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CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

SAN FRANCISCO BAY REGION

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ORDER NO. <R2-2008-XXX>
NPDES NO. CA0038857

WASTE DISCHARGE REQUIREMENTS FOR THE SAN FRANCISCO PUBLIC UTILITIES COMMISSION, SAN FRANCISCO PUBLIC UTILITIES COMMISSION DRINKING WATER TRANSMISSION SYSTEM

The following Discharger is subject to waste discharge requirements as set forth in this Order:

Table 1. Discharger Information

Discharger	San Francisco Public Utilities Commission
Name of Facility	San Francisco Public Utilities Commission Drinking Water Transmission System
Facility Address	Multiple Addresses (Linear System) (See Attachment B)
	Alameda, Santa Clara, and San Mateo Counties
The U.S. Environmental Protection Agency (USEPA) and the Regional Water Quality Control Board have classified this discharge as a minor discharge based on impacts to receiving waters.	

Discharges by the San Francisco Public Utilities Commission from their Drinking Water Transmission System are subject to waste discharge requirements as set forth in this Order.

Table 2. Administrative Information

This Order was adopted by the Regional Water Quality Control Board on:	**October 8, 2008**
This Order shall become effective on:	**December 1, 2008**
This Order shall expire on:	**November 30, 2013**
The Discharger shall file a Report of Waste Discharge in accordance with title 23, California Code of Regulations, as application for issuance of new waste discharge requirements no later than:	**180 days prior to the Order expiration date**

I, Bruce H. Wolfe, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on October 8, 2008.

Bruce H. Wolfe, Executive Officer

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I. FACILITY INFORMATION

The following Discharger is subject to waste discharge requirements as set forth in this Order:

Table 3. Facility Information

Discharger	**San Francisco Public Utilities Commission**
Name of Facility	**San Francisco Public Utilities Commission Drinking Water Transmission System**
Facility Address	**(See Attachment B)**
	Multiple Cities, California
	Alameda, Santa Clara, and San Mateo Counties
Facility Contact, Title, and Phone	**James J. Salerno, Biological Resources Manager (415) 554-3207**
Mailing Address	**1145 Market Street, San Francisco, California 94103**
Type of Facility	**Publicly Owned Drinking Water Transmission System**
Facility Design Flow	**90.0 MGD**

This Order regulates discharges of altered water from the San Francisco Public Utilities Commission Drinking Water Transmission System described in detail under Findings, Section II. below. This Order does not cover (1) discharges of unaltered water from transmission system pipelines and tunnels; (2) discharges from surface water reservoirs; (3) discharges from distribution system pipelines; or (4) discharges from drinking water treatment facilities.

II. FINDINGS

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter Regional Water Board), finds:

A. Background. The San Francisco Public Utilities Commission (hereinafter Discharger) submitted a Report of Waste Discharge, dated December 3, 2007, and applied for a National Pollutant Discharge Elimination System (NPDES) permit authorization to discharge potable water from the San Francisco Public Utilities Commission Drinking

Water Transmission System. The application was deemed complete on January 26, 2008.

For the purposes of this Order, references to the "Discharger" or "permittee" in applicable federal and state laws, regulations, plans, or policy are held to be equivalent to references to the Discharger herein.

B. **Facility Description**. The Discharger owns and operates a drinking water transmission system that provides 2.4 million people with drinking water in the San Francisco Bay Area. This regional system consists of a series of large diameter pipelines, tunnels, valves and pump stations located in Alameda, Santa Clara and San Mateo Counties. The following types of discharges to local streams and Lower San Francisco Bay occur from this system:

- **Planned Discharges**: Drinking water releases resulting from routine operations and maintenance that can be scheduled in advance, such as (1) inspection, repair, or replacement of pipelines and tunnels; (2) bringing pipelines and tunnels back on-line; and (3) upgrading facilities for seismic or delivery reliability.

- **Unplanned Discharges:** Drinking water releases caused by nonroutine events, such as (1) pipeline breaks or leaks; (2) valve malfunctions; and (3) pressure build up in the system.

- **Emergency Discharges:** Drinking water releases caused by natural or man-made disasters, such as earthquakes, landslides, floods, accidents, or sabotage.

For planned discharges, the water is treated prior to discharge to remove chlorine and adjust the pH. Flow rates of planned discharges are controlled (less than or equal to 3,500 gallons per minute) using Best Management Practices (BMPs) to limit potential erosion in receiving waters. The planned discharges with greatest flow rates (90 million gallons per day) are associated with discharges used to fill reservoirs.

For unplanned and emergency discharges, the sites are first stabilized to protect human health and safety, and then treatment measures to remove chlorine and adjust pH and BMPs to control erosion are employed to minimize impacts to waters of the State and United States. Flow rates for unplanned discharges are highly variable and unpredictable. Transmission pipeline leaks may have discharge flow rates less than 25 gallons per minute (36,000 gallons per day); however, a pipeline break caused by a natural catastrophe can discharge up to 100,000 gallons or more per minute (144 million gallons per day).

Discharge points may occur anywhere along the transmission system during unplanned or emergency events involving broken pipelines; however, the majority of unplanned discharges and all planned discharges will occur at low spots in the transmission system. The most common discharge points and receiving waters are listed in the Fact Sheet (Attachment F).

Many of the planned discharges will result from facility upgrades performed as part of the SFPUC's Water System Improvement Program (WSIP). In addition, discharges will also be necessary following completion of the facility upgrade projects to attain

maintenance goals under the WSIP. Attachment B provides a map of the facility and area around the facility, including anticipated discharge points and receiving waters. Attachment C provides a flow schematic of the field dechlorination set up for planned discharges.

C. **Legal Authorities.** This Order is issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. Environmental Protection Agency (USEPA) and chapter 5.5, division 7 of the California Water Code (commencing with section 13370). It shall serve as an NPDES permit for point source discharges from this facility to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to article 4, chapter 4, division 7 of the Water Code (commencing with section 13260).

D. **Background and Rationale for Requirements.** The Regional Water Board developed the requirements in this Order based on information submitted as part of the application and other available information. The Fact Sheet (Attachment F), which contains background information and rationale for Order requirements, is hereby incorporated into this Order and constitutes part of the Findings for this Order. Attachments A through E and G are also incorporated into this Order.

E. **California Environmental Quality Act (CEQA).** Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of CEQA. However, granting a categorical exception to the State Implementation Policy requires the preparation of a CEQA document (see Section K, below). An Initial Study/Mitigated Negative Declaration was prepared and adopted with Resolution No. R2-2008-XXXX.

F. **Technology-based Effluent Limitations.** CWA Section 301(b) and NPDES regulations at 40 CFR 122.44 require permits to, at a minimum, meet applicable technology-based requirements and any more stringent effluent limitations necessary to meet applicable water quality standards. Technology-based effluent limitations have not been established by USEPA for the types of discharges authorized by this Order.

G. **Water Quality-Based Effluent Limitations.** Section 301(b) of the CWA and section 122.44(d) of 40 CFR require that permits include limitations more stringent than federal technology-based requirements where necessary to achieve applicable water quality standards.

40 CFR Section 122.44(d) requires that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, water quality-based effluent limitations (WQBELs) may be established: (1) using USEPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) on an indicator parameter for the pollutant of concern; or (3) using a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state's narrative criterion, supplemented with other relevant information, as provided in section 122.44(d)(1)(vi).

H. **Water Quality Control Plans.** The *Water Quality Control Plan for the San Francisco Bay Basin* (Basin Plan) was duly adopted by the Regional Water Board and approved by the State Water Resources Control Board, USEPA, and the Office of Administrative Law where required. The Basin Plan is the Regional Water Board's master water quality control planning document. It designates beneficial uses of receiving waters, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed by the Plan. Section 2.2.1 of the Basin Plan at indicates that the beneficial uses of any specifically identified water body generally apply to its tributary streams. In addition, the Basin Plan implements State Water Resources Control Board (State Water Board) Resolution No. 88-63, which establishes a policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. The Basin Plan designates beneficial uses for surface waters and wetlands in the South Bay and Santa Clara Basins. Applicable beneficial uses of waters in these Basins are listed below. Thus, as discussed in detail in the Fact Sheet (Attachment F), beneficial uses applicable to Receiving Waters are as follows:

- **Freshwaters:** Agricultural Supply; Municipal and Domestic Supply; Groundwater Recharge; Cold Freshwater Habitat; Fish Migration; Preservation of Rare and Endangered Species; Fish Spawning; Warm Freshwater Habitat; Wildlife Habitat; Water Contact Recreation; and Non-Contact Water Recreation; and Freshwater Replenishment.

- **Estuarine waters:** Industrial Service Supply; Ocean, Commercial, and Sport Fishing; Shellfish Harvesting; Estuarine Habitat; Fish Migration; Preservation of Rare and Endangered Species; Fish Spawning; Wildlife Habitat; Water Contact Recreation; and Non-Contact Water Recreation; and Navigation.

Requirements of this Order implement the Basin Plan.

I. **Basin Plan Prohibitions For Which Exceptions Are Necessary.** The Basin Plan contains a prohibition against discharge of any wastewater that has particular characteristics of concern to beneficial uses at any point at which the wastewater does not receive a minimum initial dilution of at least 10:1 (Prohibition 1 in Basin Plan Table 4-1). The Regional Water Board finds that the discharges permitted under this Order are not subject to this prohibition for reasons explained in the Fact Sheet (Attachment F).

J. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** USEPA adopted the NTR on December 22, 1992, and later amended it on May 4, 1995 and November 9, 1999. About 40 criteria in the NTR applied in California. On May 18, 2000, USEPA adopted the CTR. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that were applicable in the state. The CTR was amended on February 13, 2001. These rules contain water quality criteria for priority pollutants.

K. **State Implementation Policy.** On March 2, 2000, the State Water Board adopted the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Policy or SIP). The SIP became effective on April 28, 2000, with respect to the priority pollutant criteria promulgated for California by the USEPA through the NTR and to the priority pollutant objectives

established by the Regional Water Board in the Basin Plan. The SIP became effective on May 18, 2000, with respect to the priority pollutant criteria promulgated by the USEPA through the CTR. The State Water Board adopted amendments to the SIP on February 24, 2005, that became effective on July 13, 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control.

As explained further in the Fact Sheet (Attachment F), the SIP provides for a categorical exception to priority pollutant objectives for short-term or seasonal discharges of drinking water. This Order grants this exception for certain copper and trihalomethanes objectives in accordance with the SIP and Resolution No. R2-2008-XXXX.

Requirements of this Order implement the SIP.

L. **Compliance Schedules and Interim Requirements.** This Order does not include compliance schedules or interim effluent limitations**.**

M. **Alaska Rule.** On March 30, 2000, USEPA revised its regulation that specifies when new and revised state and tribal water quality standards (WQS) become effective for CWA purposes. (40 C.F.R. § 131.21; 65 Fed. Reg. 24641 (April 27, 2000).) Under the revised regulation (also known as the Alaska rule), new and revised standards submitted to USEPA after May 30, 2000, must be approved by USEPA before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to USEPA by May 30, 2000 may be used for CWA purposes, whether or not approved by USEPA.

N. **Stringency of Requirements for Individual Pollutants.** This Order contains both technology-based and water quality-based effluent limitations for individual pollutants. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements. In addition, this Order contains some effluent limitations more stringent than the minimum, federal technology-based requirements because more stringent limitations are necessary to meet water quality standards.

Water quality-based effluent limitations have been derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. To the extent that toxic pollutant water quality-based effluent limitations were derived from the CTR, the CTR is the applicable standard pursuant to section 131.38. The procedures for calculating the individual water quality-based effluent limitations for priority pollutants are based on the SIP, which was approved by USEPA on May 18, 2000. All beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by USEPA prior to May 30, 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to May 30, 2000, but not approved by USEPA before that date, are nonetheless "applicable water quality standards for purposes of the CWA" pursuant to section 131.21(c)(1). Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the requirements of the CWA.

O. Antidegradation Policy. Section 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing quality of waters be maintained unless degradation is justified based on specific findings. The Regional Water Board's Basin Plan implements, and incorporates by reference, both the state and federal antidegradation policies. As discussed in the Fact Sheet (Attachment F), the permitted discharge is consistent with the antidegradation provision of section 131.12 and State Water Board Resolution No. 68-16.

N. Anti-Backsliding Requirements. Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations at title 40, Code of Federal Regulations section 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. This is a new permit, so no previous limits exist from which to backslide.

P. Endangered Species Act. This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code sections 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. sections 1531 to 1544). This Order requires compliance with effluent limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the state. The Discharger is responsible for meeting all requirements of the applicable Endangered Species Act.

Q. Monitoring and Reporting. 40 CFR section 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorizes the Regional Water Board to require technical and monitoring reports. The Monitoring and Reporting Program establishes monitoring and reporting requirements to implement federal and State requirements. This Monitoring and Reporting Program is provided in Attachment E.

R. Standard and Special Provisions. Standard Provisions, which apply to all NPDES permits in accordance with 40 CFR section 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 CFR section 122.42, are provided in Attachment D. The Discharger must comply with all standard provisions and with those additional conditions that are applicable under section 122.42. The Regional Water Board has also included in this Order special provisions applicable to the Discharger (Attachment G). A rationale for the special provisions contained in this Order is provided in the attached Fact Sheet (Attachment F).

S. Provisions and Requirements Implementing State Law. There are no requirements in this Order that implement state law only. Therefore, all requirements in this Order are required or authorized under the federal CWA and violations of these requirements are subject to the enforcement remedies available for NPDES violations.

T. Notification of Interested Parties. The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe Waste

Discharge Requirements for the discharge and has provided an opportunity to submit written comments and recommendations. Details of the notification are provided in the Fact Sheet (Attachment F).

U. Consideration of Public Comment. The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Details of the public hearing are provided in the Fact Sheet (Attachment F) of this Order.

THEREFORE, IT IS HEREBY ORDERED, that in order to meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and regulations adopted thereunder and the provisions of the federal Clean Water Act (CWA) and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order.

III. DISCHARGE PROHIBITIONS

The following discharges are prohibited:

A. The discharge of wastewater at a location or in a manner different from that described in this Order is prohibited.

B. The discharges shall not cause pollution, contamination, or nuisance as defined by Section 13050 of the California Water Code.

C. The discharges at any one location shall not exceed 2,200 hours per year.

D. The discharges at any one location shall not exceed water quality criteria for copper more than once every three years.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations for Discharges to Freshwater Creeks other than San Antonio and Alameda Creeks

The Discharger shall maintain compliance with the following effluent limitations at all points of discharge to freshwater creeks other than San Antonio and Alameda Creeks, with compliance measured as described in the Monitoring and Reporting Program (MRP) (Attachment E):

Table 4. Effluent Limitations for Discharges to Freshwater Creeks other than San Antonio and Alameda Creeks

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Total Residual Chlorine[1]	mg/L	--	--	--	0.0
pH[2]	Standard Units	--	--	6.5	8.5
Nickel	µg/L	4.2	7.2	--	--
Total Trihalomethanes	mg/L	--	0.10	--	--

Notes:

µg/L micrograms per liter
mg/L milligrams per liter

1. This requirement is defined as below the limit of detection in standard test methods, as defined in the latest edition of *Standard Methods for the Examination of Water and Wastewater*. For total residual chlorine (TRC) detection levels, the Discharger shall use a method for analysis of TRC that is identified for analysis of wastewaters in 40 CFR Part 136 or an equivalent method approved by USEPA. The method of analysis shall achieve a minimum level of at least 0.05 mg/L. The State Water Board is considering a statewide policy on chlorine residual. This Order may be amended to reflect any changes relating to residual chlorine.
2. Exceedance of the pH limit will not constitute a violation of this Order if the Discharger can demonstrate that the discharge does not cause natural background pH to be depressed below 6.5 nor raised above 8.5, or if outside this range, the receiving water has not been altered from normal ambient pH by more than 0.5 Standard Units (through upstream and downstream receiving water monitoring).

B. Effluent Limitations for Discharges to San Antonio Reservoir, San Antonio Creek and Alameda Creek

The Discharger shall maintain compliance with the following effluent limitations at all points of discharge to San Antonio Reservoir, San Antonio Creek and Alameda Creek with compliance measured as described in the MRP (Attachment E):

Table 5. Effluent Limitations for Discharges to San Antonio Reservoir, San Antonio Creek and Alameda Creek

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Total Residual Chlorine[1]	mg/L	--	--	--	0.0
pH[2]	Standard Units	--	--	6.5	8.5
Total Trihalomethanes	mg/L	--	0.10	--	--

Notes:
mg/L milligrams per liter

1. This requirement is defined as below the limit of detection in standard test methods, as defined in the latest edition of *Standard Methods for the Examination of Water and Wastewater*. For total residual chlorine (TRC) detection levels, the Discharger shall use a method for analysis of TRC that is identified for analysis of wastewaters in 40 CFR Part 136 or an equivalent method approved by USEPA. The method of analysis shall achieve a minimum level of at least 0.05 mg/L. The State Water Board is considering a statewide policy on chlorine residual. This Order may be amended to reflect any changes relating to residual chlorine.
2. Exceedance of the pH limit will not constitute a violation of this Order if the Discharger can demonstrate that the discharge does not cause natural background pH to be depressed below 6.5 nor raised above 8.5, or if outside this range, the receiving water has not been altered from normal ambient pH by more than 0.5 Standard Units (through upstream and downstream receiving water monitoring).

C. Effluent Limitations for Discharges to Estuarine Waters

The Discharger shall maintain compliance with the following effluent limitations at all points of discharge to estuarine receiving waters with compliance measured as described in the MRP (Attachment E):

Table 6. Effluent Limitations for Discharges to Estuarine Waters

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Total Residual Chlorine[1]	mg/L	--	--	--	0.0

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
pH[2]	Standard Units	--	--	6.5	8.5
Nickel	µg/L	10	18	--	--

Notes:

µg/L micrograms per liter

mg/L milligrams per liter

1. This requirement is defined as below the limit of detection in standard test methods, as defined in the latest edition of *Standard Methods for the Examination of Water and Wastewater*. For total residual chlorine (TRC) detection levels, the Discharger shall use a method for analysis of TRC that is identified for analysis of wastewaters in 40 CFR Part 136 or an equivalent method approved by USEPA. The method of analysis shall achieve a minimum level of at least 0.05 mg/L. The State Water Board is considering a statewide policy on chlorine residual. This Order may be amended to reflect any changes relating to residual chlorine.
2. Exceedance of the pH limit will not constitute a violation of this Order if the Discharger can demonstrate that the discharge does not cause natural background pH to be depressed below 6.5 nor raised above 8.5, or if outside this range, the receiving water has not been altered from normal ambient pH by more than 0.5 Standard Units (through upstream and downstream receiving water monitoring).

