

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION**

81 S. Higuera Street, Suite 200
San Luis Obispo, California 93401-5427

ORDER NO. 95-28 NPDES NO. CA0003743

**WASTE DISCHARGE REQUIREMENTS
FOR
PACIFIC GAS AND ELECTRIC COMPANY
MORRO BAY POWER PLANT
SAN LUIS OBISPO COUNTY**

Duke Energy Morro Bay

The California Regional Water Quality Control Board, Central Coast Region (hereafter Board), finds that:

1. The Pacific Gas and Electric Company, with headquarters at 77 Beale Street, San Francisco, CA 94105 (hereafter Discharger), owns and operates a Power Plant located within the City of Morro Bay (Section 25, T29S, R10E, MD B&M), as shown on Attachment "A" of this Order. The power plant consists of four generating units with a total net power generating capacity of 1002 MW.
2. The Morro Bay Power Plant uses up to 725 MGD of seawater for the primary purpose of cooling. As shown on Attachment "A": cooling-water intakes are located easterly of Morro Rock inside Morro Bay Harbor while spent cooling water is discharged adjacent and north-northeasterly of Morro Rock into southern Estero Bay (Outfall 001 for Units 1 through 4, at 35°22'15" N. Latitude, 120°51'56" W. Longitude); storm water is discharged into Morro Bay Harbor just north of the intakes (Outfall 002 at 35°22'20" N. Latitude, 120°51'21" W. Longitude); storm water is also discharged into Willow Camp Creek near the northern boundary of the plant (Outfall 003 at 35°22'20" N. Latitude, 120°51'27" W. Longitude); and, screen washwater is to be returned to the intake structure (Outfall 004 at 35°22'33" N. Latitude, 120°51'21" W. Longitude), in the event of screen wash sump overflow. Discharge locations are depicted on Attachment "B" of this Order.
3. An application for authorization to discharge wastes under the National Pollutant Discharge Elimination System (NPDES) was received on July 28, 1994, from the Discharger. NPDES Permit No. CA0003743 was last issued by the Board on May 11, 1990 (Order No. 90-07).
4. The application for permit reissuance describes four existing outfalls, with discharges (shown on Attachment "C" of this Order) as follows. Many of the discharges are intermittent in nature, these flows represent estimated average flows during periods of discharge.

<u>Outfall No.</u>	<u>Discharge No.</u>	<u>Discharge Description</u>	<u>Average Flow (MGD)</u>
001	001	Discharges 001A - 001G	532
	001A	Once Through Cooling (Units 1 - 4)	530
	001B*	Intake Screen Wash (Daily)	1.2
	001C	Make-up Water System - Brine	0.24
	001D	Make-up Water System - Cooling Water	0.51

	001E*	Surface Impoundments - Boiler Blowdown, Boiler Chemical Metal Cleaning Waste (annually), Boiler Wash/Rinse & Layup Solution (monthly), Storm Runoff from Acid & Caustic Containment Sump, Misc. Non-routine Discharges	0.15
	001F*	Oily Water System - Miscellaneous Floor Drains, Fuel Oil Tank Sumps, Vapor Compression & Acid Containment Sumps	0.075
	001G*	Storm Runoff	variable
002	002*	Storm Runoff	variable
003	003*	Storm Runoff	variable
004	004*	Screen Wash Water Overflow	variable

* Intermittent discharges.

5. Boiler blowdown water (Discharge No. 001E) may be rerouted directly into condenser cooling water which discharges into Outfall 001 a few times per year for necessary maintenance.
6. The Discharger uses sodium hypochlorite for bio-fouling reduction and evaluation of alternative products for similar use continues. The Discharger also periodically discharges dye, such as rhodamine, during testing of its facilities.
7. A private aquaculture facility may be planning to use water from Discharger's circulating water system for a facility to be built on Morro Bay. Discharge would be to Estero Bay through the Discharger's Outfall No. 001.
8. The Environmental Protection Agency and Board classify this discharge as a major discharge.
9. The Water Quality Control Plan, Ocean Waters of California - California Ocean Plan (Ocean Plan) was adopted by the Board on March 22, 1990. The Ocean Plan contains water quality objectives and other requirements governing discharge to the Pacific Ocean including Morro Bay and Estero Bay.
10. The Water Quality Control Plan, Central Coastal Basin (Basin Plan), was adopted by the Board on November 17, 1989. The Basin Plan incorporates statewide plans and policies by reference and contains a strategy for protecting beneficial uses of the Pacific Ocean.
11. The present and potential beneficial uses of Estero Bay in the vicinity of the discharge are:
 - a. Water contact recreation;
 - b. Non-contact water recreation, including aesthetic enjoyment;
 - c. Industrial water supply;
 - d. Navigation;
 - e. Marine habitat;
 - f. Shell fish harvesting;
 - g. Ocean commercial and sport fishing;
 - h. Preservation of rare and endangered species; and,
 - i. Wildlife habitat.
12. The shellfish harvesting beneficial use (Finding No. 11.f.) exists wherever mussels, clams, or oysters may be harvested for human consumption. Mussels, clams, and oysters are all present within Morro Bay and Estero Bay.
13. The State Board adopted the "Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California" (Thermal Plan) on September 18, 1975. The Thermal Plan contains objectives governing cooling

water discharges.

