

CALIFORNIA COASTAL COMMISSION

45 FREMONT STREET, SUITE 2000
SAN FRANCISCO, CA 94105-2219
VOICE AND TDD (415) 904-5200



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STAFF REPORT AND RECOMMENDATION**ON CONSISTENCY CERTIFICATION**

Consistency Certification No.	CC-032-09
Staff:	MPD-SF
File Date:	5/29/2009
3 Months:	8/29/2009
6 Months:	11/29/2009
Extended to:	6/30/2010
Commission Meeting:	6/11/2010

APPLICANT:**Goleta Sanitary District****PROJECT****LOCATION:**

Goleta Municipal Wastewater treatment plant, Santa Barbara County, and offshore waters (Exhibits 1-3)

PROJECT**DESCRIPTION:**

Reissuance of Secondary Treatment Waiver

FEDERAL**AGENCY AND****PERMIT:**

EPA (Environmental Protection Agency) Reissuance, under Section 301(h) of the Clean Water Act, of a modified National Pollutant Discharge and Elimination System (NPDES) Permit for Wastewater Treatment Plant Discharges

SUBSTANTIVE**FILE****DOCUMENTS:**

See page 24.

Staff Recommendation: Concurrence. Motion is on page 6.

EXECUTIVE SUMMARY

Under the Clean Water Act (CWA), wastewater discharges from publicly owned treatment works (POTWs) are required to receive at least secondary treatment. However, Clean Water

Act Section 301(h), sometimes referred to as the “ocean waiver” provision of the Clean Water Act, gives the EPA Administrator (with the concurrence of the (Regional Water Quality Control Board (RWQCB)) the authority to grant a waiver from otherwise applicable secondary treatment requirements. Such a waiver would authorize the Goleta Sanitary District (Goleta) to continue to discharge effluent receiving less than full secondary treatment in terms of suspended solids, biochemical oxygen demand, and pH. The waivers need to be renewed every five years. Goleta has committed to upgrade to secondary by 2014; however in the interim period this waiver is still needed.

Goleta’s flows average 5 million gallons per day (mgd), 4.4 mgd of which receive secondary treatment. EPA’s Independent Technical evaluation determined that Goleta meets the applicable CWA standards for a waiver. Monitoring for the 5 years indicates that the treatment plant averages, on an annual basis, slightly above 86% removal of total suspended solids (TSS, or SS), and slightly above 76% removal of BOD (biochemical oxygen demand). Full secondary treatment standards would require, on a *monthly* basis, a consistent 85% removal of both TSS and BOD. Further, the monitoring of the biological effects of the discharges supports the applicant’s claim that the discharges comply with the secondary treatment waiver requirements and would not adversely affect marine resources. The stringent monitoring as required under Section 301(h) of the CWA will be continued. Most importantly, as the Commission noted in its previous concurrence with Goleta’s waiver (CC-013-02), Goleta has committed to upgrade to full secondary treatment within, now, 4.5 years.

On May 13, 2010, the RWQCB approved Goleta’s current waiver application. As conditioned by the RWQCB, the discharges would not adversely affect marine resources and would be consistent with Sections 30230, 30231, 30234, 30234.5, 30213, and 30220 (the marine resources, water quality, commercial and recreational fishing, and public recreation policies) of the Coastal Act.

STAFF SUMMARY AND RECOMMENDATION:

I. Project Description. The Goleta Sanitary District (Goleta) has requested a waiver under Section 301(h) of the Clean Water Act (the Act), 33 U.S.C. Section 1311(h), from the secondary treatment requirements contained in Section 301(b)(1)(B) of the Act, 33 U.S.C. Section 1311(b)(1)(B). The waiver is being sought for the Goleta wastewater treatment plant and outfall, which is 36 inches in diameter and terminates in a 280-foot long multiport (34 port) diffuser, approximately 1 nautical mile (5,912 ft.) offshore of Goleta, in about 87 feet of water (Exhibit 2). The diffuser provides a minimum dilution of 122:1 (ocean water to effluent). While Goleta has committed (through a settlement agreement) to upgrade to secondary treatment by 2014, in the interim period the waiver is needed.

The treatment plant provides full primary and partial secondary wastewater treatment for a service population of about 82,000, serving the Goleta/Santa Barbara airport and surrounding area. The application is based on a current average dry-weather flow of 5 million gallons per

day (mgd). In its current 2009 application, Goleta projects effluent flow to increase slightly, from the past permit term 4.73 mgd, to 4.79 mgd in 2013, with a subsequent decrease to 4.73 mgd in 2018. Goleta expects influent flows to increase; however effluent flow reductions should occur due to the projected increase in demand for reclaimed water, which Goleta projects will reach an annual average of 1.27 mgd by 2018. Flows up to 4.38 mgd receive secondary treatment; excess flows receive primary treatment and are blended with secondarily treated flows. Total plant design capacity is 9 mgd. Peak wet weather capacity is 25.4 mgd.

The system includes a pretreatment program for monitoring and regulating industrial discharges (which form a low percentage of total flows (approximately 4% of total flows)), as well as recycling and sludge reuse programs. A portion of Goleta's secondary flows (up to 3 mgd) may be diverted for water reclamation. The remaining secondary flow is combined with the primary flows, where it is chlorinated and dechlorinated before discharge to the ocean. Sludge from the primary process is treated through anaerobic digestion, then sent to stabilization basins. Dried sludge is made available as Class A biosolids or as a soil amendment for agricultural lands.

Secondary treatment is defined in Clean Water Act implementing regulations (40 CFR Part 133) in terms of effluent quality for suspended solids (SS), biochemical oxygen demand (BOD) and pH. The secondary treatment requirements for SS, BOD and pH are as follows:

SS: (1) The 30-day average shall not exceed **30 mg/l** (milligrams per liter). (2) The 7-day average shall not exceed 45 mg/l. (3) The 30-day average percent removal shall not be less than **85%**.

BOD: (1) The 30-day average shall not exceed **30 mg/l**. (2) The 7-day average shall not exceed 45 mg/l. (3) The 30-day average percent removal shall not be less than **85%**.

pH: The effluent limits for pH shall be maintained within the limits of 6.0 to 9.0 pH units.

The **current permit** contains the following limits for SS and BOD:

SS: (1) A 30-day average for suspended solids of **63 mg/l**. (2) The maximum allowable at any time shall not exceed 100 mg/l. (3) The 30-day average percent removal shall not be less than **75%**.

BOD: (1) The 30-day average shall not exceed **98 mg/l**. (2) The maximum allowable at any time shall not exceed 150-mg/l. (3) The 30-day average percent removal shall not be less than **30%**.

Data for the past 5 year period showed Goleta's treatment plant removed an annual average of **86%** of suspended solids and **76%** of BOD. No variance from secondary pH standards is requested, as the plant meets secondary standards for pH.

Annual Average % Removals for TSS	2005	2006	2007	2008	2009
Annual Average	84.5	88.9	86.9	85.1	85.4
Maximum Month	91.0	92.0	90.0	87.0	88.0
Minimum Month	79.0	86.0	83.0	83.0	83.0

EPA Tentative Decision, Jan. 19, 2010

Annual Average % Removals for BOD	2005	2006	2007	2008	2009
Annual Average	73.7	79.3	77.0	76.0	74.4
Maximum Month	84.0	84.0	86.0	81.0	79.0
Minimum Month	69.0	76.0	71.0	68.0	70.0

EPA Tentative Decision, Jan. 19, 2010

State water quality standards (i.e., the California Ocean Plan) require removal of **75%** of suspended solids. The Ocean Plan does not have an effluent limitation for BOD; the comparable standard is for dissolved oxygen, and the Ocean Plan requires that “dissolved oxygen shall not at any time be depressed more than 10% from that which occurs naturally as a result of the discharge of oxygen-demanding waste materials.”

II. Goleta Waiver History. The Commission has twice previously concurred with Goleta’s consistency certifications for its waivers. The Commission originally concurred January 8, 1997 (CC-126-96). After Goleta submitted a consistency certification for waiver renewal, but prior to Commission action, in November 2004 Goleta entered into a Settlement Agreement with the RWQCB which established a 10-year timetable for upgrading to secondary treatment (Exhibit 5). With this agreement and schedule, on January 12, 2005, the Commission concurred with Goleta’s consistency certification for the waiver renewal (CC-013-02).

The RWQCB approved the current waiver on May 13, 2010 (RWQCB Order No. R3-2010-0012 - NPDES Permit No. CA0048160). The RWQCB’s Draft Order indicates this will be the last waiver for Goleta, stating (p. 15): “The next permit will contain secondary treatment requirements as final enforceable effluent limitations to ensure that facility achieves at least secondary treatment.” The RWQCB’s Draft Order can be found at this link to the RWQCB’s website:

http://www.waterboards.ca.gov/centralcoast/board_info/agendas/2010/may/item_22/att_1.pdf

III. Previous Commission Reviews of Waivers Statewide. In 1979, and 1983-1985, the Commission reviewed a number of consistency certifications for secondary treatment waiver applications, under the federal consistency provisions of the Coastal Zone Management Act (“CZMA”), and EPA ultimately granted many of these waivers. During these reviews the Commission expressed concern over the need for treatment meeting the *equivalent* of

secondary treatment with respect to removal of toxics. At that time, the Commission consciously adopted a neutral position on the waivers. Since a position of "neutrality" is not an action that is recognized under CZMA regulations, the Commission's concurrence in the waivers was presumed pursuant to the CZMA and its administrative regulations. 16 USC § 1456(c)(3)(A); 15 CFR § 930.62(a).

Section 301(h) waivers are only valid for 5 years, although EPA commonly administratively extends the time during processing of renewal applications. Only a few of the initial round of waiver applicants continued to pursue waivers; by the mid-1990's the list was reduced to: Goleta, Morro Bay, and Orange County (CSDOC) (San Diego is discussed in the following paragraph). As mentioned on the previous page, on January 12, 2005, and January 8, 1997, the Commission concurred with Goleta's renewals (CC-13-02 and CC-126-96, respectively). On January 9, 2009, January 13, 1999, and January 12, 1993, the Commission concurred with Morro Bay's waiver and renewals (CC-007-06, CC-123-98 and CC-88-92, respectively). On March 10, 1998, the Commission concurred with Orange County's waiver (CC-3-98). Morro Bay, Goleta, and Orange County have now all agreed to upgrade to secondary treatment, by 2012 (Orange Co.), 2014 (Goleta), and 2015 (Morro Bay).

The City of San Diego (San Diego) is the only remaining California jurisdiction not currently committed to secondary, and that City's procedures have been different than those described in the previous paragraph. San Diego had let its original waiver application lapse, and it took special legislation to allow it to reapply to EPA for a waiver. On September 27, 1995, after a Commission public hearing, and after which the Commission endorsed the staff's recommended approach, the Commission staff concurred with a submittal from San Diego of a "No Effects" letter (in lieu of a consistency certification) for its first waiver (NE-94-95). The Commission reviewed the matter was reviewed as an administrative item due to unusual circumstances and the unique history surrounding the waiver.

When San Diego's waiver was up for renewal, the Commission took two actions on San Diego's first waiver renewal. The Commission first objected to San Diego's consistency certification (CC-10-02), on April 8, 2002. The stated basis for the objection was the need for: (1) reductions in permitted levels of mass emissions; (2) commitments to implement water reclamation; and (3) additional monitoring provisions. The RWQCB subsequently included some of these measures in its permit; however San Diego appealed the RWQCB's permit action to the SWRCB. San Diego also appealed the Commission's objection to the Secretary of Commerce, and, at the same time, resubmitted its consistency certification to the Commission.

On August 15, 2002, the SWRCB ordered the mass emission limits that the RWQCB had modified in response to the Commission's action to be returned to the originally-drafted (by the RWQCB) 15,000 MT/yr. (for the first four years). The SWRCB concluded that the RWQCB had "... failed to make findings, either in its order or during its deliberations, that justify reducing the mass emission limits for TSS from 15,000 metric tons per year to 13,995 metric tons per year in the waste discharge requirements." San Diego then clarified that its

resubmitted consistency certification to the Commission was for the waiver as modified and ordered by the SWRCB. On September 9, 2002, the Commission concurred with this resubmitted consistency certification (CC-028-02).

The Commission also took two actions on San Diego's most recent waiver renewal request. On August 13, 2009, the Commission objected to San Diego's consistency certification (CC-043-09). However, upon resubmittal, the Commission subsequently conditionally concurred (CC-056-09). The Commission's condition, to which the San Diego has agreed, provides that the City will return to the Commission in two years when it has completed a study of Wastewater Reclamation and Recycling Opportunities, at which point San Diego will report back to the Commission and "... inform the Commission how, and to what extent, the City [of San Diego] intends to implement the recommendations in the report or any alternatives to the recommendations in the report."

IV. Procedures. All Clean Water Act Section 301h waivers and waiver renewal applications are independently reviewed but jointly issued by EPA and the applicable RWQCB. EPA's independent Technical Analysis for the subject waiver renewal request is attached as Exhibit 4. After EPA performs its technical review it issues a Tentative Decision (TDD) to grant the 301(h) waiver of secondary requirements, which is then followed by a RWQCB hearing. Assuming the RWQCB approves the waiver and the Coastal Commission concurs with a consistency certification, EPA will then issue its final decision.

V. Applicant's Consistency Certification. The Goleta Sanitary District has certified that the proposed activity complies with the federally approved California Coastal Management Program and will be conducted in a manner consistent with such program.

VI. Staff Recommendation. The staff recommends that the Commission adopt the following motion:

MOTION: I move that the Commission **concur** with consistency certification CC-032-09 that the project described therein is consistent with the enforceable policies of the California Coastal Management Program (CCMP).

STAFF RECOMMENDATION:

The staff recommends a **YES** vote on the motion. Passage of this motion will result in a concurrence in the certification and adoption of the following resolution and findings. An affirmative vote of a majority of the Commissioners present is required to pass the motion.

RESOLUTION TO CONCUR IN CONSISTENCY CERTIFICATION:

The Commission hereby **concurs** with the consistency certification made by the Goleta Sanitary District for the proposed project, finding that the project is consistent with the California Coastal Management Program.

VII. Findings and Declarations:

The Commission finds and declares as follows:

A. Water Quality/Marine Resources.

1. Regulatory Framework. EPA and the applicable RWQCBs regulate municipal wastewater outfalls discharging into the Pacific Ocean under NPDES permits issued pursuant to the federal Clean Water Act. As enacted in 1972, the Clean Water Act required secondary treatment for all wastewater treatment nationwide. Amendments to the Clean Water Act in 1977 provided for Section 301(h) (33 USC Section 1311(h)) waivers of the otherwise applicable requirements for secondary treatment for discharges from publicly owned treatment works into marine waters. Section 301(h) is implemented by EPA regulations set forth in 40 CFR Part 125, Subpart G.

Section 301(h) of the Clean Water Act provides that an NPDES permit that modifies the secondary treatment requirements may be issued if the applicant: (1) discharges into oceanic or saline, well-mixed estuarine waters; and (2) demonstrates to EPA's satisfaction that the modifications will meet those requirements specified in Section 301(h) (quoted in full below), including: (a) that the waiver will not result in any increase in the discharge of toxic pollutants or otherwise impair the integrity of receiving waters; and (b) that the discharger must implement a monitoring program for effluent quality, must assure compliance with pre-treatment requirements for toxic control, must assure compliance with water quality standards, and must measure impacts to indigenous marine biota. In California, the applicable water quality standards are embodied in the California Ocean Plan (summarized below).

While the State of California (through the SWRCB and RWQCBs) administers the NPDES permit program and issues permits for most discharges to waters within State waters, authority to grant a waiver and issue a modified NPDES permit under Section 301(h) of the Act is reserved by the Regional Administrator of EPA. Prior state (i.e., SWRCB or RWQCB) concurrence with the waiver is also required.

Section 307(f) of the federal CZMA (16 USC § 1456(f)) specifically incorporates all Clean Water Act-based requirements into the California Coastal Management Program (CCMP). Commission consistency certification review and concurrence is required for 301(h) waiver applicants, because EPA NPDES permits are listed in California's Coastal Management program as federal licenses or permits for activities affecting land or water uses in the coastal

zone. In reviewing the proposed discharges, the Commission relies on the Clean Water Act and its implementing regulations, the California Ocean Plan, the Coastal Act (Chapter 3 policies), and California Water Code Section 13142.5 (incorporated into the Coastal Act by Section 30412(a)). These requirements, which are further described and summarized below, provide both specific numerical standards for pollutants, as well as general standards for protection of marine biological productivity.

a. Clean Water Act/Section 301(h). Implementation of the Clean Water Act in California, for the most part, has been delegated to the applicable RWQCB for issuance of NPDES permits. Under an MOA between EPA and the State of California, NPDES permits for secondary treatment waivers (regardless of location) are issued jointly by EPA and the applicable RWQCB. The Clean Water Act divides pollutants into three categories for purposes of regulation, as follows: (1) conventional pollutants, consisting of total suspended solids (TSS or SS); biochemical oxygen demand (BOD, a measure of the amount of oxygen consumed during degradation of waste); pH; fecal coliform bacteria; and oil and grease; (2) toxic pollutants, including heavy metals and organic chemicals; and (3) non-conventional pollutants (a "catch-all" category for other substances needing regulation (e.g., nitrogen and phosphorus, chlorine, fluoride)).

Guidelines adopted under Section 403 of the Clean Water Act (40 CFR Part 125.120-124, Subpart M, "Ocean Discharge Criteria") specify that beyond an initial mixing zone, commonly referred to as the zone of initial dilution (ZID), the applicable water quality standards must be met. The zone of initial dilution is the boundary of the area where the discharge plume achieves natural buoyancy and first begins to spread horizontally. Discharged sewage is mostly freshwater, so it creates a buoyant plume that moves upward toward the sea surface, entraining ambient seawater in the process. The wastewater/seawater plume rises through the water column until its density is equivalent to that of the surrounding water, at which point it spreads out horizontally.

Section 301(h) of the Clean Water provides for secondary treatment waivers under certain circumstances. The following requirements must be met for EPA to grant a secondary treatment waiver:

(1) there is an applicable water quality standard specific to the pollutant for which the modification is requested, which has been identified under section 304(a)(6) of this Act;

(2) such modified requirements will not interfere, alone or in combination with pollutants from other sources, with the attainment or maintenance of that water quality which assures protection of public water supplies and the protection and propagation of a balanced, indigenous population (BIP) of shellfish, fish and wildlife, and allows recreational activities, in and on the water;

(3) the applicant has established a system for monitoring the impact of such discharge on a representative sample of aquatic biota, to the extent practicable, and the scope of the monitoring is limited to include only those scientific investigations which are necessary to study the effects of the proposed discharge;

(4) such modified requirements will not result in any additional requirements on any other point or nonpoint source;

(5) all applicable pretreatment requirements for sources introducing waste into such treatment works will be enforced;

(6) in the case of any treatment works serving a population of 50,000 or more, with respect to any toxic pollutant introduced into such works by an industrial discharger for which pollutant there is no applicable pretreatment requirement in effect, sources introducing waste into such works are in compliance with all applicable pretreatment requirements, the applicant will enforce such requirements, and the applicant has in effect a pretreatment program which, in combination with the treatment of discharges from such works, removes the same amount of such pollutant as would be removed if such works were to apply secondary treatment to discharges and if such works had no pretreatment program with respect to such pollutant;

(7) to the extent practicable, the applicant has established a schedule of activities designed to eliminate the entrance of toxic pollutants from nonindustrial sources into such treatment works;

(8) there will be no new or substantially increased discharges from the point source of the pollutant to which the modification applies above that volume of discharge specified in the permit;

(9) the applicant at the time such modification becomes effective will be discharging effluent which has received at least primary or equivalent treatment and which meets the criteria established under section 304(a)(1) of the Clean Water Act after initial mixing in the waters surrounding or adjacent to the point at which such effluent is discharged.

For the purposes of this subsection the phrase “the discharge of any pollutant into marine waters” refers to a discharge into deep waters of the territorial sea or the waters of the contiguous zone, or into saline estuarine waters where there is strong tidal movement and other hydrological and geological characteristics which the Administrator determines necessary to allow compliance with paragraph (2) of this subsection, and section 101(a)(2) of this Act. For the purposes of paragraph (9), “primary or equivalent treatment” means treatment by screening, sedimentation and skimming adequate to remove at least 30 percent of the biochemical oxygen demanding material and of the suspended solids in the treatment works influent, and

disinfection, where appropriate. A municipality which applies secondary treatment shall be eligible to receive a permit pursuant to this subsection which modifies the requirements of subsection (b)(1)(B) of this section with respect to the discharge of any pollutant from any treatment works owned by such municipality into marine waters. No permit issued under this subsection shall authorize the discharge of sewage sludge into marine waters. In order for a permit to be issued under this subsection for the discharge of a pollutant into marine waters, such marine waters must exhibit characteristics assuring that water providing dilution does not contain significant amounts of previous discharged effluent from such treatment works. No permit issued under this subsection shall authorize the discharge of any pollutant into marine estuarine waters which at the time of application do not support a balanced, indigenous population of shellfish, fish and wildlife, or allow recreation in and on the waters or which exhibit ambient water quality below applicable water quality standards adopted for the protection of public water supplies, shellfish and wildlife, or recreational activities or such other standards necessary to assure support and protection of such uses. The prohibition contained in the preceding sentence shall apply without regard to the presence or absence of a causal relationship between such characteristics and the applicant's current or proposed discharge. ...

EPA's Tentative Decision Document dated January 19, 2010, evaluates Goleta's compliance with each of the above nine criteria (see EPA conclusions below). EPA's tentative decision is that the discharges meet each of the above criteria and the NPDES permit is eligible for reissuance. In addition, the RWQCB has evaluated the Goleta's discharges and determined that they would comply with the applicable California Ocean Plan, other California requirements, and NPDES permit limitations.

b. California Ocean Plan. The California Ocean Plan was originally adopted by the SWRCB and approved by the EPA in June 1972, and is revised every three years. Among the California Ocean Plan requirements are the following water quality objectives (Chapter II) [note: the asterisks (*) below refer the reader to Ocean Plan definitions in its Appendices (Exhibit 6)]:

A. General Provisions

1. This chapter sets forth limits or levels of water quality characteristics for ocean waters to ensure the reasonable protection of beneficial uses and the prevention of nuisance. The discharge of waste* shall not cause violation of these objectives.*

2. The Water Quality Objectives and Effluent Limitations are defined by a statistical distribution when appropriate. This method recognizes the normally occurring variations in treatment efficiency and sampling and analytical techniques and does not condone poor operating practices.

3. Compliance with the water quality objectives of this chapter shall be determined from samples collected at stations representative of the area within the waste field where initial dilution is completed.*

B. Bacterial Characteristics

1. Water-Contact Standards

Both the SWRCB and the California Department of Health Services (DHS) have established standards to protect water contact recreation in coastal waters from bacterial contamination. Subsection a of this section contains bacterial objectives adopted by the SWRCB for ocean waters used for water contact recreation. Subsection b describes the bacteriological standards adopted by DHS for coastal waters adjacent to public beaches and public water contact sports areas in ocean waters.

...

2. Shellfish Harvesting Standards*

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

(1) The median total coliform density shall not exceed 70 per 100 ml, and not more than 10 percent of the samples shall exceed 230 per 100 ml.

C. Physical Characteristics

1. Floating particulates and grease and oil shall not be visible.

2. The discharge of waste shall not cause aesthetically undesirable discoloration of the ocean* surface.*

3. Natural light shall not be significantly* reduced at any point outside the initial* dilution zone as the result of the discharge of waste*.*

4. The rate of deposition of inert solids and the characteristics of inert solids in ocean sediments shall not be changed such that benthic communities are degraded*.*

D. Chemical Characteristics

1. The dissolved oxygen concentration shall not at any time be depressed more than 10 percent from that which occurs naturally, as the result of the discharge of oxygen demanding waste materials.*

2. The pH shall not be changed at any time more than 0.2 units from that which occurs naturally.

3. The dissolved sulfide concentration of waters in and near sediments shall not be significantly increased above that present under natural conditions.*

4. The concentration of substances set forth in Chapter II, Table B, in marine sediments shall not be increased to levels which would degrade indigenous biota.*

5. The concentration of organic materials in marine sediments shall not be increased to levels that would degrade marine life.*

1. Nutrient materials shall not cause objectionable aquatic growths or degrade indigenous biota.*

...

E. Biological Characteristics

1. Marine communities, including vertebrate, invertebrate, and plant species, shall not be degraded.*

2. The natural taste, odor, and color of fish, shellfish, or other marine resources used for human consumption shall not be altered.*

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

F. Radioactivity

1. Discharge of radioactive waste shall not degrade* marine life.*

General requirements in the Ocean Plan include:

A. Waste management systems that discharge to the ocean must be designed and operated in a manner that will maintain the indigenous marine life and a healthy and diverse marine community.

B. Waste discharged to the ocean must be essentially free of:

- 1. Material that is floatable or will become floatable upon discharge.*
- 2. Settleable material or substances that may form sediments which will degrade benthic communities or other aquatic life.*
- 3. Substances which will accumulate to toxic levels in marine waters, sediments or biota.*
- 4. Substances that significantly decrease the natural light to benthic communities and other marine life.*
- 5. Materials that result in aesthetically undesirable discoloration of the ocean surface.*

C. Waste effluents shall be discharged in a manner which provides sufficient initial dilution to minimize the concentrations of substances not removed in the treatment.

D. Location of waste discharges must be determined after a detailed assessment of the oceanographic characteristics and current patterns to assure that:

- 1. Pathogenic organisms and viruses are not present in areas where shellfish are harvested for human consumption or in areas used for swimming or other body-contact sports.*
- 2. Natural water quality conditions are not altered in areas designated as being of special biological significance or areas that existing marine laboratories use as a source of seawater.*
- 3. Maximum protection is provided to the marine environment.*

E. Waste that contains pathogenic organisms or viruses should be discharged a sufficient distance from shellfishing and water-contact sports areas to maintain applicable bacterial standards without disinfection. Where conditions are such that an adequate distance cannot be attained, reliable disinfection in conjunction with a reasonable separation of the discharge point from the area of use must be provided.*

Disinfection procedures that do not increase effluent toxicity and that constitute the least environmental and human hazard should be used.

In addition, the Ocean Plan contains "Table A" effluent limitations for major wastewater constituents and properties, "Table B" limitations that provide maximum concentrations for toxic materials that may not be exceeded upon completion of initial dilution, and other standards. Table A and B limitations are contained in Exhibit 7.

c. Coastal Act Policies. The Coastal Act contains policies protecting water quality and marine resources. Section 30230 of the Coastal Act provides:

Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.

Section 30231 provides:

The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

In addition to these resource protection policies, Section 30412 addresses the Commission's relationship with the SWRCB and RWQCBs; Section 30412 provides (in relevant part):

(a) In addition to Section 13142.5 of the Water Code, this section shall apply to the commission and the State Water Resources Control Board and the California regional water quality control boards.

(b) The State Water Resources Control Board and the California regional water quality control boards are the state agencies with primary responsibility for the coordination and control of water quality. The State Water Resources Control Board has primary responsibility for the administration of water rights pursuant to applicable law. The commission shall assure that proposed development and local coastal programs shall not frustrate this section. The commission shall not, except as provided in subdivision (c), modify, adopt conditions, or take any action in conflict

with any determination by the State Water Resources Control Board or any California regional water quality control board in matters relating to water quality or the administration of water rights.

Except as provided in this section, nothing herein shall be interpreted in any way either as prohibiting or limiting the commission, local government, or port governing body from exercising the regulatory controls over development pursuant to this division in a manner necessary to carry out this division.

Finally, Section 13142.5 of the Water Code, which is referenced in Section 30412 above, provides:

In addition to any other policies established pursuant to this division, the policies of the state with respect to water quality as it relates to the coastal marine environment are that:

(a) Waste water discharges shall be treated to protect present and future beneficial uses, and, where feasible, to restore past beneficial uses of the receiving waters. Highest priority shall be given to improving or eliminating discharges that adversely affect any of the following:

- (1) Wetlands, estuaries, and other biologically sensitive sites.*
- (2) Areas important for water contact sports.*
- (3) Areas that produce shellfish for human consumption.*
- (4) Ocean areas subject to massive waste discharge.*

Ocean chemistry and mixing processes, marine life conditions, other present or proposed outfalls in the vicinity, and relevant aspects of areawide waste treatment management plans and programs, but not of convenience to the discharger, shall for the purposes of this section, be considered in determining the effects of such discharges...

2. EPA Evaluation of the Goleta's Discharges. EPA has conducted a technical evaluation analyzing Goleta's compliance with the 301(h) criteria discussed above. This tentative evaluation, dated, January 19, 2010 (Exhibit 4), includes the following EPA findings:

SUMMARY OF FINDINGS

Based upon review of the data, references, and empirical evidence furnished in the application and other relevant sources, EPA Region IX makes the following findings with regard to the statutory and regulatory criteria:

- 1. The applicant's proposed discharge will comply with federal primary treatment requirements. [CWA section 301(h)(9); 40 CFR 125.60]*

2. *The applicant's proposed 301 (h)-modified discharge will comply with the State of California's water quality standards for natural light, dissolved oxygen, and pH. The applicant sent a letter to the California Regional Water Quality Control Board, Central Coast (Regional Board) requesting determination that the proposed discharge complies with applicable State law including water quality standards. In 1984, a Memorandum of Understanding was signed by EPA Region IX and the State of California to jointly administer discharges that are granted modifications from secondary treatment standards. The joint issuance of a NPDES permit which incorporates both the federal 301(h) variance and State permit requirements will serve as the State's certification/concurrence that the modified discharge will comply with applicable State law and water quality standards. A draft 301 (h)-modified permit has been jointly developed by the Regional Board and EPA Region IX. [CWA section 301(h)(1); 40 CFR 125.61]*
3. *The applicant demonstrated it can consistently achieve State water quality standards and federal 304(a)(1) water quality criteria beyond the zone of initial dilution. [CWA section 301(h)(9); 40 CFR 125.62(a)]*
4. *The applicant's proposed discharge, alone or in combination with pollutants from other sources, will not adversely impact public water supplies or interfere with the protection and propagation of a balanced, indigenous population of fish, shellfish and wildlife, and will allow for recreational activities. [CWA section 301 (h)(2); 40 CFR 125.62(b), (c), (d)]*
5. *The applicant has a well-established monitoring program and has demonstrated it has adequate resources to continue the program. EPA Region IX and the Regional Board will review the applicant's existing monitoring program and revise it, as appropriate. These revisions will be included in the 301 (h)-modified permit, as conditions for monitoring the impact of the discharge. [CWA section 301(h)(3); 40 CFR 125.63]*
6. *The applicant sent a letter to the Regional Board requesting determination that the proposed discharge will not result in any additional treatment requirements on any other point or non-point sources. The adoption by the Regional Board of a NPDES permit which incorporates both the federal 301(h) variance and State permit requirements will serve as the State's determination, pursuant to 40 CFR 125.59(f)(4), that the requirements under 40 CFR 125.64 are achieved. [CWA section 301(h)(4); 40 CFR 125.64]*
7. *The applicant has an approved pretreatment program, in effect since 1983. [CWA section 301(h)(5); 40 CFR 125.66 and 125.68]*

8. *The applicant complies with urban area pretreatment requirements by establishing applicable local limits for each toxic pollutant introduced by an industrial discharger and using appropriate enforcement tools. [CWA section 301(h)(6); 40 CFR 125.65]*
9. *The applicant has a nonindustrial source control program, in effect since 1986, to characterize pollutants from residential areas and an existing public education program encouraging waste minimization and source reduction to limit the amount of toxic pollutants that enter the treatment system. [CWA section 301(h)(7); 40 CFR 125.66] .*
10. *There will be no new or substantially increased discharges from the point source of the pollutants to which the 301(h) variance applies above those specified in the permit. [CWA section 301(h)(8); 40 CFR 125.67]*
11. *The applicant sent letters to the U.S. Fish and Wildlife Service, the NOAA National Marine Fisheries Service, and the California Coastal Commission requesting determinations that the proposed discharge complies with applicable federal and State laws. The issuance of a final 301 (h)-modified permit is contingent upon receipt of determinations that the issuance of such permit does not conflict with applicable provisions of federal and State laws. [40 CFR 125.59]*

CONCLUSION

EPA concludes the applicant's proposed discharge will comply with the requirements of CWA section 301(h) and 40 CFR 125, Subpart G.

More specifically with respect to TSS and BOD, EPA's analysis states:

1. Total Suspended Solids

...

EPA's review of monitoring data found both turbidity and settleable solids concentrations in the plant effluent met COP Table A requirements, which are also established as permit limits in the existing permit. Tables 4 and 5 summarize the turbidity and settleable solids monthly average effluent concentrations for the last permit term. The applicant met both the monthly average and weekly average requirements for turbidity 100% of the time, and the instantaneous requirement 99.9% of the time; the difference is due to one exceedance out of more than 1,000 samples. The applicant consistently met the monthly average, weekly average, and instantaneous maximum requirements for settleable solids.

2. Biochemical Oxygen Demand

...

Monthly average percent removals of biochemical oxygen demand shown in Table 8 ranged from 68.0 % to 86.0% over the permit term, meeting the federal primary treatment and existing permit requirements of at least 30% removal. The highest monthly average effluent concentration of 84 mg/l, shown in Table 7, meets the applicant's proposed monthly average effluent limit of 98 mg/l. The applicant met the instantaneous maximum permit limit 99.9% of the time; the difference is due to one exceedance out of more than 1,000 samples.

With respect to State water quality standards, EPA's analysis states:

B. Attainment of Water Quality Standards for TSS and BOD

Section 301(h)(1) of the CWA, implemented by 40 CFR 125.61(a), requires the existence of water quality standards applicable to the pollutants for which a section 301(h) modified permit is requested, including: (1) water quality standards for biochemical oxygen demand or dissolved oxygen; (2) water quality standards for suspended solids, turbidity, light transmittance, light scattering, or maintenance of the euphotic zone; and (3) water quality standards for pH. Under 40 CFR 125.61(b)(1), the applicant must demonstrate the proposed modified discharge will comply with these standards. State water quality standards applicable to the Goleta discharge are specified in the California Ocean Plan (COP). The applicant did not request a modification for pH, so it is discussed under section C.1. Attainment of Other Water Quality Standards and Criteria.

1. Natural Light

...

The percent removals of total suspended solids in Goleta effluent in January 2005 and April 2008 were 83.5% and 83.0%, respectively. Both meet the COP discharge requirement of 75%, which is also the existing permit limit. Additionally, the monthly average TSS effluent concentrations in January 2005 and April 2008 were 40.7 mg/l and 49.6 mg/l, respectively. These concentrations are similar to concentrations measured throughout the permit term and also meet the existing permit limit. EPA concludes the outfall is not significantly affecting the ambient light transmittance and the discharge meets the requirements of the COP.

2. Dissolved Oxygen

...

EPA recalculated this depression for both the critical initial dilution of 55:1 and the 122:1 dilution used for COP compliance, as well as a range of ambient dissolved oxygen concentrations (4 -9 mg/l). EPA assumed an IDOD of 2 mg/l and an effluent concentration of 0 mg/l. With an initial dilution of 122:1, the predicted dissolved oxygen depression following initial dilution was 0.09 mg/l or a 1 % reduction in dissolved oxygen. For the critical initial dilution of 55:1, the predicted dissolved oxygen depression following initial dilution was 0.20 mg/l or a 2% reduction in dissolved oxygen. Thus, even under the worst-case conditions, the maximum predicted reduction in dissolved oxygen is less than 3%.

...

Based on our review of the modeling and ambient monitoring of dissolved oxygen, EPA concludes the outfall is not affecting the ambient dissolved oxygen concentration and the discharge meets the requirements of the COP.

With respect to other water quality standards, and effects on public water supplies, shellfish, fish and wildlife, and recreation, EPA's analysis includes the following conclusions:

As the benthic community metrics indicate no significant outfall effect, EPA finds the outfall is not degrading the benthic community.

...

Thus, EPA concludes the outfall is not degrading the fish and macroinvertebrate community structures.

...

Goleta did not detect concentrations of total PCBs in any effluent samples. Thus, it is unlikely the outfall is causing PCB bioaccumulation in liver tissue.

With respect to monitoring EPA's analysis states:

D. Establishment of a Monitoring Program

40 CPR 125.63 implements section 301(h)(3) of the CWA and requires the applicant to have a monitoring program designed to evaluate the impact of the modified discharge on the marine biota; demonstrate compliance with applicable water quality standards or criteria, as applicable; measure toxic substances in the discharge; and have the capability to implement these programs upon issuance of the 301 (h)-modified permit. The frequency and extent of the monitoring program are determined by consideration

of the applicant's rate of discharge, quantities of toxic pollutants discharged, and potentially significant impacts on receiving water, marine biota, and designated water uses.

