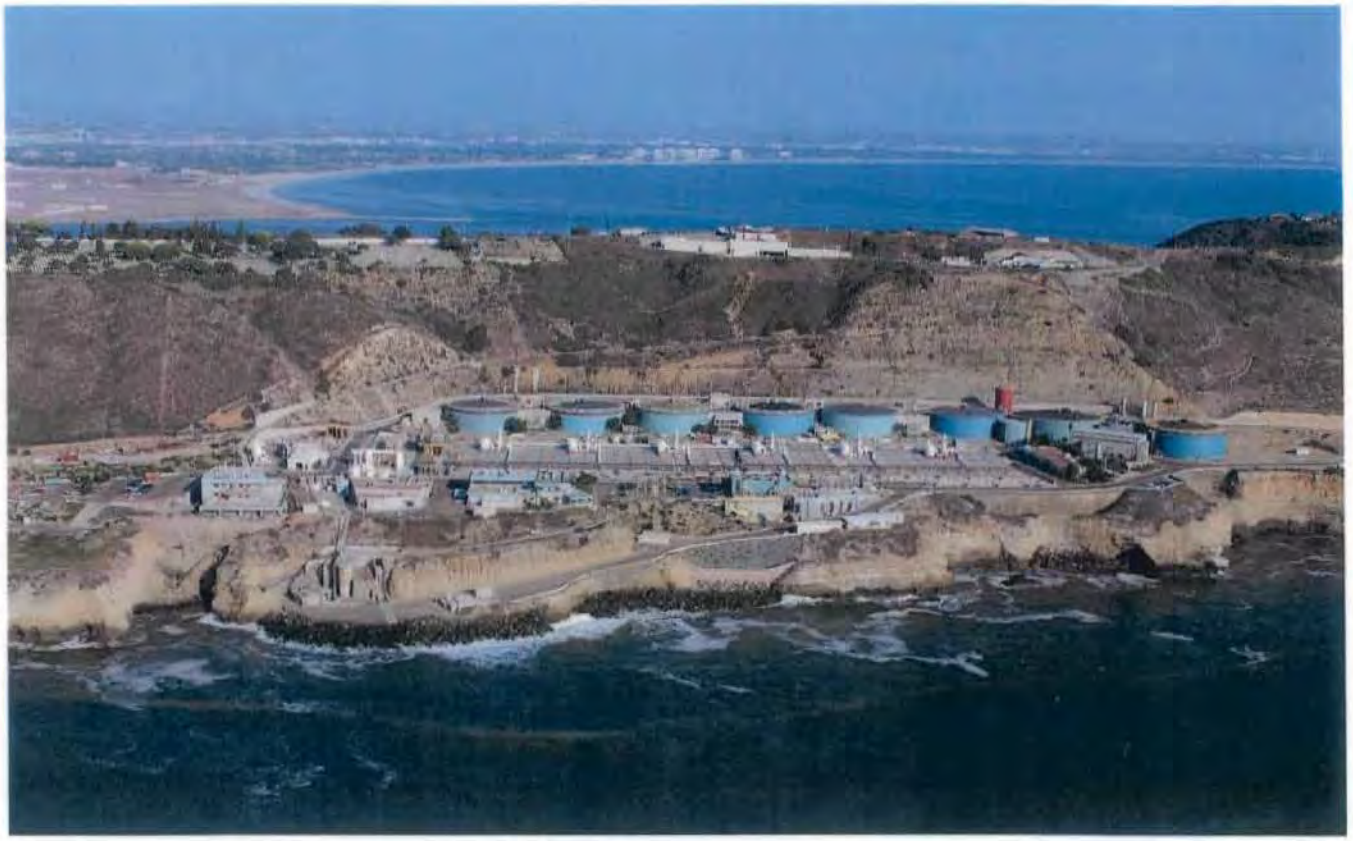
APPLICATION FOR RENEWAL OF NPDES CA0107409 and 301(h) MODIFIED SECONDARY TREATMENT REQUIREMENTS

Point Loma Ocean Outfall



VOLUME II

NPDES APPLICATION

City of San Diego
Metropolitan Wastewater Department

November 2007

Application for Renewal of NPDES CA0107409

&

301(h) Modified Secondary Treatment Requirements for Biochemical Oxygen Demand and Total Suspended Solids

POINT LOMA OCEAN OUTFALL &

POINT LOMA WASTEWATER TREATMENT PLANT

Submitted under provisions of
Section 301(h) of the Clean Water Act

City of San Diego
Metropolitan Wastewater Department
9192 Topaz Way
San Diego, CA 92123
(858) 292-6401

November 2007
(updated)

APPLICATION FOR RENEWAL OF NPDES CA0107409
&
301(h) MODIFIEDSECONDARY TREATMENT REQUIREMENTS

CITY OF SAN DIEGO
POINT LOMA OCEAN OUTFALL

November 2007
(updated)

VOLUME II

Part 1 - OVERVIEW AND BASIS OF APPLICATION

Part 2 - NPDES APPLICATION FORMS

Part 3 - ANTIDEGRADATION ANALYSIS

***Volume II Summary**: Volume II is the second of an eight-volume submittal by the City of San Diego in application for renewal modified secondary treatment requirements for the Point Loma Ocean Outfall wastewater discharge. Part 1 of Volume II presents a brief summary of the Point Loma Ocean Outfall discharge, and presents the basis for the City's application for modified secondary treatment requirements. Applicable NPDES and State of California permit application forms are presented in Part 2. Part 3 of Volume II presents an antidegradation evaluation for NPDES benchmark parameters.*

LIST OF VOLUMES

Part 1, Volume II

Basis of Application

Discharge Overview and Basis of Application

Table of Contents

List of Figures

List of Tables

List of Abbreviations

BOD	biochemical oxygen demand
CFR	Code of Federal Regulations
EPA	U.S. Environmental Protection Agency
MBC	Metro Biosolids Center
mgd	million gallons per day
mg/l	milligrams per liter
North City WRP	North City Water Reclamation Plant
NPDES	National Pollutant Discharge Elimination System
PLOO	Point Loma Ocean Outfall
Point Loma WTP	Point Loma Wastewater Treatment Plant
Regional Board	California Regional Water Quality Control Board, San Diego Region
SBOO	South Bay water Ocean Outfall
South Bay WRP	South Bay Water Reclamation Plant
TSS	total suspended solids
WRP	water reclamation plant
WTP	wastewater treatment plant

Intentional Blank Page

PART 1
DISCHARGE OVERVIEW AND BASIS OF APPLICATION

***Summary**: The City of San Diego requests renewal of NPDES CA0107409 for the discharge of treated wastewater from the Point Loma Wastewater Treatment Plant to the Pacific Ocean via the Point Loma Ocean Outfall. Within the renewed NPDES permit, the City requests reissuance of modified requirements for biochemical oxygen demand (BOD) and total suspended solids (TSS) per requirements established in Section 301(h) of the Clean Water Act. The City has complied with all applicable BOD and TSS requirements within the existing NPDES permit. The 301(h) renewal application presented herein requests no change in existing concentration standards and no increase in mass emission standards. As documented herein, the Point Loma discharge meets all 301(h) criteria for issuance of modified BOD and TSS standards. The City's application is based on an "improved discharge", as defined under 40 CFR 125.58(g). Discharge improvements proposed as part of the NPDES permit renewal include adding disinfection facilities at the Point Loma plant prior to renewal of the NPDES permit. The disinfection facilities would achieve a minimum 2.1 logarithm removal (approximately a 99 percent reduction) in pathogen indicator organisms, and would allow the outfall discharge to comply with recreational body-contact bacteriological standards throughout the water column in all State-regulated ocean waters (all waters within three nautical miles of the coast).*

Purpose of Submittal

The City of San Diego, as the operating agency of the San Diego Metropolitan Sewerage System (Metro System), requests renewal of NPDES Permit CA0107409 and renewal of modified secondary treatment standards established under Section 301(h) of the Clean Water Act.

Existing 301(h) Permit. The discharge of treated wastewater from the E.W. Blom Point Loma Wastewater Treatment Plant (Point Loma WTP) to the Pacific Ocean via the Point Loma Ocean Outfall (PLOO) is currently regulated by a joint permit issued by the California Regional Water Quality Control Board, San Diego Region (Regional Board) and the U.S. Environmental Protection Agency (EPA). Regional Board Order No. R9-2002-0025 (EPA NPDES CA0107409)

establishes modified secondary treatment requirements for the PLOO discharge in accordance with Section 301(h) of the Clean Water Act.

Order No. R9-2002-0025 was originally adopted by the Regional Board on April 10, 2002. EPA issued final approval of the joint NPDES permit (as modified by State Water Resources Control Board Order No. WQO-2002-0013) on September 13, 2002. EPA issued a Notice of Final Stay of Permit Terms (40 CFR 124.16) on May 16, 2003, and the permit became fully effective on June 15, 2003. Order No. R9-2002-0025 expires five years after this effective date (June 15, 2008) and the City is required to submit an application for renewal of the NPDES permit 180 days in advance of this expiration date.

Application for Renewal. This NPDES permit application requests renewal of 301(h) modified discharge limits for total suspended solids (TSS) and biochemical oxygen demand (BOD). This application does not seek any changes to the flow rate or concentration limits established in Order No. R9-2002-0025. This application requests (see Table 1) TSS mass emission limits that are in keeping with limits established in the two prior 301(h) NPDES permits. As shown in Table 1, the requested TSS mass emission limits would result in the reduction of permitted TSS mass emissions during the period of 301(h) modification.

Table 1
Comparison of Proposed TSS Mass Emission Rates with Prior Mass Emission Limits

Year of NPDES Permit	Total Suspended Solids (TSS) Mass Emission Rate (MER) (Metric tons per year)		
	Original TSS MER Established in Order No. 95-106[1,2]	Existing TSS MER Established in Order No. R9-2002-0025[1,3]	Proposed TSS MER for Renewal of NPDES CA0107409[1]
Year 1	15,000	15,000[4]	15,000
Year 2	15,000	15,000[4]	15,000
Year 3	15,000	15,000[4]	15,000
Year 4	15,000	15,000[4]	15,000
Year 5	13,600	13,599	13,598

1 Not to include solids contributions from (1) Tijuana, Mexico via the emergency connection, (2) federal facilities in excess of solids contributions received in calendar year 1995, (3) Metro System flows treated in the City of Escondido, (4) South Bay WRP flows discharged to the South Bay Ocean Outfall, and (5) emergency use of the Metro System by participating agencies over their capacity allotments.

2 Original Point Loma WTP 301(h) NPDES permit adopted in 1995. TSS mass emission limit of 15,000 mt/yr applied through December 31, 1999, and TSS mass emission limit of 13,600 mt/yr applied after January 1, 2000.

3 Mass emission limits within Order No. R9-2002-0025, as amended by State Water Resources Control Board Order No. WQO 2002-0013. TSS mass emission limit of 15,000 mt/yr applied through December 31, 2005, and TSS mass emission limit of 13,599 mt/yr applied after January 1, 2006.

4 The original version of Order No. R9-2002-0025 imposed a TSS MER limit of 13,995 mt/yr for years 1 through 4, but this was revised to 15,000 mt/yr by State Water Resources Control Board Order No. WQO 2002-0013.

This application for renewal of 301(h) requirements is submitted on the basis of an "improved discharge", as defined in 40 CF 125.58. Proposed discharge improvements (which will be implemented prior to renewal of the NPDES permit) include adding disinfection facilities at the Point Loma WTP to remove a minimum of 99 percent of pathogens prior to discharge. Implementing 99 percent pathogen removal at the Point Loma WTP will allow the PLOO discharge to comply with recreational body-contact bacteriological standards throughout the water column (ocean surface to ocean bottom) within all State-regulated waters (all ocean waters within three nautical miles of the coast).

As documented within this multi-volume application, the PLOO discharge complies with all applicable criteria for issuance of 301(h) modified requirements for BOD and TSS.

Metro System Overview

Existing Facilities and Operations. The Metro System provides wastewater service for the City of San Diego and 15 participating agencies. Appendix A presents a detailed description of Metro System facilities and operations. Metro System facilities include sewer interceptors, pump stations, wastewater treatment and water recycling plants, ocean outfalls, sludge pipelines, and biosolids handling facilities. Key Metro System facilities and boundaries of participating agencies are presented in Figure 1 (page 4). Figure 2 (page 5) presents a schematic of Metro System facilities and operations.

As shown in Figures 1 and 2, primary Metro System facilities include:

- North City Water Reclamation Plant (North City WRP),
- Metro Biosolids Center (MBC),
- South Bay Water Reclamation Plant (South Bay WRP),
- South Bay Ocean Outfall (SBOO),
- Pump Station No. 1,
- Pump Station No. 2, and
- Point Loma WTP and PLOO.

Each of these Metro System facilities plays a key role in Point Loma WTP operations and NPDES permit compliance. Brief descriptions of these facilities are presented below.

North City WRP. The 30 mgd North City WRP develops recycled water for delivery to customers in the North City region. Excess North City WRP treated wastewater is returned to the sewer for transport to the Point Loma WTP. Waste solids are directed to the MBC for digestion and dewatering.

Figure 1
Metro System Facilities and
Participating Agency Service Areas

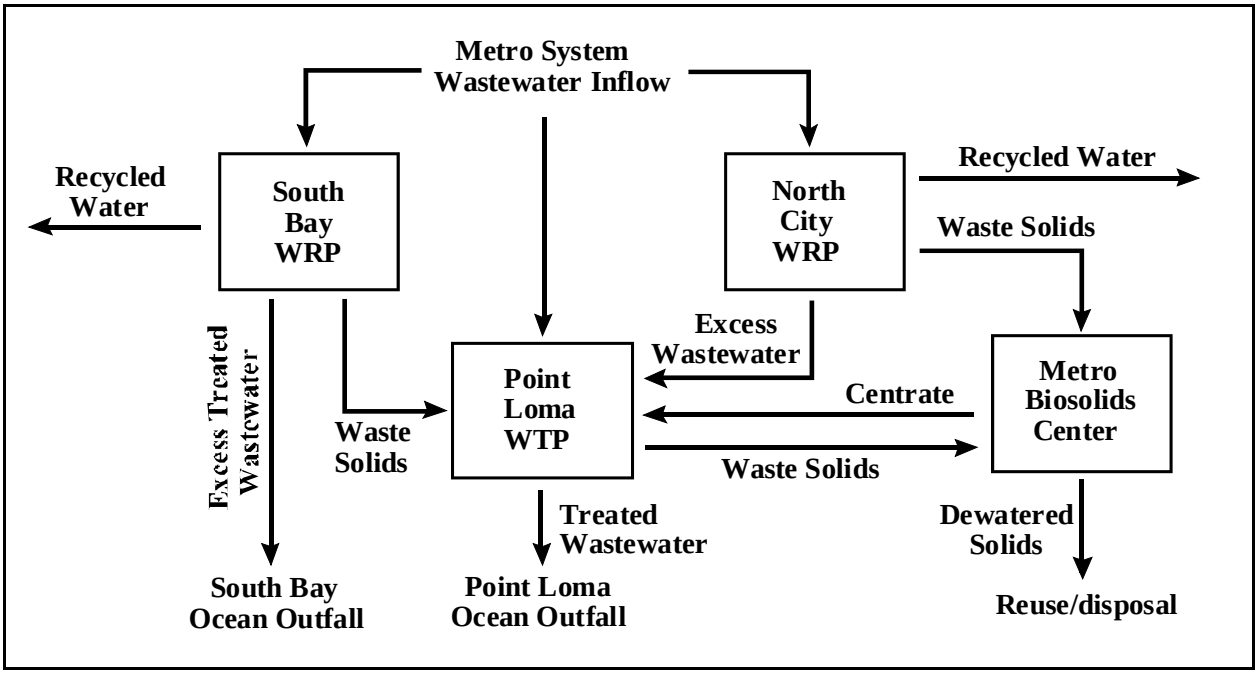


Figure 2 - Schematic of Metro System Operations

Metro Biosolids Center. MBC digests and dewaters waste biosolids from the North City WRP, and dewaters digested biosolids received from the Point Loma WTP.

South Bay Water Reclamation Plant. The 15 mgd South Bay WRP produces recycled water for customers within the South Bay region. Excess South Bay WRP treated wastewater is directed to the SBOO. Waste solids are directed to the Point Loma WTP through the South Metro Interceptor and Pump Station Nos. 1 and 2.

South Bay Ocean Outfall. SBOO discharges wastewater approximately 3.5 miles off the coast of the International Border at a depth of approximately 95 feet.

Pump Station No. 1. Pump Station No. 1 conveys wastewater from the southern portion of the Metro System through the South Metro Interceptor to Pump Station No. 2.

Pump Station No. 2. Pump Station No. 2 conveys Metro System wastewater to the Point Loma WTP. Pump Station No. 2 also provides initial screening and chemical addition. (See Appendix A for a description of Metro System chemical use, application points, purposes, and dose rates.)

Point Loma WTP. The Point Loma WTP is the terminal treatment facility in the Metro System. The Point Loma WTP provides 240 mgd of advanced primary treatment capacity. Treatment processes include screening, grit removal, and chemically-assisted primary treatment to achieve at least 80 percent removal of influent suspended solids. Treated wastewater from the plant is discharged to the PLOO. (See Appendix A for a description of Point Loma WTP treatment facilities, operations, and chemical use.)

Point Loma Ocean Outfall. The PLOO discharges wastewater approximately 4.5 miles off the coast of Point Loma at a discharge depth of 310 feet[1]. The PLOO diffuser system is 4,992 feet long with 416 ports - 208 ports per each diffuser leg. The City employs a comprehensive discharge program to protect Point Loma receiving waters. This comprehensive program includes:

- an industrial and non-industrial toxics control program (Urban Area Pretreatment Program) to prevent harmful constituents from entering the sewer system,
- development and marketing of recycled water supplies at the 30 mgd North City WRP to lessen solids loads directed to the Point Loma WTP and to reduce the amount of wastewater discharged to the ocean,
- development and marketing of recycled water supplies at the 15 mgd South Bay WRP to lessen Point Loma WTP hydraulic loads and to reduce the amount of wastewater discharged to the ocean,
- advanced primary treatment at the Point Loma WTP to achieve a minimum of 80 percent removal (system-wide) of TSS and 58 percent removal (system-wide) of BOD,
- comprehensive monitoring to assess Point Loma WTP influent and effluent quality,
- discharge to the ocean through a highly efficient ocean outfall that achieves a high initial dilution, discharges the wastewater far offshore (beyond the three-nautical-mile limit of State of California waters), and discharges the wastewater at a sufficient depth to trap the waste plume below the surface, and
- comprehensive monitoring of ocean receiving waters, sediments, fish, and benthic invertebrate species.

Proposed Improvements. Order No. R9-2002-0025 does not require disinfection of Point Loma WTP effluent prior to discharge to the PLOO. The Ocean Plan (see Appendix T) establishes bacteriological standards for body-contact recreation at beaches, coastal waters, kelp

[1] While this report describes the PLOO discharge depth as 310 feet, the actual discharge depth varies with tidal cycles. Due to the height of the diffuser pipe, the depths of the outfall diffuser ports range from 306 to 313 feet below mean lower low water. Maximum water depths in the vicinity of the diffuser are approximately 320 feet.

beds, and other areas where body-contact recreation is designated by the Regional Board as a beneficial use.

The Point Loma Ocean Outfall discharges beyond the three-mile-limit of State waters. As documented in Appendix C, all but a few of the more than 10,000 bacteriological samples collected during recent years at the edge of the three-mile limit demonstrate compliance with applicable state and federal water quality body-contact recreational standards. The infrequent instances of outfall-related elevated bacteriological concentrations occurred primarily on the ocean bottom near the edge of the three-mile limit.

The City has determined (see Appendix C) that a reduction of Point Loma WTP effluent bacteriological indicator organisms by 2.1 logarithms (approximately 99 percent) would prevent the outfall ocean discharge from causing exceedance of Ocean Plan recreational bacteriological body-contact recreational standards throughout the water column (from water surface to ocean bottom) within the three-mile-limit of State-regulated waters. The City has designed and installed effluent disinfection facilities at the Point Loma WTP, and has submitted a request to the Regional Board to initiate operation of the disinfection facilities under Order No. R9-2002-0025. The City will initiate effluent disinfection at the Point Loma WTP upon receipt of Regional Board approval.

The prototype disinfection facilities (see Appendices A and D) would achieve the 2.1 logarithm reduction in indicator organisms through the injection of a 12 percent solution of sodium hypochlorite (at a 7 mg/l dose rate) in the effluent channel. As documented in Appendix D, the outfall would provide sufficient contact time to achieve the reduction in indicator organisms, and all chlorine residual in the outfall would be consumed prior to the effluent exiting the PLOO diffuser ports. Effluent toxicity tests of disinfected Point Loma WTP effluent show that the disinfected effluent will comply with applicable toxicity standards. The disinfected effluent will also comply with Ocean Plan standards for chlorinated byproducts.

Discharge Compliance

The PLOO discharge has achieved 100 percent compliance with the 301(h) modified BOD and TSS limits established in Order No. R9-2002-0025.

BOD Removal. Table 2 (page 8) summarizes system-wide BOD removal achieved by Metro System facilities during 2002-2006. As shown in Table 2, 100 percent compliance was achieved with the annual average 58 percent removal requirement.

Table 2
System-Wide BOD Removal, 2002-2006
Compliance with 58 Percent BOD Removal Requirement

Month	System-Wide BOD_5 Percent Removal[1]				
	2002	2003	2004	2005	2006
Jan	65	67	62	62	65
Feb	61	65	64	62	66
Mar	67	63	62	60	63
Apr	66	61	64	61	63
May	69	61	65	60	64
Jun	70	61	64	59	62
Jul	68	62	63	60	60
Aug	69	64	60	62	64
Sep	71	66	61	63	67
Oct	68	65	66	60	69
Nov	65	67	63	63	67
Dec	68	66	62	63	66
Annual Average	67	64	63	61	65
Maximum Month	71	67	66	63	69
Minimum Month	61	61	60	59	60

1 BOD percent removal computed on a system-wide basis. Data from PLOO annual monitoring reports submitted to the Regional Board for 2002-2006.

In addition to achieving compliance with the 58 percent annual average BOD percent removal requirement during 2002-2006, the Metro System achieved at least 59 percent BOD removal during each month of this period.

TSS Removal. The PLOO discharge also achieved 100 percent compliance with the minimum monthly TSS percent removal requirement of 80 percent. Table 3 (page 9) summarizes Metro System system-wide TSS removal during 2002-2006.

As shown in the table, system-wide monthly TSS percent removals during 2002-2006 ranged from 83 percent to 90 percent. In the absence of a 301(h) modification, federal secondary treatment standards (40 CFR 133.102) mandate 85 percent removal of TSS. The Point Loma WTP achieved 85 percent TSS removal or better during 55 of the 60 months (92 percent of the months) during 2002-2006.

Table 3
System-Wide TSS Removal, 2002-2006
Compliance with 80 Percent TSS Removal Requirement

Month	System-Wide TSS Percent Removal[1]				
	2002	2003	2004	2005	2006
Jan	86	87	84	85	87
Feb	83	86	86	85	88
Mar	86	86	86	86	87
Apr	86	86	86	86	86
May	86	85	86	86	87
Jun	85	86	86	84	88
Jul	83	86	86	84	85
Aug	85	87	86	87	87
Sep	88	87	86	87	90
Oct	87	85	87	85	90
Nov	86	85	86	87	89
Dec	86	86	86	88	87
Annual Average	86	86	86	86	88
Maximum Month	88	87	87	88	90
Minimum Month	83	85	84	84	85

1 TSS percent removal computed on a system-wide basis. Data from PLOO annual monitoring reports submitted to the Regional Board for 2002-2006.

TSS Concentration Limit. In addition to establishing percent removal requirements, Order No. R9-2002-0025 established a TSS monthly average effluent concentration limit of 75 mg/l. Table 4 (page 10) summarizes monthly average TSS concentrations during 2002-2006.

As shown in the table, the Point Loma WTP attained 100 percent compliance with the TSS effluent concentration limit. Monthly average Point Loma WTP TSS concentrations during 2002-2006 ranged from 31 mg/l to 52 mg/l.

Table 4
Point Loma WTP Effluent TSS Concentrations, 2002-2006
Compliance with 75mg/l TSS Effluent Limitation

Month	Point Loma WTP Effluent TSS Concentration[1]				
	2002	2003	2004	2005	2006
Jan	41	41	46	38	36
Feb	47	42	44	39	37
Mar	41	40	44	36	37
Apr	42	41	44	38	38
May	43	46	42	40	35
Jun	47	44	44	45	34
Jul	52	44	44	47	37
Aug	46	41	43	41	37
Sep	39	40	46	42	31
Oct	39	41	38	43	32
Nov	42	41	38	39	34
Dec	45	43	42	39	32
Annual Average	44	42	43	41	35
Maximum Month	52	46	46	47	38
Minimum Month	39	40	38	36	31

1 TSS percent removal computed on a system-wide basis. Data from PLOO annual reports submitted to the Regional Board for 2002-2006.

TSS Mass Emissions. The PLOO effluent discharge has also achieved 100 percent compliance with TSS mass emission limits established in Order No. R9-2002-0025. Additionally, average annual TSS mass emissions have been reduced during the period of modified 301(h) TSS and BOD requirements (1995 to present). Demonstrating this, Figure 3 (page 11) presents PLOO annual TSS mass emissions during:

- 1995, the year the initial 301(h) permit Order No. 95-106 was adopted,
- 1996-2002 (the effective period of Order No. 95-106), and
- 2003-2006 (the effective period of the renewed 301(h) permit, Order No. R9-2002-0025).

As shown in Figure 3, TSS mass emissions have been reduced during the period of 301(h) modification. The City has achieved this system-wide reduction in TSS mass emissions through

a combination of (1) solids removals at North City WRP and MBC, and (2) slight improvements in solids removals at the Point Loma WTP. (As documented in the attached application, 2006 was the best ever year to date for Point Loma WTP in terms of effluent TSS concentrations and achieved TSS percent removal.) Metro System operators continue to fine-tune operations (including minor adjustment of the chemical dose rates shown in Appendix A) to improve the consistency and rate of system-wide solids removal.

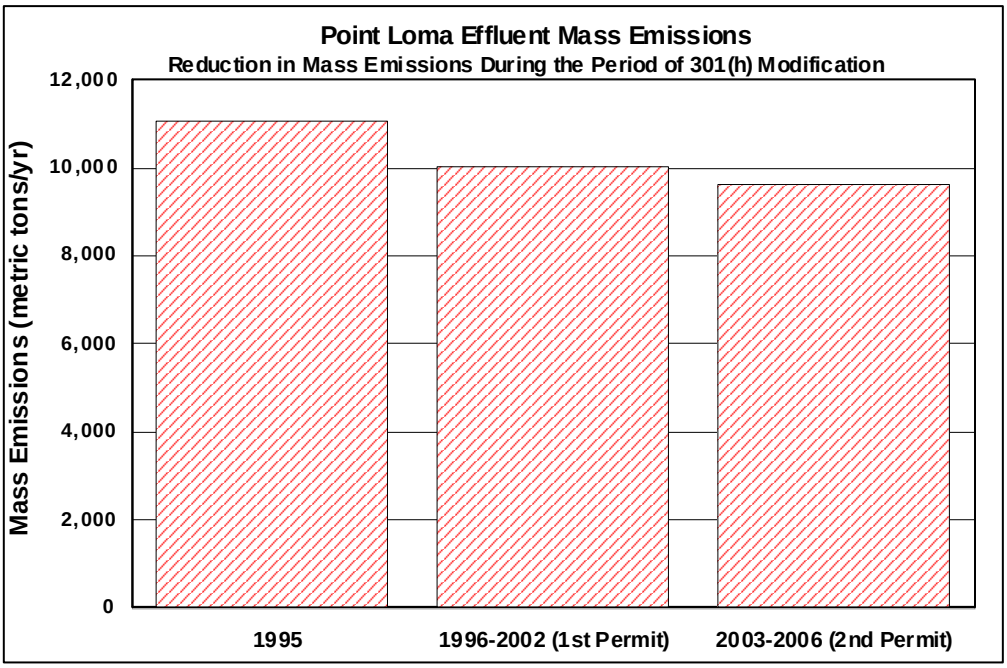


Figure 3 Reduction in Point Loma WTP Effluent TSS Mass Emissions During Period of 301(h) Modifications

Organization of Application

This application for modification of secondary treatment requirements has been prepared in accordance with Title 40, Part 125, Subpart G of the *Code of Federal Regulations*, as promulgated in the *Federal Register* by EPA on August 23, 1994. This application is also prepared in accord with *Amended Section 301(h) Technical Support Document* published by EPA in September 1994. This application consists of the following volumes:

Volume I:

Executive Summary. An executive summary of the proposed discharge is presented, along with a summary of how the discharge complies with applicable regulations.

Volume II:

Basis of Application, NPDES Application, and Antidegradation Analysis. The basis of the NPDES and 301(h) renewal request is presented in Part 1 of Volume II, along with a description of the requested permit modifications. NPDES permit application forms are presented in Part 2 of Volume II. Part 3 of Volume II compares PLOO mass emissions with mass emission benchmarks established in Order No. R9-2002-0025. For constituents that exceed the benchmarks, Part 3 evaluates compliance with federal antidegradation regulations.

Volume III:

Large Applicant Questionnaire. Volume III follows the format established in the Large Applicant Questionnaire, 40 CFR 125, Subpart G, Appendix B. Text responses to individual questions are presented with supporting tables and graphics. As necessary, the responses refer to technical appendices presented in Volumes IV through VIII of the submittal package.

Volumes IV-Volume VIII:

Technical Appendices. Volumes IV through VIII of the application present 21 technical appendices that support responses to questions of the large applicant questionnaire. Technical appendices to this 301(h) application are summarized in Table 5 (page 13).

Summary of Findings

The attached application for renewal of NPDES CA0107409 demonstrates that maintaining the existing modified 301(h) requirements for TSS and BOD provide full protection of the ocean environment and beneficial uses. This NPDES renewal application documents that:

- The Point Loma outfall discharge achieved 100 percent compliance with concentration, percent removal, and mass emission limits for BOD and TSS established in the current Point Loma NPDES permit.
- The proposed improved discharge meets the statutory requirements of Section 301(h) of the Clean Water Act.
- During 2002-2006, the Point Loma outfall discharge complied with applicable receiving water standards and federal water quality criteria for the protection of beneficial uses. The proposed improved discharge will continue to meet these standards and criteria.
- The existing TSS and BOD concentration and percent removal limits established in the current Point Loma NPDES permit are consistent with maintaining the existing high quality of ocean waters off the coast of Point Loma.

Table 5
Technical Appendices to the 301(h) Renewal Application

Volume	Appendix	Description
Volume IV	Appendix A	Metro System Facilities and Operations
	Appendix B	Point Loma Ocean Outfall
	Appendix C	Compliance with Water Contact Standards
	Appendix D	Effluent Disinfection Evaluation
	Appendix E	Benthic Sediments and Organisms
	Appendix F	Bioaccumulation Assessment
Volume V	Appendix G	Beneficial Uses Assessment
	Appendix H	Endangered Species
	Appendix I	Proposed Monitoring Program
Volume VI	Appendix J	2006 Annual Biosolids Report
Volume VII	Appendix K	Source Control Program
	Appendix L	2006 Annual Pretreatment Program Report
Volume VIII	Appendix M	Re-entrainment
	Appendix N	Oceanography
	Appendix O	Initial Dilution Simulation Models
	Appendix P	Dissolved Oxygen Demand
	Appendix Q	ROV Inspection of Discharge Zone
	Appendix R	Analysis of Ammonia
	Appendix S	2001 California Ocean Plan
	Appendix T	2005 California Ocean Plan
	Appendix U	Correspondence

- The Point Loma outfall provides a high degree of initial dilution, effectively disperses the discharged wastes, and maintains the dilute waste field more than 100 feet below the ocean surface 99 percent of the time.
- Proposed discharge improvements (effluent disinfection at the Point Loma WTP) will allow for compliance with California Ocean Plan body contact recreational standards throughout all depths in all State-regulated waters.
- A balanced indigenous population of fish, shellfish, benthic infauna, and wildlife currently exists and will continue to be maintained beyond the zone of initial dilution.
- The Point Loma outfall discharge does not create any discernible negative impacts on beneficial uses, fishing, habitats of special significant, recreation, or public water supplies, and the proposed improved discharge will add a further degree of protection to beneficial uses.
- Observations by remotely operated vehicle (ROV) indicate little or no visible accumulation of depositional materials within or beyond the zone of initial dilution.
- Sediment data collected off Point Loma since 1994 demonstrate that no trends in sediment quality (e.g., contaminant accumulation, particle distribution) have been observed since the outfall was placed in operation that would degrade[2] marine life. Concentrations of trace organics, metals, pesticides, PCBs, and PAHs in sediments within and beyond the zone of initial dilution for the outfall, as well as at reference sites continue to be near background levels for the Southern California Bight.
- The City of San Diego industrial waste source control program has been effective in reducing and controlling the discharge of toxic constituents to the sewer system.
- Mass emissions of TSS have been reduced during the period of 301(h) modification.
- The City continues efforts to market recycled water produced at the North City Water Reclamation Plant and South Bay Water Reclamation Plant.

Table 6 (pages 15 through 17) summarizes the overall findings of the comprehensive scientific studies on which this NPDES and 301(h) application are based. Table 6 also summarizes conclusions and compliance issues addressed in EPA's September 13, 2002 Tentative Decision on the City's prior 2001 301(h) application. Additionally, Table 6 summarizes how the proposed improved PLOO discharge will comply with key 301(h) requirements.

[2] As defined in the Ocean Plan, degradation is determined by comparing the waste field and reference sites for characteristic species diversity, population density, contamination, growth anomalies, debility, or supplanting normal species by undesirable plant and animal species. Per the Ocean Plan definition, degradation occurs if there are significant differences (the Ocean Plan defines a "significant difference" as a statistically significant difference in the means of two distributions of results at a 95 percent confidence interval) in any of the following three major biotic groups: demersal fish, benthic invertebrates, or attached algae.

Table 6
Summary of Key Discharge Issues Addressed in this Application

Category	Finding from 2002 EPA Tentative Decision Document[1]	Key Questions Addressed in Attached Application	Conclusions from Attached Application
Stressed Waters and Dissolved Oxygen	The outfall will operate in a manner that complies with applicable State of California water quality standards for dissolved oxygen, suspended solids, and pH (Finding #1 of the 2002 EPA Tentative Decision)	Will retention of existing modified 301(h) limits for TSS and BOD cause stressed waters of dissolved oxygen depression?	The discharge does not and will not discernibly affect TSS concentrations, concentrations of toxic pollutants, light transmittance, dissolved oxygen concentrations, or pH in the water column. Waters are not currently stressed, nor will the improved discharge lead to such stressed conditions.
Balanced, Indigenous Population (BIP) Determination	The discharge will not interfere with the protection and propagation of a balanced, indigenous population of fish, shellfish, and wildlife. (Finding #2 of the 2002 EPA Tentative Decision)	Will retention of existing modified 301(h) limits for TSS and BOD impact benthic species, fish, or the propagation of a balanced indigenous population (BIP)?	A Balanced Indigenous Population (BIP) is maintained beyond the zone of initial dilution (ZID) for the existing discharge, and a BIP will be maintained beyond the ZID for the improved PLOO discharge. Sediment quality data collected since 1994 demonstrate that no trends in sediment chemistry or deposition have been observed since the outfall was placed in operation that would degrade marine life. Concentrations of contaminants (e.g., trace organics, metals) in benthic sediments near and beyond the outfall continue to be near background levels for the Southern California Bight (SCB). Sediment BOD concentrations near the outfall continue to be within the range typically seen along the coast of the Point Loma region. Key species parameters such as total infaunal abundance, species diversity, Benthic Response Index (BRI), and population abundances of indicator species are maintained within the limits of variability that typify natural benthic communities of the SCB. This is expected to continue with the improved discharge. The Point Loma WTP achieved 85 percent or more TSS removal during 55 of 60 months during 2002-2006. The City's EPA-approved Urban Area Pretreatment Program (which includes a public education and household hazardous waste program) has been highly effective in reducing discharges of toxic compounds to the sewer system. Additionally, outfall provides a high degree of initial dilution. The waste field is trapped far beneath the surface, and is efficiently and rapidly dispersed. The erosional environment at the extended outfall site and the location of the outfall adjacent to the shelf break prevent the accumulation of solids. The lack of visible deposition of solids in the outfall zone is confirmed by remotely operated vehicle (ROV) visual inspection. Because of these factors, benthic species, fish, and other marine aquatic life will continue to be protected.

Table 6
Summary of Key Discharge Issues Addressed in this Application

Category	Finding from 2002 EPA Tentative Decision Document[1]	Key Questions Addressed in Attached Application	Conclusions from Attached Application
Bacteriological Standards and Recreation	The discharge will allow for recreational activities (Finding #2 of the 2002 EPA Tentative Decision)	Will the PLOO discharge comply with the 2005 version of the California Ocean Plan, and will the discharge comply with body-contact recreational standards throughout the water column in State-regulated waters?	The existing discharge complied with bacteriological standards established in the current NPDES permit. Receiving water data indicate that the PLOO plume impinged on State-regulated waters less than one percent of the time during 2002-2006, and such impingement events usually occurred in deep waters near the ocean bottom. The proposed improved discharge includes disinfection to achieve a minimum 2.1 logarithm reduction (approximately 99 percent) of pathogen indicator organisms in the Point Loma WTP effluent. The City has designed and installed the applicable disinfection facilities, and awaits Regional Board approval to initiate disinfection operations. When implemented, the PLOO discharge will maintain compliance with California Ocean Plan recreational body-contact standards throughout the water column (ocean surface to ocean bottom) in all State-regulated waters. No recreational water contact uses are known to exist off Point Loma beyond State-regulated waters.
Public Water Supplies	The discharge will not adversely impact public water supplies. (Finding #2 of the 2002 EPA Tentative Decision)	Not applicable; no public water supplies are endangered.	No impact on existing or planned water supplies.
Monitoring Program	The applicant has a well-established monitoring program (Finding #3 of the 2002 EPA Tentative Decision)	Is the monitoring program effective in assessing potential impacts?	The City's monitoring program is one of the (if not the) most comprehensive in the world, and includes influent monitoring, effluent monitoring, receiving water monitoring, sediment chemistry monitoring, benthic monitoring, and fish and fish tissue monitoring. The program includes a comprehensive array of reference and outfall stations to (1) demonstrate compliance with applicable requirements, and (2) allow for analysis of how the discharge affects the marine environment. The monitoring program also incorporates recommendations of the *Model Monitoring Program for Large Ocean Dischargers in Southern California* developed by the Southern California Coastal Water Research Project (SCCWRP) for implementation by the Southern California Regional Boards.