V. RECEIVING WATER LIMITATIONS

Receiving water limitations are based on water quality objectives contained in the Basin Plan and are a required part of this Order. Discharges shall not cause the following conditions to exist in the any receiving water.

A. Floating material, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses;

B. Bottom deposits or aquatic growths to the extent that such deposits or growths cause nuisance or adversely affect beneficial uses;

C. Alteration of temperature from ambient levels unless it can be demonstrated to the satisfaction of the Regional Water Board that such alteration in temperature does not adversely affect beneficial uses;

D. Oils, greases, waxes, or other materials in concentrations that result in a visible film or coating on the surface of the water or on objects in the water, that cause nuisance, or that otherwise adversely affect beneficial uses;

E. Toxic or other deleterious substances in concentrations or quantities that will cause deleterious effects on aquatic biota, wildlife, or waterfowl; or that render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentration; and

F. Changes in turbidity that cause nuisance or adversely affect beneficial uses. In non-tidal receiving waters, where background turbidity is greater than 50 NTU, the discharges shall also not cause an increase of more than 10 percent above upstream background turbidity.

VI. PROVISIONS

A. Standard Provisions

1. The Discharger shall comply with all Standard Provisions included in Attachment D of this Order.

2. The Discharger shall comply with all applicable items of the *Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits, August 1993* (Attachment G), including any amendments thereto. Where provisions or reporting requirements specified in this Order are different from equivalent or related provisions or reporting requirements given in the Federal Standard Provisions, the specifications of this Order and Attachment G shall apply in areas where those provisions are more stringent. Duplicative requirements in the federal Standard Provisions in VI.A.1, above (Attachment D), and the regional Standard Provisions (Attachment G) are not separate requirements. A violation of a duplicative requirement does not constitute two separate violations.

B. Monitoring and Reporting Program (MRP) Requirements

The Discharger shall comply with the MRP, and future revisions thereto, in Attachment E of this Order. The Discharger shall also comply with the Self-Monitoring Program, Part A (Attachment G).

C. Special Provisions

1. Reopener Provisions

The Regional Water Board may modify or reopen this Order prior to its expiration date in any of the following circumstances:

a. If present or future investigations demonstrate that the discharges governed by this Order will, or cease to, have adverse impacts on water quality or beneficial uses of the receiving waters;

b. As new or revised WQOs come into effect for the San Francisco Bay estuary and contiguous water bodies (whether statewide, regional, or site-specific). In such cases, effluent limitations in this Order will be modified as necessary to reflect updated WQOs;

c. If translator or other water quality studies provide a basis for determining that a permit condition should be modified;

d. If an administrative or judicial decision on a separate NPDES permit or WDR addresses requirements similar to this discharge; or

e. As authorized by law.

The Discharger may request permit modification based on the above. The Discharger shall include in any such request an antidegradation and antibacksliding analysis as applicable.

2. Erosion Control Provisions

The Discharger shall develop and implement an erosion control plan that specifies Best Management Practices (BMPs) to minimize impacts to waters of the State from planned, unplanned and emergency discharges. No later than 6 months after the effective date of this Order, the Discharger shall submit an erosion control plan that describes implementation of the BMPs. The Discharger must review and update its erosion control plan annually as specified in VI.C.2.d, below. The minimum content of the erosion control plan shall be as follows.

a. Planned Discharges

In addition to treating the effluent to remove toxic pollutants, the Discharger shall implement the following BMPs for planned discharges:

i. Contingency Plan – The Discharger shall develop a contingency plan that implements BMPs that first avoid and second minimize discharges to the extent possible, and identifies an alternate water supply, if necessary. These BMPs may include managerial practices, operations and maintenance procedures, or other measures that reduce or prevent discharges of drinking water by retaining water within the supply and transmission systems.

ii. Notification – One week prior to discharging, the Discharger shall notify potentially affected water utilities and flood control agencies. The Discharger shall also notify state and federal natural resource agencies at least one week prior to discharging to a creek that supports special status species. The Discharger shall also include, in each quarterly self-monitoring report, a time schedule for all reasonably foreseeable discharges.

iii. Erosion and Sediment Control BMPs – The Discharger shall implement erosion and sediment control BMPs that assess and prevent potential erosion impacts to creeks at the point of discharge and downstream of the discharge. BMPs to control erosion at the point of discharge shall consist of measures specified in the Erosion Control Standard Operating Procedure (Attachment H).

To control erosion downstream of the discharge, the Discharger shall include the following in the erosion control plan:

(1) The Discharger shall specify methods for locating the discharge point to the creek and collecting the latitudinal and longitudinal coordinates. The Discharger will use these coordinates to determine whether the discharge is to a tidally influenced or hardened channel. Discharges to tidally influenced channels or channels hardened continuously from the point of discharge to the upstream portion of tidal influence are in compliance with erosion control BMPs. These channels are shown in Attachment B (Facility Map).

(2) The Discharger shall specify methods for determining whether the discharge is less than the flow rate threshold for excessive erosion.

The flow rate threshold for excessive erosion is defined as 20 percent of the dominant discharge or 20 percent of the 2-year flood flow if the dominant discharge flow rate is unknown. The 2-year flood flow is the creek flow rate associated with a storm having a 50 percent probability of occurring in any one year on the basis of the annual flood series. Discharges with flow rates less than the flow threshold for excessive erosion are protective of creeks and are in compliance with erosion control BMPs.

(3) If a discharge flow rate is greater than the flow rate threshold above, the Discharger shall determine whether the shear stress of the discharge is less than the permissible shear stress value. The permissible shear stress value shall be 2 pounds per square foot (lb/ft^2). Discharges with flow rates less than 2 lb/ft^2 are protective of creeks and are in compliance with erosion control BMPs. If the discharge shear stress is greater than 2 lb/ft^2, then the Discharger shall implement flow control or other measures to reduce the discharge shear stress until it is less than 2 lb/ft^2. The Discharger may also propose alternative permissible shear stress values based on site-specific measurements. These site-specific permissible shear stress values must be acceptable to the Executive Officer.

b. Unplanned Discharges

The Discharger shall first implement BMPs that protect health and safety. Once protection of health and safety has been achieved, the effluent shall be treated to remove chloramine and adjust pH, and erosion and sediment control BMPs shall be implemented as described in Subsection C.3.a.iii.

c. Emergency Discharges

The Discharger shall implement BMPs that do not interfere with immediate emergency response operations or threaten public health and safety. During emergency situations, priority of efforts shall be directed toward life, property, and the environment. Once protection of health and safety has been achieved, the effluent shall be treated to remove toxic pollutants, and erosion and sediment control BMPs shall be implemented as described in Subsection C.3.a.iii.

d. Annual Comprehensive Facility Compliance Evaluation

The Discharger shall conduct at least one comprehensive facility compliance evaluation per year to determine the effectiveness of the Erosion Control. Evaluations shall be conducted not less than 8 or more than 16 months apart. The pollution prevention plan shall be revised, as appropriate, and any revisions implemented within 30 days of the evaluation. Evaluations shall include the following:

i. A review of all visual observation records, inspection records, and sampling and analysis results.

ii. A visual inspection at a single discharge location to evaluate the effectiveness of field procedures for evidence of, or the potential for, the discharge of pollutants.

iii. A review and evaluation of all BMPs to determine whether the BMPs are adequate, properly implemented, and maintained, or whether additional BMPs are needed.

iv. An evaluation report that includes (1) identification of personnel performing the evaluation, (2) date of the evaluation, (3) necessary program revisions, (4) incidents of non-compliance and the corrective actions taken, and (5) certification that the Discharger is in compliance with this Order. If the above certification cannot be provided, the evaluation report shall include an explanation as to why the Discharger is not in compliance with this Order. The evaluation report shall be submitted as part of the annual report (as described in the Monitoring and Reporting Program (MRP) (Attachment E)), be retained for at least five years, and be signed and certified in accordance with the requirements of this Order.

At least 30 days prior to conducting the Comprehensive Facility Compliance Evaluation, the Discharger shall notify the appropriate Regional Water Board NPDES staff person of its intent to conduct the evaluation, so that a representative of the Regional Water Board may accompany the Discharger during its field inspection and review of BMPs.

3. Additional SIP Exception Requirements

This Order grants a categorical exception to SIP requirements for copper and certain trihalomethanes. In accordance with SIP requirements for the categorical exception, the Discharger shall include, in each quarterly self-monitoring report, a detailed description of anticipated actions that will result in a discharge, including actions that have a reasonable potential to result in a discharge. This detailed description shall include the proposed method of completing the action.

The Discharger shall also provide, in each quarterly monitoring report, certification by a qualified biologist that the receiving water beneficial uses have either (1) not been impacted or (2) been restored for all discharges that have been completed during the quarter.

4. Construction, Operation and Maintenance Specifications

No later than 6 months after the effective date of this Order, the Discharger shall submit Standard Operating Procedure (SOP) for dechlorination. The SOP for dechlorination shall be maintained in usable condition and be available for reference and use by all applicable personnel.

The Discharger shall regularly review, revise, or update, as necessary, the dechlorination SOP to ensure that the document remains useful and relevant to current equipment and operational practices. Reviews shall be conducted annually, and revisions or updates shall be completed as necessary. For any significant

changes in treatment equipment or operation practices, applicable revisions shall be completed within 90 days of completion of such changes.

The Discharger shall provide the Executive Officer, upon request, a report describing the current status of its dechlorination SOP, including any recommended or planned actions and an estimated time schedule for these actions. The Discharger shall also include, in each annual self-monitoring report, a description or summary of review and evaluation procedures and applicable changes to its SOP.

VII. COMPLIANCE DETERMINATION

Compliance with the effluent limitations contained in Section IV of this Order will be determined as specified below:

A. General

Compliance with effluent limitations for priority pollutants shall be determined using sample reporting protocols defined in the MRP and Attachment A of this Order. For purposes of reporting and administrative enforcement by the Regional and State Water Boards, the Discharger shall be deemed out of compliance with effluent limitations if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reporting level (RL).

B. Multiple Sample Data

When determining compliance with an AMEL or MDEL for priority pollutants and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of “Detected, but Not Quantified” (DNQ) or “Not Detected” (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

1. The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.

2. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

ATTACHMENT A – DEFINITIONS

Arithmetic Mean (μ)
Also called the average, is the sum of measured values divided by the number of samples. For ambient water concentrations, the arithmetic mean is calculated as follows:

Arithmetic mean = $\mu = \Sigma x / n$ where: Σx is the sum of the measured ambient water concentrations, and n is the number of samples.

Average Monthly Effluent Limitation (AMEL)
The highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

Best Management Practices (BMPs)
Methods, measures, or practices designed and selected to reduce or eliminate the discharge of pollutants to surface waters from point and non-point source discharges including storm water. BMPs include structural and non-structural controls, and operation and maintenance procedures, which can be applied before, during, and/or after pollution producing activities.

Bioaccumulative
Those substances taken up by an organism from its surrounding medium through gill membranes, epithelial tissue, or from food and subsequently concentrated and retained in the body of the organism.

Carcinogenic
Pollutants are substances that are known to cause cancer in living organisms.

Coefficient of Variation (CV)
CV is a measure of the data variability and is calculated as the estimated standard deviation divided by the arithmetic mean of the observed values.

Daily Discharge
Daily Discharge is defined as either: (1) the total mass of the constituent discharged over the calendar day (12:00 am through 11:59 pm) or any 24-hour period that reasonably represents a calendar day for purposes of sampling (as specified in the permit), for a constituent with limitations expressed in units of mass or; (2) the unweighted arithmetic mean measurement of the constituent over the day for a constituent with limitations expressed in other units of measurement (e.g., concentration).

The daily discharge may be determined by the analytical results of a composite sample taken over the course of one day (a calendar day or other 24-hour period defined as a day) or by the arithmetic mean of analytical results from one or more grab samples taken over the course of the day.

For composite sampling, if 1 day is defined as a 24-hour period other than a calendar day, the analytical result for the 24-hour period will be considered as the result for the calendar day in which the 24-hour period ends.

Detected, but Not Quantified (DNQ)
DNQ are those sample results less than the RL, but greater than or equal to the laboratory's MDL.

Dilution Credit
Dilution Credit is the amount of dilution granted to a discharge in the calculation of a water quality-based effluent limitation, based on the allowance of a specified mixing zone. It is calculated from the dilution ratio or determined through conducting a mixing zone study or modeling of the discharge and receiving water.

Effluent Concentration Allowance (ECA)
ECA is a value derived from the water quality criterion/objective, dilution credit, and ambient background concentration that is used, in conjunction with the coefficient of variation for the effluent monitoring data, to calculate a long-term average (LTA) discharge concentration. The ECA has the same meaning as waste load allocation (WLA) as used in USEPA guidance (Technical Support Document For Water Quality-based Toxics Control, March 1991, second printing, EPA/505/2-90-001).

Emergency Discharges
Drinking water releases caused by natural or man-made disasters, such as pipeline breaks caused by earthquakes, landslides, floods, accidents, and terrorist actions.

Enclosed Bays
Enclosed Bays means indentations along the coast that enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between the headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. Enclosed bays include, but are not limited to, Humboldt Bay, Bodega Harbor, Tomales Bay, Drake's Estero, San Francisco Bay, Morro Bay, Los Angeles-Long Beach Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay. Enclosed bays do not include inland surface waters or ocean waters.

Estimated Chemical Concentration
The estimated chemical concentration that results from the confirmed detection of the substance by the analytical method below the ML value.

Estuaries
Estuaries means waters, including coastal lagoons, located at the mouths of streams that serve as areas of mixing for fresh and ocean waters. Coastal lagoons and mouths of streams that are temporarily separated from the ocean by sandbars shall be considered estuaries. Estuarine waters shall be considered to extend from a bay or the open ocean to a point upstream where there is no significant mixing of fresh water and seawater. Estuarine waters included, but are not limited to, the Sacramento-San Joaquin Delta, as defined in Water Code section 12220, Suisun Bay, Carquinez Strait downstream to the Carquinez Bridge, and appropriate areas of the Smith, Mad, Eel, Noyo, Russian, Klamath, San Diego, and Otay rivers. Estuaries do not include inland surface waters or ocean waters.

Inland Surface Waters
All surface waters of the State that do not include the ocean, enclosed bays, or estuaries.

Instantaneous Maximum Effluent Limitation

The highest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous maximum limitation).

Instantaneous Minimum Effluent Limitation
The lowest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous minimum limitation).

Maximum Daily Effluent Limitation (MDEL)
The highest allowable daily discharge of a pollutant, over a calendar day (or 24-hour period). For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the arithmetic mean measurement of the pollutant over the day.

Median
The middle measurement in a set of data. The median of a set of data is found by first arranging the measurements in order of magnitude (either increasing or decreasing order). If the number of measurements (n) is odd, then the median = $X_{(n+1)/2}$. If n is even, then the median = $(X_{n/2} + X_{(n/2)+1})/2$ (i.e., the midpoint between the $n/2$ and $n/2+1$).

Method Detection Limit (MDL)
MDL is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, as defined in title 40 of the Code of Federal Regulations, Part 136, Attachment B, revised as of July 3, 1999.

Minimum Level (ML)
ML is the concentration 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.

Not Detected (ND)
Sample results which are less than the laboratory's MDL.

Planned Discharges
Drinking water releases resulting from routine operations and maintenance that can be scheduled in advance, such as (1) draining pipelines and tunnels to allow for inspection, repair, and/or replacement; (2) flushing disinfection water from the system after bringing pipelines and tunnels back on-line; and (3) transferring water from pipelines to reservoirs.

Reporting Level (RL)
RL is the ML (and its associated analytical method) chosen by the Discharger for reporting and compliance determination from the MLs included in this Order. The MLs included in this Order correspond to approved analytical methods for reporting a sample result that are selected by the Regional Water Board either from Appendix 4 of the SIP in accordance with section 2.4.2 of the SIP or established in accordance with section 2.4.3 of the SIP. The ML is based on the proper application of method-based analytical procedures for sample preparation and the absence of any matrix interferences. Other factors may be applied to the ML depending on the specific sample preparation steps employed. For example, the treatment typically applied in

cases where there are matrix-effects is to dilute the sample or sample aliquot by a factor of ten. In such cases, this additional factor must be applied to the ML in the computation of the RL.

Source of Drinking Water
Any water designated as municipal or domestic supply (MUN) in a Regional Water Board Basin Plan.