The applicant has a well-established monitoring program, described in section HLP of the application, and has consistently implemented the program. The applicant proposes to keep the existing ambient monitoring program intact, but requests decreased sampling at the surf zone stations. Currently, the applicant samples surf zone stations weekly for total coliform, fecal coliform, and enterococcus. The applicant proposes sampling at the surf zone stations be initiated by a trigger based on the concentration of coliform in the effluent. The applicant requested this change in monitoring frequency during the last permit issuance, but EPA and the Regional Board denied the request.

EPA finds the applicant's existing monitoring program meets the requirements under 40 CFR 125.63 and the applicant has the resources to implement the program. EPA has considered the request for a change in surf zone monitoring frequency, but finds the current monitoring locations and frequency provide the data necessary to determine exceedances of water quality standards at surf zone stations are not associated with the discharge from the Goleta outfall. To maintain a 301(h) waiver, the applicant must meet the requirements of section 301 (h)(2) and (3), which Goleta meets by monitoring at the 30-meter contour, the edges of the kelp bed, within the discharge plume, and along the surf zone. Together, data from these stations assists in the detection and measurement of any impacts due to system breaks, spills or ineffective chlorination/dechlorination. EPA also finds necessary the current sampling frequency for ensuring the protection of recreational use, such as that found at the heavily used Goleta Beach County Park.

3. Commission Conclusion. The information submitted by the Goleta Sanitary District, which includes with the accompanying analysis and information from EPA and the RWQCB, supports the Goleta's request for a continued secondary treatment waiver. Historically, the Commission has generally concurred with consistency certifications for these types of waivers and waiver renewals, and found applicable water quality and marine resource policies of the Coastal Act to be met, when: (1) adequate monitoring is in place; and (2) EPA and the appropriate RWQCB have determined that the discharger's effluent complies with the applicable Clean Water Act and Ocean Plan requirements. In this case, Goleta has monitored its discharges since its initial waiver was granted, and these monitoring efforts support the Goleta's conclusions that its discharges meet the applicable water quality and marine resource requirements. Moreover, the stringent monitoring as required under Section 301(h) will be continued.¹ More importantly, Goleta has agreed to upgrade its facilities to provide for secondary treatment of its discharges, as described in the November 10, 2004, settlement

¹ Goleta' monitoring program is described in ATTACHMENT E – MONITORING AND REPORTING PROGRAM, RWQCB Draft Order, pages 67-104, at:

http://www.waterboards.ca.gov/centralcoast/board_info/agendas/2010/may/item_22/att_1.pdf

agreement between Goleta and the RWQCB (Exhibit 5). This agreement provides for an upgrade to full secondary treatment within 4.5 years.

Based on EPA's analysis, including a review of plant performance and modeling efforts performed since the previous permit was issued, the outfall does not appear to be resulting in any significant reduction in light transmissivity, any biologically significant changes in benthic community structure in the vicinity of the outfall (beyond the zone of initial dilution), or any significant changes in fish populations or fish diseases in the area. EPA and the RWQCB have also addressed a historic Commission's historic concern over toxics by continuing to include requirements for the implementation of a pollution prevention program to minimize discharge of toxic pollutants into the sewer system. These factors, combined with Goleta's commitment to upgrade its system to full secondary treatment within 4.5 years, enable the Commission to conclude that the Goleta Sanitary District's discharges would be consistent with the applicable marine resource and water quality provisions (Sections 30230 and 30231) of the Coastal Act.

B. Commercial Fishing/Recreation. Section 30230 of the Coastal Act, quoted in full on page 14 above, includes a requirement that:

Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.

The Coastal Act also contains more specific policies protecting commercial and recreational fishing; Section 30234 provides:

Facilities serving the commercial fishing and recreational boating industries shall be protected and, where feasible, upgraded. Existing commercial fishing and recreational boating harbor space shall not be reduced unless the demand for those facilities no longer exists or adequate substitute space has been provided. Proposed recreational boating facilities shall, where feasible, be designed and located in such a fashion as not to interfere with the needs of the commercial fishing industry.

Section 30234.5 provides:

The economic, commercial, and recreational importance of fishing activities shall be recognized and protected.

The Coastal Act also protects public recreation (such as surfing and other water-contact recreation). Section 30213 provides, in part:

Lower cost visitor and recreational facilities shall be protected, encouraged, and, where feasible, provided.

Section 30220 provides:

Coastal areas suited for water-oriented recreational activities that cannot readily be provided at inland water areas shall be protected for such uses.

Primary recreational activities in the vicinity of the Goleta outfall include sunbathing, snorkeling, scuba diving, surfing, picnicking, swimming, wading, boating, fishing, kayaking, and jet skiing. Much of this recreation takes place at the heavily used Goleta Beach County Park. In addition, occasional boat launching and fishing occur at the Goleta Pier, located just east of the outfall. Goleta's monitoring efforts over the past five years are sufficient to enable a determination that commercial/recreational fishing and other recreational concerns are met.

Concerning effects on fish populations, EPA's analysis states:

b. Fish and Macroinvertebrate Community Structure

Under the existing permit, Goleta conducts duplicate trawls annually at station TB3 (near the outfall) and station TB6 (3,000 meters east of the outfall). From these trawls, Goleta determines the abundance, number of species, diversity, and dominance for both fish and macroinvertebrates. The 2004 through 2008 annual trawl results are summarized in Table 17. EPA reviewed this data to determine the effect of Goleta's discharge on the fish and macro invertebrate community structure.

EPA performed two-way analyses of variance for each community metric and determined there were no significant differences between near-ZID station TB3 and reference station TB6 in abundance, number of species, diversity, or dominance in the fish and macroinvertebrate communities. Thus, EPA concludes the outfall is not degrading the fish and macroinvertebrate community structures.

Concerning bioaccumulation potential (both a biological and recreational fishing issue), EPA states:

Based on this review of fish liver, muscle and whole bivalve tissues, EPA finds the modified discharge will comply with COP water quality objectives for biological characteristics of ocean waters. EPA also concludes the modified discharge will allow for the attainment or maintenance of water quality which allows for recreational activities (fishing) beyond the zone of initial dilution.

Concerning other recreation-related issues, EPA states:

Goleta disinfects by chlorination and dechlorinates the effluent prior to discharge. The existing NPDES permit requires Goleta to maintain a total chlorine residual of 5 mg/l at the end of the chlorine contact channel. According to data provided in the application, this limit was consistently met over the permit term. The permit also requires Goleta to disinfect

the effluent such that no more than 10% of the final effluent samples in any monthly period shall exceed a total coliform density of 2,400 MPN/100ml, and no single sample shall exceed 16,000 MPN/100ml. The permit does not provide effluent limits for fecal coliform or enterococcus; however, monitoring is still required.

Goleta conducts the required monitoring for total coliform, fecal coliform, and enterococcus concentrations in the effluent, offshore water column, and surf zone water column. Samples are taken five days per week from the effluent, quarterly from the offshore stations, and weekly from the surf zone stations. Depending on the season and the potential for rain events to increase the concentration of bacteria, Goleta changes the number of laboratory dilutions in the analyses to detect and quantify higher concentrations of bacteria. Sometimes the maximum detection is ">16,000 MPN/100ml, and sometimes it is ">1,600 MPN/100ml". The method detection limit is "< 2 MPN/100ml." The following sections describe EPA's review of effluent, offshore, and surf zone monitoring data.

Effluent

EPA reviewed monthly average and highest monthly single sample maximum effluent data from 2005 through 2009 for total coliform, fecal coliform and enterococcus. One exceedance of the total coliform single sample maximum permit limit (>16,000 MPN/100ml) occurred in February 2008. A break in a chlorine pipe caused the exceedance. Goleta promptly restored the pipe. For this month, Goleta also recorded high single sample maximums of fecal coliform (>16,000 MPN/100ml) and enterococcus (>1,600 MPN/100ml). On average, bacteria concentrations in the effluent were low. For the five-year period, the average total coliform concentration was 60 MPN/100ml, the average fecal coliform concentration was 20 MPN/100ml, and the average enterococcus concentration was 5 MPN/100ml.

Offshore, Plume, and Nearshore

In 2008, no exceedances of total coliform, fecal coliform, or enterococcus occurred at offshore, plume, and nearshore stations. In fact, EPA found no measurements above the detection limit for fecal coliform and enterococcus. For total coliform, only 4% (7 of 156) of the samples measured above the detection limit, with the highest measurement of 50 MPN/100 ml occurring in the spring (April) at station B5.

...

Based on this review of effluent and water column data from offshore, plume, nearshore, and surf zone areas, EPA finds bacterial concentrations associated with the discharge of wastewater from the Goleta outfall are not likely to affect recreational uses in the Goleta area.

The Commission notes that the average effluent coliform concentrations over the five year period of 2004-2009 (total coliform averaged 60 MPN/100) were well below California Ocean

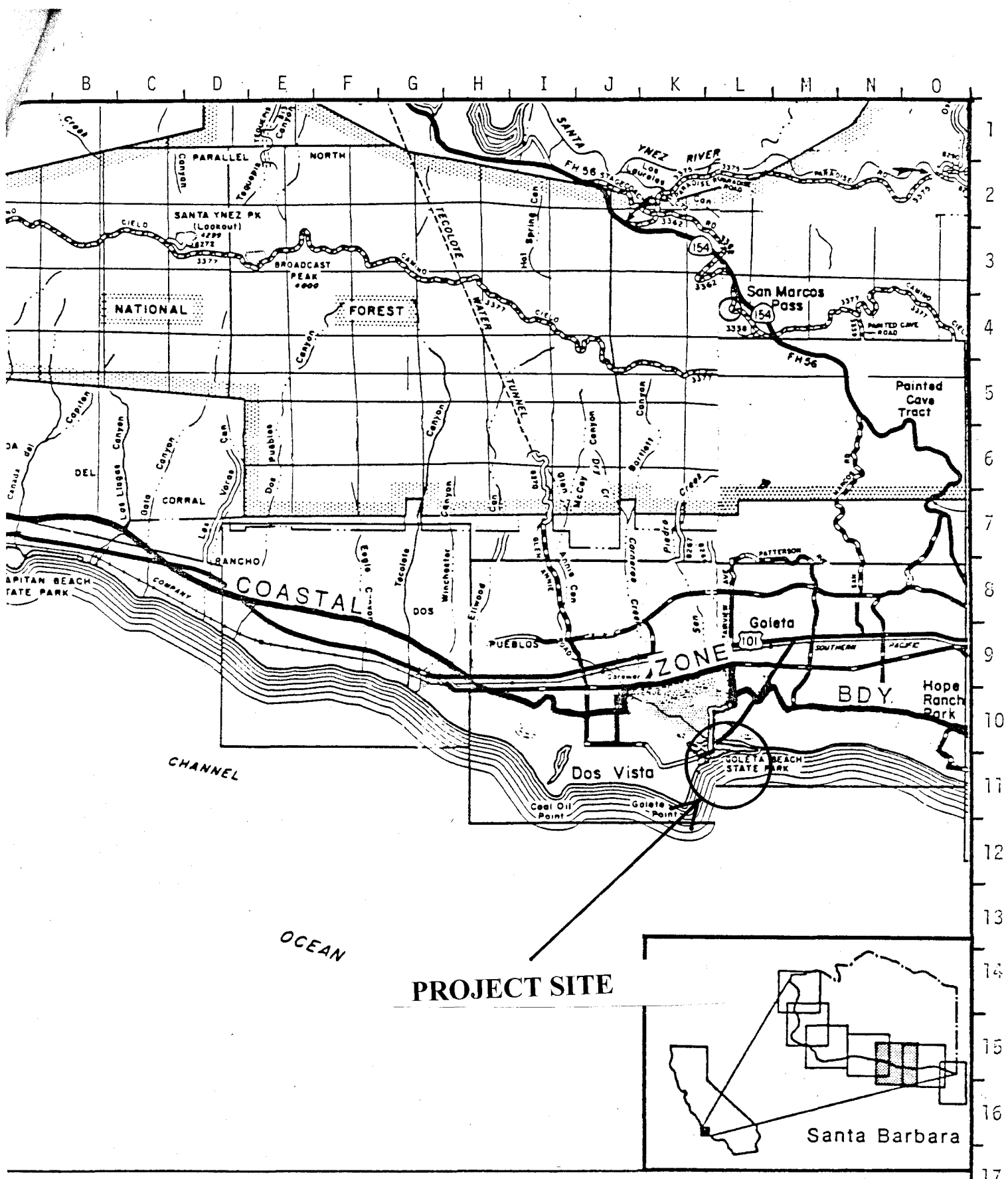
Plan standards for body contact areas. Based on the above analysis and the information contained in the previous section of this report, with continued monitoring, and with Goleta's commitment upgrade its facilities to provide for secondary treatment of its discharges within 4.5 years (as described in the November 10, 2004, settlement agreement (Exhibit 5)), the Commission concludes that the discharges would be consistent with the applicable commercial and recreational fishing and general recreation policies (Sections 30230, 30234, 30234.5, 30213, and 30220) of the Coastal Act.

VIII. SUBSTANTIVE FILE DOCUMENTS:

1. RWQCB Draft Order No. R3-2010-0012, and NPDES Permit No. CA0048160 Waste Discharge Requirements for Goleta Sanitary District Wastewater Treatment Plant, Santa Barbara County.
2. EPA Tentative Decision, Goleta Sanitary District's Application for a Modified NPDES Permit, January 19, 2010.
3. Settlement Agreement between RWQCB and Goleta Sanitary District dated November 10, 2004.
4. Commission actions on Consistency Certifications for secondary treatment waivers and waiver renewals CC-056-09, CC-043-09, CC-28-02, CC-010-02, and NE-94-95 (City of San Diego), CC-88-92 and CC-123-98, and CC-007-06 (City of Morro Bay), CC-13-02 and CC-126-96 (Goleta Sanitary District), and CC-3-98 (County Sanitation Districts of Orange County (CSDOC)).

IX. EXHIBITS:

1. Area Map
2. Outfall and Sampling Stations
3. Service District Boundaries
4. EPA Analysis, January 19, 2010
5. Settlement Agreement, RWQCB/Goleta Sanitary District, 11/10/04
6. California Ocean Plan - Definitions
7. California Ocean Plan - Tables A & B



California Coastal Commission

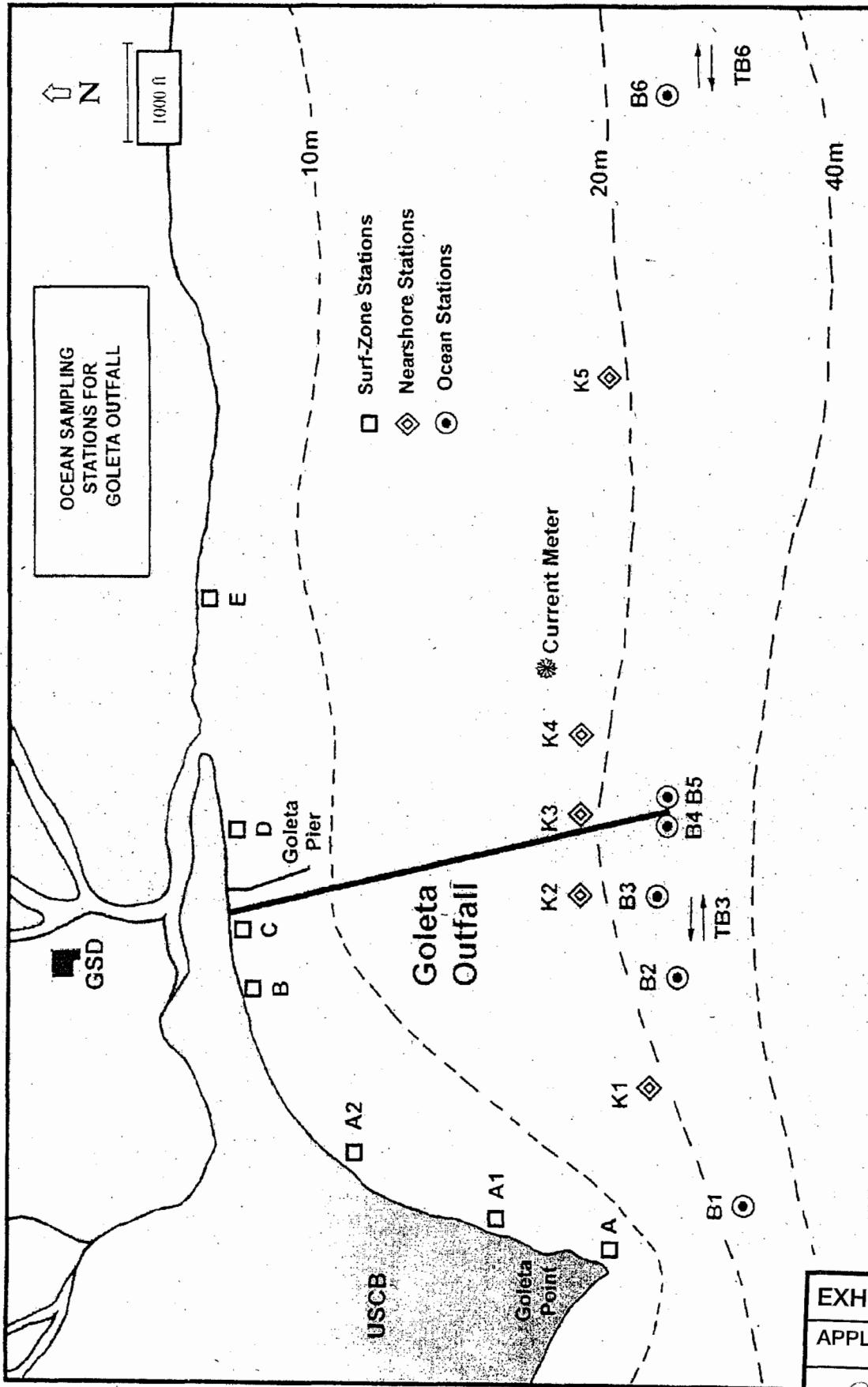
LOCATION MAP



County of Santa Barbara

She

EXHIBIT NO.	1
APPLICATION NO.	
	CC-32-09



IB-1. Goleta Sanitary District Receiving Water Monitoring Stations

EXHIBIT NO.	2
APPLICATION NO.	
CC-32-09	

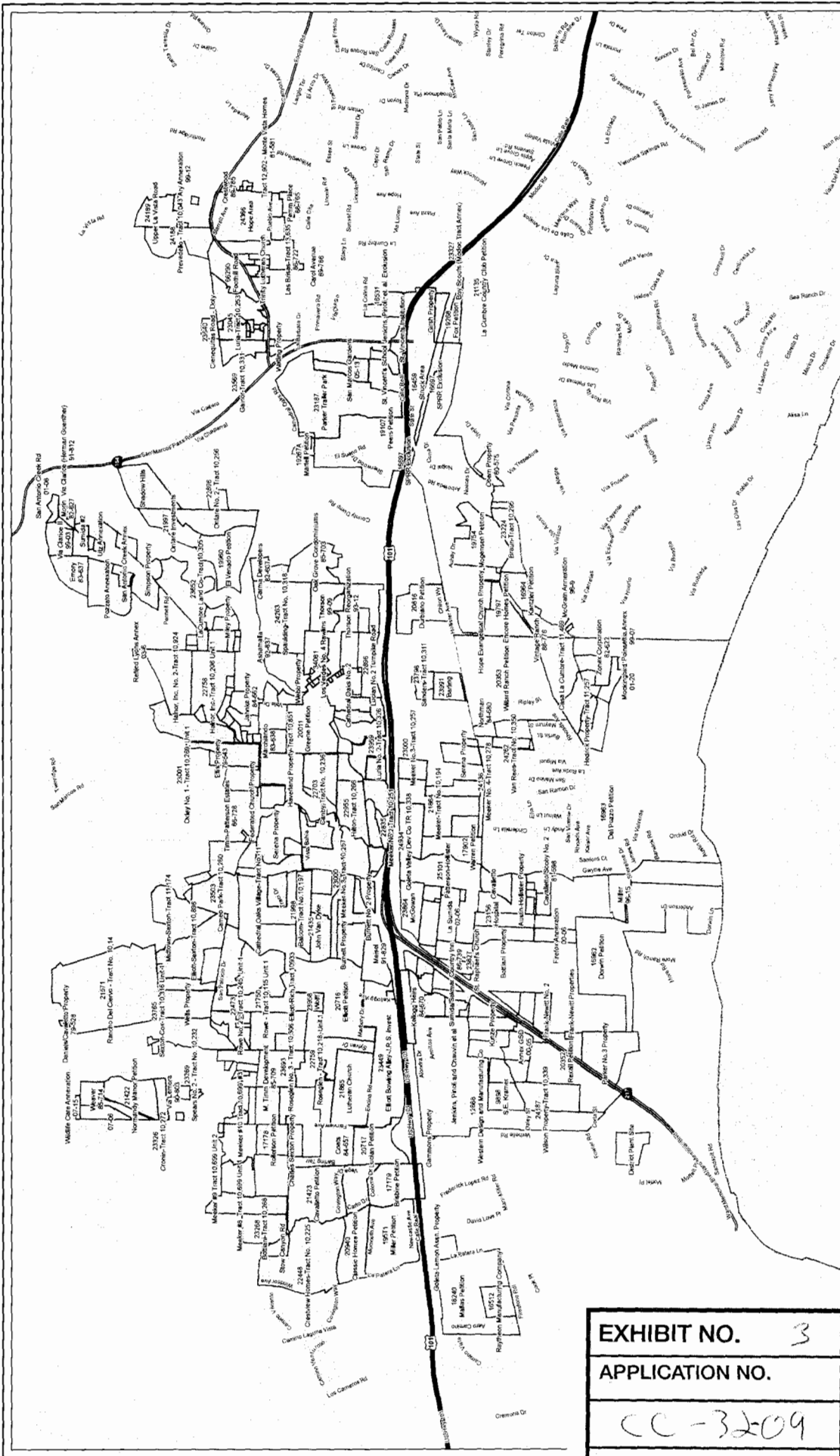


EXHIBIT NO.	3
APPLICATION NO.	CC-3209

Goleta Sanitary District

Compiled by the Office of the County Surveyor in September of 2007

COUNTY OF SANTA BARBARA, CALIFORNIA

Legend

- Annexation
- Detachment
- Formation
- Parcel Boundary

GRAPHIC SCALE

0 0.2 0.4 0.8 1.2 1.6 Miles

N
W E
S

NOTICE OF DISCLAIMER: This map is a representation of the current status of the Goleta Sanitary District as of the date of compilation. It is not a warranty, representation, or guarantee of the accuracy or completeness of the information contained herein. The County of Santa Barbara and the Office of the County Surveyor assume no liability for any errors or omissions in this map. This map is for informational purposes only and should not be used for legal or financial purposes. For more information, please contact the Office of the County Surveyor at (805) 964-2000.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 9
75 Hawthorne Street
San Francisco, CA 94105

In Re:

GOLETA SANITARY DISTRICT'S
APPLICATION FOR A MODIFIED
NPDES PERMIT UNDER SECTION
301(h) OF THE CLEAN WATER ACT

TENTATIVE DECISION OF THE
REGIONAL ADMINISTRATOR
PURSUANT TO 40 CFR PART 125,
SUBPART G

I have reviewed the attached evaluation analyzing the merits of the application of the Goleta Sanitary District requesting a variance from secondary treatment requirements of the Clean Water Act (the Act), pursuant to section 301(h). It is my tentative decision that Goleta Sanitary District be granted a variance in accordance with the terms, conditions, and limitations of the attached evaluation, based on section 301(h) of the Act.

My decision is based on available evidence specific to this particular discharge. It is not intended to assess the need for secondary treatment in general, nor does it reflect on the necessity for secondary treatment by other publicly owned treatment works discharging to the marine environment. This decision and the National Pollutant Discharge Elimination System (NPDES) permit implementing this decision are subject to revision on the basis of subsequently acquired information relating to the impacts of the less-than-secondary discharge on the marine environment.

Under the procedures of the Permit Regulations, 40 CFR Part 124, public notice and comment regarding this decision and accompanying draft NPDES permit will be made available to interested persons. Following the public comment period on this tentative decision and draft permit, a final decision and permit will be issued under the procedures in 40 CFR Part 124.

Dated: January 19, 2010

//S//

Jared Blumenfeld
Regional Administrator

EXHIBIT NO.	4
APPLICATION NO.	
	CC-32-09

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INTRODUCTION

The Goleta Sanitary District (the applicant or Goleta) is requesting renewal of its variance (sometimes informally called a "waiver" or "modification") under section 301(h) of the Clean Water Act (the Act or CWA), 33 U.S.C. section 1311(h), from the secondary treatment requirements contained in section 301(b)(1)(B) of the Act, 33 U.S.C. section 1311(b)(1)(B), for the Goleta Wastewater Treatment Plant (the plant), a publicly owned treatment works (POTW). The 301(h) variance would allow the discharge of wastewater receiving less-than-secondary treatment to the Pacific Ocean.

The U.S. Environmental Protection Agency, Pacific Southwest Region (the EPA Region IX or EPA) and the California Regional Water Quality Control Board, Central Coast (the Regional Board) issued a 301(h) modified NPDES permit to the applicant in 1985 (Permit No. CA0048160). EPA and the Regional Board renewed the modified permit on July 26, 1996, and again on November 19, 2004 after Goleta signed a Settlement Agreement with the Regional Board on November 10, 2004, committing the Plant to convert to full secondary treatment by 2014. The 2004 modified permit expired on November 19, 2009, but is administratively extended pending EPA's decision on Goleta's application for renewal of a 301(h) variance and modified permit, submitted to EPA on May 29, 2009.

This document presents findings, conclusions, and recommendations of EPA Region IX regarding the compliance of the applicant's proposed discharge with the criteria set forth in section 301(h) of the Act, as implemented by regulations contained in 40 CFR Part 125, Subpart G.

Secondary treatment is defined in the regulations (40 CFR Part 133) in terms of effluent quality for total suspended solids (TSS), biochemical oxygen demand (BOD) and pH. The secondary treatment requirements for TSS, BOD and pH are listed below:

TSS: (1) The 30-day average shall not exceed 30 mg/l.
(2) The 7-day average shall not exceed 45 mg/l.
(3) The 30-day average percent removal shall not be less than 85%;

BOD: (1) The 30-day average shall not exceed 30 mg/l.
(2) The 7-day average shall not exceed 45 mg/l.
(3) The 30-day average percent removal shall not be less than 85%;

pH: At all times, shall be maintained within the limits of 6.0 to 9.0 units.

The applicant is requesting a modification to the TSS and BOD requirements. A modification for pH is not requested. The applicant's proposed alternative effluent limits for TSS and BOD have not changed from the existing modified permit and are as follows:

TSS: (1) The 30-day average shall not exceed 63 mg/l.
(2) The maximum at any time shall not exceed 100 mg/l.
(3) The 30-day average percent removal shall not be less than 75%.

BOD: (1) The 30-day average shall not exceed 98 mg/l.
(2) The maximum at any time shall not exceed 150 mg/l.

The plant provides full primary and partial secondary wastewater treatment for a service population of about 82,000. The application is based on the plant's existing modified permit, an average dry-weather flow limited to 7.64 million gallons per day (MGD). Based on the definition in 40 CFR 125.58(c), the applicant is a large discharger.

DECISION CRITERIA

Under section 301(b)(1)(B) of the Act, 33 U.S.C. section 1311(b)(1)(B), publicly owned treatment works (POTWs) in existence on July 1, 1977, were required to meet effluent limits based upon secondary treatment as defined by the Administrator of EPA. The Administrator defined secondary treatment in terms of three parameters: TSS, BOD, and pH. Uniform national effluent limits for these pollutants were promulgated and included in National Pollutant Discharge Elimination System (NPDES) permits for POTWs issued under section 402 of the Act. POTWs were required to comply with these limits by July 1, 1977.

Congress subsequently amended the Act, adding section 301(h) which authorizes the Administrator, with State concurrence, to issue NPDES permits which modify the secondary treatment requirements of the Act with respect to certain discharges. P.L. 95-217, 91 Stat. 1566, as amended by P.L. 97-117, 95 Stat. 1623; and section 303 of the Water Quality Act of 1987. Section 301(h) provides:

The Administrator, with the concurrence of the State, may issue a permit under section 402 [of the Act], which modifies the requirements of subsection (b)(1)(B) of this section [the secondary treatment requirements] with respect to the discharge of any pollutant from a publicly owned treatment works into marine waters, if the applicant demonstrates to the satisfaction of the Administrator that:

- (1) there is an applicable water quality standard specific to the pollutant for which the modification is requested, which has been identified under section 304(a)(6) of this Act;
- (2) the discharge of pollutants in accordance with such modified requirements will not interfere, alone or in combination with pollutants from other sources, with the attainment or maintenance of that water quality which assures protection of public water supplies and the protection and propagation of a balanced, indigenous population of shellfish, fish, and wildlife, and allows recreational activities, in and on the water;
- (3) the applicant has established a system for monitoring the impact of such discharge on a representative sample of aquatic biota, to the extent practicable, and the scope of such monitoring is limited to include only those scientific investigations which are necessary to study the effects of the proposed discharge;
- (4) such modified requirements will not result in any additional requirements on any other point or non-point source;
- (5) all applicable pretreatment requirements for sources introducing waste into such treatment works will be enforced;
- (6) in the case of any treatment works serving a population of 50,000 or more, with respect to any toxic pollutant introduced into such works by an industrial

discharger for which pollutant there is no applicable pretreatment requirement in effect, sources introducing waste into such works are in compliance with all applicable pretreatment requirements, the applicant will enforce such requirements, and the applicant has in effect a pretreatment program, which, in combination with the treatment of discharges from such works, removes the same amount of such pollutant as would be removed if such works were to apply secondary treatment to discharges and if such works had no pretreatment program with respect to such pollutant;

(7) to the extent practicable, the applicant has established a schedule of activities designed to eliminate the entrance of toxic pollutants from nonindustrial sources into such treatment works;

(8) there will be no new or substantially increased discharges from the point source of the pollutant to which the modification applies above that volume of discharge specified in the permit;

(9) the applicant at the time such modification becomes effective will be discharging effluent that has received at least primary or equivalent treatment and which meets the criteria established under section 304(a)(1) of the Act after initial mixing in the waters surrounding or adjacent to the point at which such effluent is discharged.

For the purposes of this subsection the phrase "the discharge of any pollutant into marine waters" refers to a discharge into deep waters of the territorial sea or the waters of the contiguous zone, or into saline estuarine waters where there is strong tidal movement or other hydrological and geological characteristics which the Administrator determines necessary to allow compliance with paragraph (2) of this subsection, and section 101(a)(2) of this Act. For the purposes of paragraph (9), "primary or equivalent treatment" means treatment by screening, sedimentation, and skimming adequate to remove at least 30 percent of the biological oxygen demanding material and of the suspended solids in the treatment works influent, and disinfection, where appropriate. A municipality which applies secondary treatment shall be eligible to receive a permit pursuant to this subsection which modifies the requirements of subsection (b)(1)(B) of this section with respect to the discharge of any pollutant from any treatment works owned by such municipality into marine waters. No permit issued under this subsection shall authorize the discharge of sewage sludge into marine waters. In order for a permit to be issued under this subsection for the discharge of a pollutant into marine waters, such marine waters must exhibit characteristics assuring that water providing dilution does not contain significant amounts of previously discharged effluent from such treatment works. No permit issued under this subsection shall authorize the discharge of any pollutant into saline estuarine waters which at the time of application do not support a balanced, indigenous population of shellfish, fish, and wildlife, or allow recreation in and on the waters or which exhibit ambient water quality below applicable water quality standards adopted for the protection of public water supplies, shellfish, fish, and wildlife or recreational activities or such other standards necessary to assure support and protection of such uses. The prohibition contained in the preceding

sentence shall apply without regard to the presence or absence of a causal relationship between such characteristics and the applicant's current or proposed discharge. Notwithstanding any other provisions of this subsection, no permit may be issued under this subsection for discharge of a pollutant into the New York Bight Apex consisting of the ocean waters of the Atlantic Ocean westward of 73 degrees 30 minutes west longitude and northward of 40 degrees 10 minutes north latitude.

EPA regulations implementing section 301(h) provide that a 301(h) modified NPDES permit may not be issued in violation of 40 CFR 125.59(b), which requires among other things, compliance with the provisions of the Coastal Zone Management Act (16 U.S.C. 1451 et seq.), the Endangered Species Act (16 U.S.C. 1531 et seq.), the Marine Protection, Research, and Sanctuaries Act (16 U.S.C. 1431 et seq.), and all other applicable provisions of State or Federal law or Executive Order. In the following discussion, EPA analyzes data submitted by the applicant in the context of the statutory and regulatory criteria.

SUMMARY OF FINDINGS

Based upon review of the data, references, and empirical evidence furnished in the application and other relevant sources, EPA Region IX makes the following findings with regard to the statutory and regulatory criteria:

1. The applicant's proposed discharge will comply with federal primary treatment requirements. [CWA section 301(h)(9); 40 CFR 125.60]
2. The applicant's proposed 301(h)-modified discharge will comply with the State of California's water quality standards for natural light, dissolved oxygen, and pH. The applicant sent a letter to the California Regional Water Quality Control Board, Central Coast (Regional Board) requesting determination that the proposed discharge complies with applicable State law including water quality standards. In 1984, a Memorandum of Understanding was signed by EPA Region IX and the State of California to jointly administer discharges that are granted modifications from secondary treatment standards. The joint issuance of a NPDES permit which incorporates both the federal 301(h) variance and State permit requirements will serve as the State's certification/concurrence that the modified discharge will comply with applicable State law and water quality standards. A draft 301(h)-modified permit has been jointly developed by the Regional Board and EPA Region IX. [CWA section 301(h)(1); 40 CFR 125.61]
3. The applicant demonstrated it can consistently achieve State water quality standards and federal 304(a)(1) water quality criteria beyond the zone of initial dilution. [CWA section 301(h)(9); 40 CFR 125.62(a)]
4. The applicant's proposed discharge, alone or in combination with pollutants from other sources, will not adversely impact public water supplies or interfere with the protection and propagation of a balanced,

indigenous population of fish, shellfish and wildlife, and will allow for recreational activities. [CWA section 301(h)(2); 40 CFR 125.62(b), (c), (d)]

5. The applicant has a well-established monitoring program and has demonstrated it has adequate resources to continue the program. EPA Region IX and the Regional Board will review the applicant's existing monitoring program and revise it, as appropriate. These revisions will be included in the 301(h)-modified permit, as conditions for monitoring the impact of the discharge. [CWA section 301(h)(3); 40 CFR 125.63]
6. The applicant sent a letter to the Regional Board requesting determination that the proposed discharge will not result in any additional treatment requirements on any other point or non-point sources. The adoption by the Regional Board of a NPDES permit which incorporates both the federal 301(h) variance and State permit requirements will serve as the State's determination, pursuant to 40 CFR 125.59(f)(4), that the requirements under 40 CFR 125.64 are achieved. [CWA section 301(h)(4); 40 CFR 125.64]
7. The applicant has an approved pretreatment program, in effect since 1983. [CWA section 301(h)(5); 40 CFR 125.66 and 125.68]
8. The applicant complies with urban area pretreatment requirements by establishing applicable local limits for each toxic pollutant introduced by an industrial discharger and using appropriate enforcement tools. [CWA section 301(h)(6); 40 CFR 125.65]
9. The applicant has a nonindustrial source control program, in effect since 1986, to characterize pollutants from residential areas and an existing public education program encouraging waste minimization and source reduction to limit the amount of toxic pollutants that enter the treatment system. [CWA section 301(h)(7); 40 CFR 125.66]
10. There will be no new or substantially increased discharges from the point source of the pollutants to which the 301(h) variance applies above those specified in the permit. [CWA section 301(h)(8); 40 CFR 125.67]
11. The applicant sent letters to the U.S. Fish and Wildlife Service, the NOAA National Marine Fisheries Service, and the California Coastal Commission requesting determinations that the proposed discharge complies with applicable federal and State laws. The issuance of a final 301(h)-modified permit is contingent upon receipt of determinations that the issuance of such permit does not conflict with applicable provisions of federal and State laws. [40 CFR 125.59]

CONCLUSION

EPA concludes the applicant's proposed discharge will comply with the requirements of CWA section 301(h) and 40 CFR 125, Subpart G.

