

Environmental Protection Agency
Region 9 (W-5-1)
1235 Mission Street
San Francisco, CA 94103
Permit No. CA0037681
NPDES Requirements

California Regional Water
Quality Control Board
San Francisco Bay Region
1800 Harrison Street,
Suite 700
Oakland, CA 94612
Order No. 90-093 ✓
Waste Discharge Requirements

FOR

OCEANSIDE TREATMENT FACILITY AND SOUTHWEST OCEAN OUTFALL
CITY AND COUNTY OF SAN FRANCISCO

The U.S. Environmental Protection Agency, Region 9 (hereafter EPA) and the California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter called the Board), find that:

1. The City and County of San Francisco (hereinafter called the Discharger) is the owner and operator of a wastewater collection, treatment, and disposal system which serves the Richmond-Sunset Sewerage Zone of San Francisco. The Richmond-Sunset sewage treatment plant provides primary treatment to wastewater prior to discharge to the Pacific Ocean through the Southwest Ocean Outfall. The plant provides primary treatment for a peak flow of 45 million gallons per day (MGD). The present average dry-weather flow is about 22 MGD. The primary treatment process includes screening, grit removal, and primary sedimentation of plant effluent. During wet-weather, most of the combined sewage and stormwater in excess of the Richmond-Sunset plant's capacity are collected in the Westside Transport. Flows in excess of the Transport's capacity are pumped out the Southwest Ocean Outfall. The transport removes floatables and some solids before discharging; in an average year, decant is discharged to the outfall 26 times.
2. On July 18, 1984, the Board adopted Order No. 84-45, NPDES Permit No. CA 0037681, prescribing waste discharge requirements for the Richmond-Sunset water pollution control plant. At that time, the plant discharged to state waters near Mile Rock.
3. The discharger completed its ocean outfall in 1986 and began discharging Richmond-Sunset plant effluent to federal waters via the new outfall in September, 1986. On December 18, 1986, EPA ruled that the Board's waste discharge

requirements for this discharge (Order 84-45) did not apply to the relocated discharge, and issued Administrative Order No. IX-FY87-7. The Administrative Order set interim effluent limitations and remains in effect.

4. On June 15, 1988, the Board adopted Order No. 88-106, revising waste discharge requirement for the same discharge (Westside Treatment Facility and Southwest Ocean Outfall). This action represented final state concurrence on EPA's waiver of secondary treatment requirements. EPA issued a 301(h) modified NPDES permit for this discharge on July 7, 1988, although this permit action was stayed by requests for an evidentiary hearing.
5. On August 17, 1988, the Board adopted Order No. 88-134, requiring the Discharger to cease and desist discharging waste from the above facilities contrary to the effluent limits in Order No. 88-106. The enforcement order established interim effluent limits for suspended solids and grease/oil and a compliance schedule for meeting final effluent limits.
6. The discharger has begun construction of a new sewage treatment plant at a site near the San Francisco Zoo. The new Oceanside plant will be completed in December 1993, and will take the place of the Richmond-Sunset plant.
7. On August 16, 1989, the Board adopted Order No. 89-139, amending the 1988 cease and desist order. The amendment added interim limits for turbidity and toxicity, and revised existing interim limits, to address other compliance problems.
8. On May 17, 1989, the Board adopted Order No. 89-71, amending Order No. 88-106 to delete the disinfection requirements from the Order. The Board action was based on the final technical report dated April 3, 1989 submitted by the discharger entitled "Wastefield Transport and Bacteriological Compliance Studies of The San Francisco Ocean Outfall". The studies were conducted in 1987 and 1988. The findings suggest that the present non-disinfected wastewater discharge from the Southwest Ocean Outfall does not and will not in the future violate the California Ocean Plan bacteriological body-contact standards.
9. On February 7, 1990, the Discharger informed EPA and the Board about its intention to withdraw its application for waiver of secondary treatment (Section 301 (h) waiver).
10. Combined sewage overflows (CSO) such as the decant from the Westside Transport are not normally subject to effluent limits, consistent with both EPA's and the State's

CSO Control Strategy. The California Ocean Plan normally requires all discharges to meet effluent limits for toxic pollutants, but emphasizes compliance with toxic pollution objectives in the receiving water, especially for non-point sources. While effluent limits for decant are not appropriate, source control measures are necessary to reduce the level of toxicants in decant, since it contains toxic pollutants from storm water discharges and sewage. Source control measures include best management practices (BMPs) directed at both year-round and wet-weather sources of toxic pollutants.

11. The capacity of the new plant's secondary treatment unit will be exceeded during some wet-weather periods, due to the City's combined sewer system. At such times, excess flow will receive only primary treatment. This practice is consistent with EPA regulations for sewage treatment plants serving combined sewer systems (40 CFR 133.103).
12. Combined sewer overflows to State waters (8 shoreline locations) are regulated separately by NPDES Permit CA 0038415 adopted by the Board as Order 87-120 on September 16, 1987. The permit requires the Discharger to reduce overflow frequency to a long-term average of 8 per year, and to remove floatables prior to discharge.
13. The State Water Resources Control Board adopted a revised Water Quality Control Plan for Ocean Waters of California (Ocean Plan) on March 22, 1990. The Ocean Plan contains a listing of beneficial uses and water quality objectives for the ocean waters of the State. The beneficial uses of the Pacific Ocean include:
 - a. Water Contact and Non-Contact Recreation
 - b. Commercial and Sport Fishing
 - c. Shellfish Harvesting
 - d. Mariculture
 - e. Preservation and Enhancement of Areas of Special Biological Significance
 - f. Preservation of Rare and Endangered Species
 - g. Marine Habitat
 - h. Fish Spawning and Migration
 - i. Navigation
 - J. Industrial Service Supply
14. An Operation and Maintenance Manual is maintained by the Discharger for purposes of providing plant and regulatory personnel with a source of information describing all equipment, facilities, recommended operation strategies, process control monitoring, and maintenance activities.
15. EPA is the NPDES permit issuing agency because the discharge is to federal waters, over three miles from shore. The Board is adopting waste discharge requirements for the same

discharge in order to indicate state concurrence with EPA's action and to assure that the discharge does not cause state water quality standards to be violated in state waters, within three miles from shore.

16. This Order serves as an NPDES Permit, adoption of which is exempt from the provisions of Chapter 3 (commencing with Section 21100) of Division 13 of the Public Resources Code (California Environmental Quality Act) pursuant to Section 13389 of the California Water Code.
17. EPA and the Board notified the Discharger and interested agencies and persons of their intent to issue an NPDES permit and waste discharge requirements, and provided an opportunity for a public hearing and the opportunity to submit written views and recommendations.
18. EPA and the Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, that the City and County of San Francisco (Discharger), 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. Discharge Prohibitions

1. Discharge of wastewater to federal waters at a location other than 37° 42' 18" North latitude, 122° 34' 39" West longitude (start of diffuser), is prohibited.
2. Bypass of wastewater either at the treatment plant or from any of the collection systems and pump stations tributary to the treatment plant is prohibited. During wet-weather, overflows will be allowed, consistent with the prohibitions and provisions of NPDES Permit No. CA0038415. (Allowable overflows and decanted flow to the Southwest Outfall are not considered bypasses for the purposes of this permit).
3. The average dry weather flow shall not exceed 24 million gallons per day. Average dry weather flow shall be determined over three consecutive dry weather months each year.

B. Effluent Limitations

1. Representative samples of combined effluent from the sewage treatment plant measured from sampling station E-001 (see "Monitoring and Reporting Program"), shall not exceed the Table A limits:

Constituent	Units	Monthly Average	Weekly Average	Maximum at any Time
a. BOD ₅	mg/l	30	45	---
b. Total Suspended Solids	mg/l	30	45	---
c. Grease and Oil	mg/l	25	40	75
d. Settleable Matter	ml/l-hr	1.0	1.5	3.0
e. Turbidity	NTU	75	100	225
f. pH	within limits of 6.0 to 9.0 at all times			
g. Acute Toxicity (1)	tu _a	1.5	2.0	2.5

$$(1) \text{ Acute Toxicity } (tu_a) = \frac{100}{96\text{-hour LC}_{50}}$$

LC₅₀ (percent waste giving 50% survival of test organisms) shall be determined by static or continuous flow bioassay techniques using standard test species. If specific identifiable substances in waste water can be demonstrated by the discharger as being rapidly rendered harmless upon discharge to the marine environment, but not as a result of dilution, the LC₅₀ may be determined after the test samples are adjusted to remove the influence of those substances.

When it is not possible to measure the 96-hour LC₅₀ due to greater than 50 percent survival of the test species in 100 percent waste, the toxicity concentration shall be calculated by the expression:

$$\text{Toxicity Concentration } (tu_a) = \frac{\log(100 - S)}{1.7}$$

where S = percent survival in 100 % wastewater.

