

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION

ORDER NO. 89-15  
NPDES NO. CA 0028185

RENEWAL OF WASTE DISCHARGE REQUIREMENTS FOR:

FAIRCHILD SEMICONDUCTOR CORPORATION AND SCHLUMBERGER TECHNOLOGY CORPORATION  
SAN JOSE  
SANTA CLARA COUNTY

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

1. Fairchild Semiconductor Corporation and Schlumberger Technology Corporation (hereinafter called the dischargers), by application dated October 7, 1988, have applied for renewal of waste discharge requirements and a permit to discharge waste under the National Pollutant Discharge Elimination System (NPDES). The dischargers are currently discharging wastes pursuant to Order No. 82-61 which was adopted by the Board on November 17, 1982.
2. The dischargers owned and operated a semiconductor manufacturing facility located at 101 Bernal Road, San Jose. The dischargers operated the facility from April 1977 until the facility was closed in October 1983. The facility has been inactive since 1983. The facility is currently owned by Schlumberger Technology Corporation, the former parent corporation of Fairchild. Schlumberger has entered into a contract to sell the property to the Koll Company. Koll plans to develop the property as a neighborhood shopping center.
3. Subsurface investigations detected various chemicals, including trichloroethane (TCA), xylene, acetone, isopropyl alcohol, and other chemicals in both soils and groundwater at the facility.
4. The dischargers seek to remediate and to prevent the further migration of chemicals as described in Finding 3 by groundwater extraction and treatment.
5. The discharges are described as follows:

<u>Extracted Groundwater</u>	<u>Average Annual Flow Rate (MGD)</u>
Waste 001 Continuous from On Site and Off-Site Well RW-25 groundwater extraction.	0.25
Waste 002 Continuous from groundwater extraction Wells RW-2 and RW-22.	1.6

FAIRCHILD-SAN JOSE NPDES PERMIT

Waste 003 Intermittent flows from  
well sample collection and  
aquifer testing

Treatment of groundwater containing pollutants is based on the best available treatment which is economically achievable (BATEA). The extracted groundwater, as described in Waste 001, will be treated by air stripping prior to discharge. Waste 001 is currently being treated by an air stripping unit which will have to be upgraded or replaced in order to meet the effluent limits contained in this Order.

The extracted groundwater, as described in Waste 002, will be treated by use of nozzles prior to discharge, as a mitigation measure in order to qualify for the exemption being granted in Finding 15 of this Order. It is expected that the discharge of Waste 002 will only be necessary for two years in order to meet the groundwater cleanup goals for this portion of the aquifer. This waste discharge will meet all health based water quality criteria.

Due to the high yield of groundwater from monitoring wells, low waste constituent concentrations, scattered monitoring well locations, and the intermittent nature of the discharge, polluted groundwater, as described in Waste 003, produced from intermittent groundwater sample collection and aquifer testing will be blended with other waste discharges to meet effluent limits.

All the effluent discharged to surface water will be conveyed along storm drains tributary to Canoas Creek, Guadalupe River and South San Francisco Bay.

6. In order to prevent well plugging and mechanical difficulties, the dischargers may conduct a chlorination program of the extraction and injection wells to minimize bacterial and algae problems.
7. The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Region (Basin Plan) on December 17, 1986. The Basin Plan contains water quality objectives for Guadalupe River, South San Francisco Bay, and contiguous surface and groundwaters.
8. The existing and potential beneficial uses of Guadalupe River and its tributaries include:
  - a. Contact and Non-Contact Water Recreation
  - b. Warm Fresh Water Habitat
  - c. Cold Fresh Water Habitat
  - d. Wildlife Habitat
  - e. Fish Migration
  - f. Fish Spawning

Canoas Creek has the same beneficial uses as Guadalupe River, but is not used for active recharge efforts, as is the Guadalupe River, and provides only limited natural recharge.