Table 6
Summary of Key Discharge Issues Addressed in this Application

Category	Finding from 2002 EPA Tentative Decision Document[1]	Key Questions Addressed in Attached Application	Conclusions from Attached Application
Impacts on Other Discharges	The discharge will not result in any additional treatment requirements on any other point or nonpoint source. (Finding #4 of the 2002 EPA Tentative Decision)	Will retention of existing modified 301(h) limits for TSS and BOD affect other point or non-point dischargers?	The discharge does not and will not affect any other point or nonpoint dischargers. The offshore distance of the outfall sufficiently separates the Point Loma discharge from point and nonpoint sources along the shore. Other regional offshore (outfall) discharges are sufficiently distant so as to be unlikely to interfere with each other.
Toxics	The City has an existing pretreatment program and an Urban Area Pretreatment Program. (Findings #5, #6 and #7 of the 2002 EPA Tentative Decision)	Has the City complied with applicable source control requirements?	The City implemented and received EPA approval for an Urban Area Pretreatment Program in 1996. The City continues to implement public education and non-industrial source control actions, such as the City's Household Hazardous Waste Program. The Point Loma discharge continues to comply with California Ocean Plan water quality standards for toxics and with applicable federal water quality criteria. Mass emissions of chromium, lead, nickel, silver, and zinc have been reduced by a factor of approximately ten from those 25 years ago.
Mass Emissions	The discharge will not result in new or substantially increased mass emissions. (Finding #8 of the 2002 EPA Tentative Decision)	Will the discharge result in increased mass emissions?	The City is not requesting any increase in mass emission limits as part of this application for renewal of 301(h) NPDES requirements for the PLOO. Existing mass emission rates are in keeping with maintaining compliance with State water quality standards, federal water quality criteria, and protecting beneficial uses.
Water Quality Standards	The discharge attains State water quality standards and Federal water quality criteria (Finding #9 of the 2002 EPA Tentative Decision)	Does the discharge comply with applicable water quality standards?	The PLOO discharge complies with all applicable California Ocean Plan receiving water standards and federal water quality criteria for the protection of marine aquatic life and human health. The discharge complies with the majority of these standards by multiple orders of magnitude.

1 Findings presented within: *Tentative Decision of the Regional Administrator Pursuant to 40 CFR Part 125, Subpart G, City of San Diego's Point Loma Wastewater Treatment Plant, Application for a Modified NPDES Permit Under Section 301(h) of the Clean Water Act.* U.S. Environmental Protection Agency, Region IX, February 8, 2002.

Intentional Blank Page

Part 2, Volume II

NPDES Application Forms

NPDES APPLICATION FORMS

Table of Contents

EPA NPDES Form 1

Renewal of NPDES CA0107409

Please print or type in the unshaded areas only.

Form Approved. OMB No. 2040-0086.

FORM 1 GENERAL

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY
GENERAL INFORMATION
Consolidated Permits Program
(Read the "General Instructions" before starting.)

I. EPA I.D. NUMBER

S		T/A	C
F			D

LABEL ITEMS

I. EPA I.D. NUMBER
III. FACILITY NAME
V. FACILITY MAILING ADDRESS
VI. FACILITY LOCATION

PLEASE PLACE LABEL IN THIS SPACE

GENERAL INSTRUCTIONS

If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill-in area below. Also, if any of the preprinted data is absent *(the area to the left of the label space lists the information that should appear)*, please provide it in the proper fill-in area(s) below. If the label is complete and correct, you need not complete Items I, III, V, and VI *(except VI-B which must be completed regardless)*. Complete all items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.

II. POLLUTANT CHARACTERISTICS

INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of **bold-faced terms**.

SPECIFIC QUESTIONS	Mark "X" YES	NO	FORM ATTACHED	SPECIFIC QUESTIONS	Mark "X" YES	NO	FORM ATTACHED
A. Is this facility a **publicly owned treatment works** which results in a **discharge** to **waters of the U.S.**? (FORM 2A)	X (16)	(17)	X (18)	B. Does or will this facility *(either existing or proposed)* include a **concentrated animal feeding operation** or **aquatic animal production facility** which results in a **discharge** to **waters of the U.S.**? (FORM 2B)	(19)	X (20)	(21)
C. Is this a facility which currently results in **discharges** to **waters of the U.S.** other than those described in A or B above? (FORM 2C)	(22)	X (23)	(24)	D. Is this a proposed facility *(other than those described in A or B above)* which will result in a **discharge** to **waters of the U.S.**? (FORM 2D)	(25)	X (26)	(27)
E. Does or will this facility treat, store, or dispose of **hazardous wastes**? (FORM 3)	(28)	X (29)	(30)	F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)	(31)	X (32)	(33)
G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)	(34)	X (35)	(36)	H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)	(37)	X (38)	(39)
I. Is this facility a proposed **stationary source** which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)	(40)	X (41)	(42)	J. Is this facility a proposed **stationary source** which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an **attainment area**? (FORM 5)	(43)	X (44)	(45)

III. NAME OF FACILITY

1 SKIP **E.W. Blom Point Loma Wastewater Treatment Plant** (15 | 16 – 29 | 30 ... 69)

IV. FACILITY CONTACT

A. NAME & TITLE *(last, first, & title)*: 2 **Timothy C. Bertch, Ph.D., Metropolitan Wastewater Director** (15 | 16 ... 45)

B. PHONE *(area code & no.)*: **(858) 292-6401** (46 | 48 | 49 | 51 | 52 – 55)

V. FACILTY MAILING ADDRESS

A. STREET OR P.O. BOX: 3 **9192 Topaz Way** (15 | 16 ... 45)

B. CITY OR TOWN: 4 **San Diego** (15 | 16 ... 40)

C. STATE: **CA** (41 | 42)

D. ZIP CODE: **92123** (47 ... 51)

VI. FACILITY LOCATION

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER: 5 **1902 Gatchell Road** (15 | 16 ... 45)

B. COUNTY NAME: **San Diego** (46 ... 70)

C. CITY OR TOWN: 6 **San Diego** (15 | 16 ... 40)

D. STATE: **CA** (41 | 42)

E. ZIP CODE: **92106** (47 ... 51)

F. COUNTY CODE *(if known)*: **NA** (52 ... 54)

CONTINUE ON REVERSE

CONTINUED FROM THE FRONT

VII. SIC CODES (4-digit, in order of priority)

A. FIRST	B. SECOND
4952 (specify) Sanitary services sewer system	NA
C. THIRD	**D. FOURTH**
NA	NA

VIII. OPERATOR INFORMATION

A. NAME	B. Is the name listed in Item VIII-A also the owner?
City of San Diego Metropolitan Wastewater Department	■ YES ☐ NO

C. STATUS OF OPERATOR (Enter the appropriate letter into the answer box: if "Other," specify.)

F = FEDERAL
S = STATE
P = PRIVATE
M = PUBLIC (other than federal or state)
O = OTHER (specify)

M (specify)

D. PHONE (area code & no.): (858) 292-6300

E. STREET OR P.O. BOX: 9192 Topaz Way

F. CITY OR TOWN	G. STATE	H. ZIP CODE	IX. INDIAN LAND
San Diego	CA	92123	Is the facility located on Indian lands? ☐ YES ■ NO

X. EXISTING ENVIRONMENTAL PERMITS

A. NPDES (Discharges to Surface Water)	D. PSD (Air Emissions from Proposed Sources)
9 N CA0107409	9 P NA
B. UIC (Underground Injection of Fluids)	**E. OTHER (specify)**
9 U NA	9 NA (specify)
C. RCRA (Hazardous Wastes)	**E. OTHER (specify)**
9 R NA	9 NA (specify)

XI. MAP

Attach to this application a topographic map of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers, and other surface water bodies in the map area. See instructions for precise requirements. **(See attached)**

XII. NATURE OF BUSINESS (provide a brief description)

Collection and treatment of municipal wastewater produced within the service area of the San Diego Metropolitan Sewer System. Includes production and reuse of recycled water and treatment and reuse/disposal of waste solids removed through wastewater treatment.

XIII. CERTIFICATION (see instructions)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME & OFFICIAL TITLE (type or print)	B. SIGNATURE	C. DATE SIGNED
Timothy C. Bertch, Ph.D. Metropolitan Wastewater Director	Timothy C Bertch	29 Nov 2007

COMMENTS FOR OFFICIAL USE ONLY

EPA NPDES Form 2A

Renewal of NPDES CA0107409

FACILITY NAME AND PERMIT NUMBER:	CA0107409
E.W. Blom Point Loma Wastewater Treatment Plant	

Form Approved 1/14/99
OMB Number 2040-0086

FORM 2A NPDES

NPDES FORM 2A APPLICATION OVERVIEW

APPLICATION OVERVIEW

Form 2A has been developed in a modular format and consists of a "Basic Application Information" packet and a "Supplemental Application Information" packet. The Basic Application Information packet is divided into two parts. All applicants must complete Parts A and C. Applicants with a design flow greater than or equal to 0.1 mgd must also complete Part B. Some applicants must also complete the Supplemental Application Information packet. The following items explain which parts of Form 2A you must complete.

BASIC APPLICATION INFORMATION:

A. **Basic Application Information for all Applicants.** All applicants must complete questions A.1 through A.8. A treatment works that discharges effluent to surface waters of the United States must also answer questions A.9 through A.12.

B. **Additional Application Information for Applicants with a Design Flow ≥ 0.1 mgd.** All treatment works that have design flows greater than or equal to 0.1 million gallons per day must complete questions B.1 through B.6.

C. **Certification.** All applicants must complete Part C (Certification).

SUPPLEMENTAL APPLICATION INFORMATION:

D. **Expanded Effluent Testing Data.** A treatment works that discharges effluent to surface waters of the United States and meets one or more of the following criteria must complete Part D (Expanded Effluent Testing Data):

1. Has a design flow rate greater than or equal to 1 mgd,
2. Is required to have a pretreatment program (or has one in place), or
3. Is otherwise required by the permitting authority to provide the information.

E. **Toxicity Testing Data.** A treatment works that meets one or more of the following criteria must complete Part E (Toxicity Testing Data):

1. Has a design flow rate greater than or equal to 1 mgd,
2. Is required to have a pretreatment program (or has one in place), or
3. Is otherwise required by the permitting authority to submit results of toxicity testing.

F. **Industrial User Discharges and RCRA/CERCLA Wastes.** A treatment works that accepts process wastewater from any significant industrial users (SIUs) or receives RCRA or CERCLA wastes must complete Part F (Industrial User Discharges and RCRA/CERCLA Wastes). SIUs are defined as:

1. All industrial users subject to Categorical Pretreatment Standards under 40 Code of Federal Regulations (CFR) 403.6 and 40 CFR Chapter I, Subchapter N (see instructions); and
2. Any other industrial user that:
   a. Discharges an average of 25,000 gallons per day or more of process wastewater to the treatment works (with certain exclusions); or
   b. Contributes a process wastestream that makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the treatment plant; or
   c. Is designated as an SIU by the control authority.

G. **Combined Sewer Systems.** A treatment works that has a combined sewer system must complete Part G (Combined Sewer Systems).

ALL APPLICANTS MUST COMPLETE PART C (CERTIFICATION)

Form Approved 1/14/99
OMB Number 2040-0086

BASIC APPLICATION INFORMATION

PART A. BASIC APPLICATION INFORMATION FOR ALL APPLICANTS:

All treatment works must complete questions A.1 through A.8 of this Basic Application Information packet.

A.1. Facility Information.

Facility name: E.W. Blom Point Loma Wastewater Treatment Plant

Mailing Address: Metropolitan Wastewater Department, 9192 Topaz Way

Contact person: Timothy C. Bertch, Ph.D.

Title: Metropolitan Wastewater Director

Telephone number: (858) 292-6401

Facility Address (not P.O. Box): 1902 Gatchell Road, San Diego, CA 92106

A.2. Applicant Information. If the applicant is different from the above, provide the following:

Applicant name: City of San Diego Metropolitan Wastewater Department

Mailing Address: 9192 Topaz Way, San Diego, CA 92123

Contact person: Timothy C. Bertch, Ph.D.

Title: Metropolitan Wastewater Director

Telephone number: (858) 292-6401

Is the applicant the owner or operator (or both) of the treatment works?

X owner X operator

Indicate whether correspondence regarding this permit should be directed to the facility or the applicant.

___ facility X applicant

A.3. Existing Environmental Permits. Provide the permit number of any existing environmental permits that have been issued to the treatment works (include state-issued permits).

NPDES	CA0107409	PSD	NA
UIC	NA	Other	NA
RCRA	NA	Other	NA

A.4. Collection System Information. Provide information on municipalities and areas served by the facility. Provide the name and population of each entity and, if known, provide information on the type of collection system (combined vs. separate) and its ownership (municipal, private, etc.).

Name	Population Served	Type of Collection System	Ownership
See Appendix A for list of Metro System member agencies	2.14 million[1]	Separate sanitary sewer	See Appendix A for list of Metro System member agencies
Total population served	2.14 million[1]		

[1] Estimated 2007 Metro System population. See Appendix A for Metro System population projections for future years.

NA = not applicable

A.5. Indian Country.

a. Is the treatment works located in Indian Country?

____ Yes **X** No

b. Does the treatment works discharge to a receiving water that is either in Indian Country or that is upstream from (and eventually flows through) Indian Country?

____ Yes **X** No

A.6. Flow. Indicate the design flow rate of the treatment plant (i.e., the wastewater flow rate that the plant was built to handle). Also provide the average daily flow rate and maximum daily flow rate for each of the last three years. Each year's data must be based on a 12-month time period with the 12th month of "this year" occurring no more than three months prior to this application submittal.

a. Design flow rate **240** mgd

See attached table for 2007 flows to date

	2004 Two Years Ago	2005 Last Year	2006 This Year	
b. Annual average daily flow rate	174	183	170	mgd
c. Maximum daily flow rate	295	325	224	mgd

A.7. Collection System. Indicate the type(s) of collection system(s) used by the treatment plant. Check all that apply. Also estimate the percent contribution (by miles) of each.

X	Separate sanitary sewer	100% %
____	Combined storm and sanitary sewer	NA %

A.8. Discharges and Other Disposal Methods.

a. Does the treatment works discharge effluent to waters of the U.S.? **X** Yes ____ No

If yes, list how many of each of the following types of discharge points the treatment works uses:

i. Discharges of treated effluent	1
ii. Discharges of untreated or partially treated effluent	0
iii. Combined sewer overflow points	0
iv. Constructed emergency overflows (prior to the headworks)	0
v. Other _____	NA

b. Does the treatment works discharge effluent to basins, ponds, or other surface impoundments that do not have outlets for discharge to waters of the U.S.? ____ Yes **X** No

If yes, provide the following for each surface impoundment:

Location: NA

Annual average daily volume discharged to surface impoundment(s) NA mgd

Is discharge ____ continuous or NA intermittent?

c. Does the treatment works land-apply treated wastewater? ____ Yes **X** No

If yes, provide the following for each land application site:

Location: NA

Number of acres: NA

Annual average daily volume applied to site: NA Mgd

Is land application ____ continuous or NA intermittent?

d. Does the treatment works discharge or transport treated or untreated wastewater to another treatment works? ____ Yes **X**[2] No

[2] **All Point Loma Wastewater Treatment Plant (Point Loma WTP) treated effluent is directed to the Point Loma Ocean Outfall (PLOO). All Point Loma WTP digested biosolids are directed to the Metro Biosolids Center for dewatering. See Appendix A for details.**

NA = not applicable

Point Loma Wastewater Treatment Plant
2007 Effluent Flows by Month[1,2]

Month	Monthly Average Point Loma Effluent Flow - 2007[1,2,3]	
	mgd	m^3/sec
January	164	7.18
February	170	7.44
March	165	7.25
April	161	7.05
M ay	157	6.90
June	157	6.90
July	159	6.97
August	160	7.03
September	159	6.95
October	157	6.86
Year-to-Date Average	161	7.05

1 Question No. A.6 requires flow data from within 3 months of the date of application. This table shows Point Loma WTP effluent flows for calendar year 2007 through October.

2 From monthly monitoring reports submitted to the Regional Board during calendar year 2007.

3 Point Loma WTP flows are lower than projected (and lower than flows during prior years) due to extended drought conditions, increased recycled water use, and expanded local water conservation efforts.

If yes, describe the mean(s) by which the wastewater from the treatment works is discharged or transported to the other treatment works (e.g., tank truck, pipe).

Digested sludge pumped via force main to Metro Biosolids Center for dewatering

If transport is by a party other than the applicant, provide:

Transporter name: **NA**

Mailing Address: **NA**
NA

Contact person: **NA**

Title: **NA**

Telephone number: **NA**

For each treatment works that receives this discharge, provide the following:

Name: **Metro Biosolids Center**

Mailing Address: **Metropolitan Wastewater Department, 9192 Topaz Way**
San Diego, CA 92123

Contact person: **Timothy C. Bertch, Ph.D.**

Title: **Metropolitan Wastewater Director**

Telephone number: **(858) 292-6401**

If known, provide the NPDES permit number of the treatment works that receives this discharge. **NA**

Provide the average daily flow rate from the treatment works into the receiving facility. **0.99**[3] mgd

[3] **Digested sludge from Point Loma WTP pumped to Metro Biosolids Center**

e. Does the treatment works discharge or dispose of its wastewater in a manner not included in A.8.a through A.8.d above (e.g., underground percolation, well injection)? ____ Yes **X** No

If yes, provide the following for each disposal method:

Description of method (including location and size of site(s) if applicable):
NA

Annual daily volume disposed of by this method: **NA**

Is disposal through this method ____ continuous or **NA** intermittent?

NA = not applicable

WASTEWATER DISCHARGES:

If you answered "yes" to question A.8.a, complete questions A.9 through A.12 **once for each outfall** (including bypass points) through which effluent is discharged. Do not include information on combined sewer overflows in this section. **If you answered "no" to question A.8.a**, go to Part B, "Additional Application Information for Applicants with a Design Flow Greater than or Equal to 0.1 mgd."

A.9. Description of Outfall.

a. Outfall number: 001

b. Location: San Diego (City or town, if applicable); 92106 (Zip Code); San Diego (County); CA (State); 32° 39' 55" N[4] (Latitude); 117° 19' 25" W[4] (Longitude)

c. Distance from shore (if applicable): 23,472 ft.

d. Depth below surface (if applicable): 300-320 ft.

e. Average daily flow rate: 170 mgd

f. Does this outfall have either an intermittent or a periodic discharge? ____ Yes X No (go to A.9.g.)

If yes, provide the following information:

Number of times per year discharge occurs: NA

Average duration of each discharge: NA

Average flow per discharge: NA mgd

Months in which discharge occurs: NA

g. Is outfall equipped with a diffuser? X Yes ____ No

A.10. Description of Receiving Waters.

a. Name of receiving water: Pacific Ocean

b. Name of watershed (if known): NA

United States Soil Conservation Service 14-digit watershed code (if known): NA

c. Name of State Management/River Basin (if known): NA

United States Geological Survey 8-digit hydrologic cataloging unit code (if known): NA

d. Critical low flow of receiving stream (if applicable):
acute NA cfs chronic NA cfs

e. Total hardness of receiving stream at critical low flow (if applicable): NA mg/l of $CaCO_3$

[4] **Latitude and longitude at the outfall wye (outfall connection to the "Y"-shaped diffuser). A 2-inch-diameter outfall crown vent is located at 32°40' 20" N, 117° 17' 04" W**

NA = not applicable

A.11. Description of Treatment.

a. What levels of treatment are provided? Check all that apply.

X[5] Primary ____ Secondary

____ Advanced ____ Other. Describe: [5] Advanced (chemically assisted) primary treatment

b. Indicate the following removal rates (as applicable):

Design BOD_5 removal or Design $CBOD_5$ removal	> 58	%
Design SS removal	> 80	%
Design P removal	NA	%
Design N removal	NA	%
Other ____	NA	%

c. What type of disinfection is used for the effluent from this outfall? If disinfection varies by season, please describe.

Effluent disinfection is being implemented and will be operational prior to NPDES permit renewal. See Appendix A.

If disinfection is by chlorination, is dechlorination used for this outfall? ____ Yes X[6] No

[6] Dechlorination not required; chlorine residual is consumed during outfall transport.

d. Does the treatment plant have post aeration? ____ Yes X No

A.12. Effluent Testing Information. All Applicants that discharge to waters of the US must provide effluent testing data for the following parameters. Provide the indicated effluent testing required by the permitting authority for each outfall through which effluent is discharged. Do not include information on combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136. At a minimum, effluent testing data must be based on at least three samples and must be no more than four and one-half years apart.

Outfall number: 001

PARAMETER	MAXIMUM DAILY VALUE		AVERAGE DAILY VALUE		
	Value	Units	Value	Units	Number of Samples
pH (Minimum)		s.u.			
pH (Maximum)		s.u.			
Flow Rate					
Temperature (Winter)		See table on following page			
Temperature (Summer)					

* For pH please report a minimum and a maximum daily value

POLLUTANT		MAXIMUM DAILY DISCHARGE		AVERAGE DAILY DISCHARGE			ANALYTICAL METHOD	ML / MDL
		Conc.	Units	Conc.	Units	Number of Samples		
CONVENTIONAL AND NONCONVENTIONAL COMPOUNDS.								
BIOCHEMICAL OXYGEN DEMAND (Report one)	BOD-5			See table on following page				
	CBOD-5							
FECAL COLIFORM								
TOTAL SUSPENDED SOLIDS (TSS)								

END OF PART A.
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE

Point Loma WTP
Flow, Temperature and pH[1]
NPDES Form 2A, Part A.12

Constituent	Units	Maximum Daily Value	Average Daily Value	Minimum Value	Number of Samples
pH	pH Units	7.72	6.88	7.21	Continuous
Flow	mgd	224	170	143	Continuous
Temperature (Nov - Apr)	°C	25.4	23.5	22.6	365
Temperature (May - Oct)	°C	28.1	26.8	24.6	365

1 From Point Loma WTP monthly monitoring reports submitted to the Regional Board for calendar year 2006. (2006 is the most recent year for which a complete 12 month data set is available.)

Point Loma WTP
BOD, Coliform, and TSS[1]
NPDES Form 2A, Part A.12

Constituent	Units	Maximum Daily Value	Average Daily Value	Minimum Value	Number of Samples	Analytical Method	MDL
BOD-5	mg/l	137	102	72	360[2]	5210B	2.0
Fecal Coliform	organisms per 100 ml	Not sampled[3]	Not sampled[3]	Not sampled[3]	0	NA	NA
TSS	mg/l	55	35	22	365	2540D	1.6

1 From Point Loma WTP monthly monitoring reports submitted to the Regional Board for calendar year 2006. (2006 is the most recent year for which a complete 12 month data set is available.)
2 Daily biochemical oxygen demand (BOD) samples are collected, but results from five samples were not obtained.
3 Monitoring and Reporting Program No. R9-2002-0025 does not require monitoring for the listed constituent.

BASIC APPLICATION INFORMATION

PART B. ADDITIONAL APPLICATION INFORMATION FOR APPLICANTS WITH A DESIGN FLOW GREATER THAN OR EQUAL TO 0.1 MGD (100,000 gallons per day).

All applicants with a design flow rate ≥ 0.1 mgd must answer questions B.1 through B.6. All others go to Part C (Certification).

B.1. Inflow and Infiltration. Estimate the average number of gallons per day that flow into the treatment works from inflow and/or infiltration.

8,000,000 gpd **(approx. 4 -5 % of total flow)**

Briefly explain any steps underway or planned to minimize inflow and infiltration.

The City has implemented an aggressive program to replace sewer lines and seal manholes. In addition, the City maintains an extensive metering and modeling program to assess system flows and capacity.

B.2. Topographic Map. Attach to this application a topographic map of the area extending at least one mile beyond facility property boundaries. This map must show the outline of the facility and the following information. (You may submit more than one map if one map does not show the entire area.)

a. The area surrounding the treatment plant, including all unit processes. **(See attached topographic map)**

b. The major pipes or other structures through which wastewater enters the treatment works and the pipes or other structures through which treated wastewater is discharged from the treatment plant. Include outfalls from bypass piping, if applicable.

c. Each well where wastewater from the treatment plant is injected underground.

d. Wells, springs, other surface water bodies, and drinking water wells that are: 1) within 1/4 mile of the property boundaries of the treatment works, and 2) listed in public record or otherwise known to the applicant.

e. Any areas where the sewage sludge produced by the treatment works is stored, treated, or disposed.

f. If the treatment works receives waste that is classified as hazardous under the Resource Conservation and Recovery Act (RCRA) by truck, rail, or special pipe, show on the map where that hazardous waste enters the treatment works and where it is treated, stored, and/or disposed.

B.3. Process Flow Diagram or Schematic. Provide a diagram showing the processes of the treatment plant, including all bypass piping and all backup power sources or redundancy in the system. Also provide a water balance showing all treatment units, including disinfection (e.g, chlorination and dechlorination). The water balance must show daily average flow rates at influent and discharge points and approximate daily flow rates between treatment units. Include a brief narrative description of the diagram.

(See attached process flow diagrams)

B.4. Operation/Maintenance Performed by Contractor(s).

Are any operational or maintenance aspects (related to wastewater treatment and effluent quality) of the treatment works the responsibility of a contractor? ____Yes __X__No

If yes, list the name, address, telephone number, and status of each contractor and describe the contractor's responsibilities (attach additional pages if necessary).

Name: NA

Mailing Address: NA
NA

Telephone Number: NA

Responsibilities of Contractor: NA

B.5. Scheduled Improvements and Schedules of Implementation. Provide information on any uncompleted implementation schedule or uncompleted plans for improvements that will affect the wastewater treatment, effluent quality, or design capacity of the treatment works. If the treatment works has several different implementation schedules or is planning several improvements, submit separate responses to question B.5 for each. (If none, go to question B.6.)

a. List the outfall number (assigned in question A.9) for each outfall that is covered by this implementation schedule.

001 **See attached schedule. See Appendix A for details.**

b. Indicate whether the planned improvements or implementation schedule are required by local, State, or Federal agencies.

____Yes __X__[7] No

[7] **Chlorination is being implemented to ensure compliance with Ocean Plan recreational body-contact standards throughout the water column in State-regulated waters.**

NA = not applicable

c If the answer to B.5.b is "Yes," briefly describe, including new maximum daily inflow rate (if applicable).

NA

d. Provide dates imposed by any compliance schedule or any actual dates of completion for the implementation steps listed below, as applicable. For improvements planned independently of local, State, or Federal agencies, indicate planned or actual completion dates, as applicable. Indicate dates as accurately as possible.

Implementation Stage	Schedule MM / DD / YYYY	Actual Completion MM / DD / YYYY
– Begin construction	___/___/_____	___/___/_____
– End construction	See Appendix A	___/___/_____
– Begin discharge	___/___/_____	___/___/_____
– Attain operational level	___/___/_____	___/___/_____

e. Have appropriate permits/clearances concerning other Federal/State requirements been obtained? X Yes ____No

Describe briefly: NA

B.6. EFFLUENT TESTING DATA (GREATER THAN 0.1 MGD ONLY).

Applicants that discharge to waters of the US must provide effluent testing data for the following parameters. Provide the indicated effluent testing required by the permitting authority for each outfall through which effluent is discharged. Do not include information on combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136. At a minimum, effluent testing data must be based on at least three pollutant scans and must be no more than four and one-half years old.

Outfall Number: 001

POLLUTANT	MAXIMUM DAILY DISCHARGE		AVERAGE DAILY DISCHARGE			ANALYTICAL METHOD	ML / MDL
	Conc.	Units	Conc.	Units	Number of Samples		
CONVENTIONAL AND NONCONVENTIONAL COMPOUNDS.							
AMMONIA (as N)							
CHLORINE (TOTAL RESIDUAL, TRC)							
DISSOLVED OXYGEN		See table on following page					
TOTAL KJELDAHL NITROGEN (TKN)							
NITRATE PLUS NITRITE NITROGEN							
OIL and GREASE							
PHOSPHORUS (Total)		See table on following page					
TOTAL DISSOLVED SOLIDS (TDS)							
OTHER							

END OF PART B.
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE

NA = not applicable

Point Loma WTP
Conventional and Non-Conventional Compounds
NPDES Form 2A, Part B.6

Constituent	Concentration[1] (mg/l)				Number of Samples	Analytical Method
	Maximum Value	Average Value	Minimum Value	MDL		
Ammonia (as N)	37	31	28	0.2	46	4500 NH3 B&E
Total chlorine residual	0[2]	0[2]	0[2]	NA[2]	0	NA[2]
Dissolved oxygen	Not sampled[3]	Not sampled[3]	Not sampled[3]	NA	0	NA
Total Kjeldahl Nitrogen	42	39	36	1.6	4	4500 NH3 B&E
Nitrate plus nitrite (as N)	1.31[4]	0.64[4]	0.13[4]	0.04	4	300
Oil and grease (hexane extractable material)[5]	26.1	9.6	4.7	1.4	365	1644A[5]
Phosphorus	Not sampled[3]	Not sampled[3]	Not sampled[3]	NA	0	NA
Total dissolved solids (TDS)	1840	1470	1100	42	365	2540C

1 From Point Loma WTP monthly monitoring reports submitted to the Regional Board for calendar year 2006. (2006 is the most recent year for which a complete 12 month data set is available.)
2 Point Loma effluent was not chlorinated during 2006.
3 Sample results for 2006 are not available. Monitoring and Reporting Program No. R9-2002-0025 does not require monitoring for the listed constituent.
4 Results shown are for nitrate as nitrogen. Monitoring and Reporting Program No. R9-2002-0025 does not require monitoring for nitrite.
5 Method 1664A measures oil and grease as hexane extractable material.

FACILITY NAME AND PERMIT NUMBER: CA0107409
E.W. Blom Point Loma Wastewater Treatment Plant

Form Approved 1/14/99
OMB Number 2040-0086

BASIC APPLICATION INFORMATION

PART C. CERTIFICATION

All applicants must complete the Certification Section. Refer to instructions to determine who is an officer for the purposes of this certification. All applicants must complete all applicable sections of Form 2A, as explained in the Application Overview. Indicate below which parts of Form 2A you have completed and are submitting. By signing this certification statement, applicants confirm that they have reviewed Form 2A and have completed all sections that apply to the facility for which this application is submitted.

Indicate which parts of Form 2A you have completed and are submitting:

[X] Basic Application Information packet

Supplemental Application Information packet:

[X] Part D (Expanded Effluent Testing Data)

[X] Part E (Toxicity Testing: Biomonitoring Data)

[X] Part F (Industrial User Discharges and RCRA/CERCLA Wastes)

[ ] Part G (Combined Sewer Systems)

ALL APPLICANTS MUST COMPLETE THE FOLLOWING CERTIFICATION.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name and official title: **Timothy C. Bertch, Ph.D., Metropolitan Wastewater Director**

Signature: Timothy C Bertch

Telephone number: **(858) 292-6401**

Date signed: 20 Nov 2007

Upon request of the permitting authority, you must submit any other information necessary to assess wastewater treatment practices at the treatment works or identify appropriate permitting requirements.

SEND COMPLETED FORMS TO:

SUPPLEMENTAL APPLICATION INFORMATION

PART D. EXPANDED EFFLUENT TESTING DATA

Refer to the directions on the cover page to determine whether this section applies to the treatment works.

Effluent Testing: 1.0 mgd and Pretreatment Treatment Works. If the treatment works has a design flow greater than or equal to 1.0 mgd or it has (or is required to have) a pretreatment program, or is otherwise required by the permitting authority to provide the data, then provide effluent testing data for the following pollutants. Provide the indicated effluent testing information and any other information required by the permitting authority for each outfall through which effluent is discharged. Do not include information on combined sewer overflows in this section. All information reported must be based on data collected through analyses conducted using 40 CFR Part 136 methods. In addition, these data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136. Indicate in the blank rows provided below any data you may have on pollutants not specifically listed in this form. At a minimum, effluent testing data must be based on at least three pollutant scans and must be no more than four and one-half years old.

Outfall number: 001 (Complete once for each outfall discharging effluent to waters of the United States.)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/ MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples		
METALS (TOTAL RECOVERABLE), CYANIDE, PHENOLS, AND HARDNESS.											
ANTIMONY											
ARSENIC											
BERYLLIUM											
CADMIUM					See tables on following pages						
CHROMIUM											
COPPER											
LEAD											
MERCURY											
NICKEL											
SELENIUM											
SILVER					See tables on following pages						
THALLIUM											
ZINC											
CYANIDE											
TOTAL PHENOLIC COMPOUNDS											
HARDNESS (AS $CaCO_3$)											
Use this space (or a separate sheet) to provide information on other metals requested by the permit writer.											

Point Loma WTP
Metals, Cyanide, Phenols and Hardness
NPDES Form 2A, Part D

Constituent	Maximum Value[1]		Average Value[1]		MDL[6] (µg/l)	Number of Samples	Analytical Method
	Concentration[2] (µg/l)	Mass[3] (mt/yr)	Concentration[4] (µg/l)	Mass[5] (mt/yr)			
Antimony	2.80	0.71	< 0.75[7]	< 0.18[7]	1.02	46	200.7
Arsenic	0.88	0.25	< 0.55[7]	< 0.13[7]	0.4	46	3114C
Beryllium	0.05	0.01	< 0.02[7]	< 0.01[7]	0.04	46	200.7
Cadmium	0.44	0.10	< 0.14[7]	< 0.03[7]	0.19	46	200.7
Chromium	7.55	1.9	< 1.83[7]	< 0.43[7]	0.19	46	200.7
Copper	42.0	9	20.9	4.9	0.39	46	200.7
Lead	5.30	1.3	< 1.12[7]	< 0.26[7]	1.4	46	200.7
Mercury	0.14	0.03	< 0.05[7]	< 0.01[7]	0.09	46	200.7
Nickel	17.70	4.0	9.41	2.21	0.27	46	200.7
Selenium	1.25	0.29	0.92	0.22	0.28	46	3114C
Silver	0.91	0.22	< 0.18[7]	< 0.04[7]	0.16	46	200.7
Thallium	2.30	0.53	< 1.02[7]	< 0.24[7]	1.8	46	200.7
Zinc	64.1	15	24.7	5.8	0.55	46	200.7
Cyanide	3.00	0.7	1.18	0.28	2.0	45	4500-CN E
Total phenolic compounds	25.6	6.3	13.9	3.3	2.53	46	625
Hardness[8] (as $CaCO_3$)	437,000	104,780	371,893	87,279	0.3	46	200.7 2340B

1 From Point Loma WTP monthly monitoring reports submitted to the Regional Board for calendar year 2006. (2006 is the most recent year for which a complete 12 month data set is available.)
2 Maximum sample value during calendar year 2006.
3 Mass emission (metric tons per year) computed using the maximum sample value observed during 2006 and the Point Loma WTP flow on the day the maximum value occurred.
4 Arithmetic average of calendar year 2006 samples.
5 Average mass emissions (metric tons per year) computed using the average annual concentration and the average annual Point Loma WTP flow of 170 mgd.
6 The listed Method Detection Limit (MDL) is the predominant MDL achieved during the calendar year 2006 samples for the listed constituent.
7 Less than symbol "<" indicates that one or more samples for the listed constituent were not detected during 2006. Not detected values were assigned a concentration of one-half the MDL for purposes of computing averages and mass emissions.
8 Computed as sum of calcium hardness and magnesium hardness.

FACILITY NAME AND PERMIT NUMBER: CA0107409 E.W. Blom Point Loma Wastewater Treatment Plant	*Form Approved 1/14/99* *OMB Number 2040-0086*

Outfall number: 001 (Complete once for each outfall discharging effluent to waters of the United States.)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/ MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples		
VOLATILE ORGANIC COMPOUNDS.											
ACROLEIN											
ACRYLONITRILE											
BENZENE											
BROMOFORM											
CARBON TETRACHLORIDE					**See tables on following pages**						
CLOROBENZENE											
CHLORODIBROMO-METHANE											
CHLOROETHANE											
2-CHLORO-ETHYLVINYL ETHER											
CHLOROFORM											
DICHLOROBROMO-METHANE											
1,1-DICHLOROETHANE					**See tables on following pages**						
1,2-DICHLOROETHANE											
TRANS-1,2-DICHLORO-ETHYLENE											
1,1-DICHLOROETHYLENE											
1,2-DICHLOROPROPANE											
1,3-DICHLORO-PROPYLENE											
ETHYLBENZENE											
METHYL BROMIDE					**See tables on following pages**						
METHYL CHLORIDE											
METHYLENE CHLORIDE											
1,1,2,2-TETRACHLORO-ETHANE											
TETRACHLORO-ETHYLENE											
TOLUENE											

Outfall number: 001 (Complete once for each outfall discharging effluent to waters of the United States.)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/ MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples		
1,1,1-TRICHLOROETHANE											
1,1,2-TRICHLOROETHANE											
TRICHLORETHYLENE					See tables on following pages						
VINYL CHLORIDE											
Use this space (or a separate sheet) to provide information on other volatile organic compounds requested by the permit writer.											
ACID-EXTRACTABLE COMPOUNDS											
P-CHLORO-M-CRESOL											
2-CHLOROPHENOL											
2,4-DICHLOROPHENOL					See tables on following pages						
2,4-DIMETHYLPHENOL											
4,6-DINITRO-O-CRESOL											
2,4-DINITROPHENOL											
2-NITROPHENOL											
4-NITROPHENOL					See tables on following pages						
PENTACHLOROPHENOL											
PHENOL											
2,4,6-TRICHLOROPHENOL											
Use this space (or a separate sheet) to provide information on other acid-extractable compounds requested by the permit writer.											
BASE-NEUTRAL COMPOUNDS.											
ACENAPHTHENE											
ACENAPHTHYLENE											
ANTHRACENE					See tables on following pages						
BENZIDINE											
BENZO(A)ANTHRACENE											
BENZO(A)PYRENE											

Outfall number: 001 (Complete once for each outfall discharging effluent to waters of the United States.)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/ MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples		
3,4 BENZO-FLUORANTHENE											
BENZO(GHI)PERYLENE											
BENZO(K)FLUORANTHENE											
BIS (2-CHLOROETHOXY) METHANE					See tables on following pages						
BIS (2-CHLOROETHYL)-ETHER											
BIS (2-CHLOROISO-PROPYL) ETHER											
BIS (2-ETHYLHEXYL) PHTHALATE											
4-BROMOPHENYL PHENYL ETHER											
BUTYL BENZYL PHTHALATE											
2-CHLORONAPHTHALENE											
4-CHLORPHENYL PHENYL ETHER					See tables on following pages						
CHRYSENE											
DI-N-BUTYL PHTHALATE											
DI-N-OCTYL PHTHALATE											
DIBENZO(A,H) ANTHRACENE											
1,2-DICHLOROBENZENE											
1,3-DICHLOROBENZENE											
1,4-DICHLOROBENZENE					See tables on following pages						
3,3-DICHLOROBENZIDINE											
DIETHYL PHTHALATE											
DIMETHYL PHTHALATE											
2,4-DINITROTOLUENE											
2,6-DINITROTOLUENE											
1,2-DIPHENYLHYDRAZINE											

Outfall number: 001 (Complete once for each outfall discharging effluent to waters of the United States.)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/ MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples		
FLUORANTHENE											
FLUORENE											
HEXACHLOROBENZENE											
HEXACHLOROBUTADIENE											
HEXACHLOROCYCLO-PENTADIENE					See tables on following pages						
HEXACHLOROETHANE											
INDENO(1,2,3-CD)PYRENE											
ISOPHORONE											
NAPHTHALENE											
NITROBENZENE											
N-NITROSODI-N-PROPYLAMINE											
N-NITROSODI- METHYLAMINE					See tables on following pages						
N-NITROSODI-PHENYLAMINE											
PHENANTHRENE											
PYRENE											
1,2,4-TRICHLOROBENZENE											
Use this space (or a separate sheet) to provide information on other base-neutral compounds requested by the permit writer.											
Use this space (or a separate sheet) to provide information on other pollutants (e.g., pesticides) requested by the permit writer.											