If S ≥ 99, Tc shall be reported as zero.

Bioassays shall be performed using two test species in parallel tests: three-spined stickleback and fathead minnow.

2. The arithmetic mean of the biochemical oxygen demand (five-day, 20°C) and suspended solids value by weight, for effluent samples collected in a calendar month shall not exceed 15 percent of the arithmetic mean of the respective values, by weight, for influent samples collected at approximately the same times during the

same period (85 percent removal). These limitations do not apply during months when the hydraulic capacity of the secondary treatment unit is exceeded for more than three days.

3. Representative samples of effluent from the sewage treatment plant, measured from sampling station E-001, shall not exceed the following limits:

a. Marine Aquatic Life

Constituent	Units	6-Month Median	Daily Maximum	Instantaneous Maximum
Arsenic	ug/l	388	2236	5932
Cadmium	ug/l	77	308	770
Chromium(VI) (1)	ug/l	154	616	1540
Copper	ug/l	79	772	2158
Lead	ug/l	154	616	4620
Mercury	ug/l	3	12	31
Nickel	ug/l	385	1540	3850
Selenium	ug/l	1155	4620	11550
Silver	ug/l	42	203	527
Zinc	ug/l	932	5552	14792
Cyanide(2)	ug/l	77	308	770
Total Chlorine Residual	ug/l	154	616	4620
Ammonia (as N)	ug/l	46200	184800	462000
Chronic Toxicity(3)	TU _c		77	
Phenolic Compounds (non-chlorinated)	ug/l	2310	9240	23100
Chlorinated Phenolics	ug/l	77	308	770
Endosulfan	ng/l	693	1386	2079
Endrin	ng/l	154	308	462
HCH (4)	ng/l	308	616	924
Radioactivity	Not to exceed limits specified in Title 22, Chapter 15, Article 4, Section 64443 of the California Code of Regulations.			

b. Human Health-Non Carcinogen

Constituent	Units	Monthly Average
acrolein	ug/l	16940
antimony	mg/l	92
bis(2-chloroethoxy) methane	ug/l	339
bis(2-chloroisopropyl) ether	mg/l	92
chlorobenzene	ug/l	43890
chromium (III)	mg/l	14630
di-n-butyl phthalate	mg/l	270

dichlorobenzene (5)	mg/l	393
1,1-dichloroethylene	mg/l	547
diethyl phthalate	mg/l	2541
dimethyl phthalate	mg/l	63140
4,6-dinitro-2-methylphenol	ug/l	16940
2,4-dinitrophenol	ug/l	308
ethylbenzene	mg/l	316
fluoranthene	ug/l	1155
hexachlorocyclopentadiene	ug/l	4466
isophorone	mg/l	11550
nitrobenzene	ug/l	377
thallium	ug/l	1078
toluene	mg/l	6545
1,1,2,2-tetrachloroethane	mg/l	92
tributyltin	ng/l	108
1,1,1-trichloroethane	mg/l	41580
1,1,2-trichloroethane	mg/l	3311

c. Human Health- Carcinogens

Constituent	Units	Monthly Average
acrylonitrile	ug/l	7.7
aldrin	ng/l	1.7
benzene	ug/l	454.3
benzidine	ng/l	5.3
beryllium	ng/l	2541.0
bis(2-chloroethyl) ether	ug/l	3.5
bis(2-ethylhexyl) phthalate	ug/l	269.5
carbon tetrachloride	ug/l	69.3
chlordan (6)	ng/l	1.8
chloroform	mg/l	10.0
DDT (7)	ng/l	12.2
1,4-dichlorobenzene	ug/l	1386.0
3,3'-dichlorobenzidine	ng/l	623.7
1,2-dichloroethane	mg/l	10.0
dichloromethane	mg/l	34.7
1,3-dichloropropene	ug/l	685.3
dieldrin	ng/l	3.1
2,4-dinitrotoluene	ug/l	200.0
1,2-diphenylhydrazine	ug/l	12.3
halomethanes (8)	mg/l	10.0
heptachlor (9)	ng/l	55.4
hexachlorobenzene	ng/l	16.2
hexachlorobutadiene	ug/l	1078.0
hexachloroethane	ug/l	192.5
N-nitrosodimethylamine	ug/l	562.1

N-nitrodiphenylamine	ug/l	192.5
PAHs (10)	ng/l	677.6
PCBs (11)	ng/l	1.5
TCDD equivalents (12)	pg/l	0.3
tetrachloroethylene	ug/l	7623.0
toxaphene	ng/l	16.2
trichloroethylene	ug/l	2079.0
2,4,6-trichlorophenol	ug/l	22.3
vinyl chloride	ug/l	2772.0

- (1) The Discharger may at its option meet this limit as total chromium.
- (2) If a discharger can demonstrate to the satisfaction of the Regional Board (subject to EPA approval) that an analytical method is available to reliably distinguish between strongly and weakly complexed cyanide, effluent limitations for cyanide may be met by the combined measurement of free cyanide, simple alkali metal cyanides, and weakly complexed organometallic cyanide complexes. In order for the analytical method to be acceptable, the recovery of free cyanide from metal complexes must be comparable to that achieved by Standard Methods 412 E,G, and H (Standard Methods for the Examination of Water and Wastewater, Joint Editorial Board, American Public Health Association, American Water Works Association, and Water Pollution Control Federation, Most recent edition).
- (3) Chronic toxicity (TU_c) equals $100/NOEL$, where the No Observed Effect Level (NOEL):
is expressed as the maximum percent effluent that causes no observable effect on a test organism, as determined by the result of a critical life stage toxicity test specified by EPA and the Board. If the discharger consistently exceeds this limit, the discharger shall conduct a toxicity reduction evaluation (TRE). Once the source(s) of toxicity are identified, the discharger shall take all reasonable steps to reduce toxicity.
- (4) HCH shall mean the sum of the alpha, beta gamma (lindane) and delta isomers of hexachlorocyclohexane.
- (5) Dichlorobenzenes shall mean the sum of 1,2- and 1,3-dichlorobenzene.
- (6) Chlordane shall mean the sum of chlordane-alpha, chlordane-gamma, chlordene-elpha, chlordene-gamma, nonachlor-alpha, nonachlor-gamma, and oxychlordane.
- (7) DDT shall mean the sum of 4,4'DDT, 2,4'DDT, 4,4'DDE, 2,4'DDE, 4,4'DDD, and 2,4'DDD.

- (8) Halomethanes shall mean the sum of bromoform, bromomethane (methylbromide), chloromethane (methylchloride), chlorodibromomethane, and dichloro-bromomethane.
- (9) Heptachlor shall mean the sum of heptachlor and heptachlor epoxide.
- (10) PAHs (polynuclear aromatic hydrocarbons) shall mean the sum of acenaphthylene, anthracene, 1,2-benzanthracene, 3,4-benzofluoranthene, benzo[k]fluoranthene, 1,12-benzoperylene, benzo[a]pyrene, chrysene, dibenzo[ah]anthracene, fluorene, indeno[1,2,3-cd]pyrene, phenanthrene and pyrene.
- (11) PCBs (polychlorinated biphenyls) shall mean the sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254 and Aroclor-1260.
- (12) TCDD EQUIVALENTS shall mean the sum of the concentrations of chlorinated dibenzodizins (2,3,7,8-CDs) and chlorinated dibenzofurans (2,3,7,8-CDFs) multiplied by their respective toxicity factors, as shown in the table below.

Isomer Group	Toxicity Equivalence Factor

2,3,7,8-tetra CDD	1.0
2,3,7,8-penta CDD	0.5
2,3,7,8-hexa CDDs	0.1
2,3,7,8-hepta CDD	0.01
octa CDD	0.001
2,3,7,8 tetra CDF	0.1
1,2,3,7,8 penta CDF	0.05
2,3,4,7,8 penta CDF	0.5
2,3,7,8 hexa CDFs	0.1
2,3,7,8 hepta CDFs	0.01
octa CDF	0.001

Note: All toxic pollutant effluent limits are based on a minimum initial dilution of 76:1. For toxic pollutants where the effluent limit is below the practical quantitation limit (PQL), analytical results at or below the PQL will indicate compliance. The Executive Officer will specify the PQL for affected pollutants after reviewing method detection limits and other relevant information.

4. Actual flow and plant operation must conform to the provisions of the State Implementation Plan limitations on anticipated growth and emissions.

C. Receiving Water Limitations

1. The discharge shall not cause the following water quality objectives to be violated in ocean waters upon completion of initial dilution:

- a. Body- Contact Standards

Within a zone bounded by the shoreline and a distance of 1000 feet from the shoreline or the 30-foot depth contour, whichever is farther from the shoreline, and in area outside this zone used for body contact sports, as determined by the Regional Board, but including all kelp beds, the following bacteriological objectives shall be maintained throughout the water column:

- (1) The most probable number of total coliform organisms shall be less 1,000 per 100 mL; provided that not more than 20 percent of samples taken at any sampling station in any 30 day period may exceed 1,000 per 100 ml. No single sample when verified by repeat sample taken within 48 hours shall exceed 10,000 per 100 ml.