FAIRCHILD-SAN JOSE NPDES PERMIT

9. The existing and potential beneficial uses of South San Francisco Bay include:
  - a. Contact and Non-contact Water Recreation
  - b. Wildlife Habitat
  - c. Preservation of Rare and Endangered Species
  - d. Estuarine Habitat
  - e. Fish Spawning and Migration
  - f. Industrial Service Supply
  - g. Shellfishing
  - h. Navigation
  - i. Ocean commercial and sport fishing
  
10. The existing and potential beneficial uses of the groundwater underlying and adjacent to the facility include:
  - a. Industrial process water supply
  - b. Industrial service water supply
  - c. Municipal and domestic water supply
  - d. Agricultural water supply
  
11. Effluent limitations of this Order are based on the Basin Plan, State and U.S. Environmental Protection Agency (EPA) plans and policies, best available treatment economically achievable (BATEA), and best engineering judgement. United States Environmental Protection Agency (EPA), Region IX, draft guidance "NPDES Permit Limitations for Discharge of Contaminated Groundwater: Guidance Document" was also considered in the determination of effluent limits.
  
12. The Board has considered currently available water quality objectives for constituents necessary to protect beneficial uses. The dischargers have evaluated alternative treatment methods. The effluent limits herein are based on water quality objectives, best available economically achievable technology, and best professional judgement. These effluent limits are set based on the source of polluted groundwater and on the need for continued groundwater remediation prior to construction of the treatment systems as ordered. Interim limits remain in effect until the treatment systems are constructed and operating; thereafter final limits apply to discharges from the treatment systems. Limits are subject to reconsideration when additional information or final guidelines are available. In most other groundwater remediation cases, the Board has considered best available economically achievable treatment (BATEA) to include air stripping or activated carbon treatment, or both, to achieve an effluent containing at most 5 ppb of each constituent. However, BATEA in this case differs from other cases due to the higher flow rates, low influent chemical concentrations, high unit costs, and the limited duration of the discharge.
  
13. The Basin Plan prohibits the discharge of wastewater which has "particular characteristics of concern to beneficial uses" (a) "at any point in San Francisco Bay south of the Dumbarton Bridge" and (b) "at any point where the wastewater does not receive a minimum initial dilution of at least 10:1 or into any nontidal water, deadend slough, similar confined water, or any immediate tributary thereof."

FAIRCHILD-SAN JOSE NPDES PERMIT

14. The Basin Plan allows for exceptions to the prohibitions referred to in Finding 13 above when it can be demonstrated that a net environmental benefit can be derived as a result of the discharge.
15. Exceptions to the prohibitions referred to in Finding 13 are warranted because the discharge is an integral part of a groundwater remediation program and thereby produces a net environmental benefit, and receiving water concentrations are expected to be below levels that would affect beneficial uses. Effective reclamation and reuse of extracted groundwater is an important part of this remediation program. Also, the installation of nozzle treatment provides an additional mitigating measure. The Board will reconsider this exception to the discharge prohibition where, unless for reasons beyond the control of the dischargers, satisfactory progress is not made by the dischargers toward the required reclamation/reuse goal for groundwater extracted under Board adopted Site Cleanup Requirements and the objectives of the State Water Resources Control Board's (State Board) Resolution No. 88-88.
16. The Basin Plan prohibits discharge of "all conservative toxic and deleterious substances, above those levels which can be achieved by a program acceptable to the Board, to waters of the Basin." The dischargers' groundwater extraction and treatment system and associated operation, maintenance, and monitoring plan constitutes an acceptable control program for minimizing the discharge of toxicants to waters of the State. Nozzle treatment for Waste 002 acts as a mitigation factor to help assure adequate protection of water quality.
17. The issuance of waste discharge requirements for this discharge is exempt from the provisions of Chapter 3 (commencing with Section 21100) of Division 13 of the Public Resources Code (CEQA) pursuant to Section 13389 of the California Water Code.
18. The Board has notified the dischargers and 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.
19. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

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, and the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, shall comply with the following:

A. Effluent Limitations

The following effluent limitations apply: (1) for discharges to the storm drains, at the point of discharge of effluent into storm drains and (2) where groundwater is reused or reinjected, at the point where the dischargers last maintain control of the effluent.