END OF PART D.
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE

Point Loma WTP
Volatile Organic Compounds
NPDES Form 2A, Part D

Constituent	Maximum Value[1]		Average Value[1]		MDL[6] (µg/l)	Number of Samples	Analytical Method
	Concentration[2] (µg/l)	Mass[3] (mt/yr)	Concentration[4] (µg/l)	Mass[5] (mt/yr)			
Acrolein	ND	ND	ND	ND	11.4	12	8260B
Acrylonitrile	ND	ND	ND	ND	13.8	12	8260B
Benzene	ND	ND	ND	ND	1.0	12	8260B
Bromoform	ND	ND	ND	ND	1.0	12	8260B
Carbon tetrachloride	ND	ND	ND	ND	1.0	12	8260B
Chlorobenzene	ND	ND	ND	ND	1.0	12	8260B
Chlorodibromomethane	2.87	0.7	< 0.9[7]	< 0.2[7]	1.0	12	8260B
Chloroethane	ND	ND	ND	ND	1.0	12	8260B
2-chloro-ethyl vinyl ether	ND	ND	ND	ND	1.0	12	8260B
Chloroform	11.2	2.8	6.4	1.5	1.0	12	8260B
Dichlorobromomethane	3.66	0.9	< 1.1[7]	< 0.3[7]	1.0	12	8260B
1,1-dichloroethane	ND	ND	ND	ND	1.0	12	8260B
1,2-dichloroethane	ND	ND	ND	ND	1.0	12	8260B
Trans-1,2-dichloroethylene	ND	ND	ND	ND	1.0	12	8260B
1,1-dichlroethylene	ND	ND	ND	ND	1.0	12	8260B
1,2-dichloroethylene	ND	ND	ND	ND	1.0	12	8260B
1,2-dichloropropylene	ND	ND	ND	ND	1.0	12	8260B
Ethylbenzene	ND	ND	ND	ND	1.0	12	8260B
Methyl bromide (bromomethane)	ND	ND	ND	ND	1.0	12	8260B
Methyl chloroide (chloromethane)	ND	ND	ND	ND	1.0	12	8260B
Methylene chloride	3.62	0.9	< 2.4[7]	< 0.6[7]	1.0	12	8260B
1,1,2,2-tetrachloroethane	ND	ND	ND	ND	1.0	12	8260B
Tetrachloroethylene	3.4	0.8	< 0.7[7]	< 0.2[7]	1.0	12	8260B
Toluene	2.96	0.7	< 1.5[7]	< 0.4[7]	1.0	12	8260B
1,1,1-trichloroethane	ND	ND	ND	ND	1.0	12	8260B
1,1,2-trichloroethane	ND	ND	ND	ND	1.0	12	8260B
Trichloroethylene	ND	ND	ND	ND	1.0	12	8260B
Vinyl chloride	ND	ND	ND	ND	1.0	12	8260B

1 From Point Loma WTP monthly monitoring reports submitted to the Regional Board for calendar year 2006. (2006 is the most recent year for which a complete 12 month data set is available.)
2 Maximum sample value during calendar year 2006.
3 Mass emission (metric tons per year) computed using the maximum sample value observed during 2006 and the Point Loma WTP flow on the day the maximum value occurred. For purposes of computing mass emissions, not detected (ND) concentrations are assumed to be one-half the corresponding MDL.
4 Arithmetic average of calendar year 2006 samples.
5 Average mass emissions (metric tons per year) computed using the average annual concentration and the average annual Point Loma WTP flow of 170 mgd.
6 Method Detection Limit (MDL) for Point Loma WTP effluent samples during 2006.
7 Less than symbol "<" indicates that one or more samples for the listed constituent were not detected during 2006. Not detected values were assigned a concentration of one-half the MDL for purposes of computing average and mass emissions.

Point Loma WTP
Metals, Cyanide, Phenols and Hardness
Acid Extractable Compounds

Constituent	Maximum Value[1]		Average Value[1]		MDL[6] (µg/l)	Number of Samples	Analytical Method
	Concentration[2] (µg/l)	Mass[3] (mt/yr)	Concentration[4] (µg/l)	Mass[5] (mt/yr)			
4-chlroro-3-methylphenol (p-chloro-m-cresol)	ND	ND	ND	ND	1.34	46	625
2-chlorophenol	ND	ND	ND	ND	1.76	46	625
2.4-dichlorophenol	ND	ND	ND	ND	1.95	46	625
2.4-dimethylphenol	ND	ND	ND	ND	1.32	46	625
2-methyl-4,6-dinitro phenol (4,6-dinitro-o-cresol)	ND	ND	ND	ND	4.29	46	625
2,4-dinitrophenol	ND	ND	ND	ND	6.07	46	625
2-nitrophenol	ND	ND	ND	ND	1.88	46	625
4-nitrophenol	ND	ND	ND	ND	3.17	46	625
Pentachlorophenol	ND	ND	ND	ND	5.87	46	625
Phenol	25.6	6.3	13.9	3.3	2.53	46	625
2,4,6-trichlorophenol	ND	ND	ND	ND	1.75	46	625

1 From Point Loma WTP monthly monitoring reports submitted to the Regional Board for calendar year 2006. (2006 is the most recent year for which a complete 12 month data set is available.)
2 Maximum sample value during calendar year 2006.
3 Mass emission (metric tons per year) computed using the maximum sample value observed during 2006 and the Point Loma WTP flow on the day the maximum value occurred.
4 Arithmetic average of calendar year 2006 samples.
5 Average mass emissions (metric tons per year) computed using the average annual concentration and the average annual Point Loma WTP flow of 170 mgd.
6 Method Detection Limit (MDL) for Point Loma WTP effluent samples during calendar year 2006.

Point Loma WTP
Base Neutral Compounds
NPDES Form 2A, Part D

Constituent	Maximum Value		Average Value		MDL[6] (µg/l)	Number of Samples	Analytical Method
	Concentration[2] (µg/l)	Mass[3] (mt/yr)	Concentration[4] (µg/l)	Mass[5] (mt/yr)			
Acenapthene	ND	ND	ND	ND	2.2	12	625
Acenaphthylene	ND	ND	ND	ND	2.02	12	625
Anthracene	ND	ND	ND	ND	4.04	12	625
Benzidine	ND	ND	ND	ND	1.02	11	605
Benzo(a)anthracene	ND	ND	ND	ND	7.68	12	625
Benzo(a)pyrene	ND	ND	ND	ND	6.53	12	625
3,4-benzo(b)fluoranthene	ND	ND	ND	ND	6.63	12	625
Benzo(g,h,i)perylene	ND	ND	ND	ND	6.5	12	625
Benzo(k)fluoranthene	ND	ND	ND	ND	7.36	12	625
Bis (2-chloroethyxy) methane	ND	ND	ND	ND	1.57	12	625
Bis (2-chloroethyl) ether	ND	ND	ND	ND	2.62	12	625
Bis (2-chloroisopropyl) ether	ND	ND	ND	ND	8.95	12	625
Bis (2-ethylhexyl) phthalate	15.2	3.8	< 7.1[7]	< 1.7[7]	10.43	8	625
4-bromophenyl phenyl ether	ND	ND	ND	ND	4.04	12	625
Butyl benzyl phthalate	ND	ND	ND	ND	4.77	12	625
2-chloronaphthalene	ND	ND	ND	ND	2.41	12	625
4-chlorophenyl phenyl ether	ND	ND	ND	ND	3.62	12	625
Chrysene	ND	ND	ND	ND	7.49	12	625
di-n-butyl phthalate	ND	ND	ND	ND	6.49	12	625
di-n-octyl phthalate	ND	ND	ND	ND	8.59	12	625
Dibenzo(a,h)anthracene	ND	ND	ND	ND	6.19	12	625
1,2-dichlorobenzene	ND	ND	ND	ND	1.0/1.63[8]	24[8]	625
1,3-dichlorobenzene	ND	ND	ND	ND	1.0/1.65[8]	24[8]	625
1,4-dichlorobenzene	3.35	0.8	< 1.9[7]	< 0.4[7]	1.0/2.3[8]	24[8]	625
3,3-dichlorobenzidene	ND	ND	ND	ND	2.43	12	625
Diethyl phthalate	11.2	2.6	< 4.4[7]	< 1.0[7]	6.97	12	625
Dimethyl phthalate	ND	ND	ND	ND	3.26	12	625
2,4-dinitrotoluene	ND	ND	ND	ND	1.49	12	625
2,6-dinitrotoluene	ND	ND	ND	ND	1.93	12	625
1,2-diphenylhydrazine	ND	ND	ND	ND	2.49	12	625
Fluorene	ND	ND	ND	ND	6.9	12	625
Fluoranthene	ND	ND	ND	ND	2.43	12	625
Hexachlorobenzene	ND	ND	ND	ND	4.8	12	625
Hexachlorobutadiene	ND	ND	ND	ND	2.87	12	625
Hexachlorocyclopentadiene	ND	ND	ND	ND	NA	12	625
Hexachloroethane	ND	ND	ND	ND	3.55	12	625
Ideno(1,2,3-cd)pyrene	ND	ND	ND	ND	6.27	12	625
Isophorone	ND	ND	ND	ND	1.93	12	625
Naphthalene	ND	ND	ND	ND	1.52	12	625
Nitrobenzene	ND	ND	ND	ND	1.52	12	625
n-nitrosodi-n-propylamine	ND	ND	ND	ND	2.01	12	625
n-nitrosodi-methylamine	ND	ND	ND	ND	1.63	12	625
n-nitrosodi-phenylamine	ND	ND	ND	ND	2.96	12	625
Phenanthrene	ND	ND	ND	ND	4.15	12	625
Pyrene	ND	ND	ND	ND	5.19	12	625
1,2,4-trichlorobenzene	ND	ND	ND	ND	1.44/4.9[7]	24[7]	625

1 From Point Loma WTP monthly monitoring reports submitted to the Regional Board for calendar year 2006. (2006 is the most recent year for which a complete 12 month data set is available.)
2 Maximum sample value during calendar year 2006.
3 Mass emission (metric tons per year) computed using the maximum sample value observed during 2006 and the Point Loma WTP flow on the day the maximum value occurred.
4 Arithmetic average of calendar year 2006 samples.
5 Average mass emissions (metric tons per year) computed using the average annual concentration and the average annual Point Loma WTP flow of 170 mgd. For purposes of computing mass emissions, not detected (ND) concentrations are assumed to be one-half the corresponding MDL.
6 Method Detection Limit (MDL) for Point Loma WTP effluent samples during 2006.
7 Less than symbol "<" indicates that one or more samples for the listed constituent were not detected during 2006. Not detected values were assigned a concentration of one-half the MDL for purposes of computing average and mass emissions.
8 Monthly grab and composite samples collected. The lower MDL is for the grab sample.

SUPPLEMENTAL APPLICATION INFORMATION

PART E. TOXICITY TESTING DATA

POTWs meeting one or more of the following criteria must provide the results of whole effluent toxicity tests for acute or chronic toxicity for each of the facility's discharge points: 1) POTWs with a design flow rate greater than or equal to 1.0 mgd; 2) POTWs with a pretreatment program (or those that are required to have one under 40 CFR Part 403); or 3) POTWs required by the permitting authority to submit data for these parameters.

- At a minimum, these results must include quarterly testing for a 12-month period within the past 1 year using multiple species (minimum of two species), or the results from four tests performed at least annually in the four and one-half years prior to the application, provided the results show no appreciable toxicity, and testing for acute and/or chronic toxicity, depending on the range of receiving water dilution. Do not include information on combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136.
- In addition, submit the results of any other whole effluent toxicity tests from the past four and one-half years. If a whole effluent toxicity test conducted during the past four and one-half years revealed toxicity, provide any information on the cause of the toxicity or any results of a toxicity reduction evaluation, if one was conducted.
- If you have already submitted any of the information requested in Part E, you need not submit it again. Rather, provide the information requested in question E.4 for previously submitted information. If EPA methods were not used, report the reasons for using alternate methods. If test summaries are available that contain all of the information requested below, they may be submitted in place of Part E.

If no biomonitoring data is required, do not complete Part E. Refer to the Application Overview for directions on which other sections of the form to complete.

E.1. Required Tests.

Indicate the number of whole effluent toxicity tests conducted in the past four and one-half years.

161[8] chronic 11[8] acute

[8] **Tests conducted under Order No. R9-2002-0025 during 2003-2006. See attached application documents for details on toxicity tests and results.**

E.2. Individual Test Data. Complete the following chart for each whole effluent toxicity test conducted in the last four and one-half years. Allow one column per test (where each species constitutes a test). Copy this page if more than three tests are being reported.

	Test number:_____	Test number:_____	Test number:_____
a. Test information.			
Test species & test method number			
Age at initiation of test			
Outfall number			
Dates sample collected	**See summary tables on following pages**		
Date test started			
Duration			
b. Give toxicity test methods followed.			
Manual title			
Edition number and year of publication	**See summary tables on following pages**		
Page number(s)			
c. Give the sample collection method(s) used. For multiple grab samples, indicate the number of grab samples used.			
24-Hour composite			
Grab			
d. Indicate where the sample was taken in relation to disinfection. (Check all that apply for each)			
Before disinfection			
After disinfection	**See summary tables on following pages**		
After dechlorination			

	Test number:_____	Test number:_____	Test number:_____
e. Describe the point in the treatment process at which the sample was collected.			
Sample was collected:			
f. For each test, include whether the test was intended to assess chronic toxicity, acute toxicity, or both.			
Chronic toxicity			
Acute toxicity	**See summary tables on following pages**		
g. Provide the type of test performed.			
Static			
Static-renewal			
Flow-through			
h. Source of dilution water. If laboratory water, specify type; if receiving water, specify source.			
Laboratory water			
Receiving water	**See summary tables on following pages**		
i. Type of dilution water. If salt water, specify "natural" or type of artificial sea salts or brine used.			
Fresh water			
Salt water			
j. Give the percentage effluent used for all concentrations in the test series.			
	See summary tables on following pages		
k. Parameters measured during the test. (State whether parameter meets test method specifications)			
pH			
Salinity			
Temperature	**See summary tables on following pages**		
Ammonia			
Dissolved oxygen			
l. Test Results.			
Acute:			
Percent survival in 100% effluent	%	%	%
LC_{50}	**See summary tables on following pages**		
95% C.I.	%	%	%
Control percent survival	%	%	%
Other (describe)			

Chronic:			
NOEC	%	%	%
IC_{25}	%	%	%
Control percent survival	%	%	%
Other (describe)	See summary tables on following pages		
m. Quality Control/Quality Assurance.			
Is reference toxicant data available?			
Was reference toxicant test within acceptable bounds?			
What date was reference toxicant test run (MM/DD/YYYY)?	See summary tables on following pages		
Other (describe)			

E.3. Toxicity Reduction Evaluation. Is the treatment works involved in a Toxicity Reduction Evaluation?

___Yes_X_No If yes, describe: NA

E.4. Summary of Submitted Biomonitoring Test Information. If you have submitted biomonitoring test information, or information regarding the cause of toxicity, within the past four and one-half years, provide the dates the information was submitted to the permitting authority and a summary of the results.

Date submitted: **Monthly and annually per Order No. R9-2002-0025 (NPDES CA0107409)**

Summary of results: (see instructions)

Biomonitoring test data are submitted in monthly reports to the Regional Board. Summaries of results are submitted to the Regional Board in annual reports. See Antidegradation Study (Part 3, Volume 1 of this application) for a discussion and summary of chronic and acute toxicity results during 2003-2006.

END OF PART E.
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE.

NA = not applicable

Point Loma WTP Acute Toxicity
2003-2006

Date	Acute Toxicity (TUa) Daily Maximum Limit is 6.5 TUa	
	Atherinops affinis (topsmelt)	*Mysidopsis bahia* (shrimp)
January 13, 2003	2.6	3.5
July 7, 2003	2.2	1.7
January 6, 2004	4.2	5.3
July 18, 2004	No test[2]	3.7
March 20, 2005	No test[2]	3.0
July 17, 2005	No test[2]	3.3
February 12, 2006	No test[2]	3.7
July 16, 2006	No test[2]	2.6

1 From monthly toxicity monitoring reports submitted to the Regional Board, 2003-2006. Acute toxicity monitoring conducted per Order No. R9-2002-0025. Year 2003 was the first full year of acute toxicity testing for acute toxicity species specified in Order No. R9-2002-0025.

2 No test was required, as *Mysidopsis bahia* (shrimp) was determined to be the most sensitive species.

NOTE: A summary of acute toxicity test procedures is presented in the "Bioassay Procecures" section of the EPA NPDES application forms (Part 2, Volume II).

Point Loma WTP Chronic Toxicity
2003-2006

Species	Test	Year	Point Loma WTP Effluent Chronic Toxicity Testing, 2003-2006[1]				
			Number of Tests[2]	Number of Tests in Compliance[3]	Median Value[4] TUc	Mean Value[5] (TUc)	Maximum Value (TUc)
Atherinops affinis (topsmelt)	Survival[6]	2003	3	3	64	64	64
		2005	1	1	64	64	64
	Growth[6]	2003	3	3	64	64	64
		2005	1	1	64	64	64
Haliotis rufeuscens (red abalone)	Larval development	2003	11	11	64	64	64
		2004	12	12	64	64	64
		2005	12	12	64	64	64
		2006	12	12	64	68	114
Macrocystis pyrifera (giant kelp)	Germination	2003	15	15	64	80	204
		2004	12	12	64	64	64
		2005	12	12	64	77	114
		2006	15	15	64	71	114
	Germ tube length	2003	15	14	64	108	**667**[7]
		2004	11	11	64	72	114
		2005	12	11	64	114	**>667**[8]
		2006	14	14	64	67	114

1 Chronic toxicity testing conducted per requirements of Order No. R9-2002-0025 during 2003-2006. Results are from monthly toxicity monitoring reports submitted by the City to the Regional Board. (Year 2003 is the first full year of chronic toxicity testing under Order No. R9-2002-0025.) A summary of test procedures is presented as an attachment to the NPDES forms (Part 2 of Volume 2).

2 Total number of tests for the listed species and test conducted during the year.

3 Number of chronic toxicity tests during the year that complied with the 205 TUc effluent limitation established in Discharge Specification B.1.b of Order No. R9-2002-0025.

4 Median corresponds to the 50th percentile value (half the sample values are higher and half are lower than the median).

5 Arithmetic mean of samples results during the listed calendar year.

6 Order No. R9-2002-0025 requires biannual screening for chronic toxicity, with monthly monitoring for species determined to be most sensitive. The City conducted biannual screening for topsmelt in 2003 and 2005. Monthly chronic toxicity monitoring for red abalone and giant kelp is performed, as the screening shows these species to be most sensitive.

7 The May 4, 2003 chronic toxicity test for giant kelp germ tube length (development) exceeded the 205 TUc chronic toxicity limit, but all other toxicity tests performed on that date complied with the limit. In response to the exceedance, the City implemented accelerated toxicity testing for giant kelp germination and development. Repeat tests demonstrated compliance with the chronic toxicity limit. No unusual concentrations occurred in the Point Loma WTP effluent on or immediately prior to the May 4, 2003 test. The cause of the exceedance is unknown.

8 The December 19, 2005 chronic toxicity test for giant kelp germ tube length (development) exceeded the 205 TUc chronic toxicity limit, but all other toxicity tests performed on that date complied with the limit. In response to the exceedance, the City implemented accelerated toxicity testing for giant kelp germination and development. Repeat tests demonstrated compliance with the chronic toxicity limit. No unusual concentrations occurred in the Point Loma WTP effluent on or immediately prior to the December 19, 2005 test. The cause of the exceedance is unknown.

NOTE: A summary of chronic toxicity test procedures is presented in the "Bioassay Procecures" section of the EPA NPDES application forms (Part 2, Volume II).

SUPPLEMENTAL APPLICATION INFORMATION

PART F. INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES

All treatment works receiving discharges from significant industrial users or which receive RCRA, CERCLA, or other remedial wastes must complete Part F.

GENERAL INFORMATION:

F.1. **Pretreatment Program.** Does the treatment works have, or is it subject to, an approved pretreatment program?

X Yes ___ No

F.2. **Number of Significant Industrial Users (SIUs) and Categorical Industrial Users (CIUs).** Provide the number of each of the following types of industrial users that discharge to the treatment works.

a. Number of non-categorical SIUs. 70[9]

b. Number of CIUs. 50[9]

[9] **Number of Categorical Industrial Users (CIUs) and Significant Industrial Users (SIUs) during 2006. See Appendices K and L for details.**

SIGNIFICANT INDUSTRIAL USER INFORMATION:

Supply the following information for each SIU. If more than one SIU discharges to the treatment works, copy questions F.3 through F.8 and provide the information requested for each SIU.

F.3. **Significant Industrial User Information.** Provide the name and address of each SIU discharging to the treatment works. Submit additional pages as necessary.

Name:

Mailing Address:

Completion of NPDES Form 3510-2A, Part F (formerly Form 7550, Part IV) is not required for 301(h) applicants per 40 C FR 125.59(c)(1). Information for Parts F.3 through F.15 is presented in the Large Applicant Questionnaire, Section III.H per requirements of 40 CFR 125, Subpart G. Appendices K and L of this application present information on individual CIUs and SIUs.

F.4. **Industrial Processes.** Describe all of the industrial processes that affect or contribute to the SIU's discharge.

See Appendices K and L for information on individual SIUs.

F.5. **Principal Product(s) and Raw Material(s).** Describe all of the principal processes and raw materials that affect or contribute to the SIU's discharge.

Principal product(s):

Raw material(s):

Completion of NPDES Form 3510-2A, Part F (formerly Form 7550, Part IV) is not required for 301(h) applicants per 40 C FR 125.59(c)(1). Information for Parts F.3 through F.15 is presented in the Large Applicant Questionnaire, Section III.H per requirements of 40 CFR 125, Subpart G. Appendices K and L of this application present information on individual CIUs and SIUs.

F.6. **Flow Rate.**

a. Process wastewater flow rate. Indicate the average daily volume of process wastewater discharged into the collection system in gallons per day (gpd) and whether the discharge is continuous or intermittent.

_____ gpd (_____continuous or _____intermittent)

See Appendices K and L for information on individual SIUs.

b. Non-process wastewater flow rate. Indicate the average daily volume of non-process wastewater flow discharged into the collection system in gallons per day (gpd) and whether the discharge is continuous or intermittent.

_____ gpd (_____continuous or _____intermittent)

F.7. **Pretreatment Standards.** Indicate whether the SIU is subject to the following:

a. Local limits ___Yes ___No

b. Categorical pretreatment standards ___Yes ___No

See Appendices K and L for information on individual SIUs.

If subject to categorical pretreatment standards, which category and subcategory?

F.8. Problems at the Treatment Works Attributed to Waste Discharged by the SIU. Has the SIU caused or contributed to any problems (e.g., upsets, interference) at the treatment works in the past three years?

____Yes __X__No If yes, describe each episode.

NA

RCRA HAZARDOUS WASTE RECEIVED BY TRUCK, RAIL, OR DEDICATED PIPELINE:

F.9. RCRA Waste. Does the treatment works receive or has it in the past three years received RCRA hazardous waste by truck, rail, or dedicated pipe? ____Yes __X__No (go to F.12.)

F.10. Waste Transport. Method by which RCRA waste is received (check all that apply):

NA Truck NA Rail NA Dedicated Pipe

F.11. Waste Description. Give EPA hazardous waste number and amount (volume or mass, specify units).

EPA Hazardous Waste Number	Amount	Units
NA	NA	NA

CERCLA (SUPERFUND) WASTEWATER, RCRA REMEDIATION/CORRECTIVE ACTION WASTEWATER, AND OTHER REMEDIAL ACTIVITY WASTEWATER:

F.12. Remediation Waste. Does the treatment works currently (or has it been notified that it will) receive waste from remedial activities?

__X__Yes (complete F.13 through F.15.) ____No

Provide a list of sites and the requested information (F.13 - F.15.) for each current and future site.

F.13. Waste Origin. Describe the site and type of facility at which the CERCLA/RCRA/or other remedial waste originates (or is expected to originate in the next five years).

See Appendix L for a list of dischargers of remedial wastes and/or extracted groundwater.

F.14. Pollutants. List the hazardous constituents that are received (or are expected to be received). Include data on volume and concentration, if known. (Attach additional sheets if necessary).

See Appendix L for a list of dischargers of remedial wastes and/or extracted groundwater.

F.15. Waste Treatment.

a. Is this waste treated (or will it be treated) prior to entering the treatment works?

____Yes ____No

If yes, describe the treatment (provide information about the removal efficiency):

See Appendix L for a list of dischargers of remedial wastes and/or extracted groundwater.

b. Is the discharge (or will the discharge be) continuous or intermittent?

____Continuous ____Intermittent If intermittent, describe discharge schedule.

See Appendix L for a list of dischargers of remedial wastes and/or extracted groundwater.

END OF PART F.
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE

NA = not applicable

SUPPLEMENTAL APPLICATION INFORMATION

PART G. COMBINED SEWER SYSTEMS

If the treatment works has a combined sewer system, complete Part G.

G.1. System Map. Provide a map indicating the following: (may be included with Basic Application Information)

a. All CSO discharge points. **Not applicable. Metro System is 100 percent separate sanitary sewer system.**

b. Sensitive use areas potentially affected by CSOs (e.g., beaches, drinking water supplies, shellfish beds, sensitive aquatic ecosystems, and outstanding natural resource waters).

c. Waters that support threatened and endangered species potentially affected by CSOs.

G.2. System Diagram. Provide a diagram, either in the map provided in G.1. or on a separate drawing, of the combined sewer collection system that includes the following information:

a. Locations of major sewer trunk lines, both combined and separate sanitary.

b. Locations of points where separate sanitary sewers feed into the combined sewer system.

c. Locations of in-line and off-line storage structures.

d. Locations of flow-regulating devices.

e. Locations of pump stations. **Not applicable. Metro System is 100 percent separate sanitary sewer system.**

CSO OUTFALLS:

Complete questions G.3 through G.6 once for each CSO discharge point.

G.3. Description of Outfall.

a. Outfall number **Not applicable. Metro System is 100 percent separate sanitary sewer system.**

b. Location

NA
(City or town, if applicable) (Zip Code)

NA
(County) (State)

NA
(Latitude) (Longitude)

c. Distance from shore (if applicable) NA ft.

d. Depth below surface (if applicable) NA ft.

e. Which of the following were monitored during the last year for this CSO?

____Rainfall ____CSO pollutant concentrations ____CSO frequency

____CSO flow volume ____Receiving water quality

f. How many storm events were monitored during the last year? NA

G.4. CSO Events. **Not applicable. Metro System is 100 percent separate sanitary sewer system.**

a. Give the number of CSO events in the last year.
NA events (___ actual or ___ approx.)

b. Give the average duration per CSO event.
NA hours (____ actual or ____ approx.)

NA = not applicable

c. Give the average volume per CSO event.

NA million gallons (_____ actual or _____ approx.)

d. Give the minimum rainfall that caused a CSO event in the last year.

NA inches of rainfall

G.5. Description of Receiving Waters.

a. Name of receiving water: **Not applicable. Metro System is 100 percent separate sanitary sewer system.**

b. Name of watershed/river/stream system: NA

United States Soil Conservation Service 14-digit watershed code (if known): NA

c. Name of State Management/River Basin: NA

United States Geological Survey 8-digit hydrologic cataloging unit code (if known): NA

G.6. CSO Operations.

Describe any known water quality impacts on the receiving water caused by this CSO (e.g., permanent or intermittent beach closings, permanent or intermittent shell fish bed closings, fish kills, fish advisories, other recreational loss, or violation of any applicable State water quality standard).

Not applicable. Metro System is 100 percent separate sanitary sewer system.

END OF PART G.
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE.

NA = not applicable

EPA NPDES Form 2S

Renewal of NPDES CA0107409

FACILITY NAME AND PERMIT NUMBER: CA0107409
E.W. Blom Point Loma Wastewater Treatment Plant

Form Approved 1/14/99
OMB Number 2040-0086

FORM 2S NPDES

NPDES FORM 2S APPLICATION OVERVIEW

PRELIMINARY INFORMATION

This page is designed to indicate whether the applicant is to complete Part 1 or Part 2. Review each category, and then complete Part 1 or Part 2, as indicated. For purposes of this form, the term "you" refers to the applicant. "This facility" and "your facility" refer to the facility for which application information is submitted.

FACILITIES INCLUDED IN ANY OF THE FOLLOWING CATEGORIES MUST COMPLETE PART 2 (PERMIT APPLICATION INFORMATION).

1. Facilities with a currently effective NPDES permit.

2. Facilities which have been directed by the permitting authority to submit a full permit application at this time.

ALL OTHER FACILITIES MUST COMPLETE PART 1 (LIMITED BACKGROUND INFORMATION).

FACILITY NAME AND PERMIT NUMBER: CA0107409
E.W. Blom Point Loma Wastewater Treatment Plant

Form Approved 1/14/99
OMB Number 2040-0086

PART 1: LIMITED BACKGROUND INFORMATION

This part should be completed only by "sludge-only" facilities - that is, facilities that do not currently have, and are not applying for, an NPDES permit for a direct discharge to a surface body of water.

For purposes of this form, the term "you" refers to the applicant. "This facility" and "your facility" refer to the facility for which application information is submitted.

1. **Facility Information.**

   a. Facility name: Metro Biosolids Center

   b. Mailing Address: Metropolitan Wastewater Department, 9192 Topaz Way
   San Diego, CA 92123

   c. Contact person: Timothy C. Bertch, Ph.D.
   Title: Metropolitan Wastewater Director
   Telephone number: (858) 292-6401

   d. Facility Address (not P.O. B ox): 5240 Convoy Street
   San Diego, CA 92111

   e. Indicate the type of facility

   X Publicly owned treatment works (POTW) ____ Privately owned treatment works

   ____ Federally owned treatment works ____ Blending or treatment operation

   ____ Surface disposal site ____ Sewage sludge incinerator

   ____ Other (describe) _____

2. **Applicant Information.**

   a. Applicant name: City of San Diego Metropolitan Wastewater Department

   b. Mailing Address: 9192 Topaz Way
   San Diego, CA 92123

   c. Contact person: Timothy C. Bertch, Ph.D.
   Title: Metropolitan Wastewater Director
   Telephone number: (858) 292-6401

   d. Is the applicant the owner or operator (or both) of this facility?

   X owner X operator

   e. Should correspondence regarding this permit be directed to the facility or the applicant?

   ____ facility X applicant

FACILITY NAME AND PERMIT NUMBER: CA0107409
E.W. Blom Point Loma Wastewater Treatment Plant

Form Approved 1/14/99
OMB Number 2040-0086

3. **Sewage Sludge Amount.** Provide the total dry metric tons per latest 365 day period of sewage sludge handled under the following practices:

a.	Amount generated at the facility	31,479[1] dry metric tons
b.	Amount received from off site	_____ dry metric tons
c.	Amount treated or blended on site	_____ dry metric tons
d.	Amount sold or given away in a bag or other container for application to the land	_____ dry metric tons
e.	Amount of bulk sewage sludge shipped off site for treatment or blending	_____ dry metric tons
f.	Amount applied to the land in bulk form	3,202[1] dry metric tons
g.	Amount placed on a surface disposal site	_____ dry metric tons
h.	Amount fired in a sewage sludge incinerator	_____ dry metric tons
i.	Amount sent to a municipal solid waste landfill	593[1] dry metric tons
j.	Amount used or disposed by another practice	27,684[1] dry metric tons
	Describe	**Beneficial reuse as Alternative Daily Cover at landfill**

[1] **Totals for MBC biosolids for calendar year 2006.**

4. **Pollutant Concentrations.** Using the table below or a separate attachment, provide existing sewage sludge monitoring data for the pollutants for which limits in sewage sludge have been established in 40 CFR part 503 for this facility's expected use or disposal practices. If available, base data on three or more samples taken at least one month apart and no more than four and one-half years old.

POLLUTANT	CONCENTRATION (mg/kg dry weight)	ANALYTICAL METHOD	DETECTION LEVEL FOR ANALYSIS
ARSENIC			
CADMIUM			
CHROMIUM	**See Enclosures 7 & 8 of Appendix J for sludge pollutant analyses**		
COPPER			
LEAD			
MERCURY			
MOLYBDENUM	**See Enclosures 7 & 8 of Appendix J for sludge pollutant analyses**		
NICKEL			
SELENIUM			
ZINC			

5. **Treatment Provided At Your Facility.**

a. Which class of pathogen reduction does the sewage sludge meet at your facility?

_____ Class A **X** Class B _____ Neither or unknown

b. Describe, on this form or another sheet of paper, any treatment processes used at your facility to reduce pathogens in sewage sludge:

All biosolids were treated to Class B standards through anaerobic digestion for a minimum of 15 days at a temperature of 35° C to 55° C (Alternative 3, Process 3).

Metro Biosolids Center
Summary of Sludge Pollutant Concentrations
Calendar Year 2006

Constituent	Number of Samples	MBC Sludge Concentration (mg/kg dry wt.)[1]		
		Annual Average	Maximum Monthly Value	Minimum Monthly Value
Arsenic	12	3.40	4.80	2.18
Cadmium	12	2.16	3.59	1.64
Chromium	12	62.6	93.1	40.8
Copper	12	700	809	573
Lead	12	24.8	28.9	20.2
Mercury	12	1.44	1.77	1.30
Molybdenum	12	19.5	31.3	14.1
Nickel	12	57.2	102.0	30.0
Selenium	12	4.81	5.67	3.84
Zinc	12	998	1250	786

1 From monthly sludge monitoring reports submitted to the Regional Board during calendar year 2006. See Appendix J.

c. Which vector attraction reduction option is met for the sewage sludge at your facility?

X Option 1 (Minimum 38 percent reduction in volatile solids)
____ Option 2 (Anaerobic process, with bench-scale demonstration)
____ Option 3 (Aerobic process, with bench-scale demonstration)
____ Option 4 (Specific oxygen uptake rate for aerobically digested sludge)
____ Option 5 (Aerobic processes plus raised temperature)
____ Option 6 (Raise pH to 12 and retain at 11.5)
____ Option 7 (75 percent solids with no unstabilized solids)
____ Option 8 (90 percent solids with unstabilized solids)
____ Option 9 (Injection below land surface)
____ Option 10 (Incorporation into soil within 6 hours)
____ Option 11 (Covering active sewage sludge unit daily)
____ None or unknown

d. Describe, on this form or another sheet of paper, any treatment processes used at your facility to reduce vector attraction properties of sewage sludge:

Vector Attraction requirements were attained by reducing the volatile solids concent to a minimum of 38 percent (Option 1).

6. **Sewage Sludge Sent to Other Facilities.** Does the sewage sludge from your facility meet the Table 1 ceiling concentrations, the Table 3 pollutant concentrations, Class A pathogen requirements, and one of the vector attraction options 1-8?
____ Yes X No

If yes, go to question 8 (Certification).

If no, is sewage sludge from your facility provided to another facility for treatment, distribution, use, or disposal?
____ Yes X No

If no, go to question 7 (Use and Disposal Sites).

If yes, provide the following information for the facility receiving the sewage sludge:

a. Facility name: NA

b. Mailing address: NA

c. Contact person: NA
Title: NA
Telephone number: NA

d. Which activities does the receiving facility provide? (Check all that apply)

NA Treatment or blending
____ Land application
____ Incineration
____ Sale or give-away in bag or other container
____ Surface disposal
____ Other (describe):

NA

NA = not applicable

FACILITY NAME AND PERMIT NUMBER: CA0107409
E.W. Blom Point Loma Wastewater Treatment Plant

Form Approved 1/14/99
OMB Number 2040-0086

7. **Use and Disposal Sites.** Provide the following information for each site on which sewage sludge from this facility is used or disposed:

a. Site name or number: **See Enclosures 10, 11 & 12 of Appendix J for list and location of sites**

b. Contact person: _____

Title: **See Enclosures 10, 11 & 12 of Appendix J for list and location of sites**

Telephone: _____

c. Site location (Complete 1 or 2)

1. Street or Route #: **See Enclosures 10, 11 & 12 of Appendix J for list and location of sites**

County: _____

City or Town: _____ State: _____ Zip: _____

2. Latitude: _____ Longitude: _____

d. Site type (Check all that apply) **See Enclosures 10 & 11 of Appendix J**

X Agricultural	____ Lawn or home garden	____ Forest
____ Surface disposal	____ Public Contact	____ Incineration
____ Reclamation	X Municipal Solid Waste Landfill	____ Other (describe): _____

8. **Certification.** Sign the certification statement below. (Refer to instructions to determine who is an officer for purposes of this certification.)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name and official title: **Timothy C. Bertch, Ph.D., Metropolitan Wastewater Director**

Signature: Timothy C Bertch

Telephone number: **(858) 292-6401**

Date signed: 29 Nov 2007

SEND COMPLETED FORMS TO:

PART 2: PERMIT APPLICATION INFORMATION

Complete this part if you have an effective NPDES permit or have been directed by the permitting authority to submit a full permit application at this time. In other words, complete this part if your facility has, or is applying for, an NPDES permit.