RECOMMENDATION

EPA recommends the applicant be allowed to retain the 301(h) variance in accordance with the above findings, contingent upon the satisfaction of the following conditions:

1. The determination by the Regional Board that the proposed discharge will comply with applicable provisions of State law, including water quality standards, in accordance with 40 CFR 125.61(b)(2). The adoption by the Regional Board of a NPDES permit which incorporates both the federal 301(h) variance and State permit requirements will serve as the State's certification/concurrence, pursuant to 40 CFR Parts 124.53 and 124.54, that requirements under 40 CFR 125.61(b)(2) are achieved.
2. The determination by the Regional Board that the proposed discharge will not result in any additional treatment requirements on any other point or non-point sources, in accordance with 40 CFR 125.64. The adoption by the Regional Board of a NPDES permit which incorporates both the federal 301(h) variance and State permit requirements will serve as the State's determination, pursuant to 40 CFR 125.59(f)(4), that requirements under 40 CFR 125.64 are achieved.
3. The draft permit contains the applicable terms and conditions required by 40 CFR 125.68, for establishment of a monitoring program.
4. The determination by the California Coastal Commission that issuance of a 301(h)-modified permit does not conflict with the Coastal Zone Management Act, as amended.
5. The determination by the U.S. Fish and Wildlife Service that issuance of a 301(h)-modified permit does not conflict with applicable provisions of the federal Endangered Species Act, as amended.
6. The determination by the NOAA National Marine Fisheries Service that issuance of a 301(h)-modified permit does not conflict with applicable provisions of the federal Endangered Species Act, as amended, and the Magnuson-Stevens Fishery Conservation and Management Act, as amended.
7. Issuance of the 301(h)-modified permit assures compliance with all applicable requirements of 40 CFR 122 and 40 CFR 125, Subpart G.

DESCRIPTION OF TREATMENT SYSTEM

The Goleta Wastewater Treatment Plant (the plant) is located approximately 10 miles west of the City of Santa Barbara and treats wastewater from the Goleta Sanitary District, the Goleta West Sanitary District, the University of California Santa Barbara, the Santa Barbara Municipal Airport and other facilities in Santa Barbara County. Goleta's service area involves over 190 miles of pipeline, which collect wastewater at each participating agency's gravity-fed pump station, where it is then transferred to the plant. The plant is designed to accommodate an average dry-weather flow of 9.0 MGD and a peak wet-weather flow of 25.4 MGD. According to the applicant, the actual annual average flow in

2008 was 5.0 MGD. The plant's 43 industrial users generate approximately 4% of the current flow.

At the plant headworks, raw wastewater (influent) flows through a bar screen, which removes large debris. The wastewater is then routed to aerated grit tanks, where sand and grit settle out. Water from these tanks flows to three primary sedimentation basins, where settling solids and floatable materials are collected and sent to digesters. The primary effluent is then split with one portion receiving secondary treatment and the other portion routed directly to disinfection. Secondary treatment consists of a biofilter, a solids contact channel (for air injection and reintroduction of recirculated sludge) and secondary sedimentation tanks. A portion of the secondary flow is diverted to the water reclamation facility. The remaining secondary flow is combined with the primary flow where it is chlorinated in the chlorine contact channel by sodium hypochlorite and dechlorinated by sodium bisulfite before discharge to the ocean.

The disinfected effluent discharges to the Pacific Ocean through a 5,912-foot outfall pipe, which terminates in a 280-foot long multiport (34-port) diffuser at an average depth of 87 feet. The diffuser coordinates are Latitude 34° 24' 06" N and Longitude 119° 49' 27" W. The 4-inch-in-diameter ports are located on alternate sides of the diffuser and vary in depth from 74 to 92 feet below the mean lower low water surface.

Sludge is treated through anaerobic digestion for approximately 55 days and sent to stabilization basins for 2 years. The stabilized sludge is dewatered by drying bed or belt press and then made available, as Class A biosolids, to the local community as a soil amendment. All debris and grit from the primary treatment process are trucked to a landfill for disposal.

The plant is permitted by the Regional Board (Order No. 91-03) to produce up to 3.0 MGD of reclaimed water. A portion of the secondary effluent enters the reclamation facilities where it is mixed with aluminum sulfate and polymer and filtered through a bed of anthracite coal to remove floc. The filtered water is then disinfected with sodium hypochlorite and stored in an underground storage tank until needed. This water is distributed for landscape irrigation and dust control.

DESCRIPTION OF RECEIVING WATERS

Currents

The plant's outfall is located southeast of Point Conception and northwest of the City of Santa Barbara on the California Central Coast. The predominant oceanic surface flow along the coast is due to the southward flowing California current. As this current passes Point Conception, the abrupt change in coastline direction causes a large-scale eddy to form south of Point Conception within the Santa Barbara Channel. This eddy circulates counterclockwise between the mainland and offshore Channel Islands. Consequently, a prevailing westward ocean current in the Goleta-Santa Barbara area is observed during most of the year.

The applicant measured current transport at 6-meter and 19-meter depths near the outfall and recorded 3-minute and 1-minute averages over the permit term. In 2008, currents moved in a southwest to westerly direction with average speeds ranging between 7.09 cm/s in winter to 10.70 cm/s in summer at the 6-meter depth, and between 6.19 cm/s in

winter to 8.86 cm/s in summer at the 19-meter depth. Current measurements from 2006 and 2007 were similar to those measured in 2008. According to the applicant, currents at the 19-meter depth were more variable and more often turbulent with a slight offshore component.

The applicant also calculated the lowest 10th-percentile current speeds from measurements obtained at current meters located 300 meters east of the outfall. The results ranged from 1.41 to 4.39 cm/s. The applicant did not observe a seasonal trend in the 10th-percentile, median, or mode current speeds.

To determine the potential for wind-induced natural upwelling near the outfall, the applicant analyzed wind direction and frequency. Upwelling events can increase the buoyancy of the outfall plume, involving water at the level of the diffuser and a few meters above. The analysis found the predominant northwesterly winds do not support perennial upwelling as they blow parallel to the coast for only a few hours a day; however, temporary local wind conditions may occasionally create mild upwelling.

Stratification

The applicant computed density profiles from temperature and salinity data measured during quarterly surveys over the permit term at monitoring station B4 (near the outfall terminus) and station B6 (3,000 meters east of the outfall). Density profiles were similar at both stations, with higher water column density stratification occurring during July and October.

The formation of a thermocline at a depth of 10-15 meters (or 33-49 feet) caused strong stratification during the month of July. Temperatures during this month, measured at K (nearshore) and B (ocean) monitoring stations, ranged from 13° C near the bottom to 18° C at the surface; however, the water column was isothermal during the winter and spring. The applicant performed a statistical t-test, which found no significant differences between temperatures at the outfall and temperatures at the farfield stations. Overall, the lowest temperatures occurred in April and the highest occurred in July.

Salinity, affected by seasonal currents and upwelling, was fairly stable over the permit term, ranging from 33.4 parts per trillion (ppt) in October to 33.9 ppt in April. Similar to temperature, the water column was isohaline in January.

PHYSICAL CHARACTERISTICS OF THE DISCHARGE

Outfall/Diffuser and Initial Dilution

Under 40 CFR 125.62(a), the applicant's proposed outfall and diffuser must be located and designed to provide adequate initial dilution, dispersion, and transport of wastewater to meet all applicable water quality standards and criteria at and beyond the boundary of the zone of initial dilution (ZID). This evaluation is based on conditions occurring during periods of maximum stratification and during other periods when discharge characteristics, water quality, biological seasons, or oceanographic conditions indicate more critical situations exist.

The outfall/diffuser system and design capacity of the plant have not changed, so the applicant cited the same initial dilutions previously determined in the 1993 Tetra Tech

Technical Review of Goleta's previous 301(h) application (TTR). The TTR determined a critical initial dilution of 55:1 and a minimum monthly initial dilution of 122:1 using the UDKHDEN model. The critical initial dilution of 55:1 is based on a peak dry-weather flow of 16.93 MGD and a peak wet-weather flow of 22.02 MGD and is used to assess worst-case conditions and discharge compliance with Federal acute and chronic water quality criteria for aquatic life. The minimum monthly initial dilution of 122:1 is based on a monthly average flow of 7.2 MGD and is used to assess compliance with California Ocean Plan (COP) Table B water quality objectives. The COP includes State water quality objectives applicable to Goleta's discharge. Chapter III of the COP requires that "Waste effluents shall be discharged in a manner which provides sufficient initial dilution to minimize the concentrations of substances not removed in the treatment." This plan defines the "minimum initial dilution (Dm)" as the "... lowest average initial dilution within any single month of the year," and specifies that "dilution estimates shall be based on observed waste flow characteristics, observed receiving water density structure, and the assumption that no currents, of sufficient strength to influence the initial dilution process, flow across the discharge structure" (State Water Resources Control Board, 2005). The TTR also determined a long-term average initial dilution of 170:1 using the model ULINe, to assess compliance with Federal water quality criteria for human health (organisms only).

EPA's 2002 Tentative Decision Document (TDD) regarding Goleta's 2001 301(h) application used a recalculated initial dilution of 111:1 to assess compliance with the COP. This revised initial dilution, calculated by the EPA PLUMES model, was based on a 9.0 MGD average design flow; however, the 2004 NPDES permit limits the effluent daily dry-weather flow to 7.64 MGD on a monthly average. Assuming no current, an effluent flow of 7.64 MGD corresponds to an initial dilution of 122:1. This initial dilution was incorporated into the effluent limits for toxics in the 2004 NPDES permit.

According to the applicant, the dry-weather season is June through September. Over the last permit term, actual dry-weather effluent flows at the plant were much lower than the 7.64 MGD permit limit. The highest daily maximum flow was 4.86 MGD and the highest monthly average flow was 3.09 MGD. For the wet-weather season, the highest daily maximum was 14.24 MGD and the highest monthly average was 4.62 MGD, which are significantly lower than both the design peak wet-weather flow and the flow used in calculating critical initial dilution.

In the 2009 application, Goleta projects an increase in influent flow from the past permit term annual average of 5.62 MGD to 5.81 MGD in 2013 and 6.00 MGD in 2018. These projections are based on historical flow increases, which result in higher flows than population-based projections. Goleta expects effluent flow to increase slightly from the past permit term annual average of 4.73 MGD to 4.79 MGD in 2013 and then decrease to 4.73 MGD in 2018. The change between influent and effluent flow projections is due to the projected increase in demand of reclaimed water, which should reach an annual average of 1.27 MGD and a monthly maximum of 2.83 MGD in 2018.

Application of Initial Dilution to Water Quality Standards

Based on the information summarized in the previous section, EPA concludes: (1) the outfall and diffuser system are well designed and achieve a high degree of dilution;

(2) the minimum monthly average initial dilution of 122:1 provides a conservative estimate of initial dilution for evaluating compliance with applicable State water quality standards in Table B of the COP; (3) the critical initial dilution of 55:1 is sufficiently conservative for evaluating compliance with EPA toxics water quality criteria for aquatic life; and (4) the long-term effective dilution of 170:1 provides an appropriate estimate for evaluating compliance with EPA toxics water quality criteria for human health (organisms only) based on long-term exposure. As in the 2002 TDD, this evaluation also uses the initial dilution value of 55:1 to assess worst-case conditions for suspended solids and dissolved oxygen concentrations following initial dilution.

Zone of Initial Dilution

Goleta did not make any changes to the outfall that would affect the dimensions of the ZID. The TTR calculated the dimensions of the ZID using procedures outlined in the 1982 Section 301(h) Technical Support Document. These procedures did not change when this document was amended in 1994 (Amended Technical Support Document, or ATSD). The dimensions of the ZID were estimated to be 138 m (453 ft) long and 54 m (177 ft) wide. Monitoring stations B4 and B5 are located 25 meters from the outfall and are considered ZID boundary stations.

Dilution Water Recirculation

Under CWA section 301(h)(9), modified discharges are prohibited into waters that contain significant amounts of previously discharged effluent from the treatment works. Re-entrainment of discharged effluent decreases the initial dilutions within the ZID and decreases the probability of the effluent to meet water quality standards at the edge of the ZID. Results of a dye study, summarized in the TTR, showed re-entrainment of previously discharged wastewater is probable during current reversals caused by tidal forces, but would not be expected to have a significant impact on dilution of the effluent plume.

APPLICATION OF STATUTORY AND REGULATORY CRITERIA

A. Compliance with Federal Primary Treatment & California Ocean Plan Table A Requirements

The applicant is required under CWA section 301(h)(9) and 40 CFR 125.60 to demonstrate, at the time the 301(h) variance becomes effective, it will be discharging effluent that has received at least primary or equivalent treatment. According to 40 CFR 125.58(r), primary treatment means treatment by screening, sedimentation, and skimming adequate to remove at least 30 percent of the biological oxygen demanding material and of the suspended solids in the treatment plant influent, and disinfection, where appropriate.

Table A of the California Ocean Plan (COP) requires publicly owned treatment works to, as a 30-day average, remove 75 percent of suspended solids from the influent stream before discharging wastewater to the ocean. Table A also specifies effluent turbidity must not exceed 75 Nephelometric Turbidity Units (NTU) as a 30-day average, 100 NTU as a 7-day average, and 225 NTU at any time. Effluent settleable solids must not exceed 1.0 mL/L as a 30-day average, 1.5 mL/L as a 7-day average, and 3.0 mL/L at any time. There

are no Table A effluent requirements for biochemical oxygen demand. EPA discusses compliance with COP water quality objectives for light transmittance and dissolved oxygen below, in sections B.1 and B.2.

1. Total Suspended Solids

In order to comply with federal primary treatment and COP requirements, the applicant proposes renewal of the following effluent limits for total suspended solids as established in the existing permit:

- TSS: (1) The 30-day average shall not exceed 63 mg/l.
 (2) The maximum at any time shall not exceed 100 mg/l.
 (3) The 30-day average percent removal shall not be less than 75%.

Under the existing permit, Goleta takes 24-hour composite samples of the plant influent and effluent five days per week and analyzes them for total suspended solids. Additionally, Goleta takes grab samples of the effluent five days per week and analyzes them for settleable solids and turbidity. EPA reviewed influent and effluent monitoring data reported over the permit term in monthly discharge monitoring reports. Discharge monitoring data for suspended solids, turbidity, and settleable solids is summarized in the following tables.

Table 1. Monthly average and annual average influent concentrations for total suspended solids (mg/l) at Goleta Sanitary District.

Month	2005	2006	2007	2008	2009
January	254	278	360	285	245
February	244	286	324	306	270
March	223	302	331	274	281
April	287	341	293	291	293
May	245	396	328	257	287
June	237	391	279	266	276
July	227	287	267	270	287
August	241	318	285	241	255
September	259	300	281	259	269
October	277	299	326	255	-- ¹
November	289	327	354	247	--
December	321	329	329	238	--
Annual Average	259	321	313	266	274
Maximum Month	321	396	360	306	293
Minimum Month	223	278	267	238	245

¹Data not available at time of analysis.

Table 2. Monthly average and annual average effluent concentrations for total suspended solids (mg/l) at Goleta Sanitary District.

Month	2005	2006	2007	2008	2009
January	40.7	30.7	39.8	39.2	36.8
February	40.0	38.3	40.7	37.6	42.6
March	38.0	27.9	45.0	43.0	37.8
April	42.0	35.9	39.9	49.6	44.2
May	41.9	31.4	44.3	41.1	40.7
June	41.7	36.2	47.3	41.1	44.4
July	43.4	31.9	38.2	36.4	36.5
August	34.6	35.0	39.6	31.7	33.7
September	36.3	36.7	36.2	35.4	30.9
October	31.9	34.6	34.4	40.0	--
November	30.2	31.8	35.1	33.0	--
December	28.1	32.2	29.7	31.6	--
Annual Average	37.4	33.6	39.2	38.3	38.6
Maximum Month	43.4	38.3	47.3	49.6	44.4
Minimum Month	28.1	27.9	29.7	31.6	30.9

Table 3. Monthly average and annual average percent removals for total suspended solids (%) at Goleta Sanitary District.

Month	2005	2006	2007	2008	2009
January	83.5	89.0	88.0	85.0	85.0
February	82.0	86.0	87.0	87.0	84.0
March	82.0	90.0	86.0	84.0	86.0
April	85.0	88.0	86.0	83.0	84.0
May	82.5	92.0	86.0	84.0	86.0
June	82.0	90.0	83.0	84.0	83.0
July	79.0	89.0	85.0	86.0	87.0
August	85.0	88.0	86.0	86.0	86.0
September	86.0	87.0	87.0	86.0	88.0
October	88.0	88.0	89.0	84.0	--
November	88.0	90.0	90.0	86.0	--
December	91.0	90.0	90.0	86.0	--
Annual Average	84.5	88.9	86.9	85.1	85.4
Maximum Month	91.0	92.0	90.0	87.0	88.0
Minimum Month	79.0	86.0	83.0	83.0	83.0

Table 4. Monthly average and annual average effluent values for turbidity (NTU) at Goleta Sanitary District.

Month	2005	2006	2007	2008	2009
January	42	40	44	44	51
February	45	46	47	43	50
March	41	40	50	48	48
April	46	44	48	56	54
May	51	42	51	55	58
June	53	48	51	54	61
July	51	41	49	52	49
August	45	46	51	44	48
September	46	50	51	45	48
October	42	44	49	51	--
November	41	46	46	51	--
December	38	44	42	46	--
Annual Average	45	44	48	49	52
Maximum Month	53	50	51	56	61
Minimum Month	38	40	42	43	48

Table 5. Monthly average and annual average effluent concentrations for settleable solids (ml/l) at Goleta Sanitary District.

Month	2005	2006	2007	2008	2009
January	0.2	0.2	0.1	0.2	0.2
February	0.3	0.2	0.1	0.3	0.2
March	0.2	0.2	0.1	0.2	0.2
April	0.2	0.2	0.2	0.3	0.2
May	0.2	0.3	0.2	0.2	0.2
June	0.2	0.3	0.3	0.2	0.2
July	0.2	0.3	0.2	0.3	0.2
August	0.2	0.3	0.3	0.3	0.2
September	0.2	0.2	0.3	0.2	0.2
October	0.2	0.2	0.3	0.3	--
November	0.2	0.2	0.3	0.2	--
December	0.2	0.1	0.2	0.2	--
Annual Average	0.2	0.2	0.2	0.2	0.2
Maximum Month	0.3	0.3	0.3	0.3	0.2
Minimum Month	0.2	0.1	0.1	0.2	0.2

Table 3 shows the plant's monthly average percent removals of total suspended solids ranged from 79.0% to 92.0% over the permit term, consistently meeting both the federal primary treatment requirement of at least 30% removal and the COP Table A requirement of at least 75% removal. Table 2 shows the highest monthly average effluent concentration of total suspended solids was 49.6 mg/l, which meets the applicant's proposed monthly average effluent limit of 63 mg/l.

EPA's review of monitoring data found both turbidity and settleable solids concentrations in the plant effluent met COP Table A requirements, which are also established as permit limits in the existing permit. Tables 4 and 5 summarize the turbidity and settleable solids monthly average effluent concentrations for the last permit term. The applicant met both the monthly average and weekly average requirements for turbidity 100% of the time, and the instantaneous requirement 99.9% of the time; the difference is due to one exceedance out of more than 1,000 samples. The applicant consistently met the monthly average, weekly average, and instantaneous maximum requirements for settleable solids.

2. Biochemical Oxygen Demand

In order to comply with federal primary treatment requirements for biochemical oxygen demand, the applicant proposes the renewal of the following effluent limits as established in the existing permit:

- BOD: (1) The 30-day average shall not exceed 98 mg/l.
 (2) The maximum at any time shall not exceed 150 mg/l.

Under the existing permit, Goleta takes 24-hour composite samples of the plant influent three days per week and the plant effluent five days per week to analyze for biochemical oxygen demand. EPA reviewed influent and effluent monitoring data reported over the permit term in monthly discharge monitoring reports. Discharge monitoring data for biochemical oxygen demand is summarized in the following tables.

Table 6. Monthly average and annual average influent concentrations for biochemical oxygen demand (mg/l) at Goleta Sanitary District.

Month	2005	2006	2007	2008	2009
January	205	265	283	251	257
February	215	314	302	261	263
March	210	292	280	273	283
April	233	276	291	269	310
May	220	293	319	259	298
June	208	284	301	280	265
July	218	271	282	270	291
August	207	290	267	251	268
September	238	273	255	284	284
October	283	282	313	294	-- ¹
November	293	307	328	292	--
December	279	291	321	254	--

Month	2005	2006	2007	2008	2009
Annual Average	234	287	295	270	280
Maximum Month	293	314	328	294	310
Minimum Month	205	265	255	251	257

¹Data not available at time of analysis.

Table 7. Monthly average and annual average effluent concentrations for biochemical oxygen demand (mg/l) at Goleta Sanitary District.

Month	2005	2006	2007	2008	2009
January	60.0	54.0	68.0	53.0	75.0
February	62.0	61.0	67.0	49.0	66.0
March	53.0	54.0	78.0	64.0	71.0
April	71.0	59.0	67.0	82.0	84.0
May	66.0	54.0	70.0	80.0	74.0
June	64.0	64.0	75.0	67.0	74.0
July	65.0	58.0	69.0	58.0	67.0
August	53.0	39.0	68.0	48.0	60.0
September	56.0	65.0	72.0	62.0	60.0
October	64.0	69.0	69.0	75.0	--
November	48.0	58.0	56.0	64.0	--
December	45.0	48.0	47.0	63.0	--
Annual Average	58.9	56.9	67.2	63.8	70.1
Maximum Month	71.0	69.0	78.0	82.0	84.0
Minimum Month	45.0	39.0	47.0	48.0	60.0

Table 8. Monthly average and annual average percent removals for biochemical oxygen demand (%) at Goleta Sanitary District.

Month	2005	2006	2007	2008	2009
January	69.9	80.0	76.0	78.0	70.0
February	71.0	80.0	77.0	81.0	73.0
March	73.0	81.0	72.0	77.0	75.0
April	69.0	78.0	77.0	68.0	72.0
May	69.0	81.0	78.0	69.0	75.0
June	69.0	78.0	75.0	76.0	72.0
July	69.0	78.0	75.0	78.0	76.0
August	74.0	78.0	75.0	80.0	78.0
September	76.0	76.0	71.0	78.0	79.0
October	77.0	76.0	77.0	74.0	--
November	83.0	81.0	86.0	78.0	--
December	84.0	84.0	85.0	75.0	--
Annual Average	73.7	79.3	77.0	76.0	74.4

Month	2005	2006	2007	2008	2009
Maximum Month	84.0	84.0	86.0	81.0	79.0
Minimum Month	69.0	76.0	71.0	68.0	70.0

Monthly average percent removals of biochemical oxygen demand shown in Table 8 ranged from 68.0 % to 86.0% over the permit term, meeting the federal primary treatment and existing permit requirements of at least 30% removal. The highest monthly average effluent concentration of 84 mg/l, shown in Table 7, meets the applicant's proposed monthly average effluent limit of 98 mg/l. The applicant met the instantaneous maximum permit limit 99.9% of the time; the difference is due to one exceedance out of more than 1,000 samples.

B. Attainment of Water Quality Standards for TSS and BOD

Section 301(h)(1) of the CWA, implemented by 40 CFR 125.61(a), requires the existence of water quality standards applicable to the pollutants for which a section 301(h) modified permit is requested, including: (1) water quality standards for biochemical oxygen demand or dissolved oxygen; (2) water quality standards for suspended solids, turbidity, light transmittance, light scattering, or maintenance of the euphotic zone; and (3) water quality standards for pH. Under 40 CFR 125.61(b)(1), the applicant must demonstrate the proposed modified discharge will comply with these standards. State water quality standards applicable to the Goleta discharge are specified in the California Ocean Plan (COP). The applicant did not request a modification for pH, so it is discussed under section C.1. Attainment of Other Water Quality Standards and Criteria.

1. Natural Light

The applicant requests modified effluent limits for total suspended solids. Increased total suspended solids concentrations associated with municipal discharges can cause a decrease in light penetration in the water column. Chapter II of the COP requires "natural light shall not be significantly reduced at any point outside the initial dilution zone as the result of the discharge of waste." Under the existing permit, Goleta collects light transmittance data at both offshore and down-plume monitoring stations and reports the results at 1-meter depth intervals from 1 to 30 meters. EPA reviewed quarterly light transmittance profiles over the permit term and compared the light transmittance at the zone of initial dilution (plume station WC-ZID) with the light transmittance at offshore stations B1 through B6. Station WC-ZID is located 25 meters from the outfall in the direction of the wastewater plume. Stations B1 through B6 are located between 1,500 meters west of the outfall to 3,000 meters east of the outfall. A map of receiving water monitoring stations, Figure IIB-1 of the application, is attached in Appendix A. Table 9 shows the percent reduction in light transmittance at station WC-ZID compared to offshore stations, averaged over all depths.

Table 9. Percent reduction in light transmittance at station WC-ZID, relative to offshore stations. (Negative values indicate light transmittance at station WC-ZID is higher than at other stations).

Quarter	WC-ZID vs B1	WC-ZID vs B2	WC-ZID vs B3	WC-ZID vs B4	WC-ZID vs B5	WC-ZID vs B6
January 2005	59%	33%	-10%	-274%	35%	35%
April 2005	3%	1%	1%	1%	1%	1%
July 2005	0%	0%	0%	0%	0%	3%
October 2005	0%	0%	1%	1%	1%	-1%
January 2006	4%	-5%	-3%	4%	1%	-7%
April 2006	-5%	-5%	-3%	-4%	-3%	-4%
July 2006	2%	1%	1%	2%	0%	1%
October 2006	1%	1%	2%	1%	2%	1%
January 2007	4%	-1%	-4%	0%	1%	-1%
April 2007	0%	-2%	-5%	1%	-5%	-5%
July 2007	-1%	1%	1%	1%	0%	1%
October 2007	1%	1%	1%	1%	-2%	1%
January 2008	1%	1%	1%	1%	1%	-4%
April 2008	-3%	-1%	5%	4%	3%	6%
July 2008	0%	0%	0%	-1%	-1%	-1%
October 2008	3%	2%	2%	0%	2%	1%

Except for January 2005, light transmittance at station WC-ZID is not significantly different and sometimes measures slightly higher than at offshore stations. The National Oceanic and Atmospheric Administration recorded historically heavy rainfall in Santa Barbara County in January 2005 (NOAA, 2009), which may explain the large differences and variability in light transmittance between stations for the month. Disregarding the January 2005 results, the highest reduction in light transmittance (6%) occurred in April 2008. Six percent reduction is small compared to the natural variability in the Southern California Bight. In 1994, researchers found 30% variability in surface light transmittance and 55% variability in bottom light transmittance in a survey of 261 sites along the southern California coastal shelf (Santangelo, R.V., 1994).

The percent removals of total suspended solids in Goleta effluent in January 2005 and April 2008 were 83.5% and 83.0%, respectively. Both meet the COP discharge requirement of 75%, which is also the existing permit limit. Additionally, the monthly average TSS effluent concentrations in January 2005 and April 2008 were 40.7 mg/l and 49.6 mg/l, respectively. These concentrations are similar to concentrations measured throughout the permit term and also meet the existing permit limit. EPA concludes the outfall is not significantly affecting the ambient light transmittance and the discharge meets the requirements of the COP.

2. Dissolved Oxygen

The applicant also requests modified effluent limits for biochemical oxygen demand, which can affect the ambient dissolved oxygen concentration. Chapter II of the COP requires "the dissolved oxygen concentration shall not be depressed more than 10 percent

from that which occurs naturally, as the result of the discharge of oxygen demanding waste materials.”

Both the applicant and EPA modeled the potential for: (1) dissolved oxygen depression following initial dilution during the period of maximum stratification (or other critical period); (2) farfield dissolved oxygen depression associated with biochemical oxygen demand exertion in the wastefield; (3) dissolved oxygen depression associated with steady-state sediment oxygen demand; and (4) dissolved oxygen depression associated with the resuspension of sediments. EPA discusses each evaluation in the following paragraphs and Table 10 summarizes the results.

a. Dissolved Oxygen Depression upon Initial Dilution

Using the method described in the 1994 Amended Section 301(h) Technical Support Document (ATSD), the applicant predicted a dissolved oxygen depression following initial dilution of 0.07 mg/l, assuming an immediate dissolved oxygen demand (IDOD) of 2 mg/l, initial dilution of 137:1, ambient dissolved oxygen concentration of 7.8 mg/l and effluent dissolved oxygen concentration of 0 mg/l. The applicant produced the 137:1 initial dilution with the PLUMES model, assuming ambient density, thermocline stratification, and no current. The predicted final dissolved oxygen concentration after initial dilution was 7.73 mg/l, which means a 0.07 mg/l or 0.9% reduction in dissolved oxygen.

EPA recalculated this depression for both the critical initial dilution of 55:1 and the 122:1 dilution used for COP compliance, as well as a range of ambient dissolved oxygen concentrations (4 – 9 mg/l). EPA assumed an IDOD of 2 mg/l and an effluent concentration of 0 mg/l. With an initial dilution of 122:1, the predicted dissolved oxygen depression following initial dilution was 0.09 mg/l or a 1% reduction in dissolved oxygen. For the critical initial dilution of 55:1, the predicted dissolved oxygen depression following initial dilution was 0.20 mg/l or a 2% reduction in dissolved oxygen. Thus, even under the worst-case conditions, the maximum predicted reduction in dissolved oxygen is less than 3%.

b. Dissolved Oxygen Depression due to BOD in the Farfield

After initial dilution, dissolved oxygen may be consumed by biochemical oxygen demand in the wastefield. The applicant evaluated whether the dissolved oxygen standard (DO_{STD}) is less than or equal to the dissolved oxygen concentration after initial dilution (DO_f) minus the biochemical oxygen demand after initial dilution (BOD_f) and multiplied by a factor of 1.46. This equation is presented in the ATSD:

$$DO_{STD} \leq DO_f - (BOD_f * 1.46)$$

The ATSD states that if the inequality is true, the discharge will not violate the dissolved oxygen standard due to BOD exertion and no further analysis is necessary. To evaluate this inequality, the applicant assumed a DO_{STD} of 7.0 mg/l, or 90% of the assumed ambient dissolved oxygen concentration (7.8 mg/l). The DO_f computed in the above section is 7.73 mg/l. The applicant calculated a 0.67 mg/l BOD_f , assuming an effluent BOD concentration of 62.7 mg/l, an initial dilution of 137:1, and an ambient BOD

concentration of 0 mg/l. Goleta applied the variables to the inequality yielding a value of 7.1 mg/l, which is greater than the DO_{STD} , thus the inequality is true.

EPA re-evaluated the inequality and found it to be true only at higher initial dilutions, such as the 137:1 dilution used by the applicant. The inequality was false for the critical initial dilution of 55:1 and the 122:1 dilution used for COP compliance.

Goleta conducted the entire analysis for the 1993 permit application and Tetra Tech did a recalculation for EPA in the 1993 Tetra Tech Technical Review (TTR). For the 1993 application, Goleta predicted a 0.03 mg/l depression due to BOD. The TTR used more conservative variables for the analysis, assuming a BOD effluent concentration of 98 mg/l, which corresponds to the modified permit limit, a critical initial dilution of 55:1, and an ambient dissolved oxygen concentration of 8.0 mg/l. The TTR predicted the dissolved oxygen depression due to BOD to be less than 0.01 mg/l. Assuming the 8.0 mg/l ambient concentration, 0.01 mg/l is equivalent to a dissolved oxygen depression of 0.13%, which is minimal when compared to the "no more than 10%" COP water quality objective.

c. Steady-State Sediment Oxygen Demand

The applicant calculated the steady-state sediment oxygen demand using the method described in the ATSD. Assumptions from the ATSD include an oxygen:sediment stoichiometric ratio (a) of 1.07 mg O_2 /mg sediment and a sediment decay rate constant (k_d) of 0.01/day. Goleta also assumed a steady-state organic mass accumulation (S) of 30.6 g/m², a 1,560-meter length deposition area (X_M), and a minimum current speed of 2.3 cm/s. Both the organic mass accumulation and length of deposition come from results of the sediment deposition modeling discussed below, in section C.1.c. Goleta chose a dilution caused by horizontal entrainment of ambient water (D) of 3 based on Table B-5 of the ATSD, using a travel time of 3.3 hrs and an initial field width of 480 meters. The average depth of water column influenced by sediment oxygen demand (H) of 1.86 m was calculated with a vertical diffusion coefficient (ϵ_z) of 0.8 cm²/s. Incorporating these variables into the method described in the ATSD, Goleta predicted an oxygen depletion due to steady-state sediment oxygen demand of 0.05 mg/l. Assuming that the dissolved oxygen is typically near 6 mg/l at the bottom of the water column, this equates to a dissolved oxygen reduction of less than 1%.

EPA recalculated the steady-state sediment oxygen demand, using the organic mass accumulation of 12.4 g/m² from EPA's re-evaluation of the sediment deposition modeling discussed below, in section C.1.c and a more conservative dilution of 1.5 based on Table B-5 of the ATSD. Incorporating these variables, EPA predicted a dissolved oxygen reduction of 0.04 mg/l. Based on these results, EPA finds Goleta's model overestimates the steady-state sediment oxygen demand.

d. Sediment Oxygen Demand due to Sediment Resuspension

Goleta calculated the sediment oxygen demand due to resuspension based on the method described in the ATSD. Assumptions from the ATSD include a decay rate of resuspended sediments (k_r) of 0.1/day, a dilution (D) of 1, and a vertical diffusion coefficient when resuspension is occurring (ϵ'_z) of 5 cm²/s. The average concentration of resuspended organic sediment (S_r) of 18.2 g/m² is based on the 90-day organic mass accumulation

from the sediment deposition modeling. Goleta calculated the depth of the water column containing resuspended materials (H) and finally the oxygen depletion (ΔDO) for 3-hour increments (t) up to 24 hours. The oxygen depletion ranged from 0.06 mg/l at 3 hours to 0.17 mg/l at 24 hours, which, assuming an ambient dissolved oxygen concentration of 8 mg/l, equates to an oxygen reduction of less than 2%.

EPA recalculated the sediment oxygen demand due to resuspension, using the 90-day organic mass accumulation of 7.3 g/m² from EPA's re-evaluation of the sediment deposition modeling discussed below, in section C.1.c. EPA determined a dissolved oxygen reduction range of 0.03 mg/l at 3 hours to 0.07 mg/l at 24 hours. Based on these results, EPA finds Goleta's model overestimates the sediment oxygen demand due to sediment resuspension.

Table 10. Summary of worst-case dissolved oxygen depressions associated with the Goleta outfall.

Sources of potential Oxygen Demand	Goleta (mg/l)	EPA (mg/l)
Dissolved Oxygen Depression upon Initial Dilution ¹	0.07	0.20
Dissolved Oxygen Depression due to BOD in the Farfield ²	0.03	0.01
Steady-State Sediment Oxygen Demand	0.05	0.04
Sediment Oxygen Demand due to Sediment Resuspension	0.06 to 0.17	0.03 to 0.07

¹ Goleta's model result is based on a dilution of 137:1, while EPA's result is based on the worst-case dilution of 55:1.

² Goleta's result is from 1990, while EPA's result is from 1993 and based on more conservative variables.

Based on the modeling performed by Goleta and EPA, it is unlikely the outfall will cause a dissolved oxygen depression of more than 10%. EPA also reviewed ambient dissolved oxygen concentrations monitored by Goleta over the permit term and these are discussed in the following section.

e. Dissolved Oxygen Monitoring

Under the existing permit, Goleta collects dissolved oxygen data at both offshore and down-plume monitoring stations and reports results at 1-meter depths from 1 to 30 meters. EPA reviewed quarterly dissolved oxygen profiles over the permit term and compared the concentrations at the zone of initial dilution (plume station WC-ZID) with those at offshore stations B1 through B6. Table 11 shows the percent reduction in dissolved oxygen at station WC-ZID compared to offshore stations, averaged over all depths.

Table 11. Percent reduction in dissolved oxygen at station WC-ZID, relative to offshore stations. (Negative values indicate dissolved oxygen at station WC-ZID is higher than at other stations).