14. A thermal effects study was submitted by the Discharger in 1973 in accordance with requirements of the Thermal Plan. The Study concluded that the discharge does not adversely affect beneficial uses. Since that time there have been no physical or operational changes that would affect thermal loading.
15. The Ocean Plan is directly applicable to discharge No. 001 to Estero Bay. A procedure for determining effluent limitations is based on ocean water quality conditions and the minimum initial dilution of the discharge. An initial dilution ratio of 10.4:1 (Seawater:Effluent) is used in calculating effluent limits for Discharge No. 001.
16. The cooling-water intake has a potentially high impact because of its location in a valued aquatic habitat in the presence of an endangered species, the California Sea Otter. Section 316(b) of the CWA requires the location, design, construction, and capacity of cooling water intake structures reflect Best Technology Available (BTA) for minimizing adverse environmental impacts. This potential impact can be minimized through operation and maintenance procedures. Further, a 316(b) Cooling Water Intake Structure Study was submitted on November 18, 1983. Based on local sampling and extrapolation from the Discharger's "Moss Landing 316(b) Cooling Water Intake Structure Study," the intake presents no significant impact to fish and invertebrates and, given the age of the units, the low biological impacts, and the cost of modifications, the existing cooling water system, intake locations, and configuration of the intakes represents BTA.
17. Effluent limitations, and toxic and effluent standards established pursuant to Sections 301, 302, 303(d), 304, 307, and 316 of the Clean Water Act (CWA) and amendments thereto, are applicable to the discharge. Final regulations defining effluent limitation guidelines for the steam-electric industry were promulgated by the Environmental Protection Agency on November 19, 1982, as specified in Title 40 of the Code of Federal Regulations (CFR) Part 423.
18. Federal Regulations for storm water discharges were promulgated by the US Environmental Protection Agency on November 19, 1990. The regulations [40 CFR Parts 122, 123, and 124] require specific categories of industrial activities which discharge storm water associated with industrial activity (industrial storm water) to obtain a NPDES permit and to implement Best Available Technology Economically Achievable (BAT) and Best Conventional Pollutant Control Technology (BCT) to control pollutants in industrial storm water discharges.
19. The storm water flows from nonindustrial process areas are discharged to Estero Bay, Morro Bay Harbor and Willow Camp Creek (Outfall 001, 002 and 003). These storm water flows constitute all storm water at this facility and consequently this permit regulates all storm water discharges at this facility.
20. Waste discharge requirements for this discharge are exempt from the provisions of the California Environmental Quality Act (Public Resources Code, Section 21100, et seq.) in accordance with section 13389 of the California Water Code.
21. A permit and the privilege to discharge waste into waters of the State is conditional upon the discharge complying with provisions of Division 7 of the California Water Code and of the Clean Water Act (as amended or as supplemented by implementing guidelines and regulations) and with any more stringent effluent limitations necessary to implement water quality control plans, to protect beneficial uses, and to prevent nuisance. This Order shall serve as a National Pollutant Discharge Elimination System Permit pursuant to Section 402 of the Clean Water Act. Compliance with

this Order should assure conditions are met and mitigate any potential changes in water quality due to the project.

22. On December 20, 1994, the Board notified the Discharger and interested persons of its intent to reissue waste discharge requirements for the discharge, provided them with an opportunity to submit their written views and recommendations, and scheduled a public hearing.
23. In a public hearing on March 10, 1995, the Board heard and considered all comments pertaining to the discharge and found this Order consistent with the above findings.

IT IS HEREBY ORDERED, pursuant to authority in Section 13377 of the California Water Code, that Pacific Gas and Electric Company, its agents, successors, and assigns, may discharge waste from its Morro Bay Power Plant providing they comply with the following:

(General permit conditions, definitions and the method of determining compliance are contained in the attached "Standard Provisions and Reporting Requirements for National Pollutant Discharge Elimination System Permits," dated January 1985.)

Requirements specified in the proposed Order are based on staff's professional judgement and the following documents:

- A = Administrative Procedures Manual (SWRCB)
- B = Basin Plan
- C = California Ocean Plan
- D = Thermal Plan
- E = 40 Code of Federal Regulations Part 423

Throughout the proposed Order and Monitoring and Reporting Program, footnotes are included to indicate the source of specified requirements. Requirements not referenced are based on professional judgement.

A. DISCHARGE PROHIBITIONS

1. Discharge at any location other than that described in the Permit application, Finding No. 4, or shown on Attachments "A" "B" or "C", is prohibited. This prohibition does not apply to uncontaminated storm runoff.
2. Discharge of polychlorinated biphenyl compounds is prohibited.^E
3. Discharge of domestic wastewater or solid waste to surface waters is prohibited.
4. Discharge of pollutants, which are not otherwise authorized by this NPDES permit, to a storm drain system or waters of the state are prohibited.

B. EFFLUENT LIMITATIONS

Discharge No. 001

1. Discharge shall not exceed 725 MGD (2.74 x 10⁶ m³/day).
2. During heat treatment to remove biofouling organisms from conduits, the maximum temperature of the discharge (measured at the end of the discharge canal) shall not exceed the natural temperature of the intake water by more than 35 degrees F (19.4 degrees C).^D
3. Excepting periods of heat treatment, the daily average temperature of the discharge shall not exceed the natural daily average temperature of the intake water by more than 30 degrees F (16.7 degrees C).^D

4. Discharge shall not exceed the following limits*:^c

a. PROTECTION OF MARINE AQUATIC LIFE

<u>Constituent</u>	<u>Units</u>	<u>Six-Month</u>	<u>Daily</u>	<u>Instantaneous</u>
		<u>Median</u>	<u>Maximum</u>	<u>Maximum</u>
Arsenic	mg/l	0.06	0.33	0.88
Cadmium	mg/l	0.01	0.05	0.11
Chromium(Hex) ¹	mg/l	0.02	0.09	0.23
Copper	mg/l	0.01	0.12	0.32
Lead	mg/l	0.02	0.09	0.23
Mercury	mg/l	0.0005	.0018	0.046
Nickel	mg/l	0.06	0.23	0.57
Selenium	mg/l	0.17	0.68	1.71
Silver	mg/l	0.063	0.0303	0.0781
Zinc	mg/l	0.14	0.83	2.20
Total Chlorine Residual ²	mg/l	---	---	0.20
Ammonia (as N)	mg/l	6.84	27.36	68.40
Chronic Toxicity	TUc	---	11.4	---
Phenolic Compounds (non-chlorinated)	mg/l	0.34	1.37	3.42
Chlorinated Phenolics	mg/l	0.01	0.05	0.11
Radioactivity	Not to exceed limits specified in California Code of Regulations, Title 17, Division 1, Chapter 5, Subchapter 4, Group 3, Article 3, Section 30269.			

b. PROTECTION OF HUMAN HEALTH - NONCARCINOGENS

<u>Constituent</u>	<u>Units</u>	<u>30-Day Average</u>
Acrolein	mg/l	2.5
Antimony	mg/l	14.
Bis(2-chloroethoxy) Methane	mg/l	0.05
Bis(2-chloroisopropyl) Ether	mg/l	14.
Chlorobenzene	mg/l	6.5
Chromium (III)	g/l	2.2
Di-n-butyl Phthalate	mg/l	40.
Dichlorobenzenes ³	mg/l	58.
1,1-dichloroethylene	mg/l	81.

¹The chromium limit may be met as Total Chromium if the Discharger chooses.

²Total Chlorine Residual may not be discharged from any single generating unit for more than two hours per day. Simultaneous multi-unit chlorination is permitted. Total Chlorine Residual (instantaneous maximum in ug/l) shall be determined through use of the following equations:

$$C_o = 10^{[-0.43(\log x) + 1.8]} \text{ and } C_o = C_e (D_m + 1)$$

Where: x = the duration of uninterrupted chlorine discharge in minutes.

C_o = the concentration to be met at the completion of initial dilution.

C_e = the effluent concentration limit.

D_m = the minimum probable initial dilution expressed as parts seawater per parts wastewater.