- (2) The fecal coliform concentration, based on a minimum of not less than five samples for any 30 day period, shall not exceed a log mean of 200 per 100 mL, and more than ten percent of the total samples during any 60-day period shall not exceed 400 per mL.

The initial dilution zone of wastewater outfall shall be excluded from designation as kelp beds for purposes of bacteriological standards.

- b. Shellfish Harvesting Standards

At all areas where shellfish may be harvested for human consumption, as determined by the Regional Board, the following bacteriological objectives shall be maintained throughout the water column:

In any 30-day period, the median total coliform concentration shall not exceed 70 per 100 ml, and not more than ten percent of the samples shall exceed 230 per 100 ml. This limit applies only when shellfish may be legally harvested (November through April of each year.)

- c. Physical Characteristics

- (1) Floating particulates and grease and oil shall not be visible.

- (2) The discharge of waste shall not cause aesthetically undesirable discoloration of the ocean surface.
- (3) Natural light shall not be significantly reduced at any point outside the initial dilution zone as the result of the discharge of waste.
- (4) The rate of deposition of inert solids and the characteristics of inert solids in ocean sediments shall not be changed such that benthic communities are degraded.

d. Chemical Characteristics

- (1) The dissolved oxygen concentration shall not at any time be depressed more than ten percent from that which occurs naturally as a result of the discharge of oxygen demanding waste materials.
- (2) The pH shall not be changed at any time more than 0.2 units from that which occurs naturally.
- (3) The dissolved sulfide concentration of waters in and near sediments shall not be significantly increased above that present under natural conditions.
- (4) The concentration of substances set forth in Effluent Limitation B-3 in marine sediments shall not be increased to levels which would degrade indigenous biota.
- (5) The concentration of organic materials in marine sediments shall not be increased to levels which would degrade marine life.
- (6) Nutrient materials shall not cause objectionable aquatic growths or degrade indigenous biota.

e. Biological Characteristics

- (1) Marine communities, including vertebrate, invertebrate, and plant species, shall not be degraded.
- (2) The natural taste, odor, and color of fish, shellfish, or other marine resources used for human consumption shall not be altered.

- (3) The concentration of organic materials in fish, shellfish or other marine resources used for human consumption shall not bioaccumulate to levels that are harmful to human health.

f. General Standards

- (1) The discharger shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Board or the State Water Resources Control Board as required by the Clean Water Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Clean Water Act, or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

D. Sludge Requirements

1. The discharger shall comply with standards for sludge use and disposal at 40 CFR 257, including cadmium loading rate limits, PCB limits, pathogen reduction requirements, and groundwater limits.
2. If an applicable "acceptable management practice" or numerical limit promulgated under Section 405 (d) (2) of the Clean Water Act, as amended by the Water Quality Act of 1987, is more stringent than the sludge pollutant limit or acceptable management practice in the permit, or controls a pollutant not limited in this permit, this permit may be reopened to include the new requirements. Regardless of whether or not the permit is modified, the discharger shall comply with the new limits by no later than the compliance deadline specified in the regulations promulgated under Section 405(d) (2) of the Act.
3. The discharger shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.
4. The discharger shall provide written notification to the Board at least 90 days prior to making any significant changes in sludge disposal practices.

5. The treatment, disposal, storage, or processing of sludge shall not create a condition of pollution or nuisance as defined in Section 13050(1) and (m) of the California Water Code.
6. Any sludge treatment, disposal, storage, processing site shall have facilities adequate to divert surface runoff from adjacent areas, to protect boundaries of the site from erosion, and to prevent any conditions that would cause drainage from the materials in the disposal site to escape from the site. Adequate protection is defined as protected from at least a 100-year storm and from the highest tidal stage that may occur.

E. Provisions

1. Requirements prescribed by this Order supersede the requirements prescribed by Order Nos. 88-106 and 89-71. Order Nos. 88-106 and 89-71 and rescinded.
2. This Order does not revoke Order Nos. 88-134 and 89-139. These Orders shall remain in full force and effect until these orders are rescinded.
3. The Discharger shall comply with all sections of this Order 90-093 immediately upon adoption.
4. The Discharger shall comply with all applicable items of the attached "Standard Provisions and Reporting Requirements" dated December, 1986.
5. The Discharger shall comply with the attached Self-Monitoring Program. The Board's Executive Officer may make minor amendments to this Self-Monitoring Program pursuant to federal regulations (40 CFR 122.63).
6. Where effluent concentration limitations in mg/l or ug/l are contained in this Permit, the following Mass Emission Limitations shall also apply:

$$\text{(Mass Emission Limit in lbs/day)} = \text{(Concentration Limit in mg/l)} \times (8.34) \times \text{(Actual Flow in million gallons per day averaged over the time interval to which the limit applies)}.$$
7. The Discharger shall implement and enforce its approved pretreatment program in accordance with Board Order No. 89-179 and its amendments thereafter. The Discharger's responsibilities include, but are not limited to:

- a. Enforcement of national pretreatment standards (e.g., prohibited discharges, categorical standards, and financial provisions described in the general pretreatment regulations (40 CFR 403) and the Discharger's approved pretreatment program including subsequent modification to the program).
 - b. Implementation of the pretreatment program in accordance with the legal authorities, policies, procedures, and financial provisions described in the general pretreatment regulations (40 CFR 403) and the Discharger's approved pretreatment program including subsequent modification to the program.
 - c. Submission of annual and quarterly reports to EPA and the State as described in Board Order 89-179 and its amendments thereafter.
8. Best Management Practics (BMPs)
- a. By October 1, 1990, the Discharger shall submit an implementation program for the following source control measures to reduce the levels of toxicants in the decant.

Educational Control Measures

- E1. Educate re: the impacts that result when oil, antifreeze, pesticides, herbicides, paints, solvents, or other potentially harmful chemicals are dumped into sewers.
- E2. Educate re: the proper use (e.g., application methods, frequencies, and precautions) and proper management of fertilizers, pesticides, herbicides, and other potentially harmful chemicals.
- E3. Educate re: the effective use of "housekeeping" practices, including the use of absorbents, cleaning compounds, and oil/grease traps for controlling oil and grease in gas stations, automotive repair shops, parking areas, commerical/industrial facilities, and food service facilities.
- E4. Educate re: the need to keep rainfall and runoff from contacting potential contaminants. Describe typical examples of the problem and practical solutions.

Regulatory Control Measures

- R1. Research, strengthen (if necessary), and enforce regulations which give the Discharger the legal authority to control the improper disposal of potentially harmful wastes.
- R2. Research, strengthen (if necessary), and enforce regulations which give the Discharger the legal authority to prevent the improper disposal of soil, debris, refuse, or other pollutants into storm drains, sewers and catch basins.
- R3. Research, strengthen (if necessary), and enforce regulations which give the Discharger the authority to require oil and grease controls in areas which are significant sources (e.g., gas stations, automotive shops, wrecking yards, machine shops, commercial/industrial facilities, parking areas, and food service establishments).
- R4. Develop and implement regulations which require landowners and/or tenants to provide covers (e.g., roofs, tarps) to keep rain off of areas which contain contaminants (e.g., chemical storage areas, waste storage areas, contaminated industrial areas); and to keep runoff from draining through area which contain contaminants.

Public Agency Control Measures

- P1. Label storm drain inlets and provide signs along the banks of storm drains, sewers, catch basins and creeks explaining the environmental impacts of dumping wastes.
 - P2. Develop and implement programs which provide convenient means for people to properly dispose of oil, antifreeze, pesticides, herbicides, paints, solvents, and other potentially harmful chemicals (recycle if possible).
- b. The Discharger shall study additional source control measures to determine their cost-effectiveness for reducing the level of toxicants in the decant. The discharger shall submit a study plan describing the scope of work by January 1,

1991. The Discharger shall submit a detailed implementation program, including selected additional control measures and schedules, by August 1, 1992. EPA may amend this NPDES permit to add additional control measures. At least the following options should be included in the study:

Educational Control Measures

- E1. Educate re: the environmental impacts which result from leaks and spills from gasoline, fuel oil, and chemical tanks (above and below ground).
- E2. Investigate other education programs targeted at residential and commercial sources of toxic pollutants waste minimization and source reduction).

Regulatory Control Measures

- R1 Develop and implement program to reduce the risk of toxic pollutants spills from commercial, industrial, and public facilities.