Quarter	WC-ZID vs B1	WC-ZID vs B2	WC-ZID vs B3	WC-ZID vs B4	WC-ZID vs B5	WC-ZID vs B6
January 2005	7%	7%	7%	0%	7%	9%
April 2005	-4%	-2%	-2%	-3%	-3%	-4%
July 2005	1%	3%	3%	1%	2%	-18%
October 2005	4%	9%	8%	7%	4%	-23%
January 2006	9%	3%	3%	5%	3%	-6%
April 2006	8%	10%	10%	2%	11%	15%
July 2006	5%	-1%	-5%	-6%	-5%	-3%
October 2006	1%	2%	2%	1%	2%	-2%
January 2007	0%	-1%	-2%	-3%	-1%	1%
April 2007	-3%	-8%	-17%	-10%	-11%	2%
July 2007	-2%	4%	4%	4%	1%	-4%
October 2007	2%	3%	3%	2%	-2%	2%
January 2008	1%	1%	0%	-1%	-2%	-4%
April 2008	-1%	-9%	-19%	-13%	-7%	-12%
July 2008	0%	0%	-2%	-2%	1%	-3%
October 2008	3%	0%	4%	0%	0%	0%

Dissolved oxygen concentrations at station WC-ZID are not depressed more than 10% from offshore station concentrations, with the single exception of April 2006. The 78.0 % removal of biochemical oxygen demand in Goleta effluent during April 2006 meets the federal primary treatment requirement of 30%, which is also the existing permit limit. The monthly average BOD concentration in April 2006 of 59.0 mg/l is similar to concentrations measured throughout the permit term. Therefore, it is unlikely the Goleta outfall caused the reduction in dissolved oxygen concentration during April 2006.

Based on our review of the modeling and ambient monitoring of dissolved oxygen, EPA concludes the outfall is not affecting the ambient dissolved oxygen concentration and the discharge meets the requirements of the COP.

C. Attainment of Other Water Quality Standards and Impact of the Discharge on Public Water Supplies; Shellfish, Fish and Wildlife; and Recreation

Section 301(h)(2) of the CWA, implemented under 40 CFR 125.62, requires the modified discharge not interfere, either alone or in combination with pollutants from other sources, with the attainment or maintenance of water quality that assures protection of public water supplies; protection and propagation of a balanced indigenous population of shellfish, fish, and wildlife; and allows recreational activities in and on the water. In addition, section 301(h)(9) of the CWA, implemented under 40 CFR 125.62(a), requires the modified discharge meet all applicable EPA-approved State water quality standards and, where no such standards exist, EPA's 304(a)(1) aquatic life criteria for acute and chronic toxicity and human health criteria for carcinogens and noncarcinogens, after initial mixing in the waters surrounding or adjacent to the outfall.

1. Attainment of Other Water Quality Standards and Criteria

40 CFR 125.62(a) requires the applicant's outfall and diffuser to be located and designed to provide adequate initial dilution, dispersion, and transport of wastewater such that the discharge does not exceed, at and beyond the zone of initial dilution, all applicable State water quality standards. Where there are no such standards, the discharge must not exceed 304(a)(1) aquatic life and human health criteria. For this review, EPA analyzes the applicable water quality standards and criteria in three categories: pH, toxics and whole effluent toxicity, and sediment quality.

a. pH

Chapter II of the California Ocean Plan (COP) requires "the pH shall not be changed at any time more than 0.2 units from that which occurs naturally." Under the existing permit, Goleta collects pH data at both offshore and down-plume monitoring stations and reports results at 1-meter depths from 1 to 30 meters. EPA reviewed quarterly pH profiles over the permit term and compared the concentrations at the zone of initial dilution (plume station WC-ZID) with those at offshore stations B1 through B6. Table 12 shows the change in pH at station WC-ZID compared to offshore stations, averaged over all depths.

Table 12. Change in pH at station WC-ZID, relative to offshore stations. (Negative values indicate pH at station WC-ZID is lower than at other stations).

Quarter	WC-ZID vs B1	WC-ZID vs B2	WC-ZID vs B3	WC-ZID vs B4	WC-ZID vs B5	WC-ZID vs B6
January 2005	-0.02	-0.02	-0.02	0.01	-0.02	-0.01
April 2005	0.03	0.02	0.02	0.02	0.03	0.03
July 2005	-0.01	-0.02	-0.01	0.00	-0.02	0.06
October 2005	-0.01	-0.04	-0.03	-0.03	0.00	0.17
January 2006	-0.05	-0.01	-0.01	-0.03	-0.01	0.06
April 2006	-0.04	-0.06	-0.04	-0.02	-0.06	-0.09
July 2006	-0.04	0.00	0.02	0.02	0.02	0.02
October 2006	-- ¹	--	--	--	--	--
January 2007	0.00	0.01	0.02	0.02	0.01	0.04
April 2007	0.04	0.06	0.09	0.06	0.07	0.00
July 2007	0.01	-0.02	-0.02	-0.02	-0.01	0.05
October 2007	-0.01	-0.02	-0.01	-0.01	0.02	-0.01
January 2008	0.00	-0.01	0.00	0.00	0.00	0.02
April 2008	-0.02	0.05	0.09	0.07	0.06	0.06
July 2008	0.01	0.00	0.00	0.01	-0.01	0.04
October 2008	-0.02	0.00	-0.01	0.00	0.00	0.02

¹No data was recorded at the WC-ZID station in October 2006, so no comparison was made.

The differences in pH between station WC-ZID and offshore monitoring stations over the permit term do not exceed 0.2 standard units. Thus, the discharge meets the COP requirement for pH.

Goleta takes grab samples of the effluent five days per week to analyze for pH. EPA reviewed effluent monitoring data reported over the permit term in monthly discharge monitoring reports. The minimum pH was 6.9 units and the maximum pH was 7.8 units. These levels achieve the technology-based effluent limits required in both Table A of the COP and federal secondary treatment standards.

Based on the ambient and effluent monitoring data, EPA concludes the discharge will not change the ambient pH more than 0.2 standard units and the applicant meets both water quality standards and technology-based effluent limits for pH.

b. Toxics and Whole Effluent Toxicity

Under the existing permit, Goleta monitors the effluent for priority toxic pollutants and the COP Table B parameters for the protection of marine aquatic life and human health. All Table B parameters for the protection of marine aquatic life are monitored monthly, except selenium and cyanide are monitored annually, total chlorine residual is monitored continuously, and acute and chronic toxicity are monitored quarterly. All Table B parameters for the protection of human health (carcinogens and noncarcinogens) and all the remaining priority toxic pollutants are monitored annually.

EPA compiled the effluent toxics and whole effluent toxicity data for the last permit term, years 2005 through 2008, and compared the highest effluent concentration for each toxic directly to the applicable COP Table B objective and the applicable EPA CWA section 304(a)(1) water quality criterion. EPA conducted this screening to determine if the effluent caused any direct exceedances of water quality standards. EPA screened the highest daily maximum effluent concentration of each parameter against the applicable EPA 304(a)(1) criteria using the critical worst-case dilution of 55:1 for aquatic life criteria and the long-term average dilution of 170:1 for human health criteria. Both the highest 6-month median and highest daily maximum effluent concentrations for each parameter were screened against the applicable Table B objectives using a dilution of 122:1. EPA used the value of the method detection limit for the comparison when a parameter was reported as "nondetect" for the entire permit term.

For all parameters detected at least once in the effluent, EPA found only one parameter, total chlorine residual, to exceed water quality standards over the last permit term. One exceedance of the total chlorine residual instantaneous maximum Table B objective for the protection of aquatic life occurred in September 2007. A 14-minute partial failure of the probe at the front of the chlorine contact chamber caused the concentration of total chlorine residual to swell from < 0.1 mg/l to 13.0 mg/l and then return to < 0.1 mg/l. Goleta promptly replaced the probe.

EPA also reviewed the sensitivity of the method detection limits for the comparison to water quality standards. EPA found the method detection limits for benzidine, 3,3'-dichlorobenzidine, 1,2-diphenylhydrazine, hexachlorobenzene, aldrin, 4,4'-DDT, 4,4'-DDE, dieldrin, heptachlor, heptachlor epoxide, polychlorinated biphenyls (PCBs), toxaphene, and chlordane were not low enough to evaluate effluent quality in relation to water quality standards after initial dilution. EPA determined as of 2008, Goleta achieves method detection limits as sensitive as the minimum levels required by Appendix II of the COP for 4,4'-DDT, 4,4'-DDE, PCBs, and chlordane. The method detection limits for

benzidine, 3,3'-dichlorobenzidine, 1,2-diphenylhydrazine, hexachlorobenzene, aldrin dieldrin, heptachlor, heptachlor epoxide and toxaphene need to be lowered to achieve COP minimum levels. EPA found the 2008 method detection limit for 2,4-dinitrophenol adequate to evaluate water quality standards after initial dilution; however, it should also be lowered to meet the minimum level required by the COP.

Under the existing permit, Goleta conducts quarterly whole effluent toxicity (WET) tests. WET tests determine the aggregate toxic effect of pollutants within a discharger's effluent to aquatic organisms. Goleta uses the fathead minnow (*Pimphales promelas*) to test for acute toxicity and red abalone (*Haliotis rufescens*) to test for chronic toxicity. Over the last permit term, Goleta's effluent did not exceed Table B objectives for acute or chronic toxicity after initial dilution and has consistently met the limits imposed by the existing permit.

Based on this review, EPA concludes the modified discharge meets State water quality standards as required by 40 CFR 125.62(a).

c. Sediment Quality

The accumulation of solids in and beyond the vicinity of the discharge can adversely affect local biological communities. 40 CFR 125.62 requires that following initial dilution, the diluted wastewater and particulates must be transported and dispersed so water use areas and areas of biological sensitivity are not adversely affected. Chapter II of the COP requires "the rate of deposition of inert solids and the characteristics of inert solids in ocean sediments shall not be changed such that benthic communities are degraded."

Both organic and inorganic contaminants can accumulate in sediments. To address this contamination, Chapter II of the COP provides further narrative, requiring "the concentration of organic materials in marine sediments shall not be increased to levels that would degrade marine life," "nutrient materials shall not cause objectionable aquatic growths or degrade indigenous biota," and "the dissolved sulfide concentration of waters in and near sediments shall not be significantly increased above that present under natural conditions."

For the previous 301(h) waiver application, Goleta calculated suspended solids deposition rates for the modified discharge using both the simple method described in the ATSD and the EPA SEDDEP Model. The values and assumptions used in the previous modeling have not changed and are therefore valid for this TDD.

ATSD Sediment Deposition Model

For the ATSD method, Goleta assumed a total suspended solids concentration of 60 mg/l and a discharge flow of 7.7 MGD to calculate a mass emission rate of 1,737 kg/day. The 12-meter height-of-rise of the plume is the result of a PLUMES model simulation which calculated the initial dilution based on a discharge flow of 7.7 MGD. Goleta used current velocities of 9 cm/s upcoast (west), 4 cm/s downcoast (east), and 2 cm/s onshore and offshore, which are typical of the local currents. Particle settling velocities of 0.1, 0.01, 0.006, and 0.001 cm/s are listed in the ATSD for "primary or advanced primary effluent." Goleta assumed effluent solids were 80% organic, 50% of these solids would remain

suspended, and a decay rate constant of 0.01/day. This model assumes effluent sediment particles with a specific fall velocity settle uniformly within an elliptical area.

From these variables and assumptions, Goleta calculated the maximum settling distance from the outfall by particle settling rate, current velocity and direction. Assuming an elliptical area of deposition, area was calculated using the equation: $\text{area} = \pi * \text{length} * \text{width}$. For each particle settling rate, length is equal to the sum of upcoast and downcoast maximum settling distance and width is equal to the sum of onshore and offshore maximum settling distance. From this, Goleta determined mass deposition rates in $\text{g/m}^2/\text{day}$ and finally, the steady-state and critical 90-day accumulations in g/m^2 . Table 13 provides a summary of the ATSD model results. The model predicts the highest organic mass deposition rate of $0.2954 \text{ g/m}^2/\text{day}$ occurs within 2.35 km^2 around the outfall. The predicted depositional pattern is a 1,560 m by 480 m ellipse.

Table 13. Summary of ATSD sediment deposition model results based on 7.7 MGD flow.

Particle Settling Velocity (cm/s)	Area of Deposition (km^2)	Organic Mass Deposition Rate ($\text{g/m}^2/\text{day}$)	Steady State Organic Accumulation (g/m^2)	Peak 90-Day Organic Accumulation (g/m^2)
0.1	2.35	0.2954	30.6	18.2
0.01	235	0.0089	1.1	0.7
0.006	652	0.0021	0.2	0.1
0.001	23,524	0.0001	0.01	0.01

Using the same variables, EPA recalculated the results of the ATSD model. EPA used the equation: $\pi * (\text{length}/2) * (\text{width}/2)$, the area of an ellipse, in order to calculate the area of deposition. EPA's calculations resulted in an organic mass deposition rate of $0.1191 \text{ g/m}^2/\text{day}$, a steady-state organic accumulation of 12.4 g/m^2 , and a peak 90-day organic accumulation of 7.3 g/m^2 . Based on these results, EPA finds Goleta's model overestimates the organic accumulation.

SEDDEP Model

Goleta also calculated sediment deposition using the EPA model SEDDEP. This model incorporates more realistic particle distribution and allows for the use of additional current information and bathymetry. Goleta entered the same values for flow, suspended solids concentration, and height-of-rise of the plume as those used in the ATSD model. The SEDDEP model assumes currents representing the typical minimal flow from April through July. The results of this model were similar to those of the ATSD model. The model predicted a total deposition rate of $0.37 \text{ g/m}^2/\text{day}$. Eighty percent of this loading is assumed to be organic. The predicted elliptical deposition area is 1,067 m by 366 m. From the total deposition rate, Goleta estimated a carbon loading of $0.15 \text{ g C/m}^2/\text{day}$.

Researchers (Maughan and Oviatt, 1993) found alteration of the benthic community in response to the discharge of wastewater solids is related to the rate of organic carbon deposition. Little or no change to the benthic community occurs at deposition rates less than $0.1 \text{ g C/m}^2/\text{day}$. A changed benthic community, meaning an increase in biomass and abundance accompanied by a shift in dominant feeding type, is observed at deposition rates between $0.1 \text{ g C/m}^2/\text{day}$ and $1.0 \text{ g C/m}^2/\text{day}$. A degraded benthic community is

expected at deposition rates greater than 1.5 g C/m²/day. Goleta's estimation of 0.15 g C/m²/day falls just within the organic carbon deposition range for a "changed" benthic community, thus there is some enrichment, but the benthic community is not degraded. EPA's review of sediment monitoring data, discussed in the following sections, further evaluates whether significant accumulation is actually occurring in the area of the outfall.

Sediment Grain Size Characteristics

Physical sediment characteristics, such as particle size and percent fines, affect the biology and chemistry of the local environment. Finer sediments provide habitat for different benthos and infaunal organisms than rocky sediments, and also more easily adsorb contaminants. Goleta provided particle size distributions from offshore monitoring stations B1 through B6 for October 2004 through October 2008 annual surveys in Table IIC-1 of the application. The applicant reports the sediment is comprised of 69-89% sand, 13-34% silt, and 2-6% clay. Station B5, near the zone of initial dilution (near-ZID), has a higher range of percent fines than reference station B6; however, the range of percent fines at near-ZID station B4 is entirely within the range found at reference station B6.

Figure IIC-1 of the application shows the distribution of fine sediments over time by station. All stations, except for B3, show a pattern of increasing fines in October 2005, and then a steady decrease through October 2008. The applicant reports this pattern may be due to deposition of sediments during the historically high rain season of 2005.

Organic Indicators

EPA evaluated annual survey data for total organic carbon, total Kjeldahl nitrogen and acid volatile solids to determine whether the outfall is contributing to organic enrichment in ocean sediments.

Total Organic Carbon (TOC). Total organic carbon is a measurement of organic carbon in sediments. Figure 1 shows sediment concentrations of total organic carbon varied across monitoring stations. Over the permit term, mean concentrations of total organic carbon concentrations ranged from 3,760 µg/g at reference station B6 to 7,210 µg/g at station B1.

Total Kjeldahl Nitrogen (TKN). Total Kjeldahl nitrogen is the sum of organic nitrogen, ammonia (NH₃) and ammonium (NH₄⁺). Figure 2 shows concentrations of total Kjeldahl nitrogen are fairly consistent across offshore monitoring stations but slightly lower at reference station B6. The mean total Kjeldahl nitrogen concentrations ranged from 338 µg/g at reference station B6 to 550 µg/g at station B2.

Acid Volatile Sulfides (AVS). Acid volatile sulfides have a strong effect on the bioavailability and toxicity of metals in sediments. Figure 3 shows concentrations of acid volatile sulfides varied considerably across monitoring stations and over time, with an unusually high peak at station B3 in 2005. Without taking into account this peak at B3, the mean acid volatile sulfide concentrations ranged from 5.57 µg/g at near-ZID station B5, to 8.12 µg/g at station B3.

In this review of sediment concentrations of organics over time, EPA found no obvious spatial or temporal pattern which would indicate a significant carbon, nutrient, or acid volatile sulfide contribution from the outfall.

Trace Metals and Toxic Organics

The COP requires “the concentration of substances set forth in Chapter II, Table B, in marine sediments shall not be increased to levels which would degrade indigenous biota.” In order to evaluate the toxicity of pollutants in local sediments and determine whether the discharge from the Goleta outfall influences the accumulation of these pollutants, EPA evaluated sediment chemistry results from five years (2004-2008) of annual surveys performed during the month of October. In the application, Goleta provides sample results for fifteen trace metals and four complex organics in sediments at offshore monitoring stations B1 through B6. Stations B4 and B5 are located near the zone of initial dilution and station B6 is the reference station.

First, EPA evaluated the frequency and concentrations at which these pollutants are found in the effluent. Then, EPA compared sediment concentrations of pollutants at near-ZID and reference stations. Lastly, EPA compared the data with non-regulatory NOAA sediment quality guidelines developed for the National Status and Trends Program (NOAA, 1999). These NOAA guideline concentrations, listed in Table 14, represent the 10th percentile (or Effects Range-Low) and 50th percentile (or Effects Range-Median) of a toxicological effects database that has been compiled by NOAA for each parameter. The ERL is indicative of the concentrations below which adverse effects rarely occur and the ERM is representative of concentrations above which effects frequently occur.

Table 14. NOAA Sediment Quality Guidelines (ERL = Effects Range-Low; ERM = Effects Range-Median) and the applicant's 2008 sediment method detection limits (MDL).

Parameter	ERL	ERM	MDL (2008) ¹
Arsenic (µg/g)	8.2	70	0.025
Cadmium (µg/g)	1.2	9.6	0.025
Chromium (µg/g)	81	370	0.025
Copper (µg/g)	34	270	0.025
Lead (µg/g)	46.7	218	0.025
Mercury (µg/g)	0.15	0.71	0.01
Nickel (µg/g)	20.9	51.6	0.025
Silver (µg/g)	1	3.7	0.025
Zinc (µg/g)	150	410	0.025
Total DDTs (ng/g)	1.58	46.1	1
Total PCBs (ng/g)	22.7	180	1
Total PAHs (ng/g)	4,022	44,792	1

¹ Applicant's MDLs found in section 10.4 of Goleta NPDES Monitoring and Reporting Program Annual Reports

Table III.H.1.d in the application lists all known industrial sources for pollutants of concern found in the Goleta effluent. Goleta lists additional sources of pollutants in section II.C.1, which include treated municipal and industrial wastewater, stormwater runoff, disposal of dredged materials, aerial fallout, and oil and hazardous material spills.

Trace metals and complex organics in the Goleta effluent are either at low concentrations or below detection limits. For example, Goleta detected low concentrations of mercury in 33 of 51 monthly effluent samples, with a highest daily maximum of 0.25 µg/l.

In sediment, EPA found no significant differences between pollutant concentrations at near-ZID and reference stations. Pollutant concentrations at near-ZID stations B4 and B5 are similar, although station B5 tends to exhibit slightly higher concentrations than station B4. This difference may be due to the higher amount of fine sediments at station B5 than at station B4, as pollutants accumulate more in fine, rather than coarse, sediments. A summary of sediment pollutant concentrations during the last permit term is shown in Table 15.

Table 15. Summary of 2004 through 2008 sediment pollutant concentrations (µg/g unless otherwise specified) at offshore monitoring stations.

	B1	B2	B3	B4	B5	B6
TOC						
Minimum	4,500	4,900	3,600	2,200	3,300	2,200
Average	7,210	6,340	4,840	4,200	6,000	3,760
Maximum	9,100	8,900	6,600	6,400	10,500	4,500
TKN						
Minimum	450	410	310	310	310	210
Average	490	550	436	424	484	338
Maximum	530	690	520	530	600	490
AVS						
Minimum	0.05	1.96	0.36	1.13	0.78	0.05
Average	5.98	7.39	67.1	6.64	5.57	6.88
Maximum	24.5	10.7	303	12.7	11.9	27.0
Aluminum						
Minimum	5,548	6,298	4,669	4,567	5,598	5,121
Average	8,262	9,572	8,134	6,957	9,497	6,508
Maximum	15,900	18,690	16,840	12,900	22,100	10,600
Antimony						
Minimum	0.126	0.129	0.110	0.094	0.118	0.090
Average	0.155	0.195	0.138	0.130	0.197	0.122
Maximum	0.190	0.296	0.170	0.199	0.360	0.160
Arsenic						
Minimum	4.17	4.13	3.64	3.78	3.81	3.38
Average	4.64	5.16	4.51	4.38	4.79	4.39
Maximum	5.10	5.93	5.33	5.01	5.81	5.56
Cadmium						
Minimum	0.281	0.394	0.327	0.226	0.257	0.330
Average	0.377	0.483	0.432	0.352	0.390	0.400
Maximum	0.450	0.610	0.560	0.470	0.560	0.495
Chromium						
Minimum	18.7	22.8	17.4	15.5	18.7	17.4
Average	24.5	28.6	24.3	21.7	28.8	20.5

	B1	B2	B3	B4	B5	B6
Maximum	37.7	42.9	39.2	30.9	56.5	25.9
Hexavalent Chromium						
Minimum	0.05	0.05	0.05	0.05	0.05	0.05
Average	0.05	0.08	0.06	0.06	0.12	0.08
Maximum	0.05	0.10	0.06	0.06	0.19	0.10
Copper						
Minimum	4.94	5.39	4.33	4.51	4.85	2.66
Average	6.02	7.18	5.92	5.86	7.77	4.00
Maximum	8.69	9.99	8.96	7.81	12.90	4.69
Iron						
Minimum	8,813	10,230	8,260	7,289	8,640	6,835
Average	10,506	12,544	10,568	9,109	12,419	8,888
Maximum	15,200	18,100	16,000	12,300	22,500	10,100
Lead						
Minimum	3.13	4.35	2.92	3.62	4.07	2.98
Average	4.25	4.96	4.36	4.01	4.49	3.34
Maximum	5.28	6.19	5.54	4.68	5.50	3.69
Mercury						
Minimum	0.01	0.01	0.01	0.01	0.01	0.01
Average	2.67	3.26	3.40	3.22	3.50	7.73
Maximum	13.3	16.2	16.9	16.0	17.4	38.6
Nickel						
Minimum	14.1	15.4	13.0	10.9	12.0	8.69
Average	16.5	19.6	16.4	13.4	19.1	13.2
Maximum	22.2	25.4	23.2	16.8	34.2	15.6
Selenium						
Minimum	0.290	0.327	0.274	0.201	0.229	0.257
Average	0.587	0.663	0.526	0.519	0.566	0.523
Maximum	0.930	1.39	1.00	1.14	1.25	1.18
Silver						
Minimum	0.025	0.025	0.025	0.025	0.025	0.025
Average	0.073	0.094	0.072	0.074	0.079	0.119
Maximum	0.150	0.171	0.130	0.169	0.165	0.210
Tin						
Minimum	0.318	0.405	0.398	0.365	0.346	0.313
Average	0.545	0.645	0.566	0.605	0.606	0.454
Maximum	0.925	1.08	0.970	0.950	0.930	0.690
Zinc						
Minimum	21.7	24.0	19.7	19.1	20.6	15.3
Average	25.6	31.4	26.3	23.6	30.3	21.8
Maximum	34.0	41.5	36.8	29.9	46.2	25.8
Total DDT (ng/g)						
Minimum	0.00	0.00	0.00	0.00	0.00	0.00
Average	2.16	1.56	2.00	0.92	1.54	1.52

	B1	B2	B3	B4	B5	B6
Maximum	5.40	4.80	6.20	2.00	3.60	5.20
Total Chlordane (ng/g)						
Minimum	--	--	--	--	--	--
Average	--	--	--	--	--	--
Maximum	--	--	--	--	--	--
Total PCB (ng/g)						
Minimum	--	--	--	--	--	--
Average	--	--	--	--	--	--
Maximum	--	--	--	--	--	--
Total PAH (ng/g)						
Minimum	103	0.00	37.4	22.8	42.0	19.4
Average	137	302	109	46.7	96.9	97.1
Maximum	179	944	180	70.1	148	193

¹Not detected

Except for mercury, nickel, and total DDT, trace metals and complex organics are at concentrations below ERL thresholds. Figure 4 shows sediment concentrations of mercury are fairly low and consistent over offshore monitoring stations, except for significantly higher concentrations found in 2005. The mean mercury concentrations at near-ZID stations B4 and B5 were 3.22 and 3.50 $\mu\text{g/g}$, respectively, while the mean concentration at reference station B6 was 7.73 $\mu\text{g/g}$. These concentrations exceed both the ERL and the ERM, and reflect the unusually high levels of mercury in 2005. If we exclude the 2005 concentrations, the mean mercury concentration for survey years 2004, and 2006-2008 is 0.02 $\mu\text{g/g}$, and the maximum mercury concentration is 0.06 $\mu\text{g/g}$, which are both below the ERL threshold. It is unlikely Goleta's discharge caused the high sediment concentrations in 2005, as effluent concentrations during the sediment survey month were low: 0.02 $\mu\text{g/l}$ (or ng/g) daily maximum and 0.05 $\mu\text{g/l}$ (ng/g) 6-month median.

The 2005 mercury concentrations are much higher than the concentrations found during the other annual surveys and this trend is shown in many of the other pollutant profiles. Nickel concentrations in sediment also exhibit higher concentrations in 2005. Figure 5 shows 5 of 30 sediment samples contained nickel concentrations above the ERL, four of which occurred in 2005. The daily maximum and 6-month median effluent concentrations of nickel during the sediment survey month were low, both measuring at 6 $\mu\text{g/l}$ (ng/g). Record levels of rainfall occurring within the Goleta area during 2005 resulted in significant stormwater runoff, which may be responsible for the higher concentrations of pollutants found in sediments during the 2005 survey.

Figure 6 shows 12 of 30 sediment samples contained total DDT concentrations above the ERL; however 15 of the 30 samples were below the detection limit, Goleta did not detect total DDT in any effluent samples, and sediment concentrations at near-ZID and reference stations were not significantly different. DDT and its derivatives were banned for use in the United States in 1972. Thus, contribution of total DDT from the outfall to sediments is minimal.

In summary, EPA found low effluent concentrations, which comply with COP objectives, no significant difference between near-ZID and reference station sediment concentrations, and concentrations in sediment mostly below the ERL. Thus, EPA concludes the outfall is not contributing to increased concentrations of trace metals and complex organics in ocean sediments and those concentrations are below levels which would degrade marine life.

2. Impact of the Discharge on Public Water Supplies

Under 40 CFR 125.62(b), the discharge must allow for the attainment or maintenance of water quality that assures protection of public water supplies. According to the applicant, there are no existing seawater supply intakes within 10 miles of the Goleta discharge. The City of Santa Barbara constructed a desalination facility in 1992 with an intake located 11 miles east of the Goleta outfall; however this facility was mothballed and sections of the facility were sold. Based on the ability of the Goleta discharge to meet water quality standards and the absence of desalination facilities in the vicinity of the discharge, EPA concludes the applicant's proposed modified discharge will have no effect on public water supplies.

3. Impact of the Discharge on Shellfish, Fish, and Wildlife

Under 40 CFR 125.62(c), the applicant's modified discharge must allow for the attainment or maintenance of water quality that assures protection and propagation of a balanced indigenous population of shellfish, fish, and wildlife. A balanced indigenous population must exist immediately beyond the zone of initial dilution and in all other areas beyond the zone of initial dilution where marine life is actually or potentially affected by the applicant's modified discharge. Conditions within the zone of initial dilution must not contribute to extreme adverse biological impacts, including, but not limited to, the destruction of distinctive habitats of limited distribution, the presence of disease epicenter, or the stimulation of phytoplankton blooms which have adverse effects beyond the zone of initial dilution. The term "balanced indigenous population", as defined in 40 CFR 125.58(f), means an ecological community that exhibits characteristics similar to those of nearby, healthy communities existing under comparable but unpolluted environmental conditions; or may reasonably be expected to become re-established in the polluted water body segment from adjacent waters if sources of pollution were removed. In addition to these requirements, Chapter II of the COP states "marine communities, including vertebrate, invertebrate, and plant species, shall not be degraded." EPA's review of the benthic, fish, and macroinvertebrate community structures is discussed in the following sections.

a. Benthic Community Structure

Under the existing permit, Goleta collects five replicate 0.1 m² sediment samples at offshore monitoring stations B1 through B6 on an annual basis in the month of October. From these samples, Goleta determines the abundance, number of species, diversity, richness, dominance, infaunal trophic index, and benthic response index. The 2004 through 2008 benthic community metric results are summarized in Table 16. EPA reviewed the data and performed two-way analyses of variance for each benthic

community metric to determine the effect of Goleta's discharge on the benthic community structure.

Table 16. Summary of 2004 through 2008 Benthic Community Metric Data.

	B1	B2	B3	B4	B5	B6
Number of Species						
Minimum	135	111	143	125	134	139
Average	165	144	155	137	149	157
Maximum	185	174	174	162	177	190
Abundance						
Minimum	582	677	1093	854	741	910
Average	1280	1182	1441	1141	1242	1121
Maximum	2164	1621	1775	1580	1804	1349
Diversity (Shannon)						
Minimum	3.5	3.1	3.4	3.1	3.5	3.4
Average	3.9	3.7	3.6	3.4	3.7	3.7
Maximum	4.2	4.2	3.9	3.7	3.9	4.1
Richness (Margalef)						
Minimum	21	16	20	18	19	20
Average	23	20	21	19	21	22
Maximum	25	23	23	22	23	26
Dominance (Swartz)						
Minimum	19	13	20	16	24	22
Average	32	26	25	21	29	29
Maximum	42	37	30	27	33	34
Infaunal Trophic Index (ITI)						
Minimum	73	72	73	68	72	74
Average	76	77	75	71	75	77
Maximum	80	81	77	72	77	80
Benthic Response Index (BRI)						
Minimum	25	25	23	25	25	24
Average	27	27	26	27	26	26
Maximum	31	28	29	30	27	28

Number of Species and Abundance

The combination of high benthic abundance (number of individuals) due to organic enrichment and a decrease in the number of benthic species near an outfall relative to a reference station would indicate an outfall-related effect. EPA found no significant difference in species abundance or number of species between near-ZID monitoring stations, B4 and B5, and reference station B6.

Species Richness

Goleta calculated Margalef Richness, which equals the number of species divided by the natural log of the abundance. EPA found levels of richness to be similar to those reported in the 1990s, and higher than those reported in the late 1990s.

Species Diversity and Dominance

Low species diversity and high dominance near an outfall relative to a reference station would indicate an outfall-related effect. Shannon Diversity takes into account the number and evenness of species and Swartz Dominance is the minimum number of species representing 75% of the total abundance in a given sample. EPA found significant differences between near-ZID monitoring station B4 and reference station B6 for both metrics. Diversity was higher at the reference station but dominance was also higher at the reference station. Since diversity and dominance are inversely related, and these results do not represent that relationship, these data are indeterminate.

Infaunal Trophic & Benthic Response Indices

Since the above metrics, especially abundance, can be affected by natural temporal variability, the infaunal trophic index (ITI) and the benthic response index (BRI) were developed to better assess benthic community health. Goleta reported both the ITI and the BRI for each monitoring station. EPA found levels of the ITI to be similar to those found in the 1990s. The BRI is a more recently developed index and unlike other indices, has low seasonal variability and is not related to grain size or latitude (Smith, R.W. et al., 2001). BRI thresholds to indicate loss in biodiversity were developed for the Southern California Bight (Smith, R.W. et al., 2001). A BRI at 25 or below indicates reference conditions. The threshold for loss in biodiversity is set at a BRI of 34 and the threshold for loss in community function is set at a BRI of 44. Between 2004 and 2008, BRI values at near-ZID stations, B4 and B5, and reference station B6 were between 24 and 30, ranging between reference conditions and response level 1. According to Smith, R.W. et al., 2001, sites with index values of 25 to 33 represent only minor deviation from reference conditions. A BRI of 33 is actually the maximum score for reference sites in the calibration and validation data sets used for development of the index. EPA also found no significant difference in BRI values between near-ZID stations, B4 and B5, and reference station B6.

As the benthic community metrics indicate no significant outfall effect, EPA finds the outfall is not degrading the benthic community.

b. Fish and Macroinvertebrate Community Structure

Under the existing permit, Goleta conducts duplicate trawls annually at station TB3 (near the outfall) and station TB6 (3,000 meters east of the outfall). From these trawls, Goleta determines the abundance, number of species, diversity, and dominance for both fish and macroinvertebrates. The 2004 through 2008 annual trawl results are summarized in Table 17. EPA reviewed this data to determine the effect of Goleta's discharge on the fish and macroinvertebrate community structure.

Table 17. Summary of Annual Fish and Macroinvertebrate Trawl Data.

Abundance	Fish		Macroinvertebrates	
	TB3	TB6	TB3	TB6
2004	20	118	2	4
2005	5	29	2	1
2006	32	80	5	29

	Fish		Macroinvertebrates	
Abundance	TB3	TB6	TB3	TB6
2007	129	159	4	5
2008	11	7	4	2
Number of Species				
2004	7	13	2	3
2005	3	7	2	1
2006	5	10	2	2
2007	12	9	3	4
2008	4	3	2	1
Diversity				
2004	1.5	1.5	0.6	0.8
2005	1.0	1.3	0.6	0.0
2006	1.0	1.4	0.5	0.4
2007	1.0	1.1	0.8	1.1
2008	1.0	1.0	0.6	0.0
Dominance				
2004	3	3	2	3
2005	3	3	2	1
2006	2	3	2	2
2007	2	2	2	3
2008	2	2	2	1

EPA performed two-way analyses of variance for each community metric and determined there were no significant differences between near-ZID station TB3 and reference station TB6 in abundance, number of species, diversity, or dominance in the fish and macroinvertebrate communities. Thus, EPA concludes the outfall is not degrading the fish and macroinvertebrate community structures.

4. Impact of the Discharge on Recreational Activities

Under 40 CFR 125.62(d), the applicant's modified discharge must allow for the attainment or maintenance of water quality that allows for recreational activities beyond the zone of initial dilution, including, without limitation, swimming, diving, boating, fishing, and picnicking, and sports activities along shorelines and beaches. According to the applicant, there are no restrictions on recreational activities in the vicinity of the discharge, except for an emergency safety zone for commercial shellfish harvesting within a one-mile radius of the discharge point. The following assessment to determine whether the discharge will protect recreational activities consists of EPA's review of both the applicant's bioaccumulation and fish consumption data, and for water contact recreation, the applicant's effluent and water column bacteria data.

a. Bioaccumulation and Fish Consumption

Bioaccumulation is a process by which chemical contaminants undergo uptake and retention in organisms via various pathways of exposure. For example, fishes can accumulate contaminants through adsorption and absorption of dissolved chemicals in the

water or through ingestion or assimilation of contaminants in food. Once a contaminant is incorporated into the tissues of an organism, it may resist metabolic excretion and accumulate. Higher trophic level organisms may then feed on contaminated prey and further concentrate the contaminant in their tissues. This process can lead to concentrations of contaminants in fish tissue that are of ecological and human health concern.

Chapter II of the COP requires, “the natural taste, odor, and color of fish, shellfish, or other marine resources used for human consumption shall not be altered” and “the concentrations of organic materials in fish, shellfish, or other marine resources used for human consumption shall not bioaccumulate to levels that are harmful to human health.”

Annually, Goleta collects speckled sanddab from duplicate trawls at stations TB3 (near the outfall) and TB6 (3,000 meters east of the outfall). From these trawls, Goleta analyzes three replicate samples for each toxic parameter specified in the existing permit. Goleta selected the speckled sanddab for fish muscle and liver bioaccumulation analyses, as it is the most abundant fish species found consistently during the trawls. To determine bioaccumulation in shellfish, Goleta deploys mussel (whole bivalve) arrays at stations B3, B4, and B6, (located 250, 25, and 3,000 meters, respectively, from the outfall), and collects laboratory control mussels at Anacapa Island.

EPA examined concentrations of toxics in fish liver, fish muscle, and whole bivalve tissue sampled annually in October from 2004 to 2008 to evaluate bioaccumulation in the area of the Goleta outfall. The following discussion involves the evaluation of both the spatial and temporal trends and the comparison of concentrations to EPA screening values and California fish contaminant goals. The 15 toxics are discussed by tissue type.

