular monitoring program reporting. A report on bypassing of untreated units shall be made which will include cause, time and date, duration and estimated volume bypassed, method used in estimating volume, and persons and agencies notified. Notification to the Regional Board shall be made immediately by telephone (415-464-1255), followed by a written account within 15 days.

3. Self-Monitoring Reports

a. Reporting Period:

Written reports shall be filed regularly for each month by the thirtieth of the following month.

b. Letter of Transmittal:

A letter transmitting self-monitoring reports shall accompany each report. Such a letter shall include a discussion of requirement violations found during the reporting period and actions taken or planned for correcting any requirement violation. If the discharger has previously submitted a detailed time schedule for correcting requirement violations, a reference to this correspondence will be satisfactory.

Monitoring reports and the letter transmitting reports shall be signed by either a principal executive officer or his duly authorized employee. The letter shall contain a statement by the official, under penalty of perjury, that to the best of the signer's knowledge the report is true and correct.

c. Data Results:

- (1) Results from each required analysis and observation shall be submitted in the monthly self-monitoring report. Results shall also be submitted for any additional analyses performed by the dischargers at the specific request of the Board for parameters for which effluent limits have been established and provided to the dischargers by the Board.
- (2) The report shall include a discussion of unexpected operational changes which could affect performance of the treatment system, such as flow fluctuations, maintenance shutdown, etc.
- (3) The report shall also include a table identifying by method number the analytical procedures used for analyses. Any special methods shall be identified and should have prior approval of the Board's Executive Officer.
- (4) Lab results should be copied and submitted as an appendix to the regular report.
- (5) A map shall accompany the report, showing sampling locations and flow path to receiving waters.
- (6) The report shall include an annual waste summary by month for the current year for each parameter of the attached Table I, showing the minimum, maximum and average for the month. The report for December shall include minimum, maximum and average for the year.

D. DESCRIPTION OF SAMPLING STATIONS

EFFLUENT

3 X-A	Discharge from groundwater extraction well.
-------	---

GROUNDWATER

Station

Description

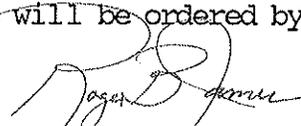
T-2, H-1, H2, H3B, H4C, F-1, 3D, 3EB	Points on the edge of the pollutant plume.
---	--

E. SCHEDULE OF SAMPLING AND ANALYSIS

The schedule of sampling and analysis shall be that given as Table I.

I, Roger B. James, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board Order No. 86-48
2. Is effective on the date shown below.
3. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the dischargers and revisions will be ordered by the Executive Officer.



ROGER B. JAMES
Executive Officer

Effective Date: June 19, 1986

Attachment: Table I