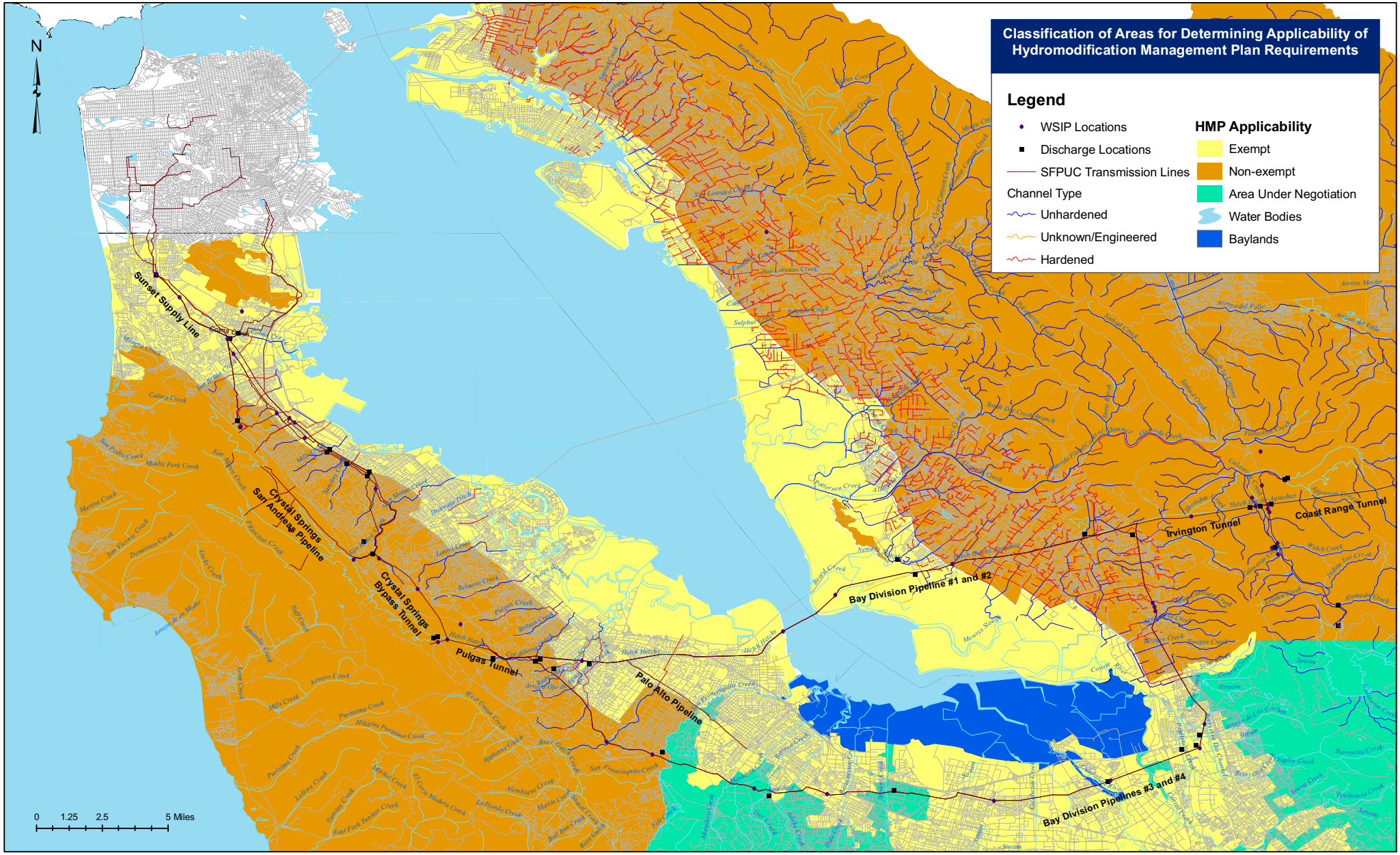
Standard Deviation (σ)
Standard Deviation is a measure of variability that is calculated as follows:

$$\sigma = (\sum[(x - \mu)^2]/(n - 1))^{0.5}$$

where:
x is the observed value;
μ is the arithmetic mean of the observed values; and
n is the number of samples.

Unplanned Discharges
Drinking water releases caused by nonroutine events, such as (1) pipeline breaks or leaks; (2) valve malfunctions; (3) pressure build up in the system; and (4) non-compliance with drinking water turbidity standards.

ATTACHMENT B – MAP



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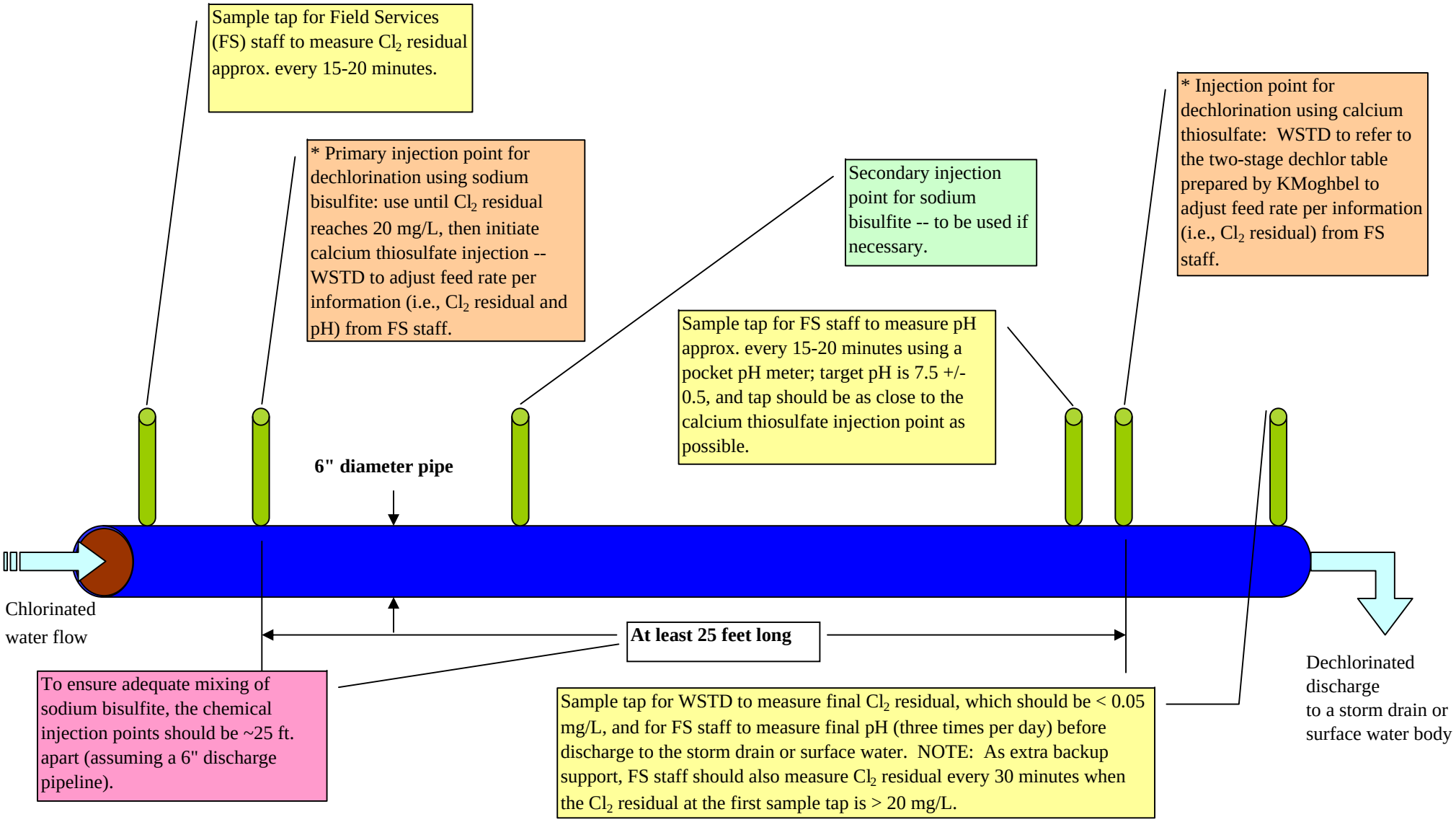
ATTACHMENT C – FLOW SCHEMATIC FOR PLANNED DISCHARGES

Dual Dechlorination Setup for Discharge Site - Side View



* The current chemical injection pumps cannot measure the injection rate of dechlorination chemicals and may not be able to prevent siphoning. There are pumps on the market that can more precisely inject chemicals at the required rates to remove chlorine and to maintain pH levels between 6.5 and 8.5.

This schematic is for illustrative purposes only. Actual methods for discharges may vary and alternative methods may be employed to achieve goals specified in this permit.

ATTACHMENT D – STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

1. The Discharger must comply with all of the conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code and is grounds for enforcement action, for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. (40 C.F.R. § 122.41(a).)

2. The Discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not yet been modified to incorporate the requirement. (40 C.F.R. § 122.41(a)(1).)

B. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a Discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Order. (40 C.F.R. § 122.41(c).)

C. Duty to Mitigate

The Discharger shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this Order that has a reasonable likelihood of adversely affecting human health or the environment. (40 C.F.R. § 122.41(d).)

D. Proper Operation and Maintenance

The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by a Discharger only when necessary to achieve compliance with the conditions of this Order. (40 C.F.R. § 122.41(e).)

E. Property Rights

1. This Order does not convey any property rights of any sort or any exclusive privileges. (40 C.F.R. § 122.41(g).)

2. The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of state or local law or regulations. (40 C.F.R. § 122.5(c).)

F. Inspection and Entry

The Discharger shall allow the Regional Water Board, State Water Board, United States Environmental Protection Agency (USEPA), and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to (40 C.F.R. § 122.41(i); Water Code, § 13383):

1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order (40 C.F.R. § 122.41(i)(1));

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (40 C.F.R. § 122.41(i)(2));

3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (40 C.F.R. § 122.41(i)(3)); and

4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the Water Code, any substances or parameters at any location. (40 C.F.R. § 122.41(i)(4).)

G. Bypass

1. Definitions

a. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility. (40 C.F.R. § 122.41(m)(1)(i).)

b. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. (40 C.F.R. § 122.41(m)(1)(ii).)

2. Bypass not exceeding limitations. The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance I.G.3, I.G.4, and I.G.5 below. (40 C.F.R. § 122.41(m)(2).)

3. Prohibition of bypass. Bypass is prohibited, and the Regional Water Board may take enforcement action against a Discharger for bypass, unless (40 C.F.R. § 122.41(m)(4)(i)):

Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 C.F.R. § 122.41(m)(4)(i)(A));

There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance (40 C.F.R. § 122.41(m)(4)(i)(B)); and

The Discharger submitted notice to the Regional Water Board as required under Standard Provisions – Permit Compliance I.G.5 below. (40 C.F.R. § 122.41(m)(4)(i)(C).)

4. The Regional Water Board may approve an anticipated bypass, after considering its adverse effects, if the Regional Water Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance I.G.3 above. (40 C.F.R. § 122.41(m)(4)(ii).)

5. Notice

Anticipated bypass. If the Discharger knows in advance of the need for a bypass, it shall submit a notice, if possible at least 10 days before the date of the bypass. (40 C.F.R. § 122.41(m)(3)(i).)

Unanticipated bypass. The Discharger shall submit notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below (24-hour notice). (40 C.F.R. § 122.41(m)(3)(ii).)

H. Upset

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the Discharger. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. (40 C.F.R. § 122.41(n)(1).)

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 C.F.R. § 122.41(n)(2).)

2. Conditions necessary for a demonstration of upset. A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that (40 C.F.R. § 122.41(n)(3)):

An upset occurred and that the Discharger can identify the cause(s) of the upset (40 C.F.R. § 122.41(n)(3)(i));

The permitted facility was, at the time, being properly operated (40 C.F.R. § 122.41(n)(3)(ii));

The Discharger submitted notice of the upset as required in Standard Provisions – Reporting V.E.2.b below (24-hour notice) (40 C.F.R. § 122.41(n)(3)(iii)); and

The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above. (40 C.F.R. § 122.41(n)(3)(iv).)

3. Burden of proof. In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof. (40 C.F.R. § 122.41(n)(4).)

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any Order condition. (40 C.F.R. § 122.41(f).)

B. Duty to Reapply

If the Discharger wishes to continue an activity regulated by this Order after the expiration date of this Order, the Discharger must apply for and obtain a new permit. (40 C.F.R. § 122.41(b).)

C. Transfers

This Order is not transferable to any person except after notice to the Regional Water Board. The Regional Water Board may require modification or revocation and reissuance of the Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the CWA and the Water Code. (40 C.F.R. § 122.41(l)(3); § 122.61.)

III. STANDARD PROVISIONS – MONITORING

A. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. (40 C.F.R. § 122.41(j)(1).)

B. Monitoring results must be conducted according to test procedures under Part 136 or, in the case of sludge use or disposal, approved under Part 136 unless otherwise specified in Part 503 unless other test procedures have been specified in this Order. (40 C.F.R. § 122.41(j)(4); § 122.44(i)(1)(iv).)

IV. STANDARD PROVISIONS – RECORDS

C. Except for records of monitoring information required by this Order related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by Part 503), the Discharger shall

retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Regional Water Board Executive Officer at any time. (40 C.F.R. § 122.41(j)(2).)

D. Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements (40 C.F.R. § 122.41(j)(3)(i));
2. The individual(s) who performed the sampling or measurements (40 C.F.R. § 122.41(j)(3)(ii));
3. The date(s) analyses were performed (40 C.F.R. § 122.41(j)(3)(iii));
4. The individual(s) who performed the analyses (40 C.F.R. § 122.41(j)(3)(iv));
5. The analytical techniques or methods used (40 C.F.R. § 122.41(j)(3)(v)); and
6. The results of such analyses. (40 C.F.R. § 122.41(j)(3)(vi).)

E. Claims of confidentiality for the following information will be denied (40 C.F.R. § 122.7(b)):

1. The name and address of any permit applicant or Discharger (40 C.F.R. § 122.7(b)(1)); and
2. Permit applications and attachments, permits and effluent data. (40 C.F.R. § 122.7(b)(2).)

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

The Discharger shall furnish to the Regional Water Board, State Water Board, or USEPA within a reasonable time, any information which the Regional Water Board, State Water Board, or USEPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Upon request, the Discharger shall also furnish to the Regional Water Board, State Water Board, or USEPA copies of records required to be kept by this Order. (40 C.F.R. § 122.41(h); Water Code, § 13267.)

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the Regional Water Board, State Water Board, and/or USEPA shall be signed and certified in accordance with Standard Provisions – Reporting V.B.2, V.B.3, V.B.4, and V.B.5 below. (40 C.F.R. § 122.41(k).)

2. All permit applications shall be signed by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of USEPA). (40 C.F.R. § 122.22(a)(3).)

3. All reports required by this Order and other information requested by the Regional Water Board, State Water Board, or USEPA shall be signed by a person described in Standard Provisions – Reporting V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:

   The authorization is made in writing by a person described in Standard Provisions – Reporting V.B.2 above (40 C.F.R. § 122.22(b)(1));

   The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) (40 C.F.R. § 122.22(b)(2)); and

   The written authorization is submitted to the Regional Water Board and State Water Board. (40 C.F.R. § 122.22(b)(3).)

4. If an authorization under Standard Provisions – Reporting V.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard Provisions – Reporting V.B.3 above must be submitted to the Regional Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 C.F.R. § 122.22(c).)

5. Any person signing a document under Standard Provisions – Reporting V.B.2 or V.B.3 above shall make the following certification:

   "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations." (40 C.F.R. § 122.22(d).)

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) in this Order. (40 C.F.R. § 122.22(l)(4).)

2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Regional Water Board or State Water Board for reporting results of monitoring of sludge use or disposal practices. (40 C.F.R. § 122.41(l)(4)(i).)

3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under Part 136 or, in the case of sludge use or disposal, approved under Part 136 unless otherwise specified in Part 503, or as specified in this Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Regional Water Board. (40 C.F.R. § 122.41(l)(4)(ii).)

4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order. (40 C.F.R. § 122.41(l)(4)(iii).)

D. Compliance Schedules

Not Applicable.

E. Twenty-Four Hour Reporting

1. The Discharger shall report any noncompliance that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A written submission shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. (40 C.F.R. § 122.41(l)(6)(i).)

2. The following shall be included as information that must be reported within 24 hours under this paragraph (40 C.F.R. § 122.41(l)(6)(ii)):

   Any unanticipated bypass that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(A).)

   Any upset that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(B).)

3. The Regional Water Board may waive the above-required written report under this provision on a case-by-case basis if an oral report has been received within 24 hours. (40 C.F.R. § 122.41(l)(6)(iii).)

F. Planned Changes

The Discharger shall give notice to the Regional Water Board as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required under this provision only when (40 C.F.R. § 122.41(l)(1)):

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in section 122.29(b) (40 C.F.R. § 122.41(l)(1)(i)); or

2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not subject to effluent limitations in this Order. (40 C.F.R. § 122.41(l)(1)(ii).)

3. The alteration or addition results in a significant change in the Discharger's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan. (40 C.F.R.§ 122.41(l)(1)(iii).)

G. Anticipated Noncompliance

The Discharger shall give advance notice to the Regional Water Board or State Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with General Order requirements. (40 C.F.R. § 122.41(l)(2).)

H. Other Noncompliance

The Discharger shall report all instances of noncompliance not reported under Standard Provisions – Reporting V.C, V.D, and V.E above at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provision – Reporting V.E above. (40 C.F.R. § 122.41(l)(7).)

I. Other Information

When the Discharger becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Regional Water Board, State Water Board, or USEPA, the Discharger shall promptly submit such facts or information. (40 C.F.R. § 122.41(l)(8).)

VI. STANDARD PROVISIONS – ENFORCEMENT

A. The Regional Water Board is authorized to enforce the terms of this permit under several provisions of the Water Code, including, but not limited to, sections 13385, 13386, and 13387

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

A. Non-Municipal Facilities

Existing manufacturing, commercial, mining, and silvicultural Dischargers shall notify the Regional Water Board as soon as they know or have reason to believe (40 C.F.R. § 122.42(a)):

1. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant that is not limited in this Order, if that

discharge will exceed the highest of the following "notification levels" (40 C.F.R. § 122.42(a)(1)):

100 micrograms per liter (µg/L) (40 C.F.R. § 122.42(a)(1)(i));

200 µg/L for acrolein and acrylonitrile; 500 µg/L for 2,4-dinitrophenol and 2-methyl-4,6-dinitrophenol; and 1 milligram per liter (mg/L) for antimony (40 C.F.R. § 122.42(a)(1)(ii));

Five (5) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge (40 C.F.R. § 122.42(a)(1)(iii)); or

The level established by the Regional Water Board in accordance with section 122.44(f). (40 C.F.R. § 122.42(a)(1)(iv).)

2. That any activity has occurred or will occur that would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following “notification levels" (40 C.F.R. § 122.42(a)(2)):

500 micrograms per liter (µg/L) (40 C.F.R. § 122.42(a)(2)(i));

1 milligram per liter (mg/L) for antimony (40 C.F.R. § 122.42(a)(2)(ii));

Ten (10) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge (40 C.F.R. § 122.42(a)(2)(iii)); or

The level established by the Regional Water Board in accordance with section 122.44(f). (40 C.F.R. § 122.42(a)(2)(iv).)

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

The Code of Federal Regulations, Title 40, section 122.48 requires that all NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 also authorize the Regional Water Quality Control Board (Regional Water Board) to require technical and monitoring reports. This MRP establishes monitoring and reporting requirements that implement the federal and California regulations.