Fish Liver

EPA reviewed concentrations of arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, zinc, total DDTs, total chlordane, total PCBs, aroclors of PCBs, and total PAHs in speckled sanddab liver tissue. The metal with the highest concentration in liver tissue at station TB3 is zinc, with a mean concentration of 53.43 mg/kg dry weight (dw). The complex organic with the highest concentration in liver tissue is total DDT, with a mean concentration of 866.54 µg/kg dw. These concentrations are similar to concentrations Goleta reported during the late 1990s.

EPA looked for spatial and temporal trends in pollutant concentrations that would indicate bioaccumulation. Except for total PCBs, EPA did not observe any spatial or temporal trends in liver tissue pollutant concentrations. Figure 7 summarizes the average concentration of total PCBs in liver tissue from 2004 through 2008. Concentrations at TB3 and TB6 fluctuate and increase together over time. For the five-year period, the overall mean concentrations of total PCBs are 70.57 µg/kg dw at nearfield station TB3 and 68.32 µg/kg dw at reference station TB6. Although increasing over the permit term, these total PCB concentrations in liver tissue are similar to those Goleta reported during the late 1990s. There are no screening values for total PCBs in liver tissue; however, as discussed below, concentrations in muscle tissue meet EPA screening values for recreational fishing. PCBs were banned for industrial use in the United States in 1977.

Goleta did not detect concentrations of total PCBs in any effluent samples. Thus, it is unlikely the outfall is causing PCB bioaccumulation in liver tissue.

Fish Muscle

EPA reviewed concentrations of arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, zinc, total DDTs, total chlordane, total PCBs, arochlors of PCBs, and total PAHs in speckled sanddab muscle tissue. In the following discussion, EPA looks at the spatial and temporal trends of each parameter and compares the concentrations to EPA screening values and California fish contaminant goals.

U.S. EPA has developed recommended target analyte screening values for recreational fishers. These screening values (SVs) are summarized in Table 18 and are defined as "concentrations of target analytes in fish or shellfish tissue that are of potential public health concern and that are used as threshold values against which levels of contamination in similar tissue collected from the ambient environment can be compared. Exceedance of these SVs should be taken as an indication that more intensive site-specific monitoring and/or evaluation of human health risk should be conducted" (USEPA, 2000).

Table 18. Selected U.S. EPA recommended target analyte screening values for recreational fishers. Based on fish consumption rate of 17.5 grams per day, 70 kilograms body weight (all adults), and, for carcinogens, 10^{-5} risk level, and 70-year lifetime.

Target Analyte	Screening Values (mg/kg wet weight)	
	Noncarcinogens	Carcinogens
Arsenic (inorganic)	1.2	0.026
Cadmium	4.0	--
Mercury (methylmercury)	0.3*	--
Selenium	20	--
Total Chlordane (sum of cis- and trans-chlordane, cis- and trans-nonachlor, and oxychlordane)	2.0	0.114
Total DDT (sum of 4,4'- and 2,4'-isomers of DDT, DDE, and DDD)	2.0	0.117
Total PCBs (sum of congeners or arochlors)	0.08	0.02
Total PAHs	--	5.47E-03

*From EPA's tissue-based 304(a)(1) water quality criterion for human health (USEPA, 2001)

The California Office of Environmental Health Hazard Assessment (OEHHA) has developed fish contaminant goals for chlordane, DDTs, dieldrin, methylmercury, PCBs, selenium, and toxaphene. These fish contaminant goals (FCGs), listed in Table 19, are estimates of contaminant levels in fish that pose no significant health risk to individuals consuming sport fish at a standard consumption rate of eight ounces per week (32 grams per day) (Klasing and Brodberg, 2008).

Table 19. Fish Contaminant Goals for selected fish contaminants based on cancer and non-cancer risk using an eight ounce per week (prior to cooking) consumption rate (32 grams per day).

Contaminant	Fish Contaminant Goal ($\mu\text{g/kg}$, wet weight)
Chlordane (mg/kg/day) ⁻¹	5.6
DDTs (mg/kg/day) ⁻¹	21
Methylmercury (mg/kg-day)	220
PCBs (mg/kg/day) ⁻¹	3.6
Selenium (mg/kg-day)	7,400

The metals with the highest concentrations in muscle tissue at station TB3 are zinc and arsenic, with mean concentrations of 11.85 mg/kg dw and 7.04 mg/kg dw, respectively. The complex organic with the highest concentration in muscle tissue is total PAHs, with a mean concentration of 13.13 $\mu\text{g/kg}$ dw.

Except for arsenic and total PAHs, pollutant concentrations in muscle tissue meet EPA screening values. All pollutant concentrations meet the OEHHA fish contaminant goals.

Arsenic. Figure 8 summarizes the average dry weight concentration of arsenic in muscle tissue during October, from 2004 through 2008. Concentrations at TB3 and TB6 are similar, increasing from 2004 to 2005 and then leveling out through 2008. For the five-year period, the overall mean concentrations (dry weight) of arsenic are 7.04 mg/kg at nearfield station TB3 and 6.06 mg/kg at reference station TB6. Corresponding wet weight (ww) concentrations of arsenic in muscle tissue range from 0.104 to 2.07 mg/kg at TB3 and 0.224 to 1.72 mg/kg at TB6. These concentrations exceed the EPA screening values of 1.2 and 0.026 mg/kg ww. There is no OEHHA fish contaminant goal for arsenic. Although these concentrations exceed screening values, arsenic concentrations in fish and other species have been found at concentrations between 0.1 to over 50 mg/kg ww in the Southern California Bight (Mearns et al., 1991). Goleta detected arsenic in only 2 of 51 monthly effluent samples and these two samples were at low concentrations (0.005 mg/l). Reference station concentrations also exceeded screening values. Thus, it is unlikely the outfall is causing bioaccumulation of arsenic in muscle tissue.

Total PAHs. Figure 9 summarizes the average dry weight concentration of total PAHs in muscle tissue during October, from 2004 through 2008. Goleta did not detect total PAHs until 2007. Concentrations at TB3 and TB6 are similar, increasing from 2007 to 2008. For the survey period, the overall mean concentrations (dry weight) of total PAHs are 13.13 $\mu\text{g/kg}$ at nearfield station TB3 and 13.27 $\mu\text{g/kg}$ at reference station TB6. Corresponding wet weight concentrations of total PAHs in muscle tissue range from 2.45 to 5.20 $\mu\text{g/kg}$ at TB3 and 4.42 to 5.65 $\mu\text{g/kg}$ at TB6. Concentrations of total PAHs at TB3 are below the EPA screening level of 5.47 $\mu\text{g/kg}$; however, the 2008 TB6 concentration of total PAHs is above the screening level. There is no OEHHA fish contaminant goal for total PAHs. As concentrations of total PAHs only exceeded screening values at reference station TB6 and Goleta did not detect concentrations of total PAHs in any effluent samples, it is unlikely the outfall is causing bioaccumulation of total PAHs in fish muscle.

EPA observed a temporal trend over the permit term of zinc concentrations in muscle tissue. Figure 10 summarizes the average dry weight concentration of zinc in muscle tissue during October, from 2004 through 2008. Concentrations at TB3 and TB6 increase together over time. For the survey period, the overall mean concentrations (dry weight) of zinc are 11.85 mg/kg at nearfield station TB3 and 13.63 mg/kg at reference station TB6. There is no EPA screening value or OEHHA fish contaminant goal for zinc. Effluent concentrations of zinc also appear to be slightly increasing over time, but consistently meet water quality standards. Additionally, reference station concentrations are increasing and are higher than nearfield station concentrations. Thus, it is unlikely the outfall is causing bioaccumulation of zinc in muscle tissue.

Whole Bivalves

EPA reviewed concentrations of arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, zinc, total DDTs, total chlordane, total PCBs, arochlors of PCBs, and total PAHs in whole bivalve tissue. As with fish tissue, the metal with the highest concentrations in bivalve tissue at near-ZID station B4 is zinc, with a mean concentration of 118.46 mg/kg dw. Zinc concentrations at station B4 are similar to those found at the control station. The complex organic with the highest concentration in bivalve tissue is total DDT, with a mean concentration of 51.13 µg/kg dw at near-ZID station B4. Concentrations of total DDT at the control station were actually higher than those found at station B4.

Except for total PAHs, EPA did not observe any spatial or temporal trends in pollutant concentrations in bivalve tissue. Figure 11 summarizes the average concentration of total PAHs in bivalve tissue during October, from 2004 through 2008. Concentrations at stations B3, B4, B6, and Control (Anacapa Island) increase over time since 2006, with the highest concentrations found at the control station. For the survey period, the overall mean concentrations of total PAHs are 19.69, 17.35, 10.54, and 62.22 µg/kg dw at station B3, near-ZID station B4, station B6, and the control station, respectively. Goleta did not detect concentrations of total PAHs in any effluent samples. Bivalve tissue concentrations at the control station exceed concentrations at near-ZID station B4 and are also increasing over time. Thus, it is unlikely the outfall is causing total PAH bioaccumulation in bivalve tissue.

It should be noted that bivalve tissue concentrations of all complex organics (total DDTs, total chlordane, total PCBs, arochlors of PCBs, and total PAHs) are higher at the control station than at the nearfield stations and concentrations of total chlordane, total PCBs, and total arochlors of PCBs were only detected in 2008. The applicant explained the latter to be due to a change in the laboratory method, involving a larger sample size before extraction.

Conclusion on Bioaccumulation

Based on this review of fish liver, muscle and whole bivalve tissues, EPA finds the modified discharge will comply with COP water quality objectives for biological characteristics of ocean waters. EPA also concludes the modified discharge will allow for the attainment or maintenance of water quality which allows for recreational activities (fishing) beyond the zone of initial dilution.

b. Water Contact Recreation

As stated above, under 40 CFR 125.62(d), the applicant's modified discharge must allow for the attainment or maintenance of water quality which allows for recreational activities beyond the zone of initial dilution, including, without limitation, swimming, diving, boating, fishing, and picnicking, and sports activities along shorelines and beaches. This section describes EPA's review of effluent and water column bacteria monitoring data provided by the applicant, to determine the impact of the discharge on recreational activities.

According to the applicant, recreational activities within a 5-mile radius of the Goleta outfall include sunbathing, snorkeling, scuba diving, surfing, picnicking, swimming, wading, boating, fishing, kayaking, and jet skiing. Much of this recreation takes place at the heavily used Goleta Beach County Park. In addition, occasional boat launching and fishing occur at the Goleta Pier, located just east of the outfall.

The State Water Resources Control Board established water-contact standards for total coliform, fecal coliform, and enterococcus in Chapter II of the COP. These standards are applied in State waters throughout the water column "within a zone bounded by the shoreline and a distance of 1,000 feet from the shoreline or the 30-foot depth contour, whichever is further from the shoreline, and in areas outside this zone used for water contact sports, as determined by the Regional Board (i.e., waters designated as REC-1), but including all kelp beds." Table 20 provides a summary of the water-contact standards from the COP.

Table 20. California Ocean Plan Water-Contact Standards.

Indicator	30-day Geometric Mean (per 100 ml)	Single Sample Maximum (per 100 ml)
Total Coliform	1,000	10,000
Fecal Coliform	200	400
Total coliform when fecal coliform:total coliform ratio > 0.1	--	1,000
Enterococcus	35	104

Goleta disinfects by chlorination and dechlorinates the effluent prior to discharge. The existing NPDES permit requires Goleta to maintain a total chlorine residual of 5 mg/l at the end of the chlorine contact channel. According to data provided in the application, this limit was consistently met over the permit term. The permit also requires Goleta to disinfect the effluent such that no more than 10% of the final effluent samples in any monthly period shall exceed a total coliform density of 2,400 MPN/100ml, and no single sample shall exceed 16,000 MPN/100ml. The permit does not provide effluent limits for fecal coliform or enterococcus; however, monitoring is still required.

Goleta conducts the required monitoring for total coliform, fecal coliform, and enterococcus concentrations in the effluent, offshore water column, and surf zone water column. Samples are taken five days per week from the effluent, quarterly from the offshore stations, and weekly from the surf zone stations. Depending on the season and the potential for rain events to increase the concentration of bacteria, Goleta changes the

number of laboratory dilutions in the analyses to detect and quantify higher concentrations of bacteria. Sometimes the maximum detection is " $\geq 16,000$ MPN/100ml", and sometimes it is " $\geq 1,600$ MPN/100ml". The method detection limit is " < 2 MPN/100ml." The following sections describe EPA's review of effluent, offshore, and surf zone monitoring data.

Effluent

EPA reviewed monthly average and highest monthly single sample maximum effluent data from 2005 through 2009 for total coliform, fecal coliform and enterococcus. One exceedance of the total coliform single sample maximum permit limit ($> 16,000$ MPN/100ml) occurred in February 2008. A break in a chlorine pipe caused the exceedance. Goleta promptly restored the pipe. For this month, Goleta also recorded high single sample maximums of fecal coliform ($> 16,000$ MPN/100ml) and enterococcus ($> 1,600$ MPN/100ml). On average, bacteria concentrations in the effluent were low. For the five-year period, the average total coliform concentration was 60 MPN/100ml, the average fecal coliform concentration was 20 MPN/100ml, and the average enterococcus concentration was 5 MPN/100ml.

Offshore, Plume, and Nearshore

Goleta performs quarterly (January/April/July/October) water column sampling at offshore (B1-B6), plume (WC-ZID and WC-100M), and nearshore (K1-K5) stations. Station WC-ZID is located 25 meters from the outfall in the direction of the wastewater plume and Station WC-100M is located 100 meters from the outfall in the same heading as station WC-ZID. Offshore stations are located between 1,500 meters west of the outfall to 3,000 meters east of the outfall. Nearshore stations are located inshore of the outfall terminus and between 1,200 meters west and east of the outfall at the edge of the kelp bed. Goleta samples at three depths: the surface, middle, and bottom. The middle sampling depths are 12 meters at offshore stations, 16 meters at plume stations, and 9 meters at nearshore stations.

EPA reviewed 2004 through 2008 water column data in comparison to single sample maximum and fecal to total coliform ratio criteria only, because sample frequency did not allow for comparison to 30-day geometric mean criteria. EPA observed one exceedance (measured at 16,000 MPN/100ml) of the single sample maximum criteria for total coliform. The exceedance occurred at the surface of station B6 in the winter (January) of 2004, ten months before the start of the last permit term. Of the 780 samples taken over the five-year period, only 21% were above the method detection limit (2 MPN/100ml). Of these, excluding the one exceedance, only three samples were above 1,000 MPN/100ml: 1,600 MPN/100ml at the surface of station WC-ZID in the winter (January) of 2005, 2,200 MPN/100ml at the bottom of station B5 in the summer (July) of 2005, and 1,700 MPN/100ml at the surface of station B4 in the spring (April) of 2006. The latter measurement exceeded the single sample maximum criteria for total coliform of 1,000 MPN/100ml when the ratio criteria of fecal to total coliform exceeds 0.1. In this case, the ratio of fecal to total coliform was 0.6. EPA found none of the total coliform exceedances at offshore stations to coincide in time with the exceedance in Goleta's effluent.

EPA found one fecal coliform exceedance (measuring at 1,400 MPN/100ml) at offshore, plume, and nearshore stations at the bottom of station B5 in the summer (July) of 2005. The same sample caused the ratio exceedance for total coliform. Of the 780 samples, only 9% (71) were above the detection limit. The maximum plume and nearshore measurements of fecal coliform were 17 MPN/100ml (at station WC-100M) and 30 MPN/100ml (at station K2), respectively. Both of these measurements were found at the surface in the spring (April) of 2006. In comparison, fecal coliform concentrations in Goleta's effluent during July 2005 and April 2006 were low, measuring at 17 and 7 MPN/100ml, respectively.

EPA found no exceedances of the COP criteria for enterococcus in the offshore, plume, and nearshore monitoring data. Only 7% (56) of the 780 samples were above the detection limit. The maximum offshore measurement of enterococcus was 50 MPN/100ml, from the bottom of station B3 in the winter (January) of 2005. The maximum plume measurement was 23 MPN/100ml, from the bottom of station WC-ZID in the spring (April) of 2005, and the maximum nearshore measurement was 80 MPN/100ml, from the middle depth of station K5 in the spring (April) of 2006.

In 2008, no exceedances of total coliform, fecal coliform, or enterococcus occurred at offshore, plume, and nearshore stations. In fact, EPA found no measurements above the detection limit for fecal coliform and enterococcus. For total coliform, only 4% (7 of 156) of the samples measured above the detection limit, with the highest measurement of 50 MPN/100ml occurring in the spring (April) at station B5.

Surf Zone

Goleta also conducts weekly monitoring at surf zone (A, A1, A2, B, C, D, E and Goleta Slough) stations. Surf zone stations are located at the shoreline from Goleta Point to beyond Goleta Slough at 1,000 meters east of the outfall line. EPA reviewed weekly monitoring data from 2004 through 2008 of total coliform, fecal coliform, and enterococcus at the eight surf zone stations. EPA found very few exceedances of water quality standards. Only 1.2%, 2.6%, and 4.8% of samples exceeded the single sample maximum criteria for total coliform, fecal coliform, and enterococcus, respectively. About half of these exceedances occurred at the Goleta Slough monitoring station.

From the applicant's weekly data, EPA calculated 30-day geometric means for January 2004 through December 2008. Samples at the maximum detection limits of " $\geq 1,600$ MPN/100ml" and " $\geq 16,000$ MPN/100ml" were considered equal to values of 1,600 and 16,000 MPN/100ml and samples at the method detection limit of " < 2 " were considered equal to a value of 2 MPN/100ml. Only 11 total coliform, 7 fecal coliform, and 16 enterococcus samples exceeded the 30-day geometric mean criteria, equating to 2.3%, 1.5%, and 3.3% of the samples for each parameter, respectively. More than half of these exceedances occurred at the Goleta Slough station. The majority occurred between January and March 2005, but two of the total coliform exceedances at the Goleta Slough station occurred in January and February 2008. Each of these months correlate with high monthly flow measurements found upstream of Goleta Slough (USGS, 2009) and as mentioned above, NOAA recorded historically heavy rainfall in Santa Barbara County in January 2005 (NOAA, 2009). EPA finds the exceedances at the Goleta Slough surf zone

station are likely due to run-off from storm events and not caused by the discharge of effluent from Goleta's outfall.

Based on this review of effluent and water column data from offshore, plume, nearshore, and surf zone areas, EPA finds bacterial concentrations associated with the discharge of wastewater from the Goleta outfall are not likely to affect recreational uses in the Goleta area.

D. Establishment of a Monitoring Program

40 CFR 125.63 implements section 301(h)(3) of the CWA and requires the applicant to have a monitoring program designed to evaluate the impact of the modified discharge on the marine biota; demonstrate compliance with applicable water quality standards or criteria, as applicable; measure toxic substances in the discharge; and have the capability to implement these programs upon issuance of the 301(h)-modified permit. The frequency and extent of the monitoring program are determined by consideration of the applicant's rate of discharge, quantities of toxic pollutants discharged, and potentially significant impacts on receiving water, marine biota, and designated water uses.

The applicant has a well-established monitoring program, described in section III.F of the application, and has consistently implemented the program. The applicant proposes to keep the existing ambient monitoring program intact, but requests decreased sampling at the surf zone stations. Currently, the applicant samples surf zone stations weekly for total coliform, fecal coliform, and enterococcus. The applicant proposes sampling at the surf zone stations be initiated by a trigger based on the concentration of coliform in the effluent. The applicant requested this change in monitoring frequency during the last permit issuance, but EPA and the Regional Board denied the request.

EPA finds the applicant's existing monitoring program meets the requirements under 40 CFR 125.63 and the applicant has the resources to implement the program. EPA has considered the request for a change in surf zone monitoring frequency, but finds the current monitoring locations and frequency provide the data necessary to determine exceedances of water quality standards at surf zone stations are not associated with the discharge from the Goleta outfall. To maintain a 301(h) waiver, the applicant must meet the requirements of section 301(h)(2) and (3), which Goleta meets by monitoring at the 30-meter contour, the edges of the kelp bed, within the discharge plume, and along the surf zone. Together, data from these stations assists in the detection and measurement of any impacts due to system breaks, spills or ineffective chlorination/dechlorination. EPA also finds necessary the current sampling frequency for ensuring the protection of recreational use, such as that found at the heavily used Goleta Beach County Park.

E. Impact of Modified Discharge on Other Point and Non-point Sources

40 CFR 125.64 implements section 301(h)(4) of the CWA and requires the applicant's proposed modified discharge not result in the imposition of additional treatment requirements on any other point or non-point source. The applicant states no other discharges occur within the same open coastal waters as the Goleta discharge. The only known source of wastewater discharge in the vicinity of the Goleta outfall is the El Estero wastewater treatment plant, located 10 miles to the east, which provides full secondary

treatment and disinfection for its wastewater. For previous applications, the Regional Board determined the Goleta discharge will not affect any other point or non-point source discharges. For the 2009 application, the applicant submitted a letter on May 22, 2009 to the Regional Board requesting the required concurrence under 40 CFR 125.64(b). The granting of the 301(h) variance by EPA's Regional Administrator is contingent upon a determination by the Regional Board that the proposed discharge will not result in any additional treatment requirements on any other point or non-point sources.

F. Urban Area Pretreatment Program

Under 40 CFR 125.65, an applicant serving a population of 50,000 or more that has one or more toxic pollutants introduced into the POTW by one or more industrial dischargers must meet urban area pretreatment requirements. 40 CFR 125.65(b)(1) requires the applicant to demonstrate industrial sources introducing waste into the treatment works are either in compliance with all applicable pretreatment requirements, as described in 40 CFR 125.65(c) and including numerical standards set by local limits, or the applicant has in effect a program that achieves secondary equivalency, as described in 40 CFR 125.65(d). The applicant must also demonstrate that it will enforce these requirements, as required by 40 CFR 125.65(b)(2). As a large discharger, Goleta is subject to these requirements.

Goleta meets the urban area pretreatment requirement under 40 CFR 125.65(b)(1) through establishment of local discharge limits to control toxic pollutants which might be introduced by an industrial source. In implementing these limits, Goleta meets the Applicable Pretreatment Requirement under 125.65(c). As shown in Tables IIH-2 and IIH-3 of the application, Goleta imposes local limits for 44 pollutants and federal categorical limits for the metal finishing and electrical and electronic component categories.

Goleta has seven significant industrial users (SIUs). According to annual and quarterly pretreatment reports, three SIUs had violations of applicable pretreatment requirements during years 2005 through 2008. Two SIUs exceeded a local or federal limit once and compliance was met following issuance of Goleta's Notice of Violation (NOV) and subsequent resampling. The third SIU was in noncompliance three times for copper exceedances, twice for nickel exceedances and once for methylene chloride. The two nickel exceedances occurred within the same year, but the criteria for Significant Noncompliance under 40 CFR 403.8(f)(2)(viii) were not met. Goleta issued NOVs for each exceedance and required resampling. In 2006, the SIU was inspected by an EPA Contractor. EPA concludes Goleta has appropriately used enforcement tools to ensure pretreatment requirements are met and therefore, Goleta meets the requirements of 40 CFR 125.65(b)(2).

G. Toxics Control Program

In accordance with 40 CFR 125.66, the applicant must design a toxics control program to identify and ensure control of toxic pollutants and pesticides discharged in the effluent. Section 301(h) of the CWA requires both industrial and nonindustrial source control programs.

1. Chemical Analysis

40 CFR 125.66(a) requires the applicant to submit a chemical analysis of the current discharge for all toxic pollutants and pesticides defined in 40 CFR 125.58(aa) and (p). The analysis must be performed on two 24-hour composite samples (one dry-weather and one wet-weather). As a result of the established monitoring requirements specified in the existing permit, Goleta monitored certain parameters only in wet-weather months. Goleta conducts regular influent and effluent monitoring following sampling schedules specified in the existing permit. All metals, except for selenium are monitored monthly. Selenium and the remaining toxics, as listed in Table B of the California Ocean Plan, are monitored annually. Both influent and effluent monitoring data are reported in monthly, quarterly, and annual reports to the Regional Board and EPA. Goleta provided effluent data from 2004 through 2008 in electronic format as part of the application.

2. Toxic Pollutant Source Identification

Under 40 CFR 125.66(b), the applicant must submit an analysis of the sources of toxic pollutants identified in section 125.66(a) and to the extent practicable categorize the sources according to industrial and nonindustrial types. The applicant identifies and categorizes the industrial type facilities in the Goleta service area as part of the existing industrial pretreatment program. Table III.H.1 of the application lists the 43 industrial users by classification. Seven companies are listed as Class IV – Significant Industrial Users, and six of these are subject to categorical pretreatment requirements. The nonindustrial source control program is discussed below. Based on this information, EPA concludes the applicant meets the requirements at 40 CFR 125.66(b).

3. Industrial Pretreatment Requirements

Under 40 CFR 125.66(c), applicants with known or suspected industrial sources of toxic pollutants must have an approved industrial pretreatment program in accordance with 40 CFR 403. Goleta's industrial users generate 4 percent of the current flow. EPA approved the applicant's industrial pretreatment program on July 19, 1983. Goleta surveys the service area to determine if any businesses require an industrial wastewater discharge permit, regularly inspects its industrial users based on classification, and reports quarterly status and annual pretreatment reports to EPA and the Regional Board. Goleta also follows up on pretreatment compliance inspections conducted by the Regional Board. Based on this information, EPA concludes the applicant meets the requirements of 40 CFR 125.66(c).

H. Nonindustrial Source Control Program

40 CFR 125.66(d) implements section 301(h)(7) of the CWA and requires the applicant to have a proposed public education program designed to minimize the entrance of nonindustrial toxic pollutants and pesticides into the POTW and develop and implement additional nonindustrial source control programs, at the earliest possible schedule. These programs and schedules are subject to revision by the Regional Administrator during permit review and reissuance and throughout the term of the permit.

Goleta developed and implemented a nonindustrial toxics control program in 1986, which includes semi-annual sampling of wastewater collected from eight manholes, five of

which are in the residential sections of the service area. Samples are monitored for BOD, TSS, ammonia, oil and grease, pH, chlorides, total dissolved solids, trace metals, cyanide, and total toxic organics. Goleta publishes a semi-annual newsletter and holds workshops with local businesses to increase public awareness of plant operations, the sewer collection system, the biosolids program, pretreatment regulations and encourage pollution prevention. Based on this information, EPA concludes the applicant meets the requirements of 40 CFR 125.66(d).

I. Increase in Effluent Volume or Amount of Pollutants Discharged

40 CFR 125.67, which implements section 301(h)(8) of the CWA, states no modified discharge may result in any new or substantially increased discharges of the pollutant to which the modification applies above the discharge specified in the 301(h)-modified permit. The applicant must provide projections of effluent volume and mass loadings for any pollutants to which the modification applies, in five year increments, for the design life of the facility.

Table 21 shows the projections in mass loadings of total suspended solids and biochemical oxygen demand for which the permit modification is requested. The table compares these projections to the proposed modified permit limits.

Table 21. Projected Monthly Average Mass Loadings and Concentrations of Total Suspended Solids and Biochemical Oxygen Demand from the Goleta discharge.

Parameter	Units	2004-2008	2013	2018	Existing and Proposed Permit Limits
TSS	lbs/day	1,035	1,129	707	4,010
	mg/l	34	42	30	63
BOD	lbs/day	1,557	1,694	707	6,240
	mg/l	51	63	30	98

The projected mass loadings and concentrations of total suspended solids and biochemical oxygen demand in the Goleta effluent fall within the existing and proposed 301(h) modified permit limits. Goleta is subject to the terms of a settlement agreement, signed on November 10, 2004 with the Regional Board, requiring the conversion to full secondary treatment by 2014. This explains the projected decrease in mass loadings and concentrations for 2018. The existing permit limits the discharge flow to 7.64 MGD, restricting the effluent volume. Based on this information, EPA concludes the applicant meets the requirements of 40 CFR 125.67.

J. Compliance with Other Applicable Laws

Under 40 CFR 125.59(b)(3), a 301(h)-modified permit shall not be issued where such issuance would conflict with applicable provisions of State, local, or other federal laws or Executive Orders.

1. Coastal Zone Management

40 CFR 125.59(b)(3) requires issuance of a 301(h) modified NPDES permit comply with the Coastal Zone Management Act, 16 U.S.C. 1451 *et seq.* A 301(h) modified NPDES permit may not be issued unless the proposed discharge is certified by the State to comply with the applicable State coastal zone management program(s) approved under the Coastal Zone Management Act, or the State waives such certification.

The applicant notified the California Coastal Commission of its intent to renew the waiver in a letter dated May 22, 2009 and requested a determination of concurrence. The California Coastal Commission concurred on the last waiver in January 2005 and Goleta does not propose any changes in plant operation. The issuance of a 301(h) modified permit for the Goleta discharge is contingent upon California Coastal Commission certification.

2. Marine Sanctuaries

40 CFR 125.59(b)(3) requires issuance of a 301(h) modified NPDES permit comply with Title III of the Marine Protection, Research, and Sanctuaries Act, 16 U.S.C. 1431 *et seq.* A 301(h) modified permit may not be issued for a discharge located in a marine sanctuary designated pursuant to Title III if the regulations applicable to the sanctuary prohibit issuance of such a permit.

There are no federal marine sanctuaries in the vicinity of the Goleta outfall. The closest federal marine sanctuary is the Channel Islands Marine Sanctuary, which is well outside the influence of the outfall.

3. Endangered or Threatened Species

40 CFR 125.59(b)(3) requires issuance of a 301(h) modified NPDES permit comply with the Endangered Species Act, 16 U.S.C. 1531 *et seq.* A 301(h) modified NPDES permit may not be issued if the proposed discharge will adversely impact threatened or endangered species or critical habitats listed pursuant to the Endangered Species Act.

The applicant notified the United States Fish and Wildlife Service (USFWS) and the NOAA National Marine Fisheries Service (NMFS) of its intent to renew the waiver in a letter dated May 22, 2009 and requested a determination of concurrence with the Endangered Species Act. USFWS provided a list of endangered and threatened species which may occur in the vicinity of the discharge to EPA. EPA prepared a biological evaluation for the purposes of consultation under Section 7 of the Endangered Species Act and determined the continued discharge will have "no effect" on the California least tern, western snowy plover, southern sea otter, and tidewater goby. The brown pelican was on the list provided by USFWS; however, it was delisted on November 11, 2009. EPA's biological evaluation will be provided to USFWS for concurrence. EPA will also coordinate with NMFS regarding any listed marine species. The issuance of a 301(h)-modified permit for the Goleta discharge is contingent upon concurrence by the Services.

4. Fishery Conservation and Management

A 301(h)-modified permit shall not be issued where such issuance would conflict with the federal Magnuson-Stevens Fishery Conservation and Management Act, as amended (the MSA), 16 U.S.C. 1801 *et seq.*

The applicant notified the National Marine Fisheries Service of its intent to renew the waiver in a letter dated October 23, 2009 and requested concurrence that the modified discharge is consistent with the Essential Fish Habitat provisions of the Magnuson-Stevens Fishery Conservation and Management Act. The issuance of a 301(h)-modified permit for the Goleta discharge is contingent upon the National Marine Fisheries Service's concurrence.

K. State Determination and Concurrence

In accordance with 40 CFR 125.59(i)(2), no 301(h)-modified permit shall be issued until the appropriate State certification/concurrence is granted or waived, or if the State denies certification/concurrence, pursuant to 40 CFR 124.54.

In May 1984, EPA and the State of California signed a Memorandum of Understanding to jointly administer discharges that are granted 301(h) modifications from federal secondary treatment standards. Under California's Porter-Cologne Water Quality Control Act, the Regional Boards issue waste discharge requirements which serve as NPDES permits. The joint issuance of a 301(h)-modified NPDES permit for the Goleta discharge, which incorporates both the federal 301(h) variance and State waste discharge requirements will serve as the State's concurrence, pursuant to 40 CFR 124.54.