FAIRCHILD-SAN JOSE NPDES PERMIT

- Waste 001 shall not contain constituents in excess of the following limits for discharges to surface waters or for groundwater reuse, except as noted in Limitation 3, below.

<u>Constituent</u>	Instantaneous Maximum (ug/l)	
	<u>Interim</u>	<u>Final</u>
<u>Flow</u> (MGD)	0.30	0.30
1,1,1-trichloroethane (TCA)	100	5
tetrachloroethylene (PCE)		5
1,1-dichloroethylene (1,1-DCE)		5
Freon-113		5
Xylenes		5
isopropyl alcohol (IPA)		500
acetone		700
Chlorine (free chlorine plus chloramines)	0.0(mg/l)	0.0(mg/l)

- Waste 002 shall not contain constituents in excess of the following limits.

<u>Constituent</u>	Instantaneous <u>Maximum (ug/l)</u>
<u>Flow</u> (MGD)	1.6
1,1,1-trichloroethane (TCA)	50
1,1-dichloroethylene (1,1-DCE)	3.0
Chlorine (free chlorine plus chloramines)	0.0(mg/l)

- In addition to the concentrations listed in A.1, for Waste 001 which is reinjected pursuant to a program approved by the Executive Officer, chemical constituents shall not exceed a Hazard Index of 0.25, as defined in Board Order No. 89-16, or existing aquifer concentrations within the area potentially impacted by the recharge activities, whichever is less.
- Waste 003 shall not contain constituents in excess of the limits set forth in A.1. for on-site monitoring wells and A.2. for off-site monitoring wells.
- The pH of the discharges shall not exceed 8.5 nor be less than 6.5.
- In any representative set of samples, the waste shall meet the following limit of quality:

TOXICITY: The survival of rainbow trout or fathead minnow in flow through 96 hour bioassays of the effluent as discharged shall be a median of 90% survival and a 90 percentile value of not less than 70% survival.

FAIRCHILD-SAN JOSE NPDES PERMIT

B. Receiving Water Limitations

1. The discharge of waste shall not cause the following conditions to exist in waters of the State at any place:
  - a. Floating, suspended, or deposited macroscopic particulate matter or foam;
  - b. Bottom deposits or aquatic growths;
  - c. Alteration of temperature, turbidity, or apparent color beyond present natural background levels;
  - d. Visible, floating, suspended, or deposited oil or other products of petroleum origin;
  - e. Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife, or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentration.
  
2. The discharge of waste shall not cause the following limits to be exceeded in waters of the State in any place within one foot of the water surface:
  - a. Dissolved oxygen: 5.0 mg/l minimum. The median dissolved oxygen concentration for any three consecutive months shall not be less than 80% of the dissolved oxygen concentration at saturation. When natural factors cause lesser concentration(s) than specified above, the dischargers shall not cause further reduction in the concentration of dissolved oxygen.
  - b. pH: The pH shall not be depressed below 6.5 nor raised above 8.5, nor caused to vary from normal ambient pH levels by more than 0.5 units.
  - c. U n - i o n i z e d Ammonia: The concentration of un-ionized ammonia shall not exceed a maximum at any time of 0.4 mg/l as N and an annual median of 0.025 mg/l as N.
  
3. The discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Board as required by the Federal Water Pollution Control Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Federal Water Pollution Control Act or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

FAIRCHILD-SAN JOSE NPDES PERMIT

C. Prohibitions

1. Discharge of Waste 001 to surface water is prohibited after May 15, 1990. The Executive Officer may approve exceptions to this prohibition for intermittent discharges to surface waters which shall last no longer than 30 days for each discharge approved.

If the Regional Board determines that reinjection is technically infeasible, discharges of Waste 001 to surface water may continue through the duration of this permit.