I. GENERAL MONITORING PROVISIONS

A. Reporting responsibilities of waste dischargers are specified in Water Code Sections 13225(a), 13267(b), 13268, 13383 and 13387(b).

B. The principal purposes of a monitoring program by a waste discharger, also referred to as a self-monitoring program, are (1) to document compliance with waste discharge requirements and prohibitions established by the Regional Water Board; (2) to facilitate self-policing by the waste discharger in the prevention and abatement of pollution arising from waste discharge; (3) to develop or assist in the development of effluent or other limitations, discharge prohibitions, national standards of performance, pretreatment and toxicity standards, and other standards; and (4) to prepare water and wastewater quality inventories.

C. Sampling is required during each planned discharge event. All analyses shall be conducted using current USEPA methods approved by the USEPA Regional Administrator pursuant to 40 CFR 136.4 and 40 CFR 136.5, or equivalent methods that are commercially and reasonably available and that provide quantification of sampling parameters and constituents sufficient to evaluate compliance with applicable effluent limits and to perform reasonable potential analyses. Equivalent methods must be more sensitive than those specified in 40 CFR 136, must be specified in the permit, and must be approved for use by the Executive Officer following consultation with the State Water Resources Control Board's Quality Assurance Program.

D. Laboratories analyzing monitoring samples shall be certified by the Department of Public Health in accordance with Water Code section 13176 and must include quality assurance/quality control data with their reports.

E. Written reports, strip charts, calibration and maintenance records, and other records shall be maintained by the Discharger and be accessible and retained for a minimum of five years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or when requested by the Regional Water Board or USEPA. Such records shall show the following for each sample:

1. Identity of sampling and observation stations by number.

2. Date and time of sampling or observations.

3. Method of sampling.

4. Full report for bioassay tests (96-hour static bioassay renewal).

5. Date and time that analyses were started and completed, and name of personnel performing the analyses.

6. Complete procedure used, including method of preserving sample and identity and volumes of reagents used. A reference to a specific section of Standard Methods (SM) or the standard USEPA method number is satisfactory.

7. Calculations of results.

8. Results of analyses or observations.

F. If the Discharger wishes to invalidate any measurement, the letter of transmittal will include identification of the measurement suspected to be invalid and notification of intent to submit, within 60 days, a formal request to invalidate the measurement. The request must include the original measurement in question, the reason for invalidating the measurement, all relevant documentation that supports the invalidation (e.g., laboratory sheet, log entry, test results, etc.), and discussion of the corrective actions taken or planned (with a time schedule for completion) to prevent recurrence of the sampling or measurement problem.

G. A tabulation of the quantity of planned, unplanned and emergency discharges shall be maintained. This tabulation shall include the discharge point names, monitoring location names, and the latitude and longitude of the discharge points and monitoring locations.

H. A copy of this Order, full copies of the Standard Operation Procedures for dechlorination and erosion control, and any other documents relevant to the dewatering of pipelines, tunnels, vaults or other transmission system facilities shall be on site during discharge events. These documents help the Discharger's staff responsible for compliance assurance and shall be made available to Regional Water Board staff and others during inspections.

II. MONITORING LOCATIONS

Monitoring stations for creeks, reservoirs, and San Francisco Bay shall be as provided below.

A. Monitoring Stations for Discharges to Creeks

The Discharger shall establish the following monitoring locations for discharges to creeks to demonstrate compliance with the effluent limitations, discharge specifications, and other requirements in this Order:

Table E-1. Monitoring Station Locations for Discharges to Creeks

Discharge Point Name[1]	Monitoring Location Name[2]	Monitoring Location Description
004 through XXX	EFF-004 through EFF-XXX	At a point in the discharge line immediately following treatment and before it joins or is diluted by any other waste stream, body of water, or substance.
004 through XXX	RSW-004U through RSW-XXXU	At a location in the receiving water located upstream of the discharge point where conditions are not expected to be influenced by the discharge.
004 through XXX	RSW-004D through RSW-XXXD	At a location within 50 feet downstream from the point of discharge into the receiving water, or if access is limited, at the first accessible point downstream.
004 through XXX	RSW-004E through RSW-XXXE	At a location at least 10 times the channel width downstream from the point of discharge.

Notes:

1. Discharge point names for frequently used discharge locations shall be as specified in Table F-2 of the Fact Sheet (Attachment F). Each additional outfall shall be assigned a unique discharge point name as needed by increasing the number of the last discharge point name sequentially, as follows: Discharge Point 038, Discharge Point 039, Discharge Point 040, etc. The Discharger shall maintain a tabulation of discharge point names for this purpose as described in Section I.G. above).
2. Monitoring location names shall be assigned as follows:
   a. Effluent sampling locations shall be assigned monitoring location names beginning with "EFF" followed by a dash ("-") and the unique three digit discharge point name (EFF-XXX). For instance, the monitoring location name for an effluent sample collected at Discharge Point 001 would be EFF-001.
   b. Receiving surface water sampling locations shall be assigned monitoring location names beginning with "RSW" followed by a dash ("-") and the unique three digit Discharge Point Name, and ending with either U for upstream, D for downstream, or E for erosion. For instance, the monitoring location name for a receiving water sample collected upstream of Discharge Point 002 would be RSW-002U.

B. Monitoring Stations for Discharges to Reservoirs and San Francisco Bay

The Discharger shall establish the following monitoring locations for discharges to reservoirs and San Francisco Bay to demonstrate compliance with the effluent limitations, discharge specifications, and other requirements in this Order:

Table E-2. Monitoring Station Locations for Discharges to Reservoirs and San Francisco Bay

Discharge Point Name[1]	Monitoring Location Name[2]	Monitoring Location Description
001 through 003, XXX through XXX	EFF-001 through EFF-XXX	At a point in the discharge line immediately following treatment and before it joins or is diluted by any other waste stream, body of water, or substance.
001 through 003, and XXX through XXX	RSW-001A through RSW-XXXA	At a location in the receiving water where conditions are not expected to be influenced by the discharge (i.e., ambient locations).
001 through 003, and XXX through XXX	RSW-001R through RSW-XXXR	At a location within 50 feet of the point of discharge into the receiving water, or if access is limited, at the closest accessible point to the discharge.

Notes:

1. Discharge point names for frequently used discharge locations shall be as specified in Table F-2 of the Fact Sheet (Attachment F). Each additional outfall shall be assigned a unique discharge point name as needed by increasing the number of the last discharge point name sequentially, as follows: Discharge Point 036, Discharge Point 037, Discharge Point 038, etc. A tabulation of discharge point names shall be maintained for this purpose as described in Section I.G above.
2. Monitoring location names shall be assigned as follows:

a. Effluent sampling locations shall be assigned monitoring location names beginning with "EFF" followed by a dash ("-") and the unique three digit discharge point name (EFF-XXX). For instance, the monitoring location name for an effluent sample collected at Discharge Point 001 would be EFF-001.

b. Receiving surface water sampling locations shall be assigned monitoring location names beginning with "RSW" followed by a dash ("-") and the unique three digit Discharge Point Name, and ending with either A for ambient or R for receiving water. For instance, the monitoring location name for a receiving water sample collected from San Antonio Reservoir within 50 feet of Discharge Point 001 would be RSW-001R.

III. EFFLUENT MONITORING REQUIREMENTS

Effluent monitoring shall be performed during planned, unplanned, and emergency discharges. Before implementing effluent monitoring requirements for unplanned and emergency discharges the Discharger shall implement procedures to protect human health and safety. The schedule of effluent sampling, analyses and observations for planned, unplanned and emergency discharges shall be as provided below.

Table E-3. Effluent Monitoring Requirements

Parameter	Units	Sample Type[1]	Minimum Sampling Frequency[2]
Flow Rate[3]	MGD	Continuous	Hourly on each occurrence
Volume[3]	MG	Continuous	Daily on each occurrence
pH	s.u.	Grab	Hourly on each occurrence
Total Residual Chlorine	mg/L	Grab	Hourly on each occurrence
Copper[5]	µg/L	Grab	One discharge per quarter[5]
Nickel[5]	µg/L	Grab	One discharge per quarter[5]
Total Trihalomethanes[6]	mg/L	Grab	One discharge per quarter[5]
All other priority pollutants not listed above[7]	µg/L	Grab	Any one discharge per 5 years

Notes:

$CaCO_3$	calcium carbonate
µg/L	micrograms per liter
mg/L	milligrams per liter
MG	million gallons
MGD	million gallons per day
s.u.	Standard pH unit

1. Sample Type:

   Continuous = Measured continuously, and recorded and reported in accordance with the minimum sampling frequency.

   Grab = Discrete samples of effluent collected during periods of peak flows.

2. Minimum sampling frequencies only apply when discharging. If no discharges occur, monitoring requirements shall be met by the Discharger reporting no discharges.

3. Flow Rate and Volume:

   Flows shall be monitored at each discharge outfall by flow meters or estimated if no flow meter is in place and the following shall be reported in self-monitoring reports:

   a. Daily total flow volume (MG).
   b. Dates during which a discharge occurred and durations of each discharge (hours).
   c. Daily average flow rate (MGD), if not measured directly, calculated using a. and b. data above.
   d. Total discharge hours each year.
   e. Monthly total flow volume (MG).

4. Monitoring for copper and nickel shall not be required for discharges to San Antonio Reservoir, San Antonio Creek, and Alameda Creek.

5. For any calendar quarter, the effluent of at least one discharge shall be monitored for parameters with a sampling frequency of one discharge per quarter.
6. Monitoring for trihalomethanes compounds shall not be required for discharges to San Francisco Bay.
7. Priority pollutants are those pollutants identified as Compound Nos.1–126 by the California Toxics Rule at 40 CFR 131.38.

IV. RECEIVING WATER MONITORING REQUIREMENTS

Receiving water monitoring shall be performed during planned, unplanned, and emergency discharges. Before implementing receiving water monitoring requirements for unplanned and emergency discharges, the Discharger shall implement procedures to protect human health and safety. The schedule of receiving water sampling, analyses and observations for planned, unplanned, and emergency discharges shall be as provided below.

Table E-4. Receiving Water Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency[1]
Salinity[2,3]	ppt	Grab	On each occurrence
Turbidity	NTU	Grab	One discharge per quarter[4]
pH[2]	s.u.	Grab	One discharge per quarter[4]
Hardness[2]	mg/L as $CaCO_3$	Grab	One discharge per quarter[4]
Nickel[2,5]	µg/L	Grab	One discharge per quarter[4]
Standard Observation[2,6]	NA	NA	Once per occurrence
All other priority pollutants not listed above[2,7]	µg/L	Grab	Any one discharge per 5 years
Shear Stress[8]	lb/ft^2	NA	One discharge per quarter[4]
Soil Texture[8]	NA	Grab	One discharge per quarter[4]
Channel Geomorphology[8]	Ft	NA	One discharge per quarter[4]

Notes:

$CaCO_3$	calcium carbonate
ft	feet
lb/ft^2	pounds per square foot
µg/L	micrograms per liter
mg/L	milligrams per liter
NTU	Nephelometric turbidity units
NA	Not applicable
ppt	parts per thousand
s.u.	Standard pH unit

1. Minimum sampling frequencies only apply when discharging. If no discharges occur, monitoring requirements shall be met by the Discharger reporting no discharges.
2. Monitoring for these constituents shall not be required at erosion monitoring locations (RSW-001E through RSW-XXXE).
3. Monitoring for salinity shall only be required for estuarine waters.
4. For any calendar quarter, the receiving water for at least one discharge shall be monitored for parameters with a sampling frequency of one discharge per quarter.
5. Monitoring for nickel shall not be required for discharges to San Antonio Reservoir, San Antonio Creek, and Alameda Creek.
6. Standard observations of receiving waters include the following:
   a. Discoloration and turbidity: description of color, source, and size of affected area.
   b. Depth of water column and sampling depth.
   c. Weather conditions:
      i. Air temperatures;

ii. Total precipitation during the previous five days and on the day of observation; and

iii. Location of meteorological station accessed to collect the weather conditions and distance of this station from the discharge location.

These standard observation parameters supersede standard observation parameters listed in Self-Monitoring Program (SMP), Part A (Attachment G).

7. Priority pollutants are those pollutants identified as Compound Nos.1–126 by the California Toxics Rule at 40 CFR 131.38.

8. Shear stress and soil texture monitoring shall be performed according to Section V. below.

V. SHEAR STRESS, SOIL TEXTURE, CHANNEL GEOMORPHOLOGY MONITORING REQUIREMENTS

Compliance with the shear stress and soil texture monitoring requirements of this Order shall be achieved as follows:

1. The average shear stress shall be calculated and reported for the peak discharge flow at the erosion monitoring location (RSW-001E through RSW-XXXE).

2. Soil texture of the banks shall be estimated at the erosion monitoring location. If the bank consists solely of unconsolidated materials (nonsoil), then the average particle size of the bank substrate (i.e. gravel, cobble, boulder, etc.) shall be estimated and reported.

3. Cross-sectional surveys and a longitudinal profile shall be surveyed starting at the point of discharge to the creek and ending at the erosion monitoring location. A minimum of three cross-sections shall be measured.

4. In addition, the Discharger shall photographically document the boundary conditions at the erosion monitoring location by collecting photographs of the stream alignment, channel banks and any vegetation present on the banks both upstream and downstream of the erosion monitoring location before and after the discharge.

VI. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

1. The Discharger shall comply with all Standard Provisions (Attachment D) related to monitoring, reporting, and recordkeeping.

2. The Discharger shall comply with SMP, Part A, and Regional Provisions (Attachment G).

3. The Discharger shall monitor and report all discharges greater than 25 gallons per minute. The Discharger shall also report all discharges to creeks providing habitat for salmonids. The Discharger shall not be required to report discharges less than or equal to 25 gallons per minute unless the discharge is to a creek providing habitat for salmonids.

B. Self Monitoring Reports (SMRs)

1. At any time during the term of this Order, the State or Regional Water Board may notify the Discharger to electronically submit Self-Monitoring Reports (SMRs) using

the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (http://www.waterboards.ca.gov/ciwqs/index.html). Until such notification is given, the Discharger shall submit hard copy SMRs. The CIWQS Web site will provide additional directions for SMR submittal in the event there will be service interruption for electronic submittal.

2. The Discharger shall submit quarterly SMRs including the results for all monitoring specified in this MRP and certification required by Provision VI.C.3 of this Order. The quarterly SMRs shall be due on the 30th day following the end of each quarter (see Table E-5) covering all monitoring conducted during the previous quarter. By February 1 of each year, the Discharger shall submit an annual report covering all monitoring conducted the previous calendar year. The annual report shall include both tabular and graphical summaries of the monitoring data collected during the previous year, a comprehensive discussion of the compliance record, and the corrective actions taken or planned that may be needed to bring the Discharger into full compliance with this Order. If the Discharger monitors any pollutant more frequently than required by this Order, the results of this monitoring shall be included in the calculations and reporting of the data submitted in the SMRs and annual report.

3. Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

Table E-5. Monitoring Periods and Reporting Schedule

Sampling/Reporting Frequency	Monitoring Period Begins On…	Monitoring Period
Continuous	Permit effective date	All
Hourly	Permit effective date	Hourly
Daily	Permit effective date	(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling.
Quarterly	Permit effective date	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31
Annually	Permit effective date	January 1 through December 31
1 / 5 years	Permit effective date	Once during the permit term

4. Reporting Protocols. The Discharger shall report with each sample result the applicable reported Reporting Level (RL) and the current Method Detection Limit (MDL), as determined by the procedure in 40 CFR Part 136.

The Discharger shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:

a. Sample results greater than or equal to the reported ML shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).

b. Sample results less than the RL, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or "DNQ". The estimated chemical concentration of the sample shall also be reported.

For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to "DNQ" as well as the words "Estimated Concentration" (may be shortened to "Est. Conc."). The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (+/- a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.

c. Sample results less than the laboratory's MDL shall be reported as "Not Detected," or "ND".

d. Dischargers shall to instruct laboratories to establish calibration standards so that the ML value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.

5. The Discharger shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the facility is operating in compliance with effluent limitations.

6. The Discharger shall attach a cover letter to each SMR. The information contained in the cover letter shall clearly identify violations; discuss corrective actions taken or planned; and propose a time schedule for corrective actions. Identified violations shall include a description of the requirement that was violated and a description of the violation.

7. Multiple Sample Data. When determining compliance with an MDEL or AMEL for priority pollutants and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of "Detected, but Not Quantified" (DNQ) or "Not Detected" (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

a. The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.

b. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

8. SMRs must be submitted to the Regional Water Board, signed and certified as required by the standard provisions (Attachment D and G), to the address listed below:

   Executive Officer
   California Regional Water Quality Control Board
   San Francisco Bay Region
   1515 Clay Street, Suite 1400
   Oakland, CA 94612
   ATTN: NPDES Wastewater Division

9. The Discharger has the option to submit all monitoring results in an electronic reporting format approved by the Executive Officer. The Electronic Reporting System (ERS) format includes, but is not limited to, a transmittal letter, summary of violation details and corrective actions, and transmittal receipt. If there are any discrepancies between the ERS requirements and the "hard copy" requirements listed in the MRP, then the approved ERS requirements supersede.

C. Discharge Monitoring Reports

As described in Section VI.B.1 above, at any time during the term of this Order, the State or Regional Water Board may notify the Discharger to electronically submit SMRs that will satisfy federal requirements for submittal of Discharge Monitoring Reports (DMRs). Until such notification is given, the Discharger shall submit DMRs in accordance with the requirements described below.

1. DMRs must be signed and certified as required by the standard provisions (Attachment D). The Discharge shall submit the original DMR and one copy of the DMR to the address listed below:

Standard Mail	FedEx/UPS/Other Private Carriers
State Water Resources Control Board Division of Water Quality c/o DMR Processing Center PO Box 100 Sacramento, CA 95812-1000	State Water Resources Control Board Division of Water Quality c/o DMR Processing Center 1001 I Street, 15th Floor Sacramento, CA 95814

2. All discharge monitoring results must be reported on the official USEPA pre-printed DMR forms (EPA Form 3320-1). Computer generated forms may be accepted with authorization from the USEPA.

D. Other Reports

The Discharger shall submit a report documenting the implementation of erosion control BMPs required by Special Provision VI.C.2.a.iii of this Order.