For purposes of this form, the term "you" refers to the applicant. "This facility" and "your facility" refer to the facility for which application information is submitted.

APPLICATION OVERVIEW — SEWAGE SLUDGE USE OR DISPOSAL INFORMATION

Part 2 is divided into five sections (A-E). Section A pertains to all applicants. The applicability of Sections B, C, D, and E depends on your facility's sewage sludge use or disposal practices. The information provided on this page indicates which sections of Part 2 to fill out.

1. **SECTION A: GENERAL INFORMATION.**

   Section A must be completed by all applicants

2. **SECTION B: GENERATION OF SEWAGE SLUDGE OR PREPARATION OF A MATERIAL DERIVED FROM SEWAGE SLUDGE.**

   Section B must be completed by applicants who either:

   1) Generate sewage sludge, or

   2) Derive a material from sewage sludge.

3. **SECTION C: LAND APPLICATION OF BULK SEWAGE SLUDGE.**

   Section C must be completed by applicants who either:

   1) Apply sewage to the land, or

   2) Generate sewage sludge which is applied to the land by others.

   NOTE: Applicants who meet either or both of the two above criteria are exempted from this requirement if <u>all</u> sewage sludge from their facility falls into one of the following three categories:

   1) The sewage sludge from this facility meets the ceiling and pollutant concentrations, Class A pathogen reduction requirements, and one of vector attraction reduction options 1-8, as identified in the instructions, or
   2) The sewage sludge from this facility is placed in a bag or other container for sale or give-away for application to the land, or
   3) The sewage sludge from this facility is sent to another facility for treatment or blending.

4. **SECTION D: SURFACE DISPOSAL**

   Section D must be completed by applicants who own or operate a surface disposal site.

5. **SECTION E: INCINERATION**

   Section E must be completed by applicants who own or operate a sewage sludge incinerator.

FACILITY NAME AND PERMIT NUMBER: CA0107409
E.W. Blom Point Loma Wastewater Treatment Plant

Form Approved 1/14/99
OMB Number 2040-0086

A. GENERAL INFORMATION

All applicants must complete this section.

A.1. Facility Information.

a. Facility name: **Metro Biosolids Center**

b. Mailing Address: **Metropolitan Wastewater Department, 9192 Topaz Way**
San Diego, CA 92123

c. Contact person: **Timothy C. Bertch, Ph.D.**
Title: **Metropolitan Wastewater Director**
Telephone number: **(858) 292-6401**

d. Facility Address (not P.O. Box): **5240 Convoy Street**
San Diego, CA 92111

e. Is this facility a Class I sludge management facility? **X** Yes _____ No

f. Facility design flow rate: **240**[2] mgd

g. Total population served: **2.14 million**

[2] **MBC designed to serve both 240 mgd Point Loma WTP and 30 mgd North City WRP.**

h. Indicate the type of facility:

X Publicly owned treatment works (POTW)
_____ Federally owned treatment works
_____ Surface disposal site
_____ Other (describe)
_____ Privately owned treatment works
_____ Blending or treatment operation
_____ Sewage sludge incinerator

A.2. Applicant Information. If the applicant is different from the above, provide the following:

a. Applicant name: **City of San Diego Metropolitan Wastewater Department**

b. Mailing Address: **9192 Topaz Way**
San Diego, CA 92123

c. Contact person: **Timothy C. Bertch, Ph.D.**
Title: **Metropolitan Wastewater Director**
Telephone number: **(858) 292-6401**

d. Is the applicant the owner or operator (or both) of this facility?

X owner **X** operator

e. Should correspondence regarding this permit should be directed to the facility or the applicant.

_____ facility **X** applicant

A.3. Permit Information.

a. Facility's NPDES permit number (if applicable): NPDES CA0107409

b. List, on this form or an attachment, all other Federal, State, and local permits or construction approvals received or applied for that regulate this facility's sewage sludge management practices:

Permit Number	Type of Permit
NA	NA

A.4. Indian Country. Does any generation, treatment, storage, application to land, or disposal of sewage sludge from this facility occur in Indian Country?

_____Yes __X__ No If yes, describe: NA

A.5. Topographic Map. Provide a topographic map or maps (or other appropriate map(s) if a topographic map is unavailable) that show the following information. Map(s) should include the area one mile beyond all property boundaries of the facility:

a. Location of all sewage sludge management facilities, including locations where sewage sludge is stored, treated, or disposed.

b. Location of all wells, springs, and other surface water bodies, listed in public records or otherwise known to the applicant within 1/4 mile of the facility property boundaries.

See attached topographic map

A.6. Line Drawing. Provide a line drawing and/or a narrative description that identifies all sewage sludge processes that will be employed during the term of the permit, including all processes used for collecting, dewatering, storing, or treating sewage sludge, the destination(s) of all liquids and solids leaving each unit, and all methods used for pathogen reduction and vector attraction reduction.

See attached process schematic

A.7. Contractor Information.

Are any operational or maintenance aspects of this facility related to sewage sludge generation, treatment, use or disposal the responsibility of a contractor? __X__ Yes _____No

If yes, provide the following for each contractor (attach additional pages if necessary):

a. Name: Solids Solutions, LLC

b. Mailing Address: 12340 Seal Beach Blvd., Suite B-383
Seal Beach, CA 90740

c. Telephone Number: (888) 765-4377

d. Responsibilities of contractor: Haul and apply biosolids to agricultural reuse sites

NA = not applicable

FACILITY NAME AND PERMIT NUMBER: CA0107409
E.W. Blom Point Loma Wastewater Treatment Plant

Form Approved 1/14/99
OMB Number 2040-0086

A.8. Pollution Concentrations: Using the table below or a separate attachment, provide sewage sludge monitoring data for the pollutants for which limits in sewage sludge have been established in 40 CFR Part 503 for this facility's expected use or disposal practices. All data must be based on three or more samples taken at least one month apart and must be no more than four and one-half years old.

POLLUTANT	CONCENTRATION (mg/kg dry weight)	ANALYTICAL METHOD	DETECTION LEVEL FOR ANALYSIS
ARSENIC			
CADMIUM			
CHROMIUM	**See Enclosures 7 & 8 of Appendix J for sludge pollutant analyses**		
COPPER			
LEAD			
MERCURY			
MOLYBDENUM	**See Enclosures 7 & 8 of Appendix J for sludge pollutant analyses**		
NICKEL			
SELENIUM			
ZINC			

A.9. Certification. Read and submit the following certification statement with this application. Refer to the instructions to determine who is an officer for purposes of this certification. Indicate which parts of Form 2S you have completed and are submitting:

X Part 1 Limited Background Information packet

Part 2 Permit Application Information packet:

X Section A (General Information)

X Section B (Generation of Sewage Sludge or Preparation of a Material Derived from Sewage Sludge)

X Section C (Land Application of Bulk Sewage Sludge)

____ Section D (Surface Disposal)

____ Section E (Incineration)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name and official title: **Dr. Timothy C. Bertch, Metropolitan Wastewater Director**

Signature: Timothy C Bertch Date signed: 29 Nov 2007

Telephone number: **(858) 292-6401**

Upon request of the permitting authority, you must submit any other information necessary to assess sewage sludge use or disposal practices at your facility or identify appropriate permitting requirements.

SEND COMPLETED FORMS TO:

FACILITY NAME AND PERMIT NUMBER: CA0107409
E.W. Blom Point Loma Wastewater Treatment Plant

Form Approved 1/14/99
OMB Number 2040-0086

B. GENERATION OF SEWAGE SLUDGE OR PREPARATION OF A MATERIAL DERIVED FROM SEWAGE SLUDGE

Complete this section if your facility generates sewage sludge or derives a material from sewage sludge.

B.1. Amount Generated On Site.

Total dry metric tons per 365-day period generated at your facility: 31,479[3] dry metric tons

[3] **Totals for MBC biosolids for calendar year 2006. See attached table.**

B.2. Amount Received from Off Site. If your facility receives sewage sludge from another facility for treatment, use, or disposal, provide the following information for each facility from which sewage sludge is received. If you receive sewage sludge from more than one facility, attach additional pages as necessary.

a. Facility name: **See table on following page**

b. Mailing Address: _____

c. Contact person: **See table on following page**

Title: _____

Telephone number: _____

d. Facility Address (not P.O. Box): **See table on following page**

e. Total dry metric tons per 365-day period received from this facility: **See Appendix J** dry metric tons

f. Describe, on this form or on another sheet of paper, any treatment processes known to occur at the off-site facility, including blending activities and treatment to reduce pathogens or vector attraction characteristics.

NA

B.3. Treatment Provided At Your Facility.

a. Which class of pathogen reduction is achieved for the sewage sludge at your facility?

_____ Class A **X** Class B _____ Neither or unknown

b. Describe, on this form or another sheet of paper, any treatment processes used at your facility to reduce pathogens in sewage sludge:

All biosolids were treated to Class B standards through anaerobic digestion for a minimum of 15 days at a temperature of 35° C to 55° C (Alternative 3, Process 3).

c. Which vector attraction reduction option is met for the sewage sludge at your facility?

X Option 1 (Minimum 38 percent reduction in volatile solids)
_____ Option 2 (Anaerobic process, with bench-scale demonstration)
_____ Option 3 (Aerobic process, with bench-scale demonstration)
_____ Option 4 (Specific oxygen uptake rate for aerobically digested sludge)
_____ Option 5 (Aerobic processes plus raised temperature)
_____ Option 6 (Raise pH to 12 and retain at 11.5)
_____ Option 7 (75 percent solids with no unstabilized solids)
_____ Option 8 (90 percent solids with unstabilized solids)
_____ None or unknown

Summary of Facilities Discharging to Metro Biosolids Center

Facility	Location	Description of Flow Directed to MBC
Point Loma WTP	1902 Gatchell San Diego, CA 92106	Anaerobically digested advanced primary sludge
North City WRP	4949 Eastgate Mall San Diego, CA 92121	Waste activated sludge

1 Facility owned and operated by the City of San Diego. Facility contact information: Metropolitan Wastewater Department, 9192 Topaz Way, San Diego, CA 92123, (858) 292-6300.

Summary of Monthly Solids Reports
Metro Biosolids Center
Calendar Year 2006

Month	Point Loma Digested Sludge[2]		Combined MBC Centrifuge Centrate[2,3]		MBC Centrifuge Dewatered Biosolids[2]	
	mgd	Percent Solids	mgd	Percent Solids	Centrate Sludge Cake (dry tons)	Percent Solids
Jan	1.00	2.2	2.46	0.3	101.7	28.8
Feb	1.02	2.2	2.53	0.2	94.9	28.9
Mar	1.02	2.1	2.45	0.3	96.9	29.6
Apr	1.00	2.1	2.30	0.3	87.0	29.9
May	1.10	1.9	2.39	0.4	91.3	29.5
Jun	1.04	2.0	2.40	0.3	91.1	30.6
Jul	0.95	2.1	2.18	0.3	77.1	29.9
Aug	0.96	2.1	2.56	0.3	95.3	29.0
Sep	1.01	2.2	2.65	0.3	93.4	28.9
Oct	1.02	2.2	2.70	0.3	101.2	29.4
Nov	0.91	2.2	2.61	0.3	109.1	29.5
Dec	0.91	2.1	2.28	0.4	98.1	29.1
Annual Ave.	1.00	2.1	2.46	0.3	94.8	29.4

2 Monthly average value. From monthly sludge monitoring reports submitted to the Regional Board during calendar year 2006. See Appendix J.

3 Includes digested sludge from Point Loma WTP and biosolids from North City WTP digested onsite at MBC.

B.3. Treatment Provided At Your Facility. (con't)

d. Describe, on this form or another sheet of paper, any treatment processes used at your facility to reduce vector attraction properties of sewage sludge:

Vector Attraction requirements were attained by reducing the volatile solids concent to a minimum of 38 percent (Option 1).

e. Describe, on this form or another sheet of paper, any other sewage sludge treatment or blending activities not identified in (a) - (d) above:

NA

Complete Section B.4 if sewage sludge from your facility meets the ceiling concentrations in Table 1 of 40 CFR 503.13, the pollutant concentrations in Table 3 of §503.13, the Class A pathogen reduction requirements in §503.32(a), and one of the vector attraction reduction requirements in § 503.33(b)(1)-(8) and is land applied. Skip this section if sewage sludge from your facility does not meet all of these criteria.

B.4. Preparation of Sewage Sludge Meeting Ceiling and Pollutant Concentrations, Class A Pathogen Requirements, and One of Vector Attraction Reduction Options 1-8.

a. Total dry metric tons per 365-day period of sewage sludge subject to this section that is applied to the land: 0 dry metric tons

b. Is sewage sludge subject to this section placed in bags or other containers for sale or give-away for application to the land?

NA Yes _____ No

Complete Section B.5. if you place sewage sludge in a bag or other container for sale or give-away for land application. Skip this section if the sewage sludge is covered in Section B.4.

B.5. Sale or Give-Away in a Bag or Other Container for Application to the Land.

a. Total dry metric tons per 365-day period of sewage sludge placed in a bag or other container at your facility for sale or give-away for application to the land: 0 dry metric tons

b. Attach, with this application, a copy of all labels or notices that accompany the sewage sludge being sold or given away in a bag or other container for application to the land.

Complete Section B.6 if sewage sludge from your facility is provided to another facility that provides treatment or blending. This section does not apply to sewage sludge sent directly to a land application or surface disposal site. Skip this section if the sewage sludge is covered in Sections B.4 or B.5. If you provide sewage sludge to more than one facility, attach additional pages as necessary.

B.6. Shipment Off Site for Treatment or Blending.

a. Receiving facility name: NA

b. Mailing address: NA

c. Contact person: NA

Title: NA

Telephone number: NA

d. Total dry metric tons per 365-day period of sewage sludge provided to receiving facility: NA

B.6. Shipment Off Site for Treatment or Blending. (con't)

e. Does the receiving facility provide additional treatment to reduce pathogens in sewage sludge from your facility? NA Yes ____ No

Which class of pathogen reduction is achieved for the sewage sludge at the receiving facility?

_____ Class A NA Class B _____ Neither or unknown

Describe, on this form or another sheet of paper, any treatment processes used at the receiving facility to reduce pathogens in sewage sludge:

NA

f. Does the receiving facility provide additional treatment to reduce vector attraction characteristics of the sewage sludge?
_____Yes _____No

Which vector attraction reduction option is met for the sewage sludge at the receiving facility?

NA Option 1 (Minimum 38 percent reduction in volatile solids)
_____ Option 2 (Anaerobic process, with bench-scale demonstration)
_____ Option 3 (Aerobic process, with bench-scale demonstration)
_____ Option 4 (Specific oxygen uptake rate for aerobically digested sludge)
_____ Option 5 (Aerobic processes plus raised temperature)
_____ Option 6 (Raise pH to 12 and retain at 11.5)
_____ Option 7 (75 percent solids with no unstabilized solids)
_____ Option 8 (90 percent solids with unstabilized solids)
_____ None

Describe, on this form or another sheet of paper, any treatment processes used at the receiving facility to reduce vector attraction properties of sewage sludge.

NA

g. Does the receiving facility provide any additional treatment or blending activities not identified in (c) or (d) above? NA Yes ____ No

If yes, describe, on this form or another sheet of paper, the treatment or blending activities not identified in (c) or (d) above:

NA

h. If you answered yes to (e), (f), or (g), attach a copy of any information you provide the receiving facility to comply with the "notice and necessary information" requirement of 40 CFR 503.12(g).

i. Does the receiving facility place sewage sludge from your facility in a bag or other container for sale or give-away for application to the land? NA Yes _____ No

If yes, provide a copy of all labels or notices that accompany the product being sold or given away.

Complete Section B.7 if sewage sludge from your facility is applied to the land, unless the sewage sludge is covered in:

- **Section B.4 (it meets Table 1 ceiling concentrations, Table 3 pollutant concentrations, Class A pathogen requirements, and one of vector attraction reduction options 1-8); or**
- **Section B.5 (you place it in a bag or other container for sale or give-away for application to the land); or**
- **Section B.6 (you send it to another facility for treatment or blending).**

B.7. Land Application of Bulk Sewage Sludge.

a. Total dry metric tons per 365-day period of sewage sludge applied to all land application sites: 3,202 **(calendar year 2006)** dry metric tons

B.7. Land Application of Bulk Sewage Sludge. (con't)

b. Do you identify all land application sites in Section C of this application? X Yes _____ No

If no, submit a copy of the land application plan with application (see instructions).

c. Are any land application sites located in States other than the State where you generate sewage sludge or derive a material from sewage sludge? X Yes _____ No

If yes, describe, on this form or another sheet of paper, how you notify the permitting authority for the States where the land application sites are located. Provide a copy of the notification.

Complete Section B.8 if sewage sludge from your facility is placed on a surface disposal site.

B.8. Surface Disposal.

a. Total dry metric tons of sewage sludge from your facility placed on all surface disposal sites per 365-day period: 0 dry metric tons

b. Do you own or operate all surface disposal sites to which you send sewage sludge for disposal?

NA Yes _____ No

If no, answer B.8.c through B.8.f for each surface disposal site that you do not own or operate. If you send sewage sludge to more than one such surface disposal site, attach additional pages as necessary.

c. Site name or number: NA

d. Contact person: _____

Title: NA

Telephone number: _____

Contact is: NA Site owner _____ Site operator

e. Mailing address: _____

NA

f. Total dry metric tons of sewage sludge from your facility placed on this surface disposal site per 365-day period: _____ dry metric tons

Complete Section B.9 if sewage sludge from your facility is fired in a sewage sludge incinerator.

B.9. Incineration.

a. Total dry metric tons of sewage sludge from your facility fired in all sewage sludge incinerators per 365-day period: 0 dry metric tons

b. Do you own or operate all sewage sludge incinerators in which sewage sludge from your facility is fired? NA Yes _____ No

If no, complete B.9.c through B.9.f for each sewage sludge incinerator that you do not own or operate. If you send sewage sludge to more than one such sewage sludge incinerator, attach additional pages as necessary.

c. Incinerator name or number: NA

d. Contact person: _____

Title: NA

Telephone number: _____

Contact is: NA Incinerator owner _____ Incinerator operator

B.9. Incineration. (con't)

e. Mailing address: NA

f. Total dry metric tons of sewage sludge from your facility fired in this sewage sludge incinerator per 365-day period: NA dry metric tons

Complete Section B.10 if sewage sludge from this facility is placed on a municipal solid waste landfill.

B.10. Disposal in a Municipal Solid Waste Landfill. Provide the following information for each municipal solid waste landfill on which sewage sludge from your facility is placed. If sewage sludge is placed on more than one municipal solid waste landfill, attach additional pages as necessary.

a. Name of landfill: Otay Landfill

b. Contact person: Otay Landfill, Inc.

Title:

Telephone number: (619) 421-3773

Contact is: X Landfill owner ____ Landfill operator

c. Mailing address: 1700 Maxwell Road
Chula Vista, CA 91911

d. Location of municipal solid waste landfill:

Street or Route #: 1700 Maxwell Road

County: San Diego

City or Town: Chula Vista State: CA Zip: 91911

e. Total dry metric tons of sewage sludge from your facility placed in this municipal solid waste landfill per 365-day period:

28,277[4] dry metric tons

[4] During 2006, a total of 27,684 metric tons was beneficially used for Alternative Daily Cover, and 593 metric tons was disposed of in the landfill.

f. List, on this form or an attachment, the numbers of all other Federal, State, and local permits that regulate the operation of this municipal solid waste landfill.

Permit Number	Type of Permit
Order No. 93-86 (with addenda)	State of California waste discharge requirements

g. Submit, with this application, information to determine whether the sewage sludge meets applicable requirements for disposal of sewage sludge in a municipal solid waste landfill (e.g., results of paint filter liquids test and TCLP test) See Appendix J

h. Does the municipal solid waste landfill comply with applicable criteria set forth in 40 CFR Part 258?

X Yes ____ No

NA = not applicable

C. LAND APPLICATION OF BULK SEWAGE SLUDGE

Complete Section C for sewage sludge that is applied to the land, unless any of the following conditions apply:

- **The sewage sludge meets the Table 1 ceiling concentrations, the Table 3 pollutant concentrations, Class A pathogen requirements, and one of vector attraction reduction options 1-8 (fill out B.4 instead); or**
- **The sewage sludge is sold or given away in a bag or other container for application to the land (fill out B.5 instead); or**
- **You provide the sewage sludge to another facility for treatment or blending (fill out B.6 instead).**

Complete Section C for every site on which the sewage sludge that you reported in Section B.7 is applied.

C.1. Identification of Land Application Site.

a. Site name or number: See Enclosures 10, 11 & 12 of Appendix J for list and location of sites

b. Site location (Complete 1 and 2).

1. Street or Route #: See Enclosures 10, 11 & 12 of Appendix J for list and location of sites

   County: _____

   City or Town: _____ State: _____ Zip: _____

2. Latitude: _____ Longitude: _____

   Method of latitude/longitude determination

   _____ USGS map _____ Field survey _____ Other

c. Topographic map. Provide a topographic map (or other appropriate map if a topographic map is unavailable) that shows the site location.

See Enclosure 12 of Appendix J for topographic maps

C.2. Owner Information.

a. Are you the owner of this land application site? _____ Yes X No

b. If no, provide the following information about the owner:

Name: Solids Solutions, LLC

Telephone number: (888) 765-4377

Mailing Address: 12340 Seal Beach Blvd., Suite B-383

Seal Beach, CA 90740

C.3. Applier Information.

a. Are you the person who applies, or who is responsible for application of, sewage sludge to this land application site?
_____ Yes X No

b. If no, provide the following information for the person who applies:

Name: Solids Solutions, LLC

Telephone number: (888) 765-4377

Mailing Address: 12340 Seal Beach Blvd., Suite B-383

Seal Beach, CA 90740

C.4. Site Type: Identify the type of land application site from among the following.

X Agricultural land _____ Forest _____ Public contact site

_____ Reclamation site _____ Other. Describe: _____

C.5. Crop or Other Vegetation Grown on Site.

a. What type of crop or other vegetation is grown on this site?

See Enclosures 10 & 11 of Appendix J for list of sites, crops, and nitrogen requirements

b. What is the nitrogen requirement for this crop or vegetation?

See Enclosures 10 & 11 of Appendix J for list of sites, crops, and nitrogen requirements

C.6. Vector Attraction Reduction.

Are any vector attraction reduction requirements met when sewage sludge is applied to the land application site?

_____ Yes X No

If yes, answer C.6.a and C.6.b;

a. Indicate which vector attraction reduction option is met:

NA Option 9 (Injection below land surface)

_____ Option 10 (Incorporation into soil within 6 hours)

b. Describe, on this form or another sheet of paper, any treatment processes used at the land application site to reduce vector attraction properties of sewage sludge:

NA

Complete Question C.7 only if the sewage sludge applied to this site since July 20, 1993, is subject to the cumulative pollutant loading rates (CPLRs) in 40 CFR 503.13(b)(2).

C.7. Cumulative Loadings and Remaining Allotments.

a. Have you contacted the permitting authority in the State where the bulk sewage sludge subject to CPLRs will be applied, to ascertain whether bulk sewage sludge subject to CPLRs has been applied to this site on or since July 20, 1993? X Yes _____ No

If no, sewage sludge subject to CPLRs may not be applied to this site.

If yes, provide the following information:

Permitting authority: **Arizona Department of Environmental Quality**

Contact Person: _____

Telephone number: **(602) 771-4612**

b. Based upon this inquiry, has bulk sewage sludge subject to CPLRs been applied to this site since July 20, 1993?

See Enclosure 10 of Appendix J for pollutant loading rates to date for each site

If no, skip C.7.c.

c. Provide the following information for every facility other than yours that is sending, or has sent, bulk sewage sludge to CPLRs to this site since July 20, 1993. If more than one such facility sends sewage sludge to this site, attach additional pages as necessary.

Facility name **See Enclosure 10 of Appendix J for pollutant loading rates to date for each site**

Mailing Address _____

_____

Contact person **See Enclosure 10 of Appendix J for pollutant loading rates to date for each site**

Title _____

Telephone number _____

D. SURFACE DISPOSAL

Complete this section if you own or operate a surface disposal site.

Complete Sections D.1 - D.5 for each active sewage sludge unit.

D.1. Information on Active Sewage Sludge Units.

a. Unit name or number: **Not applicable - no surface disposal**

b. Unit location (Complete 1 and 2).

1. Street or Route # **NA**

County **NA**

City or Town **NA** State _____ Zip _____

2. Latitude **NA** Longitude **NA**

Method of latitude/longitude determination: _____ USGS map _____ Field survey _____ Other

c. Topographic map. Provide a topographic map (or other appropriate map if a topographic map is unavailable) that shows the site location.

d. Total dry metric tons of sewage sludge placed on the active sewage sludge unit per 365-day period: **NA** dry metric tons

e. Total dry metric tons of sewage sludge placed on the active sewage sludge unit over the life of the unit: **NA** dry metric tons

f. Does the active sewage sludge unit have a liner with a maximum hydraulic conductivity of 1×10^{-7} cm/sec? _____ Yes _____ No

If yes, describe the liner (or attach a description):

NA

g. Does the active sewage sludge unit have a leachate collection system? **NA** Yes _____ No

If yes, describe the leachate collection system (or attach a description). Also describe the method used for leachate disposal and provide the numbers of any Federal, State, or local permit(s) for leachate disposal:

NA

h. If you answered no to either D.1.f. or D.1.g., answer the following question:

Is the boundary of the active sewage sludge unit less than 150 meters from the property line of the surface disposal site?
NA Yes _____ No

If yes, provide the actual distance in meters: **NA**

Provide the following information:

Remaining capacity of active sewage sludge unit, in dry metric tons: **NA** dry metric tons

Anticipated closure date for active sewage sludge unit, if known: **NA** (MM/DD/YYYY)

Provide, with this application, a copy of any closure plan that has been developed for this active sewage sludge unit.

NA = not applicable

D.2. **Sewage Sludge from Other Facilities.** Is sewage sent to this active sewage sludge unit from any facilities other than your facility?
_____ Yes _____ No

If yes, provide the following information for each such facility. If sewage sludge is sent to this active sewage sludge unit from more than one such facility, attach additional pages as necessary.

a. Facility name **Not applicable - no surface disposal**

b. Mailing Address **NA**

c. Contact person **NA**

Title

Telephone number **NA**

d. Which class of pathogen reduction is achieved before sewage sludge leaves the other facility?
_____ Class A _____ Class B _____ None or unknown

e. Describe, on this form or another sheet of paper, any treatment processes used at the other facility to reduce pathogens in sewage sludge:

NA

f. Which vector attraction reduction option is met for the sewage sludge at the receiving facility?

NA Option 1 (Minimum 38 percent reduction in volatile solids)
_____ Option 2 (Anaerobic process, with bench-scale demonstration)
_____ Option 3 (Aerobic process, with bench-scale demonstration)
_____ Option 4 (Specific oxygen uptake rate for aerobically digested sludge)
_____ Option 5 (Aerobic processes plus raised temperature)
_____ Option 6 (Raise pH to 12 and retain at 11.5)
_____ Option 7 (75 percent solids with no unstabilized solids)
_____ Option 8 (90 percent solids with unstabilized solids)
_____ None or unknown

g. Describe, on this form or another sheet of paper, any treatment processes used at the receiving facility to reduce vector attraction properties of sewage sludge

NA

h. Describe, on this form or another sheet of paper, any other sewage sludge treatment activities performed by the other facility that are not identified in (d) - (g) above:

NA

D.3. **Vector Attraction Reduction**

a. Which vector attraction option, if any, is met when sewage sludge is placed on this active sewage sludge unit?

NA Option 9 (Injection below and surface)
_____ Option 10 (Incorporation into soil within 6 hours)
_____ Option 11 (Covering active sewage sludge unit daily)

D.3. Vector Attraction Reduction. (con't)

b. Describe, on this form or another sheet of paper, any treatment processes used at the active sewage sludge unit to reduce vector attraction properties of sewage sludge:

Not applicable - no surface disposal

D.4. Ground-Water Monitoring.

a. Is ground-water monitoring currently conducted at this active sewage sludge unit, or are ground-water monitoring data otherwise available for this active sewage sludge unit?
NA Yes _____ No

If yes, provide a copy of available ground-water monitoring data. Also, provide a written description of the well locations, the approximate depth to ground-water, and the ground-water monitoring procedures used to obtain these data.

NA

b. Has a ground-water monitoring program been prepared for this active sewage sludge unit? NA Yes _____ No

If yes, submit a copy of the ground-water monitoring program with this permit application.

c. Have you obtained a certification from a qualified ground-water scientist that the aquifer below the active sewage sludge unit has not been contaminated? NA Yes _____ No

If yes, submit a copy of the certification with this permit application.

D.5. Site-Specific Limits. Are you seeking site-specific pollutant limits for the sewage sludge placed on the active sewage sludge unit?
NA Yes _____ No

If yes, submit information to support the request for site-specific pollutant limits with this application.

NA = not applicable

E. INCINERATION

Complete this section if you fire sewage sludge in a sewage sludge incinerator.

Complete this section once for each incinerator in which you fire sewage sludge. If you fire sewage sludge in more than one sewage sludge incinerator, attach additional copies of this section s necessary.

E.1. Incinerator Information.

a. Incinerator name or number: Not applicable - no incineration

b. Incinerator location (Complete 1 and 2).

1. Street or Route # NA

County NA

City or Town _____ State _____ Zip _____

2. Latitude NA Longitude NA

Method of latitude/longitude determination: _____ USGS map _____ Field survey _____ Other

E.2. Amount Fired. Dry metric tons per 365-day period of sewage sludge fired in the sewage sludge incinerator: NA dry metric tons

E.3. Beryllium NESHAP.

a. Is the sewage sludge fired in this incinerator "beryllium-containing waste," as defined in 40 CFR Part 61.31? NA Yes _____ No

Submit, with this application, information, test data, and description of measures taken that demonstrate whether the sewage sludge incinerated is beryllium-containing waste, and will continue to remain as such.

b. If the answer to (a) is yes, **submit with this application** a complete report of the latest beryllium emission rate testing and documentation of ongoing incinerator operating parameters indicating that the NESHAP emission rate limit for beryllium has been and will continue to be met.

E.4. Mercury NESHAP.

a. How is compliance with the mercury NESHAP being demonstrated?

NA Stack testing (if checked, complete E.4.b)

_____ Sewage sludge sampling (if checked, complete E.4.c)

b. If stack testing is conducted, submit the following information with this application: NA

A complete report of stack testing and documentation of ongoing incinerator operating parameters indicating that the incinerator has met, and will continue to meet, the mercury NESHAP emission rate limit.

Copies of mercury emission rate tests for the two most recent years in which testing was conducted.

c. If sewage sludge sampling is used to demonstrate compliance, submit a complete report of sewage sludge sampling and documentation of ongoing incinerator operating parameters indicating that the incinerator has met, and will continue to meet the mercury NESHAP emission rate limit.

E.5. Dispersion Factor.

a. Dispersion factor, in micrograms/cubic meter per gram/second: NA

b. Name and type of dispersion model: NA

c. Submit a copy of the modeling results and supporting documentation with this application.

NA = not applicable

E.6. Control Efficiency.

a. Control efficiency, in hundredths, for the following pollutants:

Arsenic: NA Chromium: _____ Nickel: _____ **Not applicable - no incineration**

Cadmium: _____ Lead: _____

b. Submit a copy of the results or performance testing and supporting documentation (including testing dates) with this application.

E.7. Risk Specific Concentration for Chromium.

a. Risk specific concentration (RSC) used for chromium, in micrograms per cubic meter: NA

b. Which basis was used to determine the RSC?

NA Table 2 in 40 CFR 503.43

____Equation 6 in 40 CFR 503.43 (site-specific determination)

c. If Table 2 was used, identify the type of incinerator used as the basis:

NA Fluidized bed with wet scrubber

____Fluidized bed with wet scrubber and wet electrostatic precipitator

____Other types with wet scrubber

____Other types with wet scrubber and wet electrostatic precipitator

d. If Equation 6 was used, provide the following:

Decimal fraction of hexavalent chromium concentration to total chromium concentration in stack exit gas: NA

Submit results of incinerator stack tests for hexavalent and total chromium concentrations, including date(s) of test, with this application.

E.8. Incinerator Parameters

a. Do you monitor Total Hydrocarbons (THC) in the sewage sludge incinerator's exit gas? NA Yes _____ No

Do you monitor Carbon Monoxide (CO) in the sewage sludge incinerator's exit gas? NA Yes _____ No

b. Incinerator type: NA

c. Incinerator stack height, in meters: NA

Indicate whether value submitted is: _____ Actual stack height _____ Creditable stack height

E.9. Performance Test Operating Parameters

a. Maximum Performance Test Combustion Temperature: NA

b. Performance test sewage sludge feed rate, in dry metric tons/day: NA

indicate whether value submitted is:

NA Average use _____ Maximum design

Submit, with this application, supporting documents describing how the feed rate was calculated.

c. Submit, with this application, information documenting the performance test operating parameters for the air pollution control device(s) used for this sewage sludge incinerator.

NA = not applicable

E.10. **Monitoring Equipment.** List the equipment in place to monitor the following parameters:

a. Total hydrocarbons or carbon monoxide: _____

b. Percent oxygen: _____

c. Moisture content: **Not applicable - no incineration**

d. Combustion temperature: _____

e. Other: _____

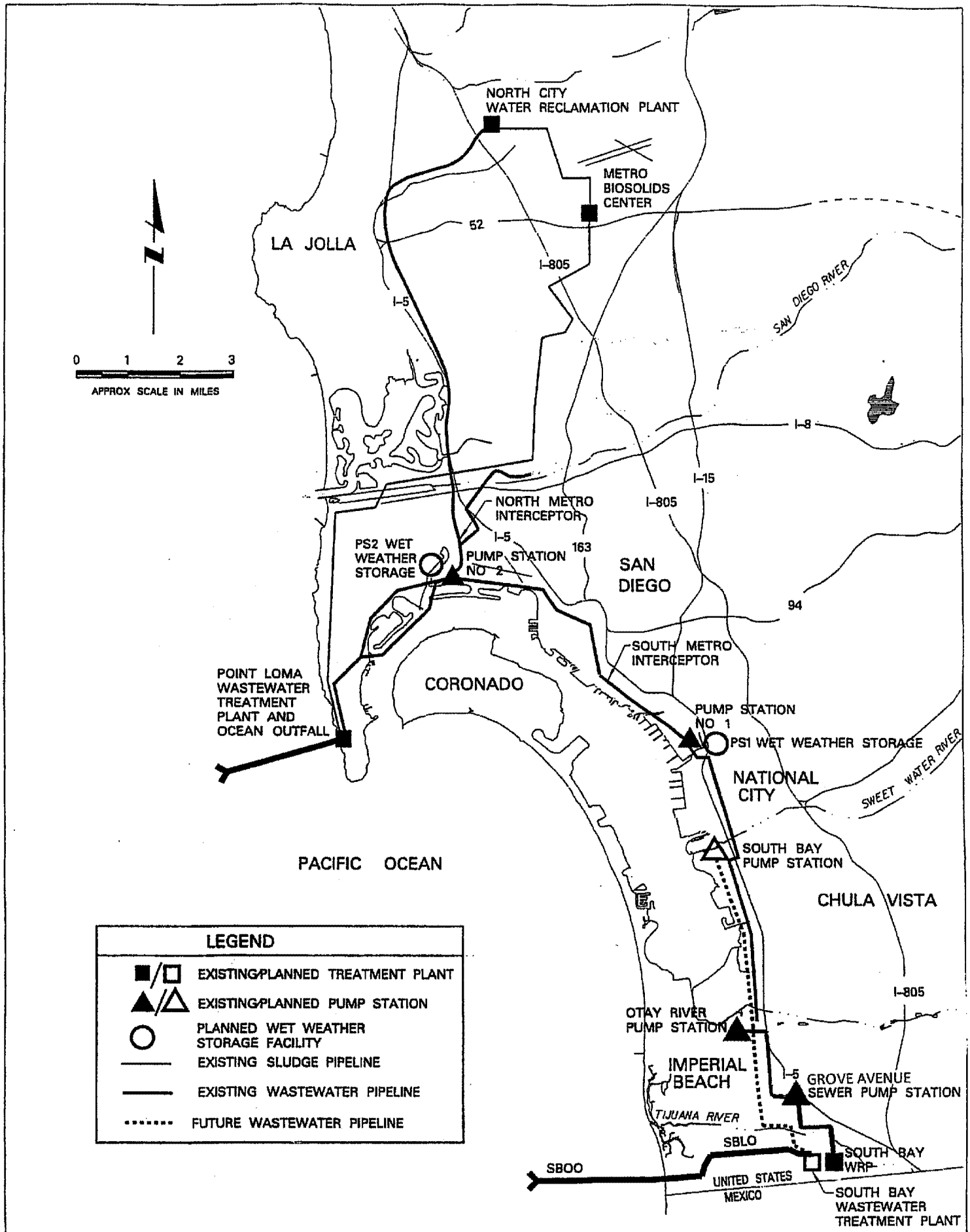
E.11. **Air Pollution Control Equipment.** Submit, with this application, a list of all air pollution control equipment used with this sewage sludge incinerator.