If C_e exceeds 0.2 mg/l, then 0.2 mg/l becomes the maximum discharge limit.

³Dichlorobenzenes shall mean the sum of 1,2- and 1,3-dichlorobenzene.

<u>Constituent</u>	<u>Units</u>	<u>30-Day Average</u>
Acrolein	mg/l	2.5
Diethyl Phthalate	mg/l	380.
Dimethyl Phthalate	mg/l	9.3
4,6-dinitro-2-methylphenol	mg/l	2.5
2,4-dinitrophenol	mg/l	0.046
Ethylbenzene	mg/l	47.
Fluoranthene	mg/l	0.17
Hexachlorocyclopentadiene	mg/l	0.66
Isophorone	g/l	1.7
Nitrobenzene	mg/l	0.056
Thallium	mg/l	0.16
Toluene	g/l	1.0
1,1,2,2-tetrachloroethane	mg/l	14.
Tributyltin	µg/l	0.016
1,1,1-trichloroethane	g/l	6.2
1,1,2-trichloroethane	mg/l	490.

c. PROTECTION OF HUMAN HEALTH - CARCINOGENS

<u>Constituent</u>	<u>Units</u>	<u>30-Day Average</u>
Acrylonitrile	µg/l	1.1
Benzene	mg/l	0.067
Benzidine	ng/l	0.79
Beryllium	µg/l	0.38
Bis(2-chloroethyl) Ether	µg/l	0.51
Bis(2-ethylhexyl) Phthalate	mg/l	0.040
Carbon tetrachloride	mg/l	0.010
1,4-dichlorobenzene	mg/l	0.21
3,3-dichlorobenzidine	µg/l	0.092
1,2-dichloroethane	mg/l	1.5
dichloromethane	mg/l	5.1
1,3-dichloropropene	mg/l	0.10
2,4-dinitrotoluene	mg/l	0.030
1,2-diphenylhydrazine	µg/l	1.8
Halomethanes ⁴	mg/l	1.5
Hexachlorobenzene	ng/l	2.4
Hexachlorobutadiene	mg/l	0.16
Hexachloroethane	mg/l	0.028
N-nitrosodimethylamine	mg/l	0.083
N-nitrosodiphenylamine	mg/l	0.028
PAHs ⁵	µg/l	0.10

⁴Halomethanes shall mean the sum of bromoform, bromomethane (methyl bromide), chloromethane (methyl chloride), chlorodibromomethane, and dichlorobromomethane.

⁵PAHs (polynuclear aromatic hydrocarbons) shall mean the sum of acenaphthylene, anthracene, 1,2-benzanthracene, 3,4-benzofluoranthene, benzo(k)fluoranthene, 1,12-benzopyrene, benzo(a)pyrene, chrysene, dibenzo(ah)anthracene, fluorene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene.

TCDD Equivalents ⁶	µg/l	0.044
Tetrachloroethylene	mg/l	1.1
Toxaphene	ng/l	2.4
Trichloroethylene	mg/l	0.31
2,4,6-trichlorophenol	µg/l	3.3
Vinyl Chloride	mg/l	0.41

* Based on California Ocean Plan criteria using a minimum initial dilution ratio of 10.4:1 (Seawater:effluent). If the actual dilution is found to be less than this value, it will be recalculated and the Order revised.

5. Discharge shall be essentially free of materials and substances that:^{B,C}

following limits^E:

a. is floatable or will become floatable upon discharge and cause nuisance or adversely affect beneficial uses.

<u>Constituent</u>	<u>30-Day Average</u>	<u>Daily Average</u>
Copper	1.0 mg/l	1.0 mg/l
Iron	1.0 mg/l	1.0 mg/l

b. may form sediments which degrade benthic communities or other biota.

c. accumulate to toxic levels in marine waters, sediments or biota.

d. significantly decrease the natural light to benthic communities and other marine life.

e. result in aesthetically undesirable discoloration of the ocean surface.

C. RECEIVING WATER LIMITATIONS

(Receiving water quality is a result of many factors, some unrelated to the discharge. This permit considers these factors and is designed to minimize the influence of the discharge to the receiving water.)

Discharges 001, 002, 003, and 004 shall not cause:

Discharges 001C, 001E, and 001F

6. Discharges 001C, 001E, and 001F shall not contain constituents in excess of the following limits:^E

<u>Constituent</u>	<u>30-Day Average</u>	<u>Daily Maximum</u>
Suspended Solids	30.0 mg/l	100.0 mg/l
Oil and Grease	15.0 mg/l	20.0 mg/l

1. Floating particulates and grease and oil to be visible on the ocean surface.^C

2. Aesthetically undesirable discoloration of the ocean surface.^C

3. Significant reduction of transmittance of natural light in ocean waters outside the "zone of initial dilution."^C

4. Change in the rate of deposition of inert solids and the characteristics of inert solids in ocean sediments such that benthic communities are degraded.^C

Discharge 001E

7. Discharge of metal cleaning waste to 001E shall not contain constituents in excess of the

5. The dissolved oxygen concentration outside the "zone of initial dilution" to fall below 5.0 mg/l

⁶TCDD Equivalents shall mean the sum of the concentrations of chlorinated dibenzodioxins (2,3,7,8-CDDs) and chlorinated dibenzofurans(2,3,7,8-CDFs) multiplied by their respective toxicity factors, as listed in Appendix I of the Ocean Plan.

or to be depressed more than 10 percent from that which occurs naturally.^{B,C}

6. The pH outside the "zone of initial dilution" to be depressed below 7.0, raised above 8.3 in the ocean, or changed more than 0.2 units from that which occurs naturally.^{B,C}
7. Dissolved sulfide concentrations of waters in and near sediments to significantly increase above that present under natural conditions.^C
8. Concentrations of the same substances listed in Effluent Limitation No. B.4. to increase in marine sediments to levels which would degrade indigenous biota.^C
9. Objectionable aquatic growth or degradation of indigenous biota.^C
10. Concentrations of organic materials in marine sediments to increase to a level which would degrade marine life.^C
11. Degradation of marine communities, including vertebrate, invertebrate, and plant species.^C
12. Alteration in natural taste, odor, and color of fish, shellfish, or other marine resources used for human consumption.^C
13. Concentrations of organic materials in fish, shellfish or other marine resources used for human consumption to bioaccumulate to levels that are harmful to human health.^C
14. Degradation of marine life due to radioactive waste.^C
15. Temperature of the receiving water to adversely affect beneficial uses.^{B,D}
16. Storm water discharges shall not adversely impact human health or the environment.