Public Agency Control Measures

- P1. Develop and implement an aggressive field program to search for, detect, and prevent dumping or routinely discharged toxic pollutants into sewers and drainage channels.
- P2. Establish program to regulate cleaning of sewer inlets, catchbasins, and drainage channels in areas where sediments and/or debris tend to accumulate.
- P3. Develop and implement a program which provides a means of recording the observations of field inspection and maintenance personnel, so this information can be used to help locate the source(s) of pollutants.
- P4. Develop and implement an aggressive field program to search for, detect, and correct situations which rainfall and/or runoff presently contact potential contaminants.

- P5. Consider pretreatment program revision to target currently unregulated sources of toxic pollutants (e.g. unpermitted commercial and industrial categories, unauthorized industrial or commercial discharges to sewer).
- c. The Discharger shall propose a special monitoring program to assess the effectiveness of source control measures in reducing the level of toxicants in the decant. The Discharger may use indicator pollutants to measure decant toxicity. The Discharge shall submit by October 1, 1990, a proposed monitoring program for review and approval.
- d. The Discharger shall submit an annual progress report by August 31 each year, starting in 1991. The progress report should discuss progress in implementing source control measures, monitoring results, and the need for modification of source control programs (if necessary).
9. The Discharger shall review and update its Operations and Maintenance Manual annually, or in the event of significant facility or process changes, shortly after such changes have occurred. Annual revisions, or letters stating that no changes are needed, shall be submitted to the Board by July 15 of each year.
10. The Discharger shall review and update by July 15, annually, its contingency plan as required by Board Resolution No. 74-10. The discharge of pollutants in violation of this Order where the Discharger has failed to develop and/or implement a contingency plan will be basis for considering such discharge a willful and negligent violation of this Order pursuant to Section 13387 of the California Water Code.
11. This Order expires June 30, 1995. The Discharger must file a Report of Waste Discharge in accordance with Title 23, Chapter 3, Subchapter 9 of the California Code of Regulations not later than 180 days in advance of such expiration date as application for issuance of new waste discharge requirements.
12. 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 30 days after the date of its adoption by the Regional Administrator, Environmental Protection Agency.

We 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 20, 1990, and of an NPDES permit signed by the Director, Water Management Division, U.S. Environmental Protection Agency, Region 9, on , 1990.

Harry Seraydarian
Director
Water Management Division
U.S. Environmental Protection Agency
Region 9
for the Regional Administrator



Steven R. Ritchie
Executive Officer
Regional Water Quality Control
Board
San Francisco Bay Region

Attachments:

Standard Provisions and Reporting
Requirements, December 1986
Resolution No. 74-10
Self Monitoring Program

U. S. ENVIRONMENTAL PROTECTION AGENCY, REGION 9
AND
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM

FOR

CITY AND COUNTY OF SAN FRANCISCO
OCEANSIDE TREATMENT FACILITY
AND
SOUTHWEST OCEAN OUTFALL

NPDES PERMIT NO. CA0037681

ORDER NO. 90-093

CONSISTS OF
PART A, dated December 1986

AND

PART B

PART B

CITY AND COUNTY OF SAN FRANCISCO OCEANSIDE TREATMENT PLANT AND
SOUTHWEST OCEAN OUTFALL

I. INFLUENT AND EFFLUENT MONITORING

Effluent monitoring is conducted to determine compliance with effluent limitations in the permit. Influent monitoring is necessary to determine compliance with percent-removal requirements for BOD and suspended solid and to assess overall plant performance.

A. Description of Sampling Stations

1. Influent

<u>Station</u>	<u>Description</u>
A-001	At any point in the treatment facilities headworks at which all waste tributary to the system is present and preceding any phase of treatment, and exclusive of any return flows or process sidestreams.

2. Effluent

<u>Station</u>	<u>Description</u>
E-001	At any point after all sewage treatment units and before mixing with any effluent from the Westside Transport.

B. Sampling Schedule

The schedule of sampling, analysis, and observations shall be that given in Table 1 and its footnotes.

II. RECEIVING WATER MONITORING

The water quality monitoring program is conducted to determine compliance with the California Ocean Plan (e.g., bacteriological, dissolved oxygen, and light transmittance standards) and to determine if the sewage discharge causes significant detrimental impacts on the water quality at the zone of initial dilution (ZID) boundary, gradient, and reference stations. All water quality samples should be collected and processed according to the protocols found in EPA's guidance document entitled Quality Assurance and Quality Control (QA/QC) for 301 (h) Monitoring Programs: Guidance on Field and Laboratory Methods (Tetra Tech, Inc., 1986).

A. Station Locations

During the time this permit is in effect, water quality monitoring shall be conducted at six offshore stations in the vicinity of the outfall, four nearshore stations located at the 12 m (40 ft.) isobath (fig. 1). Water samples shall also be collected and measured at eight shoreline (surf zone) station (fig.1). The eighteen water quality stations shall be located as follows:

Water Quality Station	Approximately Depth meters (ft.)	Location:	
		Latitude	Longitude
WQ #1 ^a (ZID)	24 (79)	24 meters south of the midpoint of the operational portion of the diffuser.	
WQ #2	20 (66)	37° 42.63'N	122° 34.50'W
WQ #4	23 (75)	37° 42.70'N	122° 35.70'W
WQ #6 ^a	27 (90)	At a point directly offshore from Mussel Rocks and in line with Stations WQ #1,2, and 31.	
WQ #28	25 (83)	37° 41.85'N	122° 34.81'W
WQ #31	17 (55)	37° 43.50'N	122° 34.00'W
WQ #9 ^{a,b}	12 (40)	Directly offshore of Station 18	
WQ #10 ^{a,b}	12 (40)	Directly offshore of Station 19	
WQ #12 ^{a,b}	12 (40)	Directly offshore of Station 21	
WQ #13 ^{a,b}	12 (40)	Directly offshore of Station 22	
WQ #15 ^a	Shoreline Station	In the surf at the mouth of Lobos Creek	
WQ #16 ^a	Shoreline Station	In the surf at the southwestern end of Baker's Beach	
WQ #17 ^a	Shoreline Station	In the surf at a point opposite the bathhouse on Phelan Beach.	
WQ #18 ^a	Shoreline Station	At a point in the surf at Ocean Beach at the foot of Cabrillo Street.	
WQ #19 ^a	Shoreline Station	At a point in the surf at Ocean Beach opposite the Lincoln Way Overflow structure.	
WQ #20 ^a	Shoreline Station	At a point in the surf midway between Stations WQ #19 & #21.	
WQ #21 ^a	Shoreline Station	At a point in the surf at Ocean Beach opposite the Vicente Street Overflow Structure.	
WQ #22 ^a	Shoreline Station	At a point in the surf near the Lake Merced overflow Structure (when accessible).	

Notes: a. The exact location (latitude and longitude) of each of these stations shall be determined by the City and County of San Francisco.

- b. To minimize the influence of breaking waves, these stations shall be located at the 12 meter (40 ft.) isobath, directly offshore from the shoreline stations.

B. Parameter to be Measured and Reported:

1. At all offshore and nearshore stations, water column profiles shall be conducted quarterly for temperature ($^{\circ}\text{C}$) conductivity [i.e., salinity (o/oo)], dissolved oxygen (mg/L), pH, light transmittance (% transmittance), and secchi disc.

In addition, at each offshore station, discrete grab samples shall be collected at the 1 m, mid-depth and 1m above the sea floor and measured for ammonia nitrogen and suspended solids. At Stations 1, 2, and 4, discrete samples shall be collected at the 1 m, mid-depth and 1 m above the sea floor and measured for oil and grease, and at 1 m above the sea floor for dissolved sulfides.

At each nearshore station, discrete grab samples shall be collected at five different equidistant depths from the surface and measured for total and fecal coliform and enterococci bacteria.

In the event of inclement weather, which may make sampling hazardous or impractical at any (or all) of the offshore and nearshore water quality stations, collection of these samples may be omitted, provided that omissions do not occur in consecutive quarters.

2. Shoreline Stations

At all eight shoreline stations, surface grabs shall be collected three times a week. Each station shall be measured for temperature ($^{\circ}\text{C}$), total and fecal coliforms, and enterococci (MPN/100ml). Stations shall be occupied on different days in successive weeks, such that all days (Monday through Sunday) are routinely sampled within each seven-week period.

In the event of inclement weather, which may make sampling hazardous or impractical, collection of these shoreline samples may be

omitted, provided that such omissions do not occur in consecutive weeks or in more than four weeks of any calendar year.