NA

NA = not applicable

Figures and Maps

Renewal of NPDES CA0107409



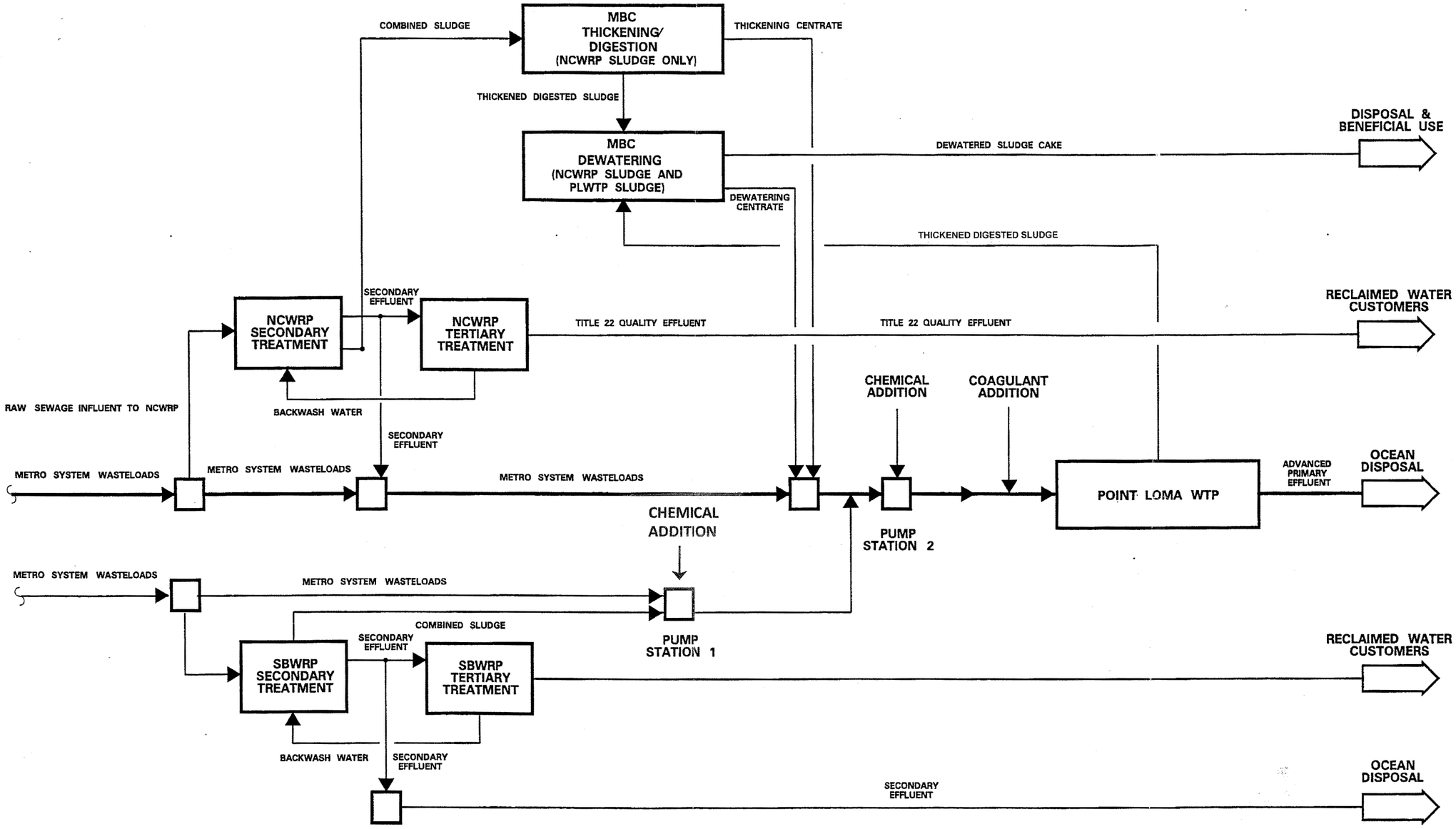
EXISTING AND PLANNED METRO SYSTEM FACILITIES

FIGURE 1

Chemical Use at Metro System Facilities

Chemical	*Application Point*	*Purpose*	*Dosage*
METRO BIOSOLIDS CENTER			
Ferric chloride	Feed flow/centrifuges	Flocculation and scale control	39 mg/L
Ferrous chloride	Digester in service	Control of hydrogen sulfide gas	310 mg/L
Mannich polymer	Feed flow/centrifuges	Flocculation	2.4 mg/L
Sodium hydroxide	Wet scrubbers	Odor control, adjust ORP[1]	1014 mg/L
Sodium hypochlorite	Wet scrubbers	Odor control, adjust pH	1790 mg/L
NORTH CITY WRP			
Anionic Polymer	Aeration Effluent Channel	Turbidity control	60 lbs/day
Sodium Hydroxide	Influent PS/headworks/primary	Odor control	30 gpd
Ferric Chloride	Sludge pump station	Odor control	500 gpd
Hydrochloric Acid 31%	Influent PS /headworks/primary	Odor control	7.8 gpd
Sodium Hypochlorite	Influent PS/headworks/primary	Odor control	300 gpd
Sodium Hypochlorite	Filter effluent	NC disinfection	1500 gpd
POINT LOMA WTP			
Anionic Polymer	Flumes to sedimentation basins	Flocculation	0.14 mg/L
Caustic Soda	Odor tower wet scrubber	Odor control	ORP>575
Ferric Chloride	Parshall flumes	Coagulation	13-24 mg/L
Ferrous Chloride	Sludge blending tank	Hydrogen sulfide control at digesters	475-900 mg/L
Hydrogen Peroxide	Y structure upstream	Regenerate iron salts for coagulation	0-5 mg/L
Salt	Water softener	Odor control	500 lbs/day
Sodium Hypochlorite	Odor tower wet scrubber	Odor control	ORP[1] > 575
PUMP STATION NO. 1			
Ferrous Chloride	Influent wetwell	Sulfide control in wastewater	20-30 mg/L
Sodium Hydroxide	Odor scrubber(s)	Odor control	2-3 gpd
Sodium Hypochlorite	Odor scrubber(s)	Odor control	0.5 - 1 gpd
PUMP STATION NO. 2			
Ferric Chloride	Influent wetwell	Flocculation at Point Loma WTP	0-15 mg/L
Hydrogen Peroxide	Influent wetwell	Iron recovery and ferric reduction at Point Loma WTP	0 - 5 mg/L
Sodium Hydroxide	Odor scrubber(s)	Odor control	5 gpd
Sodium Hypochlorite	Odor scrubber(s)	Odor control	25 - 30 gpd
Hydrogen Peroxide	Influent wetwell	Regenerate iron salts for coagulation	0 - 5 mg/L
PUMP STATION NO. 64			
Sodium hypochlorite	Odor scrubber(s)	Odor control	25 gpd
PUMP STATION NO. 65			
Sodium hypochlorite	Odor scrubber(s)	Odor control	30 gpd
PENASQUITOS PUMP STATION			
Ferrous chloride	Influent wetwell	Odor control force main	450 gpd
Sodium hydroxide	Odor scrubber(s)	Odor control	1 gpd
Sodium hypochlorite	Odor scrubber(s)	Odor control	3-5 gpd
SOUTH BAY WRP			
Alum (poly-alum)	Tertiary filters main influent line	Coagulant aid/turbidity control	10mg/L
Sodium hydroxide	Odor control wet scrubbers	Odor control	>9.0 pH units
Sodium hypochlorite	Odor control wet scrubbers	Odor control	ORP[1] >575
Sodium hypochlorite	UV influent channel	Algae control	5 mg/L
Sodium hypochlorite	Header lines	Odor control	10 mg/L
Sodium hypochlorite	RAS header lines	Filament control	1 mg/L

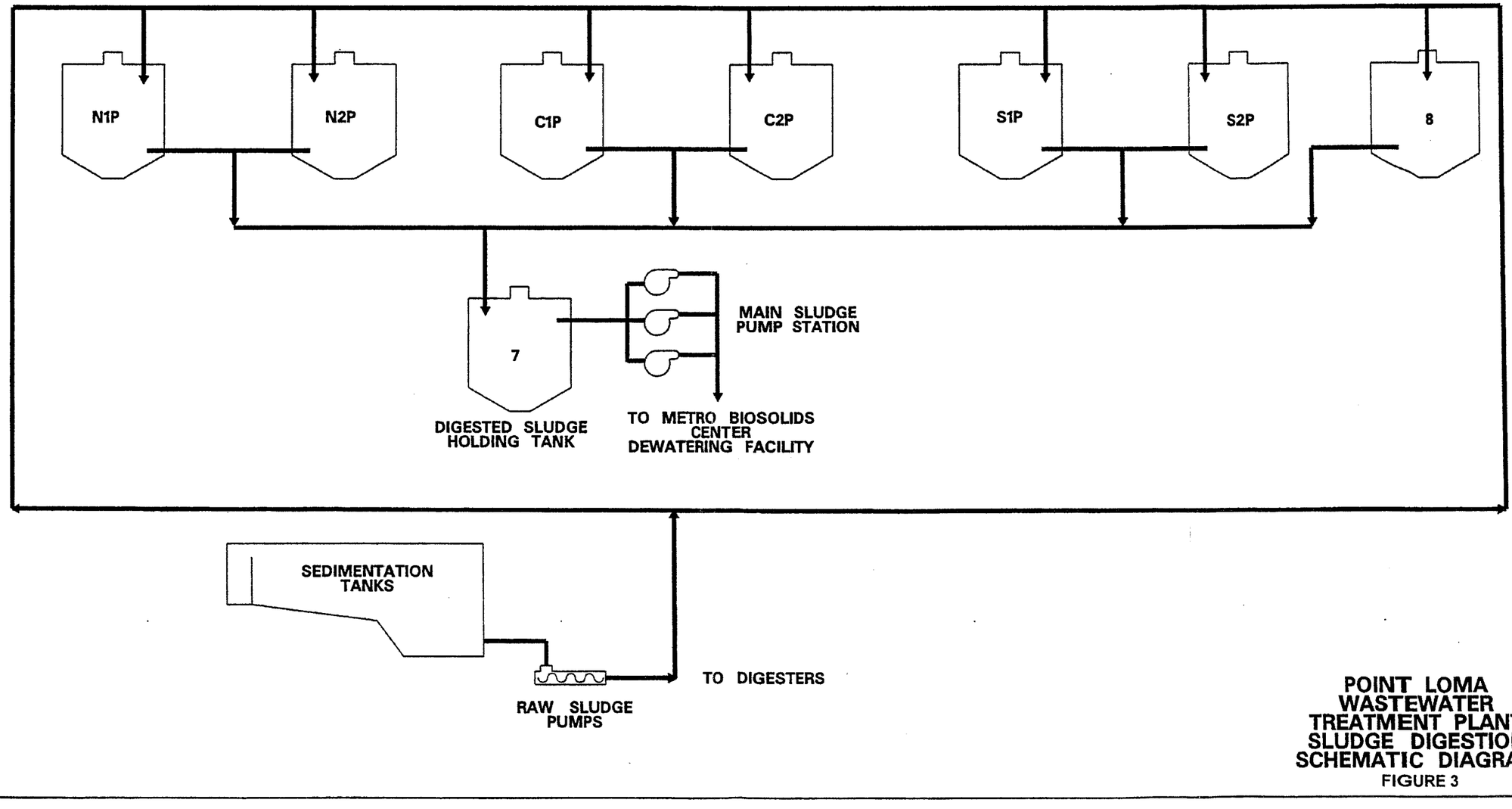
1 ORP = oxidation/reduction potential



METRO SYSTEM PROCESS SCHEMATIC

FIGURE 2

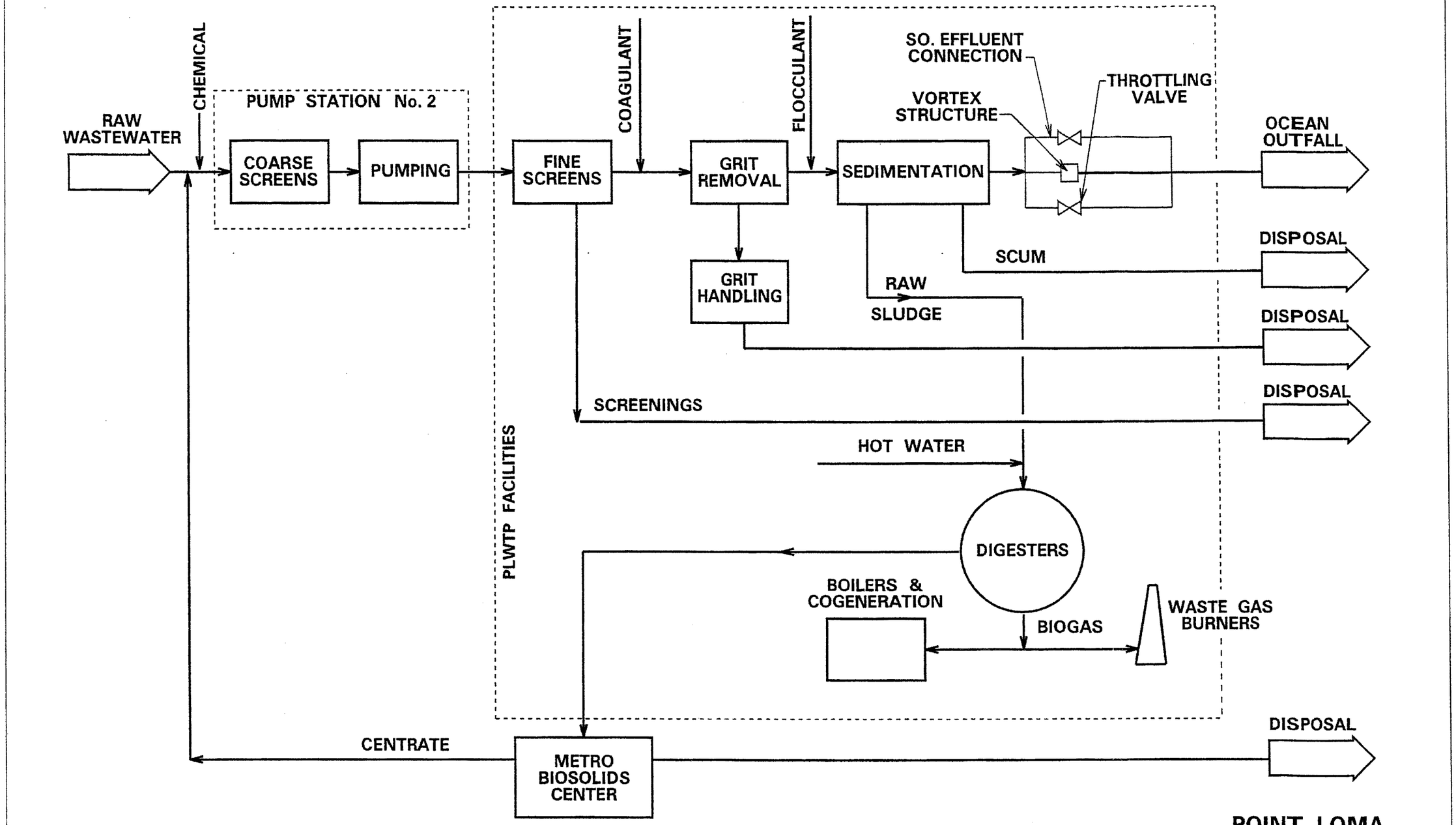
r\raida\cleanwater\prj\waiver\wav51-1a.dgn 4/1/00



FILENAME:G:\RADIA\CLEANWATER\PRJ\WAIVER\WAIV35_JA.DGN

POINT LOMA WASTEWATER TREATMENT PLANT SLUDGE DIGESTION SCHEMATIC DIAGRAM

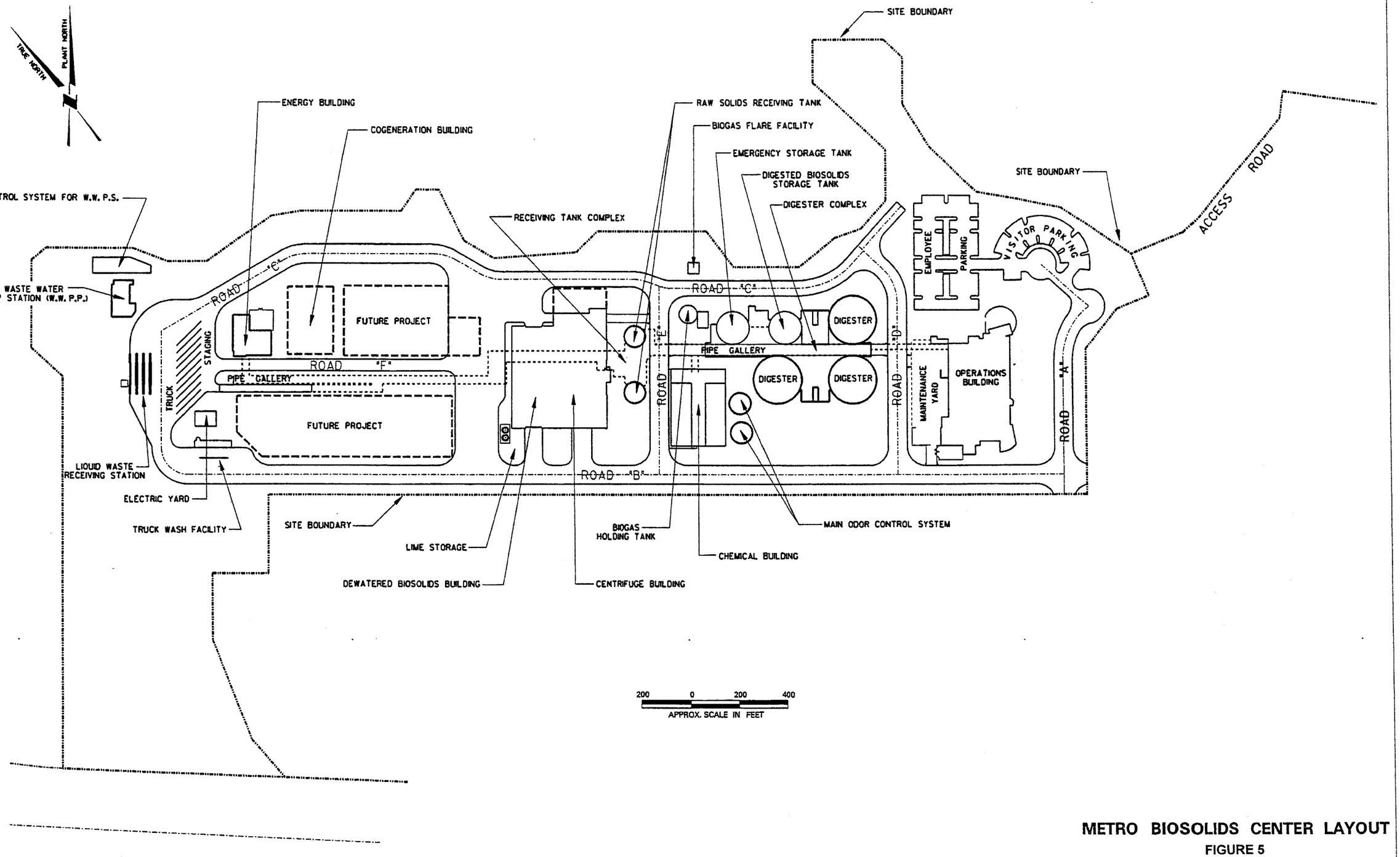
FIGURE 3



r:\reida...\pri\waiver\wavf41-1a.dgn

POINT LOMA WASTEWATER TREATMENT PLANT PROCESS SCHEMATIC DIAGRAM

FIGURE 4



R:\RAIDA\CLEANWATER\PRJ\WAIVER\WAVH31-1A.DGN

METRO BIOSOLIDS CENTER LAYOUT

FIGURE 5

...\prj\waiver\wavh31-1a.dgn Apr. 18, 2000 13:14:09

RAW SOLIDS RECEIVING	
*UNITS	2
OPERATING	1
STANDBY	1
CAPACITY 528303 GA/EACH	

SLUDGE DEGRITTER	
*UNITS	3
AVG. OPERATING	1
PEAK OPERATING	2
PEAK STANDBY	1
EMER. OPERATING	3
UNIT CAPACITY	
AVG. OPERATING	1042 GPM

THICKENING CENTRIFUGES	
*UNITS	5
AVG. OPERATING	2
PEAK OPERATING	3
PEAK STANDBY	2
EMER. OPERATING	4
UNIT CAPACITY	
AVERAGE	600 GPM
PEAK	750 GPM
UNIT OPERATING FLOW	
AVERAGE	408 GPM
PEAK	652 GPM
CAPTURE	
AVERAGE	95%
PEAK	95%

THICKENED SLUDGE BLENDING	
*UNITS	2
OPERATING	2
STANDBY	0
DETENTION TIME	
AT AVG. FLOW	3.16 HR.
CAPACITY 23697 GA/EACH	

ANAEROBIC DIGESTERS	
*UNITS	3
HYDRAULIC DETENTION TIME	
AT AVG. FLOW	48 DAYS
AT PEAK FLOW	32 DAYS
CAPACITY 2,913,147 GA/EACH	

RAWSOLIDS FROM NCWRP

FLOW = 855/1223/1957/2882 GPM
SOLIDS LOAD = 55194/79357/178554/178554 LB/DAY
%SOLIDS = .54/.54/.76/.52

CENTRATE
FLOW = 767/1098/1675/2600 GPM
SOLIDS LOAD = 2773/3968/8928/8928 LB/DAY
%SOLIDS = .03/.03/.04/.03

TO DIGESTED BIOSOLIDS STORAGE TANKS

DIGESTED BIOSOLIDS
FLOW = 88/125/282 GPM
SOLIDS LOAD = 3444/49282/73923 LB/DAY
%SOLIDS = 3.27/3.27/2.18

FLOW = 855/1223/1957/2882 GPM
SOLIDS LOAD = 55194/79357/178554/178554 LB/DAY
%SOLIDS = .54/.54/.76/.52

MIN. AVG. PEAK EMER.
FLOW = 855/1223/1957/2882 GPM
SOLIDS LOAD = 55194/79357/178554/178554 LB/DAY
%SOLIDS = .54/.54/.76/.52

THICKENED SOLIDS
FLOW = 88/125/282 GPM
SOLIDS LOAD = 52687/75390/169626 LB/DAY
%SOLIDS = 5/5/5

SLUDGE SCREENS	
*UNITS	3
AVG. OPERATING	1
PEAK OPERATING	2
PEAK STANDBY	1
UNIT CAPACITY	
AVERAGE	125 GPM
PEAK	141 GPM

FLOW = 88/125/282 GPM
SOLIDS LOAD = 52687/75390/169626 LB/DAY
%SOLIDS = 5/5/5

FLOW = 88/125/282 GPM
SOLIDS LOAD = 52687/75390/169626 LB/DAY
%SOLIDS = 5/5/5

MINIMUM AVERAGE FLOW
AVERAGE FLOW
PEAK FLOW
EMERGENCY FLOW

FLOW = 71/93/131/204

NOTE: FLOW DIAGRAM INDICATES DESIGN BASIS FOR FACILITIES. FOR INFORMATION ONLY.

LEGEND	
GA	GALLONS
GPM	GALLONS PER MINUTE
LB/DAY	POUNDS PER DAY
NCWRP	NORTH CITY WATER RECLAMATION PLANT

NOTE: MBC CENTRATE IS DIRECTED TO THE SEWER SYSTEM FOR TREATMENT AT THE POINT LOMA WTP

METRO BIOSOLIDS CENTER
PROCESS FLOW DIAGRAM – 1

FIGURE 6

R:\RAIDA\CLEANWATER\PRJ\WAIVER\WAVH3R-2A.DGN

DIGESTED BIOSOLIDS FROM PLWTP

FLOW = 606/794/1151/1662 GPM
SOLIDS LOAD = 215636/300401/414553/632439 LB/DAY
%SOLIDS = 2.96/3.15/3.00/3.17

DEWATERING

*UNITS	8
AVG. OPERATING	5
PEAK OPERATING	6
EMERGENCY OPER.	6
PEAK STANDBY	2
UNIT CAPACITY	
AVERAGE	200 GPM
PEAK	300 GPM
UNIT OPERATING FLOW	
AVERAGE	184 GPM
PEAK	223 GPM
CAPTURE	
AVERAGE	95%
PEAK	92%

DEWATERED BIOSOLIDS STORAGE SILOS

*UNITS 8
CAPACITY 7260 CU.FT./EACH
CAPACITY 217 TONS/EACH

RELATIVE DETENTION TIME AT AVERAGE FLOW 3.1 DAYS (EMPTY TO FULL)

TRUCK LOADING

*TRAINS 2
CAPACITY 24 CU.YD EACH
CAPACITY 20 TONS EACH

DIGESTED BIOSOLIDS STORAGE

*UNITS 2
OPERATING 1
STANDBY 1

CAPACITY 1,295,389 GA/EACH

DIGESTED BIOSOLIDS FROM MBC DIGESTERS

FLOW = 19/88/176 GPM
SOLIDS LOAD = 70,000/316,000/636,000 LB/DAY
SOLIDS LOAD = 35/158/318 DTPD
%SOLIDS = 30/30/30

FLOW = 88/125/282 GPM
SOLIDS LOAD = 3444/49282/73923 LB/DAY
%SOLIDS = 3.27/3.27/2.18

FLOW = 702/920/1340/1944 GPM
SOLIDS LOAD = 251012/349683/482562/706362 LB/DAY
%SOLIDS = 2.98/3.17/3.00/3.03

CENTRATE
FLOW = 631/826/1208/1740 GPM
SOLIDS LOAD = 10166/14162/34165/70636 LB/DAY
%SOLIDS = .13/.14/.24/.34

TO PRIVATIZER
TO PRIVATIZER

EACH PRIVATIZER
FLOW = 19/88/176 GPM
SOLIDS LOAD = 70,000/316,000/636,000 LB/DAY
SOLIDS LOAD = 35/158/318 DTPD
%SOLIDS = 30/30/30

DEWATERED BIOSOLIDS
FLOW = 71/93/131/204 GPM
SOLIDS LOAD = 240846/335521/448397/635726 LB/DAY
SOLIDS LOAD = 120/168/224/318 DTPD
%SOLIDS = 28/30/28/26

MINIMUM AVERAGE FLOW
AVERAGE FLOW
PEAK FLOW
EMERGENCY FLOW

FLOW = 71/93/131/204

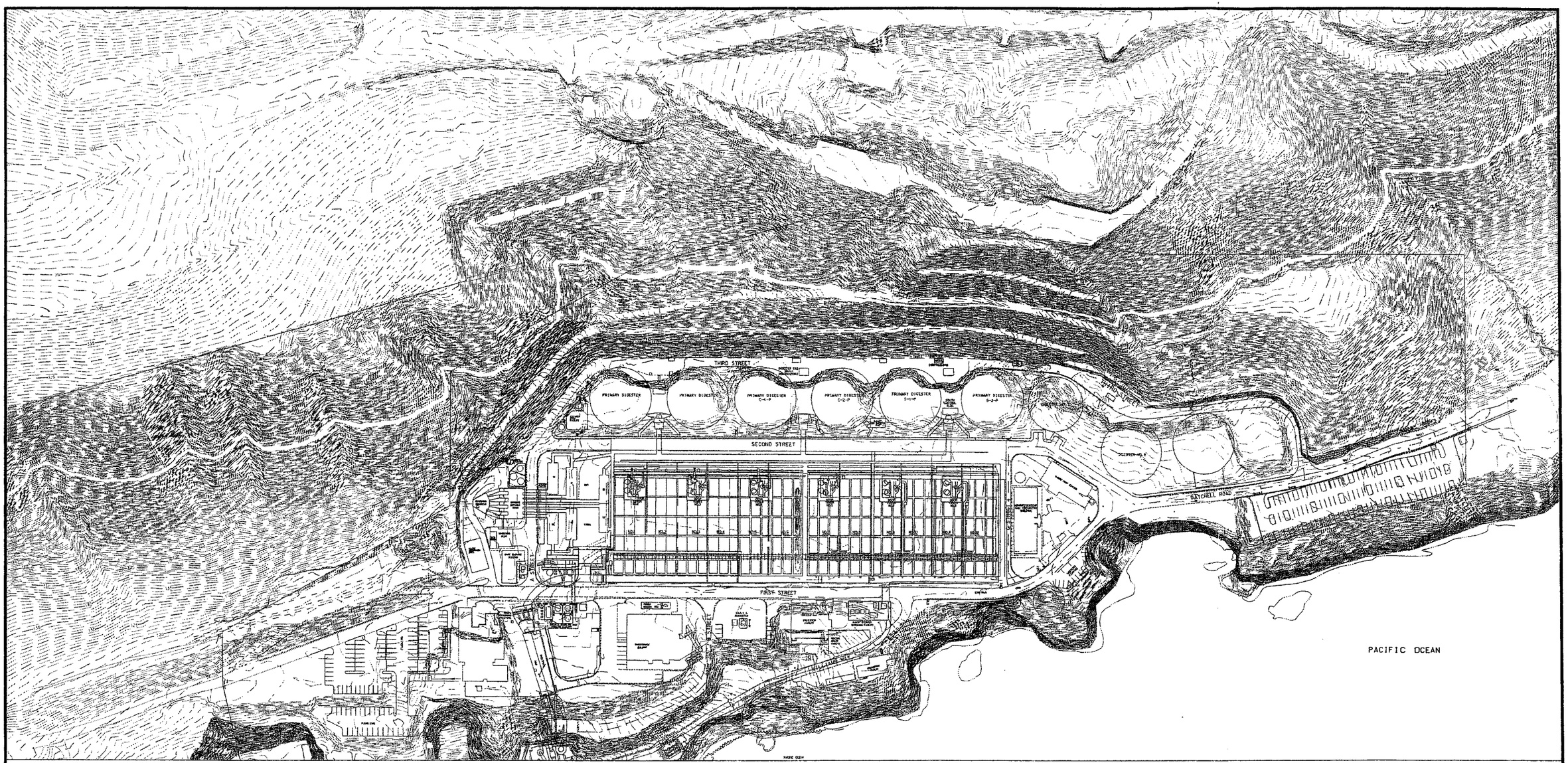
NOTE: FLOW DIAGRAM INDICATES DESIGN BASIS FOR FACILITIES. FOR INFORMATION ONLY.

LEGEND	
DTPD	DRY TONS PER DAY
GPM	GALLONS PER MINUTE
NSPF	NORTERN SLUDGE PROCESSING FACILITY
PLWTP	POINT LOMA WASTEWATER TREATMENT PLANT
LB/DAY	POUNDS PER DAY
GA/EACH	GALLONS EACH

NOTE: MBC CENTRATE IS DIRECTED TO THE SEWER SYSTEM FOR TREATMENT AT THE POINT LOMA WTP

R:\RAIDA\CLEANWATER\PRJ\WAIVER\WAVH3J_3A.DGN

METRO BIOSOLIDS CENTER
PROCESS FLOW DIAGRAM – 2
FIGURE 7



0 100 200 300
SCALE 1"=100'

DRAWING NO.	
SHEET NO.	
CIP NO.	
SPECIFICATION NO.	

FIGURE 8
POINT LOMA WTP
TOPOGRAPHIC MAP

CITY OF SAN DIEGO, CALIFORNIA
SHEET 1 OF 1 SHEETS

WATER W.O. _____
SEWER W.O. _____

PROJECT MANAGER _____ DATE 02/12/07

DESCRIPTION	BY	APPROVED	DATE	FILMED

DESIGN ENGINEER _____
CONTROL CERTIFICATION _____
LAMBERT COORDINATES _____

CONTRACTOR _____ DATE STARTED _____
INSPECTOR _____ DATE COMPLETED _____

WARNING
0 ½ 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

SCALE: HORIZONTAL 1" = 100 ' ; VERTICAL N/A

METROPOLITAN WASTEWATER DEPARTMENT
City of San Diego

DRAWING STATUS

NO.	DATE	REQ.	REVISION DESCRIPTION	DRAWN	CKD	APD	PE	EM	QA/QC

R:\ploma-baf\Layout\ptloma-nobaf.dgn
21-MAR-2007 15:07
x3de

THIRD STREET

DIGESTER N1

NORTH CONTROL BUILDING

DIGESTER N2

DIGESTER C1

CENTRAL CONTROL BUILDING

DIGESTER C2

DIGESTER S1

SOUTH CONTROL BUILDING 1041

DIGESTER S2

DIGESTER 7

FLARES

POLYMER BUILDING

POWER CENTER 2

INFLUENT CHANNEL AERATION BUILDING

POWER CENTER 3

WEST GULF GAS COMPRESSOR BUILDING

POWER CENTER 4

SLUDGE HOLDING TANK

DIGESTER 7 & 8 CONTROL BUILDING

SECOND STREET

SECOND STREET

MCC-6

MCC-31

PLANT AIR COMPRESSOR BUILDING 300 SQ. FT.

POWER CENTER 5

SLUDGE PUMP STATION

GRIT PUMP ROOM

FERRIC CHLORIDE TANK FARM

MCC-20

GRIT BUILDING

ORS #2

ORS #3

ORS #4

ORS #5

ORS #6

ORS #7

ORS #8

SLUDGE HOLDING TANK

ORS #9

GATCHELL ROAD

MCC 10

SCREENING BUILDING

PLANT WASHDOWN AREA

CART STORAGE BUILDING

A STREET

ORS #1

NEW 1 1/2" DOUBLE WALL PIPE

ACCESS DOOR AT NORTH END ONLY

CONSTRUCTION MANAGEMENT & ENGINEERING BUILDING

E STREET

RAMP

SCUM TO MCC 3 & 4

SCUM CONCENTRATORS

NORTH EFFLUENT OUTFALL SYSTEM

BG-4

EXISTING 1" PIPE IN PIPE TRENCH

POWER CENTER NO.1

CHEMICAL FARM

WATER SOFTENER

FIRST STREET

DISCHARGE POINT

FIRST STREET

NORTH EFFLUENT SCREENING FACILITY

OIL AND PAINT BUILDING

POWER CENTER 1

CUT 1" PIPE AND USE NEW 1 1/2" DOUBLE WALL PIPE

SDG&E STATION

DIGESTER GAS UTILIZATION FACILITY

SOUTH BUBBLERS

BG-2

BG-6C PER O&M

SOUTH EFFLUENT SCREENING FACILITY

NORTH FERMIC CHLORIDE STRUCTURE

EXISTING BLEACH STORAGE

PAINT BOOTH

NEW PUMP

STOREROOM BUILDING

MAINTENANCE BUILDING

B STREET

CENTRAL BOILER FACILITY

OPERATIONS BUILDING & VISITORS CENTER

WEIR

S STRUCTURE

MAINTENANCE STORAGE BUILDING

POWER CENTER 6

NEW BULLHEAD GATE (BG-1)

SOUTH EFFLUENT OUTFALL SYSTEM

ENGINEERING TRAILER

METERING VAULT

ELECTRONICS MAINTENANCE TRAILER

MCC-9 EMERGENCY POWER BUILDING

84" PIPE

OCEAN OUTFALL INTAKE STRUCTURE

CONCRETE GATE COVER

STILLING BASIN

84" KNIFE GATES

84" SLEEVE VALVE

SOUTH THROTTLING VALVE FACILITY

108" RCP

IMPRESSED CURRENT CATHODIC SYSTEM FOR EXTERIOR OF NEW STEEL PIPE

VORTEX

THOMA WICKETS CONTROL

84" BUTTERFLY VALVE

54" BALL VALVE

96" KNIFE GATE

54" SLEEVE VALVE (3 PLACES)

BUTTERFLY VALVE (6 PLACES)

84" KNIFE GATES

84" WYE

EXISTING SAMPLER PUMPS

THROTTLING VAVLE STRUCTURE

HYDROELECTRIC POWER FACILITY

OUTFALL

FIGURE 9

POINT LOMA
WASTEWATER TREATMENT PLANT
EFFLUENT CHLORINATION

CITY OF SAN DIEGO, CALIFORNIA
METROPOLITAN
WASTEWATER DEPARTMENT

WATER W.O. _____
SEWER W.O. _____

UTILITIES DIRECTOR _____ DATE _____ DEPUTY DIRECTOR

DESCRIPTION	BY	APPROVED	DATE	FILMED
r:/stacy/effchlor.dgn	jdw/skc		9/2007	

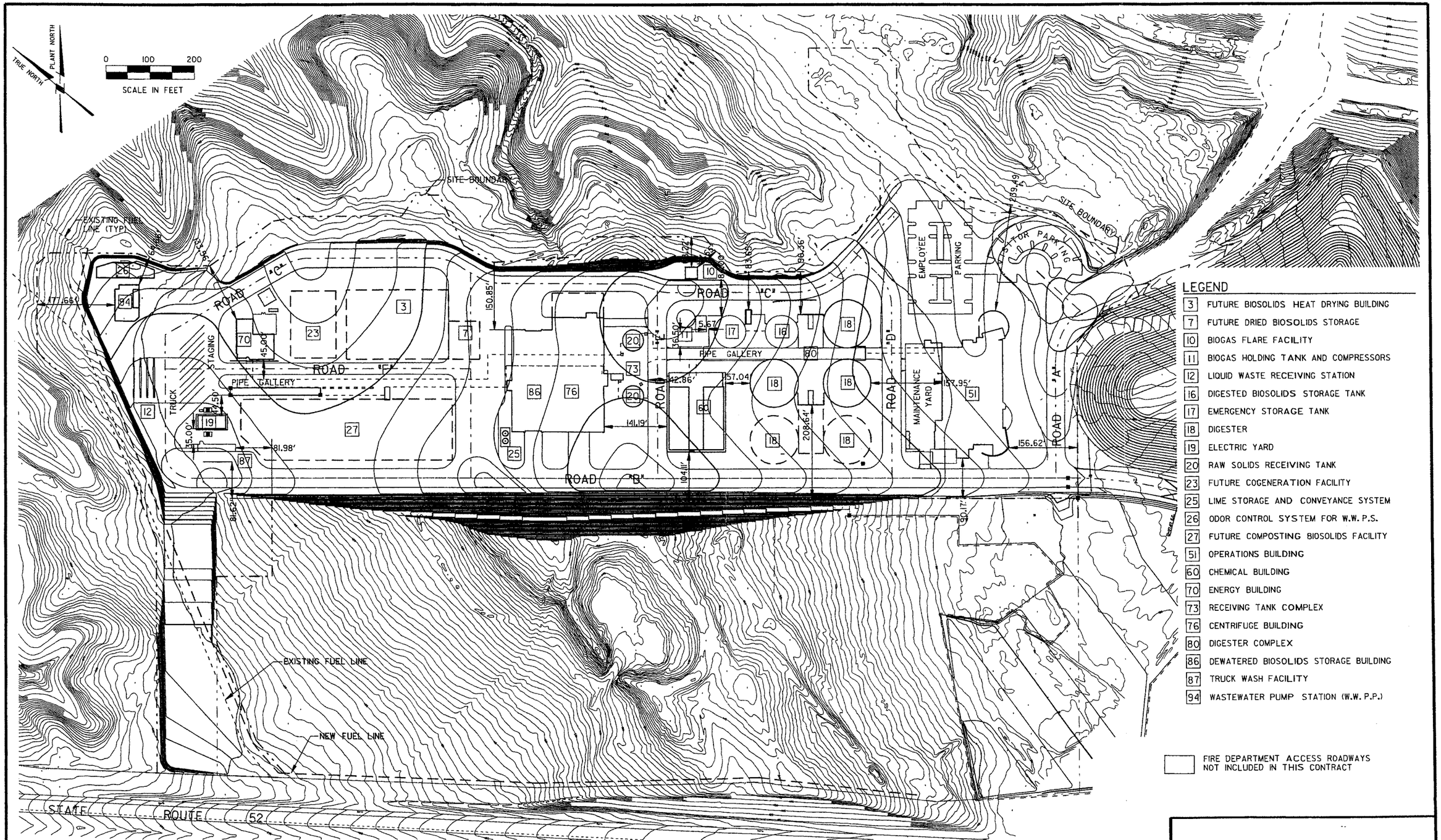
DESIGN ENGINEER

CONTROL CERTIFICATION

LAMBERT COORDINATES

CONTRACTOR _____ DATE STARTED _____
INSPECTOR _____ DATE COMPLETED _____

SHEET 1 OF 1



LEGEND

- 3 FUTURE BIOSOLIDS HEAT DRYING BUILDING
- 7 FUTURE DRIED BIOSOLIDS STORAGE
- 10 BIOGAS FLARE FACILITY
- 11 BIOGAS HOLDING TANK AND COMPRESSORS
- 12 LIQUID WASTE RECEIVING STATION
- 16 DIGESTED BIOSOLIDS STORAGE TANK
- 17 EMERGENCY STORAGE TANK
- 18 DIGESTER
- 19 ELECTRIC YARD
- 20 RAW SOLIDS RECEIVING TANK
- 23 FUTURE COGENERATION FACILITY
- 25 LIME STORAGE AND CONVEYANCE SYSTEM
- 26 ODOR CONTROL SYSTEM FOR W.W.P.S.
- 27 FUTURE COMPOSTING BIOSOLIDS FACILITY
- 51 OPERATIONS BUILDING
- 60 CHEMICAL BUILDING
- 70 ENERGY BUILDING
- 73 RECEIVING TANK COMPLEX
- 76 CENTRIFUGE BUILDING
- 80 DIGESTER COMPLEX
- 86 DEWATERED BIOSOLIDS STORAGE BUILDING
- 87 TRUCK WASH FACILITY
- 94 WASTEWATER PUMP STATION (W.W.P.P.)