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ATTACHMENT F – FACT SHEET

As described in section II of this Order, this Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order.

This Order has been prepared under a standardized format to accommodate a broad range of discharge requirements for Dischargers in California. Only those sections or subsections of this Order that are specifically identified as "not applicable" have been determined not to apply to this Discharger. Sections or subsections of this Order not specifically identified as "not applicable" are fully applicable to this Discharger.

I. PERMIT INFORMATION

The following table summarizes administrative information related to the facility.

Table F-1. Facility Information

WDID	
Discharger	San Francisco Public Utilities Commission
Name of Facility	San Francisco Public Utilities Commission Drinking Water Transmission System
Facility Address	Multiple Addresses (Linear System) (See Attachment B)
	Alameda, Santa Clara, and San Mateo Counties
Facility Contact, Title and Phone	James J. Salerno, Biological Resources Manager (415) 554-3207
Authorized Person to Sign and Submit Reports	James J. Salerno, Biological Resources Manager (415) 554-3207 Jill Blanchard WSIP Permitting Manager (415) 554-3208
Mailing Address	1145 Market Street,
Billing Address	SAME
Type of Facility	Water Supply (SIC Code: 4941)
Major or Minor Facility	Minor
Threat to Water Quality	2
Complexity	B
Pretreatment Program	NA
Reclamation Requirements	NA
Facility Permitted Flow	144 MGD
Facility Design Flow	90 MGD
Watershed	South Bay Basin, Santa Clara Basin
Receiving Water	See I.B., below.
Receiving Water Type	Estuary and/or Inland Surface Water

A. The San Francisco Public Utilities Commission (hereinafter Discharger) is the owner and operator of the San Francisco Public Utilities Commission Drinking Water Transmission System (hereinafter Facility), a water supply facility.

For the purposes of this Order, references to the "Discharger" or "permittee" in applicable federal and state laws, regulations, plans, or policy are held to be equivalent to references to the Discharger herein.

B. The facility discharges treated wastewater to the following waters of the State and their tributaries (Receiving Waters):

- Alameda Creek
- Barron Creek
- Berryessa Creek
- Calaveras Creek
- Calabazas Creek
- Colma Creek
- Cordilleras Creek
- Coyote Creek
- Guadalupe River
- Matadero Creek
- Mills Creek
- Mission Creek
- Newark Slough
- Permanente Creek
- Penitencia Creek
- Polhemus Creek
- Ralston Creek
- Redwood Creek
- San Antonio Creek
- San Antonio Reservoir
- San Bruno Creek
- Sanchez Creek
- San Francisquito Creek
- San Mateo Creek
- Saratoga Creek
- San Francisco Bay
- Stevens Creek
- Wrigley Creek

C. The Discharger filed a report of waste discharge and submitted an application for Waste Discharge Requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permit on December 3, 2007. Supplemental information was requested on January 11, January 14, and January 23, 2008, and received on January 14, January 18, and January 25, 2008.

II. FACILITY DESCRIPTION

The Discharger owns and operates a drinking water transmission system that provides 2.4 million people with drinking water in the San Francisco Bay Area. This regional system consists of a series of large diameter pipelines, tunnels, valves and pump stations located in Alameda, Santa Clara and San Mateo Counties. The following types of discharges to local streams and Lower San Francisco Bay occur from this system:

- **Planned Discharges**: Drinking water releases resulting from routine operations and maintenance that can be scheduled in advance, such as (1) draining pipelines and tunnels to allow for inspection, repair, or replacement; (2) flushing disinfection water from the system after bringing pipelines and tunnels back on-line; and (3) upgrading facilities for seismic or delivery reliability. These occur less than once every three years except at the following locations: Alameda Siphons in Sunol Valley and the San Antonio Reservoir.

- **Unplanned Discharges:** Drinking water releases caused by nonroutine events, such as (1) pipeline breaks or leaks; (2) valve malfunctions; and (3) pressure build up in the system.

- **Emergency Discharges:** Drinking water releases caused by natural or man-made disasters, such as (1) earthquakes, landslides, floods, accidents, and sabotage.

For planned discharges, the water is treated prior to discharge to remove chlorine and adjust the pH. Flow rates of planned discharges are controlled (less than or equal to 3,500 gallons per minute) using Best Management Practices (BMPs) to limit potential erosion in receiving waters. The planned discharges with greatest flow rates (90 million gallons per day) are associated with discharges used to fill reservoirs.

For unplanned and emergency discharges, the sites are first stabilized to protect human health and safety, and then treatment measures to remove chlorine and adjust pH and BMPs to control erosion are employed to minimize impacts to waters of the State and United States. Flow rates for unplanned discharges are highly variable and unpredictable. Transmission pipeline leaks may have discharge flow rates less than 25 gallons per minute (36,000 gallons per day); however, a pipeline break caused by a natural catastrophe can discharge up to 100,000 gallons or more per minute (144 million gallons per day).

A. Description of Wastewater Treatment

All discharges authorized under this Order originate as potable water. Prior to planned discharges, the water is treated to remove chlorine and adjust the pH. Discharge flows are controlled using Best Management Practices (BMPs) to limit potential erosion in the receiving water. For unplanned and emergency discharges, sites are first stabilized to protect human health and safety, and then treatment measures to remove chlorine and adjust pH and BMPs to minimize erosion impacts are implemented to protect waters of the State and United States.

B. Discharge Points and Receiving Waters

Discharge points may occur anywhere along the transmission system during unplanned or emergency events involving broken pipelines; however, the majority of unplanned discharges and all planned discharges will occur at low spots in the transmission system. Although not every discharge location can be anticipated for planned and unplanned discharges, the most common discharge points and receiving waters are listed below.

Table F-2. Common Discharge Points and Receiving Waters

Discharge Point	Effluent Description	Pipelines	Location	Receiving Water	Frequency
001	Potable water	San Antonio Pipeline	Adit structure in San Antonio Reservoir	San Antonio Reservoir	2 to 3 times per year
002	Potable water	Bay Division Pipelines 1 and/or 2	Newark Valve House at Hickory Street and Enterprise Drive in Newark	Newark Slough	Potable water
003	Potable water	Bay Division Pipelines 1 and/or 2	Dumbarton Valve House at the Thornton Avenue and Marshlands Road in Newark	San Francisco Bay, South	About once every 5 years
004	Potable water	San Antonio Pipeline	Howell Bunger Valve at base of Turner Dam (San Antonio Reservoir)	San Antonio Creek	About once every 5 years
005	Potable water	Coast Range Tunnel	Alameda East Portal in Sunol Valley	Alameda Creek	1 to 2 times per year

Discharge Point	Effluent Description	Pipelines	Location	Receiving Water	Frequency
006	Potable water	Alameda Siphons	Alameda West Portal in Sunol Valley	Alameda Creek	About once every 5 years
007	Potable water	Bay Division Pipelines 3 and/or 4	Palm Avenue and Via San Miguel in Fremont	Mission Creek	About once every 5 years
008	Potable water	Bay Division Pipelines 1 and/or 2	Grimmer Boulevard and Paseo Padre Parkway in Fremont	Mission Creek	About once every 10 years
009	Potable water	Bay Division Pipelines 3 and/or 4	Calaveras Boulevard and Town Center Drive in Milpitas	Berryessa Creek	About once every 5 years
010	Potable water	Bay Division Pipelines 3 and/or 4	Corning Street and Abel Street in Milpitas	Penitencia Creek	About once every 10 years
011	Potable water	Bay Division Pipelines 3 and/or 4	Topaz Street and Turquoise Street in Milpitas	Wrigley Creek	About once every 10 years
012	Potable water	Bay Division Pipelines 3 and/or 4	160 Rio Robles in San Jose	Guadalupe River	About once every 5 years
013	Potable water	Bay Division Pipelines 3 and/or 4	Walker Avenue and Easy Street in Mountain View	Stevens Creek	About once every 10 years
014	Potable water	Bay Division Pipelines 3 and/or 4	Miranda Avenue and Arastradero Road in Palo Alto	Barron Creek	About once every 10 years
015	Potable water	Bay Division Pipelines 3 and/or 4	Alpine Road near Branner Drive in Menlo Park	San Franciscquito Creek	About once every 5 years
016	Potable water	Bay Division Pipelines 1 and/or 2	Johnson Street and Roosevelt Avenue in Redwood City	Redwood Creek	About once every 10 years
017	Potable water	Bay Division Pipelines 3 and/or 4	Canyon Road and Glenwood Avenue in Redwood City	Redwood Creek	About once every 5 years
018	Potable water	Division Pipelines 1 and/or 2	1600 Cordilleras Road (near Canyon Road intersection) in Redwood City	Cordilleras Creek	About once every 10 years
019	Potable water	Division Pipelines 1 and/or 2	1750 Cordilleras Road (near Canyon Road intersection) in Redwood City	Cordilleras Creek	About once every 5 years
020	Potable water	Bay Division Pipelines 1 through 4	2600 Edmonds Road in Redwood City	Cordilleras Creek	About once every 5 years
021	Potable water	Crystal Springs Bypass Tunnel	Decommissioned Fluoride Facility at Polhemus Road in Unincorporated San Mateo County	Polhemus Creek	About once every 10 years
022	Potable water	Crystal Springs Pipeline II	Release valve just below Lower Crystal Springs Reservoir as Crystal Springs Road in Unincorporated San Mateo County	San Mateo Creek	About once every 10 years
023	Potable water	Sunset Supply Line	Casey Quarry at Tartan Trail Road and Braemar Drive in Burlingame	San Mateo Creek	About once every 10 years
024	Potable water	Sunset Supply Line	Casey Quarry at Tartan Trail Road and Braemar Drive in Burlingame	Ralston Creek	About once every 10 years
025	Potable water	Crystal Springs Pipeline II	Bellevue Avenue and Pepper Avenue in Burlingame	Ralston Creek	About once every 10 years

Discharge Point	Effluent Description	Pipelines	Location	Receiving Water	Frequency
026	Potable water	Crystal Springs Pipeline III	Bellevue Avenue and Pepper Avenue in Burlingame	Sanchez and Mills Creeks	About once every 5 years
027	Potable water	Crystal Springs Pipeline II	Occidental Avenue and Bellevue Avenue in Burlingame	San Mateo Creek	About once every 10 years
028	Potable water	Sunset Supply Line	Carmelita Avenue and Cortez Avenue in Burlingame	Sanchez and Mills Creeks	About once every 10 years
029	Potable water	Sunset Supply Line	Adeline Drive and Cortez Avenue in Burlingame	Sanchez and Mills Creeks	About once every 10 years
030	Potable water	Crystal Springs Pipeline II	Adeline Drive and El Camino Real in Burlingame	Sanchez and Mills Creeks	About once every 10 years
031	Potable water	Crystal Springs Pipeline II	Baden Valve Lot at W Orange Avenue and El Camino Real in South San Francisco	Colma Creek	About once every 5 years
032	Potable water	Sunset Supply Line and San Andreas Pipeline II	Baden Valve Lot at W Orange Avenue and El Camino Real in South San Francisco	Colma Creek	About once every 5 years
033	Potable water	San Andreas Pipeline II and III	Baden Valve Lot at W Orange Avenue and El Camino Real in South San Francisco	Colma Creek	About once every 10 years
034	Potable water	Crystal Springs Pipeline II	W Orange Avenue and N Canal Street in South San Francisco	Colma Creek	About once every 10 years
035	Potable water	Sunset Supply Line	San Pedro Valve Lot at Junipero Serra Boulevard and San Pedro Road in Daly City	Colma and San Bruno Creeks	About once every 10 years

Notes:

1. Discharge point names for common discharge locations shall be as specified in Table F-2. Each additional outfall shall be assigned a unique discharge point name as needed by increasing the number of the last discharge point name sequentially, as follows: Discharge Point 036, Discharge Point 037, Discharge Point 038, etc. A tabulation of discharge point names shall be maintained as specified in the Monitoring and Reporting Plan (Attachment E).

Many of these discharge points and receiving waters will be used during implementation of the SFPUC's Water System Improvement Program.

C. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data

This is a new permit; therefore, no existing requirements apply to the discharge.

D. Compliance Summary

This is a new permit; therefore, there are no compliance records to summarize.

E. Planned Changes

The Discharger is currently implementing the Water System Improvement Program (WSIP) to improve the reliability of its drinking water system. The WSIP includes several infrastructure improvement projects and maintenance goals that would or could result in discharges. The infrastructure improvement projects and maintenance activities would result in discharges because pipelines and tunnels would be shut down and dewatered to connect new facilities to the system and to access facilities for inspection and maintenance. Discharges would also occur when these facilities are brought back

on-line and the pipelines are pressure-tested. This order includes discharges resulting from implementation of the WSIP.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in the proposed Order are based on the requirements and authorities described in this section.

A. Legal Authorities

This Order is issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. Environmental Protection Agency (USEPA) and chapter 5.5, division 7 of the California Water Code (commencing with section 13370). It shall serve as an NPDES permit for point source discharges from this facility to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to article 4, chapter 4, division 7 of the Water Code (commencing with section 13260).

B. California Environmental Quality Act (CEQA)

Under Water Code section 13389, this action to adopt an NPDES permit and Waste Discharge Requirements is exempt from the provisions of CEQA. However, granting a categorical exception to the State Implementation Policy requires the preparation of a CEQA document. An Initial Study/Mitigated Negative Declaration was prepared and adopted with Resolution No. R2-2008-XXXX.

C. State and Federal Regulations, Policies, and Plans

1. **Water Quality Control Plans.** The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) was duly adopted by the Regional Water Board and approved by the State Water Resources Control Board, USEPA, and the Office of Administrative Law where required.

   The Basin Plan is the Regional Water Board's master water quality control planning document. It designates beneficial uses of receiving waters, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed by the Plan. Section 2.2.1 of the Basin Plan indicates that the beneficial uses of any specifically identified water body generally apply to its tributary streams. In addition, the Basin Plan implements State Water Resources Control Board (State Water Board) Resolution No. 88-63, which establishes a policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. The Basin Plan designates beneficial uses for surface waters and wetlands in the South Bay and Santa Clara Basins. Applicable beneficial uses of waters in these Basins are listed below.

- **Freshwaters:** Agricultural Supply; Municipal and Domestic Supply; Groundwater Recharge; Cold Freshwater Habitat; Fish Migration; Preservation of Rare and Endangered Species; Fish Spawning; Warm Freshwater Habitat; Wildlife Habitat; Water Contact Recreation; and Non-Contact Water Recreation; and Freshwater Replenishment.

- **Estuarine waters:** Industrial Service Supply; Ocean, Commercial, and Sport Fishing; Shellfish Harvesting; Estuarine Habitat; Fish Migration; Preservation of Rare and Endangered Species; Fish Spawning; Wildlife Habitat; Water Contact Recreation; and Non-Contact Water Recreation; and Navigation.

Requirements of this Order implement the Basin Plan.

2. **Basin Plan Prohibitions For Which Exceptions Are Necessary.** This Order exempts the Discharger from Basin Plan Prohibition 1 (Basin Plan Table 4-1), which prohibits discharge of any wastewater that has particular constituents of concern to beneficial uses at any point at which the wastewater does not receive a minimum initial dilution of at least 10:1. The Basin Plan provides the following discussion for this prohibition:

   Waste Discharges will contain some levels of pollutants regardless of treatment. This prohibition will (a) provide an added degree of protection from the continuous effects of waste discharge, (b) provide a buffer against the effects of abnormal discharges caused by temporary plant upsets or malfunctions, (c) minimize public contact with undiluted wastes, and (d) reduce the visual (aesthetic) impact of waste discharges.

   As indicated in the Basin Plan, discharges of treated sewage and other discharges will contain some levels of pollutants, which may result in continuous effects. However, the discharges under this order will be intermittent (less once every 5 years at most discharge points and less than 4 times per year at the most frequent discharge point) and of short duration (typically less than 5 days). In addition, the main pollutant of concern (total chlorine residual) is not bioaccumulative. As a result, there should be no continuous effects from these discharges and the prohibition does not apply.

   In addition, discharges of treated sewage and other discharges contain particular characteristics of concern and have treatment processes that are subject to upset. The dilution requirement provides a contingency in the event of temporary treatment plant malfunction to minimize public contact with undiluted treated sewage. However, the discharges here do not contain treated sewage or wastewater from a treatment process that is subject to upset. Therefore, the prohibition does not apply in this event.

   Even if this prohibition did apply, the Basin Plan provides an exception:

   Exceptions … will be considered where: An inordinate burden would be placed on the discharger relative to beneficial uses protected … .

This facility delivers drinking water to 2.4 million people in the San Francisco Bay Area, and the discharges from this facility are to comply with Safe Drinking Water Act requirements, to maintain the integrity of the system, or to replenish water supplies in reservoirs. Therefore, prohibition of these discharges would impact municipal supply beneficial uses by impairing the quality, delivery reliability, and quantity of potable water and would be a significant burden to 2.4 million people served by this public facility.

3. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** USEPA adopted the NTR on December 22, 1992, and later amended it on May 4, 1995 and November 9, 1999. About 40 criteria in the NTR applied in California. On May 18, 2000, USEPA adopted the CTR. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that were applicable in the state. The CTR was amended on February 13, 2001. These rules contain water quality criteria (WQC) for priority pollutants.

4. **State Implementation Policy.** On March 2, 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on April 28, 2000, with respect to the priority pollutant criteria promulgated for California by the USEPA through the NTR and to the priority pollutant objectives established by the Regional Water Board in the Basin Plan. The SIP became effective on May 18, 2000, with respect to the priority pollutant criteria promulgated by the USEPA through the CTR. The State Water Board adopted amendments to the SIP on February 24, 2005, that became effective on July 13, 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.

5. **Alaska Rule.** On March 30, 2000, USEPA revised its regulation that specifies when new and revised state and tribal water quality standards (WQS) become effective for CWA purposes (40 C.F.R. § 131.21, 65 Fed. Reg. 24641 (April 27, 2000)). Under the revised regulation (also known as the Alaska rule), new and revised standards submitted to USEPA after May 30, 2000, must be approved by USEPA before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to USEPA by May 30, 2000, may be used for CWA purposes, whether or not approved by USEPA.