3. All Stations

At water quality stations, the following observation shall be recorded during each sampling event:

- .. Wind (direction and velocity)
- .. Weather (e.g., cloudy, sunny, or rainy)
- .. Tidal conditions (i.e., high, low, or slack tide)
- .. Water color and/or discoloration
- .. Odor
- .. Occurrence of grease and oil and/or other material of sewage origin

C. Special Study of Attainment of Toxic Pollutant Objectives

The Discharger shall submit a study plan by November 1, 1990, describing a special study to assess compliance with toxic pollutant objectives near the Southwest ocean out fall during decant discharge episodes. The study plan shall define water sampling station locations, and methods and criteria for conducting receiving water sampling. At least four sampling runs shall be conducted during the permit span, although sampling frequency and timing will depend on weather conditions and other variables. The study plan should describe control station(s) to be used to identify background concentrations of toxic pollutants. The study plan should also describe methods to be used to avoid sample contamination and optimal detection limits, consistent with standard methods of analysis. The study should address all toxic pollutants for which effluent limits have been established in the NPDES permit.

III. BENTHIC MONITORING

Benthic monitoring is conducted to determine the physical and chemical qualities of sediments in the vicinity of the outfall, to assess the accumulation of priority pollutants and petroleum hydrocarbons in sediments and organisms, to monitor the status of the benthic communities, and to evaluate compliance with Federal Water Quality Criteria and California Ocean Plan Standards. The benthic sediment and biological samples should be collected and processed according to the protocols found in EPA's guidance document entitled Quality Assurance and Quality Control (QA/QC) for 301 (h) Monitoring Programs: Guidance on Field and Laboratory Methods (Tetra Tech, Inc., 1986).

Note: All benthic samples shall be collected at all stations prior to trawl sampling for demersal fish and epibenthic macroinvertebrates.

A. Sediment Analyses

During March and September of each year this permit is in effect, a 0.1 m² Smith-McIntyre grab sampler shall be used to collect five sediment grab samples at each of seven stations (Figure 2). An alternate sediment collection device, or a different replication scheme, may be approved by EPA Region 9 provided that the alternate device and replication scheme are statistically equivalent or superior to the results obtained by analyzing five replicate samples obtained with a 0.1 m² Smith-McIntyre grab sampler. The seven basic sediment chemistry and benthic infauna stations shall be located as follows:

<u>Sediment Station</u>	<u>Approximate Depth meters (ft.)</u>	<u>Latitude</u>	<u>Location: Longitude</u>
SS # 1 (ZID)	24 (79)		24 meters south of the midpoint of the operational portion of the diffuser.
SS # 2	20 (66)	37° 42.63'N	122° 34.50'W
SS # 4	23 (75)	37° 42.28'N	122° 35.00'W
SS # 6 ^a	27 (90)		At a point directly offshore from Mussel Rocks and in line with Stations SS #1, #2, and #31
SS # 25	23 (75)		24 m north of the midpoint of the operational portion of the diffuser.
SS # 28	25 (83)	37° 41.85'N	122° 34.81'W
SS # 31	17 (55)	37° 43.50'N	122° 34.00'W

Note: The exact location (latitude and longitude) of stations 1, 6, and 25 shall be determined by the City and County of San Francisco.

Each benthic sediment grab sample shall be analyzed for the following:

- Sediment Grain Size Distribution (% weight in relation to phi size)
- Total Organic Carbon [mg/Kg (dry)]
- Total Volatile Solids [mg/Kg (dry)]
- Grease and Oil [mg/Kg (dry)]
- % Hydrocarbons [mg/Kg (dry)]
- Total Kjeldahl Nitrogen [mg/Kg (dry)]

Dissolved sulfides [mg/Kg (dry)] shall be analyzed from samples collected at Stations 1, 4, and 31.

Annually (September), two benthic sediment samples, collected with a 0.1 m² Smith-McIntyre grab (or equivalent method), shall be collected at stations 1, 4 and 31 (Fig. 2). At each station, the top two cm of each grab shall be combined to form one composite sample (and the remainder of each grab sample shall be combined to form another composite sample). The two composite samples shall be analyzed for aromatic hydrocarbons and all priority pollutants listed in Table B of the California Ocean Plan. The analytical protocols found in EPA's guidance document entitled Analytical Methods for U.S. EPA Priority Pollutants and 301(h) Pesticides in Estuarine and Marine Sediments Tetra Tech, Inc., 1986) should be used to measure priority pollutants in the sediments samples.

B. Infauna Analyses

At the same time of each year that sediment grabs are collected for physical and chemical analyses, a 0.1 m² Smith-McIntyre benthic grab sampler shall be used to collect five sediment samples at each of the seven sediment stations (Fig.2) located in the vicinity of the outfall. An alternated sediment collection device, or a different replication scheme, may be approved by EPA Region 9 provided that the alternate device and replication scheme are statistically equivalent or superior to the results obtained by analyzing five replicate samples obtained with a 0.1 m² Smith-McIntyre grab sampler.

All sediment samples collected for the analysis of benthic infauna shall be screened through a 0.5 mm (0.02 inch) mesh sieve. All organisms collected from the sieved samples should be fixed in 10% buffered formalin and transferred within two to seven days to 70% ethanol for storage before processing. To facilitate sorting, organisms may be stained with Rose Bengal. The following data and statistical analyses shall be reported for each replicate and station:

- (a) Identification of all organisms to the lowest possible taxon (usually species);
- (b) The biological indices found in the EPA document entitled Recommended Biological Indices for 310(h) Monitoring Programs (Tetra Tech, Inc., 1985);
- (c) When appropriate, the mean, median, range, standard deviation, and 95% confidence limits for the data specified in (b) above;

(d) Statistical analyses shall be conducted and graphic displays shall be presented in the monitoring reports to demonstrate the current status of and any changes to the benthic infauna communities found at the ZID boundary, gradient, and reference stations.

IV. DEMERSAL FISH AND EPIBENTHIC MACROINVERTEBRATE MONITORING

Monitoring shall be conducted to assess the balanced indigenous populations of demersal fish and epibenthic macroinvertebrates, to assess the accumulation of priority pollutants and petroleum hydrocarbons in selected organisms, and to determine if statistically significant differences exist between populations sampled at the ZID boundary, gradient, and reference stations.

Duplicate standardized otter trawls shall be conducted during the day at each of four stations (fig. 3) during the months March and September of each year. The four trawl stations shall be located as follows:

<u>Trawl Station</u>	<u>Approximate Depth meters (ft.)</u>	<u>Location:</u>	
		<u>Latitude</u>	<u>Longitude</u>
TS # 1 (ZID)	24 (79)	24 meters south of the midpoint of the operational portion of the diffuser	
TS # 4	27 (89)	37 41.56'N	122 35.80'W
TS # 6	27 (90)	At a point directly offshore from Mussel Rocks and in line with Stations TS #1 and #31	
TS #31	17 (55)	37 43.50'N	122 34.00'W

Note: The exact location (latitude and longitude) of stations 1 and 6 shall be determined by the City and County of San Francisco

All trawls shall be conducted according to the guidelines in Control (QA/OC) for 301 (h) Monitoring Programs: Guidance on Field and Laboratory Methods (Tetra Tech, Inc., 1986). A standardized trawl shall be a Marinovich 7.6 m (25 ft) head rope otter trawl, towed at the specified depth for a minimum duration of 10 minutes and at a uniform speed between 2.0 and 2.5 knots. All necessary steps should be taken to ensure that the second trawl at each station covers the same distance (and area) but does not sweep the same area as the first trawl. EPA may approve an alternate trawling net, upon satisfactory demonstration that the substitute net is equivalent or superior in performance to the standard Marinovich otter trawl.

A. Community Analyses

Fish and macroinvertebrates collected by each trawl shall be measured (e.g., standard length) and identified to the species level. In addition, the following data and statistical analyses shall be reported separately for fish and macroinvertebrates:

(a) The biological indices found in the EPA document entitled Recommended Biological Indices for 301 (h) Monitoring Programs (Tetra Tech, Inc., 1985);

(b) All organisms shall be inspected for external abnormalities (e.g., tumors, ectoparasites) and disease symptoms (e.g., fin erosion, external lesions). The frequency of abnormalities and incidence of disease shall be compared between the ZID boundary and the reference station (i.e., station 4), and spatial and temporal trends shall be measured and reported;

(c) Station mean, range, standard deviation, and 95% confidence limits, if appropriate, for values determined above in (a) and (b); and

(d) Statistical analyses shall be conducted and graphic displays shall be presented in the monitoring reports to demonstrate the current status of any any changes to the demersal fish and macroinvertebrate communities found at the ZID boundary, gradient, and reference stations.