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APPENDIX A – FIGURES

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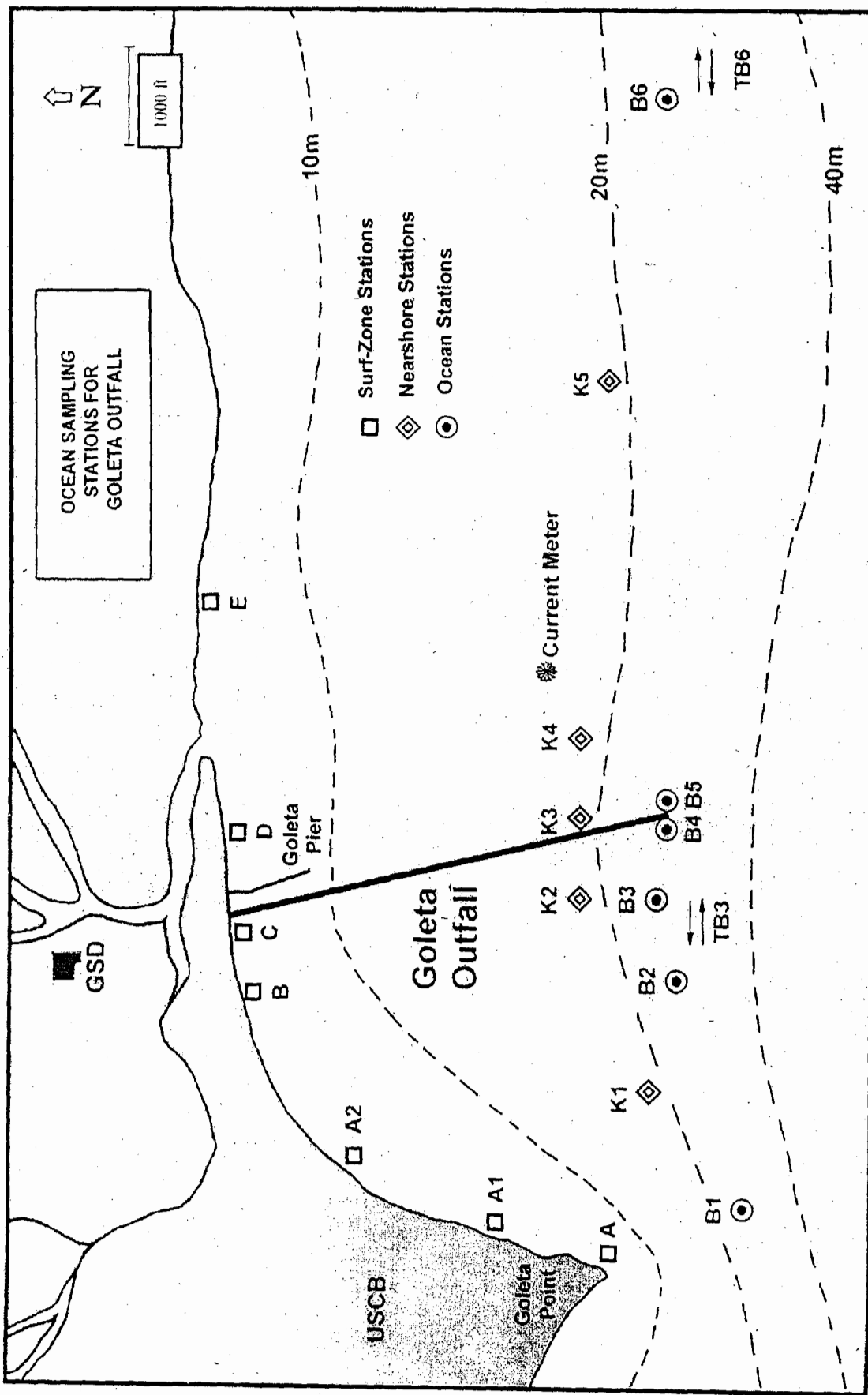


Figure IIB-1. Goleta Sanitary District Receiving Water Monitoring Stations

Figure 1. Total Organic Carbon in Sediment ($\mu\text{g/g}$)

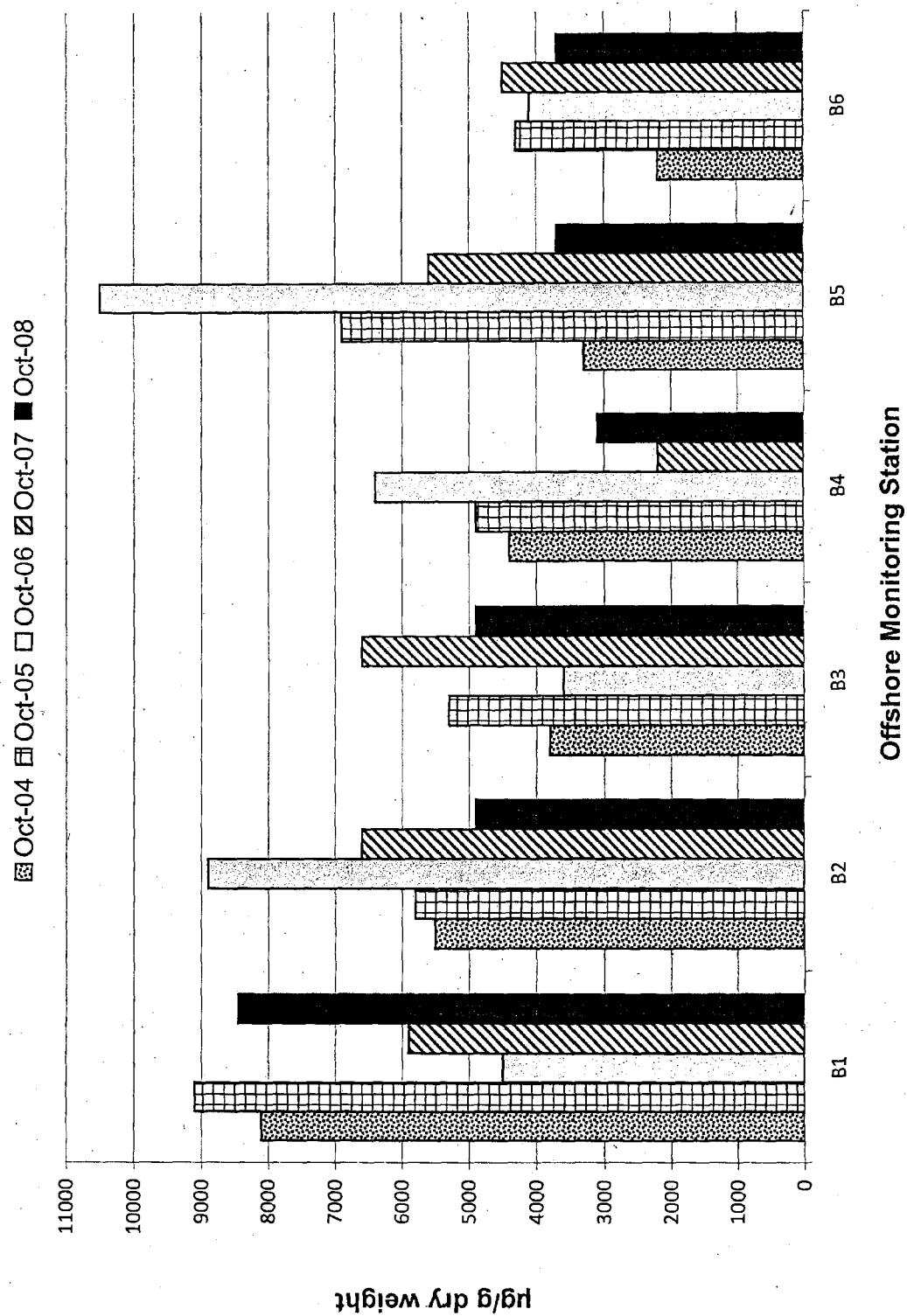


Figure 2. Total Kjeldahl Nitrogen in Sediment ($\mu\text{g/g}$)

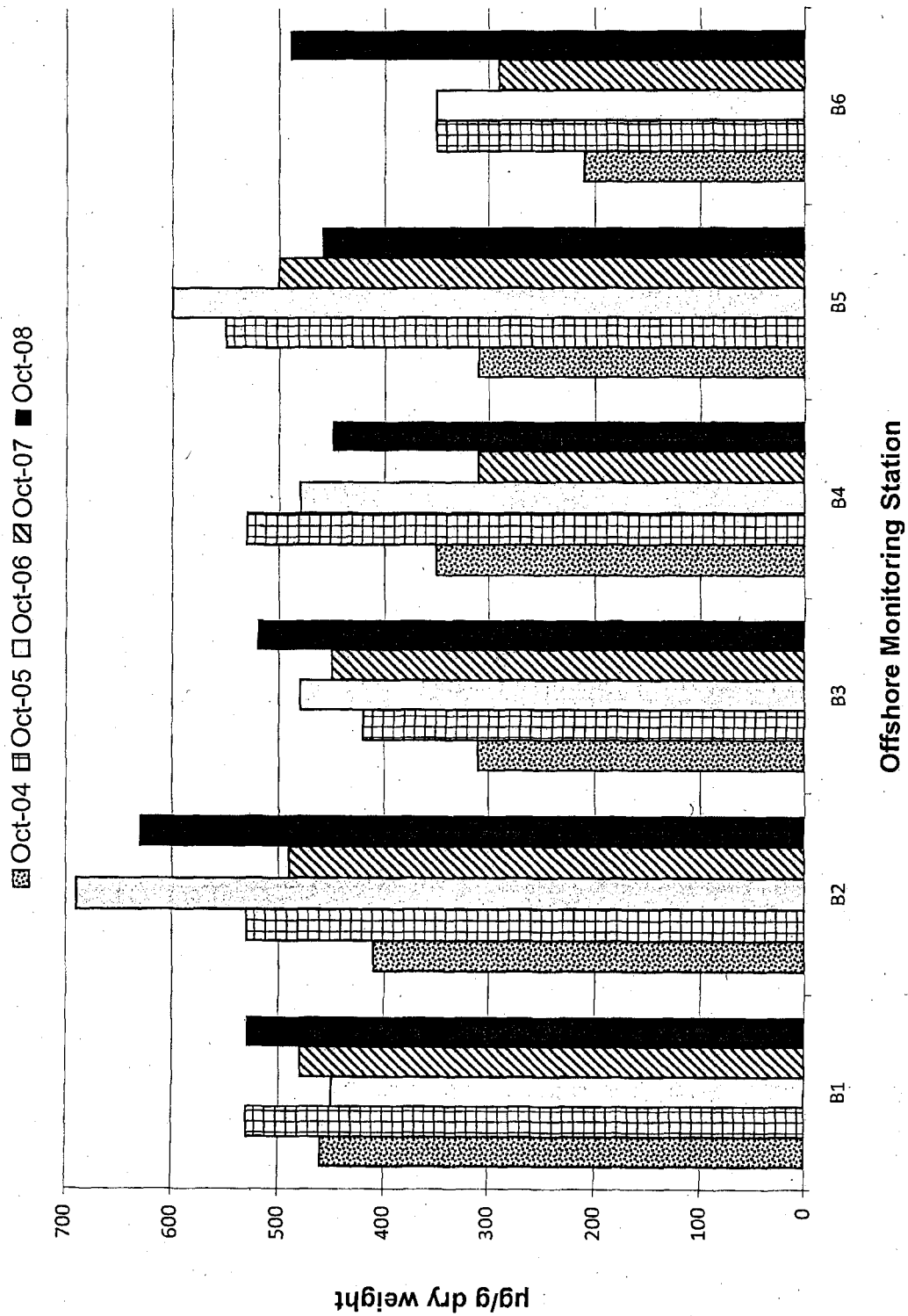


Figure 3. Acid Volatile Sulfide in Sediment ($\mu\text{g/g}$)

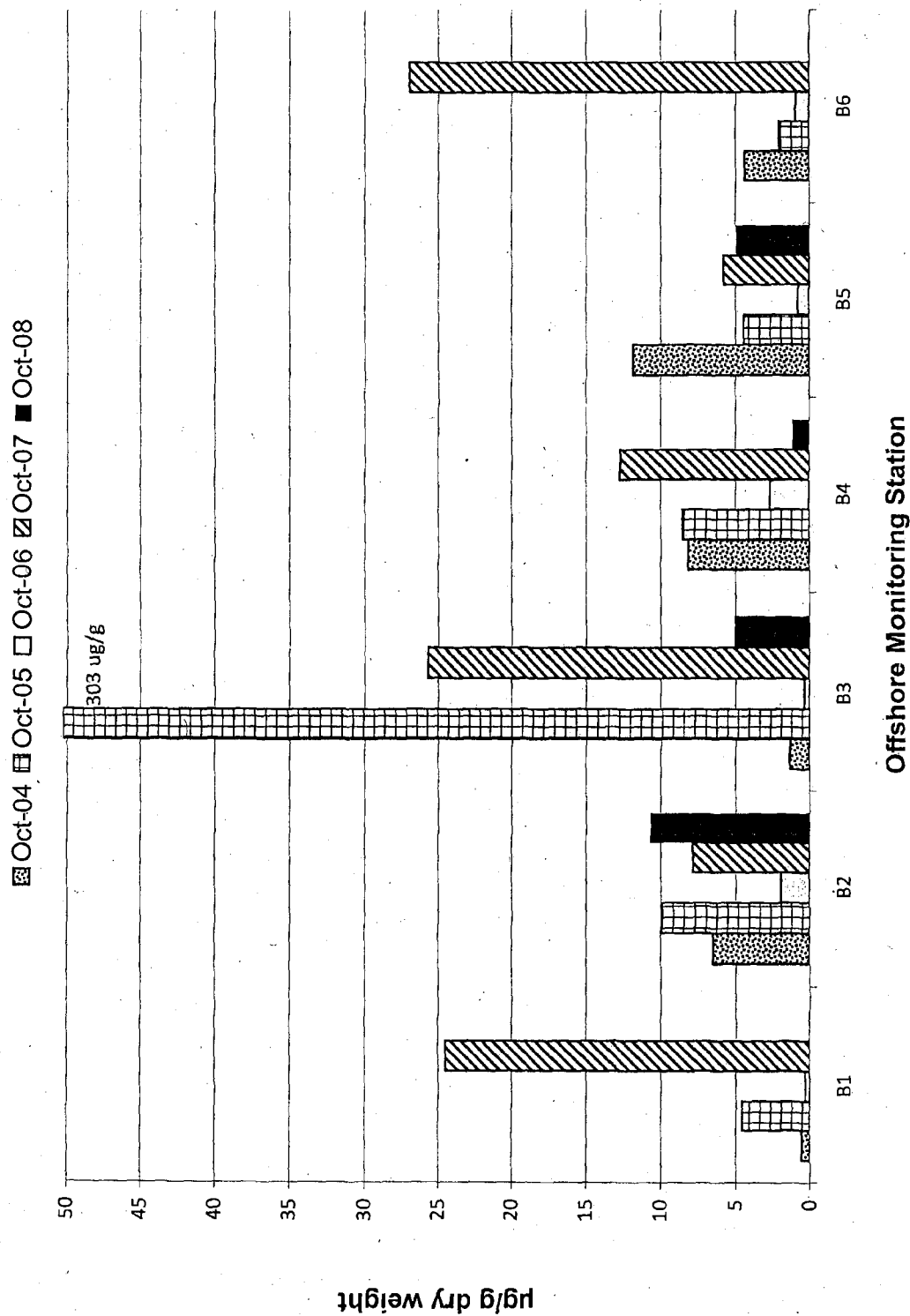


Figure 4. Mercury in Sediment ($\mu\text{g/g}$)

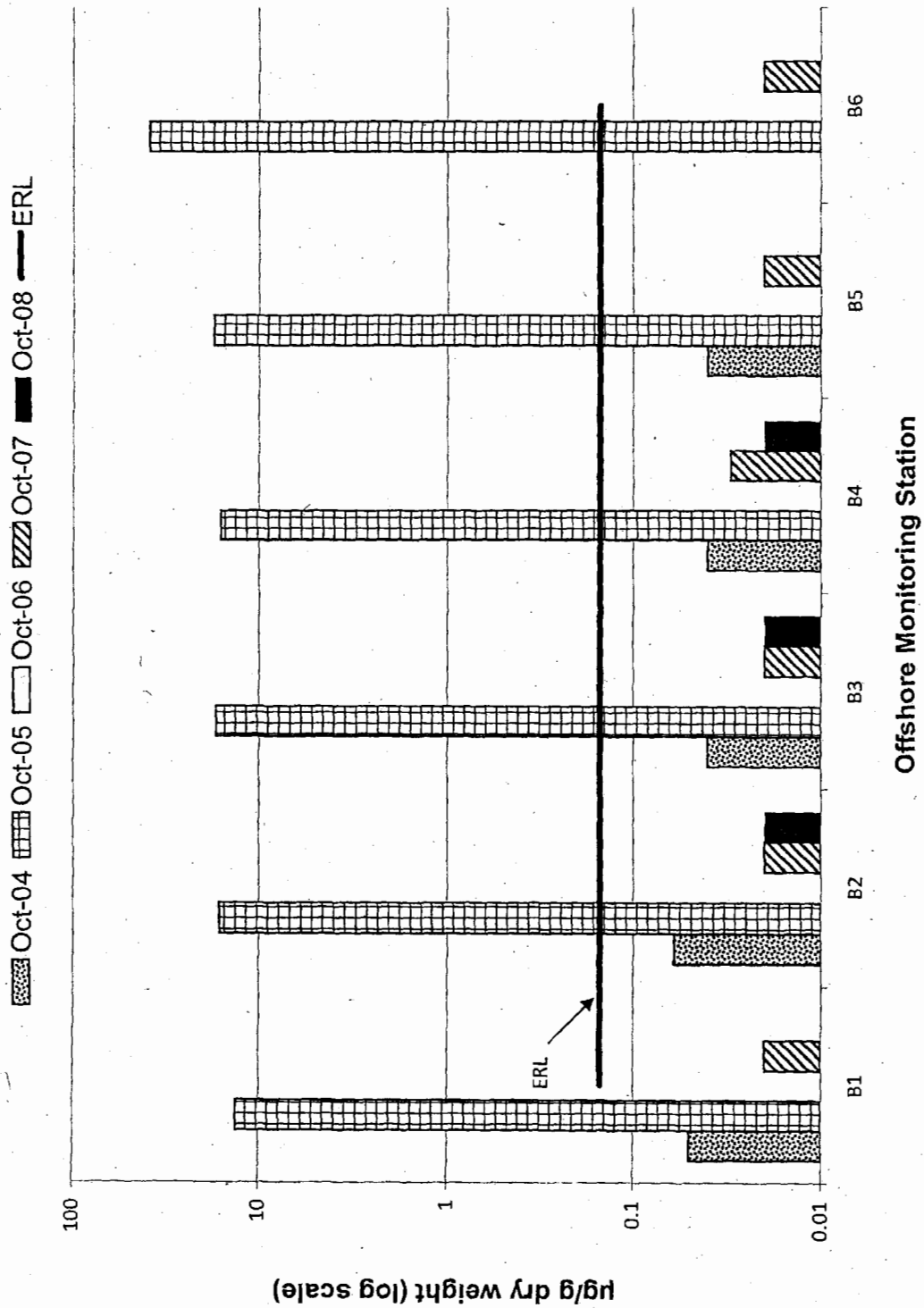


Figure 5. Nickel in Sediment ($\mu\text{g/g}$)

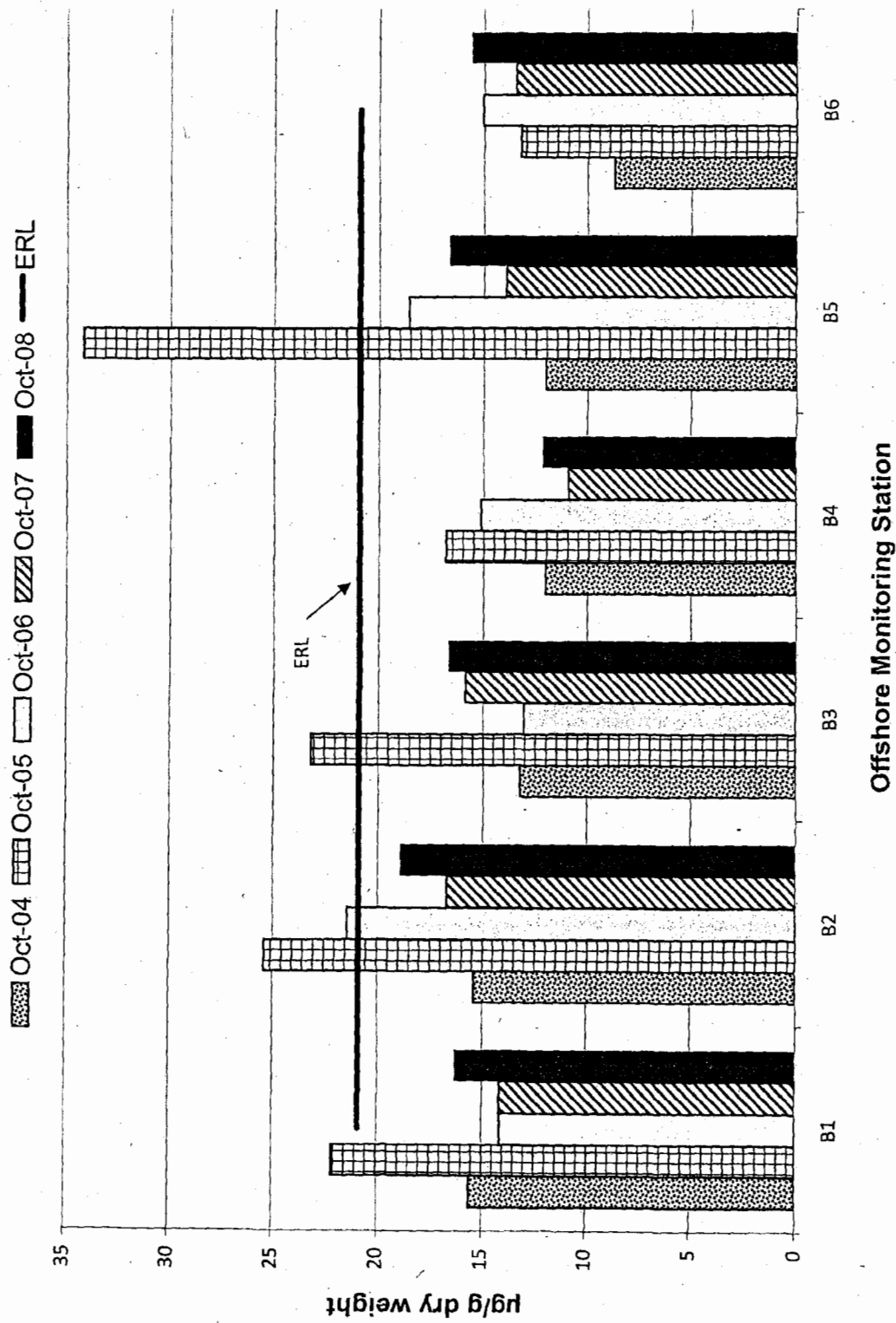


Figure 6. Total DDT in Sediment (ng/g)

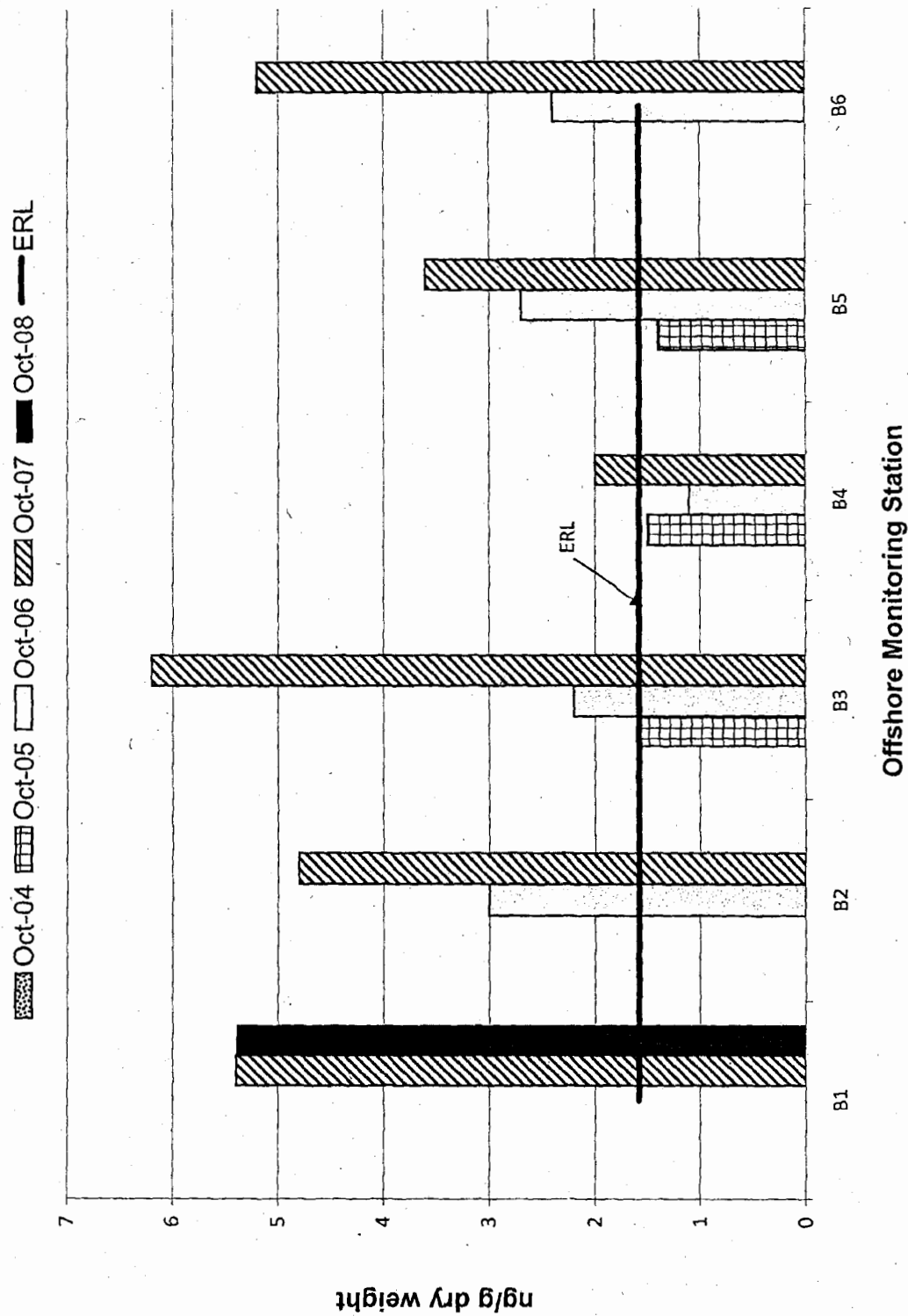


Figure 7. Total PCB concentrations in the liver of Speckled Sanddab collected at offshore trawl stations (2004-2008)

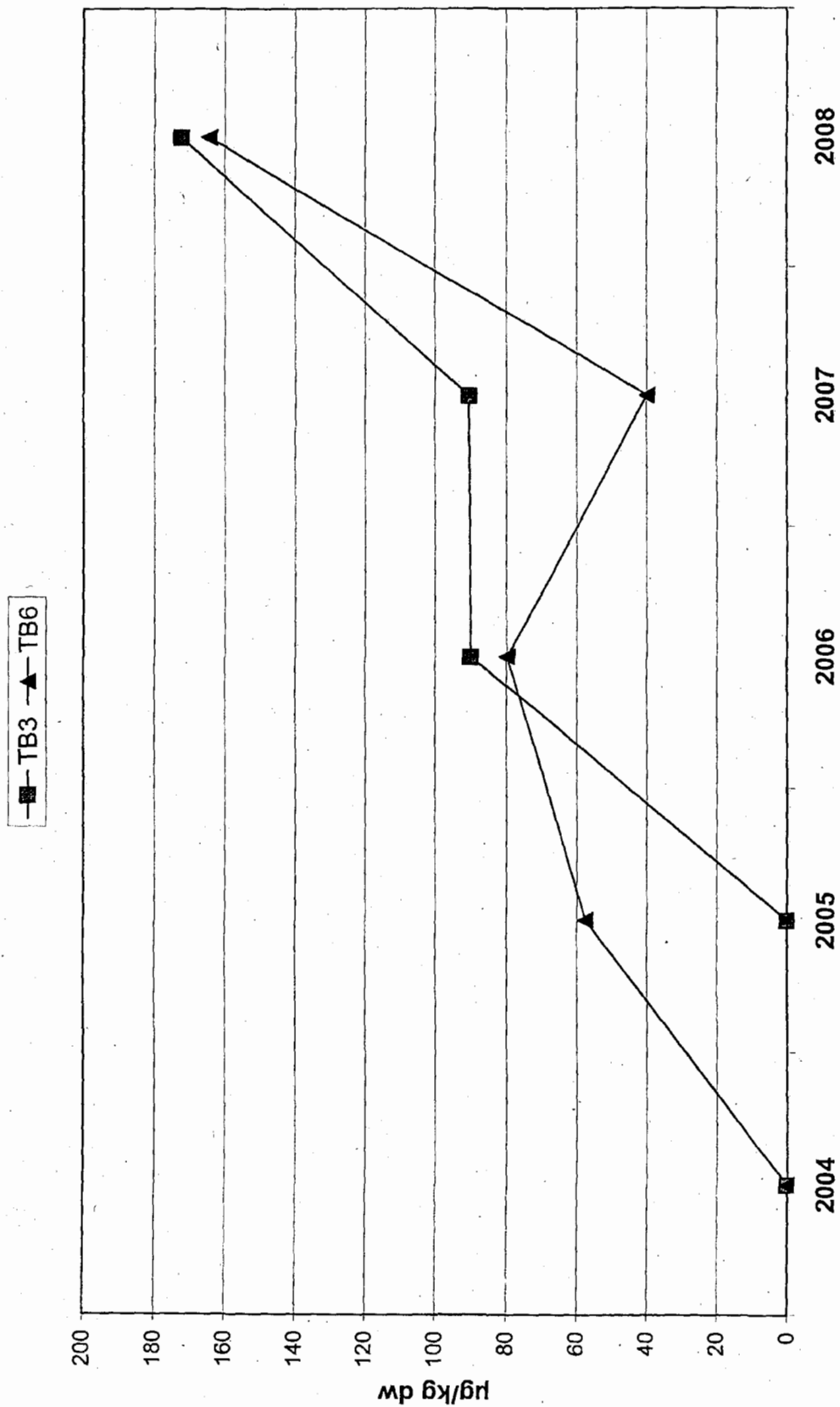


Figure 8. Arsenic concentrations in the muscle tissue of Speckled Sanddab collected at offshore trawl stations (2004-2008)

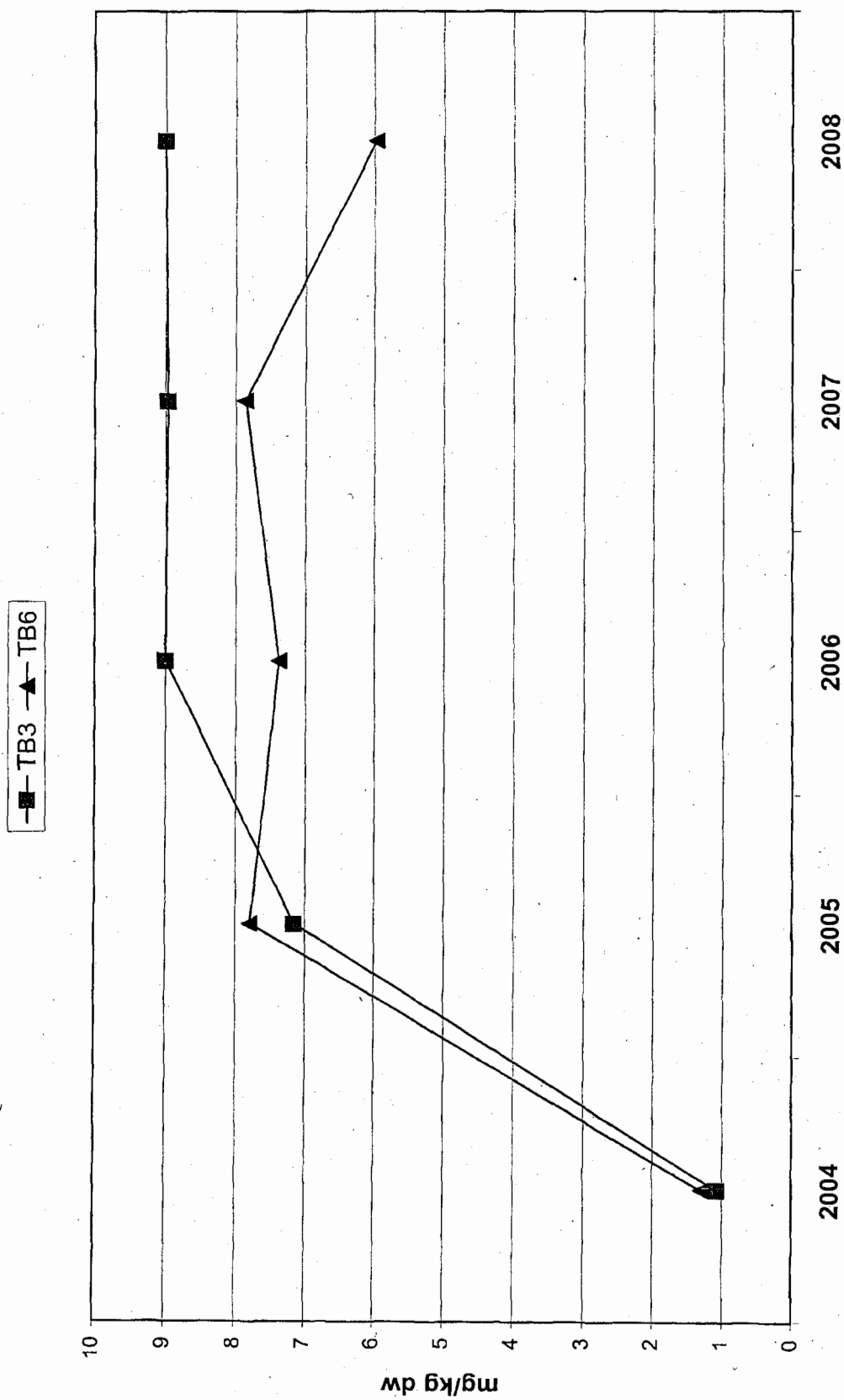


Figure 9. Total PAH concentrations in the muscle tissue of Speckled Sanddab collected at offshore trawl stations (2004-2008)

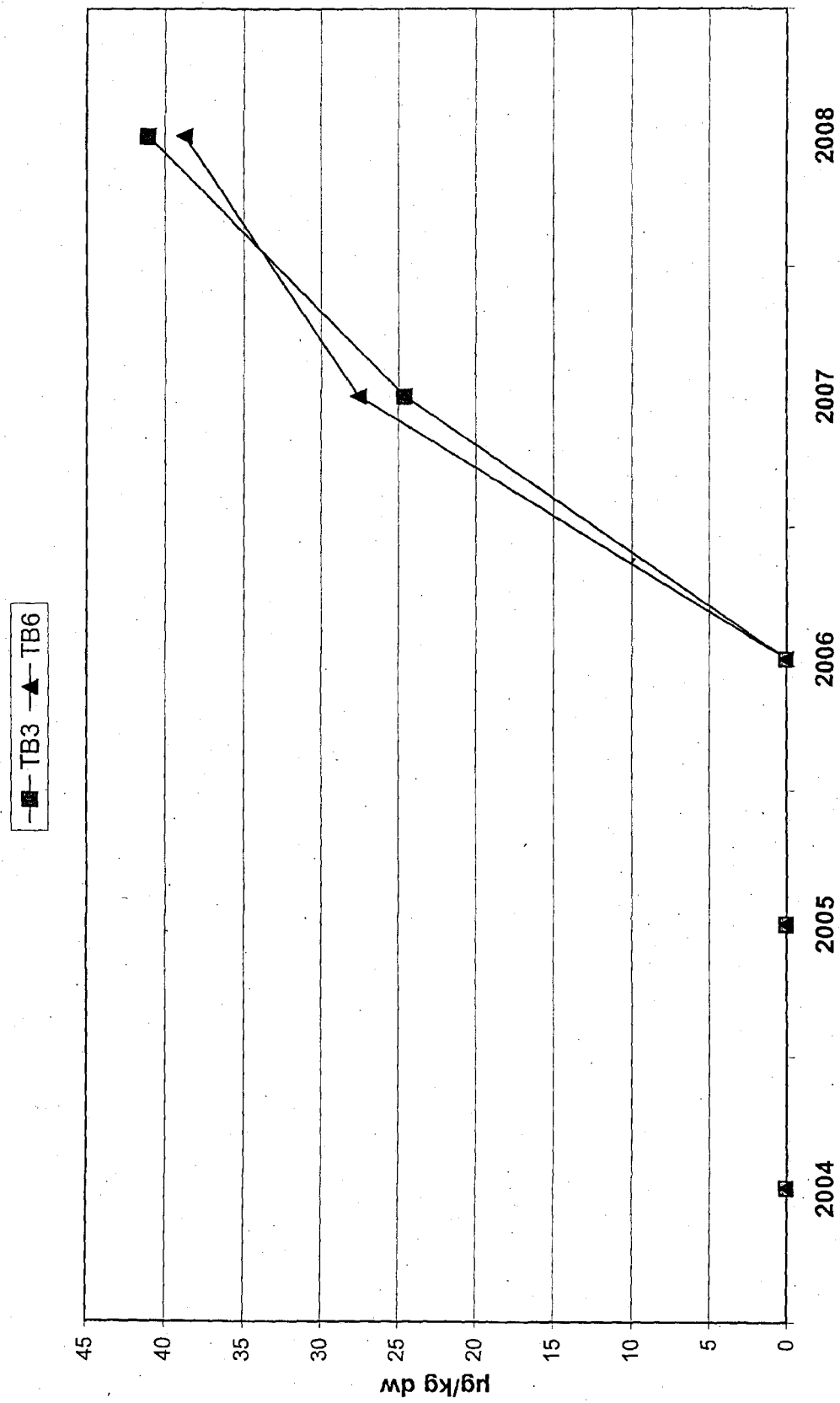


Figure 10. Zinc concentrations in the muscle tissue of Speckled Sanddab collected at offshore trawl stations (2004-2008)