FIRE DEPARTMENT ACCESS ROADWAYS NOT INCLUDED IN THIS CONTRACT

r:\asbuilt\mbc\asbuilt\gen\mp2_site.dgn
x3de
24-OCT-2007 15:39

RECORD DRAWING

THE RECORD DRAWING SHOWS THE FACILITIES AND THEIR CONDITION BASED UPON DATA SUPPLIED BY THE CONTRACTOR AND INSPECTED BY THE CITY AND THE CITY'S RESIDENT ENGINEER. FOR PURPOSES OF FUTURE CONSTRUCTION, LOCATION AND CONDITION OF FACILITIES MUST BE VERIFIED IN THE FIELD.

DRAWING STATUS

NO.	DATE	REQ.	REVISION DESCRIPTION	DRAWN	CKD	APD	PE	EM	QA/QC
A	11/94		REVISED ROAD AND MOUNDS	NLM	DG	DPL			
B	2/98		RECORD DRAWING	NML	DG	DPL			

FIGURE 10
METRO BIOSOLIDS CENTER
TOPOGRAPHIC MAP

Bioassay Procedures

Renewal of NPDES CA0107409

SUMMARY OF STANDARD PROCEDURES
CHRONIC BIOASSAYS

Introduction

Sensitive life-stage bioassays (chronic bioassays) are performed using 24-hour composite effluent samples collected at the Point Loma WTP. The objective of these chronic bioassays is to estimate the "safe" or "no effect" concentration of the effluent and the EPA-designated toxicant. Tests are performed in accordance with procedures set forth in Regional Board Order No. R9-2002-0025 (NPDES CA0107409). In accordance with Order No. R9-2002-0025, test results are reported to the Regional Board, EPA, California Department of Public Health, and the San Diego County Department of Public Health.

Kelp Germination and Growth Bioassays

Giant Kelp (*Macrocystis pyrifera*) bioassays are conducted in accordance with EPA/600/R-95/136 (USEPA, 1995). The test endpoints are germination success and germination tube length. The results are expressed as the "no observable effect concentration" (NOEC), which is defined as the lowest exposure concentration at which no adverse effect is observed when compared to the controls. A reference toxicant test is conducted concurrently under identical environmental conditions as the effluent test, and is used to determine organism sensitivity.

Preparation of Test Organisms. Reproductive blades (sporophylls) of adult kelp plants are collected in the kelp beds near La Jolla, California. The sporophylls are collected one day prior to test initiation and returned to the laboratory in a cooler containing blue ice. The kelp blades are maintained at a temperature of approximately 9 to 12 ºC during transport and holding.

Sphrophylls are cleaned, rinsed, blotted dry, arranged in a single layer, and then desiccated for approximately 24 hours at 9 to 12 ºC. They are then rinsed again, placed in a one-liter glass beaker containing clean 0.2-µm filtered seawater, and held at the test temperature of 15 ± 1 ºC. They are removed from the beaker after one hour and immobile spores are allowed to settle. After approximately 30 minutes, 400 ml of zoospores are siphoned from the top layer of seawater into a flask, and are then observed under a compound microscope at 100x to verify their viability. Spore density is determined by making direct microscopic counts using a bright-line hemacytometer.

Receiving Water. In accordance with requirements established in Order No. R9-2002-0025, receiving water for the tests is collected at Point Loma receiving water reference stations. Reference receiving water samples for chronic toxicity tests are collected at either Station B-8 (approximately 6.7 miles north of the outfall offshore from Mission Beach) or Station B-13 (approximately 8.3 miles north of the outfall offshore from Pacific Beach).

Both stations were selected because they have similar depths and distances offshore to the Point Loma Ocean Outfall, but are located at sufficient distances from the outfall so as to not be discernibly influenced by the outfall. As demonstrated by transport studies (see Appendices M, N, and O), Stations B-8 and B-13 are sufficiently removed from the outfall zone to render any outfall-related effects on any water quality parameter non-measurable as a result of dilution, dispersion, and transport. Historic receiving water data have failed to show any measurable or discernible outfall-related influence on Stations B-8 or B-13 for any water quality parameter. As a result of this large geographic distance and lack of outfall-related effects, Stations B-8 and B-13 have historically been used as reference control stations (stations that are affected by ambient ocean conditions but not discernibly affected by the outfall). Table 1 summarizes information on these reference stations.

Table 1
Reference Stations for Collection of Receiving Water

Station	Depth	Latitude/Longitude	Approximate Distance from PLOO
B-8	88.4 m (290 feet)	32º 45.50' N 117º 20.77 W	10.8 km (6.7 miles)
B-13	112 m (367 feet)	32º 46.37' N 117º 22.63' W	13.4 km (8.3 miles)

Receiving water is collected within 96 hours of test initiation, and is transported to the City of San Diego Toxicology Laboratory. The receiving water samples are then placed in a temperature-controlled room at 15°C until used.

Natural seawater for the reference toxicant tests is obtained from the Scripps Institution of Oceanography (SIO) within 96 hours of test initiation. The seawater is first filtered with an in-line system containing 1.0-µm and 0.2-µm polypropylene filters, then is collected and held in 20 liter carboys at 15°C.

Test Design. For chronic toxicity tests, a study array is used that consists of five 50-milliliter control test chambers filled with 40 ml of receiving water and five 50-milliliter test chambers filled with 40 ml of test material for each concentration. Dilution water is comprised of receiving water for the effluent tests and natural seawater collected at SIO for the reference toxicant tests.

The test chambers are 50-milliliter polycarbonate Petri dishes with a standard microscope slide placed in each dish. Solutions are adjusted to 15°C in a temperature-controlled incubator prior to test initiation. To eliminate bias in the analysis of test results, test containers are assigned random numbers, and are placed in an illuminated incubator in numeric order. The spore stock is well mixed to ensure homogeneity, and approximately 3.0 x 10^4 spores are added to each test chamber using a micropipette. This results in a final spore density of approximately 7,500 spores/ml. Test chambers are illuminated on a 16:8 light:dark cycle using cool white light at an intensity of approximately 50 $\mu E/m^2/s$.

Effluent Test. The 24-hour composite effluent samples of Point Loma WTP effluent are collected by City personnel using an ISCO (Lincoln, NE) automatic sampler. Each effluent sample is collected in a 1 liter high density polyethylene bottle. Collected samples are transported to the City's Toxicology Laboratory on wet ice and are refrigerated until test initiation. The exposure series consists of 0.15, 0.27, 0.49, 0.88, and 1.56 percent effluent.

Reference Toxicant Test. Copper is used as the reference toxicant in concentrations of 5.6, 10, 18, 32, 56, 100 and 180 µg/L.

Observations and Maintenance. Salinity, pH, temperature, and dissolved oxygen are measured at the beginning and end of each test in all concentrations. At 24 hours, the temperature is measured in all test concentrations. At the end of the 48-hour test period, the microscope slide from each test chamber is removed, an 18-mm cover slip is placed on top, and the excess water from the top and bottom of the slide is blotted away. The slide is then observed under a compound microscope at 400x. The endpoints determined are germination success and germination tube length.

Statistical Analysis and Test Acceptability. ToxCalc software (Tidepool Scientific Software, 2002) is used for all statistical analyses. Data are analyzed in accordance with "Flowchart for statistical analysis of giant kelp, *Macrocystis pyrifera*, germination data" and "Flowchart for statistical analysis of giant kelp, *Macrocystis pyrifera*, growth data" (USEPA, 1995; pp. 495 & 508). For results to be valid, mean control non-germination cannot exceed 30 percent, and mean control germination tube length must be at least 10 µm. In addition, the NOEC for the germination endpoint must fall below 35 µg/L copper, and the minimum significant difference (%MSD) relative to the control must be less than 20 for all parameters in the reference toxicant test.

Red Abalone Development Bioassay

Red abalone (*Haliotis rufescens*) bioassays are conducted in accordance with EPA/600/R-95/136 (USEPA, 1995). The test endpoint is larval development and the results are expressed as the "no observable effect concentration" (NOEC), which is defined as the lowest exposure concentration at which no adverse effect is observed when compared with the controls. A reference toxicant test is conducted concurrently under identical conditions as the effluent test, and is used to determine test organism sensitivity.

Preparation of Test Organisms. Test organisms are purchased from Cultured Abalone (Goleta, CA), and shipped via overnight delivery to the City's Toxicology Laboratory in an insulated cooler with blue ice. Mature abalones are placed in 100 gallon recirculation tanks with continuous aeration and filtration at 15°C. The loading factor of each holding tank is not allowed to exceed one abalone per liter of tank volume.

Food is withheld for at least 48 hours prior to test initiation. This allows the abalone to acclimate and to eliminate wastes. Abalones are induced to spawn using the hydrogen peroxide method. Four ripe abalone of each sex are placed into clean polyethylene buckets filled with six liters of 0.2-µm filtered seawater obtained from SIO. The seawater in each bucket is aerated and held at the test temperature of 15 ± 1°C. Tris buffer and hydrogen peroxide solutions are added to the buckets. At the end of the exposure period, the buckets are emptied, rinsed, and refilled with 0.2-µm filtered seawater. Aeration is suspended once spawning begins.

Sperm is collected in a 100-milliliter flask by siphoning from directly above the respiratory pore of each male abalone as it spawned. Eggs are siphoned from the bottom of the spawning bucket and transferred to a third (fertilization) bucket approximately 30 minutes after the first female has begun spawning. Approximately 100,000 eggs are transferred to the fertilization bucket which contained 2 liters filtered seawater.

Eggs are fertilized within one hour of release by adding 100 ml of sperm-laden water at a concentration of approximately 10 million sperm per ml. A gentle flow of filtered seawater is used to roll the eggs and allow them to fertilize. The eggs are allowed to settle for 15 minutes before the sperm-laden water is siphoned off. The bucket is then refilled with seawater and the eggs are again allowed to settle. After 15 minutes, the fertilized eggs are siphoned into a one liter beaker for enumeration. The fertilized egg density in the beaker is determined by direct count on a Sedgewick-Rafter counting chamber. Eggs are kept in suspension at 15°C using a perforated plunger at all times. Each test vessel is inoculated with 500 embryos from the egg stock using a 10-mL wide-bore pipette.

Receiving Water. Receiving water is collected as described in the giant kelp bioassay section within 96 hours of test initiation and immediately transported to the City's Toxicology Laboratory. Upon arrival, the receiving water is placed in a temperature-controlled room at 15°C until used.

Natural seawater for the reference toxicant test is obtained from SIO within 96 hours of test initiation. The seawater is first filtered with an in-line system containing 1.0-µm and 0.2-µm polypropylene filters, and is then collected and held in 20 liter carboys at 15°C.

Test Design. The study array consists of five 50-milliliter control test chambers filled with 40 ml of receiving water and five 50-milliliter test chambers filled with 40 ml of test material for each concentration. Dilution water consists of receiving water for the effluent test and natural seawater collected at SIO for the reference toxicant test as per permit requirements.

Tests are initiated by distributing 40 ml of test solution into each test chamber, adjusting the solutions to 15°C in a temperature-controlled room, and delivering approximately 500 embryos to each vessel using a micropipette. Test chambers are illuminated on a 16:8 light:dark cycle at ambient laboratory levels.

Effluent Test. A 24-hour composite effluent sample is collected by City of San Diego personnel using an ISCO (Lincoln, NE) automatic sampler. The effluent sample is collected in a one liter polyethylene bottle and delivered immediately to the City's Toxicology Laboratory. The samples are then refrigerated until test initiation. The exposure series consists of 0.15, 0.27, 0.49, 0.88, and 1.56 percent effluent.

Reference Toxicant Test. Zinc is used as the reference toxicant in concentrations of 10, 18, 32, 56, and 100 µg/L.

Observations and Maintenance. Salinity, pH, dissolved oxygen, and temperature of each test concentration are measured at test initiation and termination. At 24 hours, temperature is measured in all test concentrations. The test is terminated after 48 hours by fixing the larvae with buffered formaldehyde in seawater. One milliliter of 37% formaldehyde is then added to each flask. The larvae are observed in the testing flasks using an inverted microscope.

Statistical Analysis and Test Acceptability. ToxCalc software (Tidepool Scientific Software, 2002) is used for all statistical analyses. The data are analyzed in accordance with "Flowchart for statistical analysis of red abalone *Haliotus rufescens*, development data" (USEPA, 1995; p. 298). The percentage of normally developed embryos for each replicate is arcsine square root

transformed in order to normalize the data. Valid tests must have mean control larval abnormality less than or equal to 20 percent. In addition, the NOEC must fall below 56 µg/L zinc and the minimum significant difference (%MSD) relative to the control must be less than 20 percent.

Topsmelt Survival and Growth Bioassays

Topsmelt (*Atherinops affinis*) bioassays are conducted in accordance with EPA/600/R-95/136 (USEPA 1995). The test endpoints are survival and growth. The results are expressed as the "no observable effect concentration" (NOEC), which is defined as the lowest exposure concentration at which no adverse effect is observed when compared with the controls. A reference toxicant test is conducted concurrently under identical environmental conditions as the effluent test, and is used to determine test organism sensitivity.

Preparation of Test Organisms. The test organisms, *Atherinops affinis*, are purchased from Aquatic Bio Systems, Inc. (Fort Collins, CO) and are approximately 9 to 14 days old at test initiation. They are shipped via overnight delivery service in oxygenated plastic bags contained in an insulated container. Upon receipt, fish are observed for mortality and stress. If no abnormalities are found, the animals are deemed acceptable. Organisms are acclimated to laboratory conditions and held at the test temperature of 20 ± 1°C until testing is initiated. Mortality is monitored to ensure that it is less than 10 percent during the acclimation and holding periods.

Receiving Water. Receiving water is collected as described in the giant kelp bioassay section within 96 hours of test initiation and immediately transported to the City's Toxicology Laboratory. Upon arrival, the receiving water is placed in a temperature-controlled room at 15°C until used.

Natural seawater for the reference toxicant test is obtained from SIO within 96 hours of test initiation. The seawater is first filtered with an in-line system containing 1.0-µm and 0.2-µm polypropylene filters, is then collected and held in 20 liter carboys at 15°C.

Test Design. Test chambers consist of 250-milliliter polycarbonate plastic cups. Two hundred milliliters of test solution or control water are dispensed into the designated test chamber. Five replicates of each effluent concentration and control are tested. Tests are initiated by placing five randomly selected larvae into each test chamber once water quality parameters have met protocol limits in all test chambers.

Effluent Test. A 24-hour composite effluent sample is collected by City of San Diego personnel using an ISCO (Lincoln, NE) automatic sampler. Effluent samples are collected in a one liter polyethylene bottle and delivered immediately to the City's Toxicology Laboratory. The samples are then refrigerated until test initiation. The exposure series consists of 0.15, 0.27, 0.49, 0.88, and 1.56 percent effluent.

Reference Toxicant Test. Copper is used as the reference toxicant in concentrations of 32, 56, 100, 180, and 320 µg/l.

Organism Feeding. Topsmelt larvae are fed approximately 40 *Artemia nauplii* each in the morning and again in the afternoon throughout the test period.

Observations and Maintenance. Initial readings on the test solutions are recorded prior to the introduction of test animals. Parameters measured include dissolved oxygen, pH, temperature, and salinity. Each test chamber is monitored daily for mortality and sub-lethal effects. Daily renewals of test solutions are made by siphoning test material out of each test chamber and immediately adding fresh test solution of the appropriate concentration. After replacement, the used test solution is pooled by concentration to measure final water quality parameters. The test duration is 7 days. Upon test termination, final observations are made and test animals are desiccated for weight analysis.

Fish weights are determined by placing fish from each replicate in a tared weighing pan and drying them at 60°C for 24 hours or 105°C for 6 hours. After drying, the fish are placed in a desiccator to cool and are then weighed on an analytical balance to the nearest 0.01 milligram.

Statistical Analysis and Test Acceptability. The endpoints of toxicity tests using the topsmelt larvae are based on the adverse effects on survival and growth. Data are analyzed using ToxCalc (Tidepool Software, 2002) in accordance with the appropriate US EPA flowcharts for statistical analysis of topsmelt survival and growth test data by hypothesis testing and point estimation (USEPA 1995; pp.105-106). Criteria for acceptance include:

1. The average survival of control larvae must be at least 80%.
2. If the test was initiated with 9-day old larvae, the average weight per larva must exceed 0.85 mg in the reference and brine controls; the average weight of preserved larvae must exceed 0.72 mg.
3. The LC_{50} for survival must be within two standard deviations of the control chart mean for the laboratory. The LC_{50} for survival with copper must be less than or equal to 205 µg/L.

4. The reference toxicant test must have a minimum significant difference (MSD) of <25% for survival relative to the control and an MSD of <50% for growth relative to the control for growth for the reference toxicant test.

References

Anderson, B., J. Hunt, et al. January 1996. Procedures Manual for Conducting Toxicity Tests Developed by the Marine Bioassay Project. 96-1WQ. State of California Water Resources Control Board.

APHA. 2005. Standard Methods for the Examination of Water and Wastewater. 21st Edition. American Public Health Association. Washington, D.C.

City of San Diego. 2002. Quality Assurance Manual for Toxicity Testing. City of San Diego Ocean Monitoring Program, Metropolitan Wastewater Department, Environmental Monitoring and Technical Services Division, San Diego, CA

State Water Resources Control Board. 2001. California Ocean Plan (2001): Water Quality Control Plan, Ocean Waters of California. State Water Resources Control Board, Sacramento, CA

Tidepool Scientific Software. 2002. ToxCalc Toxicity Information Management System Database Software.

USEPA. 1995. Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms. U.S. Environmental Protection Agency, Environmental Monitoring and Support Laboratory, Cincinnati, OH, EPA/600/R-95/136.

SUMMARY OF STANDARD PROCEDURES
ACUTE BIOASSAYS

Introduction

Acute bioassays of standard reference toxicants and a 24-hour composite effluent samples are collected at the Point Loma WTP and are performed by the City of San Diego Toxicology Laboratory using topsmelt (*Atherinops affinis*) and mysid shrimp (*Mysidopsis bahia*). The objective of such acute tests is to estimate the Asafe≅ or Ano effect≅ concentration of the Point Loma WTP effluent and the EPA designated reference toxicant.

Tests are performed in accordance with procedures set forth in Regional Board Order No. R9-2002-0025 (NPDES CA0107409). In accordance with Order No. R9-2002-0025, test results are reported to the Regional Board, EPA, California Department of Public Health, and the San Diego County Department of Public Health.

Topsmelt Survival Bioassay

The topsmelt test endpoint is survival and the acute lethality is expressed as the concentration lethal to 50% of the test organisms (LC_{50}) over a 96-hour exposure period. The reference toxicant test is conducted concurrently under identical environmental conditions as the effluent test, and is used to determine test organism sensitivity.

Preparation of Test Organisms. The test organisms, *Atherinops affinis,* are purchased from Aquatic Bio Systems, Inc. (Fort Collins, CO) and are approximately 9 to14 days old at test initiation. They are shipped via overnight delivery service in oxygenated plastic bags contained in an insulated container. Upon receipt, fish are observed for mortality and stress. If no abnormalities are found, the animals are deemed acceptable. Organisms are acclimated to laboratory conditions and held at the test temperature of 20 ∀ 2EC until testing is initiated. Mortality is monitored to ensure that it is less than 10 percent during the acclimation and holding periods.

Receiving Water. Receiving water for acute bioassays are collected from the Pacific Ocean at either Station -8 or B-13, as documented in the previously described standard procedures for chronic bioassay tests. As previously documented, Stations B-8 and B-13 are sufficiently remote from the outfall to ensure that they are not influenced by the outfall itself.

Receiving water is collected within 96 hours of test initiation, and transported to the City of San Diego Toxicology Laboratory. The receiving water samples are then placed in a temperature-controlled room at 15EC until used.

Natural seawater for the reference toxicant test is obtained from SIO within 96 hours of test initiation. The seawater is filtered with an in-line system containing 1.0-µm and 0.2-µm polypropylene filters and is collected and held in 20-L carboys at 15EC.

Test Design. The study array consists of four 400-milliliter control test chambers filled with 350 ml of receiving water and four 400-milliliter test chambers filled with 350 ml of test material for each concentration. Dilution water consists of receiving water for the effluent test and natural seawater collected from SIO for the reference toxicant test. An additional brine control series is also tested. The test chambers are 400-milliliter polyethylene tripour beakers. Solutions are adjusted to 20EC in a temperature-controlled room prior to test initiation. Ten larval topsmelt are randomly placed in each test chamber to help eliminate bias in the analysis of test results. Oxygen and temperature levels are measured in all concentrations prior to introduction of the fish. Animals are fed once daily during the test period.

Effluent Test. A 24-hour composite effluent sample is collected by City of San Diego personnel using an ISCO automatic sampler. Samples are used within 36 hours of collection. The effluent sample is collected in a 10 liter polyethylene carboy and delivered on ice to the CSDBL. The sample is then refrigerated and adjusted with hypersaline brine to achieve test salinity. The sample is maintained at 4EC throughout the collection, holding, and transport periods. The nominal exposure series consisted of 3.87, 7.75, 15.5, 31.0, and 62.0 percent effluent. Depending on brine salinity, however, exposure series may consist of effluent concentrations of 4.1, 8.2, 16.3, 32.6, and 65.2 percent effluent.

Reference Toxicant Test. Copper is used as the reference toxicant in concentrations of 56, 100, 180, 320, and 560 µg/L. Serial dilutions are made using volumetric pipettes and volumetric flasks.

Observations and Maintenance. Observations of mortality and sub-lethal effects are recorded daily. Water quality analyses (dissolved oxygen, pH, salinity, and temperature) are also performed daily on the control and all test concentrations. Ammonia is measured in 100% effluent at test initiation.

Statistical Analysis and Test Acceptability. ToxCalc software (Tidepool Scientific Software, 2002) is used for all statistical analyses. Data are analyzed in accordance with "Determination of

the NOAEC from a Multi-Effluent-Concentration Acute Toxicity Test" (USEPA, 1990; p.94). Criterion for test acceptance consisted of 90% or greater control survival.

Mysid Survival Bioassay

The mysid test endpoint is survival and the acute lethality is expressed as the concentration lethal to 50% of the test organisms (LC_{50}) over a 96-hour exposure period. The reference toxicant test is conducted concurrently under identical environmental conditions as the effluent test, and is used to determine test organism sensitivity.

Preparation of Test Organisms. The test organisms, *Mysidopsis bahia*, are purchased from Aquatic Bio Systems, Inc. (Fort Collins, CO) and are approximately 4 to 5 days old at test initiation. They are shipped via overnight delivery service in oxygenated plastic bags contained in an insulated container. Upon receipt, mysids are observed for mortality and stress. If no abnormalities are found, the animals are deemed acceptable. Organisms are acclimated to laboratory conditions and held at the test temperature of 20 ∀ 2EC until testing is initiated. Mortality is monitored to ensure that it is less than 10 percent during the acclimation and holding periods.

Receiving Water. Receiving water is collected at either Station B-8 or B-13, as described in the previously documented procedures for chronic toxicity samples. Natural seawater for the reference toxicant test is obtained from SIO within 96 hours of test initiation. The seawater, filtered with an in-line system containing 1.0-µm and 0.2-µm polypropylene filters, is collected and held in 20 liter carboys at 15EC.

Test Design. The study array consists of four 400-milliliter control test chambers filled with 350 ml of receiving water and four 400-milliliter test chambers filled with 350 ml of test material for each concentration. Dilution water consists of receiving water for the effluent test and natural seawater collected at SIO for the reference toxicant test. An additional brine control series is also tested. The test chambers are 400-milliliter polyethylene tripour beakers. Solutions are adjusted to 20EC in a temperature-controlled room prior to test initiation. Ten mysids are randomly placed in each test chamber to help eliminate bias in the analysis of test results. Oxygen and temperature levels are measured in all concentrations prior to introduction of the mysids. Animals are fed twice during the test period.

Effluent Test. 24-hour composite effluent samples are collected by City of San Diego personnel using an ISCO automatic sampler. Samples are used within 36 hours of collection. The effluent samples are collected in a 10 liter polyethylene carboy and delivered on ice to the City's Toxicology Laboratory. The sample is then refrigerated and adjusted with hypersaline brine to

achieve test salinity. The sample is maintained at 4EC throughout the collection, holding, and transport periods. The nominal exposure series consists of 3.87, 7.75, 15.5, 31.0, and 62.0 percent effluent. Depending on brine salinity, however, exposure series may consist of effluent concentrations of up to 4.1, 8.2, 16.3, 32.6, and 65.2 percent effluent.

Reference Toxicant Test. Copper is used as the reference toxicant in concentrations of 56, 100, 180, 320, and 560 µg/L. Serial dilutions are made using volumetric pipettes and volumetric flasks.

Observations and Maintenance. Observations of mortality and sub-lethal effects are recorded daily. Water quality analyses (dissolved oxygen, pH, salinity, and temperature) are also performed daily on the control and all test concentrations. Ammonia is measured in 100% effluent at test initiation.

Statistical Analysis and Test Acceptability. ToxCalc software (Tidepool Scientific Software, 2002) is used for all statistical analyses. Data are analyzed in accordance with ADetermination of the NOAEC from a Multi-Effluent-Concentration Acute Toxicity Test≅ (USEPA, 1990; p. 94). Criterion for test acceptance consists of 90% or greater control survival.

References

APHA. 1992. Standard Methods for the Examination of Water and Wastewater. 16th Edition. American Public Health Association. Washington, D.C.

City of San Diego. 2001. Quality Assurance Manual. City of San Diego Ocean Monitoring Program, Metropolitan Wastewater Department, Environmental Monitoring and Technical Services Division, San Diego, CA

Tidepool Scientific Software. 2002. ToxCalc Toxicity Information Management System Database Software.

State Water Resources Control Board. 2001. California Ocean Plan (2001): Water Quality Control Plan, Ocean Waters of California. State Water Resources Control Board, Sacramento, CA.

USEPA. 1985. Methods for measuring the acute toxicity of effluents to freshwater and marine organisms. U.S. Environmental Protection Agency, Environmental Monitoring and Support Laboratory, Cincinnati, OH, EPA/600/4-85/013.

USEPA. 1990. Methods for measuring the acute toxicity of effluents and receiving waters to freshwater and marine organisms. U.S. Environmental Protection Agency, Environmental Monitoring and Support Laboratory, Cincinnati, OH, EPA/600/4-90/027F.

State of California Form 200

Renewal of NPDES CA0107409

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

State of California
Regional Water Quality Control Board

APPLICATION/REPORT OF WASTE DISCHARGE
GENERAL INFORMATION FORM FOR
WASTE DISCHARGE REQUIREMENTS OR NPDES PERMIT

I. FACILITY INFORMATION

A. Facility:

Name:	E.W. Blom Point Loma Wastewater Treatment Plant			
Address:	1902 Gatchell Road			
City: San Diego		County: San Diego	State: CA	Zip Code: 92106
Contact Person: Timothy C. Bertch, Ph.D., Director			Telephone Number: (858) 292-6401	

B. Facility Owner:

Name:	City of San Diego Metropolitan Wastewater Department			Owner Type (Check One) 1. ☐ Individual 2. ☐ Corporation
Address:	9192 Topaz Way			3. ■ Governmental Agency 4. ☐ Partnership
City: San Diego		State: CA	Zip Code: 92123	5. ☐ Other: _____
Contact Person: Timothy C. Bertch, Ph.D., Director			Telephone Number: (858) 292-6401	Federal Tax ID:

C. Facility Operator (The agency or business, not the person):

Name:	City of San Diego Metropolitan Wastewater Department			Operator Type (Check One) 1. ☐ Individual 2. ☐ Corporation
Address:	9192 Topaz Way			3. ■ Governmental Agency 4. ☐ Partnership
City: San Diego		State: CA	Zip Code: 92123	5. ☐ Other: _____
Contact Person: Timothy C. Bertch, Ph.D., Director			Telephone Number: (858) 292-6401	

D. Owner of the Land:

Name:	City of San Diego Metropolitan Wastewater Department			Owner Type (Check One) 1. ☐ Individual 2. ☐ Corporation
Address:	9192 Topaz Way			3. ■ Governmental Agency 4. ☐ Partnership
City: San Diego		State: CA	Zip Code: 92123	5. ☐ Other: _____
Contact Person: Timothy C. Bertch, Ph.D., Director			Telephone Number: (858) 292-6401	

E. Address Where Legal Notice May Be Served:

Address:	Metropolitan Wastewater Department, 9192 Topaz Way		
City: San Diego		State: CA	Zip Code: 92123
Contact Person: Timothy C. Bertch, Ph.D., Director		Telephone Number: (858) 292-6401	

F. Billing Address:

Address:	Metropolitan Wastewater Department, 9192 Topaz Way		
City: San Diego		State: CA	Zip Code: 92123
Contact Person: Timothy C. Bertch, Ph.D., Director		Telephone Number: (858) 292-6401	

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

State of California
Regional Water Quality Control Board

APPLICATION/REPORT OF WASTE DISCHARGE GENERAL INFORMATION FORM FOR WASTE DISCHARGE REQUIREMENTS OR NPDES PERMIT

II. TYPE OF DISCHARGE

Check Type of Discharge(s) Described in this Application (A or B):

☐ **A. WASTE DISCHARGE TO LAND** ■ **B. WASTE DISCHARGE TO SURFACE WATER**

Check all that apply:

- ■ Domestic/Municipal Wastewater Treatment and Disposal
- ☐ Cooling Water
- ☐ Mining
- ☐ Waste Pile
- ☐ Wastewater Reclamation
- ☐ Other, please describe: **Not applicable**
- ☐ Animal Waste Solids
- ☐ Land Treatment Unit
- ☐ Dredge Material Disposal
- ☐ Surface Impoundment
- ☐ Industrial Process Wastewater
- ☐ Animal or Aquacultural Wastewater
- ☐ Biosolids/Residual
- ☐ Hazardous Waste (see instructions)
- ☐ Landfill (see instructions)
- ☐ Storm Water

III. LOCATION OF THE FACILITY

Describe the physical location of the facility.

1. Assessor's Parcel Number(s)	2. Latitude	3. Longitude
Facility:	Facility: 32° 40' 45" N	Facility: 117° 14' 46" W
Discharge Point: NA	Discharge Point: 32° 39' 55" N[1]	Discharge Point: 117° 19' 25" W[1]

[1] **Latitude and longitude at the outfall wye (outfall connection to the "Y"-shaped diffuser)**

IV. REASON FOR FILING

- ☐ New Discharge or Facility
- ☐ Changes in Ownership/Operator (see instructions)
- ☐ Change in Design or Operation
- ■ Waste Discharge Requirements Update or NPDES Permit Reissuance
- ☐ Change in Quantity/Type of Discharge
- ☐ Other: _____

V. CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

Name of Lead Agency: Not applicable - renewal of permit for existing facility

Has a public agency determined that the proposed project is exempt from CEQA? ☐ Yes ☐ No

If Yes, state the basis for the exemption and the name of the agency supplying the exemption on the line below.

Basis for Exemption/Agency: Not applicable

Has a "Notice of Determination" been filed under CEQA? ☐ Yes ☐ No Not applicable

If Yes, enclose a copy of the CEQA document, Environmental Impact Report, or Negative Declaration. If no, identify the expected type of CEQA document and expected date of completion.

Expected CEQA Documents: Not applicable - renewal of permit for existing facility

☐ EIR ☐ Negative Declaration

Expected CEQA Completion Date: _____

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

State of California
Regional Water Quality Control Board

APPLICATION/REPORT OF WASTE DISCHARGE GENERAL INFORMATION FORM FOR WASTE DISCHARGE REQUIREMENTS OR NPDES PERMIT

VI. OTHER REQUIRED INFORMATION

Please provide a COMPLETE characterization of your discharge. A complete characterization includes, but is not limited to, design and actual flows, a list of constituents and the discharge concentration of each constituent, a list of other appropriate waste discharge characteristics, a description and schematic drawing of all treatment processes, a description of any Best Management Practices (BMPs) used, and a description of disposal methods.

Also include a site map showing the location of the facility and, if you are submitting this application for an NPDES permit, identify the surface water to which you propose to discharge. Please try to limit your maps to a scale of 1:24,000 (7.5' USGS Quadrangle) or a street map, if more appropriate.

VII. OTHER

Attach additional sheets to explain any responses which need clarification. List attachments with titles and dates below:

See attached multi-volume 301(h) renewal application

You will be notified by a representative of the RWQCB within 30 days of receipt of your application. The notice will state if your application is complete or if there is additional information you must submit to complete your Application/Report of Waste Discharge, pursuant to Division 7, Section 13260 of the California Water Code.

VIII. CERTIFICATION

"I certify under penalty of law that this document, including all attachments and supplemental information, were prepared under my direction and supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

Print Name: **Timothy C. Bertch, Ph.D.** Title: **Metropolitan Wastewater Director**

Signature: Timothy C Bertch Date: 29 Nov 2007

FOR OFFICE USE ONLY

Date Form 200 Received:	Letter to Discharger:	Fee Amount Received:	Check #:

Contributions Disclosure

Renewal of NPDES CA0107409

CONTRIBUTIONS DISCLOSURE STATEMENT

I certify that neither I nor the City of San Diego Metropolitan Wastewater Department has made any contributions amounting to $250 or more to any of the current Regional Board members within 12 months of the date of this application for use in a federal, state, or local election.

Signature: 

Name: Timothy C. Bertch, Ph.D.

Title: Metropolitan Wastewater Director

Date: 30 Nov 2007

Organization: City of San Diego
Metropolitan Wastewater Department
9192 Topaz Way
San Diego, CA 92123

Phone Number: (858) 292-6401

Part 3, Volume II

Antidegradation Analysis

Antidegradation Analysis

Table of Contents

Table of Contents
(continued)

List of Tables

List of Tables
(continued)

List of Abbreviations

APU	Administrative Procedures Update
BOD	biochemical oxygen demand
CFR	Code of Federal Regulations
DDT	dichloro-diphenyl-trichloroethane
EPA	U.S. Environmental Protection Agency
m^3/sec	cubic meters per second
MDL	Method Detection Limit
MER	mass emissions rate
mgd	million gallons per day
mg/l	milligrams per liter
mt	metric tons
mt/yr	metric tons per year
N	nitrogen
ND	not detected
NPDES	National Pollutant Discharge Elimination System
PAHs	polynuclear aromatic hydrocarbons
PCBs	polychlorinated biphenyls
PLOO	Point Loma ocean outfall
Point Loma WTP	Point Loma Wastewater Treatment Plant
POTW	Public Owned Treatment Works
Regional Board	California Regional Water Quality Control Board, San Diego Region
State Board	California State Water Resources Control Board
TOMPS	toxic organic management practices
TSS	total suspended solids
TUa	acute toxicity units
TUc	chronic toxicity units
µg/l	micrograms per liter
WTP	wastewater treatment plant

Intentional Blank Page

1. INTRODUCTION

1.1 OVERVIEW

Existing NPDES Permit. The City of San Diego, as operator of the Metropolitan Sewerage System, discharges treated wastewater from the E.W. Blom Point Loma Metropolitan Wastewater Treatment Plant (Point Loma WTP) to the Pacific Ocean through the Point Loma Ocean Outfall (PLOO). The PLOO discharge is regulated by requirements established by the California Regional Water Quality Control Board, San Diego Region (Regional Board) and United States Environmental Protection Agency (EPA) in Regional Board Order No. R9-2002-0025 and Addendum No. 1 thereto.

Proposed Retention of Existing Mass Emission Limits. Order No. R9-2002-0025 established modified discharge limits for biochemical oxygen demand (BOD) and total suspended solids (TSS) per regulations established under Section 301(h) of the Clean Water Act. The City requests renewal of the modified 301(h) requirements for BOD and TSS.

As part of the application for renewal of 301(h) NPDES requirements for the PLOO, the City is not requesting an increase in any mass emission limits established within Order No. R9-2002-0025.

NPDES Permit Benchmarks. Order No. R9-2002-0025 established mass emission benchmarks for toxic pollutant loads discharged to the ocean via the PLOO. The benchmarks were established to assess pollutant mass emission loads from the Point Loma WTP to the environment, and to establish a framework for evaluating the need to assess compliance with federal antidegradation requirements at the time of permit reissuance.

The benchmarks are not enforceable water quality-based standards, and exceedance of a benchmark does not constitute a violation. Mass emissions may exceed a benchmark, yet remain well below scientifically established standards to protect aquatic life or human health. Instead, the benchmarks established within Order No. R9-2002-0025 represent a tool to statistically characterize historic mass loadings during 1990-1995. If observed mass emissions for any

constituent exceed the benchmarks established in Order No. R9-2002-0025, it is presumed that mass emissions for the constituent have increased since the 1990-1995 reference period. Such a presumed increase in mass emissions triggers the need for a special evaluation at the time of NPDES permit reapplication to determine if federal antidegradation regulations have been satisfied.