2. Discharge of Waste 002 to surface waters is prohibited after January 31, 1991 unless the dischargers implement by December 31, 1990, a groundwater reuse and reinjection program that eliminates at least 50% of the discharge to surface waters. If the dischargers reinject or reuse at least 50% of Waste 002, discharge of the remainder of Waste 002 to surface waters may continue until January 31, 1992. Discharge of Waste 002 to surface waters shall cease as of January 31, 1992.

D. Provisions

1. The dischargers shall comply with all sections of this Order immediately upon discharge, except as described below in Provision 2.
2. The dischargers shall comply with the following Waste 002 treatment system construction schedule.

- a. COMPLETION DATE: February 28, 1989

TASK 1 - PROPOSAL FOR WASTE 002 TREATMENT SYSTEMS

Submit a technical report acceptable to the Executive Officer which contains a proposal to construct and operate a system for treating polluted groundwater from the dischargers' Waste 002 extraction wells and intermittent sample collection.

- b. COMPLETION DATE: 45 days after Executive Officer acceptance of Task 1.

TASK 2 - DETAILED WASTE 002 TREATMENT SYSTEMS DESIGN AND BAAQMD PERMIT APPLICATION FILED

Submit a technical report acceptable to the Executive Officer which contains a copy of the application, if any is required, filed with the Bay Area Air Quality Management District.

- c. COMPLETION DATE: August 15, 1989

TASK 3 - WASTE 002 TREATMENT SYSTEM CONSTRUCTION AND OPERATION

Submit a technical report acceptable to the Executive Officer which describes the construction and operation of the system to treat Waste 002 and sample collection from monitoring wells. This report

FAIRCHILD-SAN JOSE NPDES PERMIT

may be submitted in the quarterly monitoring report due August 15, 1989.

3. The dischargers shall comply with the following Waste 001 treatment system compliance schedule.

- a. COMPLETION DATE: March 20, 1989

TASK 4 - TREATMENT SYSTEM PRELIMINARY DESIGN

Submit a technical report acceptable to the Executive Officer which contains a description of the preliminary design of the Waste 001 treatment system.

- b. COMPLETION DATE: Two weeks after Executive Officer acceptance of Task 4.

TASK 5 - DETAILED WASTE 001 TREATMENT SYSTEM DESIGN AND BAAQMD PERMIT APPLICATION FILED

Submit a technical report acceptable to the Executive Officer which contains a copy of the application filed with the Bay Area Air Quality Management District.

- c. COMPLETION DATE: February 15, 1990

TASK 6 - WASTE 001 TREATMENT SYSTEM CONSTRUCTION AND OPERATION

Submit a technical report acceptable to the Executive Officer which describes the construction and operation of the system to treat Waste 001. This report may be submitted in the quarterly report due February 15, 1990.

- d. COMPLETION DATE: August 15, 1990

TASK 7 - RESULTS AND EVALUATION OF WASTE 001 TREATMENT SYSTEM EFFECTIVENESS

Submit a technical report acceptable to the Executive Officer which contains results and an evaluation of the treatment effectiveness of the system described in Task 6. This report may be submitted in the quarterly report due August 15, 1990.

4. WELL MAINTENANCE PROGRAM

COMPLETION DATE: May 15, 1989

TASK 8 - WELL MAINTENANCE PROGRAM

Submit a technical report acceptable to the Executive Officer which describes the well maintenance program and documents how the dischargers shall comply with effluent limits established in this Order. This report may be submitted in the quarterly report due May 15, 1989.