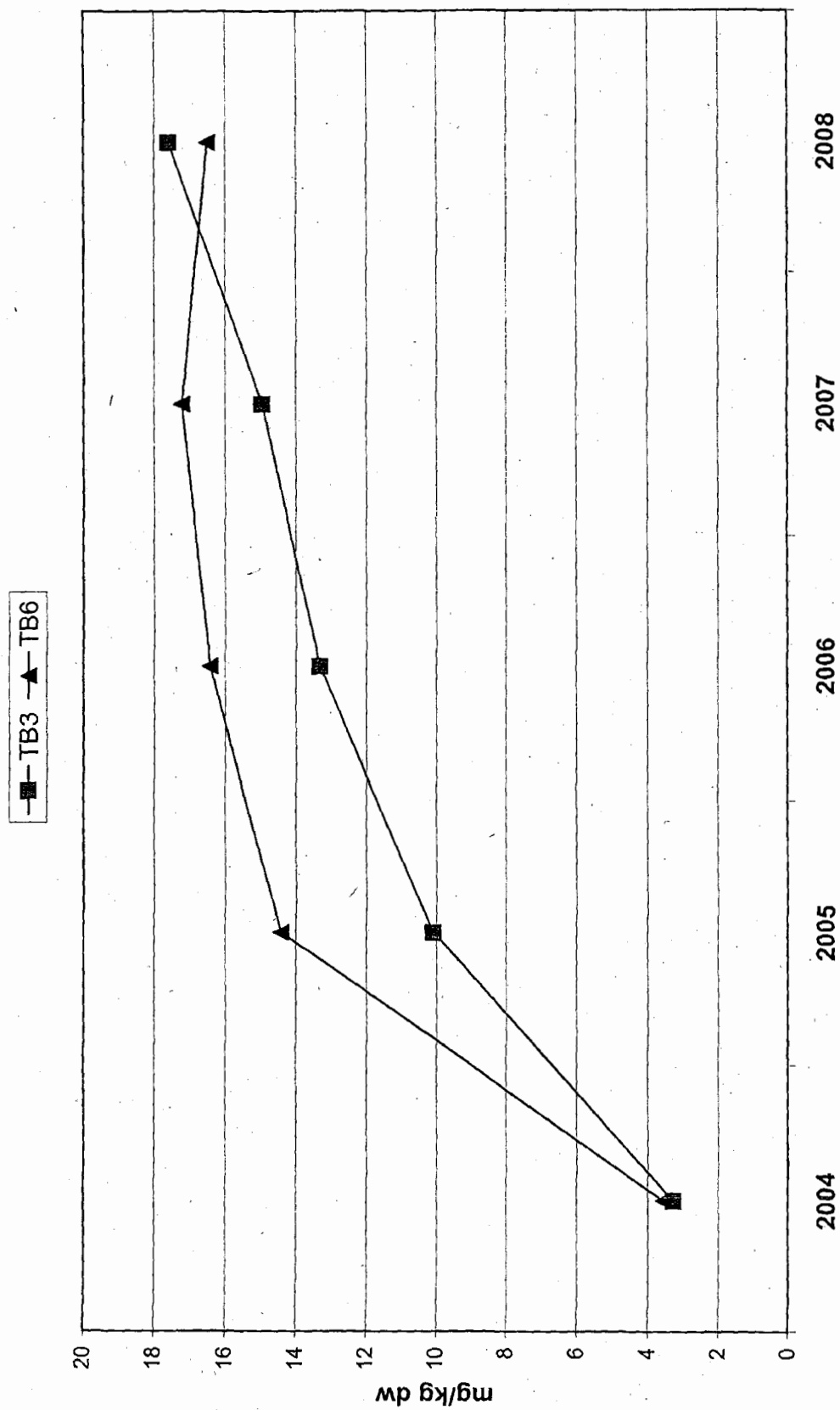
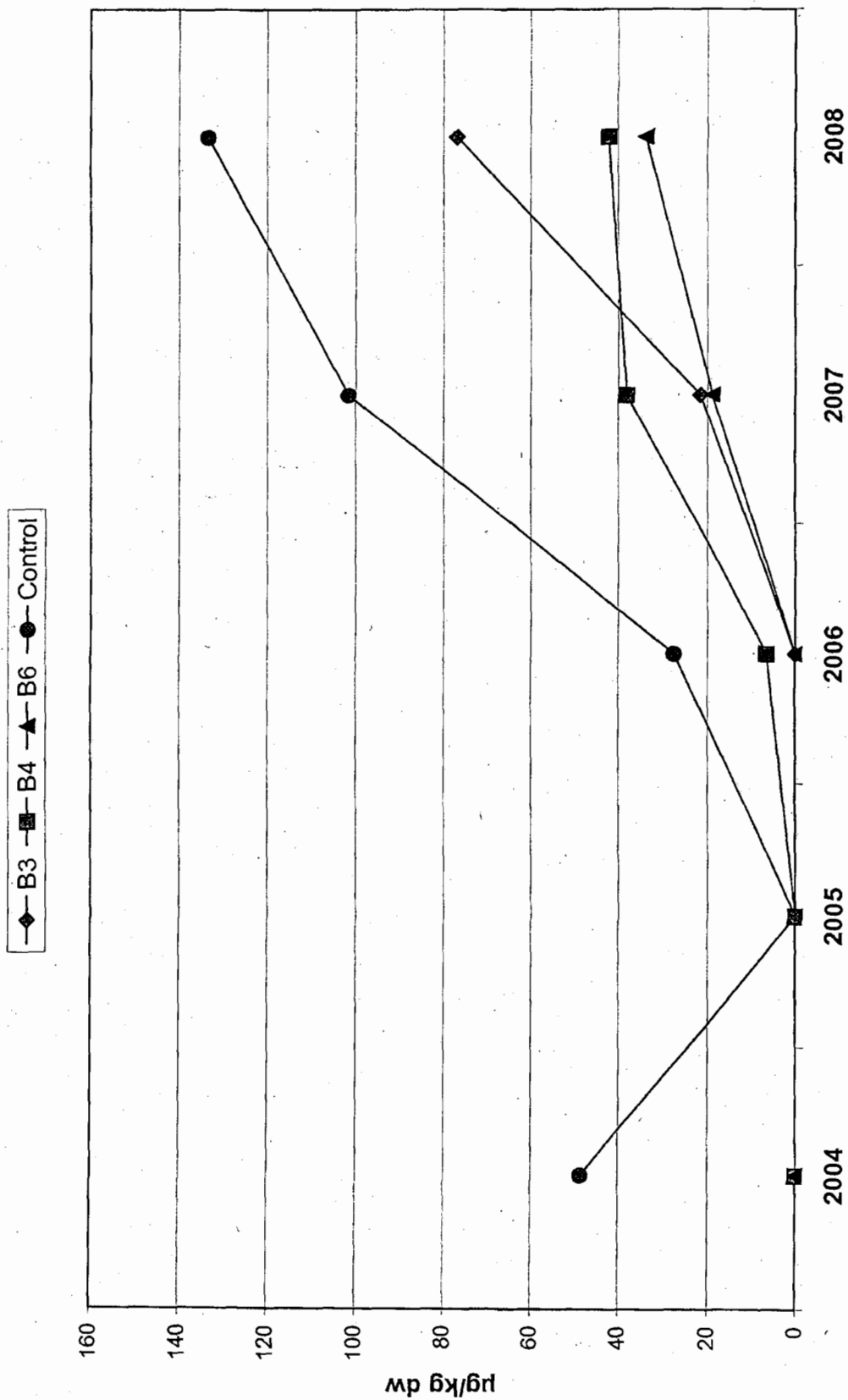


Figure 11. Total PAH concentrations in Whole Bivalve tissue deployed at offshore stations (2004-2008)



APPENDIX B – LIST OF TABLES AND FIGURES

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Table 2.	Monthly average and annual average effluent concentrations for total suspended solids (mg/l) at Goleta Sanitary District.
Table 3.	Monthly average and annual average percent removals for total suspended solids (%) at Goleta Sanitary District.
Table 4.	Monthly average and annual average effluent values for turbidity (NTU) at Goleta Sanitary District.
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Table 11.	Percent reduction in dissolved oxygen at station WC-ZID, relative to offshore stations.
Table 12.	Change in pH at station WC-ZID, relative to offshore stations.
Table 13.	Summary of ATSD sediment deposition model results based on 7.7 MGD flow.
Table 14.	NOAA Sediment Quality Guidelines (ERL = Effects Range-Low; ERM = Effects Range-Median) and the applicant's 2008 sediment method detection limits (MDL).
Table 15.	Summary of 2004 through 2008 sediment pollutant concentrations ($\mu\text{g/g}$ unless otherwise specified) at offshore monitoring stations.
Table 16.	Summary of 2004 through 2008 Benthic Community Metric Data.
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- Table 19. Fish Contaminant Goals for selected fish contaminants based on cancer and non-cancer risk using an eight ounce per week (prior to cooking) consumption rate (32 grams per day).
- Table 20. California Ocean Plan Water-Contact Standards.
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SETTLEMENT AGREEMENT

THIS SETTLEMENT AGREEMENT ("Agreement") is made by and between the CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, CENTRAL COAST REGION (the "Regional Board"), and the GOLETA SANITARY DISTRICT (the "District"). The Regional Board and the District are collectively referred to herein as the "Parties," and each of them is singularly referred to herein as a "Party."

Recitals

A. Pursuant to the requirements of Clean Water Act ("CWA") section 402 (33 U.S.C. §1342) and Water Code sections 13000 et seq., the Regional Board or the United States Environmental Protection Agency (the "U.S. EPA") must prepare and adopt a National Pollutant Discharge Elimination System ("NPDES") permit for the District's wastewater discharge to the Pacific Ocean every five (5) years.

B. Although NPDES permits issued to publicly owned treatment works generally specify secondary treatment of wastewater (33 U.S.C. §1311(b)(1)(B)), Congress has specifically authorized waivers of secondary treatment requirements under CWA section 301(h) (33 U.S.C. §1311(h)). To qualify for a waiver, a discharge must satisfy the conditions of CWA Section 301(h), and applicable regulations. The District has been and continues to discharge its treated wastewater under a 301(h) permit (No. CA0048160) jointly issued by the U.S. EPA and the Regional Board on July 26, 1996. On January 23, 2001, the District applied to U.S. EPA and the Regional Board for another 301(h) permit with a flow limit of 9 mgd.

C. At its April 19, 2002 meeting, the Regional Board considered the renewal of the District's 301(h) permit. At the conclusion of that meeting, the Regional Board directed its staff to develop findings to support denying CWA section 401 certification and denying concurrence with the 301(h) permit.

D. At its July 12, 2002 meeting, the Regional Board adopted Resolution No. R3-2002-0077 denying CWA section 401 certification and denying concurrence with the 301(h) permit. The Resolution required the District to submit a modified NPDES permit application to the Regional Board by December 12, 2002.

E. The District petitioned the Regional Board's adoption of Resolution 0077 to the State Water Resources Control Board (the "State Board") on August 7,

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Board Petition”). At the same time, the District requested that the State Board stay the Regional Board’s December 12, 2002 deadline for submitting a modified NPDES permit application while the State Board considered the State Board Petition. The State Board denied this stay request, but the Regional Board extended its own deadline to the date 45 days after the State Board issued a decision on the State Board Petition.

F. On October 15, 2003, the State Board adopted Order No. WQO 2003-0015, which stated that the deadline for final action upon the District’s State Board Petition was October 17, 2003 and that, because the State Board anticipated taking final action on the matter after October 17, 2003 (the expiration of the regulatory timeframe set forth in 23 C.C.R. §2050.5), the State Board would review Regional Board Resolution No. R3-2002-0077 on its own motion. (Subdivision (a) of the Water Code section 13320 authorizes the State Board to review actions of a regional water quality control board on its own motion at any time.)

G. On December 4, 2003, the District submitted to the Regional Board and U.S. EPA an application for a 301(h) permit providing for a flow limit of 7.64 million gallons per day and a CWA section 401 Water Quality Certification Application. The District provided additional information on December 19, 2003. On December 30, 2003 the Regional Board denied 401 certification without prejudice.

H. On January 22, 2004, the State Board adopted a motion rescinding Order No. WQO 2003-0015. In a letter dated February 4, 2004, the State Board advised the District that: “In view of the SWRCB’s action rescinding Order No. WQO 2003-0015, and the fact that the deadline for acting on GSD’s petition has passed, GSD’s petition is deemed to be denied by operation of law as of January 22, 2004, and Regional Board Resolution No. R3-2002-0077 remains in effect.” In a footnote, the State Board noted that: “By letter dated October 13, 2003, Goleta asked the SWRCB to hold Goleta’s petition to review the Regional Board resolution in abeyance. The State Board took no action upon the request to hold the petition in abeyance.”

I. On February 18, 2004, the District filed a Petition for Writ of Mandate in Santa Barbara County Superior Court (the “Petition”), and on April 21, 2004, filed an amended writ petition (the “Amended Petition”). In order to effectively stay these proceedings to allow settlement discussions to proceed, the District has not requested preparation of the administrative record.

J. The Parties wish to avoid unnecessary litigation over the issues raised in the Amended Petition and have agreed to settle the Amended Petition as set forth in this Agreement.

K. Subject to the provisions of this Agreement regarding Regional Board discretion and New Evidence (defined below), this Agreement contemplates that the Regional Board will concur in or issue the First and Second 5-Year Permits (defined below) in order to effect the District's obligation to complete the upgrade of its treatment facility to full secondary treatment standards within a ten-year period. Pursuant to the May 1984 Memorandum of Understanding for Modified NPDES Permits Under Section 301(h) of the Clean Water Act Between the California State Water Resources Control Board and the U.S. Environmental Protection Agency, Region 9, the Regional Board issues such concurrence and Clean Water Act Section 401 certification by issuing final waste discharge requirements. U.S. EPA then issues a NPDES permit including the 301(h) waiver provisions. References in this Agreement to the Regional Board "issuing" a permit mean, as applicable, issuance by the Regional Board of waste discharge requirements that constitute Section 401 certification of and concurrence with a U.S. EPA NPDES permit that includes modifications under Section 301(h), or issuance by the Regional Board of a NPDES permit.

L. Without admitting anything, the Parties enter into this Agreement to resolve the pending Amended Petition and to avoid the expense and uncertainty of litigation.

Agreement

In consideration of the foregoing and the following, the Parties agree as follows:

A. STAY OF LAWSUIT.

In order to avoid unnecessary litigation over the issues raised in the Amended Petition and to pursue the settlement provided for in this Agreement and to allow for its implementation, the Parties desire to stay the Amended Petition, the preparation and lodging with the Superior Court of the administrative record, the requirement for the filing of pleadings, and the court's consideration of the Amended Petition (the "Stay"). To accomplish the Stay, the District hereby agrees not to request that the administrative record pertaining to the Amended Petition be prepared or lodged with the court unless and until the District recommences the pending litigation pursuant to the Amended Petition under Section C.1.d after this Agreement becomes null and void. If the Superior Court issues an order to show cause or takes other action, which would have the effect of terminating the Stay and/or requiring said pending litigation to be recommenced, the Parties will jointly seek a court order granting a Stay of the litigation. If the Superior Court denies the Stay,

then within ten (10) days of such denial, (i) the Parties shall enter into a stipulation providing that the District may refile the Amended Petition, but only if such refiling is in accordance with the terms of this Agreement set forth below, and (ii) the District shall then dismiss the Amended Petition as to all respondents without prejudice. Said stipulation shall provide that, to the extent that the Amended Petition is refiled in accordance with and subject to the terms of this Agreement, (i) the refiling of the Amended Petition is not barred by time related defenses such as statutes of limitation, laches, estoppel or waiver, (ii) neither Party is waiving any other claims or defenses in connection with the Amended Petition upon refiling, including but not limited to claims and/or defenses relating to mootness and exhaustion of administrative remedies, (iii) the Regional Board reserves all rights to move to dismiss or demur to or move for summary judgment on the Amended Petition or any other pleading on any ground not stated in clause (i), (iv) the District reserves all rights to oppose such motions or demurrers, and (v) the waiver of time-related defenses in clause (i) shall expire if the District does not refile the Amended Petition within 30 days after this Agreement becomes null and void pursuant to Section B.2.c.2(a) or (b) hereof. The intent of this paragraph is only to effectuate the terms of this Agreement regarding the timing of and requirements for the Stay of the Amended Petition. Any new or changed allegations or claims in the refiled Amended Petition that were not included in the Amended Petition on April 21, 2004 are not subject to this paragraph.

B. TERMS.

1. Conversion Schedule

The District shall undertake a program to install and operate equipment at its treatment plant capable of achieving, and achieve, secondary treatment requirements set forth in 40 C.F.R. Part 133, other than 40 C.F.R. section 133.105. The program must be designed to adequately address projected future wastewater flows as of the end of the Conversion Schedule. The District shall complete the planning, design, construction and operation of the facilities necessary to attain compliance with the secondary treatment requirements in accordance with the schedule set forth below (the "Conversion Schedule"). The ten-year upgrade period, commencing with the issuance of the First 5-Year Permit (defined below) and ending on the last date listed in the Conversion Schedule, is the "Conversion Period."

CONVERSION SCHEDULE

Tasks	Date of Completion*
A. <u>Preliminary Activities:</u>	
1. Submittal of Detailed Conversion Plan and Timeline to Owners of Capacity in District's Plant	1/1/05
2. Coordination of Conversion Concepts w/ Owners of Capacity in District's Plant (Education regarding participation in conversion)	6/30/05
3. Send Requests for Environmental and Consulting Engineering Proposals	12/31/05
4. Award of Environmental and Consulting Engineering Contracts	6/30/06
B. <u>Facilities Planning:</u>	
1. Complete Draft Facilities Plan	12/31/06
2. Complete Final Facilities Plan	6/30/08
C. <u>Environmental Review and Permitting:</u>	
1. Complete and Circulate Draft CEQA Document	6/30/08
2. Certify Final CEQA Document	1/31/09 6/30/10
3. Submit Applications for all Necessary Permits	1/31/09
4. Obtain all Necessary Permits	1/31/11
D. <u>Financing:</u>	
1. Complete Draft Plan for Project Design and Construction Financing	1/30/07
2. Complete Final Plan for Project Design and Construction Financing	3/31/08
3. Submit Proof that all Necessary Construction Financing has been Secured, Including Compliance with Proposition 218	12/31/10
E. <u>Design and Construction:</u>	
1 Initiate Design	6/30/08
2 30% Design	12/31/08

3	60% Design	11/30/09
4	90% Design	3/31/10
5	100% Design	9/30/10
6	Issue Notice to Proceed to Contractor	4/30/11
7	Construction Progress Reports	Quarterly (w/ self monitoring reports)
8	Complete Construction and Commence Debugging and Startup	4/30/14
9	Full Compliance w/ Secondary Requirements	11/1/14

 * Any completion date falling on a Saturday, Sunday or State holiday shall be extended until the next business day. The District shall submit proof of completion of each task within 30 days after the due date for completion.

2. Secondary Treatment Limits and District's Conversion to Secondary.

a. First Five-Year Permit Cycle.

1. The Regional Board's Executive Officer shall recommend to the Regional Board that it (i) concur in the issuance of a five (5)-year 301(h) permit for the District (the "First 5Year Permit"), and (ii) provide water quality certification of the First 5-Year Permit under Clean Water Act Section 401 (33 U.S.C. §1341) without changing the District's current requirements for biochemical oxygen demand ("BOD") or total suspended solids ("TSS"). It is not the intent of this Agreement to impose numeric or narrative requirements for other constituents (e.g., limits for bacteria) that would effectively require the District to upgrade to full-secondary treatment faster than provided under the Conversion Schedule. Therefore, unless there is new evidence that was not in the administrative record as of the date the Regional Board's Executive Officer signed this Agreement, the Executive Officer shall recommend that the First 5-Year Permit allow the District to continue with its current treatment process consistent with the provisions of its existing 301(h) permit, Order No. 96-21 (except as provided below with respect to Enhanced Treatment),

2. The BOD and TSS limits to be recommended by the Executive Officer for approval are as follows:

Constituent	Units	Monthly (30-day) Average	Maximum at any time
BOD5 (20°C)	mg/L	98	150
	lbs/day	6,240	9,560
Suspended Solids	mg/L	63	100
	lbs/day	4,010	6,370

3. The findings recommended for adoption by the Regional Board in connection with the First 5-Year Permit and the issuance of water quality certification shall reference the Settlement Agreement and shall incorporate the Conversion Schedule. The findings recommended for adoption by the Regional Board shall also state that:

(i) Subject to the provisions of the Settlement Agreement regarding Regional Board Discretion and New Evidence, the Settlement Agreement contemplates that the Regional Board will concur in or issue the First and Second 5-Year Permits (defined below) in order to effect the District's obligation to complete the upgrade of its treatment facility to full secondary treatment standards within a ten-year period,

(ii) Based on the administrative record, including population growth projections through 2014, known environmental and cumulative impacts of the District's existing wastewater treatment facilities, and evidence submitted by the District of the time needed for upgrading the plant, the Conversion Schedule is appropriate, and

(iii) At the end of the Conversion Period, once the District has converted to secondary treatment of effluent from the Plant, the Regional Board expects to issue an NPDES permit imposing effluent limitations based on secondary treatment as defined in 40 C.F.R. Part 133, or any more stringent requirements the Regional Board determines are necessary to comply with State or Federal law.

4. If the Regional Board adopts the Executive Officer's recommendation by concurring with the First 5-Year Permit and issuing water quality certification, the District shall commence the process for completing all modifications to its plant necessary to comply with

secondary treatment standards (“upgrade to secondary treatment”) by the end of the Conversion Period, in accordance with the Conversion Schedule.

b. Second Five-Year Permit Cycle.

1. For the five (5) year period following the expiration of the First 5-Year Permit, the Regional Board’s Executive Officer shall recommend to the Regional Board that it (i) concur in the issuance of a second five (5)-year 301(h) permit for the District (the “Second 5-Year Permit”), and (ii) provide water quality certification of the Second 5-Year Permit under Clean Water Act Section 401 (33 U.S.C. §1341) without changing the District’s current requirements for BOD or TSS as provided under Section B.2.a.2 above. As stated above, it is not the intent of this Agreement to impose numeric or narrative requirements for other constituents (e.g., limits for bacteria) that would effectively require the District to upgrade to full-secondary treatment faster than the Conversion Schedule provides. Therefore, the Regional Board’s Executive Officer shall recommend that the Second 5-Year Permit (i) allow the District to continue with its current treatment process consistent with the provisions of its existing 301(h) Permit Order No. 96-21 (except as provided below with respect to Enhanced Treatment), and (ii) incorporate findings that contain the Conversion Schedule providing for converting to secondary treatment no sooner than the end of the original ten (10)-year Conversion Period. Notwithstanding the foregoing, the Executive Officer is not required to recommend concurrence in or certification of the Second 5-Year Permit as a 301(h) permit if there is evidence not in the administrative record at the time the First 5-Year Permit is issued (“New Evidence”) that (a) the plant cannot satisfy one or more of the applicable requirements for issuance of a 301(h) permit; (b) population growth is likely to cause the projected average dry weather flows through the plant to exceed 7.64 mgd prior to the end of the Conversion Period; or (c) a change in the law requires more stringent limits. If the Executive Officer does not make the recommendations described in this paragraph because there is New Evidence, the Executive Officer shall state in writing the reasons for not making the recommendation and clearly identify the New Evidence.

2. If the Regional Board determines at the time of its consideration of the District’s Second 5-Year Permit that substantial evidence supports a finding that the Conversion Schedule is still appropriate, based on the record before the Regional Board, but that the required

findings cannot be made for the Regional Board to (i) concur in the issuance of the Second 5-Year Permit under CWA Section 301(h), or (ii) provide water quality certification for such 301(h) permit as set forth in section B.2.b.1 above, the Regional Board may instead issue as the "Second 5-Year Permit" an NPDES permit. In such case, the final effluent limits (i.e., secondary treatment requirements) and the Conversion Schedule shall be incorporated into the permit findings, and the interim limits set forth in Section B.2.b.1 shall be incorporated into the permit provisions if the Regional Board determines that interim limits are legally authorized under the Water Code and the Clean Water Act. Otherwise, the final effluent limits shall be included in the Second 5-Year Permit and the interim limits and Conversion Schedule will be placed in an order adopted in conformance with Water Code §13385(j)(3) at the time the Second 5-Year Permit is adopted.

3. Except as otherwise provided in Sections B.2.a and b, above, this Agreement does not address any effluent limits of the First 5-Year Permit and the Second 5-Year Permit. The Parties understand and agree that pursuant to Order Nos. WQO 2003-0009 and WQO 2003-0012, the State Board has determined that the removal of effluent limitations for which new monitoring data indicate that there is no reasonable potential to cause or contribute to a water quality standards violation does not violate the general antibacksliding rules under Clean Water Act section 402(o), and that removal of effluent limits for non-impairing pollutants (as defined in WQO 2003-0009) does not violate the general antibacksliding rules under Clean Water Act section 303(d)(4) if antidegradation requirements are satisfied.

c. Regional Board Discretion.

1. Nothing in this Agreement limits the discretion that the Regional Board would have absent this Agreement. The Parties understand that the Regional Board members must consider the evidence before them and exercise their authority consistent with applicable laws, the record before them, and the discretion vested in them by applicable laws. Any decision by the Regional Board not to issue the First 5-Year Permit or Second 5-Year Permit as provided above, or to issue a permit that includes more stringent requirements than those set forth in herein, i.e., more stringent BOD or TSS limits or a shorter Conversion Period (either explicitly or through the imposition of effluent limits or other requirements that require a shorter Conversion Period) shall not constitute a breach of this Agreement by the Regional Board. However, the issuance of or

concurrence with the First 5-Year Permit and, if applicable, the Second 5-Year Permit, and any necessary related water quality certification, as set forth herein, are conditions to the District's continuing obligations under this Agreement, except for the District's obligation to Stay the Amended Petition pursuant to Section A, above.

2. (a) If, based the administrative record, the Regional Board issues the First or Second 5-Year Permit or takes other action during the Conversion Period and, in connection therewith, includes more stringent requirements than those set forth herein, i.e., more stringent BOD or TSS limits or a shorter Conversion Period (either explicitly or through the imposition of effluent limits or other requirements that require a shorter Conversion Period), the District shall timely file a petition for review by the State Board pursuant to Water Code section 13320 challenging these more stringent requirements. If the State Board does not, within two hundred seventy (270) days of the date on which the State Board determines in writing that the petition is complete, either remand the matter to the Regional Board for inclusion of the requirements set forth herein, or concur in the 301(h) waiver and issue 401 certification of, or issue, on its own the First or Second 5-Year Permit that includes the requirements provided for herein, then, unless the Parties otherwise mutually agree in writing, (i) the District's obligations under this Agreement to upgrade to secondary treatment within the ten-year Conversion Period and its obligations under the Conversion Schedule shall terminate, and (ii) this Agreement shall become null and void.

(b) If the Regional Board issues the First or Second 5-Year Permit and, in connection therewith, takes action to impose BOD and TSS limits and a Conversion Schedule as set forth herein (and if the action does not require, either explicitly or through the imposition of effluent limits or other requirements, a shorter Conversion Schedule), the District agrees that it will not file a petition for review with the State Board pursuant to Water Code section 13320 challenging the BOD or TSS limits or the Conversion Schedule. If a petition for review is filed by a third party pursuant to Water Code section 13320 that challenges such BOD limits, TSS limits or the Conversion Schedule (or seeks to require, either explicitly or through the imposition of effluent limits or other requirements, a shorter Conversion Schedule), and if the State Board does not dismiss the petition, issue an order upholding the Regional Board's action, or allow the petition to be deemed denied by failing to make a formal disposition thereon within the time specified in 23 CCR §2050.5(b) (as extended by any own-motion review pursuant to 23 CCR §2050.5(c)) then,

unless the Parties otherwise mutually agree in writing, (i) the District's obligations under this Agreement to upgrade to secondary treatment and its obligations under the Conversion Schedule shall terminate, and (ii) this Agreement shall become null and void.

(c) If the Regional Board does not take final action on the First 5-Year Permit by December 3, 2005, or if the Regional Board does not take final action on the Second 5-Year Permit by November 30, 2010, then, unless the Parties otherwise mutually agree in writing, (i) the District's obligations under this Agreement to upgrade to secondary treatment within the ten-year Conversion Period and its obligations under the Conversion Schedule shall terminate, and (ii) this Agreement shall become null and void.

(d) Nothing in this Agreement relieves the District of the requirement to exhaust applicable administrative remedies. Notwithstanding the termination of this Agreement and the fact that this Agreement becomes null and void, (i) the District will be required to comply with all state and federal laws, including the Clean Water Act and the California Water Code, (ii) the District shall retain the right to bring an action relating to any failure of the Regional Board's Executive Officer to make the recommendations required under Sections B.2.a.1 or B.2.b.1, above, and (iii) certain provisions regarding fees and costs shall survive, as set forth in Section F.10. The District's sole remedy for any claimed failure of the Executive Officer to make a recommendation under Sections B.2.a.1 or B.2.b.1 shall be to seek specific performance. The parties waive any right to discovery in such action and the evidence shall be limited to documents in the Regional Board's files as of the date of the Executive Officer's challenged recommendation. The District hereby waives all of its rights, if any, to seek damages from the Regional Board or Executive Officer in the event the District claims a breach of the Executive Officer's agreement to make the recommendations required under Sections B.2.a.1 or B.2.b.1. Nothing herein shall operate as a waiver of any defenses the Executive Officer or Regional Board may assert in such an action. The parties acknowledge that the State Board may decline to review any petition filed pursuant to this Agreement.

3. It is not the intent of this Agreement to create a basis for the Regional Board to issue a subsequent permit that requires a shorter Conversion Schedule because it determines, upon consideration of the Second 5-Year Permit, that it may be possible for the District to complete the upgrade sooner. Any decision by the Regional Board, when considering the Second 5-Year Permit, to require a shorter Conversion Schedule for other reasons shall specify those reasons and

support those reasons with evidence in the record. Only after it has determined, based on substantial evidence in the record, that independent factors exist for requiring a shorter Conversion Period, may the Regional Board consider the time necessary to complete the conversion as one of the factors in establishing the shorter Conversion Schedule, time schedule, or other compliance schedule.

C. PERMIT RENEWAL AND STIPULATION TO DISMISS.

1. Required Actions

a. If the Regional Board concurs in the issuance of the First 5-Year Permit and issues water quality certification consistent with the terms of Section B of this Agreement, and if no petition is filed with the State Board by a third party under California Water Code Section 13320 challenging the Regional Board's 301(h) concurrence, 401 water quality certification, TSS or BOD effluent limits or the findings specified by this Agreement (collectively referred to in this Section C.1 as "301(h) Waiver"), then the District shall dismiss with prejudice its Amended Petition in its entirety against both the Regional Board and the State Board within ten (10) days following the effective date of the First 5-Year Permit. If a petition challenging the 301(h) Waiver is filed by a third party with the State Board under California Water Code Section 13320, then the District shall dismiss with prejudice its Amended Petition in its entirety against both the Regional Board and the State Board within ten (10) days following the date on which the State Board dismisses the petition, fails to act on the petition within the time specified in 23 CCR §2050.5(b) (as extended by any own-motion review pursuant to 23 CCR §2050.5(c)), or issues an order upholding the 301(h) Waiver.

b. If the Regional Board issues the First 5-Year Permit as provided above, the District covenants not to petition to the State Board or otherwise appeal the 301(h) Waiver provisions of the First 5-Year Permit, so long as said Permit remains in effect and unchanged. However, the District reserves the right to petition to the State Board or otherwise appeal the First 5-Year Permit if any change(s) are made to the 301(h) Waiver or Conversion Schedule provisions of said Permit by the Regional Board or State Board.

c. The District reserves the right to challenge all other provisions of the First 5-Year Permit besides the Permit's BOD, TSS or Conversion Schedule requirements, including, but not limited to any new requirements for collection system maintenance, any new or

more stringent requirement than the requirements contained in Order No. 96-21, and effluent limits for constituents not demonstrated to have reasonable potential to cause or contribute to a violation of water quality standards. Any such challenge shall be commenced by raising the issue(s) before the Regional Board and then filing a petition to the State Board under Water Code Section 13320. A challenge to the Regional Board's or State Board's action under this paragraph shall not relieve the District of its obligation to dismiss the Amended Petition if required under Section C.1.a.

d. If this Agreement becomes null and void pursuant to Section B.2.c.2(a) or (b) above (Regional Board Discretion) with respect to the First 5-Year Permit, the District has indicated that it might either file a new lawsuit and seek to consolidate the new lawsuit with the Amended Petition, or continue the pending litigation pursuant to the Amended Petition. If the District files a new lawsuit alleging that a shorter Conversion Schedule is required, the District shall have the burden of proving that a requirement imposed by the Regional Board or State Board expressly or effectively requires a shorter Conversion Schedule. Before filing a new lawsuit related to the First or Second 5-Year Permit, the District agrees that it shall first exhaust all applicable administrative remedies (except for a lawsuit to stay the Regional Board action should the State Board deny such a stay request pursuant to California Water Code Section 13320(e)). If the District continues the Amended Petition, the District agrees that it shall first seek to amend the Amended Petition to incorporate the subsequent actions of the Regional Board and any State Board order relating to the Regional Board's action. Notwithstanding the foregoing, both the Regional Board and the State Board contend that all claims set forth in the Amended Petition will become moot no later than the date on which the First 5-Year Permit is issued and that the District cannot cure this by amending the Amended Petition to incorporate subsequent actions. The District does not agree with this contention. The Regional Board explicitly reserves that defense and any other claim of mootness, and the District explicitly reserves all of its defenses and claims with respect to any mootness arguments. In addition, the Regional Board and State Board contend that the District will have failed to exhaust its administrative remedies if it attempts to amend the Amended Petition to add any new claims or facts prior to raising the issue(s) before the Regional Board and then filing a petition to the State Board. The District does not agree with this contention. Nothing in this Agreement shall prejudice the State Board's ability to assert the same defenses. These reservations do not limit any other defenses of either of the Parties or the State Board.

e. If the Regional Board issues the Second 5-Year Permit as provided in Section B.2.b.1 or B.2.b.2 above, the District covenants not to petition to the State Board or otherwise appeal the Second 5-Year Permit's BOD, TSS or Conversion Schedule requirements, so long as said Permit remains in effect and unchanged. However, the District reserves the right to petition to the State Board or otherwise appeal the Second 5-Year Permit if any change(s) are made to said Permit or if the Conversion Period or Conversion Schedule are modified by the Regional Board or State Board.

f. The District reserves the right to challenge any other provisions of the Second 5-Year Permit besides the Permit's BOD, TSS or Conversion Schedule requirements, including, but not limited to any new requirements for collection system maintenance, any new or more stringent requirements than the requirements of the First 5-Year Permit, and effluent limits for constituents not demonstrated to have reasonable potential to cause or contribute to a violation of water quality standards, except as otherwise provided in the Ocean Plan. Any such challenge shall be commenced by raising the issue(s) before the Regional Board and then filing a petition to the State Board under Water Code Section 13320.

g. A challenge by the District or any other person of any provisions of the First 5-Year Permit or the Second 5-Year Permit that do not relate to the 301(h) Waiver or the Conversion Schedule shall not relieve the District of any obligation to comply with the Conversion Schedule and shall not toll any due date in the Conversion Schedule.

h. Except as otherwise provided in this Agreement, the District reserves the right to (i) pursue a future administrative or judicial challenge to the underlying water quality objectives, both numeric and narrative, as applied in future permits; (ii) challenge future revisions to any permit other than the First 5-Year Permit or the Second 5-Year Permit, without limitation, on all legal theories raised in the District's Amended Petition, and (iii) challenge any new permit or amendment thereto should there be a change in law that renders, in the District's opinion, any provision of the permit, as amended, inconsistent with the Clean Water Act or the Porter-Cologne Water Quality Control Act.

D. REQUIRED ACTIONS DURING CONVERSION PERIOD.

1. Enhanced Treatment.

a. If, during the Conversion Period, the District's effluent monthly (30-day) average mass emissions for total suspended solids (TSS) or biochemical oxygen demand (BOD) measured over the three-month period of June, July, and August of each year exceed eighty-five percent (85%) of the mass emissions limit set forth in the District's current 301(h) Permit, the District will enhance its treatment process by the use of polymers or other available technologies of equal or lesser cost (taking into account capital, operations and maintenance costs) and equal or better effectiveness ("Enhanced Treatment") in an effort to reduce mass emissions to eighty-five percent (85%) of the Permit limit.

b. Mass emissions for TSS and BOD will be re-evaluated in June of each year following the commencement of Enhanced Treatment to determine if emissions continue to exceed the Enhanced Treatment trigger of eighty-five percent (85%) without Enhanced Treatment. If the monthly (30-day) average mass emissions for TSS or BOD in June exceed ninety (90%), Enhanced Treatment will continue until tested again in June of the following year. If the monthly (30-day) average mass emissions for TSS or BOD in June are greater than eighty-five percent (85%) but less than ninety (90%), testing will continue through July and August to determine whether the three month monthly (30-day) average mass emissions for TSS or BOD exceed eighty-five percent (85%) of the Permit limit. If the monthly (30-day) average mass emissions for TSS or BOD for the three-month period of June, July, and August do not exceed the eighty-five percent (85%) Enhanced Treatment trigger, Enhanced Treatment may be discontinued until the Enhanced Treatment trigger is exceeded again in the future, as determined by subsequent three-month results during June, July, and August.

c. If the use of Enhanced Treatment fails to achieve mass emissions at or below the Enhanced Treatment triggers for any six (6) consecutive monthly periods, the District shall investigate and apply, with the approval of the Regional Board's Executive Officer, other technologies of equal or lesser cost (taking into account capital, operations and maintenance costs) and equal or better effectiveness if any such technologies are readily available and are capable of achieving at least eighty-five percent (85%) of the permitted mass emissions limits.

d. The Enhanced Treatment triggers set forth above are not effluent limitations, and, if exceeded, will not be considered a violation of the District's NPDES permit,

waste discharge requirements or water quality certification and will not subject the District to civil liabilities, fines, penalties or other enforcement action. If the District exceeds an Enhanced Treatment trigger and is therefore required to commence or continue Enhanced Treatment, the District will not be considered to have committed a violation of the District's NPDES permit, waste discharge requirements, or water quality certification, and will not be subject to civil liabilities, fines, penalties, or other enforcement action if Enhanced Treatment fails to bring effluent mass emissions for TSS or BOD, as measured above, below eighty-five percent (85%) of the mass emissions limit set forth in the District's current 301(h) permit.

e. The Enhanced Treatment requirements shall not be stated as NPDES permit conditions that could give rise to administrative civil liability, but shall be incorporated into the findings adopted as part of any 301(h) or NPDES permit issued to the District during the Conversion Period.