B. Bioaccumulation Monitoring

At trawl stations 1 and 4 at least one demersal fish species and one epibenthic macroninvertebrate shall be analyzed annually (June) for all priority pollutants listed in Table B of the California Ocean Plan. The following fish species are recommended, in decreasing order of preference, for analysis when available:

- English sole (*Parophrys vetulus*)
- Speckled sanddab (*Citharichthys stigmaeus*)
- White croaker (*Genyonemus lineatus*)
- Pacific tomcod (*Microgadus proximus*)
- Shiner surfperch (*Cymatogaster aggregata*)

The following macroinvertebrate species are recommended, in decreasing order of preference, for analysis when available:

- Dungeness crab (*Cancer magister*)
- Slender crab (*Cancer gracilis*)
- Black-spot-shrimp (*Crangon nigromaculata*)
- Short-spined starfish (*Pisaster brevispinus*)

Note: Baited traps may be used to collect sufficient numbers of macroinvertebrates if insufficient numbers of animals are not collected by trawling.

If possible, for the duration of this permit, the same species of fish and macroinvertebrate shall be sampled at all stations and analyzed. To the extent possible, individual fish and macroinvertebrates, selected to be analyzed, should be of the same size and sex. Duplicate otter trawls should be combined to form a single collection per station from which individual organisms are selected for chemical analyses.

Priority pollutant analyses (excluding asbestos) shall be conducted on at least three composite muscle samples and three composite liver samples from fish obtained in each station's catch. These composite samples are to be obtained by compositing tissues from ten individuals per composite, whenever feasible. Macroinvertebrate tissues to be analyzed for priority pollutants shall consist of three composite muscle samples and three composite hepatopancreas samples collected from animals in each station's catch. Each of the macroinvertebrate composite samples shall consist of ten individuals, whenever feasible.

Note: To take into account the temporal and spatial variability of the trawl catches, alternate species and/or alternate numbers of animals per composite sample may be allowed, at one or more trawl stations, if approved by EPA Region 9.

The analytical protocols found in EPA's guidance document entitled Bioaccumulation Monitoring Guidance: 4. analytical Methods for U.S. EPA Priority Pollutants and 301 (h) Pesticides in Tissues from Estuarine and Marine Organisms (Tetra Tech, Inc., 1986) should be used to measure priority pollutants in the tissue samples.

V. REPORTING REQUIREMENT

- A. Self-Monitoring Reports for each calendar month shall be submitted monthly, to be received no later than the 15th day of the following month (last day of following month for all receiving water results). The required contents of these reports are specified in section G.4. of Part A of the Self Monitoring Program.
- B. An annual report covering the previous calendar year shall be submitted to the Regional Board by January 30 of each year (March 31 for all receiving water results). The required contents of the annual report are specified in section G.5 of Part A of the Self Monitoring Program.

C. Any Overflow, bypass or other significant non-compliance incident that may endanger health or the environment shall be reported according to sections G.1 and G.2 of Part A of the Self Monitoring Program.

Attachments: Part A, dated December 1986
Figures 1 - 3
Table 1

TABLE 1
INFLUENT AND EFFLUENT MONITORING SCHEDULE

Parameter	Influent A-001			Effluent E-001		
	C-24	Grab	Cont	C-24	Grab	Cont
Flow Rate (mgd) ¹			D			D
BOD (5-day) (mg/l)	5/W			5/W		
Sett. Solids (ml/l-hr)		D			D	
Suspended Solids (mg/l)	5/W			5/W		
Grease & Oil (mg/l) ²		2/W			2/W	
Turbidity (NTU)				W		
pH (units)			D			D
Acute Toxicity (TUa) ³				M		
Chronic Toxicity (TUc) ⁴						
Arsenic (ug/l)				W		
Cadmium (ug/l)				W		
Chromium (ug/l) ⁵				W		
Copper (ug/l)				W		
Lead (ug/l)				W		
Mercury (ug/l)				W		
Nickel (ug/l)				W		
Selenium (ug/l)				W		
Silver (ug/l)				W		
Zinc (ug/l)				W		
Cyanide (ug/l)				W		
Total Chlorine Residual (ug/l) ⁶						D
Ammonia as Nitrogen (ug/l)				2/M		
Phenolic Compounds (non-Chlorinated) (ug/l)				W		
Chlorinated Phenolics (ug/l)				W		
Endosufan (ng/l)				S		
Endrin (ng/l)				S		
HCH (ng/l)				S		
Radioactivity (pci/l)				S		
Other Toxic Pollutants ⁷						
Non Carcinogens				S		
Carcinogens				S		
Standard Observations ⁸				D		

LEGEND FOR TABLE

<u>Type of Samples</u>	<u>Sampling Frequency</u>
C-24 Flow-weighted composite sample (24 hours)	D Once per day
Grab Grab sample	W Once per calendar week
Cont Continuous sample	M Once per calendar month
	2/W Two days per calendar week
	5/W Five days per calendar week
	2/M Two days per calendar month
	Q Quarterly
	S Semi-annually
	A Annually

TABLE NOTES

1. Effluent flows from the Westside Transport (decant) shall also be measured and reported.
2. Grease and oil sampling shall consist of 3 grab samples taken at 8 hour intervals during the sampling day, with each grab being collected in a glass container and analyzed separately. Results shall be expressed as a weighted average of the three results, based on the instantaneous flow rates at the time each grab sample was collected.
3. Bioassay samples shall be collected on days coincident with effluent composite sampling. Pending start-up of new Oceanside plant, the discharger may use the static renewal method for the 96-hour bioassay (renewal with 24-hour composite sample at 24-hour intervals during the test). Un-ionized ammonia concentrations shall be determined whenever bioassay results violate effluent limits.
4. Chronic toxicity monitoring shall not be required until EPA and Board staff approve test methods and species, including monitoring frequency. The discharger may propose a special study of chronic toxicity in lieu of regular monitoring, subject to EPA and Board staff approval.
5. The discharger shall specify whether total or hexavalent chromium concentrations are analyzed.
6. Monitoring of total chlorine residual is only required if the discharger starts using chlorine compounds to disinfect plant effluent.
7. See effluent limits in permit for list of pollutants and units.
8. Standard observations should enable EPA and Board staff to determine the discharger's compliance with receiving water limitations.

