

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 82-49

WATER RECLAMATION REQUIREMENTS FOR:

PACIFIC UNION COLLEGE
ANGWIN, NAPA COUNTY

1. The Board, on September 15, 1966, adopted Resolution No. 778 prescribing requirements as to the nature of waste discharge from Pacific Union College, Angwin, Napa County.
2. The discharger submitted a Report of Waste Discharge dated March 13, 1981 and supplemental information dated April 23, 1981.
3. Pacific Union College (hereinafter discharger) discharges the following wastes:
 - a. Waste No. 1 consists of sanitary sewage with an average dry weather flow of 75,000 gallons per day (gpd). The campus consists of resident halls, dormitories, student and faculty housing including a trailer court, an elementary school, a laundry, and a small commercial complex. The population served by the treatment system is 1,745 full time residents and 916 day users. The treatment facilities consist of a primary clarifier, a trickling filter and a secondary clarifier followed by five oxidation ponds having a total storage capacity of 5.65 million gallons. Effluent from the treatment facilities is pumped to a 156 acre-feet reservoir for storage in wet weather months and irrigation of 80 acres of fodder crops in dry weather months. The areas that are irrigated are shown on Attachment A which is hereby made a part of this Order.
 - b. Waste No. 2 consist of farm and dairy wastes from the college farm and dairy facilities. Flush water from the freestall barn and washwater from the milking barn are collected and stored in two small ponds prior to recirculation or disposal on a field adjacent to the 156 acre-feet reservoir. Wet weather runoff is also collected and disposed on this field.
 - c. Waste No. 3 consists of 109 pounds per day of sludge from the wastewater treatment plant. This waste is stored and dewatered in drying beds. After drying, sludge is spread and subsequently disced into the soil as a soil conditioner on 66 acres of agricultural lands. The agricultural lands are shown on Attachment B, which is hereby made part of this order.
4. All the above treatment facilities, wastewater irrigation areas, and agriculture lands are owned by the discharger.

5. Conn Creek and Moore Creek run through the discharger's property. The wastewater irrigation area is located approximately 4,000 feet from Moore Creek. The treatment plant is located adjacent to Conn Creek.
6. The Board adopted a Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) in April 1975. The Basin Plan contains water quality objectives for the Napa Valley area.
7. The beneficial uses of Moore Creek as set forth in the Basin Plan include:
 - a. Municipal and domestic water supply.
 - b. Freshwater replenishment of inland lakes.
8. The beneficial uses of Conn Creek as set forth in the Basin Plan include:
 - a. Municipal and domestic water supply.
 - b. Freshwater replenishment of inland lakes.
 - c. Water contact recreation.
 - d. Esthetic enjoyment.
 - e. Fish migration and habitat.
 - f. Preservation and enhancement of fish, wildlife, and other aquatic resources.
9. This project involves the continued operation of a sewage treatment and disposal facility with negligible or no expansion of use beyond that previously existing. Consequently, this project will not have a significant effect on the environment based upon the exemption provided in Section 15101, Title 14, California Administrative Code.
10. The Board has notified the discharger and interested agencies and persons of its intent to prescribe water reclamation 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.
11. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, pursuant to the provisions of Division 7 of the California Water Code and regulations adopted thereunder, that the discharger shall comply with the following:

A. Prohibitions

1. The average dry weather flow of Waste No. 1 shall not exceed 200,000 gpd. Average shall be determined over three consecutive months each year.

2. The collection, treatment, distribution, reuse or disposal of Waste No. 1, Waste No. 2, or Waste No. 3 shall not create a nuisance as defined in Section 13050(m) of the California Water Code.
3. There shall be no bypass, overflow or discharge of Waste No. 1, Waste No. 2, or Waste No. 3 to waters of the State from either the collection, treatment, transport or storage facilities.
4. The discharge of Waste No. 1, Waste No.2 or Waste No. 3 shall not degrade the quality of any ground water suitable for domestic use or cause an increase in any quality parameter that would make groundwater unsuitable for irrigation use.
5. The discharge of Waste No. 1 or Waste No. 2 shall not cause seepage to be present any place outside the treatment ponds or storage reservoir.
6. Waste No. 1 shall not be discharged to the disposal field during the period November 1 through April 1.