D. PROVISIONS

1. The requirements prescribed by this Order

supersede requirements prescribed by Order No. 90-07, adopted by the Board on May 11, 1990. Order No. 90-07, "Waste Discharge Requirements for Pacific Gas and Electric Company, Morro Bay Fossil Fuel Power Plant, Units 1 through 4, San Luis Obispo County," is hereby rescinded.

2. Discharger shall comply with "Monitoring and Reporting Program No. 95-28," as ordered by the Executive Officer.^A
3. Discharger shall comply with all applicable Items of the attached "Standard Provisions and Reporting Requirements for National Pollutant Discharge Elimination System Permits," dated January 1985 (also referred to as "Standard Provisions"). Paragraph (a) of Item E.1. may apply if the bypass is for essential maintenance to assure efficient operation. Temporary rerouting of internal waste streams may be performed as long as effluent limitations are not exceeded and appropriate monitoring locations are used for monitoring regulated wastestreams.
4. Studies on alternative products or other process treatments may be performed by the Discharger with concurrence of the Executive Officer.
5. Plant operations shall at all times include the recommendations and procedures of the Best Management Practices Plan, dated August, 1985, revised September 7, 1988, and further revised January 30, 1991, or as amended and approved by the Executive Officer.
6. This Order expires March 10, 2000, and 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 September 10, 1999, if it wishes to continue to discharge.

E. STORM WATER PROVISIONS

1. By September 1, 1995, the Discharger shall submit a Storm Water Pollution Prevention

Plan (SWPP Plan) which describes industrial storm water discharges at the facility and describes storm water management controls. The discharger shall implement a Storm Water Pollution Prevention Plan (SWPP Plan) in accordance with the attached "Standard Storm Water Provisions". The SWPP plan shall be reviewed and updated as appropriate by October 1, 1996, and every year thereafter. Full compliance with the "Standard Storm Water Provisions" shall be an enforceable requirement of this permit.

2. The SWPP Plan shall be designed in accordance with good engineering practices and shall address the following objectives:
 - a. to identify pollutant sources that may affect the quality of storm water discharges; and
 - b. to identify, assign, and implement control measures and management practices to reduce pollutants in storm water discharges.

The SWPP Plan shall be retained onsite and made available upon request of a representative of the Regional Board.

3. Source Identification. The SWPP Plan shall provide a description of potential sources which may be expected to add significant quantities of pollutants to storm water discharges, or which may result in non-storm water discharges from the facility. The SWPP Plan shall include, at a minimum, the following items:
 - a. A topographic map (or other acceptable map if a topographic map is unavailable), extending one-quarter mile beyond the property boundaries of the facility, showing: the facility process areas, surface water bodies (including springs and wells), and the discharge point(s) where the facility's storm water discharges to a municipal storm drain system or other water body. The requirements of

this paragraph may be included in the site map required under the following paragraph if appropriate.

- b. A site map showing:
 - i. Storm water conveyance, drainage, and discharge structures;
 - ii. An outline of the storm water drainage areas for each storm water discharge point;
 - iii. Paved areas and buildings;
 - iv. Areas of pollutant contact with storm water or release to storm water, actual or potential, including but not limited to outdoor storage, and process areas, material loading, unloading, and access areas, and waste treatment, storage, and disposal areas;
 - v. Location of existing storm water structural control measures (i.e., berms, coverings, etc.);
 - vi. Surface water locations, including springs and wetlands;
 - vii. Vehicle service areas;
- c. A narrative description of the following:
 - i. Process activity areas.
 - ii. Materials, equipment, and vehicle management practices employed to minimize contact of significant materials with storm water discharge;
 - iii. Material storage, loading, unloading, and access areas;
 - iv. Existing structural and non-structural control measures (if any) to reduce pollutants in storm water discharge;

- v. Methods of onsite storage and disposal of significant materials;
- d. A list of pollutants that have a reasonable potential to be present in storm water discharge in significant quantities.
4. Storm Water Management Controls. The SWPP Plan shall describe the storm water management controls appropriate for the facility and a time schedule for fully implementing such controls. The appropriateness and priorities of controls in the SWPP Plan shall reflect identified potential sources of pollutants. The description of storm water management controls shall include, as appropriate:
- a. Storm Water Pollution Prevention Personnel. Identify specific individuals (and job titles) who are responsible for developing, implementing, and revising the SWPP Plan.
- b. Good Housekeeping. Good housekeeping requires the maintenance of clean, orderly facility areas that discharge storm water. Material handling areas shall be inspected and cleaned to reduce the potential for pollutants to enter the storm water conveyance system.
- c. Spill Prevention and Response. Identification of areas where significant materials can spill into or otherwise enter the storm water conveyance systems and their accompanying drainage points. Specific material handling procedures, storage requirements, clean up equipment and procedures should be identified, as appropriate. The necessary equipment to implement a clean-up shall be available and personnel trained in proper response, containment and cleanup of spills.
- Internal reporting procedures for spills of significant materials shall be established.
- d. Source Control. Source controls, such as elimination or reduction of the use of toxic pollutants, covering of pollutant areas, sweeping of paved areas, containment of potential pollutants, labelling all storm drain inlets with "No Dumping" signs, isolation/separation of industrial from non-industrial pollutant sources so that runoff from these areas does not mix, etc.;
- e. Storm Water Management Practices. Storm water management practices are practices other than those which control the source of pollutants. They include treatment/conveyance structures such as drop inlets, channels, retention/detention basins, treatment vaults, infiltration galleries, filters, oil/water separators etc. Based on assessment of the potential of various sources to contribute pollutants to storm water discharges in significant quantities, additional storm water management practices to remove pollutants from storm water discharge shall be implemented and design criteria shall be described.
- f. Sediment and Erosion Prevention. Measures to limit erosion around the storm water drainage and discharge points such as riprap, revegetation, slope stabilization, etc. shall be described and implemented;
- g. Employee Training. Employee training programs shall inform all personnel responsible for implementing the SWPP Plan. Training should address spill response, good housekeeping, and material management practices. Periodic dates for training shall be identified.

- h. Inspections. All inspections shall be done by trained personnel. Material handling areas shall be inspected for evidence of, or the potential for, pollutants entering storm water discharges. A tracking or follow-up procedure shall be used to ensure appropriate response has been taken in response to an inspection. Inspections and maintenance activities shall be documented and recorded. Inspection records shall be retained for five years.
- i. Records A tracking and follow up procedure shall be described to ensure that adequate response and corrective

actions have been taken in response to inspections. Records of inspections shall be maintained. Establishment of internal record keeping and internal reporting procedures of inspections and spill incidents.

- 5. An annual facility inspection shall be conducted to verify that all elements of the SWPP Plan (i.e., site map, potential pollutant sources, structural and non-structural controls to reduce pollutants in industrial storm water discharge, etc.) are accurate. A report of the annual inspection and observations that require a response (and the appropriate response to the observation) shall be retained as part of the SWPP Plan.