6. **Antidegradation Policy.** Section 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Regional Water Board's Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. Discharges authorized by this Order are consistent with the antidegradation provision of section 131.12 and State Water Board Resolution No. 68-16 because this Order ensures that water quality is not degraded by placing requirements on existing discharges where none have been placed before.

7. **Anti-Backsliding Requirements.** Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations at 40 CFR section 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed. This is a new permit, so no previous limits exist from which to backslide.

D. Other Plans, Policies and Regulations

This Order is also based on the following plans, polices, and regulations:

8. The Federal Water Pollution Control Act, Sections 301 through 305, and 307, and amendments thereto, as applicable (CWA); and,

9. Guidance provided with State Water Board Orders remanding permits to the Regional Water Board for further consideration.

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

The CWA requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations in the NPDES regulations: 40 CFR 122.44(a) requires that permits include applicable technology-based limitations and standards; and 40 CFR 122.44(d) requires that permits include water quality-based effluent limitations (WQBELs) to attain and maintain applicable numeric and narrative water quality criteria (WQC) to protect the beneficial uses of the receiving water.

A. Discharge Prohibitions

1. Discharge Prohibition III.A (no discharge other than that described in this Order). This prohibition is based on California Water Code section 13260, which requires the filing of a Report of Waste Discharge before discharges can occur. Discharges not described in the Report of Waste Discharge, and subsequently in the Order, are prohibited.

2. Discharge Prohibition III.B (discharges shall not cause pollution, contamination, or nuisance). This prohibition is established to ensure protection of receiving waters from the effects of pollution, contamination, and nuisance, as those terms are defined by CWC Section 13050 of the California Water Code.

3. Discharge Prohibition III.C (discharges at any one location shall not exceed 2,200 hours per year). This prohibition is based on Resolution No. R2-2008-XXXX, which allows a categorical exception to SIP requirements for short-term or seasonal discharges from drinking water facilities.

4. Discharge Prohibition III.D (discharges at any one location shall not exceed water quality criteria for copper more than once every three years). This prohibition is based on Resolution No. R2-2008-XXXX, which requires mitigation for discharges at that exceed copper water quality criteria more than once every three years at any

one location. Mitigation was not required in this Order because discharges at any one location will not exceed copper water quality criteria more than once every three years based on discharge frequency and copper concentrations reported for the Facility. This prohibition ensures that discharges at any one location shall not exceed copper water quality criteria more than once every three years in compliance with Resolution No. R2-2008-XXXX.

B. Technology-Based Effluent Limitations

1. Scope and Authority

CWA Section 301(b) and NPDES regulations at 40 CFR 122.44 require permits to, at a minimum, meet applicable technology-based requirements and any more stringent effluent limitations necessary to meet applicable water quality standards.

The CWA requires the USEPA to develop effluent limitations, guidelines and standards (Effluent Limitations Guidelines - ELGs) representing application of best practicable treatment control technology (BPT), best available technology economically achievable (BAT), best conventional pollutant control technology (BCT), and best available demonstrated control technology for new sources (NSPS), for specific industrial categories. Where USEPA has not yet developed ELGs for a particular industry or a particular pollutant, Section 402(a)(1) of the CWA and USEPA regulations at 40 CFR 125.3 authorize the use of best professional judgment (BPJ) to derive technology-based effluent limitations on a case-by-case basis. When BPJ is used, the permit writer must consider specific factors outlined at 40 CFR 125.3.

2. Applicable Technology-Based Effluent Limitations

This Order does not establish technology-based effluent limitations because the USEPA has not established technology-based effluent limitations for the types of discharges authorized by this Order and, based on best professional judgment, none are necessary.

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

CWA Section 301(b) and regulations at 40 CFR 122.44(d)(1)(i) require permits to include WQBELs for pollutants (including toxicity) that are or may be discharged at levels that cause, have reasonable potential to cause, or contribute to an excursion above any state water quality standard (Reasonable Potential). The process for determining Reasonable Potential and calculating WQBELs, when necessary, is intended to protect the designated uses of the receiving water as specified in the Basin Plan, and achieve applicable water quality objectives and criteria that are contained in the CTR, NTR, Basin Plan, and other State plans and policies.

2. Applicable Water Quality Criteria and Objectives

The Order authorizes eligible discharges to inland surface waters, enclosed bays, and estuaries within the San Francisco Bay Region. Beneficial uses of these receiving waters, as designated by the Basin Plan, are described in Section III of this Fact Sheet. The water quality criteria applicable to these receiving waters are established by the Basin Plan, NTR, and CTR.

a. **Basin Plan.** The Basin Plan specifies numeric WQOs for 10 priority toxic pollutants, as well as narrative WQOs to protect beneficial uses.

b. **NTR.** The NTR establishes numeric aquatic life criteria for selenium, numeric aquatic life and human health criteria for cyanide, and numeric human health criteria for 34 toxic organic pollutants for waters of San Francisco Bay upstream to and including Suisun Bay and the Delta.

c. **CTR.** The CTR specifies numeric aquatic life criteria for 23 priority toxic pollutants and numeric human health criteria for 57 priority toxic pollutants. These criteria apply to inland surface waters and enclosed bays and estuaries, such as San Francisco Bay, except in certain cases where the Basin Plan's numeric objectives apply over the CTR (i.e. San Francisco Bay south of the Dumbarton Bridge).

This Order grants a categorical exception to SIP requirements for certain Basin Plan and CTR criteria for copper and trihalomethanes in accordance with Resolution No. R2-2008-XXXX (see Section VII.C.3 on page F-26 of this Fact Sheet).

d. **Receiving Water Salinity Policy.** The Basin Plan (like the CTR and the NTR) states that the salinity characteristics (i.e., freshwater vs. saltwater) of the receiving water shall be considered in determining the applicable WQC. Freshwater criteria shall apply to discharges to waters with salinities equal to or less than one part per thousand (ppt) at least 95 percent of the time. Saltwater criteria shall apply to discharges to waters with salinities equal to or greater than 10 ppt at least 95 percent of the time in a normal water year. For discharges to water with salinities in between these two categories, or tidally influenced freshwaters that support estuarine beneficial uses, the criteria shall be the lower of the salt or freshwater criteria (the latter calculated based on ambient hardness) for each substance.

   The receiving waters for these discharges include inland surface waters, Lower San Francisco Bay, and tidally influenced creeks and sloughs. Inland surface waters include multiple creeks in Alameda, Santa Clara and San Mateo Counties that are not under tidal influence. These creeks were determined to be freshwater environments based on beneficial uses designated in the Basin Plan. Lower San Francisco Bay and the Southern Sloughs were determined to be estuarine environments based on salinity data generated through the Regional Monitoring Program (RMP) at stations located below the Dumbarton Bridge between 1993 and 2001. In that period, salinity was greater than 10 ppt in 54 percent of the receiving water samples; therefore, salinity was not greater than 10 ppt at least 95 percent of the time and was not less than one ppt at least 95

percent of the time. As a result, criteria applicable to receiving waters were for freshwater (freshwater criteria only) and estuarine environments (lower of salt or freshwater criteria).

e. **Receiving Water Hardness.** Some freshwater WQOs for metals are hardness dependent (i.e., as hardness increases in the receiving water, the toxicity of certain metals decreases). Freshwater WQOs apply to all receiving waters covered under the Order (see Salinity Policy above), so Regional Water Board staff evaluated hardness data from effluent and receiving water samples, and information on the nature of the Discharges to determine an appropriate hardness.

- For Discharges to freshwater creeks other than San Antonio and Alameda Creeks, the minimum hardness of water in the data set from the SFPUC's Transmission System (6 mg/L as $CaCO_3$) was used to calculate hardness dependent WQOs. This value was selected because (1) discharges to ephemeral and intermittent creeks are expected to dominate flow (i.e., stream flow will consist primarily of the discharges) during some portions of each year, and (2) hardness measured in effluent samples was less than hardness in receiving waters.

- For Discharges to San Antonio Reservoir, San Antonio Creek, and Alameda Creek, the minimum hardness of water in the data set from Calaveras Reservoir, San Antonio Reservoir and Alameda Creek (116 mg/L as $CaCO_3$) was used to calculate hardness dependent WQOs. This value was selected because Calaveras Reservoir, San Antonio Reservoir and Alameda Creek are in the same watershed where discharges will occur. Few other factors in the area would affect hardness.

- For Discharges to estuarine waters, hardness data from RMP Lower South Bay and Southern Sloughs Stations were evaluated. There were a total of 62 data points with hardness values ranging from 176 to 5,195 mg/L $CaCO_3$. The minimum hardness of receiving water data was used to calculate hardness dependent WQOs because discharges could occur at numerous locations and the data set varied considerably with location.

3. Determining the Need for WQBELs

NPDES regulations at 40 CFR 122.44(d)(1)(i) require permits to include WQBELs for all pollutants (non-priority or priority) "which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any narrative or numeric criteria within a State water quality standard" (i.e., have Reasonable Potential). Thus, assessing whether a pollutant has Reasonable Potential is the fundamental step in determining whether or not a WQBEL is required.

a. **Reasonable Potential Analysis.** For non-priority pollutants (i.e., chlorine and pH), Regional Water Board staff used available monitoring data, nature of facility operations, and the designated beneficial uses of receiving waters to determine

Reasonable Potential. Using the methods prescribed in SIP Section 1.3, Regional Water Board staff conducted a Reasonable Potential Analysis (RPA) for priority pollutants to determine if the discharge demonstrates reasonable potential to cause or contribute to exceedances of WQOs in the Basin Plan and numeric WQC from the NTR and CTR.

The RPA considers a maximum effluent concentration (MEC) for each pollutant based on existing data, while accounting for a limited data set and effluent variability. There are three triggers in determining Reasonable Potential.

i. The first trigger is activated if the MEC is greater than the lowest applicable WQC (MEC ≥ WQC), which has been adjusted, if appropriate, for pH, hardness, and translator data. If the MEC is greater than the adjusted WQC, then that pollutant has reasonable potential and a WQBEL is required.

ii. The second trigger is activated if the observed maximum ambient background concentration (B) is greater than the adjusted WQC (B > WQC) and the pollutant is detected in any of the effluent samples.

iii. The third trigger is activated if a review of other information determines that a WQBEL is required to protect beneficial uses, even though both MEC and B are less than the WQC. A limitation may be required under certain circumstances to protect beneficial uses.

b. Effluent Data. On January 14 and January 23, 2008, the Regional Water Board requested data collected from within the SFPUC's transmission system pipelines and tunnels. The SFPUC provided the requested data on January 14 and January 25, 2008. Regional Water Board staff analyzed effluent data and the nature of the SFPUC Transmission System operations to determine if discharges have Reasonable Potential. For most pollutants, the RPA was based on transmission system monitoring data collected in May of 2002, 2003 and 2004, and July of 2005 and 2006.

c. Ambient Background Data. Ambient background values are used in the RPA and in the calculation of effluent limitations. For the RPA, ambient background concentrations are the observed maximum detected water column concentrations. The SIP states that either the observed maximum ambient water column concentrations or, for WQC intended to protect human health from carcinogenic effects, the arithmetic mean of observed ambient water concentrations are used for calculating WQBELs.

i. Creeks and Reservoirs. The background data used to perform the RPA for discharges to freshwater were from the Surface Water Ambient Monitoring Program (SWAMP) and SFPUC Title 22 Drinking Water Source Sampling. SWAMP data were selected from stations in Arroyo Las Positas, Arroyo Mocho, Permanente Creek, Polhemus Creek, San Mateo Creek, and Stevens Creek. These creeks flow through regions with various land uses including urban and suburban uses. The SFPUC source sampling data were collected from Calaveras, Lower Crystal Springs, Pilarcitos, San Andreas, and San Antonio Reservoirs. These reservoirs receive water from protected

watersheds. The data were selected because discharges from the SFPUC's transmission system occur in both protected watersheds and in areas with urban and other land uses. Data from the SWAMP and SFPUC source sampling do not include all the constituents listed in the CTR.

ii. **Estuarine Waters.** The background data used to perform the RPA for discharges to estuarine waters were from RMP stations located below the Dumbarton Bridge (Lower South Bay and Southern Sloughs). These data were selected because discharges from the SFPUC's Transmission System will occur to estuarine waters below Dumbarton Bridge. In addition, these RMP stations have been monitored for most of the inorganic (CTR constituent numbers 1–15) and some of the organic (CTR constituent numbers 16–126) toxic pollutants. Not all the constituents listed in the CTR have been analyzed by the RMP.

d. **RPA Determination.** For non-priority pollutants, Regional Water Board staff determined Reasonable Potential for chlorine and pH. Chlorine is used to disinfect drinking water within the facility before delivery to the public. The Basin Plan provides the following WQOs related to toxicity:

POPULATION AND COMMUNITY ECOLOGY

All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce significant alterations in population or community ecology or receiving water biota. In addition, the health and life history characteristics of aquatic organisms in waters affected by controllable water quality factors shall not differ significantly from those for the same waters in areas unaffected by controllable water quality factors.

Toxicity

All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms. Detrimental responses include, but are not limited to, decreased growth rate and decreased reproductive success of resident or indicator species. There shall be no acute toxicity in ambient waters. Acute toxicity is defined as a median of less than 90 percent survival, or less than 70 percent survival, 10 percent of the time, of test organisms in a 96-hour static or continuous flow test.… The health and life history characteristics of aquatic organisms in waters affected by controllable water quality factors shall not differ significantly from those for the same waters in areas unaffected by controllable water quality factors.

Chlorine is highly toxic to aquatic organisms; therefore, reasonable potential exists for chlorine in discharges to exceed both the population and community ecology and the toxicity WQOs in the Basin Plan.

The Discharger increases the pH of water to above 9.0 within their facility to prevent corrosion of pipelines. The Basin Plan provides the following WQO for pH:

The pH shall not be depressed below 6.5 nor raised above 8.5. This encompasses the pH range usually found in waters within the basin. Controllable water quality factors shall not cause changes greater than 0.5 units in normal ambient pH levels.

Because the pH in facility water is sufficient to raise the pH in receiving waters above 8.5 if untreated, there is reasonable potential for discharges to exceed this WQO.

For priority pollutants, Regional Water Board staff used the method prescribed in SIP Section 1.3. Regional Water Board staff compared the effluent data and ambient background data with numeric and narrative WQOs in the Basin Plan and numeric WQC from the NTR, and CTR. These values and the Reasonable Potential conclusions from the RPAs are listed in the following tables for all constituents analyzed. Some of the constituents in the CTR were not evaluated because of the lack of WQOs or effluent data. Based on the RPA methodology in the SIP, most pollutants did not demonstrate Reasonable Potential. Different conditions apply in different receiving waters, and Reasonable Potential results vary based on these conditions. Consequently, receiving waters were grouped into categories based on having similar conditions, and the Reasonable Potential results for discharges to each receiving water category differed based on the conditions that defined the category. For Discharges to freshwater creeks other than San Antonio and Alameda Creeks, nickel concentrations have reasonable potential. For Discharges to San Antonio Reservoir, San Antonio Creek, and Alameda Creek, no priority pollutants have reasonable potential. For Discharges to estuarine waters, nickel concentrations have reasonable potential.

Table F-3. Reasonable Potential Analysis Results for Freshwater Creeks other than San Antonio and Alameda Creeks

CTR #	Priority Pollutants	Governing WQC (µg/L)	MEC Minimum DL (µg/L)	Maximum Background Concentration or Minimum DL (µg/L)	RPA Results[1]
1	Antimony	6.0	1.0[2]	1.0	No
2	Arsenic	50	1.6	22	No
3	Beryllium	4.0	0.10[2]	1.0	No
4	Cadmium	0.12	0.10[2]	1.0	No
5a	Chromium (III)	21	0.20[2]	12	No
9	Nickel	4.8	1.2	34	Yes
12	Thallium	1.7	1.0[2]	1.0	No
13	Zinc	11	1.0[2]	37	No
19	Benzene	1.0	0.50[2]	Not Available	No
22	Chlorobenzene	70	0.50[2]	Not Available	No
28	1,1-Dichloroethane	5.0	0.50[2]	Not Available	No
31	1,2-Dichloropropane	0.52	0.50[2]	Not Available	No
33	Ethylbenzene	700	0.50[2]	Not Available	No
34	Methyl Bromide	48	0.50[2]	Not Available	No
36	Methylene Chloride	5	0.50[2]	Not Available	No

38	Tetrachloroethylene	0.80	0.50[2]	Not Available	No
39	Toluene	150	0.50[2]	Not Available	No
40	1,2-Trans-dichloroethylene	10	0.50[2]	Not Available	No
41	1,1,1-Trichloroethane	200	0.50[2]	Not Available	No
42	1,1,2-Trichloroethane	0.60	0.50[2]	Not Available	No
43	Trichloroethylene	2.7	0.50[2]	Not Available	No
75	1,2-Dichlorobenzene	600	0.50[2]	Not Available	No
76	1,3-Dichlorobenzene	400	0.50[2]	Not Available	No
77	1,4-Dichlorobenzene	5.0	0.50[2]	Not Available	No
89	Hexachlorobutadiene	50	0.50[2]	1.0	No
101	1,2,4-Trichlorobenzene	5.0	0.50[2]	Not Available	No

Notes:

DL Detection Limit

µg/L micrograms per liter

1. For priority pollutants not shown, reasonable potential cannot be determined due to either no promulgated objective or lack of data.
2. The pollutant was not detected in the effluent; therefore, the value is the minimum detection limit.