Purpose of Report. This report compares Point Loma WTP mass emissions during 2002-2006 with mass emission benchmarks established in Order No. R9-2002-0025, and presents an analysis of compliance with federal antidegradation regulations for constituents that exceeded the mass emission benchmarks.

1.2 ANTIDEGRADATION REGULATIONS

Federal Antidegradation Regulations. The first federal antidegradation policy statement was issued by the United Stated Department of Interior in 1968. EPA incorporated this antidegradation policy statement into the first EPA water quality regulations established in 1975. (*Federal Register*, Vol. 40, 55334 *et seq.*, November 28, 1975) The initial antidegradation regulations required states to implement policies to maintain existing beneficial uses and allow degradation only if such degradation is required to accommodate significant economic and social development.

EPA promulgated changes to the federal antidegradation policy in 1983. The 1983 rules introduced two key modifications to the antidegradation policy. (*Federal Register*, Vol. 48., 51400 *et seq.*, November 8, 1983) First, the 1983 modifications required that existing beneficial uses be "maintained and protected", rather than "maintained". Second, the 1983 antidegradation regulations further restricted the potential for water quality degradation by requiring that water quality degradation only be allowed if such degradation were required to accommodate "important" (rather than "significant") economic and social development.

Current antidegradation regulations are presented in Title 40, Section 131.12 of the *Code of Federal Regulations*. The federal antidegradation regulations require states to adopt policies and implementation practices consistent with the following Tier I and Tier II antidegradation requirements:

(1) Existing instream water uses [includes marine and ocean waters] *and the level of water quality necessary to protect the existing uses shall be maintained and protected.* (Tier I requirement)

(2) Where the quality of the waters exceed [are better than] *levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and protected unless the State finds, after full satisfaction of the intergovernmental coordination and public participation provisions of the State's continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In allowing such degradation or lower water quality, the State shall assure water quality adequate to protect existing uses fully. Further, the State shall assure that there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control.* (Tier II requirement)

State Non-Degradation Policy. On October 28, 1968, the State Water Resources Control Board (State Board) adopted Resolution No. 68-16, *Statement of Policy with Respect to Maintaining High Quality of Waters in California*. Resolution No. 68-16 established the following policy (non-degradation policy) that requires maintenance of high quality waters:

> *Whenever the existing quality of water is better than the quality established in policies as of the date on which such policies become effective, such existing high quality will be maintained until it has been demonstrated to the State that any change will be consistent with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial uses of such water and will not result in water quality less than that prescribed in the policies.*

This non-degradation policy (which preceded 1972 Clean Water Act) applies to inland surface waters and groundwaters as well as State-regulated ocean waters, and requires that the existing water quality be maintained unless it is demonstrated that the benefits associated with the proposed water quality degradation outweigh the detriments associated with the degradation.

State Implementation of Federal Antidegradation Regulations. The State Board has interpreted Resolution No. 68-16 as incorporating federal antidegradation regulations. Administrative procedures for antidegradation analysis were issued by the State Board in 1990 in "Administrative Procedures Update, Antidegradation Policy Implementing for NPDES Permitting" (APU 90-004, July 2, 1990). This State Board guidance allows the Regional Boards to make a determination of Tier I antidegradation compliance (e.g. no significant water quality impacts and beneficial uses will be fully supported) if:

1. *A Regional Board determines that the reduction in water quality will be spatially localized or limited with respect to the waterbody; e.g. confined to the mixing zone; or*

2. *A Regional Board determines the reduction in water quality is temporally limited and will not result in any long-term deleterious effects on water quality; e.g. will cease after a storm event, or*
3. *A Regional Board determines that proposed action will produce minor effects which will not result in a significant reduction in water quality; e.g. a POTW has a minor increase in the volume of discharge subject to secondary treatment.*

The State Board administrative procedures require a complete antidegradation analysis (Tier II) if the Tier I analysis demonstrates water quality necessary to support beneficial uses is not maintained.

1.3 ANTIDEGRADATION APPROACH

Focus on Benchmarks. As noted, no increase in mass emission limits are requested above those established in Order No. R9-2002-0025. As a result, this antidegradation compliance assessment is limited to assessing antidegradation compliance for parameters that exceed mass emission benchmarks established in Order No. R9-2002-0025.

Approach and Report Organization. To assess antidegradation compliance for benchmark parameters, PLOO mass emissions for 2002-2006 are compared with benchmark mass emissions established in Order No. R9-2002-0025 (Chapter 2). For parameters with annual mass emissions that exceed the benchmarks during any single year:

- effluent standards applicable to the exceeded benchmark parameters are identified, and compliance with the applicable effluent standards are assessed (Chapter 3),
- receiving water quality standards and water quality criteria established for the protection of beneficial uses are identified, and compliance with the applicable standards and criteria are assessed (Chapter 4),
- receiving water beneficial uses are identified, potential impacts to the beneficial uses associated with the benchmark exceedances are assessed, and potential impacts to water quality and beneficial uses are evaluated (Chapter 5),
- means of monitoring impacts to water quality and beneficial uses are reviewed (Chapter 6), and
- conclusions are developed on whether high water quality waters necessary to support beneficial uses (Tier I compliance) are being maintained (Chapter 7).

2. NPDES PERMIT BENCHMARKS

2.1 BENCHMARKS OVERVIEW

As noted in Chapter 1, an increase in mass emissions is one factor that can trigger the need for an antidegradation assessment. Order No. R9-2002-0025 established benchmark mass emissions as a means of assessing which parameters require antidegradation analysis as part of renewal of the Point Loma WTP NPDES permit (NPDES CA0107409).

This chapter compares observed mass emissions with benchmark mass emissions established in Order No. R9-2002-0025. For constituents in which mass emissions exceed the benchmarks, subsequent chapters analyze compliance with antidegradation regulations. Year 2006 represents the most current complete year for which data are available. As a result, this analysis uses data from the period 2002-2006 in assessing compliance with NPDES mass emission benchmarks established in Order No. R9-2002-0025.

2.2 COMPARISON OF DISCHARGE WITH BENCHMARKS

Effluent mass emission benchmarks for the PLOO discharge are established in Discharge Specification B.12 of Order No. R9-2002-0025 (NPDES CA0107409). Discharge Specification B.12 states:

> B.12 To *address the uncertainty due to projected increases in toxic pollutant loadings from the PLMWTP* [an abbreviation used in Order No. R9-2002-0025 to designate the Point Loma WTP] *to the marine environment during the five-year waiver, and to establish a framework for evaluating the need for an antidegradation analysis to determine compliance with antidegradation requirements at the time of permit reissuance, the following mass emission benchmarks have been established for effluent discharged through the PLOO. The exceedance of a mass emission benchmark will trigger an antidegradation analysis for that pollutant to be conducted by the discharger, the results of which will accompany the discharger's reapplication for a NPDES permit. These mass emission benchmarks are not water quality-based effluent limitations and are not enforceable as such.*

Table B of the Ocean Plan (see Appendices R and S) establishes water quality standards for constituents for:

- the protection of marine aquatic life, and
- the protection of human health for noncarcinogens and carcinogens.

Order No. R9-2002-0025 established benchmarks for each Ocean Plan Table B constituent. For all constituents except copper and selenium, benchmarks were established on the basis of the following equation:

$$MER = C_e \cdot Q \cdot 3.875 \cdot 365 \cdot 10^{-12} \qquad \text{(Equation 2-1)}$$

Where: Ce = the January 1990 through April 1995 n-day average monthly performance (95th percentile) effluent concentration in $\mu g/\ell$, as computed using equations specified in *Technical Support Document for Water Quality-based Toxics Control* (EPA, 1991),

MER = mass emission benchmark in metric tons per year, and

Q = a flow of 205 mgd (8.98 m^3/sec).

Point Loma WTP influent concentrations of copper and selenium are, in part, dependent on the quality of San Diego area source water. Recognizing this, Order No. R9-2002-0025 established benchmark levels for copper and selenium on the basis of the above equation, but using the "n-day" monthly performance values (95th percentile) for 1994. (See the 1991 EPA document *Technical Support Document for Water Quality-based Toxics Control* for more information on the computation of the "n-day" monthly performance value.)

During 1990-1995, the City was in compliance with all Ocean Plan Table B standards. Consequently, the benchmark values established in Order No. R9-2002-0025 (derived as above from mass emissions during 1990-1995) are significantly more stringent than the water quality-based standards required to protect marine aquatic life or human health.

Constituents for the Protection of Marine Aquatic Life. Ocean Plan Table B constituents for the protection of marine aquatic life are presented in Table 2-1 (page 2-3), along with the corresponding benchmark concentration established within Discharge Specification B.12 of Order No. R9-2002-0025. Table 2-1 also presents annual PLOO mass emissions during 2002-2006, and compares the annual mass emissions with the benchmarks established in Order No. R9-2002-0025.

Table 2-1
Comparison of Point Loma Outfall Discharge with
NPDES Permit Benchmarks Established in Discharge Specification B.12
Benchmarks for Protection of Marine Aquatic Life

Parameter	Benchmark Mass Emission[1] (mt/year)		Annual Mass Emissions[2] (metric tons/year)					Antidegradation Analysis Required?
		Mean 2002-2006	2002	2003	2004	2005	2006	
Arsenic	0.88	< 0.26	0.30	0.30	< 0.26	< 0.29	< 0.13	No
Cadmium	1.4	< 0.12	< 0.22	< 0.17	< 0.10	< 0.06	< 0.03	No
Chromium III	14.2	< 0.66	< 0.62	< 0.86	< 0.79	< 0.62	< 0.43	No
Copper	26[3]	12	18	18	10	7.2	4.9	No
Lead	14.2	< 1.3	< 2.5	< 2.3	< 1.2	< 0.2	< 0.3	No
Mercury	0.19	< 0.02	< 0.04	< 0.02	< 0.01	< 0.01	< 0.01	No
Nickel	11.3	< 2.0	< 1.9	< 1.9	< 2.0	2.3	2.2	No
Selenium	0.44[3]	0.26	0.27	0.25	0.26	0.27	0.22	No
Silver	2.8	< 0.4	< 1.0	< 0.8	< 0.4	< 0.03	< 0.04	No
Zinc	18.3	5.9	6.5	5.1	5.6	6.5	5.8	No
Cyanide	1.57	0.58	0.83	0.61	0.60	0.59	0.28	No
Ammonia (as N)	8,018	6,780	6,480	6,550	6,470	7,110	7,300	No
Phenols	2.57	**2.77**	**2.64**	2.48	**2.68**	**2.74**	**3.31**	**Yes**
Chlorinated phenols	1.73	ND	ND	ND	ND	ND	ND	No
Endosulfan[4]	0.006	ND	ND	ND	ND	ND	ND	No
Endrin	0.008	ND	ND	ND	ND	ND	ND	No
HCH[5]	0.025	< 0.002[6]	< 0.003[6]	< 0.004[6]	< 0.002[6]	< 0.003[6]	< 0.001[6]	No

Note: ND indicates the constituent was not detected in any Point Loma WTP effluent sample during the listed year.

1 Benchmark mass emission established in Order No. R9-2002-0025. Benchmarks are not enforceable water quality standards, but are established for purposes of determining which constituents require antidegradation analysis in the City's application for renewal of NPDES CA0107409. For all constituents except copper and selenium, benchmarks were established on the basis of "n-day" monthly performance values (95 percentile) for the period January 1990 through April 1995 for a baseline flow of 205 mgd (8.98 m^3/sec). An antidegradation analysis of the constituent is required if any mass emission values exceed the benchmark value during the effective life of Order No. R9-2002-0025.

2 Annual mass emissions are computed by taking the average annual concentration multiplied by the annual average Point Loma WTP flow. Sample results of "not detected" are assumed to have a concentration equal to or less than one-half of the Method Detection Limit (MDL).

3 To reflect effects of source water on the Point Loma WTP effluent quality, copper and selenium benchmarks were based on n-day average monthly performance (95^{th} percentile) during 1994 and a 205 mgd (8.98 m^3/sec) flow.

4 Sum of endosulfan-alpha, endosulfan-beta, and endosulfan sulfate.

5 Sum of alpha, beta, gamma (lindane) and delta isomers of hexachlorocyclohexane.

6 Alpha, beta, and delta isomers of hexachlorocyclohexane were not detected during 2002-2006.

As shown in Table 2-1, PLOO annual mass emissions during 2002-2006 were less than the corresponding NPDES benchmarks for each Ocean Plan Table B constituents for the protection of marine aquatic life, except for phenol. The PLOO discharge exceeded the 2.57 mt/yr phenol benchmark during four of the five years, including:

- a 2.64 metric tons per year (mt/yr) mass emission during 2002 (3 percent above the benchmark),
- a 2.68 mt/yr mass emission during 2004 (4 percent above the benchmark),
- a 2.74 mt/yr mass emission during 2005 (6 percent above the benchmark), and
- a 3.31 mt/yr mass emission during 2006 (29 percent above the benchmark).

Average annual phenol mass emissions during 2002-2006 were 2.77 mt/yr, which is approximately 8 percent above the benchmark established in Order No. R9-2002-0025.

Because PLOO mass emissions (except for phenol) are within the benchmarks, a Tier I antidegradation analysis is required only for phenol; antidegradation analyses are not required for any other Ocean Plan Table B parameter for the protection of marine aquatic life.

Constituents for the Protection of Human Health. Table 2-2 (page 2-5) presents benchmarks established in Order No. R9-2002-0025 for Ocean Plan Table B constituents for the protection of human health (noncarcinogens). For comparison, Table 2-2 also presents annual PLOO mass emissions during 2002-2006 for each of these constituents.

Table 2-3 (pages 2-7 and 2-8) presents benchmarks established in Order No. R9-2002-0025 for Ocean Plan Table B constituents for the protection of human health (carcinogens). Annual PLOO mass emissions during 2002-2006 for each constituent are also presented in the table. As shown in Table 2-2 and Table 2-3, only a few of the Ocean Plan Table B constituents for the protection of human health were detected in the PLOO effluent during 2002-2006. For detected constituents, PLOO mass emissions during 2002-2006 were below benchmarks established in Order No. R9-2002-0025 for all Ocean Plan Table B constituents for the protection of human health (noncarcinogens and carcinogens).

Because PLOO mass emissions are within the benchmarks, Tier I antidegradation analyses are not required for any Ocean Plan Table B parameters for the protection of human health. Additionally, since no mass emission increase is proposed for any PLOO constituent, Tier I antidegradation analyses are not required for any regulated PLOO effluent parameter except phenol (which as noted above exceeded the NPDES mass emission benchmark).

Table 2-2
Comparison of Point Loma Outfall Mass Emissions with
NPDES Permit Benchmarks Established in Discharge Specification B.12
Benchmarks for Protection of Human Health - Noncarcinogens

Parameter	Benchmark Mass Emission[1] (mt/year)	Annual Mass Emissions[2] (metric tons/year)					Antidegradation Analysis Required?
		2002	2003	2004	2005	2006	
Acrolein	17.6	ND	ND	ND	ND	ND	No
Antimony	56.6	< 7.4	< 4.7	< 2.3	< 0.2	< 0.2	No
bis (2-chloroethoxy) methane	1.5	ND	ND	ND	ND	ND	No
bis (2-chloroisopropyl) ether	1.61	ND	ND	ND	ND	ND	No
Chlorobenzene	1.7	ND	ND	ND	ND	ND	No
Di-n-butyl phthalate	1.33	ND	ND	ND	ND	ND	No
Dichlorobenzenes[3]	2.8	ND	ND	ND	ND	ND	No
1,1-dichloroethylene	0.79	ND	ND	ND	ND	ND	No
Diethyl phthalate	6.23	< 1.7	ND	< 1.0	< 1.1	< 1.0	No
Dimethyl phthalate	1.59	ND	ND	ND	ND	ND	No
4,6-dinitro-2-methylphenol	6.8	ND	ND	ND	ND	ND	No
2,4-dinitrophenol	11.9	ND	ND	ND	ND	ND	No
Ethylbenzene	2.04	ND	ND	ND	ND	ND	No
Fluoranthene	0.62	ND	ND	ND	ND	ND	No
Nitrobenzene	2.07	ND	ND	ND	ND	ND	No
Thallium	36.8	< 5.0	ND	< 2.1	ND	< 0.2	No
Toluene	3.31	0.70	0.51	< 0.45	< 0.38	< 0.34	No
Tributyltin	0.001	ND	ND	ND	ND	ND	No
1,1,1-trichloroethane	2.51	ND	ND	ND	ND	ND	No

Note: ND indicates the constituent was not detected in any Point Loma WTP effluent sample during the listed year.

1 Benchmark mass emission established in Order No. R9-2002-0025. Benchmarks are not enforceable water quality standards, but are established for purposes of determining which constituents require antidegradation analysis in the City's application for renewal of NPDES CA0107409. For all constituents except copper and selenium, benchmarks were established on the basis of "n-day" monthly performance values (95 percentile) for the period January 1990 through April 1995 for a baseline flow of 205 mgd (8.98 m^3/sec). An antidegradation analysis of the constituent is required if any mass emission values exceed the benchmark value during the effective life of Order No. R9-2002-0025.

2 Annual mass emissions are computed by taking the average annual concentration multiplied by the annual average Point Loma WTP flow. Sample results of "not detected" are assumed to have a concentration equal to or less than one-half of the Method Detection Limit (MDL).

3 Sum of 1,2-dichlorobenzene and 1,3-dichlorobenzene, neither of which were detected in the Point Loma WTP effluent during 2002-2006.

Table 2-3
Comparison of Point Loma Outfall Mass Emissions with
NPDES Permit Benchmarks Established in Discharge Specification B.12
Benchmarks for Protection of Human Health - Carcinogens

Parameter	Benchmark Mass Emission[1] (mt/year)	Annual Mass Emissions[2] (metric tons/year)					Antidegradation Analysis Required?
		2002	2003	2004	2005	2006	
Acrylonitrile	5.95	ND	ND	ND	ND	ND	No
Aldrin	0.006	ND	ND	ND	ND	ND	No
Benzene	1.25	ND	ND	ND	ND	ND	No
Benzidine	12.5	ND	ND	ND	ND	ND	No
Beryllium	1.42	< 0.04	ND	ND	ND	< 0.005	No
bis (2-chloroethyl) ether	1.61	ND	ND	ND	ND	ND	No
bis (2-ethylhexyl) phthalate	2.89	< 1.9	< 1.2	< 1.3	< 1.6	< 1.8	No
Carbon tetrachloride	0.79	ND	ND	ND	ND	ND	No
Chlordane	0.014	ND	ND	< 0.004[3]	ND	ND	No
Chloroform	2.19	1.1	1.3	1.3	1.8	1.6	No
DDT[4]	0.043	ND	ND	ND	ND	ND	No
1,4-dichlorobenzene	1.25	< 0.5	< 0.5	< 0.6	< 0.5	< 0.5	No
3,3-dichlorobenzidine	4.67	ND	ND	ND	ND	ND	No
1,2-dichloroethane	0.79	ND	ND	ND	ND	ND	No
1,1-dichloroethylene	0.79	ND	ND	ND	ND	ND	No
Dichloromethane[5]	13.7	0.7	< 0.7	< 0.6	0.8	0.6	No
1,3-dichloropropene	1.42	ND	ND	ND	ND	ND	No
Dieldrin	0.011	ND	ND	ND	ND	ND	No
2,4-dinitrotoluene	1.61	ND	ND	ND	ND	ND	No
1,2-diphenylhydrazine	1.52	ND	ND	ND	ND	ND	No
Halomethanes[6]	5.86	ND	< 0.2[7]	ND	ND	ND	No
Heptachlor	0.001	ND	ND	< 0.002[8]	ND	ND	No
Heptachlor epoxide	0.024	ND	ND	ND	ND	ND	No
Hexachlorobenzene	0.54	ND	ND	ND	ND	ND	No
Hexachlorobutadiene	0.54	ND	ND	ND	ND	ND	No
Hexachloroethane	1.13	ND	ND	ND	ND	ND	No
Isophorone	0.71	ND	ND	ND	ND	ND	No

Table 2-3 is continued on the next page

Table 2-3 (continued)
Comparison of Point Loma Outfall Mass Emissions with
NPDES Permit Benchmarks Established in Discharge Specification B.12
Benchmarks for Protection of Human Health - Carcinogens

Parameter	Benchmark Mass Emission[1] (mt/year)	Annual Mass Emissions[2] (metric tons/year)					Antidegradation Analysis Required?
		2002	2003	2004	2005	2006	
N-nitrosodimethylamine	0.76	ND	ND	ND	ND	ND	No
N-nitrosodiphenylamine	1.47	ND	ND	ND	ND	ND	No
PAHs[9]	15.45	ND	ND	ND	ND	ND	No
PCBs[10]	0.275	ND	ND	ND	ND	ND	No
1,1,2,2-tetrachloroethane	1.95	ND	ND	ND	ND	ND	No
Tetrachloroethylene	4.0	< 0.2	ND	< 0.2	< 0.2	< 0.2	No
Toxaphene	0.068	ND	ND	ND	ND	ND	No
Trichloroethylene	1.56	ND	ND	ND	ND	ND	No
1,1,2-trichloroethane	1.42	ND	ND	ND	ND	ND	No
2,4,6-trichlorophenol	0.96	ND	ND	ND	< 0.23[11]	ND	No
Vinyl chloride	0.4	ND	ND	ND	ND	ND	No

Note: ND indicates the constituent was not detected in any Point Loma WTP effluent sample during the listed year.

1 Benchmark mass emission established in Order No. R9-2002-0025. Benchmarks are not enforceable water quality standards, but are established for purposes of determining which constituents require antidegradation analysis in the City's application for renewal of NPDES CA0107409. For all constituents except copper and selenium, benchmarks were established on the basis of the "n-day" monthly performance values (95 percentile) for the period January 1990 through April 1995 for a baseline flow of 205 mgd (8.98 m^3/sec). An antidegradation analysis of the constituent is required if any mass emission values exceed the benchmark value during the effective life of Order No. R9-2002-0025.

2 Annual mass emissions are computed by taking the average annual concentration multiplied by the annual average Point Loma WTP flow. Sample results of "not detected" are assumed to have a concentration equal to or less than one-half of the Method Detection Limit (MDL).

3 Alpha (cis) chlordane was detected in one of 46 samples during 2004.

4 Sum of 4,4'DDT, 2,4'DDT, 4,4'DDE, 2,4'DDE, 4,4'DDD, and 2,4'DDD.

5 Dichloromethane is also known as methylene chloride.

6 Halomethanes are the sum of bromoform, bromomethane (methyl bromide), and chloromethane (methyl chloride).

7 Chloromethane was detected in three of twelve samples collected during 2003, but bromoform and bromomethane were not detected in any of the twelve samples.

8 Heptachlor was detected in one of 44 samples collected during 2004. Assuming each non-detect sample had a concentration of less than half the MDL, the annual mass emission of heptachlor during 2004 is < 0.002 mt/yr. Assuming a zero concentration in each non-detected sample, the annual mass emission is 0.00025 mt/yr.

9 PAHs (polynuclear aromatic hydrocarbons) include acenapthylene, anthracene, 1,2-benzanthracene, 3,4-benzofluoranthene, benzo[k]fluoranthene, 1,2-benzoperylene, benzo[a]pyrene, chrysene, dibenzo[a,h]anthracene, fluorene, phenanthrene, pyreme, and ideno[1,2,3-cd]pyrene. None of these constituents were detected in the Point Loma WTP effluent during 2002-2006.

10 PCBs (polychlorinated biphenyls) include chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, -1221, -1232, -1242, -1248, -1254, and -1260.

11 2,4,6-trichlorophenol was detected in one of 45 Point Loma WTP effluent samples during 2005. The listed mass emission was computed assuming an effluent concentration of one-half the MDL for "not detected" samples.

2.3 ANALYSIS OF PHENOL BENCHMARK EXCEEDANCES

As documented in the above tables, phenol is the only constituent that exceeded benchmark mass emissions established in Order No. R9-2002-0025.

Influent and Effluent Trends. Table 2-4 summarizes phenol mass emissions during the past 25 years. As shown in the table, average annual Point Loma WTP phenol mass emissions were higher during 1990-1995 than during the 1980s, and average annual phenol mass emissions during 1996-2001 were higher than during 1990-1995. Mass emissions of phenol were less during 2002-2006 (the effective period of Order No. R9-2002-0025) than during the prior 1996-2001 NPDES period, but remained above the benchmark period (1990-1995).

Table 2-4
Historic Mass Emissions of Phenol
Point Loma Ocean Outfall Discharge

Period	Average Annual Point Loma Mass Emissions for Phenolic Compounds[1] (mt/year)
1980-1989	1.7
1990-1995	2.2
1996-2001	3.3
2002-2006	2.7

1 This table presents average annual Point Loma WTP phenol mass emissions for the listed time periods. It should be noted that the phenol mass emission benchmark established in Order No. R9-2002-0025 is based on 95th percentile values for the period January 1990 through April 1995 and a reference flow of 205 mgd (8.98 m^3/sec).

Point Loma WTP influent and effluent data demonstrate that the upward trend in phenol mass emissions is consistent (and not an artifact of a few high concentrations in a limited number of samples). Table 2-5 (page 2-9) presents Point Loma WTP influent and effluent phenol concentrations during 1990-2006. As shown in Table 2-5, percent removal of phenol at the Point Loma WTP is currently higher than during the benchmark reference period (1990-1995). Increases in phenol mass emissions have thus resulted from increases in phenol concentrations in the Point Loma WTP influent.

As shown in Table 2-5, a trend in increased Point Loma WTP phenol concentrations occurred during 1993-1996. Maximum annual Point Loma WTP phenol mass emissions occurred in 1996 (17.9 mt/yr), but annual phenol mass emissions since 1996 have averaged approximately one-third less than this maximum annual value.

As shown in Table 2-5, Point Loma WTP performance in removing phenol increased in 1999, and has remained relatively stable (approximately 25 to 30 percent removal) since that time. It is possible that increased phenol percent removal at the Point Loma WTP since 1999 may result from refinements in chemical dosage rates and improved solids removal performance.

Since 1996, Point Loma WTP effluent phenol concentrations remained relatively stable (ranging from 10 - 14 µg/l).

Table 2-5
Comparison of Point Loma WTP Influent and Effluent Concentrations of Phenol

Year	Mean Annual Point Loma WTP Phenol Concentration[1] (µg/l)		Mean Point Loma WTP Percent Removal[2] (%)
	Influent	Effluent	
1990	6.7	5.8	13%
1991	7.1	4.6	35%
1992	4.8	4.1	15%
1993	10.0	8.3	17%
1994	14.4	13.0	10%
1995	15.2	13.5	11%
1996	19.1	17.9	6%
1997	14.6	12.9	12%
1998	14.2	13.0	8%
1999	17.1	11.6	32%
2000	16.4	11.7	29%
2001	16.9	11.0	25%
2002	14.7	11.4	23%
2003	14.8	10.5	29%
2004	15.8	11.3	28%
2005	14.2	10.6	25%
2006	19.2	13.9	27%
1990-1995	9.7	8.2	17%
1996-2001	16.4	13.4	20%
2002-2006	15.7	11.5	27%

1 Data from annual Point Loma WTP monitoring reports for 1990-2006 submitted by the City to the Regional Board.
2 Computed percent removal based on listed Point Loma WTP influent and effluent phenol concentrations.

Potential Phenol Sources. Phenol is a common and prevalent chemical, and is used in both industrial and nonindustrial applications. It is used in a number of manufacturing or research applications as a solvent, disinfectant, or cleaning compound. It is also a constituent in paints, inks, and photographic chemicals. Phenol may also be found in a variety of household uses, including medical and household disinfectants, pharmaceuticals, solvents and cleaners, paints, inks, and photo supplies.

Discharges of phenols to the sewer system from industries are regulated within the City of San Diego. Federal categorical dischargers, hospitals, and laboratories are regulated by the City's existing "toxic organic management practices" (TOMPS). Electroplating industries and metal finishers are regulated by federal total toxic organics limits. Because these existing practices are effective in limiting industrial discharges of phenols from electroplating industries, metals industries, hospitals, laboratories, and other significant industrial users, no local limits for phenol have been established to date.

While significant controls exist on phenol discharges from industries, phenols are also discharged to the sewer by a variety of unregulated nonindustrial users. As noted, phenol is a common chemical, used in a variety of over-the-counter disinfectants, antiseptics, cleansers, and solvents. Phenol also has a variety of medical and dental uses

3. COMPLIANCE WITH EFFLUENT STANDARDS

3.1 COMPLIANCE PROGRAM

The City of San Diego's program for protecting the environment from discharges of toxic materials includes four elements:

- source control to prevent toxic materials from entering the sewer system,
- treatment operations to remove toxic materials from the effluent,
- discharge facilities and operations to minimize the potential for environmental impact, and
- monitoring to assess environmental conditions and the effectiveness of the source control and treatment operations.

Each of these components has a direct effect on Point Loma WTP effluent compliance. Source control limits the introduction of pollutants into the sewer system. Treatment removes the pollutants prior to discharge. Initial dilution provided by discharge facilities affects the establishment of effluent concentration limits that are based on receiving water standards. Monitoring is used to assess compliance.

Source Control. The City's toxics control program consists of industrial and non-industrial elements. The Industrial Waste Source Control Program regulates discharges from industrial and commercial dischargers. This overall program is described in detail in Appendix K. In addition to having an EPA-approved pretreatment program, the City maintains a comprehensive Urban Area Pretreatment Program to ensure compliance with urban area pretreatment requirements established in 40 CFR 125.65. The Urban Area Pretreatment Program, which was approved by EPA in 1998, implements pretreatment requirements for toxic constituents of concern found within the Point Loma WTP influent.

The City's non-industrial source control program includes a Household Hazardous Waste program, development of Best Management Practice requirements for selected commercial dischargers, and ongoing surveys to identify contaminant sources. As documented in Appendix K, the City's industrial and non-industrial toxics control programs have been effective in reducing mass emissions of toxic constituents into the environment.

Wastewater Treatment. Appendix A presents an overview of existing Metro System treatment facilities and operations. As documented in Appendix A, secondary treatment is provided within portions of the northern and southern sections of the Metro System by the 30 mgd (1.31 m^3/sec). North City WRP and 15 mgd (0.66 m^3/sec). South Bay WRP. The Point Loma WTP provides advanced primary treatment through preliminary treatment, aerated grit removal, and chemically assisted sedimentation. Digested waste solids from the Point Loma WTP and raw waste solids from the North City WRP are processed at the Metro Biosolids Center. (Waste solids from the South Bay WRP are returned to the Point Loma WTP for treatment and removal via the sewer.)

Ocean Discharge. Appendix B presents an overview of the PLOO and outfall performance. As documented in Appendix B, the PLOO discharges wastewater approximately 4.5 miles (7.2 km) off the coast of Point Loma at a discharge depth of 310 feet (water depth of approximately 320 feet or 98 m). The PLOO diffuser system is 4,992 feet long (1522 m) with 416 ports - 208 ports per each diffuser leg. Based on computer modeling of the outfall plume, Order No. R9-2002-0025 assigns initial dilutions of 204 to 1 and 328 to 1, respectively, for determining compliance with federal water quality criteria for the protection of aquatic life and human health. (See Appendix O for a description of initial dilution modeling of the PLOO.)

Monitoring. The City maintains one of the most comprehensive wastewater discharge monitoring programs in the world. The program features extensive influent and effluent monitoring to assess the effectiveness of source control efforts, the effectiveness of treatment, and compliance with applicable water quality standards.

3.2 EFFLUENT COMPLIANCE SCREENING

Effluent Concentration Limits. Discharge Specification B.1.b of Order No. R9-2002-0025 establishes the following effluent concentration limitations for phenol for the Point Loma WTP:

- instantaneous maximum of 61.5 mg/l,
- daily maximum of 24.6 mg/l, and
- 6-month median of 6.2 mg/l.

Table 3-1 compares maximum observed Point Loma WTP effluent phenol concentrations during 2002-2006 with the applicable instantaneous maximum and daily maximum effluent limitations of Order No. R9-2002-0025. Table 3-2 compares the Point Loma WTP effluent compliance during 2002-2006 with the 6-month median phenol limit of Order No. R9-2002-0025.

As shown in Tables 3-1 and 3-2, the Point Loma WTP achieved 100 percent compliance with the phenol concentrations effluent limitations of Discharge Specification B.1.b. Point Loma WTP effluent concentrations of phenol were more than three orders of magnitude lower than the corresponding effluent limits.

Table 3-1
Compliance of Point Loma Outfall Discharge with NPDES Permit Standards for Phenol
Daily Maximum and Instantaneous Maximum Effluent Limits

Year	Number of Samples[1]	Maximum Observed Point Loma WTP Phenol Concentration (mg/l)[1]	Percent Compliance	
			Instantaneous Maximum Effluent Limit of 61.5 mg/l[2]	Daily Maximum Effluent Limit of 24.6 mg/l[2]
2002	45	0.0202	100%	100%
2003	46	0.0175	100%	100%
2004	46	0.0199	100%	100%
2005	45	0.0156	100%	100%
2006	45	0.0256	100%	100%

1 From monthly Point Loma WTP monitoring reports submitted to the Regional Board, 2002-2006.
2 Effluent limits from Discharge Specification B.1.b of Order No. R9-2002-0025 (NPDES CA0107409).

Table 3-2
Compliance of Point Loma Outfall Discharge with NPDES Permit Standards for Phenol
6-Month Median Effluent Limit

Parameter	Units	Value
6-Month Median Effluent Limitation of Order No. R9-2002-0025[1]	mg/l	6.2
Maximum Observed 6-Month Effluent Concentration, 2002-2006[2]	mg/l	0.0153
Number of Point Loma WTP Effluent Phenol Samples, 2002-2006[2]	--	227
Percent of Samples that Complied with 6-Month Median Phenol Effluent Limitation of Order No. R9-2002-0025	%	100%

1 Effluent limit from Discharge Specification B.1.b of Order No. R9-2002-0025.
2 6-month median values computed from monthly Point Loma WTP monitoring reports submitted to the Regional Board.

Acute Toxicity. Phenol mass emissions may affect additional effluent parameters regulated by Discharge Specification B.1.b of Order No. R9-2002-0025, including acute and chronic toxicity.

Order No. R9-2002-0025 requires the City to conduct semiannual acute toxicity tests on the Point Loma WTP effluent. Table 3-3 summarizes the results of acute toxicity testing for the Point Loma WTP effluent conducted under Order No. R9-2002-0025.

Per requirements of Order No. R9-2002-0025, the City initially conducted three rounds of tests using *Atherinops affinis* (topsmelt) and *Mysidopsis bahia* (shrimp) to determine the most sensitive species. *Mysidopsis bahia* was determined to be the most sensitive species, and subsequent semiannual tests were conducted using that species.

As shown in Table 3-3, all acute toxicity samples complied with the 6.5 TUa acute toxicity limit (daily maximum) established in Discharge Specification B.1.b of Order No. R9-2002-0025.

Table 3-3
Compliance of Point Loma Outfall Discharge with
NPDES Permit Standards for Acute Toxicity

Date	Acute Toxicity (TUa) Daily Maximum Limit is 6.5 TUa	
	Atherinops affinis (topsmelt)	*Mysidopsis bahia* (shrimp)
January 13, 2003	2.6	3.5
July 7, 2003	2.2	1.7
January 6, 2004	4.2	5.3
July 18, 2004	No test[2]	3.7
March 20, 2005	No test[2]	3.0
July 17, 2005	No test[2]	3.3
February 12, 2006	No test[2]	3.7
July 16, 2006	No test[2]	2.6

1 From monthly toxicity monitoring reports submitted to the Regional Board, 2003-2006. Acute toxicity monitoring conducted per Order No. R9-2002-0025. Year 2003 was the first full year of acute toxicity testing for acute toxicity species specified in Order No. R9-2002-0025. See Part 2 of Volume I for a description of bioassay test procedures.

2 No test was required, as *Mysidopsis bahia* (shrimp) was determined to be the most sensitive species.

Chronic Toxicity. Discharge Specification B.1.b also establishes a daily maximum effluent limit for chronic toxicity of 205 TUc. Table 3-4 (page 3-6) summarizes results of chronic toxicity testing for the Point Loma WTP effluent under Order No. R9-2002-0025.

Order No. R9-2002-0025 requires the City to screen chronic toxicity on a biannual basis to determine the most sensitive species from among:

- *Atherinops affinis* (topsmelt) for survival and growth,
- *Haliotis rufeuscens* (red abalone) for larval development, and
- *Macrocystis pyrifera* (giant kelp) for germination and germ-tube length (development).

Toxicity screening testing (see Table 3-4) demonstrated that red abalone and giant kelp were most sensitive, and monthly chronic toxicity tests on these species are performed. As shown in Table 3-4, 100 percent of the chronic toxicity samples for topsmelt survival, topsmelt growth, red abalone larval development, and giant kelp germination complied with the 205 TUc chronic toxicity limitation established in Order No. R9-2002-0025.

Compliance with the chronic toxicity limit was achieved in 48 of 50 of the tests for giant kelp germ-tube length (development). Two tests (May 4, 2003 and December 19, 2003) exceeded the limits. Results from these two tests appear to be isolated anomalies, however, as:

(1) all other chronic and acute toxicity tests performed on the Point Loma WTP effluent on May 4, 2003 and December 19, 2005 showed normal values and were in compliance with applicable toxicity limits,

(2) subsequent repeat (accelerated) tests on the Point Loma WTP effluent after the exceedances showed normal values for all test species (all tests were in compliance),

(3) concentrations of toxic inorganic or organic compounds in the Point Loma WTP effluent at the time of the non-complying toxicity tests were at normal values, and

(4) concentrations of phenolic compounds in the Point Loma WTP effluent were several orders of magnitude lower than applicable water quality criteria for the protection of marine aquatic life.

Table 3-5 (page 3-7) presents a statistical breakdown of the chronic toxicity test results for 2003-2006. As shown in Table 3-5, 80th percentile chronic toxicity values were 64 TUc for all test species and tests, while 95th percentile values ranged from 64 to 114 TUc.