I, **ROGER W. BRIGGS**, 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, Central Coast Region, on March 10, 1995.


EXECUTIVE OFFICER

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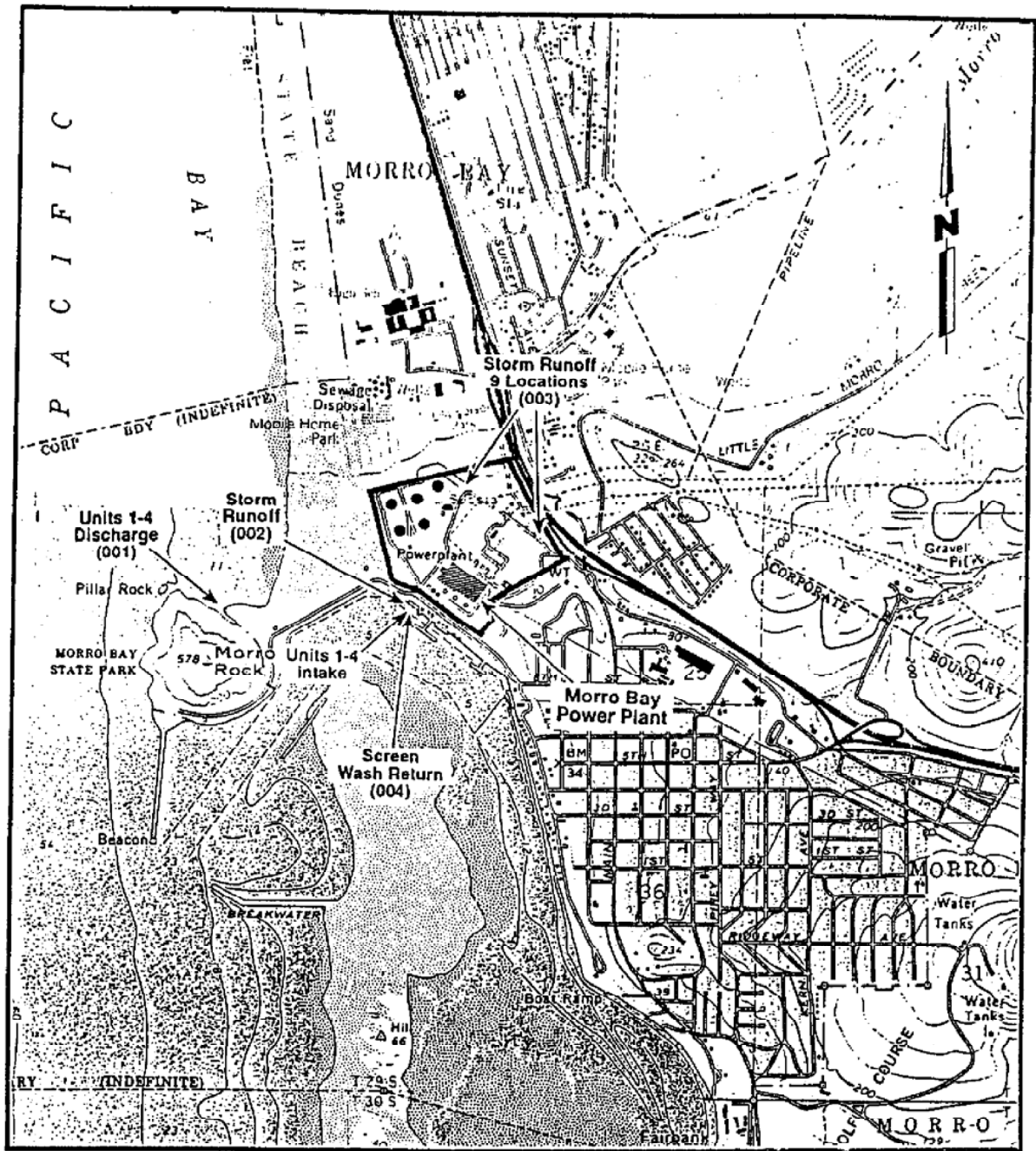


Figure 1. Morro Bay Power Plant and vicinity.

Attachment "A"

940334/S10

Attachment "B"