Table F-4. Reasonable Potential Analysis Results for San Antonio Reservoir, San Antonio Creek, and Alameda Creek

CTR #	Priority Pollutants	Governing WQC (µg/L)	MEC Minimum DL (µg/L)	Maximum Background Concentration or Minimum DL (µg/L)	RPA Results[1]
1	Antimony	6.0	1.0[2]	1.0	No
2	Arsenic	50	1.6	2	No
3	Beryllium	4.0	0.10[2]	1.0	No
4	Cadmium	1.3	0.10[2]	0.5	No
5a	Chromium (III)	50	0.20[2]	0.5	No
7	Lead	3.8	1.0	1.0	No
9	Nickel	59	1.2	2.0	No
11	Silver	5.2	0.20[2]	1.0	No
12	Thallium	1.7	1.0[2]	1.0	No
13	Zinc	136	1.0[2]	4.0	No
19	Benzene	1.0	0.50[2]	Not Available	No
22	Chlorobenzene	70	0.50[2]	Not Available	No
28	1,1-Dichloroethane	5.0	0.50[2]	Not Available	No
31	1,2-Dichloropropane	0.52	0.50[2]	Not Available	No
33	Ethylbenzene	700	0.50[2]	Not Available	No
34	Methyl Bromide	48	0.50[2]	Not Available	No
36	Methylene Chloride	5	0.50[2]	Not Available	No
38	Tetrachloroethylene	0.80	0.50[2]	Not Available	No
39	Toluene	150	0.50[2]	Not Available	No
40	1,2-Trans-dichloroethylene	10	0.50[2]	Not Available	No
41	1,1,1-Trichloroethane	200	0.50[2]	Not Available	No
42	1,1,2-Trichloroethane	0.60	0.50[2]	Not Available	No
43	Trichloroethylene	2.7	0.50[2]	Not Available	No

75	1,2-Dichlorobenzene	600	0.50[2]	Not Available	No
76	1,3-Dichlorobenzene	400	0.50[2]	Not Available	No
77	1,4-Dichlorobenzene	5.0	0.50[2]	Not Available	No
101	1,2,4-Trichlorobenzene	5.0	0.50[2]	Not Available	No

Notes:

DL Detection Limit

µg/L micrograms per liter

1. For priority pollutants not shown, reasonable potential cannot be determined due to either no promulgated objective available or lack of data.
2. The pollutant was not detected in the effluent; therefore, the value is the minimum detection limit.

Table F-5. Reasonable Potential Analysis Results for Estuarine Receiving Waters

CTR #	Priority Pollutants	Governing WQC (µg/L)	MEC or Minimum DL (µg/L)	Maximum Background Concentration or Minimum DL (µg/L)	RPA Results[1,2]
1	Antimony	4,300	1.0[2]	Not Available	No
2	Arsenic	36	1.6	18	No
4	Cadmium	1.8	0.10[2]	0.38	No
5a	Chromium (III)	329	0.20[2]	126	No
7	Lead	6.5	1.0[2]	44	No
9	Nickel	12	1.2	107	Yes
11	Silver	2.2	0.20[2]	0.23	No
12	Thallium	6.3	1.0[2]	Not Available	No
13	Zinc	86	1.0[2]	216	No
19	Benzene	71	0.50[2]	Not Available	No
21	Carbon Tetrachloride	4.4	0.50[2]	Not Available	No
22	Chlorobenzene	21,000	0.50[2]	Not Available	No
29	1,2-Dichloroethane	99	0.50[2]	Not Available	No
30	1,1-Dichloroethylene	3.2	0.50[2]	Not Available	No
31	1,2-Dichloropropane	39	0.50[2]	Not Available	No
32	1,3-Dichloropropylene	1700	0.50[2]	Not Available	No
33	Ethylbenzene	29,000	0.50[2]	Not Available	No
34	Methyl Bromide	4,000	0.50[2]	Not Available	No
36	Methylene Chloride	1,600	0.50[2]	Not Available	No
37	1,1,2,2-Tetrachloroethane	11	0.50[2]	Not Available	No
38	Tetrachloroethylene	8.9	0.50[2]	Not Available	No
39	Toluene	200,000	0.50[2]	Not Available	No
40	1,2-Trans-dichloroethylene	140,000	0.50[2]	Not Available	No
42	1,1,2-Trichloroethane	42	0.50[2]	Not Available	No
43	Trichloroethylene	81	0.50[2]	Not Available	No
44	Vinyl Chloride	525	0.50[2]	Not Available	No
75	1,2-Dichlorobenzene	17,000	0.50[2]	Not Available	No
76	1,3-Dichlorobenzene	2,600	0.50[2]	Not Available	No
77	1,4-Dichlorobenzene	2,600	0.50[2]	Not Available	No
89	Hexachlorobutadiene	50	0.50[2]	Not Available	No

Notes:

DL	Detection Limit
µg/L	micrograms per liter

1. For priority pollutants not shown, reasonable potential cannot be determined due to either no promulgated objective available or lack of data.
2. The pollutant was not detected in the effluent; therefore, the value is the minimum detection limit.

e. Pollutants with no Reasonable Potential. WQBELs are not included in this Order for constituents that do not demonstrate Reasonable Potential; however, monitoring for those pollutants is still required (MRP - Attachment E). If concentrations of these constituents are found to have increased significantly, the Discharger will be required to investigate the source of the increase. Remedial measures are required if the increases pose a threat to water quality in the receiving water.

f. Constituents with limited data. In some cases, Reasonable Potential cannot be determined because effluent data are limited or unavailable. The Discharger will monitor for these constituents in the effluent using analytical methods that provide the best feasible detection limits (MRP - Attachment E). When additional data become available, further RPA will be conducted to determine whether to add numeric effluent limitations to this Order or to continue monitoring.

4. WQBEL Calculations for Priority Pollutants

The WQBELs for priority pollutants with reasonable potential (nickel) were calculated based on applicable WQC and the procedures specified in SIP Section 1.4. The RPA found reasonable potential only for nickel in freshwater creeks other than San Antonio and Alameda Creeks, and estuarine receiving waters. WQBELs for discharges to San Antonio Reservoir, San Antonio Creek, and Alameda Creek were not calculated because priority pollutants did not have reasonable potential with respect to these waters. The derivation of nickel WQBELs is discussed below.

a. Nickel WQOs. Freshwater WQOs for nickel are hardness dependent (i.e., as hardness increases in the receiving water, the toxicity of nickel decreases). Freshwater WQOs apply to all receiving waters covered under the Order (see Salinity Policy above), so Regional Water Board staff evaluated hardness data from effluent and receiving water samples and information on the nature of the Discharges to determine an appropriate hardness.

For Discharges to freshwater creeks other than San Antonio and Alameda Creeks, the minimum hardness of water in the data set from the SFPUC's Transmission System (6 mg/L as $CaCO_3$) was used to calculate the nickel WQOs. This conservative value was selected to account for potentially effluent dominated discharges (i.e., situations where stream flow consists primarily of the discharge). As a result, the WQOs for nickel (Acute Objective = 43 µg/L; Chronic Objective = 4.8 µg/L) are very conservative and hardness monitoring is required in this Order to calculate WQOs that are more representative of actual conditions for the next permit reissuance.

For Discharges to estuarine waters, minimum hardness of receiving water data (176 mg/L as $CaCO_3$) was used to calculate nickel WQOs because discharges

could occur at numerous locations and the data set varied considerably with location. The WQOs for nickel were 75 µg/L (Salt Water Acute Objective) and 8.3 µg/L (Salt Water Chronic Objective).

b. **RPA Results.** The RPA found reasonable potential for nickel in freshwater creeks (other than San Antonio and Alameda Creeks) and estuarine receiving waters. Nickel has reasonable potential by Trigger 2 because the observed maximum ambient background concentration was greater than the WQO and the pollutant was detected in at least one of effluent sample. However, the receiving water data set was extremely limited, so nickel monitoring is required to facilitate an improved RPA during the next permit reissuance. With additional hardness data, it may be possible to show that the applicable WQO is much higher.

c. **Nickel WQBELs.** Nickel WQBELs for discharges to freshwater creeks (other than San Antonio and Alameda Creeks) and for discharges to estuarine waters were calculated based on the WQOs in the Basin Plan and CTR. WQOs are expressed as total recoverable concentrations using a default water effects ratio (WER) of 1.0 and translators recommended in the CTR and Basin Plan. WQBELs were also calculated using the coefficient of variation (CV) in accordance with the SIP. The CV for nickel (0.44) was determined based on the mean and standard deviation of the effluent data set. The following tables provide effluent limitations for nickel calculated according to SIP procedures. The calculated limitations do not include dilution factors because of the shallow-water nature of the discharges.

d. **Feasibility of Compliance.** The maximum nickel concentration reported from the SFPUC's transmission system was 1.2 µg/L. This concentration is about half of the lowest effluent limit (4.2 µg/L), so compliance with the effluent limits is feasible.

Table F-6. Priority Pollutant Water Quality-Based Effluent Limitations for Discharges to Freshwater Creeks other than San Antonio and Alameda Creeks

PRIORITY POLLUTANTS	Nickel (µg/L)
Basis and Criteria type	BP & CTR FW
Acute WQO	43
Chronic WQO	4.8
Water Effects Ratio	1
Acute Translator	0.998
Chronic Translator	0.997
Dilution Factor (D)	0
No. of samples per month	4
Aquatic life criteria analysis required? (Y/N)	Y
Human Health criteria analysis required? (Y/N)	Y
Applicable Acute WQO	43
Applicable Chronic WQO	4.8
Human Health Criteria	610
Maximum Background (Aquatic Life calculation)	34

PRIORITY POLLUTANTS	Nickel (µg/L)
Average Background (Human Health calculation)	4.7
Is the pollutant Bioaccumulative (Y/N)?	N
Effluent Concentration Average (Acute)	43
Effluent Concentration Allowance (Chronic)	4.8
Effluent Concentration Allowance (Human Health)	610
No. of data points <10 or at least 80% of data reported non- detect? (Y/N)	N
Average of effluent data points	0.68
Standard Deviation of effluent data points	0.29
CV calculated	0.44
CV (Selected) – Final	0.44
Effluent Concentration Allowance $Multiplier_{Acute99}$	0.41
Effluent Concentration Allowance $Multiplier_{chronic99}$	0.62
Long-Term Average (Acute)	18
Long-Term Average (Chronic)	3.0
Minimum Long-Term Average	3.0
Average Monthly Effluent Limit $Multiplier_{95}$	1.4
Maximum Daily Effluent Limit $Multiplier_{99}$	2.4
Average Monthly Effluent Limit (aquatic life)	4.2
Maximum Daily Effluent Limit (aquatic life)	7.2
Maximum Daily Effluent Limit / Average Monthly Effluent Limit Multiplier	1.7
Average Monthly Effluent Limit (Human Health)	610
Maximum Daily Effluent Limit (Human Health)	1060
Minimum of Average Monthly Effluent Limit for Aquatic life vs Human Health	4.2
Minimum of Maximum Daily Effluent Limit for Aquatic Life vs Human Health	7.2
Average Monthly Effluent Limit	**4.2**
Maximum Daily Effluent Limit	**7.2**

Notes:

BP Basin Plan

FW Freshwater

µg/L micrograms per liter

Table F-7. Priority Pollutant Water Quality-Based Effluent Limitations for Discharges to Estuarine Receiving Waters

PRIORITY POLLUTANTS	Nickel (µg/L)
Basis and Criteria type	BP Site Specific Objective
Acute WQO	62
Chronic WQO	12
Water Effects Ratio	1
Dilution Factor (D)	0
No. of samples per month	4
Aquatic life criteria analysis required? (Y/N)	Y
Human Health criteria analysis required? (Y/N)	Y

PRIORITY POLLUTANTS	Nickel (µg/L)
Applicable Acute WQO	62
Applicable Chronic WQO	12
Human Health Criteria	4,600
Maximum Background (Aquatic Life calculation)	107
Average Background (Human Health calculation)	14
Is the pollutant Bioaccumulative (Y/N)?	N
Effluent Concentration Allowance (Acute)	62
Effluent Concentration Allowance (Chronic)	12
Effluent Concentration Allowance (Human Health)	4600
No. of data points <10 or at least 80% of data reported non- detect? (Y/N)	N
Average of effluent data points	0.68
Standard Deviation of effluent data points	0.29
CV calculated	0.44
CV (Selected) – Final	0.44
Effluent Concentration Allowance $Multiplier_{Acute99}$	0.41
Effluent Concentration Allowance $Multiplier_{chronic99}$	0.62
Long-Term Average (Acute)	26
Long-Term Average (Chronic)	7
Minimum Long-Term Average	7
Average Monthly Effluent Limit $Multiplier_{95}$	1.4
Maximum Daily Effluent Limit $Multiplier_{99}$	2.4
Average Monthly Effluent Limit (aquatic life)	10
Maximum Daily Effluent Limit (aquatic life)	18
Maximum Daily Effluent Limit / Average Monthly Effluent Limit Multiplier	1.7
Average Monthly Effluent Limit (Human Health)	4600
Maximum Daily Effluent Limit (Human Health)	7991
Minimum of Average Monthly Effluent Limit for Aquatic life vs Human Health	10
Minimum of Maximum Daily Effluent Limit for Aquatic Life vs Human Health	18
Average Monthly Effluent Limit	**10**
Maximum Daily Effluent Limit	**18**

Notes:

BP Basin Plan

FW Freshwater

µg/L micrograms per liter

5. WQBELs for Non-Priority Pollutants

The WQBELs for non-priority pollutants were developed as follows.

a. **Residual Chlorine.** The effluent limitation for residual chlorine comes from Basin Plan Table 4-2.

b. **pH.** The effluent limitation for pH comes from Basin Plan Table 4-2.

c. **Trihalomethanes.** The effluent limitation for total trihalomethanes comes from Basin Plan Table 3-5 and Resolution R2-2008-XXXX.

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

Receiving water limitations are based on water quality objectives contained in the Basin Plan and are a required part of this Order.

- The basis for V.1 is Basin Plan, Section 3.3.6;
- The basis for V.2 is Basin Plan, Sections 3.3.3 and 3.3.13;
- The basis for V.3 is Basin Plan, Section 3.3.17;
- The basis for V.4 is Basin Plan, Section 3.3.7;
- The basis for V.5 is on Basin Plan, Sections 3.3.2, 3.3.8, 3.3.18; and
- The basis for V.6 is Basin Plan, Section 3.3.19.

VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

40 CFR section 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorize the Regional Water Board to require technical and monitoring reports. The Monitoring and Reporting Program (MRP), Attachment E of this Order, establishes monitoring and reporting requirements to implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the MRP for this facility.

A. Effluent Monitoring

Effluent monitoring is required to determine compliance with effluent limitations and to allow ongoing characterization of discharges to determine potential adverse impacts and to determine continued suitability for coverage under the Order.

In addition to the flow rate of the discharge, effluent is to be monitored for nickel, hardness, total trihalomethanes, chlorine, and pH to determine compliance with effluent limitations. This Order includes effluent monitoring for copper to determine compliance with Discharge Prohibition III.D. This Order also includes monitoring for all other priority pollutants once during the permit term to provide data for completion of future reasonable potential analyses.

B. Receiving Water Monitoring

The receiving water monitoring program is described in the MRP (Attachment E). The MRP includes turbidity and pH receiving water monitoring requirements to demonstrate compliance with receiving water limits based on Basin Plan WQOs. These objectives can only be accurately assessed by monitoring the receiving water. Salinity, hardness, and priority pollutant monitoring is required to collect additional data to perform a reasonable potential analysis and calculate WQOs for the next permit reissuance.

Shear stress, soil texture, and channel geomorphology monitoring is required to assess the effectiveness of erosion control provisions for the next permit reissuance.

VII. RATIONALE FOR PROVISIONS

A. Standard Provisions

Standard Provisions, which in accordance with 40 CFR sections 122.41 and 122.42, apply to all NPDES permits are provided in Attachments D and G.

40 CFR section 122.41(a)(1) and (b) through (n) establishes conditions that apply to all state-issued NPDES permits. These conditions must be incorporated into permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the Order. 40 CFR section 123.25(a)(12) allows the state to omit or modify conditions to impose more stringent requirements. In accordance with section 123.25, this Order omits federal conditions that address enforcement authority specified in sections 122.41(j)(5) and (k)(2) because the enforcement authority under the Water Code is more stringent. In lieu of these conditions, this Order incorporates by reference Water Code section 13387(e).

B. Monitoring and Reporting Requirements

The Discharger will need to monitor the permitted discharges to evaluate compliance with permit conditions. Monitoring requirements are contained in the MRP (Attachment E), Standard Provisions (Attachment D), and SMP, Part A (Attachment G). This provision requires compliance with these documents and is based on 40 CFR 122.63. The Standard Provisions and SMP, Part A, are standard requirements in almost all NPDES permits issued by the Regional Water Board, including this Order. They contain definitions of terms, specify general sampling and analytical protocols, and set out requirements for reporting spills, violations, and routine monitoring data in accordance with NPDES regulations, the California Water Code, and the Regional Water Board's policies. The MRP contains a sampling program for the discharges covered by this Order. It defines the sampling stations and frequency, the pollutants to be monitored, and additional reporting requirements.

C. Special Provisions

1. Reopener Provisions

These provisions are based on 40 CFR 122.41(f) and allow future modification of this Order and its effluent limitations as necessary in response to updated circumstances that may occur in the future.

2. Erosion Control Provisions

This Order includes provisions that require the development and implementation of an Erosion Control Plan and requires the Discharger to update the Erosion Control Plan annually. The purpose of the Erosion Control Plan is to develop and implement Best Management Practices (BMPs) to prevent excessive creek erosion from occurring as a result of discharges under this Order. Uncontrolled discharges from

drinking water transmission pipelines can cause excessive erosion. Excessive erosion alters the suspended sediment load and discharge rate, deposits material, and changes turbidity in a manner that can adversely affect the following beneficial uses: (1) Cold Freshwater Habitat; (2) Fish Migration; (3) Preservation of Rare and Endangered Species; and (4) Fish Spawning. Specifically, excessive erosion caused by drinking water discharges can increase sediment loads and turbidity, which in turn abrade gills in resident and migratory fish, including special status salmonid populations. Furthermore, deposition of sediment downstream of discharges can clog spawning beds and cover benthic macroinvertebrate habitat in cold water streams. Therefore, the basis for erosion control provisions listed in Section C.2 of this Order are Water Quality Objectives for Sediment (Basin Plan Section 3.3.12), Settleable Material (Basin Plan Section 3.3.13), and Turbidity (Basin Plan Section 3.3.19).

The map of tidally influenced channels and channels hardened continuously from the point of discharge to the upstream portion of tidal influence was developed from geographical information system (GIS) data collected by Alameda, Santa Clara, and San Mateo County stormwater agencies for the purpose of implementing conditions in their Municipal Separate Stormwater Sewer System permits.

