ORDER NO. R1-2016-0001
NPDES NO. CA0024449
WDID NO. 1B82151OHUM

WASTE DISCHARGE REQUIREMENTS

FOR THE

CITY OF EUREKA
ELK RIVER WASTEWATER TREATMENT PLANT
HUMBOLDT COUNTY

The following Permittee is subject to waste discharge requirements (WDRs) set forth in this Order:

Table 1. Permittee Information

Permittee	City of Eureka
Name of Facility	Elk River Wastewater Treatment Plant
Facility Address	4301 Hilfiker Lane
	Eureka, CA 95503
	Humboldt County
Type of Facility	Publicly Owned Treatment Works (POTW)
Facility Design Flow	5.24 million gallons per day (mgd) (average dry weather flow capacity) 8.6 mgd (peak dry weather treatment capacity) 12 mgd (peak wet weather treatment capacity)

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
001	Secondary treated municipal wastewater	40° 46’ 24”	124° 12’ 45”	Humboldt Bay

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Table 3. Administrative Information

This Order was adopted on:	**June 16, 2016**
This Order shall become effective on:	**September 1, 2016**
This Order shall expire on:	**August 31, 2021**
The Permittee shall file a Report of Waste Discharge as an application for reissuance of WDRs in accordance with title 23, California Code of Regulations (CCR), and an application for reissuance of a National Pollutant Discharge Elimination System (NPDES) permit no later than:	**December 1, 2020**
The U.S. Environmental Protection Agency (U.S. EPA) and the California Regional Water Quality Control Board, North Coast Region have classified this discharge as follows:	Major

IT IS HEREBY ORDERED, that Waste Discharge Requirements (WDR) Order No. R1-2009-0033 and Monitoring and Reporting Program (MRP) No. R1-2009-0033, are rescinded upon the effective date of this Order except for enforcement purposes, and in order to meet the provisions contained in division 7 of the California Water Code (Water Code) (commencing with section 13000) and regulations and guidelines adopted thereunder, and the provisions of the federal Clean Water Act (CWA) and regulations and guidelines adopted thereunder, the Permittee shall comply with the requirements of this Order. This action in no way prevents the North Coast Regional Water Quality Control Board (Regional Water Board) from taking enforcement action for past violations of the previous permit.

I, Matthias St. John, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of the Order adopted by the California Regional Water Quality Control Board, North Coast Region, on **June 16, 2016.**

_____
Matthias St. John, Executive Officer

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I. FACILITY INFORMATION

Information describing the City of Eureka (Permittee) Elk River Wastewater Treatment Plant (Facility) is summarized in Table 1 and in sections I and II of the Fact Sheet (Attachment F). Section I of the Fact Sheet also includes information regarding the Facility's permit application.

II. FINDINGS

The California Regional Water Quality Control Board, North Coast Region (Regional Water Board), finds:

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 (U.S. EPA) and chapter 5.5, division 7 of the 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. Basis and Rationale for Requirements. The Regional Water Board developed the requirements in this Order based on information submitted as part of the Permittee's application, monitoring and reporting program, and other available information. The Fact Sheet (Attachment F) contains background information and rationale for the requirements in this Order, and is hereby incorporated into this Order and constitutes Findings for this Order. Attachments A through E are also incorporated into this Order.

C. Provisions and Requirements Implementing State Law. The provisions/requirements in subsections III.F, ,V.B, and VI.C.5.a of this Order are included to implement state law only. These provisions/requirements are not required or authorized under the federal CWA; consequently, violations of these provisions/requirements are not subject to the enforcement remedies that are available for NPDES violations.

D. Notification of Interested Parties. The Regional Water Board has notified the Permittee and interested agencies and persons of its intent to prescribe WDRs for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Details of the notification are provided in the Fact Sheet.

E. 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.

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III. DISCHARGE PROHIBITIONS

A. The discharge of waste to Humboldt Bay is prohibited unless it complies with the State Water Board, Water Quality Control Policy for the Enclosed Bays and Estuaries of California (1974, 1995).

B. The discharge of any waste not disclosed by the Permittee and not within the reasonable contemplation of the Regional Water Board is prohibited.

C. Creation of pollution, contamination, or nuisance, as defined by section 13050 of the Water Code is prohibited.

D. The discharge of sludge or digester supernatant is prohibited, except as authorized under section VI.C.5.c of this Order (Sludge Disposal and Handling Requirements).