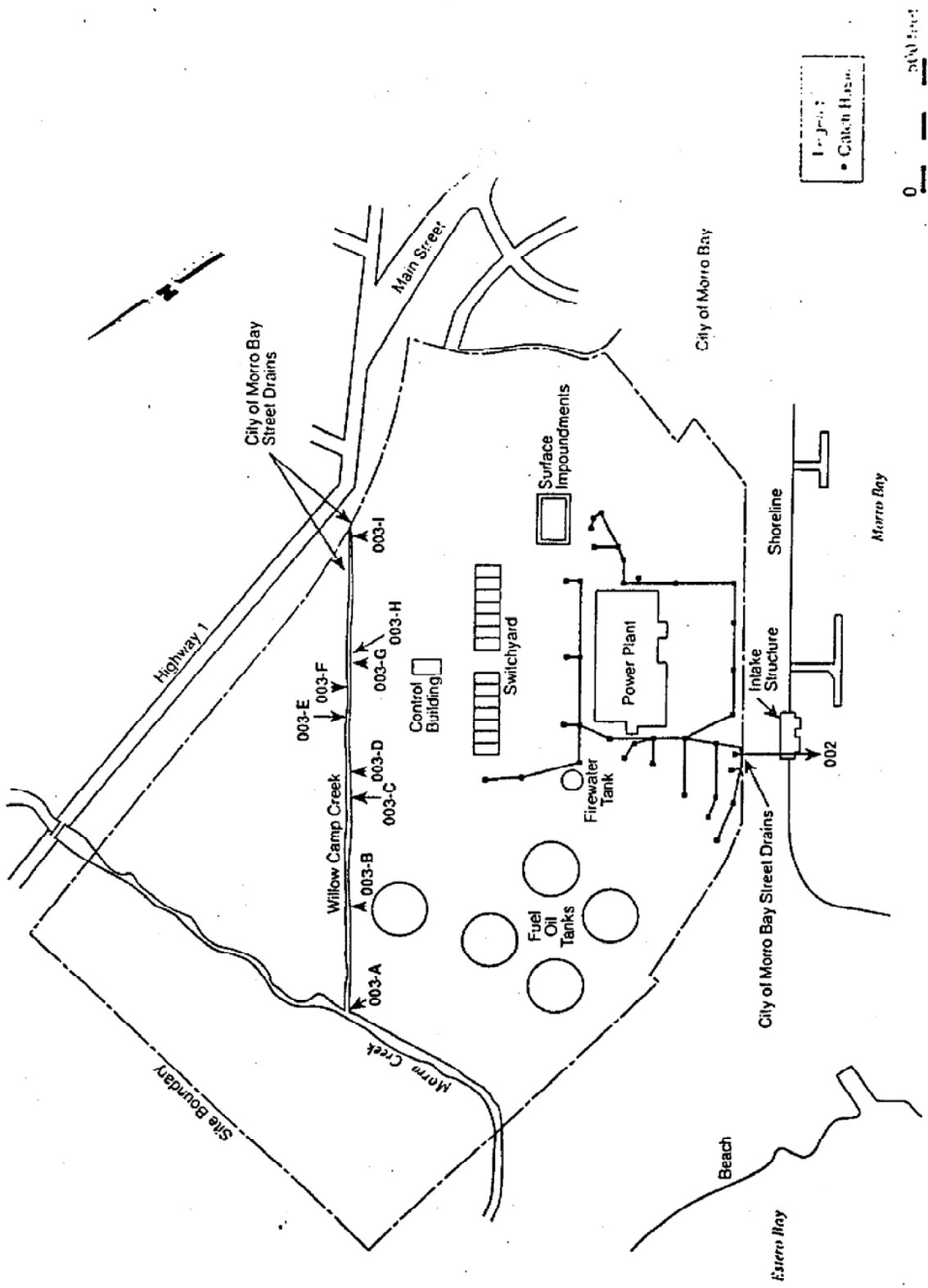
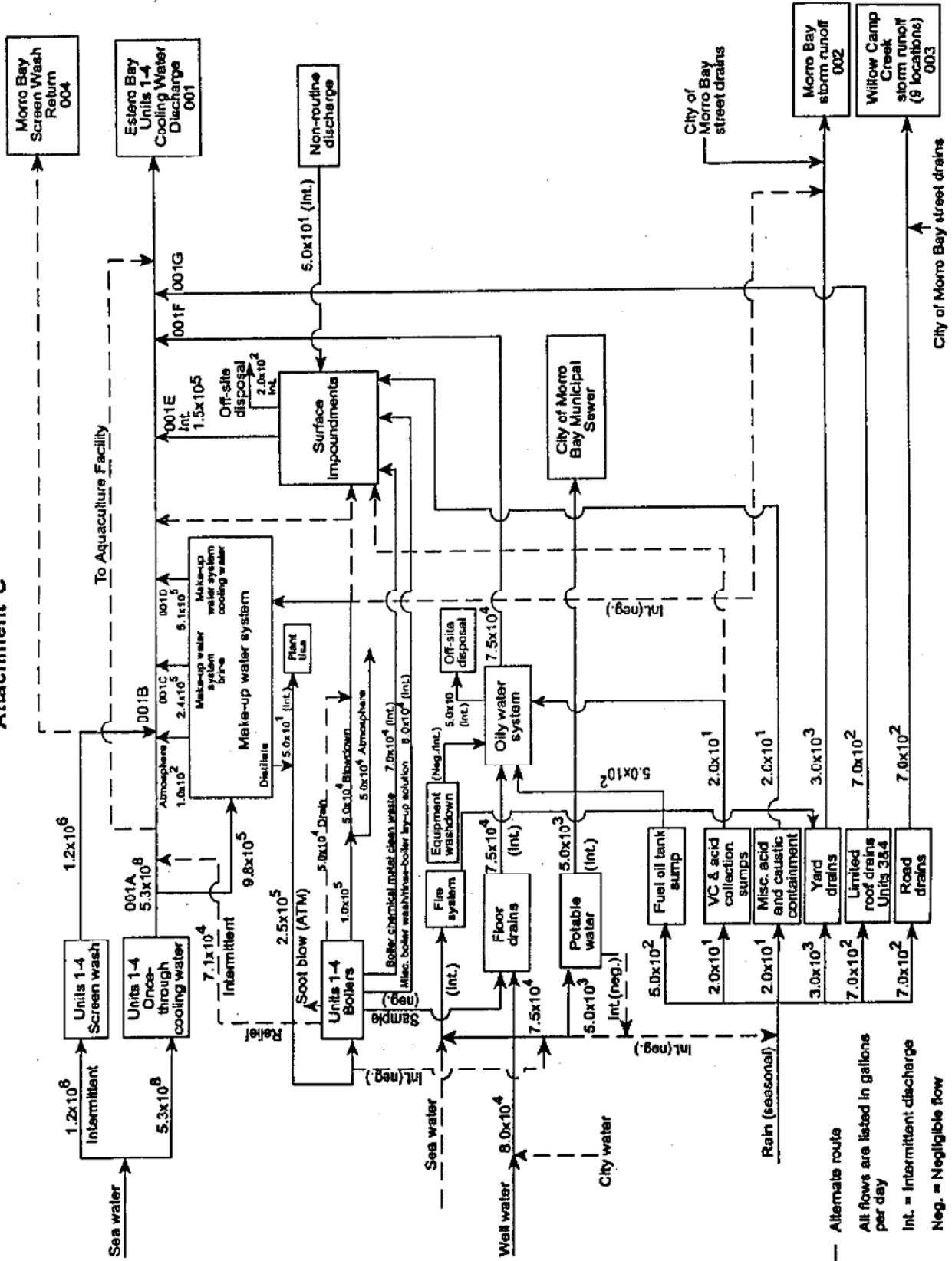


Figure 2. Morro Bay Power Plant storm water drain locations.

940219/S10

Attachment "C"



Morro Bay Power Plant Water Flow Schematic

Alternate route
All flows are listed in gallons per day
Int. = Intermittent discharge
Neg. = Negligible flow

940219/PC15



California Regional Water Quality Control Board
Central Coast Region



order

Terry Tamminen
 Secretary for
 Environmental
 Protection

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Arnold Schwarzenegger
 Governor

October 15, 2004

Steve Goschke
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DUKE ENERGY MORRO BAY POWER PLANT: REVISION OF MONITORING AND REPORTING PROGRAM 95-28

Mr. Goschke:

This letter transmits a revised Monitoring and Reporting Program for the Morro Bay Power Plant. Please note that the following requirements have been added on page 5:

“Every discharge from hazardous waste surface impoundments 1, 2 and 3 to the NPDES wastewater system must be sampled and analyzed for metals and pH. At least one discrete sample must be collected per discharge event per impoundment, and all samples must be analyzed for total (versus dissolved) concentrations of all California Code of Regulations, Title 22 Hazardous Waste metals and for pH. The analytical results shall be included with quarterly monitoring reports.”

These requirements are effective immediately. If you have questions, please call Michael Thomas at 805-542-4623.