FAIRCHILD-SAN JOSE NPDES PERMIT

5. The dischargers shall comply with the self-monitoring program as adopted by the Board and as may be amended by the Executive Officer.
6. The dischargers shall also notify the Regional Board if any activity has occurred or will occur which would result in the discharge, on a frequent or routine basis, of any toxic pollutant which is not limited by this Order.
7. The dischargers shall comply with all items of the attached "Standard Provisions and Reporting Requirements" dated December 1986 (modified January 1987), except items B.2, B.3, C.8, and C.11.
8. This permit shall be re-evaluated at the time new regulations applicable to the discharge are promulgated. This permit may also be re-evaluated by the Regional Board prior to the expiration date where circumstances indicate that the actions necessary to support the exceptions to the prohibition of discharge in Findings 13, 14, and 15 are not being met, e.g. significant discharge of extracted groundwater to surface waters continues without meeting the required reclamation goal requirements in the Board adopted Site Cleanup Requirements, or where the lack of additional significant reuse is found to not meet the objectives of State Board's Resolution No. 88-88.
9. This Order expires January 18, 1994. The dischargers must file a report of waste discharge in accordance with Title 23, Chapter 3, Subchapter 9 of the California Administrative Code not later than 180 days in advance of such expiration date as application for issuance of new waste discharge requirements.
10. This Order shall serve as a National Pollutant Discharge Elimination System Permit pursuant to Section 402 of the Clean Water Act or amendments thereto, and shall become effective 10 days after date of its adoption provided the Regional Administrator, Environmental Protection Agency, has no objection. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.
11. Order No. 82-61 is hereby rescinded.

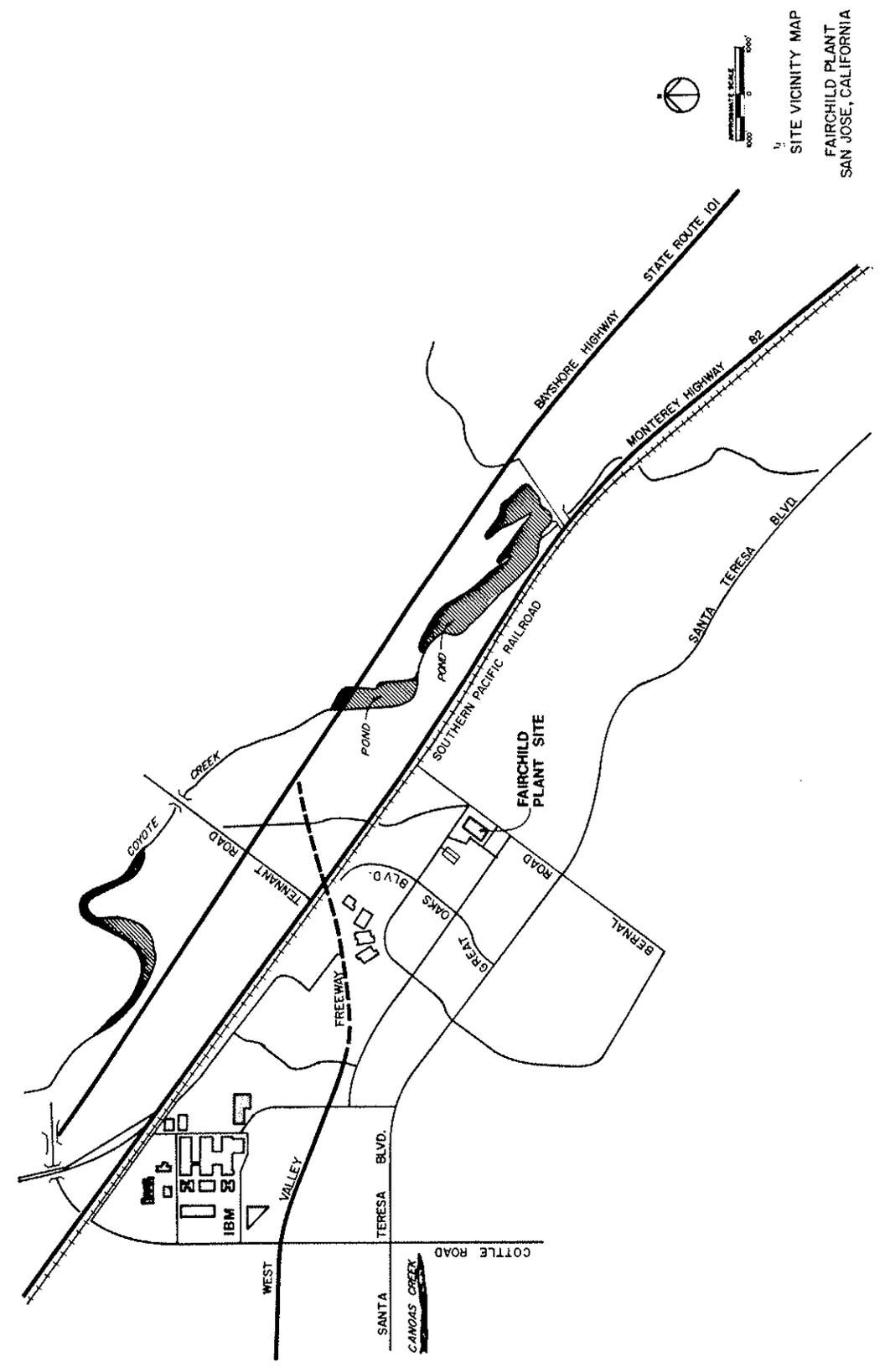
I, Steven R. Ritchie, Executive Officer do hereby certify the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region on January 18, 1989.