B. Water Quality Specifications

1. For Waste No. 1 the following limits shall be met at all times within one foot of the surface of the treatment ponds or storage reservoir:
 - a. Dissolved oxygen 2.0 mg/l minimum
 - b. Dissolved Sulfide 0.1 mg/l maximum
 - c. pH 6.0 minimum
 9.0 maximum
2. A minimum freeboard of at least two feet shall be maintained in the treatment ponds and storage reservoir at all times.
3. All ponds and irrigation sites adjacent to Conn Creek shall be protected against erosion, washout and flooding from a flood having a predicted frequency of once in 100 years.
4. Reclaimed water used for irrigation of fodder crops shall meet the following limits at all times:
 - a. Biochemical Oxygen Demand 40 mg/l maximum 30 day average
 - b. Settleable Solids 0.5 milliliter/liter-hour,
 maximum
5. The use of reclaimed water on the fodder crop areas shall be discontinued during any period where the limits specified in B.4 are not being met.

C. Reclaimed Water Use Restrictions

1. Use of reclaimed water shall be limited to the areas shown in Attachment A of this Order unless prior written authorization is obtained from the Executive Officer.

2. Reclaimed water shall be applied to the use area in a manner which will prevent public contact with the wastewater.
3. No reclaimed water used for irrigation shall be allowed to escape to areas outside the irrigation area, either by surface flow or airborne spray.
4. A 60 foot setback from Conn Creek to areas irrigated with reclaimed water shall be maintained at all times.
5. Areas irrigated with reclaimed water shall be clearly identified with posted notices to the public.
6. All equipment, including pumps, piping, valves, etc. which may at any time contain waste shall be adequately and clearly identified with warning signs, and the discharger shall make all necessary provisions, in addition, to inform the public that the liquid contained is sewage and is unfit for human consumption.
7. Wastewater irrigation site ponding which could provide a breeding area for mosquitos shall be prevented.
8. The use of reclaimed water on a designated site shall cease immediately when any of the above use restrictions is not met.

D. Sludge Disposal Restrictions

1. Sewage sludge shall be disposed of only on the cross-hatched portion of the Discharger's property as shown in Attachment B.
2. The sludge shall be applied at a rate not to exceed thirty (30) tons dry weight per acre per year.
3. The application of sludge shall be limited to the period of May 15 and November 1.
4. The sludge shall be spread thinly and disced within 3 foot of the ground surface.
5. Sludge shall not be applied during rainfall or when soils are saturated.
6. No sludge shall be applied within one hundred feet of any drainage ditches or allowed to be discharged into drainage ditches.
7. No animals shall be allowed to graze within the sludge application area.
8. No root crops grown on the disposal area shall be used for human consumption.

9. The earthen berm surrounding the sludge storage area (drying beds) shall be maintained so as to prevent runoff into adjacent areas.
10. A minimum of one foot of freeboard shall be maintained in the storage area (drying beds) at all times.

E. Provisions

1. The requirements prescribed by this Order supersede the requirements prescribed by Resolution No. 778 adopted by the Board on September 15, 1966. Resolution 778 is hereby rescinded.
2. Farm and Dairy waste handling and disposal procedures shall comply with the attached State Water Resources Control Board's Minimum Guidelines for Protection of Water Quality from Animal Wastes.
3. The discharger shall file with the Regional Board, within sixty (60) days after the effective date of this Order a sewage sludge management plan on cropland. This plan should include:
 - a. Soil information such as pH and soil texture (percent sand and clay, and percent organic matter).
 - b. Sewage sludge chemical analysis - including moisture content, volume to be disposed, and heavy metal concentrations.
 - c. Rate of application - loading rate (Tons dry weight per acre per year).
 - d. Types of crop to be grown.
4. The discharger shall file with the Regional Board technical reports on self-monitoring work performed according to detailed specifications as directed by the Executive Officer.
5. The discharger shall file with this Board a report of any material change or proposed change in the character, treatment, or volume of this waste discharge. For the purpose of these requirements, this includes any proposed change in the boundaries, or ownership of the property.
6. The discharger shall permit the Board or its authorized representative in accordance with California Water Code Section 13267(c):
 - a. Entry upon premises in which an effluent source is located or which any required records are kept:
 - b. Access to copy any records required to be kept under terms and conditions of this Order:
 - c. Inspection of monitoring equipment or records; and
 - b. Sampling of any discharge or reclaimed water.