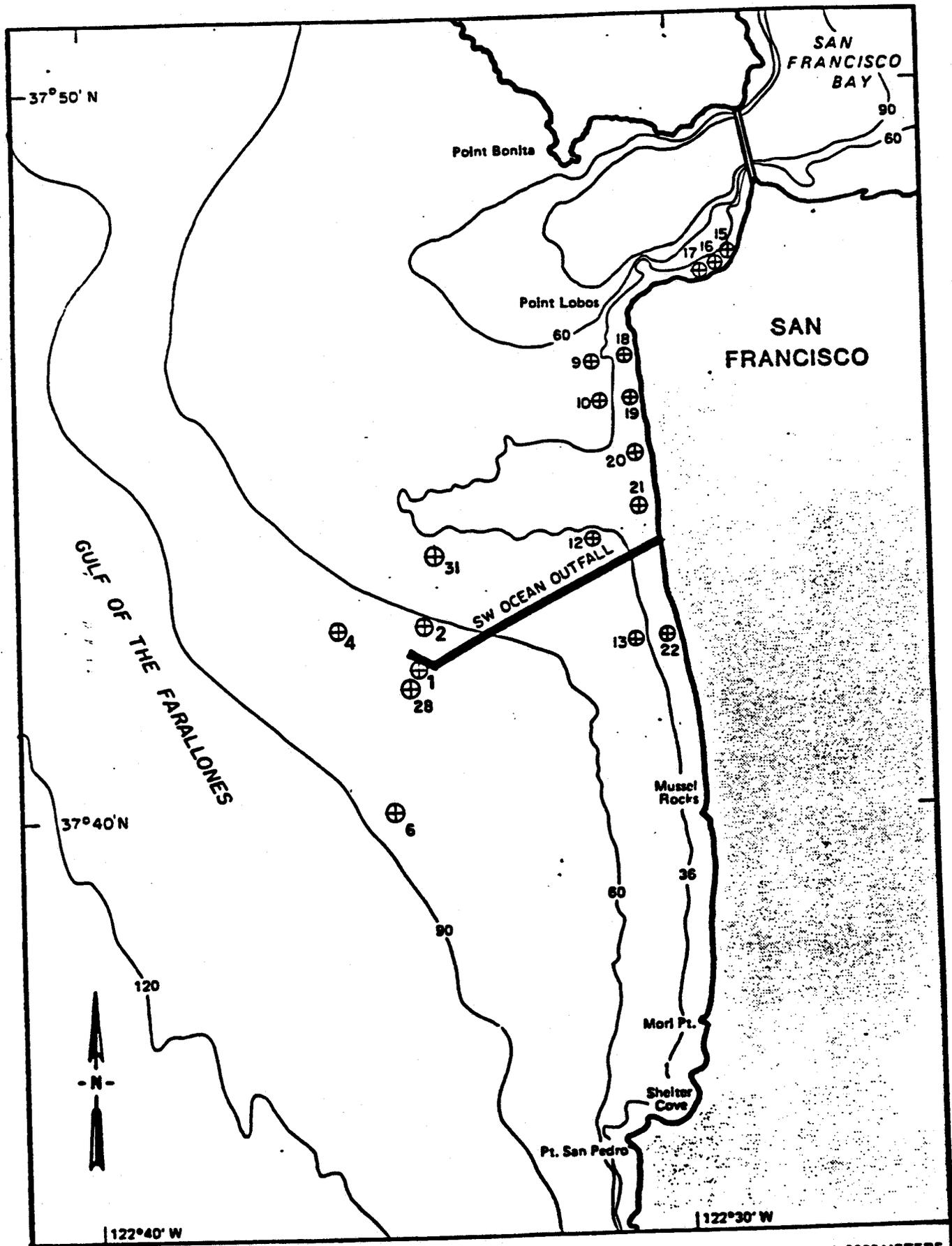


FIGURE 1
WATER QUALITY SAMPLING STATIONS

0 1000 2000 3000 METERS
0 5000 10000 FEET
DEPTHS IN FEET

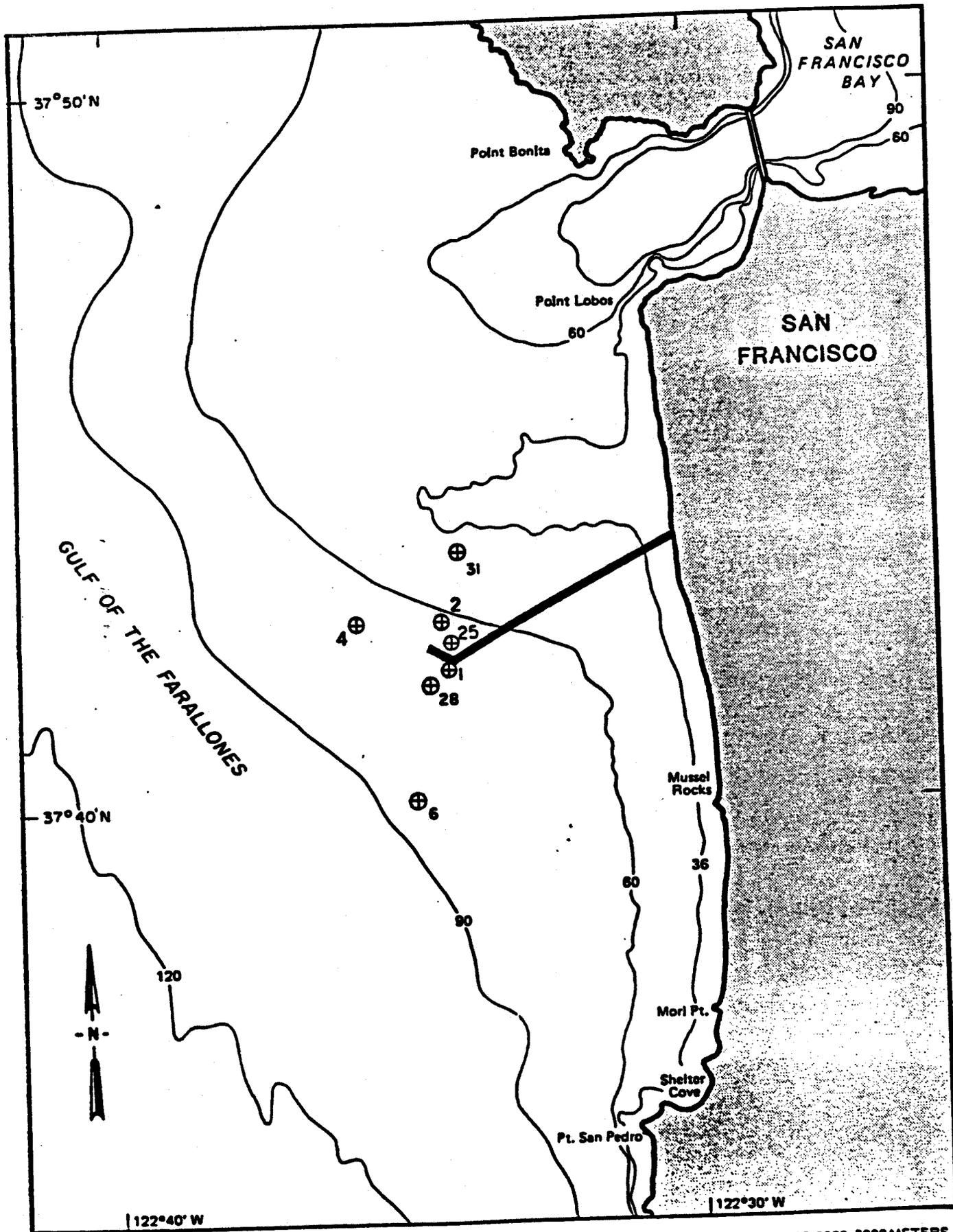
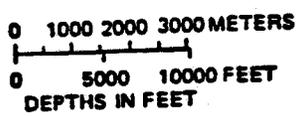