2. Force Majeure

a. A "force majeure event" is any event beyond the reasonable control of the District, its contractors, or any entity controlled by the District that delays or prevents the performance of any obligation under this Agreement. Force majeure events include, without limitation, (i) fire, strike, war, insurrection, terrorism, natural disaster, civil or military authority, civil disturbance; and (ii) to the extent they are beyond the District's reasonable control, government restriction on or prohibition of the task(s) set forth in the Compliance Schedule, lawsuits, court orders, injunctions, delays by other agencies with approval authority relating to or permitting of the conversion of the District's treatment facilities to secondary treatment, and site conditions discovered during construction if the District exercised reasonable diligence, but did not foresee such site condition prior to the commencement of construction. If a force majeure event occurs, the District shall undertake all reasonable measures to prevent or minimize the delay resulting from the event.

b. If any event occurs that the District believes is a force majeure event, the District shall notify the Regional Board by telephone as soon as reasonably possible. The District shall endeavor to notify the Regional Board in writing within fifteen (15) calendar days of the date on which the District first knew of the event, and shall provide such written notice within fifteen (15) calendar days after the date on which the District first knew the event would cause, or

be likely to cause, a delay. The District shall provide the written notice in accordance with Section F.7. The notice shall describe in reasonable detail the anticipated length of time the delay may persist, the cause or causes of the delay, the measures, if any, taken or to be taken by the District to prevent or minimize the delay as well as to prevent future delays, and the timetable by which those measures will be implemented.

c. If a delay has been caused by a force majeure event, the time for performance of the affected requirement(s) shall be extended for a period not to exceed the actual delay in performance resulting from such circumstance. In addition, stipulated penalties shall not be due for said delay. The Executive Officer shall notify the District of the agreement or disagreement with the District's claim of a delay or impediment to performance within seven (7) calendar days of receipt of a written notice that complies with Section D.2.b, above. If the Executive Officer does not so agree, or does not notify the District of its decision within seven (7) calendar days after receiving notice (in which case the Executive Officer shall be deemed to have disagreed), such decision (or deemed decision) by the Executive Officer shall not constitute final agency action and the dispute will be resolved administratively or judicially pursuant to Section E. In any such dispute, the District bears the burden of proving, by a preponderance of the evidence, that each claimed force majeure event is a force majeure event; that the District gave the notice required by this Section; that the force majeure event caused the delay that the District claims was attributable to that event; and that the District undertook all reasonable measures to prevent or minimize any delay caused by the event.

d. Unanticipated or increased costs or expenses associated with the implementation of this Settlement Agreement or changed financial circumstances shall not constitute a force majeure event hereunder.

e. An extension of one compliance date under the Compliance Schedule based on a particular incident may, but shall not necessarily, result in an extension of a subsequent compliance date or dates.

f. Where the Regional Board agrees to an extension of time, the appropriate modification(s) shall be made to the Conversion Schedule in accordance with Section F.5, below.

g. If the Regional Board issues the First or Second 5-Year Permit or takes other action during the Conversion Period and, in connection therewith, includes more

stringent requirements than those set forth herein, i.e., more stringent BOD or TSS limits or a shorter Conversion Period (either explicitly or through the imposition of effluent limits or other requirements that require a shorter Conversion Period) and, as required by Section B.2.c.2(a), the District files a timely petition for review with the State Board, a force majeure event shall be deemed to be occurring until such time as the District has been issued a permit that includes the requirements provided for herein. If the Regional Board does not act on the District's First 5-Year Permit by December 3, 2004, a force majeure event shall be deemed to be occurring from December 4, 2004 until such time as the District has been issued the First 5-Year Permit (unless prior to such permit issuance this Agreement becomes null and void). If the Regional Board does not act on the District's Second 5-Year Permit by March 31, 2010, a force majeure event shall be deemed to be occurring from April 1, 2010 until such time as the District has been issued a Second 5-Year Permit (unless prior to such permit issuance this Agreement becomes null and void).

h. If the Regional Board concurs in the 301(h) waiver and issues 401 certification of the First 5-Year Permit and, in connection therewith, includes BOD and TSS limits and a Conversion Schedule as set forth herein (and if the action does not require, either explicitly or through the imposition of effluent limits or other requirements, a shorter Conversion Schedule), and a petition for review is filed by a third party pursuant to Water Code section 13320, which challenges such BOD limits, TSS limits or the Conversion Schedule (or which seeks to require, either explicitly or through the imposition of effluent limits or other requirements, a shorter Conversion Schedule), a force majeure event shall be deemed to be occurring commencing on the date for the District to Send Requests for Environmental and Consulting Engineering Proposals (Task A.3) under the Conversion Schedule (as said date may be revised by force majeure events or by the agreement of the Parties) and continuing until such time as the State Board dismisses the petition without review (explicitly or by operation of law pursuant to 23 C.C.R. §2050.5) or issues an order upholding the BOD and TSS limits and the Conversion Schedule approved by the Regional in connection with the First 5-Year Permit.

i. If the Regional Board issues the Second 5-Year Permit as provided in Section B.2.b.1 or B.2.b.2 and, in connection therewith, includes BOD and TSS limits and a Conversion Schedule as set forth herein (and if the action does not require, either explicitly or through the imposition of effluent limits or other requirements, a shorter Conversion Schedule), and a petition for review is filed by a third party pursuant to Water Code section 13320, which

challenges such BOD limits, TSS limits or the Conversion Schedule (or which seeks to require, either explicitly or through the imposition of effluent limits or other requirements, a shorter Conversion Schedule), a force majeure event shall be deemed to be occurring commencing on the date for the District to complete 100% Design (Task E.5) under the Conversion Schedule (as said date may be revised by force majeure events or by the agreement of the Parties) and continuing until such time as the State Board dismisses the petition without review (explicitly or by operation of law pursuant to 23 C.C.R. §2050.5) or issues an order upholding the BOD and TSS limits and the Conversion Schedule approved by the Regional in connection with the Second 5-Year Permit.

j. The Parties agree not to request abeyance, and to oppose any request for abeyance, of a third party petition described in Sections D.2.h or i.

E. ENFORCEMENT

1. Except for force majeure events as provided above, and except as otherwise agreed by the Parties, if the District fails to complete a required action by the date set forth in the Conversion Schedule, stipulated penalties shall accrue as set forth below. Stipulated penalties shall accrue only with respect to one task on the Conversion Schedule at a time. In other words, if the District is behind schedule with respect to more than one required task, stipulated penalties shall accrue only for the most recent task.

a. Stipulated penalties shall be \$200/day for all tasks that are to be completed prior to the issuance of the Second 5-Year Permit. The District shall pay all such accrued stipulated penalties, together with interest at the rate of five percent (5%) per annum, within thirty (30) days following the date on which the Second 5-Year Permit becomes final. If the District is current (i.e. has “caught up”) by the date on which the Second 5-Year Permit becomes final, or if the Second 5-Year Permit is denied by the Regional Board or by the State Board on petition, all accrued stipulated penalties and interest thereon shall be cancelled and forgiven. The Second 5-Year Permit “becomes final” for purposes of this paragraph 30 days after the Regional Board issues the Second 5-Year Permit as provided in Section B.2.b.1 or B.2.b.2, if no petition challenging the BOD or TSS limits or Conversion Schedule is filed; or on the date the State Board resolves any petition challenging the BOD or TSS limits or Conversion Schedule by a dismissal (explicitly or by operation of law) or order having the effect of upholding or issuing a Second 5-Year Permit.

b. Stipulated penalties shall be \$200/day for all tasks that are to be completed after the issuance of the Second 5-Year Permit and prior to the date on which the District is to achieve full compliance with secondary treatment requirements. The District shall pay all such accrued stipulated penalties, together with interest at the rate of five percent (5%) per annum, within thirty (30) days following the date on which the District is to achieve full compliance with secondary treatment requirements. If the District is current (i.e. has "caught up") by the due date for issuing a Notice to Proceed, all stipulated penalties and interest that have accrued after the issuance of the Second 5-year Permit, but prior to the due date for issuing a Notice to Proceed, shall be cancelled and forgiven.

c. Stipulated penalties shall be \$500/day for the first 180 days if the District fails to achieve full compliance with secondary treatment requirements by the date specified in the Conversion Schedule. For the next 185 days following the initial 180 days, stipulated penalties shall be \$1,000/day until the District achieves full compliance with secondary treatment requirements. After 365 days, stipulated penalties shall be \$2,000/day until the District achieves full compliance with secondary treatment requirements. Stipulated penalties under this paragraph shall be paid by the District quarterly, commencing on the first day of the next calendar quarter that is at least thirty (30) days following the date on which the stipulated penalty is incurred.

2. Except for force majeure events as provided above, and except as otherwise agreed by the Parties, if the District fails to undertake an Enhanced Treatment activity as required herein, the District shall pay stipulated penalties in the amount of \$200/day until the Enhanced Treatment activity has been undertaken. Stipulated penalties under this paragraph shall be paid by the District quarterly, commencing on the first day of the next calendar quarter that is at least thirty (30) days following the date on which the stipulated penalty is incurred and shall be in addition to and separate from any stipulated penalties payable under Section E.1, above.

3. In addition to or in lieu of seeking stipulated penalties, the Regional Board may seek judicial enforcement, including specific performance, of this Agreement, including without limitation the tasks and due dates set forth in the Conversion Schedule or the Enhanced Treatment requirements.

4. If the Executive Officer does not agree that a delay in the District's performance was caused by a force majeure event as defined in Section D.2 and the District does not stipulate in writing to the amount of penalties due after missing a milestone under the Conversion Schedule, the Regional Board may also impose stipulated penalties by issuing an administrative civil liability complaint, pursuant to Water Code Sections 13323-13326 and 13328. The Regional Board may hold administrative civil liability proceedings at any time, but any administrative civil liability order shall include the applicable payment due date and conditions of cancellation and forgiveness set forth in Sections E.1.a and E.1.b. The District may, but shall not be required to, waive the right to a hearing. If the District does not waive the right to a hearing, the District agrees not to challenge the daily amount of the stipulated penalties as set forth in this Agreement. The issues for hearing may include, without limitation, whether the District undertook or completed the required task or activity by the completion date(s) in question, the number of days or months for which stipulated penalties apply, and whether the delay, if any, was caused by force majeure as defined in Section D.2. The District agrees not to contest the use of the administrative civil liability process and waives any claim that Water Code Sections 13323-13326 and 13328 do not apply to administrative or judicial enforcement of the stipulated penalty provisions of this Agreement. However, the District reserves the right to petition to the State Board for review of any decision made by the Regional Board under this paragraph. Upon the filing of such a petition, the District and the Regional Board shall jointly request that the petition be held in abeyance until such time as it is determined, as applicable, that (i) the stipulated penalties at issue are not subject to cancellation and forgiveness on the date the Second 5-Year Permit becomes final as set forth in Section E.1.a, (ii) the stipulated penalties at issue are not subject to cancellation and forgiveness on the date for issuing the notice to proceed to the contractor as set forth in Section E.1.b, or (iii) the District has achieved full compliance with secondary treatment requirements, such that it can be determined whether any stipulated penalties are due and the amount thereof. The intent of the foregoing provisions is to ensure that there will be no more than three (3) occasions on which the State Board will be required to take action on a petition filed by the District with respect to the issue of stipulated penalties for completion dates under the Conversion Schedule. Following the expiration of the abeyance and either final action by the State Board on the District's petition or the dismissal of the District's petition by the State Board without review, the District may, at the times described in subparagraphs (i), (ii) and (iii), above, file a judicial appeal in accordance with California Water Code Section 13330 with respect to the

administrative civil liability order. In any such judicial appeal(s), the District agrees not to challenge the daily amount of the stipulated penalties as set forth in this Agreement. The issues in such judicial appeal(s) may include, without limitation, whether the District undertook or completed the required task or activity by the completion date(s) in question, the number of days or months for which stipulated penalties apply, and whether the delay, if any, was caused by force majeure as defined in Section D.2, provided that nothing in this paragraph 4 shall relieve the District of any obligation to exhaust applicable administrative remedies prior to seeking judicial relief.

5. The requirements of this Agreement with respect to (i) the Conversion Schedule, (ii) the Conversion Period, (iii) Enhanced Treatment, and (iv) stipulated penalties shall be incorporated into the findings adopted by the Regional Board in connection with the First and Second 5-Year Permits. In addition to the procedures set forth above for enforcement with respect to failure to meet the Conversion Schedule or to undertake Enhanced Treatment activities, the Regional Board may use any enforcement action or procedure to remedy any and all violations of the terms of any permit (including the First or Second 5-Year Permits) issued to the District, including, without limitation, any remedy set forth in the California Water Code. Nothing in this Agreement shall limit other remedies available to the Regional Board to enforce the terms and conditions of any permit or 401 certification issued to the District.

F. MISCELLANEOUS PROVISIONS

1. **No Admission of Liability.** Except as set forth in this Agreement, nothing in this Agreement shall be construed as an admission of liability by any Party, or as a waiver of any future claims or causes of action, or as an agreement on the appropriate standard of review or causes of action or claims that may be asserted in challenging any permit issued to the District or the requirements thereof.

2. **Signatures.** This Agreement may be signed in counterparts. Signatures transmitted by facsimile shall be deemed to have the same force and effect as original signatures. Photocopies and facsimiles of counterparts shall be binding and admissible as originals.

3. **Representation by Counsel.** The Parties agree and confirm that this Agreement has been freely and voluntarily entered into by the Parties, each of which has been fully represented by counsel at every stage of the proceedings, and that no representations or promises of

any kind, other than as contained herein, have been made by any Party to induce any other Party to enter into this Agreement. The language of this Agreement shall be construed in its entirety, according to its fair meaning, and not strictly for or against any of the Parties.

4. Integrated Agreement. Except as otherwise set forth in this Settlement Agreement, this Agreement contains the entire understanding of the Parties concerning the matters contained herein and constitutes an integrated agreement.

5. Subsequent Amendment. This Agreement may not be altered, amended, modified, or otherwise changed except after a public meeting by a writing executed by each of the Parties. The Regional Board may, on a case-by-case basis in a public meeting, delegate to the Executive Officer the authority to approve and sign on behalf of the Regional Board written amendments to this Agreement.

6. Effective Date. This Agreement is effective when signed by all Parties and the effective date shall be date of the last signature.

7. Notice Requirements. Any notice provided under this Agreement shall be provided by facsimile and first class mail as follows:

If to the District:

Kamil S. Azoury, General Manager
GOLETA SANITARY DISTRICT
P. O. Box 906
Goleta, CA 93116
Telephone: 805-967-4519
Facsimile: 805-964-3583

Richard G. Battles, Esq.
MULLEN & HENZEL LLP
112 E. Victoria St., P.O. Drawer 789
Santa Barbara, CA 93102-0789
Telephone: 805-966-1501
Facsimile: 805-966-9204

Melissa A. Thorne, Esq.
DOWNEY BRAND, LLP
555 Capitol Mall, Tenth Floor
Sacramento, CA 95814-4686
Telephone: 916-444-1000
Facsimile: 916-444-2100

If to the Regional Board:

Roger W. Briggs, Executive Officer
REGIONAL WATER QUALITY CONTROL BOARD,
CENTRAL COAST REGION
895 Aerovista Place, Suite 101
San Luis Obispo, CA 93401
Telephone: 805-549-3147
Facsimile: 805-543-0397

Lori T. Okun, Esq.
STATE WATER RESOURCES CONTROL BOARD
1001 I Street, P.O. Box 100
Sacramento, CA 95814
Telephone: 916-341-5165
Facsimile: 916-341-5199

Marilyn H. Levin, Esq.
OFFICE OF THE ATTORNEY GENERAL
300 South Spring Street, Suite 1702
Los Angeles, CA 90013-1233
Telephone: 213- 897-2612
Facsimile: 213-897-2802

8. Authority. Each Party to this Agreement warrants that the individual executing this Agreement is duly authorized to do so and that execution is the act and deed of the Party.

9. Counsel Approval. Counsel for the represented Parties have negotiated, read, and approved as to form the language of this Agreement, the language of which shall be construed in its entirety according to its fair meaning and not strictly for or against any of the Parties.

10. Fees and Costs. The Parties acknowledge and agree that each of them will bear their own attorneys' fees, costs, including costs pursuant to C.C.P. section 1094.5, and expenses arising out of and/or connected with the disputes which are the subject of this Agreement, including but not limited to all attorneys' fees, costs, and expenses arising out of the Amended Petition or the negotiation, drafting, and execution of this Agreement, and any dispute arising out of this Agreement. The agreement that each party shall bear its own fees, costs, and expenses arising out of the claims alleged in the Amended Petition as of the date of this Agreement shall apply notwithstanding any provision that this agreement shall become null and void and regardless of when such fees or costs are incurred.

11. Severability. In the event that any provision of this Agreement is determined by a court of competent jurisdiction to be invalid, the remainder of this Agreement shall not be affected thereby and shall remain in full force and effect.

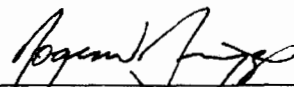
12. Successors in Interest. If applicable law allows the Executive Officer to issue waste discharge requirements at the time of consideration of the Second 5-Year Permit, then all provisions of this Agreement requiring the Executive Officer to make any recommendation shall not apply to the Executive Officer, but shall instead apply to the highest-ranking Regional Board staff person other than the Executive Officer. If applicable law does not include a process to petition to the State Board or its successor, then the District shall exhaust all other administrative remedies then available where this Agreement requires the District to file a petition to the State Board or otherwise exhaust administrative remedies. In all other cases, whenever in this Agreement one of the Parties hereto is named or referenced, the legal representatives, successors, and permitted assigns of such Party shall be included and all covenants and agreements contained in this Agreement by or on behalf of any of the Parties hereto shall bind and inure to the benefit of their respective successors and permitted assigns, whether so expressed or not.

13. References. This Agreement is made without respect to number or gender, and as such, any reference to a party hereto by any pronoun shall include the singular, the plural, the masculine, and the feminine.

IN WITNESS WHEREOF, the Parties have executed this Agreement on the dates indicated below.

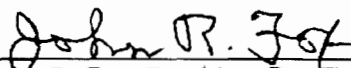

Dated: 11/19, 2009


CALIFORNIA REGIONAL WATER QUALITY
CONTROL BOARD, CENTRAL COAST REGION

By: 
Roger W. Briggs, Executive Officer

Dated: 11/2, 2009

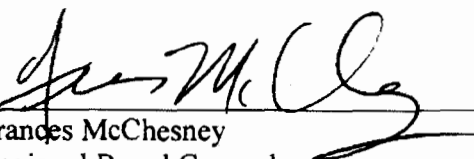
GOLETA SANITARY DISTRICT

By: 
John R. Fox, President ~~Sanitary District~~ 

By: 
Kamal S. Azoury,
General Manager/Board Secretary

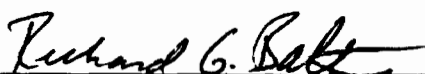
APPROVED AS TO FORM

Dated: 11/16, 2009

By: 
Frances McChesney
Regional Board Counsel

Dated: 11/2, 2009

MULLEN & HENZELL L.L.P.

By: 
Richard G. Battles
Attorneys for Goleta Sanitary District

- e. Waste* that contains pathogenic organisms or viruses should be discharged a sufficient distance from shellfishing* and water-contact sports areas to maintain applicable bacterial standards without disinfection. Where conditions are such that an adequate distance cannot be attained, reliable disinfection in conjunction with a reasonable separation of the discharge point from the area of use must be provided. Disinfection procedures that do not increase effluent toxicity and that constitute the least environmental and human hazard should be used.

3. Areas of Special Biological Significance

- a. ASBS* shall be designated by the SWRCB following the procedures provided in Appendix IV. A list of ASBS* is available in Appendix V.

4. Combined Sewer Overflow: Notwithstanding any other provisions in this plan, discharges from the City of San Francisco's combined sewer system are subject to the US EPA's Combined Sewer Overflow Policy.

B. Table A Effluent Limitations

**TABLE A
EFFLUENT LIMITATIONS**

	Unit of Measurement	Limiting Concentrations		
		Monthly (30-day Average)	Weekly (7-day Average)	Maximum at any time
Grease and Oil	mg/l	25.	40.	75.
Suspended Solids			See below +	
Settleable Solids	MI/l	1.0	1.5	3.0
Turbidity	NTU	75.	100.	225.
PH	Units		Within limit of 6.0 to 9.0 at all times	

Table A Notes:

- + Suspended Solids: Dischargers shall, as a 30-day average, remove 75% of suspended solids from the influent stream before discharging wastewaters to the ocean*, except that the effluent limitation to be met shall not be lower than 60 mg/l. Regional Boards may recommend that the SWRCB (Chapter IIIJ), with the concurrence of the Environmental Protection Agency, adjust the lower effluent concentration limit (the 60 mg/l above) to suit the environmental and effluent characteristics of the discharge. As a further consideration in making such recommendation for adjustment, Regional Boards should evaluate effects on existing and potential water* reclamation projects.

If the lower effluent concentration limit is adjusted, the discharger shall remove 75% of suspended solids from the influent stream at any time the influent concentration exceeds four times such adjusted effluent limit.

1. Table A effluent limitations apply only to publicly owned treatment works and industrial discharges for which Effluent Limitations Guidelines have not been established pursuant to Sections 301, 302, 304, or 306 of the Federal Clean Water Act.

* See Appendix I for definition of terms.

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2. Table A effluent limitations shall apply to a discharger's total effluent, of whatever origin (i.e., gross, not net, discharge), except where otherwise specified in this Plan.
3. The SWRCB is authorized to administer and enforce effluent limitations established pursuant to the Federal Clean Water Act. Effluent limitations established under Sections 301, 302, 306, 307, 316, 403, and 405 of the aforementioned Federal Act and administrative procedures pertaining thereto are included in this plan by reference. Compliance with Table A effluent limitations, or Environmental Protection Agency Effluent Limitations Guidelines for industrial discharges, based on Best Practicable Control Technology, shall be the minimum level of treatment acceptable under this plan, and shall define reasonable treatment and waste control technology.

C. Implementation Provisions for Table B

1. Effluent concentrations calculated from Table B water quality objectives shall apply to a discharger's total effluent, of whatever origin (i.e., gross, not net, discharge), except where otherwise specified in this Plan.
2. If the Regional Water Board determines, using the procedures in Appendix VI, that a pollutant is discharged into ocean* waters at levels which will cause, have the reasonable potential to cause, or contribute to an excursion above a Table B water quality objective, the Regional Water Board shall incorporate a water quality-based effluent limitation in the Waste Discharge Requirement for the discharge of that pollutant.
3. Effluent limitations shall be imposed in a manner prescribed by the State Water Board such that the concentrations set forth below as water quality objectives shall not be exceeded in the receiving water upon completion of initial* dilution, except that objectives indicated for radioactivity shall apply directly to the undiluted waste* effluent.
4. Calculation of Effluent Limitations
 - a. Effluent limitations for water quality objectives listed in Table B, with the exception of acute* toxicity and radioactivity, shall be determined through the use of the following equation:

Equation 1: $C_e = C_o + D_m (C_o - C_s)$

where:

C_e = the effluent concentration limit, ug/l

C_o = the concentration (water quality objective) to be met at the completion of initial* dilution, ug/l

C_s = background seawater concentration (see Table C below), ug/l

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

* See Appendix I for definition of terms.

**TABLE B
WATER QUALITY OBJECTIVES**

		<u>Limiting Concentrations</u>		
	<u>Units of Measurement</u>	<u>6-Month Median</u>	<u>Daily Maximum</u>	<u>Instantaneous Maximum</u>
OBJECTIVES FOR PROTECTION OF MARINE AQUATIC LIFE				
Arsenic	ug/l	8.	32.	80.
Cadmium	ug/l	1.	4.	10.
Chromium (Hexavalent) (see below, a)	ug/l	2.	8.	20.
Copper	ug/l	3.	12.	30.
Lead	ug/l	2.	8.	20.
Mercury	ug/l	0.04	0.16	0.4
Nickel	ug/l	5.	20.	50.
Selenium	ug/l	15.	60.	150.
Silver	ug/l	0.7	2.8	7.
Zinc	ug/l	20.	80.	200.
Cyanide (see below, b)	ug/l	1.	4.	10.
Total Chlorine Residual (For intermittent chlorine sources see below, c)	ug/l	2.	8.	60.
Ammonia (expressed as nitrogen)	ug/l	600.	2400.	6000.
Acute* Toxicity	TUa	N/A	0.3	N/A
Chronic* Toxicity	TUc	N/A	1.	N/A
Phenolic Compounds (non-chlorinated)	ug/l	30.	120.	300.
Chlorinated Phenolics	ug/l	1.	4.	10.
Endosulfan	ug/l	0.009	0.018	0.027
Endrin	ug/l	0.002	0.004	0.006
HCH*	ug/l	0.004	0.008	0.012
Radioactivity	Not to exceed limits specified in Title 17, Division 1, Chapter 5, Subchapter 4, Group 3, Article 3, Section 30253 of the California Code of Regulations. Reference to Section 30253 is prospective, including future changes to any incorporated provisions of federal law, as the changes take effect.			

* See Appendix I for definition of terms.

Table B Continued

Chemical	30-day Average (ug/l)	
	Decimal Notation	Scientific Notation
OBJECTIVES FOR PROTECTION OF HUMAN HEALTH – NONCARCINOGENS		
acrolein	220.	2.2×10^2
antimony	1,200.	1.2×10^3
bis(2-chloroethoxy) methane	4.4	4.4×10^0
bis(2-chloroisopropyl) ether	1,200.	1.2×10^3
chlorobenzene	570.	5.7×10^2
chromium (III)	190,000.	1.9×10^5
di-n-butyl phthalate	3,500.	3.5×10^3
dichlorobenzenes*	5,100.	5.1×10^3
diethyl phthalate	33,000.	3.3×10^4
dimethyl phthalate	820,000.	8.2×10^5
4,6-dinitro-2-methylphenol	220.	2.2×10^2
2,4-dinitrophenol	4.0	4.0×10^0
ethylbenzene	4,100.	4.1×10^3
fluoranthene	15.	1.5×10^1
hexachlorocyclopentadiene	58.	5.8×10^1
nitrobenzene	4.9	4.9×10^0
thallium	2.	$2. \times 10^0$
toluene	85,000.	8.5×10^4
tributyltin	0.0014	1.4×10^{-3}
1,1,1-trichloroethane	540,000.	5.4×10^5
OBJECTIVES FOR PROTECTION OF HUMAN HEALTH – CARCINOGENS		
acrylonitrile	0.10	1.0×10^{-1}
aldrin	0.000022	2.2×10^{-5}
benzene	5.9	5.9×10^0
benzidine	0.000069	6.9×10^{-5}
beryllium	0.033	3.3×10^{-2}
bis(2-chloroethyl) ether	0.045	4.5×10^{-2}
bis(2-ethylhexyl) phthalate	3.5	3.5×10^0
carbon tetrachloride	0.90	9.0×10^{-1}
chlordane*	0.000023	2.3×10^{-5}
chlorodibromomethane	8.6	8.6×10^0

* See Appendix I for definition of terms.

Table B Continued

Chemical	30-day Average (ug/l)	
	Decimal Notation	Scientific Notation
OBJECTIVES FOR PROTECTION OF HUMAN HEALTH – CARCINOGENS		
chloroform	130.	1.3×10^2
DDT*	0.00017	1.7×10^{-4}
1,4-dichlorobenzene	18.	1.8×10^1
3,3'-dichlorobenzidine	0.0081	8.1×10^{-3}
1,2-dichloroethane	28.	2.8×10^1
1,1-dichloroethylene	0.9	9×10^{-1}
dichlorobromomethane	6.2	6.2×10^0
dichloromethane	450.	4.5×10^2
1,3-dichloropropene	8.9	8.9×10^0
dieldrin	0.00004	4.0×10^{-5}
2,4-dinitrotoluene	2.6	2.6×10^0
1,2-diphenylhydrazine	0.16	1.6×10^{-1}
halomethanes*	130.	1.3×10^2
heptachlor	0.00005	5×10^{-5}
heptachlor epoxide	0.00002	2×10^{-5}
hexachlorobenzene	0.00021	2.1×10^{-4}
hexachlorobutadiene	14.	1.4×10^1
hexachloroethane	2.5	2.5×10^0
isophorone	730.	7.3×10^2
N-nitrosodimethylamine	7.3	7.3×10^0
N-nitrosodi-N-propylamine	0.38	3.8×10^{-1}
N-nitrosodiphenylamine	2.5	2.5×10^0
PAHs*	0.0088	8.8×10^{-3}
PCBs*	0.000019	1.9×10^{-5}
TCDD equivalents*	0.0000000039	3.9×10^{-9}
1,1,2,2-tetrachloroethane	2.3	2.3×10^0
tetrachloroethylene	2.0	2.0×10^0
toxaphene	0.00021	2.1×10^{-4}
trichloroethylene	27.	2.7×10^1
1,1,2-trichloroethane	9.4	9.4×10^0
2,4,6-trichlorophenol	0.29	2.9×10^{-1}
vinyl chloride	36.	3.6×10^1

* See Appendix I for definition of terms.

Table B Notes:

- a) Dischargers may at their option meet this objective as a total chromium objective.
- b) If a discharger can demonstrate to the satisfaction of the Regional Board (subject to EPA approval) that an analytical method is available to reliably distinguish between strongly and weakly complexed cyanide, effluent limitations for cyanide may be met by the combined measurement of free cyanide, simple alkali metal cyanides, and weakly complexed organometallic cyanide complexes. In order for the analytical method to be acceptable, the recovery of free cyanide from metal complexes must be comparable to that achieved by the approved method in 40 CFR PART 136, as revised May 14, 1999.
- c) Water quality objectives for total chlorine residual applying to intermittent discharges not exceeding two hours, shall be determined through the use of the following equation:

$$\log y = -0.43 (\log x) + 1.8$$

where: y = the water quality objective (in ug/l) to apply when chlorine is being discharged;
x = the duration of uninterrupted chlorine discharge in minutes.

E. Biological Characteristics

- 1. Marine communities, including vertebrate, invertebrate, and plant species, shall not be degraded*.
- 2. The natural taste, odor, and color of fish, shellfish*, or other marine resources used for human consumption shall not be altered.
- 3. The concentration of organic materials in fish, shellfish* or other marine resources used for human consumption shall not bioaccumulate to levels that are harmful to human health.

F. Radioactivity

- 1. Discharge of radioactive waste* shall not degrade* marine life.

* See Appendix I for definition of terms.

APPENDIX I
DEFINITION OF TERMS

ACUTE TOXICITY

a. Acute Toxicity (TUa)

Expressed in Toxic Units Acute (TUa)

$$TUa = \frac{100}{96\text{-hr LC } 50\%}$$

b. Lethal Concentration 50% (LC 50)

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

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

$$TUa = \frac{\log (100 - S)}{1.7}$$

where:

S = percentage survival in 100% waste. If S > 99, TUa shall be reported as zero.

AREAS OF SPECIAL BIOLOGICAL SIGNIFICANCE (ASBS) are those areas designated by the State Water Board as ocean areas requiring protection of species or biological communities to the extent that alteration of natural water quality is undesirable. All Areas of Special Biological Significance are also classified as a subset of STATE WATER QUALITY PROTECTION AREAS.

CHLORDANE shall mean the sum of chlordane-alpha, chlordane-gamma, chlordene-alpha, chlordene-gamma, nonachlor-alpha, nonachlor-gamma, and oxychlordane.

CHRONIC TOXICITY: This parameter shall be used to measure the acceptability of waters for supporting a healthy marine biota until improved methods are developed to evaluate biological response.

a. Chronic Toxicity (TUc)

Expressed as Toxic Units Chronic (TUc)

$$TUc = \frac{100}{NOEL}$$

* See Appendix I for definition of terms.

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b. No Observed Effect Level (NOEL)

The NOEL is expressed as the maximum percent effluent or receiving water that causes no observable effect on a test organism, as determined by the result of a critical life stage toxicity test listed in Appendix II.

DDT shall mean the sum of 4,4'DDT, 2,4'DDT, 4,4'DDE, 2,4'DDE, 4,4'DDD, and 2,4'DDD.

DEGRADE: Degradation shall be determined by comparison of the waste field and reference site(s) for characteristic species diversity, population density, contamination, growth anomalies, debility, or supplanting of normal species by undesirable plant and animal species. Degradation occurs if there are significant differences in any of three major biotic groups, namely, demersal fish, benthic invertebrates, or attached algae. Other groups may be evaluated where benthic species are not affected, or are not the only ones affected.

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

DOWNSTREAM OCEAN WATERS shall mean waters downstream with respect to ocean currents.

DREDGED MATERIAL: Any material excavated or dredged from the navigable waters of the United States, including material otherwise referred to as "spoil".

ENCLOSED BAYS are indentations along the coast which enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. This definition includes but is not limited to: Humboldt Bay, Bodega Harbor, Tomales Bay, Drakes Estero, San Francisco Bay, Morro Bay, Los Angeles Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay.

ENDOSULFAN shall mean the sum of endosulfan-alpha and -beta and endosulfan sulfate.

ESTUARIES AND COASTAL LAGOONS are waters at the mouths of streams that serve as mixing zones for fresh and ocean waters during a major portion of the year. Mouths of streams that are temporarily separated from the ocean by sandbars shall be considered as estuaries. Estuarine waters will generally be considered to extend from a bay or the open ocean to the upstream limit of tidal action but may be considered to extend seaward if significant mixing of fresh and salt water occurs in the open coastal waters. The waters described by this definition include but are not limited to the Sacramento-San Joaquin Delta as defined by Section 12220 of the California Water Code, Suisun Bay, Carquinez Strait downstream to Carquinez Bridge, and appropriate areas of the Smith, Klamath, Mad, Eel, Noyo, and Russian Rivers.

HALOMETHANES shall mean the sum of bromoform, bromomethane (methyl bromide) and chloromethane (methyl chloride).

HCH shall mean the sum of the alpha, beta, gamma (lindane) and delta isomers of hexachlorocyclohexane.

* See Appendix I for definition of terms.

INITIAL DILUTION is the process which results in the rapid and irreversible turbulent mixing of wastewater with ocean water around the point of discharge.

For a submerged buoyant discharge, characteristic of most municipal and industrial wastes that are released from the submarine outfalls, the momentum of the discharge and its initial buoyancy act together to produce turbulent mixing. Initial dilution in this case is completed when the diluting wastewater ceases to rise in the water column and first begins to spread horizontally.

For shallow water submerged discharges, surface discharges, and nonbuoyant discharges, characteristic of cooling water wastes and some individual discharges, turbulent mixing results primarily from the momentum of discharge. Initial dilution, in these cases, is considered to be completed when the momentum induced velocity of the discharge ceases to produce significant mixing of the waste, or the diluting plume reaches a fixed distance from the discharge to be specified by the Regional Board, whichever results in the lower estimate for initial dilution.

KELP BEDS, for purposes of the bacteriological standards of this plan, are significant aggregations of marine algae of the genera Macrocystis and Nereocystis. Kelp beds include the total foliage canopy of Macrocystis and Nereocystis plants throughout the water column.

MARICULTURE is the culture of plants and animals in marine waters independent of any pollution source.

MATERIAL: (a) In common usage: (1) the substance or substances of which a thing is made or composed (2) substantial; (b) For purposes of this Ocean Plan relating to waste disposal, dredging and the disposal of dredged material and fill, MATERIAL means matter of any kind or description which is subject to regulation as waste, or any material dredged from the navigable waters of the United States. See also, DREDGED MATERIAL.

MDL (Method Detection Limit) is the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero, as defined in 40 CFR PART 136 Appendix B.

MINIMUM LEVEL (ML) is the concentrations at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method-specified sample weights, volumes and processing steps have been followed.

NATURAL LIGHT: Reduction of natural light may be determined by the Regional Board by measurement of light transmissivity or total irradiance, or both, according to the monitoring needs of the Regional Board.

OCEAN WATERS are the territorial marine waters of the State as defined by California law to the extent these waters are outside of enclosed bays, estuaries, and coastal lagoons. If a discharge outside the territorial waters of the State could affect the quality of the waters of the State, the discharge may be regulated to assure no violation of the Ocean Plan will occur in ocean waters.

* See Appendix I for definition of terms.

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

PCBs (polychlorinated biphenyls) shall mean the sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254 and Aroclor-1260.

SHELLFISH are organisms identified by the California Department of Health Services as shellfish for public health purposes (i.e., mussels, clams and oysters).

SIGNIFICANT difference is defined as a statistically significant difference in the means of two distributions of sampling results at the 95 percent confidence level.

STATE WATER QUALITY PROTECTION AREAS (SWQPAs) are nonterrestrial marine or estuarine areas designated to protect marine species or biological communities from an undesirable alteration in natural water quality. All Areas of Special Biological Significance (ASBS) that were previously designated by the State Water Board in Resolutions 74-28, 74-32, and 75-61 are now also classified as a subset of State Water Quality Protection Areas and require special protections afforded by this Plan.

TCDD EQUIVALENTS shall mean the sum of the concentrations of chlorinated dibenzodioxins (2,3,7,8-CDDs) and chlorinated dibenzofurans (2,3,7,8-CDFs) multiplied by their respective toxicity factors, as shown in the table below.

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

WASTE: As used in this Plan, waste includes a discharger's total discharge, of whatever origin, i.e., gross, not net, discharge.

WATER RECLAMATION: The treatment of wastewater to render it suitable for reuse, the transportation of treated wastewater to the place of use, and the actual use of treated wastewater for a direct beneficial use or controlled use that would not otherwise occur.

* See Appendix I for definition of terms.