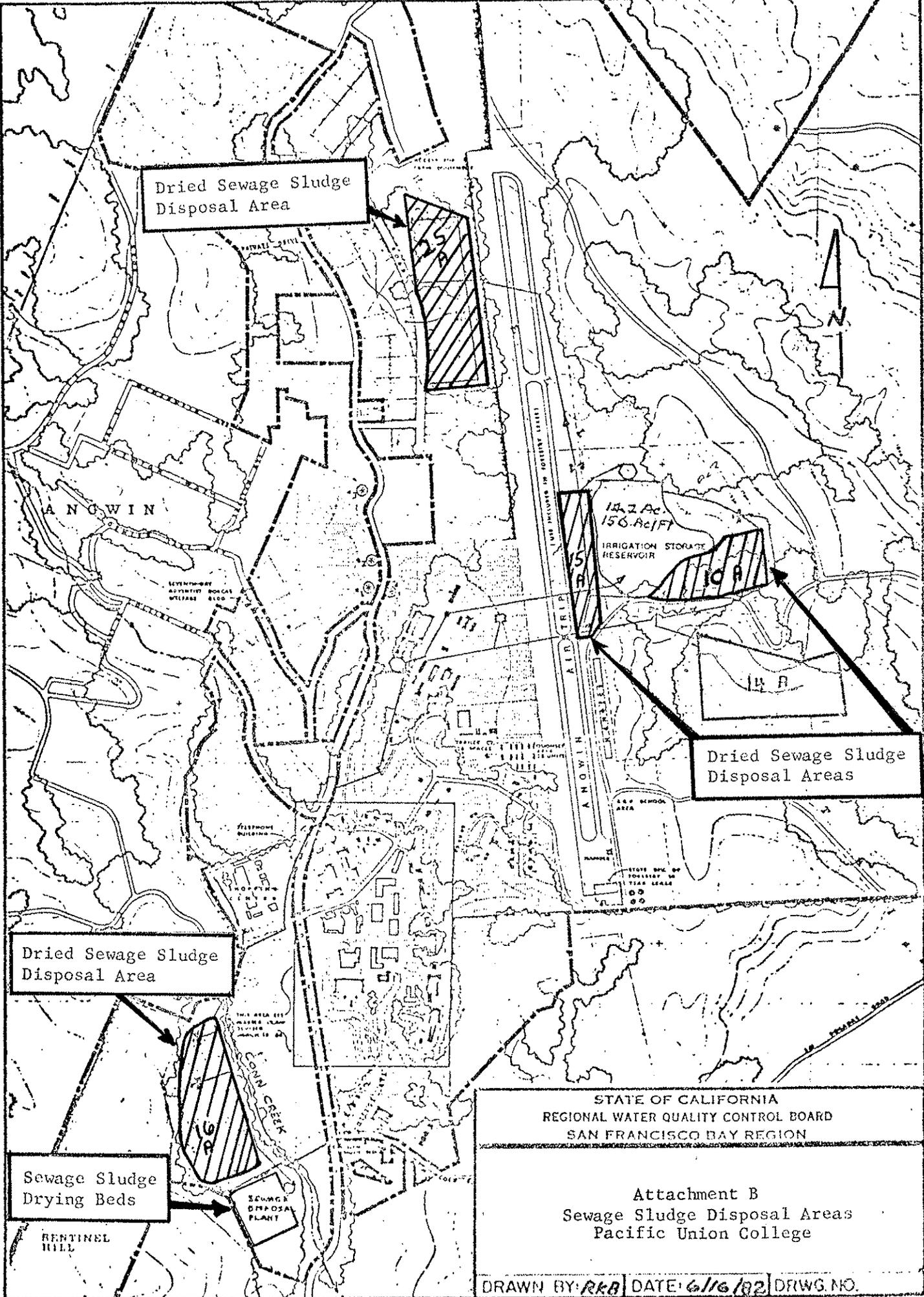
7. The discharger shall maintain in good working order and operate as efficiently as possible any facility or control system installed by the discharger to achieve compliance with the waste discharge requirements.
8. The discharger shall file with the Board, within ninety (90) days after the effective date of this Order, a technical report on his preventive (failsafe) and contingency (cleanup) plans for controlling accidental discharges, and for minimizing the effect of such events. The technical report shall:
 - a. Identify the possible sources of accidental loss, untreated waste bypass, and contaminated drainage. Loading and storage areas, power outage, waste treatment unit outage, and failure of process equipment, tanks and pipes should be considered.
 - b. Evaluate the effectiveness of present facilities and procedures and state when they became operational.
 - c. Describe facilities and procedures needed for effective preventive and contingency plans.
9. The discharger shall file with the Board, within ninety (90) days after the date of adoption of this Order, a technical report demonstrating compliance with Water Quality Specification B.3 of this Order.
10. This Board will review this Order periodically and may revise the requirements when necessary.