  
STEVEN R. RITCHIE  
Executive Officer

Attachments:

Standard Provisions & Reporting Requirements, December 1986 (modified 1/87)  
Self-Monitoring Program  
Site Map

REVISIONS	NO.	DATE	BY	APPROVED BY	CHECKED BY	DATE	NUMBER
			SP	IL-10-85			82-012-E308
			IBM				



1/ SITE VICINITY MAP  
 FAIRCHILD PLANT  
 SAN JOSE, CALIFORNIA

Figure 1  
 Site Location

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION

AMENDED

SELF-MONITORING PROGRAM

FOR

FAIRCHILD SEMICONDUCTOR CORPORATION

SAN JOSE

SANTA CLARA COUNTY

NPDES NO. CA 0028185

ORDER NO. 89-15

CONSISTS OF

PART A, dated Dec. 1986  
modified Jan. 1987

and

PART B, adopted/amended

FAIRCHILD SEMICONDUCTOR CORPORATION

PART B

I. DESCRIPTION OF SAMPLING STATIONS

A. INFLUENT

Stations

Description

I-001 At a point in the Waste 001 groundwater extraction/treatment system immediately prior to treatment by the on site system.

B. EFFLUENT

Stations

Description

E-001 At a point in the Waste 001 stream from groundwater extraction/air stripper treatment system immediately following treatment prior to discharge into storm drain tributary to Canoas Creek or reuse or recharge.

E-002 At a point in the Waste 002 stream from groundwater extraction prior to nozzle treatment systems.

C. RECEIVING WATERS

Stations

Description

C-001 At a point in Canoas Creek at least 100 feet downstream from the storm drain point of discharge.

II. MISCELLANEOUS REPORTING NONE

III. SCHEDULE OF SAMPLING AND ANALYSIS

The schedule of sampling and analysis shall be that given in Table I (attached).

IV. MODIFICATION OF PART A

All items of Self Monitoring Program Part A, dated December 1986 and as modified January 1987 shall be complied with except for the following:

A. Additions:

G.4.d.5) "Results from each required analysis and observation shall be submitted as laboratory originated data summary sheets in the quarterly self-monitoring reports. 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."

NPDES SELF-MONITORING PROGRAM

B. Deletions:

D.2.e.

D.2.g.

Standard Observation E.3., Standard Observation E.4.

G.4.e.1) Influent and Effluent Data Summary Reports shall be submitted only to the Regional Board Executive Officer, not to the EPA.

C. Modifications:

D.2.d.

"d. If ~~two consecutive~~ any sample of a constituent monitored on a weekly or monthly basis in a 30 day period exceeds the instantaneous maximum effluent limit for any parameter, (~~or if the required sampling frequency is once per month and the monthly sample exceeds the limit~~), the sampling frequency shall be increased to daily weekly with a 72 hour turnaround time until the additional sampling shows that the two most recent three (3) days 30-day moving average consecutive samples in compliance with the instantaneous maximum limit."