FIGURE 2
BENTHIC INFAUNA AND SEDIMENT SAMPLING STATIONS



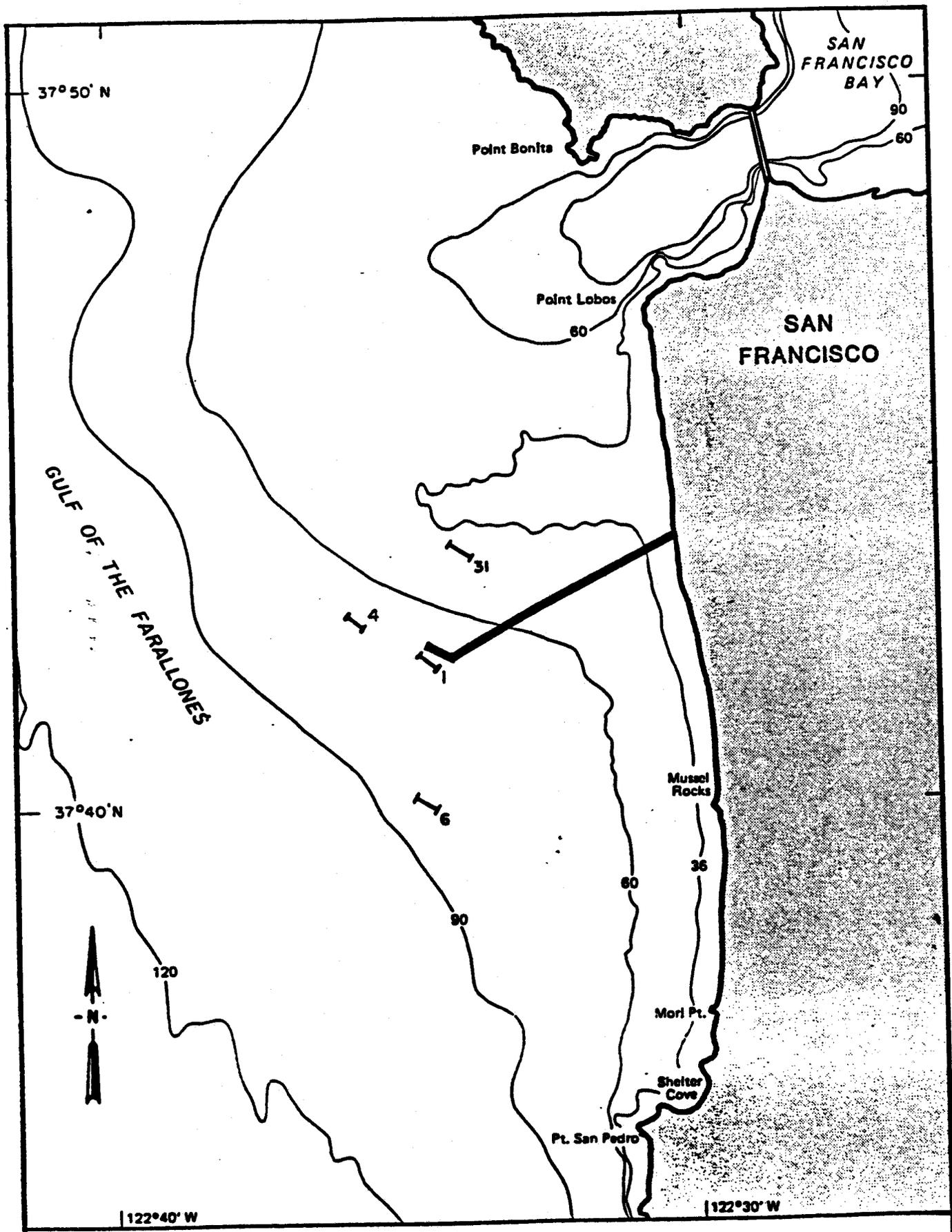
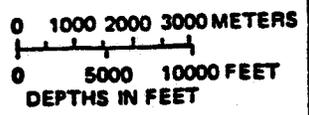
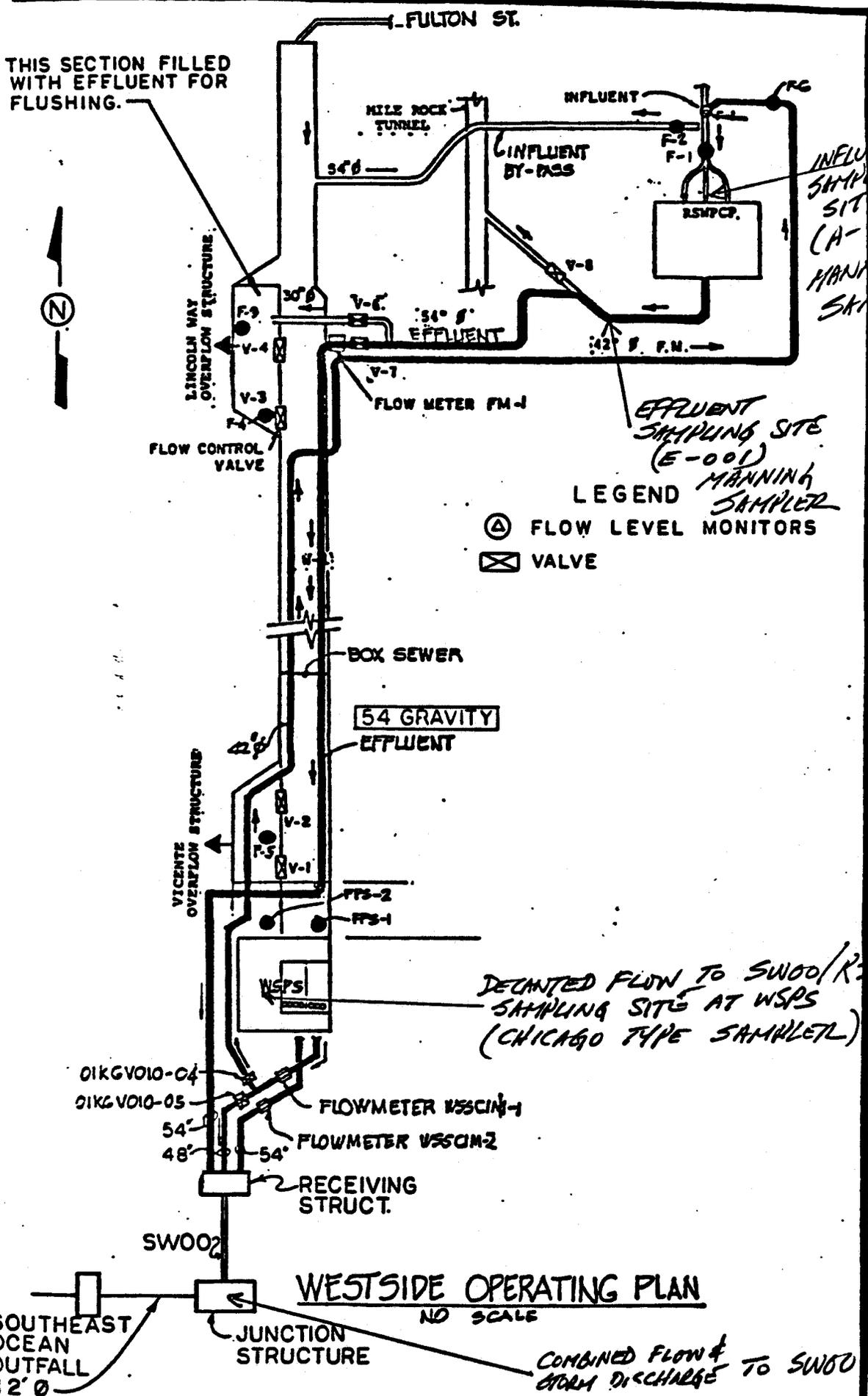


FIGURE 3
DEMERSAL FISH AND EPIBENTHIC INVERTEBRATE
TRAWL STATIONS



THIS SECTION FILLED WITH EFFLUENT FOR FLUSHING.



INFLUENT SAMPLING SITE (A-001) MANNING SAMPLER

EFFLUENT SAMPLING SITE (E-001) MANNING SAMPLER

LEGEND

- ⊙ FLOW LEVEL MONITORS
- ⊠ VALVE

DECANTED FLOW TO SW00/R54 SAMPLING SITE AT WSPS (CHICAGO TYPE SAMPLER)

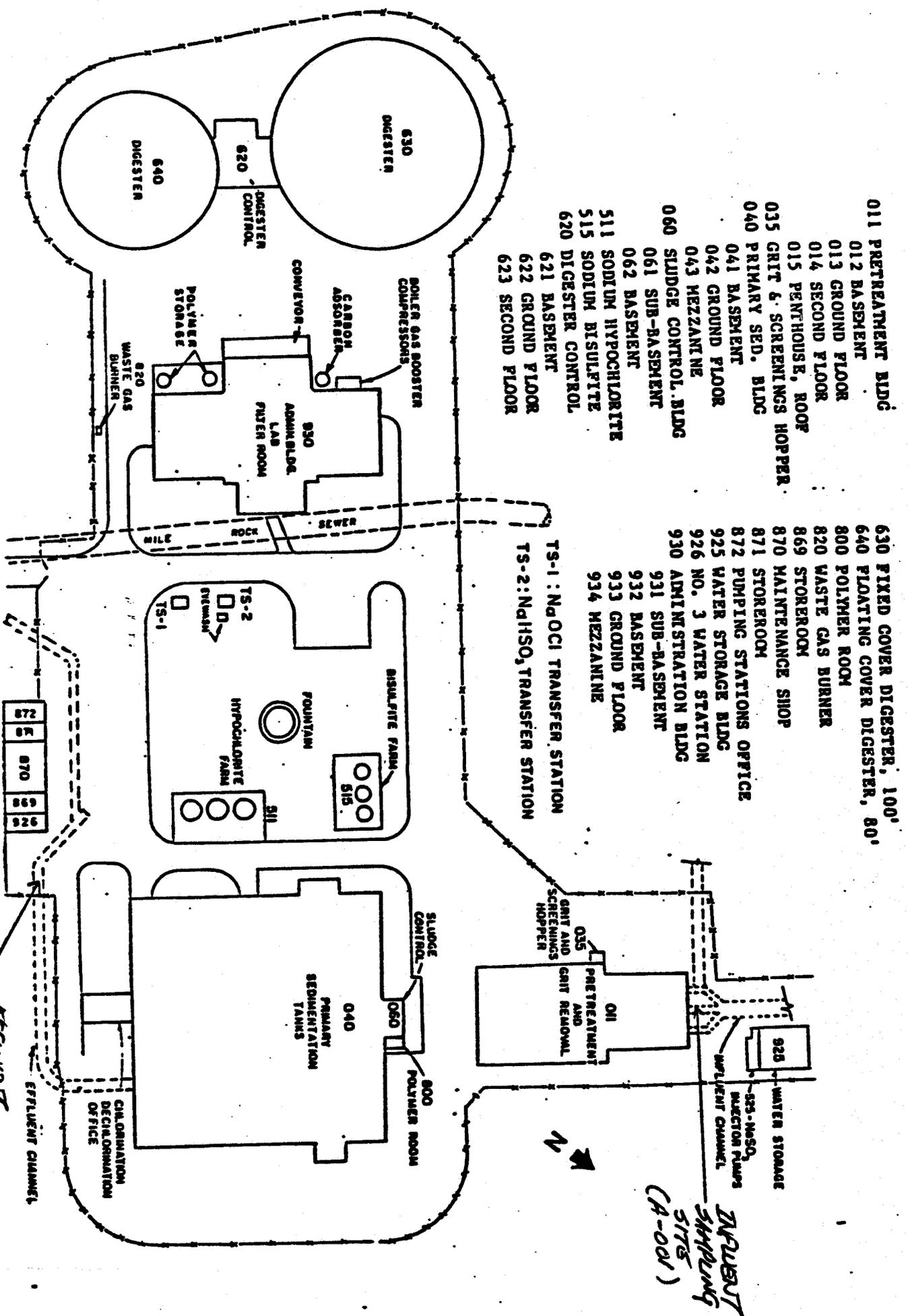
COMBINED FLOW & STORM DISCHARGE TO SW00

WESTSIDE OPERATING PLAN

NO SCALE

SOUTHEAST OCEAN OUTFALL 12' 0"

FIGURE 6
 RICHMOND-SUNSET WATER POLLUTION CONTROL PLANT
 GENERAL PLANT LAYOUT



INFLUENT SUPPLY (A-001)