I, Fred H. Dierker, 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 September 15, 1982.

FRED H. DIERKER
Executive Officer

Attachment:

- Map, Attachment A
- Map, Attachment B
- Minimum Guidelines for Protection of Water Quality from Animal Wastes (SWRCB, 3/1/78)



Dried Sewage Sludge Disposal Area

Dried Sewage Sludge Disposal Areas

Dried Sewage Sludge Disposal Area

Sewage Sludge Drying Beds

STATE OF CALIFORNIA
 REGIONAL WATER QUALITY CONTROL BOARD
 SAN FRANCISCO BAY REGION

Attachment B
 Sewage Sludge Disposal Areas
 Pacific Union College

DRAWN BY: RKB DATE: 6/16/82 DRWG. NO.

CALIFORNIA STATE WATER RESOURCES CONTROL BOARD

MINIMUM GUIDELINES FOR PROTECTION OF WATER QUALITY FROM ANIMAL WASTES

The State Water Resources Control Board has issued these guidelines for the assistance of regional water quality control boards and all other persons in the preparation and amendment of water quality control plans and waste discharge requirements for the protection of the quality of the waters of the State with respect to the disposal of animal wastes.

It is intended that, when justified, regional boards may be more restrictive than these guidelines.

The disposal of animal wastes can cause problems other than water quality degradation. To whatever extent it is appropriate, solutions to such problems will need to be integrated with these guidelines. Other agencies may have guidelines directed to points not addressed in the guidelines below.

ARTICLE I: DEFINITIONS

Animal Confinement - Cattle, calves, sheep, swine, horses, mules, goats, fowl or other domestic animals corraled, penned, tethered or otherwise caused to remain in restricted areas where feeding is other than by grazing.

Manure Storage Areas - Corrals, feedyards, retention ponds, manure collection areas of any kind and areas used for storage, composting and/or drying of animal wastes.

Ten-year 24-hour Storm - A storm of 24-hour duration which yields a total precipitation of a magnitude that has a probability of recurring only once every ten years.

Washwater - Water which has been used for washing animals or equipment or for cleaning manure storage areas.

Retention Pond - Pond used to retain washwater or surface drainage area manure storage areas until proper disposal on land or other suitable disposal means can be accomplished.

Twenty-year Peak Stream Flow - Stream flow magnitude that is expected to be equaled or exceeded on the average of once every 20 years.



One Hundred-year Peak Stream Flow - Stream flow magnitude that is expected to be equalled or exceeded on the average of once every 100 years.

Sandy loam - Soil material in which the sandy characteristics are readily recognizable. A typical sandy loam will contain from 43% to 85% sand, less than 20% clay and a content of silt plus twice the clay exceeding 30%. The normal soil textural triangle utilizing the content of sand, silt and clay to determine texture will provide the standard definition of a sandy loam.

ARTICLE II: GUIDELINES FOR PROTECTION OF SURFACE WATER

1. Animal confinement facilities plus adjacent crop lands under the control of the operator shall have the capacity to retain surface drainage from manure storage areas plus any washwater during a 10-year 24-hour storm. The regional board may set waste discharge requirements for discharges exceeding a 10-year 24-hour storm.
2. Surface drainage, including water from roofed areas, shall be prevented from running through manure storage areas.
3. Animal confinement facilities, including retention ponds, shall be protected from overflow from stream channels during 20-year peak stream flows for existing facilities and 100-year peak stream flows for new facilities.
4. Washwater and surface drainage from manure storage areas shall be applied to crop lands, or discharged to treatment systems subject to approval by the appropriate regional water quality control board.
5. Animals in confinement shall be prevented from entering surface waters.
6. Lands that have received animal wastes shall be managed to minimize erosion and runoff. Dry manures applied to cultivated crop lands should be incorporated into the soil soon after application.
7. Animal wastes shall be managed to prevent nuisances in manure storage areas.