Sincerely,

Roger W. Briggs
 Executive Officer

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California Environmental Protection Agency



**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION**

MONITORING AND REPORTING PROGRAM NO 95-28

REVISED OCTOBER 15, 2004

**FOR
DUKE ENERGY MORRO BAY, LLC
MORRO BAY POWER PLANT
SAN LUIS OBISPO COUNTY**

Influent and Effluent Monitoring

Representative samples of each waste stream discharged to the Pacific Ocean shall be collected and analyzed in accordance with the following schedule:

<u>Constituent</u>	<u>Units</u>	<u>Discharge</u>	<u>Sample Type</u>	<u>Frequency</u>
Flow	MGD	001A	Pump Operating Data	Daily
Flow	gpd	001B, C, D, E and F	Estimated	Daily when discharging
Temperature	°F	001 & intakes	Grab	Daily & during heat treatment
Total Residual Chlorine	mg/l	001	Grab	Weekly when chlorinating
pH	--	001 & intakes ¹	Grab	Once during discharge of chemical cleaning & weekly when chlorinating
Dissolved Oxygen	mg/l	001	Grab	Quarterly
Suspended Solids ²	mg/l	001C, E & F	Grab ³	Weekly when discharging
Oil and Grease	mg/l	001C, E & F	Grab ³	" "
Copper	mg/l	001E	Grab ³	Once during each discharge of chemical metal cleaning waste
Iron	mg/l	001E	Grab ³	" "
Copper	mg/l	001	Grab	Annually
Nickel	mg/l	001	Grab	" "
Zinc	mg/l	001	Grab	" "
Ammonia (as N)	mg/l	001	Grab	" "
Chronic Toxicity ⁴	TUc	001	Grab	" "
Arsenic	mg/l	001	Grab	" "
Cadmium	mg/l	001	Grab	" "
Chromium (III) ⁵	mg/l	001	Grab	" "
Chromium (Hex) ⁵	mg/l	001	Grab	" "
Lead	mg/l	001	Grab	" "
Mercury	mg/l	001	Grab	" "
Selenium	mg/l	001	Grab	" "
Silver	mg/l	001	Grab	" "
⁶ Phenolic Compounds (non-chlorinated)	mg/l	001	Grab	" "
⁶ Chlorinated Phenolics	mg/l	001	Grab	" "
⁶ Radioactivity	pci/l	001	Grab	" "
⁶ Acrolein	mg/l	001	Grab	" "
⁶ Antimony	mg/l	001	Grab	" "
⁶ Bis(2-chloroethoxy) Methane	mg/l	001	Grab	" "

⁶ Bis(2-chloroisopropyl) Ether	mg/l	001	Grab	"	"
⁶ Chlorobenzene	mg/l	001	Grab	"	"
⁶ Di-n-butyl Phthalate	mg/l	001	Grab	"	"
⁶ Dichlorobenzenes	mg/l	001	Grab	"	"
⁶ 1,1-dichloroethylene	mg/l	001	Grab	"	"
⁶ Diethyl Phthalate	mg/l	001	Grab	"	"
⁶ Dimethyl Phthalate	mg/l	001	Grab	"	"
⁶ 4,6-dinitro-2-methylphenol	mg/l	001	Grab	"	"
⁶ 2,4-dinitrophenol	mg/l	001	Grab	"	"
⁶ Ethylbenzene	mg/l	001	Grab	"	"
⁶ Fluoranthene	mg/l	001	Grab	"	"
⁶ Hexachlorocyclopentadiene	mg/l	001	Grab	"	"
⁶ Isophorone	g/l	001	Grab	"	"
⁶ Nitrobenzene	mg/l	001	Grab	"	"
⁶ Thallium	mg/l	001	Grab	"	"
⁶ Toluene	g/l	001	Grab	"	"
⁶ 1,1,2,2-tetrachloroethane	mg/l	001	Grab	"	"
⁶ Tributyltin	µg/l	001	Grab	"	"
⁶ 1,1,1-trichloroethane	g/l	001	Grab	"	"
⁶ 1,1,2-trichloroethane	mg/l	001	Grab	"	"
⁶ Acrylonitrile	µg/l	001	Grab	"	"
⁶ Benzene	mg/l	001	Grab	"	"
⁶ Benzidine	ng/l	001	Grab	"	"
⁶ Beryllium	µg/l	001	Grab	"	"
⁶ Bis(2-chloroethyl) Ether	µg/l	001	Grab	"	"
⁶ Bis(2-ethylhexyl) Phthalate	mg/l	001	Grab	"	"
⁶ Carbon tetrachloride	mg/l	001	Grab	"	"
⁶ 1,4-dichlorobenzene	mg/l	001	Grab	"	"
⁶ 3,3-dichlorobenzidine	µg/l	001	Grab	"	"
⁶ 1,2-dichloroethane	mg/l	001	Grab	"	"
⁶ dichloromethane	mg/l	001	Grab	"	"
⁶ 1,3-dichloropropene	mg/l	001	Grab	"	"
⁶ 2,4-dinitrotoluene	mg/l	001	Grab	"	"
⁶ 1,2-diphenylhydrazine	µg/l	001	Grab	"	"
⁶ Halomethanes	mg/l	001	Grab	"	"
⁶ Hexachlorobenzene	ng/l	001	Grab	"	"
⁶ Hexachlorobutadiene	mg/l	001	Grab	"	"
⁶ Hexachloroethane	mg/l	001	Grab	"	"
⁶ N-nitrosodimethylamine	mg/l	001	Grab	"	"
⁶ N-nitrosodiphenylamine	mg/l	001	Grab	"	"
⁶ PAHs	µg/l	001	Grab	"	"
PCBs	ng/l	001	Grab	"	"
⁶ TCDD equivalents	µg/l	001	Grab	"	"
⁶ Tetrachloroethylene	mg/l	001	Grab	"	"
⁶ Trichloroethylene	mg/l	001	Grab	"	"
⁶ 2,4,6-trichlorophenol	µg/l	001	Grab	"	"
⁶ Vinyl Chloride	mg/l	001	Grab	"	"

* See Ocean Plan, Appendix I, Definition of Terms.

¹Intake samples, when required, shall be coordinated so as to sample the same water mass (intake sampling time plus plant and conduit detention time yields discharge sampling time).

²When suspended solids analysis or observations of water quality conditions in Morro Bay indicate noncompliance may be due to intake water quality, concurrent intake samples shall be collected to verify such is the case. Analysis of brine waste streams shall be by approved methods.

³When more than one discharge is sampled, a flow-weighted composite of grab samples may be analyzed, rather than each specific grab sample. Grab samples must be properly preserved and stored (in accordance with the latest edition of "Guidelines Establishing Test Procedures for Analysis of Pollutants" promulgated by the United States Environmental Protection Agency) for compositing with other discharge samples when they become available.