The flow rate threshold is adapted from the allowable low flow discharge rates developed to protect streams from excessive erosion caused by hydromodification. Hydromodification is defined as the change in runoff characteristics within a watershed caused by changes in land use conditions. Hydromodification that increases stormwater discharges by less than 10 percent of the 2-year flood flows are not considered to cause excessive erosion. The discharges covered under this Order may occur over periods of less than a day up to 14 days. A potable water discharges lasting 14 days would increase the erosion potential more than a stormwater discharge of the same magnitude because the duration would be longer than the typical storm event. However, this increased erosion potential would be mitigated by the lower frequency of potable discharges (typically less than once every 5 years at any one location) and the energy dissipation structures at the point of discharge. Water Board staff with over 30 years experience in fluvial geomorphology, creek restoration, and aquatic ecology considered this information and determined that a flow rate threshold of 20 percent of the 2-year flood flow would protect streams from excessive erosion based on best professional judgment.

The permissible shear stress value of 2 pounds per square foot was based on the lowest permissible shear stress value from Engineer Manual No. 1110-2-1601, *Engineering and Design: HYDRAULIC DESIGN OF FLOOD CONTROL CHANNELS* (U.S. Army Corps of Engineers 1994). These values were developed to protect flood control channels from damage caused by erosion. Therefore, the lowest permissible shear stress value will protect creeks from excessive erosion and is appropriate for use in this Order.

3. SIP Exception Requirements

The SIP provides a categorical exception that may be granted for short-term or seasonal discharges of drinking water. The SIP allows the Regional Water Board to grant such an exception, stating:

The [Regional Water Board] may, after compliance with the California Environmental Quality Act (CEQA), allow short-term or seasonal exceptions from meeting priority pollutant criteria/objectives if determined necessary to implement control measures … regarding drinking water conducted to fulfill statutory requirements under the federal Safe Drinking Water Act or the California Health and Safety Code. Such categorical exceptions may also be granted for draining water supply reservoirs, canals, and pipelines for maintenance, for draining municipal storm water conveyances for cleaning and maintenance, or for draining water treatment facilities for cleaning or maintenance.

The Regional Water Board Adopted Resolution R2-2008-XXXX in accordance with CEQA indicating that it will grant categorical exceptions for specific drinking water discharges on a case-by-case basis. This Order grants this exception for copper and trihalomethanes objectives in accordance with the SIP and Resolution No. R2-2008-XXXX. This Order meets the conditions set forth in the SIP and Resolution No. R2-2008-XXXX for granting such an exception:

a. **Notification Requirements.** The public notice for this Order serves as notification to potentially affected public and governmental agencies. Provision VI.C.2.a.ii also includes notification requirements that serve to fulfill this requirement.

b. **Description of Proposed Action.** Provision VI.C.3 of this Order requires detailed descriptions of all reasonably foreseeable discharges in each quarterly self-monitoring report to fulfill this requirement. In addition, Section II of this Fact Sheet describes the Facility and includes a detailed description of discharges that serves to fulfill this requirement.

c. **Time Schedule.** Provision VI.C.2.a.ii requires a time schedule in quarterly self-monitoring reports to fulfill this requirement.

d. **Discharge and Receiving Water Quality Monitoring Plan.** The Monitoring and Reporting Program (Attachment E) of this Order fulfills this requirement.

e. **Contingency Plan.** Provision VI.C.2.a.i requires a contingency plan to fulfill this requirement.

f. **Alternate Water Supply.** Provision VI.C.2.a.i requires the contingency plan to identify an alternate water supply (if needed) to fulfill this requirement.

g. **Residual Waste Disposal Plan.** Provision VI.C.4 requires the Discharger to submit Standard Operating Procedure (SOP) for dechlorination. This SOP will remove all residual chlorine and fulfill this requirement.

h. **Certification by Qualified Biologist.** To fulfill this requirement, Provision VI.C.3 of this Order requires the Discharger to provide certification by a qualified biologist that beneficial uses of receiving waters either (1) have not been impacted by discharges of potable water or (2) have been restored to previous conditions following discharges of potable water.

4. Construction, Operation, and Maintenance Specifications

This provision is based on the Basin Plan and the requirements of 40 CFR 122.41(e).

VIII. PUBLIC PARTICIPATION

The Regional Water Board is considering the issuance of waste discharge requirements (WDRs) that will serve as a NPDES permit for the San Francisco Public Utilities Commission's Drinking Water Transmission System. As a step in the WDR adoption process, the Regional Water Board staff has developed tentative WDRs. The Regional Water Board encourages public participation in the WDR adoption process.

A. Notification of Interested Parties

The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Notification was provided through the Hayward Daily Review on <Date>, San Jose City Times on <Date>, and San Mateo County Times on <Date>**.**

B. Written Comments

Staff determinations are tentative. Interested persons are invited to submit written comments concerning these tentative WDRs. Comments must be submitted either in person or by mail to Xavier Fernandez at the Regional Water Board at the address on the cover page of this Order.

To be fully responded to by staff and considered by the Regional Water Board, written comments must be received at the Regional Water Board offices by 5:00 p.m. on November 13, 2008.

C. Public Hearing

The Regional Water Board will hold a public hearing on the tentative WDRs during its regular Board meeting on the following date and time and at the following location:

Date:	**December 10, 2008**
Time:	**9:00 a.m.**
Location:	Elihu Harris State Office Building 1515 Clay Street Oakland, CA 94612 1st floor Auditorium

Interested persons are invited to attend. At the public hearing, the Regional Water Board will hear testimony, if any, pertinent to the discharge, WDRs, and permit. Oral testimony will be heard; however, for accuracy of the record, important testimony should be in writing.

Please be aware that dates and venues may change. Our Web address is http://www.waterboards.ca.gov/sanfranciscobay/ where the current agenda and any changes in dates or locations will be posted.

D. Waste Discharge Requirements Petitions

Any aggrieved person may petition the State Water Board to review the decision of the Regional Water Board regarding the final WDRs. The petition must be submitted within 30 days of the Regional Water Board's action to the following address:

State Water Resources Control Board
Office of Chief Counsel
P.O. Box 100, 1001 I Street
Sacramento, CA 95812-0100

E. Information and Copying

The Report of Waste Discharge, related documents, tentative effluent limitations and special provisions, comments received, and other information are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Regional Water Board by calling 510-622-2300.

F. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the Regional Water Board, reference this facility, and provide a name, address, and phone number.

G. Additional Information

Requests for additional information or questions regarding this order should be directed to Xavier Fernandez at 510-622-5685, or by email at xafernandez@waterboards.ca.gov.

ATTACHMENT G – STANDARD PROVISIONS AND REPORTING REQUIREMENTS, AUGUST 1993; AND SELF-MONITORING PROGRAM, PART A, ADOPTED AUGUST 1993

The following documents are part of this Order but are not physically attached due to volume.

They are available on the Internet at:
http://www.waterboards.ca.gov/sanfranciscobay/npdes_wastewater_permit.shtml

- Standard Provisions and Reporting Requirements, August 1993.
- Self-Monitoring Program, Part A (August 1993).
- Regional Water Board Resolution No. 74-10.
- August 6, 2001 Regional Water Board staff letter, "Requirement for Monitoring of Pollutants in Effluent and Receiving Water to Implement New Statewide Regulations and Policy".

ATTACHMENT H – STANDARD OPERATING PROCEDURES

Technical Memorandum

Water Transmission NPDES Technical Support Services

Subject:	**Erosion Control Standard Operating Procedure**
Prepared For:	Jim Salerno
Prepared by:	Emmalynne Hu; Phoebe Grow
Reviewed by:	J. Salerno (SFPUC); D. Green (SFPUC), J. Blanchard (SFPUC), J. Wong (SFPUC), R. Stachon (RMC)
Date:	July 16, 2008
Reference:	0092-004.09

This technical memorandum is intended to formalize SFPUC's current erosion control practices for discharges to streams into a standard operating procedure (SOP). The information presented is based on discussions with Johnie Wong, Utility Plumber Supervisor II, Operations & Maintenance and review of the Disinfection/Dechlorination Manual of Procedures.

Due to technological advances, regulatory changes and other factors that could affect operating procedures and best management practices (BMPs), the erosion control SOP will be reviewed and updated at least once every five years. These revisions and updates are intended to coincide with the five year permit cycle for SFPUC's Water Transmission NPDES permit.

The content of this SOP is organized per Program Procedure #1 in the Disinfection/Dechlorination Manual of Procedures.

1 Purpose

The purpose of this procedure is to describe the erosion control measures to be used during planned discharges such as dewatering for maintenance, distribution system flushing, hydrostatic test water discharges following new water main construction and discharges of water following disinfection/dechlorination.

2 Objective

The objective of the erosion control SOP is to protect streams and natural areas from potential erosion during discharge events. Water discharges at high rates may cause erosion, which presents a threat to the environment.

3 Roles and Responsibilities

In general, the SFPUC Water Quality Bureau (WQB) is responsible for disinfection project planning, calculations, monitoring and analyses for all disinfection related field activities, including erosion control activities. The WQB Engineering Section also provides quality assurance, quality control, and supervision for these activities. Coordination is a key factor in project success. Thus prior to a planned discharge,

the WQB Engineering Section, as the entity responsible for quality assurance, shall conduct a coordination meeting with all SFPUC groups involved.

The SFPUC Natural Resources and Lands Management Division is responsible providing notification to the Regional Water Quality Control Board (RWQCB) for discharges.

The SFPUC Water Supply and Treatment Operations & Maintenance Division (Operations) are responsible for implementation of projects. This includes notifying the WQB of the need for discharge activities and notifying the SFPUC Natural Resources and Lands Management Division in writing of the timing and approximate amounts of discharges. Operations is also responsible for obtaining discharge permits from Caltrans and relevant local agencies (generally local stormwater management or flood control agencies); and negotiating the flow limits for those permits.

As appropriate, Operations will notify the following types of entities within one week of the planned discharge:

- relevant departments of the counties and/or municipalities within which the discharge will take place;
- local water districts using the stream for water supply purposes;
- local stormwater management and/or local flood control agencies (if not already contacted through the discharge permitting process);
- known industrial operators using the stream for water supply or working immediately adjacent the stream (such as quarry operators in the Sunol Valley.

4 Planning

Planning for the erosion control measures shall be conducted in conjunction with the disinfection planning; refer to Section 5 of the Disinfection/Dechlorination Manual of Procedures for details.

5 Safety

Plastic discharge piping shall only be used for non-pressurized section. Discharge piping which is subject to pressure shall be constructed of steel pipe and braced.

Discharge piping flows shall be limited to 10 ft/s to limit the potential for pipe separation or movement.

6 Procedures

In general, most discharges will occur using gravity flow controlled by valves and/or pipe sizes. In some cases, pumps will be used to facilitate some or all of the discharge. Procedures for both gravity flow and pumped discharge into a stream channel are listed below:

1. Select diameter of discharge piping based on the permitted discharge flow rate and a maximum velocity within the discharge piping of 10 ft/s. Typically,

permitted discharge rates range from 800-1,000 gpm (1.8-2.2 cfs) but can be as high as 3,500 gpm (7.9 cfs). If no discharge permit is needed or if no discharge limit is specified by the permit, then the maximum discharge shall be no more than 3,500 gpm. The table below shows the discharge rates that will result from using various pipe sizes at a velocity of 10 ft/s:

Pipe Size – Flow Rate Relationship when velocity in discharge pipe is 10 ft/s		
Pipe Inside Diameter (in)	**Flow (cfs)**	**Flow (gpm)***
4	0.9	400
6	2.0	900
8	3.5	1,600
10	5.5	2,400
12	7.9	3,500

**rounded to the nearest 100*

2. Connect discharge piping to the transmission system or to the tail end of the dechlorination piping and string piping to the riparian zone.
3. At the riparian zone, tee into a larger diameter pipe to reduce the velocity of the discharge to 2 -3 ft/s. This larger diameter pipe shall serve as the outlet to the stream and shall be perforated to further diffuse the flow. This set-up is illustrated in Figure 1.

Figure 1: Perforated discharge piping

4. Planking may be used to support piping above the creek. If possible, position the pipe above a hardened section of the channel, as illustrated in Figure 2.

Figure 2: Discharge piping supported above a hardened section of channel

5. Begin discharge at 40-200 gpm, or 0.1-0.4 cfs, to soak unhardened sections of the channel and reduce the potential for scouring.
6. Over the first thirty minutes of the discharge, gradually increase the flow rate until the permitted discharge flow rate is achieved.
7. Monitor discharge as discussed below in Section 7.
8. Within the last 30 to 60 minutes of discharge, gradually reduce flow rates.
9. In some cases, pumping is needed to complete a discharge that began as a gravity flow discharge. In these cases, there is likely to be a short interval (generally less than one hour) between the gravity flow discharge and the pumped discharge. As such, the gravity flow discharge and the pumped discharge will be treated as two separate discharge events in that each will be “ramped up” and “ramped down”. The gravity flow discharge will be conducted in accordance with the procedures detailed above. For the pumped discharge, the pumping rate will be gradually increased within the first 30 to 60 minutes of pumping and gradually decreased during the final 30 to 60 minutes of pumping as practicable.
10. Remove the piping at the end of the discharge.

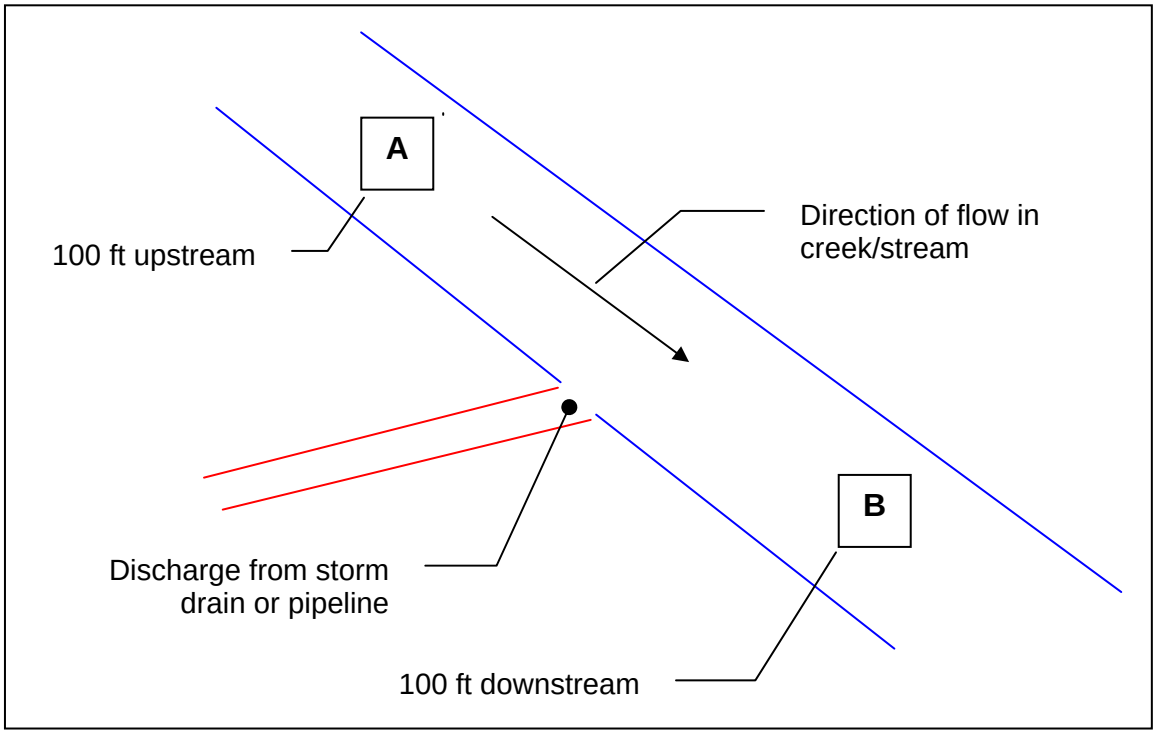
7 Monitoring

Monitoring shall be conducted to ensure that the erosion control materials remain intact and in proper working order throughout the discharge event.

If visible signs of erosion are observed downstream of the point of discharge, the discharge flow rate shall be decreased.

Additionally, turbidity monitoring within the receiving stream shall be used as an indicator of erosion. Water quality technicians shall collect turbidity measurements twice during the first hour of a discharge event and two additional times during daylight hours. The turbidity measurements shall be taken at points 100 feet upstream and downstream of the location where the discharge enters the stream, as shown in Figure 3. If these points are inaccessible or unsafe to access, turbidity measurements will be collected at the closest practicable locations.

Figure 3: Turbidity Monitoring Locations



The upstream turbidity measurement establishes the ambient stream turbidity, and the downstream turbidity measurement is taken to determine compliance. The turbidity compliance standards are defined in Table 1.

Table 1: Turbidity Compliance Standards

Ambient Stream Turbidity, A (Monitoring Location A in Figure 3)	Compliance Standard (Monitoring Location B in Figure 3)
≤ 50 NTU	≤ A+ 5 NTU
50-100 NTU	≤ A+ 10 NTU
>100 NTU	≤ 1.1 × A
No upstream flow	1,000 NTU*

*Based on turbidity Numeric Effluent Limitation (NEL) in the *Draft General NPDES Permit for Construction Activities,* State Water Resources Control Board, March 18, 2008.

If the turbidity measurements indicate the compliance standard is being exceeded, the discharge flow rate shall be reduced and turbidity measurements will be conducted every 30 minutes until compliance is achieved.

8 Records

Turbidity measurements shall be recorded on the same data sheet as the chlorine residual and pH measurements. This data sheet, which is illustrated in Figure 4, shall be attached to the discharge monitoring report and submitted to the RWQCB when the project is completed.

Figure 4: Data Sheet to be Submitted to the Regional Board

Project: _Enter Pipe Line Date
Monitoring Location:_____
Technician: _____

CA Regional Board

Time	Discharge Site		UP Stream	Down Stream	Comments
(Military Time)	(Water before it goes to the creek/stormdrain)		NTU	NTU	
	Total Cl2 (<0.0mg/L)	pH (6.5 - 8.5)	(100ft Up Stream)	(100ft Down Stream)	

Records must be maintained per Program Procedure #2 in the Disinfection/Dechlorination Manual of Procedures.

9 Referenced Sections

WQB Manual of Procedures

Section 3 - Safety

Section 4 – Roles and Responsibilities

Section 5 – Planning Procedures