ARTICLE III: GUIDELINES FOR PROTECTION OF GROUNDWATER

1. Manure storage areas shall be managed to minimize percolation of water into underlying soils.
2. Animal confinement facilities shall have adequate surface drainage to prevent continuous accumulation of surface waters in corrals and feedyards.
3. The use of special sealants for retention ponds is not usually necessary when these ponds are constructed on sandy loams or finer textured soil materials.
4. Application of manures and washwaters to crop lands shall be at rates which are reasonable for the crop, soil, climate, special local situations, management system and type of manure.
5. The salt in animal rations should be limited to that required to maintain animal health and optimum production.

3/3/73

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM
FOR

Pacific Union College

Angwin

Napa County

ORDER NO. 82-49

CONSISTS OF

PART A

Revised 8/83

PART A

I. 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 a 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.

II. DESCRIPTION OF SAMPLING STATIONS AND SCHEDULE OF SAMPLING, ANALYSES AND OBSERVATIONS

A. Pond Influent

Monthly, determine average daily flow, in gallons per day, of wastewater (Waste No. 1) entering the treatment ponds and storage reservoir system.

B. Treatment Ponds Including the Storage Reservoir

1. At any point on Pond #1, Pond #5, and storage reservoir, representative of the wastewater:
 - a. Monthly, determine dissolved oxygen (D.O.) concentration, in mg/l. If D.O. is less than 2.0 mg/l, sample for dissolved sulfides.
 - b. Monthly, determine pH.
2. At any point on all ponds and storage reservoir, representative of the wastewater:
 - a. Weekly, determine pond freeboard.
 - b. Weekly, perform the following standard observations along perimeter of each pond, for Waste No. 1, No. 2, and No. 3:
 - (1) Evidence of leaching liquid from area of confinement and estimated size of affected area. (Show affected area on a sketch).
 - (2) Odor: presence or absence characterization, source and distance of travel.
 - (3) Estimated number of waterfowl and other water-associated birds in the disposal area and vicinity.

C. Pond Effluent Reclaimed

1. Monthly, determine:

- (a) the approximate flow, in gallons per day, of reclaimed water applied to each of the irrigation areas,
- (b) Biochemical Oxygen Demand (mg/l) of reclaimed water, and
- (c) Settleable Solids (ml/l-hr) of reclaimed water.

D. Reclaimed Water Irrigation Area

Weekly, perform standard observations along the perimeter of each reclaimed water irrigation area and determine:

- 1. Evidence of runoff from irrigation area.
- 2. Odor: presence or absence, characterization, source, distance of travel.

E. Sludge Disposal Area

Monthly, report any sludge disposal to indicate: (a) when and where disposed, (b) quantity disposed and (c) when incorporated into the soil.

III. REPORTS TO BE FILED WITH THE REGIONAL BOARD

I. 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,

the discharger shall notify the Regional Board on a 24-hour basis, telephone at (415) 464-1255 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 non-compliance and shall indicate what steps were taken to prevent the problem from recurring.

In addition, if the non-compliance caused by items (a), (b) or (c) above is with respect to any of the effluent limits, the waste discharger shall promptly accelerate his monitoring program

to analyze the discharge at least once every day for those constituents which have been violated. Such daily analyses 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 Reports.

2. Bypass Reports:

Bypass reporting shall be an integral part of regular monitoring program reporting and a report on bypassing of untreated waste or bypassing of any treatment unit(s) shall be made which will include cause, time and date, duration and estimated volume of waste bypassed, method used in estimating volume, and persons notified, for planned and/or unplanned bypasses. Notification to the Regional Board shall be made immediately by phone, followed by written correspondence within 15 days if a bypass occurs.

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.

3. Self-Monitoring Reports

Written reports shall be filed regularly for each calendar month and submitted by the fifteenth day of the following month. The reports shall be comprised of the following:

a. Letter of Transmittal:

A letter transmitting self-monitoring reports should accompany each report. Such a letter shall include a discussion of requirement violations found during the past months and actions taken or planned for correcting violations, such as plant operation modifications and/or plant facilities expansion. If the discharger has previously submitted a detailed time schedule for correcting requirement violations, a reference to the correspondence transmitting such schedule will be satisfactory. Monitoring reports and the letter transmitting reports shall be signed either by a principal executive officer or other 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.

b. Data Results

All results observed or analyzed in IIA-E.

c. Map:

A map shall accompany the report showing sampling and observation station locations.

I, Fred H. Dierker, 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. 82-49.
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 discharger, and revisions will be ordered by the Executive Officer.

FRED H. DIERKER
Executive Officer

Effective Date August 18, 1983