⁴The following test shall be used to measure TUc. Abalone has been determined the most sensitive test species. Dilution and control water should be obtained from an unaffected area of the receiving waters. The sensitivity of the test organisms to a reference toxicant shall be determined concurrently with each bioassay test and reported with the test results.^c

Constituent	Effect	Test Duration	Reference
abalone, <i>Haliotis rufescens</i>	abnormal shell development	48 hours	*

***Bioassay Reference**

Weber, C.I., W.B. Horning, II, D.J. Klemm, T.W. Neiheisel, P.A. Lewis, E.L. Robinson, J. Menkedick, and F. Kessler (eds.). 1988. Short-term methods for estimating the chronic toxicity of effluent and receiving waters to marine and estuarine organisms. EPA-600/4-87/028. National Technical Information Service, Springfield, VA.

⁵May be monitored as total chromium.

⁶In lieu of sampling for these constituents, the Discharger may submit certification that such constituents are not added to the waste stream, and that no change has occurred from activities that could cause such constituents to be present in the waste stream. Such election does not relieve the Discharger from the requirement to meet the limitations set forth in this permit.

Intake Structure Monitoring

Annually, the Discharger shall measure bar rack approach velocity and sediment deposition at intake structures. The Discharger shall dredge as necessary to eliminate sand and silt buildup at intake structures and shall routinely clean bar racks as necessary to maintain bar rack approach velocities as close as practicable to design velocities.

Bottom Sediment Monitoring

The following stations shall be monitored to determine any effects of the discharge on the ocean environment:

Station	Description
A1 (Inactive)	Outside the mouth of discharge canal in 15 - 25 feet of water.
A2	400 feet north of A1 in 15 - 25 feet of water.
A3 (Inactive)	1200 feet north of A1 in 15 - 25 feet of water.
A4	2800 feet north of A1 in 15 - 25 feet of water.
A5	400 feet west of A1 in 15 - 25 feet of water.
A6	3000 feet south of South Breakwater in 15 - 25 feet of water.
A7	10,000 feet north of A1 in 15 - 25 feet of water.
A8	Adjacent to plant intake.

The stations shall be permanently marked or some method established to locate the same point every time. Stations A1

and A3 are being retained but need not be sampled until further notice.

Parameter	Units	Sampling Stations	Sampling Frequency
Particle Size (incl. & retained on #200 sieve)	microns	A2,A4,A5,A6,A7 and A8	Annually (August or September)
Arsenic	mg/kg	" "	" "
Cadmium	mg/kg	" "	" "
Copper	mg/kg	" "	" "
Mercury	mg/kg	" "	" "
Nickel	mg/kg	" "	" "
Lead	mg/kg	" "	" "
Zinc	mg/kg	" "	" "
Hexavalent Chromium	mg/kg	" "	" "
Sediment Sulfides	mg/kg	" "	" "
PCBs	mg/kg	" "	" "

The following procedure shall be carried out for sampling and analyzing ocean bottom sediments:

1. Duplicate samples shall be taken at each station and shall be analyzed and reported separately. Samples may be taken either by divers using noncontaminating samplers or by a surface operated grab sampler which will obtain a relatively undisturbed sample. If the surface operated grab sampler is utilized, a subsample (uncontaminated by the sampler) should be taken from the grab. In either case, the top 5 cm of material shall be used for analyses. Enough cores shall be taken at each station to provide sufficient sediment material for the required duplicate analyses.
2. If the contractor encounters rocks or gravel at a station, the station shall be repositioned, as necessary, to obtain a useable sediment sample. Such station location changes shall be reported with the laboratory results.
3. Samples shall be placed in air-tight polyethylene containers. Care shall be taken to ensure the containers are completely filled by the samples and air bubbles are not trapped in the containers. The samples shall be stored immediately at 2 to 4 °C and not frozen or dried. Samples shall be appropriately preserved and total sample storage time shall not exceed two weeks.
4. When processing for analyses, macrofauna and remnants should be removed, taking care to avoid contamination.
5. Sediment metal concentrations are to be determined using a weak acid leachable (WAL) extract on the fine sieved fraction (Flegal, 1981). In this method, sediment samples are filtered through a 100 um sieve, oven dried (60 °C for 24 hrs), and the fine fraction weighed and subjected to a WAL extraction in 1 N HCl at ambient temperature for 24 hours (5 gm dry weight per 50 ml HCl). The leachate is then centrifuged at 2500 RPM for 15 minutes and the supernatant quantitatively diluted to final volume (100 ml). The metals are then analyzed by flame AAS. Sediment metal concentrations are expressed as ug metal normalized to gram salt-free dry weight.
6. Results shall be compared between outfall and control areas using standard statistical techniques. Furthermore, special attention should be directed to Standard Provision C.3. which lists five specific requirements for all monitoring surveys.

Monitoring of Discharge from Hazardous Waste Surface Impoundments

Every discharge from hazardous waste surface impoundments 1, 2 and 3 to the NPDES wastewater system must be sampled and analyzed for metals and pH. At least one discrete sample must be collected per discharge event per impoundment, and all samples must be analyzed for total (versus dissolved) concentrations of all California Code of Regulations, Title 22 Hazardous Waste metals and for pH. The analytical results shall be included with quarterly monitoring reports.

Storm Water Monitoring

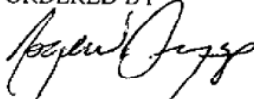
1. A monitoring program shall be developed and implemented for this facility. The monitoring program shall be developed and amended, when necessary.
2. During the wet season (October 1 to April 30), the discharger shall monitor storm water discharges according to the Storm Water Pollution Prevention Plan.
5. Records of all storm water monitoring information and copies of all reports required by this Permit shall be retained for a period of at least three years from the date of sample, observation, or report. Storm water monitoring results shall be reported in the quarterly Self-Monitoring Reports.

Reporting

Monitoring reports shall be submitted for all monitoring and sampling herein (except Bottom Sediment Monitoring) on, or before, the last day of January, April, July and October for the preceding quarter. Monitoring reports shall be submitted for Bottom Sediment Monitoring with the annual report by January 30 of the year following the monitoring.

Note on detection limits: When the discharge limit is below the detection limit (using EPA approved methods), compliance determinations based on analysis of a single sample shall only be undertaken if the concentrations of the constituent of concern in the sample is greater than or equal to the detection limit. In the event a discharge limit is below practical quantitation limits, compliance determination shall be in accordance with the requirements of the Ocean Plan for power plant discharges.

ORDERED BY



Roger W. Briggs
Executive Officer

Date: October 14, 2004

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