E. The discharge of untreated or partially treated waste (receiving a lower level of treatment than secondary as described in section II.A of the Fact Sheet) from anywhere within the collection, treatment, or disposal systems is prohibited, except as provided for in Attachment D, Standard Provisions G (Bypass) and H (Upset).

F. Any sanitary sewer overflow (SSO) that results in a discharge of untreated or partially treated wastewater to (a) waters of the state or (b) land that creates pollution, contamination, or nuisance, as defined in Water Code section 13050 is prohibited.

G. The discharge of waste at any point not described in Finding II.B of the Fact Sheet or authorized by a permit issued by the State Water Board or another Regional Water Board is prohibited.

H. The discharge of waste from the Facility to the Elk River and its tributaries, and to seasonal and tidal marshes adjacent to the Facility is prohibited.

I. The discharge of more than 8.6 mgd as a peak dry weather flow, or 12.0 mgd as a peak wet weather flow, is prohibited.

J. The discharge of any radiological, chemical, or biological warfare agent or high-level radioactive waste into waters of the state is prohibited.

K. The discharge of septage to a location other than an approved septage receiving station is prohibited.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Point 001

1. Final Effluent Limitations – Discharge Point 001

a. The discharge of secondary treated wastewater shall maintain compliance with the following effluent limitations at Discharge Point 001, with compliance measured at Monitoring Location EFF-001 as described in the Monitoring and Reporting Program (MRP) (Attachment E).

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Table 4. Effluent Limitations

Parameter	Units	Effluent Limitations[1]				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand 5-day @ 20°C (BOD_5)	mg/L	30	45	60	--	--
	lbs/day[2]	2,151	3,227	4,303	--	--
	lbs/day[3]	3,002	4,503	6,005	--	--
Total Suspended Solids (TSS)	mg/L	30	45	60	--	--
	lbs/day[2]	2,151	3,227	4,303	--	--
	lbs/day[3]	3,002	4,503	6,005	--	--
Settleable Solids	mg/L	0.1	--	0.2	--	--
Turbidity	NTU	75	100	--	--	225
pH	standard units	--	--	--	6.0	8.5
Total Residual Chlorine	mg/L	0.0061	--	0.012	--	--
Ammonia Nitrogen, Total (as N)	mg/L	4.1	--	10	--	--
Copper, Total Recoverable	µg/L	3.4	--	4.8	--	--
Cyanide, Total (as CN)	µg/L	0.50	--	1.0	--	--
2,3,7,8 - TCDD Equivalents[4]	µg/L	1.4×10^{-8}	--	2.8×10^{-8}	--	--

Table Notes:
1. See Compliance Determination discussions in section VII and Definitions in Attachment A and of this Order.
2. Mass-based effluent limitations are based on the peak dry weather design flow of 8.6 mgd.
3. These alternate mass-based limitations apply during periods of high infiltration/inflow when influent flow to the Facility exceed 8.6 mgd for the limitation period (daily, weekly, or monthly), and are based on the secondary treatment capacity of the Facility (12.0 mgd).
4. Equivalents, also known as the TEQ, is a calculated value which reflects the combined effect of dioxin and furan compounds (congeners).

b. **Percent Removal:** The average monthly percent removal of BOD_5 and TSS shall not be less than 85 percent. Percent removal shall be determined from the monthly average value of influent wastewater concentration in comparison to the monthly average value of effluent concentration for the same constituent over the same time period as measured at Monitoring Locations INF-001 and EFF-001, respectively.

c. **Disinfection**. Disinfected effluent discharged from the wastewater treatment plant through Discharge Point 001 to Humboldt Bay shall not contain fecal coliform bacteria in excess of the following concentrations, as measured at Monitoring Location EFF-001:

i. The median value of fecal coliform bacteria shall not exceed a Most Probable Number (MPN) of 14 per 100 milliliters (mL) in a calendar month, and

ii. No samples shall exceed an MPN of 43 per 100 mL.

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2. Interim Effluent Limitations – Not Applicable

This Order does not establish interim effluent limitations or schedules for compliance with final limitations.

B. Land Discharge Specifications – Not Applicable

This Order does not authorize discharges to land.

C. Recycling Specifications – Not Applicable

This Order does not authorize discharges of recycled water.