G.4. Self Monitoring Reports:

"Written reports shall be filed regularly for each calendar ~~month~~ quarter (unless specified otherwise) and filed no later than the forty-fifth day ~~of the~~ following the quarter month. The reports shall be comprised of the following:"

G.4.b.

Compliance Evaluation Summary

Each report shall be accompanied by a compliance evaluation summary sheet prepared by the discharger. The report format shall be acceptable to the Executive Officer based on the guidance provided in APPENDIX A ~~will be prepared similar to the example shown in APPENDIX A (attached)~~. The discharger will prepare the format using those parameters and requirement limits for influent, effluent and receiving water constituents specified in the permit.

G.4.d.

Results of Analyses and Observations

Tabulations of the results from each required analysis specified in Part B by date, time, type of sample, detection limit and station, signed by the laboratory director. The

NPDES SELF-MONITORING PROGRAM

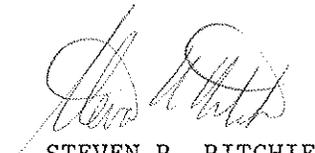
report format ~~will be prepared using the examples shown in APPENDIX B~~ shall be acceptable to the Executive Officer based on the guidance found in APPENDIX B.

G.5 Annual Reporting

By ~~January 30~~ February 15 of each year, the discharger shall submit ~~an annual report~~ to the Regional Board in place of the end of year quarterly report, an annual report covering the previous calendar year. The report shall contain both tabular and graphical summaries of the monitoring data obtained during the previous year. In addition, the report shall contain a comprehensive discussion of the compliance record and the corrective actions taken or planned which may be needed to bring the discharger into full compliance with the waste discharge requirements. The report format will be prepared by the discharger and shall be acceptable to the Executive officer based on guidance using the examples shown in APPENDIX C (attached) and should be maintained and submitted with each regular self-monitoring report.

I, Steven R. Ritchie, 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. 89-15.
2. Was adopted by the Board on January 18, 1989.
3. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or upon request from the discharger, and revisions will be ordered by the Executive Officer or Regional Board.

  
STEVEN R. RITCHIE  
Executive Officer

Attachment: Table I  
Appendices A, B, C

NPDES SELF-MONITORING PROGRAM

TABLE 1  
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	I-001	E-001	E-002	C-001
Type of sample	G	G	G	G
Flow rate (gal/day)	W	W	W	
pH (units)	M	M	M	Q
Dissolved oxygen mg/l and % saturation		M	M	Q
Temperature, C				Q
Fish toxicity 96-hr flow through % survival in undiluted waste		Q		
Metals		A	A	
Volatile chlorinated hydrocarbons (ug/l) (1)	W/M	W/M	Q	
Aromatics (ug/l) (2)	W/M/Q	W/M/Q	Q	
Alcohols, ketones (ug/l) (3)	W/M/Q	W/M	Q	
Un-ionized ammonia as N (mg/l)				Q
Chlorine (free chlorines and chloramines) (mg/l)		*	*	*
Standard observations				Q

Continued on next page

NPDES SELF-MONITORING PROGRAM

LEGEND FOR TABLE I

I= Prior to each  
discharge of Waste 002  
G = Grab Sample  
D = Once each day  
W = Weekly

A = Annual composite sample  
\* = during Chlorination  
M = Once each month  
Q = Quarterly, to be reported in  
February, May, August, and  
November

2/M = Twice a month

2/Y = To be reported in February and August

W/M/Q = Weekly for first month, then monthly for six months, after treatment system begins operation, thereafter quarterly.

W/M = Weekly for first month, thereafter monthly.

---

(1) Defined as 1,1,1-trichloroethane, 1,1-dichloroethene, tetrachloroethylene, chloroform, and Freon-113.

(2) Defined as xylenes (all polymers).

(3) Defined as isopropanol and acetone.