Table 3-4
Compliance of Point Loma Outfall Discharge with NPDES Permit Standards for Chronic Toxicity

Species	Test	Year	Point Loma WTP Effluent Chronic Toxicity Testing, 2003-2006[1]				
			Number of Tests[2]	Number of Tests in Compliance[3]	Median Value[4] TUc	Mean Value[5] (TUc)	Maximum Value (TUc)
Atherinops affinis (topsmelt)	Survival[6]	2003	3	3	64	64	64
		2005	1	1	64	64	64
	Growth[6]	2003	3	3	64	64	64
		2005	1	1	64	64	64
Haliotis rufeuscens (red abalone)	Larval development	2003	11	11	64	64	64
		2004	12	12	64	64	64
		2005	12	12	64	64	64
		2006	12	12	64	68	114
Macrocystis pyrifera (giant kelp)	Germination	2003	15	15	64	80	204
		2004	12	12	64	64	64
		2005	12	12	64	77	114
		2006	15	15	64	71	114
	Germ tube length	2003	15	14	64	108	**667**[7]
		2004	11	11	64	72	114
		2005	12	11	64	114	**>667**[8]
		2006	14	14	64	67	114

1 Chronic toxicity testing conducted per requirements of Order No. R9-2002-0025 during 2003-2006. Results are from monthly toxicity monitoring reports submitted by the City to the Regional Board. (Year 2003 is the first full year of chronic toxicity testing under Order No. R9-2002-0025.) See Part 2 of Volume I for a description of bioassay test procedures.

2 Total number of tests for the listed species and test conducted during the year.

3 Number of chronic toxicity tests during the year that complied with the 205 TUc effluent limitation established in Discharge Specification B.1.b of Order No. R9-2002-0025.

4 Median corresponds to the 50th percentile value (half the sample values are higher and half are lower than the median).

5 Arithmetic mean of samples results during the listed calendar year.

6 Order No. R9-2002-0025 requires biannual screening for chronic toxicity, with monthly monitoring for species determined to be most sensitive. The City conducted biannual screening for topsmelt in 2003 and 2005. Monthly chronic toxicity monitoring for red abalone and giant kelp is performed, as the screening shows these species to be most sensitive.

7 The May 4, 2003 chronic toxicity test for giant kelp germ tube length (development) exceeded the 205 TUc chronic toxicity limit, but all other toxicity tests performed on that date complied with the limit. In response to the exceedance, the City implemented accelerated toxicity testing for giant kelp germination and development. Repeat tests demonstrated compliance with the chronic toxicity limit. No unusual concentrations occurred in the Point Loma WTP effluent on or immediately prior to the May 4, 2003 test. The cause of the exceedance is unknown.

8 The December 19, 2005 chronic toxicity test for giant kelp germ tube length (development) exceeded the 205 TUc chronic toxicity limit, but all other toxicity tests performed on that date complied with the limit. In response to the exceedance, the City implemented accelerated toxicity testing for giant kelp germination and development. Repeat tests demonstrated compliance with the chronic toxicity limit. No unusual concentrations occurred in the Point Loma WTP effluent on or immediately prior to the December 19, 2005 test. The cause of the exceedance is unknown.

Table 3-5
Statistical Evaluation of PLOO Chronic Toxicity, 2003-2006

Species	Test	Chronic Toxicity, 2003-2006[1] (TUc)				
		95th Percentile Value[2]	90th Percentile Value[2]	80th Percentile Value[2]	70th Percentile Value[2]	Median Value[2]
Atherinops affinis (topsmelt)	Survival	64	64	64	64	64
	Growth	64	64	64	64	64
Haliotis rufeuscens (red abalone)	Larval development	64	64	64	64	64
Macrocystis pyrifera (giant kelp)	Germination	114	114	64	64	64
	Germ tube length	114	114	64	64	64

1 Statistical breakdown based on all chronic toxicity testing conducted per requirements of Order No. R9-2002-0025 during 2003-2006. Results are from monthly toxicity monitoring reports submitted by the City to the Regional Board. (Year 2003 is the first full year of chronic toxicity testing under Order No. R9-2002-0025.) See Part 2 of Volume I for a description of bioassay test procedures.

2 Percentile values based on all tests for the listed species conducted during 2003-2006. The 95th percentile value is larger than 95 percent of the values during 2003-2006, and less than 5 percent of the values during 2003-2006.

Summary of Compliance Screening. During 2002-2006, the Point Loma WTP effluent complied with effluent concentration standards for phenol established in Order No. R9-2002-0025. Maximum observed Point Loma WTP effluent phenol concentrations were several orders of magnitude lower than the applicable effluent limitations.

The Point Loma WTP effluent also achieved 100 percent compliance with applicable acute toxicity standards during the period, and achieved 100 percent compliance with chronic toxicity standards for:

- topsmelt survival and growth,
- red abalone larval development, and
- giant kelp germination.

While 2 of 50 chronic toxicity samples for giant kelp germ-tube length development did not comply with the 205 TUc toxicity limit, these two exceedances were isolated, other toxicity tests completed on these dates were in compliance, and repeat tests demonstrated compliance. The exceedances thus appear to be anomalies.

Effluent samples had been collected the day prior to each of the two non-complying chronic toxicity tests, and concentrations of phenol in the Point Loma WTP effluent during these dates were in normal ranges (orders of magnitude lower than applicable criteria for the protection of marine aquatic life).

As a result, the two non-complying chronic toxicity tests do not in any way appear to be related to phenol mass emissions. Phenol mass emissions are thus not related to any instances of Point Loma WTP effluent non-compliance during the effective period of Order No. R9-2002-0025.

4. COMPLIANCE WITH RECEIVING WATER STANDARDS

4.1 OCEAN PLAN TABLE B STANDARDS

Ocean Plan Table B receiving water standards are applicable within a three nautical mile limit (5.56 km) off the California coast. While the Point Loma discharge occurs 4.5 miles (7.2 km) offshore (outside the State jurisdictional zone), the Ocean Plan Table B standards are representative of water quality conditions necessary to protect beneficial uses in ocean waters in and outside of State waters.

Ocean Plan Table B receiving water standards are to be achieved upon completion of initial dilution. Order No. R9-2002-0025 assigns an initial dilution of 204 to 1 for purposes of determining compliance with standards and criteria for the protection of aquatic life. Order No. R9-2002-0025 assigns an initial dilution of 328 to 1 for purposes of determining compliance with human health criteria. (See Finding 10 of Order No. R9-2002-0025 and the September 13, 2002 EPA Tentative Decision Document.)

Several of the Ocean Plan Table B receiving water standards for the protection of marine aquatic life may be related to phenol mass emissions, including:

- 6-month median receiving water standards of 30 µg/l for phenol and 1 µg/l for chlorinated phenolics,
- daily maximum receiving water standards of 120 µg/l for phenol and 4 µg/l for chlorinated phenolics, and
- instantaneous maximum receiving water standards of 300 µg/l for phenol and 10 µg/l for chlorinated phenolics,
- a daily maximum acute toxicity receiving water standard of 0.3 TUa, and
- a daily maximum chronic toxicity receiving water standard of 1.0 TUc.

This chapter assesses how the PLOO discharge complies with receiving water standards that are directly or indirectly related to the phenol mass emissions benchmark.

4.2 COMPLIANCE WITH OCEAN PLAN TABLE B STANDARDS

Receiving Water Standards for Phenol. As noted, Ocean Plan Table B receiving water standards are to be achieved upon completion of initial dilution.

Table 4-1 presents computed "worst case" receiving water concentrations on the basis of the maximum observed Point Loma WTP phenol concentrations during 2002-2006 and a minimum 204:1 dilution. As shown in Table 4-1, the PLOO discharge complies with Ocean Plan receiving water standards for phenol by a wide margin - approximately three orders of magnitude.

No chlorinated phenolics were detected in the Point Loma WTP effluent during 2002-2006. As shown in Table 4-1, however, even if the Point Loma WTP effluent were to contain a maximum chlorinated phenolics concentration of 25.6 µg/l (the same as the observed maximum concentration for non-chlorinated phenols), the PLOO discharge would comply with Ocean Plan Table B daily maximum and instantaneous maximum receiving water standards.

Table 4-1
Compliance with California Ocean Plan Standards for Protection of Marine Aquatic Life
Phenols: Daily Maximum and Instantaneous Maximum

Parameter	Units	Ocean Plan Receiving Water Standard[1] (to be achieved upon completion of initial dilution)		Maximum Observed Effluent Concentration 2002-2006[2]	Maximum Receiving Water Concentration after Initial Dilution[3]	Compliance with Ocean Plan Receiving Water Standard?
		Daily Maximum	Instant. Maximum			
Phenolic compounds	µg/ℓ	120	300	25.6	0.125	Yes
Chlorinated phenolics	µg/ℓ	4	10	ND	0.0	Yes

Note: ND indicates the constituent was not detected during 2002-2006.

1 From California Ocean Plan, Table B.
2 Maximum observed Point Loma WTP effluent phenol concentration during 2002-2006. See Table 3-1 on page 3-3.
3 Projected "worst case" receiving water concentration within the Point Loma zone of initial dilution (ZID) after completion of initial dilution are computed on the basis of (1) the maximum observed Point Loma WTP effluent concentration during 2002-2006 and (2) an initial dilution 204:1.

Table 4-2 presents "worst case" 6-month median receiving water concentrations for phenol. The highest 6-month median phenol concentration in the Point Loma WTP effluent during 2002-2006 was 15.3 µg/l. After a minimum 204:1 initial dilution upon discharge, projected 6-month median receiving water concentrations are significantly below Ocean Plan standards (by more than two orders of magnitude).

Chlorinated phenols were not detected in the Point Loma WTP effluent during 2002-2006. It is noteworthy, however, that compliance with Ocean Plan chlorinated phenol 6-month median limits would have occurred even if the observed phenol concentrations were exclusively comprised of chlorinated phenolic compounds.

Table 4-2
Compliance with California Ocean Plan Standards for Protection of Marine Aquatic Life[1]
Phenols: 6-Month Median

Parameter	Units	Ocean Plan Receiving Water Standard (to be achieved upon completion of initial dilution)	Maximum Observed 6-Month Median 2002-2006[2]	Maximum 6-Month Median Receiving Water Concentration after Initial Dilution[3]	Compliance with Ocean Plan Receiving Water Standard?
		6-month median			
Phenolic Compounds	µg/l	30	15.3	0.075	Yes
Chlorinated phenolics	µg/l	1	ND	NA	Yes

1 From California Ocean Plan, Table B.
2 Maximum observed 6-month median Point Loma WTP effluent phenol concentration during 2002-2006. See Table 3-2 on page 3-3.
3 Projected maximum 6-month median receiving water concentrations are computed on the basis of (1) the maximum observed 6-month median concentration of the Point Loma WTP effluent during 2002-2006, and (2) a minimum initial dilution of 204:1.

It is emphasized that the receiving water concentration projections presented in Table 4-1 and Table 4-2 are conservative, as Point Loma WTP effluent concentrations are typically significantly below the maximum listed values, and PLOO initial dilutions are typically greater than the assigned minimum 204:1 value. As a result, the PLOO discharge will comply with Ocean Plan standards by larger margins than shown in Table 4-1 and Table 4-2.

Receiving Water Standards for Acute and Chronic Toxicity. The Ocean Plan establishes receiving water standards (daily maximum) for acute and chronic toxicity. Since phenol (in sufficient concentrations) may cause acute and chronic toxicity, it is appropriate to assess compliance with Ocean Plan acute and chronic toxicity standards.

As documented in Section 3.2, toxicity testing performed during 2003-2006 under Order No. R9-2002-0025 resulted in the following 95th percentile values for the most sensitive species:

Acute toxicity: 5.3 TUa (based survival of the most sensitive species, *Mysidopsis bahia*)

Chronic Toxicity: 114 TUc (based on germ-tube length development in the most sensitive species, *Macrocystis pyrifera*)

Using these 95th percentile values and the assigned 204:1 minimum initial dilution, Table 4-3 compares projected receiving water acute and chronic toxicity with applicable Ocean Plan standards. As shown in Table 4-3, the PLOO discharge complied with Ocean Plan receiving water standards for acute and chronic toxicity for the listed sensitive species.

Table 4-3
Compliance with California Ocean Plan Receiving Water Standards for Protection of Marine Aquatic Life[1]
Chronic and Acute Toxicity

Parameter	Units	Ocean Plan Receiving Water Standard (to be achieved upon completion of initial dilution)	95th Percentile Effluent Value 2003-2006[2]	Receiving Water Concentration after Initial Dilution[3]	Compliance with Ocean Plan Receiving Water Standard?
		Daily Maximum			
Acute Toxicity compounds	TUa	0.3	5.3	0.25[3]	Yes
Chronic Toxicity	TUc	1.0	114	0.56[4]	Yes

1 From California Ocean Plan, Table B.

2 95tth percentile value for Point Loma WTP effluent toxicity. See Table 3-3 (page 3-4) for the acute toxicity values, based on the most sensitive acute species: *Mysidopsis bahia* (shrimp). See Table 3-5 (page 3-7) for a statistical breakdown of Point Loma WTP chronic toxicity during 2003-2006. As presented in Table 3-5, the most sensitive chronic species is *Macrocystis pyrifera* (giant kelp), which had a 95th percentile chronic toxicity of 114 for both germination and germ-tube length.

3 Receiving water acute toxicity concentration (Co) in the acute toxicity mixing zone (10 percent of the dimension of the zone of initial dilution) is computed on the basis of the effluent concentration (Ce) and initial dilution (Dm) in accordance with the following equation set forth in the Ocean Plan:

$$Co = \frac{Ce}{(1 + 0.1 \cdot Dm)}$$

4 Receiving water chronic toxicity concentration (Co) at the edge of the zone of initial dilution is computed on the basis of the effluent concentration (Ce) and initial dilution (Dm) in accordance with the following equation set forth in the Ocean Plan:

$$Co = \frac{Ce}{(1 + Dm)}$$

4.3 COMPLIANCE WITH FEDERAL WATER QUALITY CRITERIA

EPA published federal water quality criteria in *2002 National Recommended Water Quality Criteria* (EPA-822-R-02-047) and in *2003 Revised Human Health Water Quality Criteria* (RPA-822-F-03-012). EPA maintains a list of updated federal water quality criteria at: http://www.epa.gov/waterscience/criteria/wqcriteria.html.

Federal water quality criteria do not represent enforceable water quality standards, but are presented by EPA for use by States and regulators in developing appropriate scientific-based standards. The criteria indicate levels at which impacts to beneficial uses may occur.

Table 4-4 summarizes current EPA criteria for phenolic compounds for the protection of human health and the protection of marine aquatic.

As previously shown in Table 4-1 (page 4-2), the maximum "worst case" PLOO receiving water concentration after initial dilutions is projected at 0.125 µg/l. The maximum 6-month median receiving water phenol concentration (see Table 4-2 on page 4-3) is projected at 0.075 µg/l. These receiving water concentrations are considerably lower (by many orders of magnitude) than federal chronic and acute water quality criteria for any single phenol compound.

Table 4-4
Federal Water Quality Criteria for Phenolic Compounds

Phenol Compound	EPA Water Quality Criteria[1] Receiving Water Concentration in µg/l		
	Criteria for the Protection of Marine Aquatic Life		Criteria for the Protection of Human Health: Consumption of Organisms
	Saltwater Acute	Saltwater Chronic	
Phenol	No Criterion[2]	No Criterion[2]	1,700,000
2-chlorophenol	No Criterion[2]	No Criterion[2]	150
2,4-dichlorophenol	No Criterion[2]	No Criterion[2]	290
2,4-dimethyl phenol	No Criterion[2]	No Criterion[2]	850
2,4-dinitrophenol	No Criterion[2]	No Criterion[2]	5,300
2-methyl-4,6-dinitrophenol	No Criterion[2]	No Criterion[2]	280
Pentachlorophenol	13	7.9	3.0

1 From *2002 National Recommended Water Quality* Criteria (EPA-822-R-02-047) and *2003 Revised Human Health Water Quality Criteria* (RPA-822-F-03-012).

2 No federal water quality criterion is established for the listed constituent.

Intentional Blank Page

5. PROTECTION OF BENEFICIAL USES

5.1 BENEFICIAL USE OVERVIEW

The *California Water Quality Control Plan for Ocean Waters* (Ocean Plan) identifies beneficial uses for California ocean waters, and establishes standards to protect the designated beneficial uses. Beneficial uses specific to the San Diego Region are designated by the Regional Board in the Water Quality Control Plan for the San Diego Basin (Basin Plan). The Regional Board also identifies the beneficial uses applicable to the PLOO discharge in Order No. R9-2002-0025.

A total of 13 beneficial uses are identified in Order No. R9-2002-0025 for the Pacific Ocean. A total of 12 of these beneficial uses are known to occur in the Point Loma coastal waters. Table 5-1 (page 5-2) presents these designated beneficial uses. Table 5-1 also presents information on specific observed Point Loma activities associated with the designated beneficial use categories. (Information presented in Table 5-1 represents a summary of the Beneficial Use Study presented in Appendix G, Volume IV of this NPDES application.) Additionally, Table 5-1 identifies key water quality parameters useful in assessing water quality-related impacts to the designated beneficial uses.

Table 5-2 (page 5-4) delineates specific geographic regions associated with each beneficial use. As shown in Tables 5-1 and 5-2, predominant Point Loma beneficial uses are natural habitat and recreation. As also shown in the tables, Point Loma is used by a wide variety of commercial and private vessels for such activities as kelp harvesting, SCUBA diving, and commercial and recreational fishing. Harvested species include sea urchins, lobster and a variety of fish.

Details on the economic value of these fisheries are described later in this section and in Table 5-1. Besides recreation, other local beneficial uses include marine habitat, fish migration and spawning and shellfish harvesting. Local marine mammals include harbor seals, bottlenose dolphins, and California sea lions. Additionally, whales annually migrate past Point Loma and are the focus of local whale watching cruises.

Table 5-1
Summary of Designated and Observed Beneficial Uses
Coastal Areas Near Point Loma

Beneficial Use[1]	Local Uses[2]	Water Quality or Environmental Monitoring Parameters
Water Contact Recreation (REC-1) Includes all recreational uses involving body contact with water, such as swimming, wading, water skiing, skin diving, windsailing, surfing, sport fishing, or other uses where ingestion of the water is reasonably possible.	Swimming and surfing are popular at Point Loma and San Diego beaches. Some 5000 SCUBA dives per year occur (accessed by boat) in the vicinity of the Point Loma kelp bed. Due to restricted access and topography, use of the area for other activities is limited. Shore access limits on federal lands limits surfing and swimming.	Bacterial indicators Water clarity Floatables Oil and grease
Non-Contact Water Recreation (REC-2) Recreational uses which involve the presence of water, but not necessarily require body contact, such as picnicking, sunbathing, hiking, beachcombing, camping, pleasure boating, tidepool and marine life study, hunting, and general aesthetic enjoyment.	Tidepooling is a key non-contact recreational use, but tidepooling access is limited along much of Point Loma (due to Navy lands). Boating, whale watching, and personal watercraft use occurs along the Point Loma coast and kelp bed area.	Bacterial indicators Floatables Oil and grease
Ocean Commercial and Nonfreshwater Sport Fishing (COMM) Includes the commercial collection of fish and shellfish, including those collected for bait, plus sport fishing in the ocean, bays, estuaries, and similar nonfreshwater areas.	Commercial fishing out of San Diego continues a trend of decline; the current San Diego commercial fishing fleet is a fraction of its former size. The total value of the annual commercial catch landed in San Diego in 2006 was approximately $1.8 million, with the lobster and sea urchin catch generating most of this value. Kelp harvesting in the Point Loma kelp bed was terminated in 2007 (operations moved overseas due to economics.) Recreational fishing now accounts for approximately 50 percent of the total catch and is an important element of the region's tourist economy.	Toxics including metals, pesticides and other priority pollutants Bacterial indicators
Wildlife Habitat (WILD) Provides a water or food supply (and supports a vegetative habitat) for the maintenance of wildlife.	Diverse and abundant wildlife (including many species of marine birds and mammals) exists along the Point Loma coast.	Toxics including metals, pesticides and other priority pollutants Bacterial indicators
Preservation of Rare and Endangered Species (RARE) Provides an aquatic habitat which is necessary, at least in part, for the survival of identified rare and endangered species.	A total of 24 species of endangered animals may occur in the vicinity of Point Loma. These include 8 endangered mammal species, 5 endangered sea turtle species, 7 endangered bird species, 2 endangered fish species, and 2 abalone species.	Toxics including metals, pesticides and other priority pollutants Bacterial indicators
Marine Habitat (MAR) Provides for the preservation of the marine ecosystem, including the propagation and sustenance of fish, shellfish, marine mammals, waterfowl, and marine vegetation.	Many species of fish, shellfish, marine mammals, birds and vegetation exist along the Point Loma coast. The largest kelp bed in San Diego County also occurs off the Point Loma coast.	Toxics including metals, pesticides and other priority pollutants Bacterial indicators

(Table 5-1 is continued on next page. See end of table on page 5-3 for footnotes.)

Table 5-1 (Continued)
Summary of Designated and Observed Beneficial Uses
Coastal Areas Near Point Loma

Beneficial Use[1]	Local Uses[2]	Water Quality or Environmental Monitoring Parameters
Shellfish Harvesting (SHELL) The harvesting of filter feeding shellfish (clams, oysters, mollusks) for human consumption, sport or commercial purposes.	The Regional Board has not designated any areas in the vicinity of Point Loma as shellfish harvesting areas. No commercial harvesting of filter-feeding shellfish occurs in the PLOO vicinity. Shellfish harvesting, collection or possession is illegal within waters of the Cabrillo National Monument and the Mia Tegner State Marine Conservation Area along the Point Loma coast inshore of the PLOO.	Toxics including metals, pesticides and other priority pollutants Bacterial indicators
Preservation and Enhancement of Biological Habitats of Special Significance (BIOL) Waters support designated areas or habitats, including, but not limited to established refuges, parks, sanctuaries, ecological reserves or preserves, and Areas of Special Biological Significance (ASBS), where the preservation and enhancement of natural resources requires special protection.	Many species of fish, shellfish, marine mammals, birds and vegetation exist off the Point Loma coast. The largest kelp bed in San Diego County also occurs off the coast of Point Loma.	Toxics including metals, pesticides and other priority pollutants
Aquaculture/Mariculture (AQUA) Mariculture involves the culture of plants and animals in marine waters independent of any pollution source.	Most mariculture in San Diego is located in lagoons and bays, with the nearest to the PLOO being 27 miles north in Agua Hedionda Lagoon. The only active mariculture in San Diego open ocean waters involves the dispersal of abalone larvae off Point Loma. Maritech, Inc. of San Diego has approval from the California Department of Fish and Game for abalone ranching along the Point Loma headlands.	Toxics including metals, pesticides and other priority pollutants Bacterial indicators
Migration of Aquatic Organisms (MIGR) Supports and facilitates the migration of marine organisms.	Many migratory species are found in the Point Loma area, including whales and numerous marine bird species.	Temperature Clarity
Navigation (NAV) Includes waters used for shipping, travel or other transportation by private, commercial or military vessels.	Extensive local shipping and navigation occurs in the Point Loma area. Numerous commercial and private boats also use the Point Loma area.	Floatables Aesthetics
Spawning, Reproduction and/or Early Development (SPWN) Waters support high quality habitats necessary for reproduction and early development of fish and wildlife.	Many species of fish, shellfish, marine mammals, birds and vegetation occur in the Point Loma area. The largest kelp bed in San Diego County occurs off the coast of Point Loma.	Toxics including metals, pesticides and other priority pollutants

1 Beneficial uses as designated in Order No. R9-2002-0025 and the Basin Plan. Industrial Service Supply is listed as a beneficial use of the Pacific Ocean in the Basin Plan, but this use is not observed in the Point Loma area.

2 See Appendix G for more detailed information.

Table 5-2
Observed Beneficial Uses of Pacific Ocean Waters Off the Coast of Point Loma

Observed Beneficial Use		Near-shore Waters	In and Near Kelp Bed	Beyond Kelp Bed Zone
Snorkeling		■	■	
Swimming & Surfing		■		
Tidepooling		■		
SCUBA Diving	Commercial	■	■	
	Recreational	■	■	
	Military	■	■	■
	Research		■	
Fishing	Commercial	■	■	■
	Recreational	■	■	■
Sailing & Boating		■	■	■
Kelp Harvesting			■	
Whale Watching			■	■

(From beneficial uses survey. See Appendix G, Volume IV)

5.2 BENEFICIAL USE IMPACT ASSESSMENT

State and federal antidegradation policies require that beneficial uses be protected. This chapter assesses compliance of PLOO phenol mass emissions with these antidegradation policies. This section (1) identifies which beneficial uses may theoretically be affected by phenol mass emissions, and (2) assesses the degree (if any) that beneficial uses may be affected by the mass emissions.

As shown in Table 5-1, a number of the designated and observed beneficial uses may be affected by toxic constituents. These include:

- Ocean commercial and nonfreshwater sport fishing (COMM),
- Wildlife habitat (WILD),
- Preservation of rare and endangered species (RARE),

- Marine habitat (MAR),
- Shellfish harvesting (SHELL),
- Preservation and enhancement of Biological Habitats of Special Significance (BIOL),
- Aquaculture/mariculture (AQUA), and
- Spawning, reproduction and/or early development (SPWN).

Toxic compounds in the PLOO discharge (including phenol) may potentially affect these beneficial uses by causing:

- acute toxicity,
- chronic toxicity,
- receiving water concentrations in excess of standards,
- toxic accumulation in sediments, or
- toxic accumulations in organisms.

Table 5-3 summarizes monitoring parameters from the City's influent/effluent and ocean water monitoring programs that may be used to assess these water quality conditions. As shown in Table 5-3, the City's monitoring program develops information on a variety of parameters that may be used to asses impacts to beneficial uses.

Table 5-3
Parameters for Assessing Impacts to Beneficial Uses

Water Quality Conditions Related to Phenol	Monitoring Program Measurement for Assessing Condition
Acute Toxicity	• Effluent acute toxicity
Chronic Toxicity	• Effluent chronic toxicity
Receiving water pollutant concentrations	• Effluent concentrations
Toxics Accumulation in Sediments	• Effluent concentrations • Sediment monitoring • Benthic species monitoring
Toxics Accumulation in Organisms	• Effluent concentrations • Benthic species monitoring • Demersal fish monitoring • Fish tissue burden • Fish disease/abnormalities

Acute Toxicity. As documented in Section 3, the PLOO discharge achieved 100 percent compliance with effluent acute toxicity standards established in Order No. R9-2002-0025 for both test species (topsmelt and shrimp). Ocean Plan acute toxicity standards are established to protect beneficial uses, and compliance with the acute toxicity standards are indicative of a lack of impact to beneficial uses related to acute toxicity.

Chronic Toxicity. As documented in Section 3, the PLOO discharge achieved 100 percent compliance with chronic toxicity standards of Order No. R9-2002-0025 for topsmelt survival and growth, red abalone larval development, and giant kelp germination.

While 2 of 50 chronic toxicity samples for giant kelp germ-tube length development did not comply with the 205 TUc toxicity limit, these two exceedances were isolated, other toxicity tests completed on these dates were in compliance, and repeat tests demonstrated compliance. The exceedances appear to be anomalies and are not related to PLOO phenol mass emissions. As shown in Table 3-5 (page 3-7), 80 percent of all chronic toxicity tests show toxicity values more than a factor of three lower than the Ocean Plan standard. Since effluent phenol concentrations were significantly below applicable concentration standards, is it concluded that phenol-related chronic toxicity poses no discernible impact to beneficial uses.

Receiving Water Concentrations. As documented in Section 4, the PLOO discharge achieved 100 percent compliance with phenol-related Ocean Plan receiving water standards. Compliance with phenol standards were attained by two or more orders of magnitude. Chlorinated phenols were not detected in the Point Loma WTP effluent during 2002-2006. Compliance with Ocean Plan chlorinated phenol standards, however, would have occurred even if the observed PLOO phenol concentrations were comprised of chlorinated compounds. Because concentrations of phenol in receiving waters are significantly below applicable Ocean Plan standards, it is concluded that phenolic compounds in receiving waters do not pose any discernible impact to beneficial uses.

Toxics Accumulation in Sediments. Phenol in the water column and in sediments is biodegraded by abiotic and microbial reactions (primarily converted to carbon dioxide and methane), and the compound is not known to accumulate in sediments. Given the fact that PLOO phenol concentrations are orders of magnitude less than applicable Ocean Plan standard and federal water quality criteria, toxic accumulation of phenol in PLOO sediments does not represent a discernible threat to designated or observed beneficial uses.

Toxic Accumulation in Organisms. The World Health Organization publishes water quality criteria for phenol (Health and Safety Guide No. 88 - Health and Safety Guide for Phenol, ISSN 0259-7268). The World Health Organization health and safety guide for phenol concludes that:

- phenol is rapidly distributed to all tissue,
- bioconcentration factors of phenol in various types of aquatic organism are low, and
- phenol is not expected to bioaccumulate significantly.

As documented in Section 4, PLOO receiving water concentrations of phenolic compounds were two or more orders of magnitude less than Ocean Plan receiving water standards established for the protection of marine aquatic organisms. PLOO receiving water concentrations of phenolic compounds (see Table 4-4 on page 4-5) were also significantly below federal water quality criteria for the protection of marine aquatic organisms.

As a result of these factors, it is concluded that designated or observed beneficial uses in the PLOO marine environment are not impacted by phenol accumulation in organisms.

Conclusions. In summary PLOO discharge of phenol mass emissions are not projected to discernibly affect

- effluent or receiving water acute toxicity,
- effluent or receiving water chronic toxicity,
- effluent receiving water concentrations,
- toxics accumulation in sediments, or
- toxics accumulation in organisms.

PLOO mass emissions of phenol are thus in keeping with maintaining the existing high quality of water necessary to support designated and observed beneficial uses off the coast of Point Loma.

Intentional Blank Page

6. OCEAN MONITORING

6.1 MONITORING PROGRAM ELEMENTS

As presented in Chapters 3 and 4, the existing Point Loma discharge complies with applicable effluent and receiving water standards established for the protection of beneficial uses. The improved discharge is also projected to comply with applicable standards and federal water quality criteria for the protection of saltwater habitat (acute and chronic impacts) and for the protection of public health.

Because of the high initial dilution and low Point Loma WTP effluent concentrations of phenolic compounds, phenol mass emissions are not projected to result in any discernible changes in water quality impacts within the water column.

The City's monitoring program (described in Appendix I) is an important element of the overall comprehensive approach for protecting San Diego's ocean resources. The program is administered by the City of San Diego's Environmental Monitoring and Technical Services Division. Including administrative support, the program is carried out by a staff of over 90 with an annual budget of $13.8 million.

In accordance with monitoring and reporting requirements of Order No. R9-2002-0025, key elements of this program include:

Influent/Effluent Monitoring. The Point Loma WTP influent and effluent is monitored at frequent intervals for a wide variety of physical/chemical, toxic organic, and toxic inorganic constituents. The Point Loma WTP effluent is monitored monthly for chronic toxicity and semiannually for acute toxicity using marine environment test species.

Receiving Water Quality. PLOO receiving waters are monitored at a series of reference and outfall stations (see Appendix I) for a variety of physical parameters, including temperature, salinity, density, dissolved oxygen, pH, light transmittance, chlorophyll A, and TSS. Receiving waters are also monitored for such bacteriological parameters as total coliform, fecal coliform, and enterococcus,

Sediments. Receiving water sediments are monitored at reference and outfall stations (see Appendix I) for particle grain size and composition. Sediment is also analyzed at these stations for variety of toxic inorganic constituents (metals) and toxic organic constituents.

Benthic Infauna. Benthic infauna samples are collected from PLOO reference and monitoring stations (see Appendix I) to identify, classify, and analyze species. Statistical analysis of a variety of benthic parameters is performed, including assessing species numbers, richness, abundance, diversity, biomass, dominance, Infaunal Trophic Index (ITI), and Benthic Response Index (BRI).

Demersal Fish and Megabenthic Invertebrates. Fish and megabenthic invertebrates are collected via trawls at a number of outfall and reference stations (see Appendix I). Species are analyzed for parasitism and physical abnormalities, and statistical analyses are performed on number of species, abundance, diversity, and biomass.

Tissue Burden. Fish collected at trawl and rig stations (see Appendix I) are assessed for bioaccumulation of toxic compounds in muscle tissue.

In addition to conducting the monitoring program set forth in Order No. R9-2002-0025, the City also participates in a regional monitoring program in conjunction with the Regional Board and the Southern California Coastal Water Research Project (SCCWRP) and other southern California dischargers. The regional monitoring program focuses on the effects of wastewater discharges from a regional perspective.

6.2 ADEQUACY OF MONITORING PROGRAM

The comprehensive monitoring program allows the City and regulators to:

- assess compliance with effluent and receiving water standards,
- detect any changes in the ocean water quality or sediment chemistry,
- detect any changes in marine aquatic life (benthic species and fish), and
- assess how the PLOO discharge may affects beneficial uses including uses related to marine aquatic life and recreation.

The City's influent, effluent, receiving water, sediment, benthic infauna, and tissue burden monitoring elements are concluded as being adequate to:

(1) demonstrate and document PLOO compliance with applicable effluent standards (see Chapter 3),

(2) demonstrate and document PLOO compliance with applicable receiving water standards and federal water quality criteria (see Chapter 4),

(3) assess impacts to beneficial uses and demonstrate that beneficial uses are not discernibly impacted by the PLOO discharge (see Chapter 5), and

(4) demonstrate that PLOO mass emissions are consistent with maintaining existing high-quality waters and protecting beneficial uses.

Intentional Blank Page

7. CONCLUSIONS

7.1 ANTIDEGRADATION FOCUS

This City of San Diego, as operator of the Metro System, requests renewal of 301(h) NPDES permit limits for the Point Loma WTP discharge to the Pacific Ocean via the PLOO. The City requests renewal of modified of BOD and TSS effluent limits per Section 301(h) of the Clean Water Act.

The Point Loma WTP discharge complied with percent removal, effluent concentration, and mass emission limits established for BOD and TSS within Order No. R9-2002-0025. The Point Loma WTP discharge also achieved compliance with effluent concentration and mass emission limitations established within Order No. R9-2002-0025 for physical/chemical parameters and for toxic constituents.

The City is not requesting any increase in mass emission limits over those established in Order No. R9-2002-0025.

Order No. R9-2005-0025 establishes non-enforceable mass emission benchmarks for toxic constituents to establish a framework for evaluating compliance with federal antidegradation regulations.

As documented in Chapter 2, the Point Loma WTP during 2002-2006 complied with all mass emission benchmarks established in Order No. R9-2002-0025 for toxic organic constituents. The Point Loma WTP also complied with mass emission benchmarks established in Order No. R9-2002-0025 for all toxic inorganic constituents, except for phenol.

As a result of exceedance of the phenol mass emission benchmark, this report assesses antidegradation compliance for PLOO mass emissions of phenol.

7.2 COMPLIANCE WITH APPLICABLE STANDARDS

Compliance with Effluent Standards. As a first step in assessing compliance of phenol mass emissions with Tier I antidegradation regulations, PLOO compliance with effluent standards related to the phenol benchmark were reviewed (see Chapter 3). During 2002-2006, the Point Loma WTP effluent:

- Achieved compliance with applicable effluent concentrations standards for phenol by several orders of magnitude.
- Achieved 100 percent compliance with effluent acute toxicity standards for both test species (topsmelt and shrimp).
- Achieved 100 percent compliance with effluent chronic toxicity standards for topsmelt (survival and growth), red abalone (larval development), and giant kelp (germination).
- Achieved compliance with effluent chronic toxicity standards for giant kelp (germ-tube length development) in 48 of 50 samples. In the two non-complying kelp germ-tube development samples, repeat tests achieved compliance. Phenol concentrations were in normal ranges (several orders of magnitude below water quality criteria thresholds for marine organisms) during the time of the non-complying chronic toxicity tests, and the two exceedances are not related to phenol.

Compliance with Receiving Water Standards. As a second step in assessing compliance of phenol mass emissions with Tier I antidegradation regulations, PLOO compliance with applicable receiving water standards related to phenol were reviewed. PLOO compliance with phenol-related federal water quality criteria were also reviewed (see Chapter 4). During 2002-2006, the PLOO discharge:

- Achieved compliance with Ocean Plan receiving water standards for phenol by several orders of magnitude.
- Achieved compliance with Ocean Plan receiving water standards for acute toxicity and chronic toxicity.
- Achieved compliance with federal water quality criteria for the protection of marine aquatic life and human health by several orders of magnitude.

It is also noteworthy that the PLOO discharge would have achieved 100 percent compliance with Ocean Plan standards for chlorinated phenolics, even if the concentration of chlorinated phenolics in the Point Loma WTP effluent were to be equal to the observed concentrations of unchlorinated phenolics. (Concentrations of chlorinated phenolics in the Point Loma WTP effluent were below detection limits during 2002-2006.)

7.3 TIER I ANTIDEGRADATION CONCLUSIONS

Beneficial Use Protection. Designated and actual observed beneficial uses in the PLOO receiving waters were identified (see Chapter 5), and water quality necessary to support the beneficial uses was evaluated.

Water quality standards (both effluent and receiving water standards) necessary for the protection of beneficial uses are in effect. Ocean monitoring necessary to ensure protection of beneficial uses (see Chapter 6) is also in place. The PLOO discharge complies with all phenol-related water quality standards that relate to designated and actual beneficial uses. As a result, the discharge of phenol mass emissions is concluded as having no discernible effect on beneficial uses.

Tier I Antidegradation Compliance. On the basis of the evaluation presented herein, the following are concluded:

- Mass emissions of phenol during the current NPDES permit period (2002-2006) were less than during the prior NPDES permit period (1995-2001).
- The existing Point Loma discharge complies with applicable Ocean Plan receiving water standards for phenolic compounds (and federal water quality criteria) by several orders of magnitude, and receiving water quality is not discernibly affected by the phenol mass emissions.
- High quality waters necessary to support beneficial uses have been maintained in the PLOO receiving waters. Existing and proposed mass emissions of phenol are in keeping with maintaining the existing high quality of water necessary to support beneficial uses.
- The proposed improved discharge will insure that the outfall discharge will comply with Ocean Plan body contact recreational bacteriological standards throughout the water column (from ocean bottom to the surface) within State waters. The improved discharge will reduce con centrations of bacteriological constituents. Disinfection of the PLOO discharge is not projected to negatively affect concentrations of pollutants (including chlorinated or unchlorinated phenolics) or cause effluent or receiving water non-compliance.
- The City's monitoring program is adequate to assess potential impacts to receiving water quality or beneficial uses, and enhancements to the monitoring program are proposed (see Appendix I of Volume IV).

Because the high quality of water necessary to support beneficial uses has been maintained by the existing discharge (and will be maintained by the improved discharge), it is concluded PLOO phenol mass emissions are in compliance with Tier I antidegradation regulations. No Tier II analysis is thus required.