D. Other Requirements

1. The Permittee shall begin discharge prior to the outgoing tide, 45 minutes before slack tide and, when discharge volumes require use of the effluent pumps, the pumping rate shall be set to convey the stored volume within the limits of the discharge window[1].
2. There shall be no detectable levels of chlorine discharged to the Overflow Marsh, as measured at Monitoring Location INT-001, (and as described in the Monitoring and Reporting Program, Attachment E), using an analytical method with a minimum detection limit of 0.1 mg/L.

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

Receiving water limitations are based on water quality objectives contained in the Basin Plan and are a required part of this Order. Receiving water conditions not in conformance with the limitation are not necessarily a violation of this Order. The Regional Water Board may require an investigation to determine cause and culpability prior to asserting that a violation has occurred.

Discharges from the Facility shall not cause the following in the receiving water:

1. The discharge shall not cause the dissolved oxygen concentration of Humboldt Bay to violate the following objectives established by Table 3-1 of the Basin Plan:
   - **a.** 6.0 mg/L, as a minimum in any sample;
   - **b.** 6.2 mg/L, as a 90 percent lower limit (90 percent or more of the monthly mean dissolved oxygen concentrations in a calendar year shall be greater than or equal to 6.2 mg/L); and
   - **c.** 7.0 mg/L, as a 50 percent lower limit (50 percent or more of the monthly mean dissolved oxygen concentrations in a calendar year shall be greater than or equal to 7.0 mg/L).
2. The discharge shall not cause the pH of receiving waters to be depressed below natural background levels nor raised above 8.5. Within this range, the discharge shall not cause the pH of the receiving waters to be changed at any time more than 0.2 units from that which occurs naturally.

[1] The discharge window shall begin 45 minutes before slack tide conditions on the outgoing tide and end prior to the slack tide associated with the subsequent incoming tide.

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3. The discharge shall not cause the turbidity of receiving waters to be increased more than 20 percent above naturally occurring background levels.
4. The discharge shall not cause receiving waters to contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses.
5. The discharge shall not cause receiving waters to contain floating materials, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses.
6. The discharge shall not cause receiving waters to contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin, that cause nuisance, or that adversely affect beneficial uses.
7. The discharge shall not cause coloration or receiving waters that causes nuisance or adversely affects beneficial uses.
8. The discharge shall not contain substances in concentrations that result in deposition of material in receiving waters that causes nuisance or adversely affect beneficial uses.
9. The discharge shall not cause receiving waters to contain biostimulatory substances in concentrations that promote objectionable aquatic growth to the extent that such growth causes nuisance or adversely affects beneficial uses.
10. The discharge shall not cause receiving waters to contain toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in humans, plants, animals, or aquatic life. Compliance with this objective will be determined by use of indicator organisms, analyses of species diversity, population density, growth anomalies, bioassays of appropriate duration, or other appropriate methods, as specified by the Regional Water Board.
11. The natural receiving water temperature shall not be altered unless it can be demonstrated to the satisfaction of the Regional Water Board that such alteration in temperature does not adversely affect beneficial uses. The discharge shall not cause an increase of the receiving water by more than 5° F above natural receiving water temperature.
12. The discharge shall not cause an individual pesticide or combination of pesticides to be present in concentrations that adversely affect beneficial uses. The discharge shall not cause bioaccumulation of pesticide concentrations in bottom sediments or aquatic life.
13. The discharge shall not cause the receiving waters to contain concentrations of pesticides in excess of Basin Plan objectives or in excess of more stringent Maximum Contaminant Levels (MCLs) established for these pollutants in title 22, division 4, chapter 15, articles 4 and 5.5 of the CCR.
14. The discharge shall not cause receiving waters to contain 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 affect beneficial uses.
15. The discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Regional Water Board or the State Water Board, as required by the federal Clean Water Act and regulations adopted thereunder. If more

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stringent applicable water quality standards are promulgated or approved pursuant to section 303 of the Clean Water Act, or amendments thereto, the Regional Water Board will revise and modify this Order in accordance with such more stringent standards.

16. The discharge shall not cause concentrations of chemical constituents to occur in excess of Basin Plan objectives or in excess of more stringent MCLs established for these pollutants in title 22, division 4, chapter 15, articles 4 and 5.5 of the CCR or in concentrations that adversely affect the agricultural supply beneficial use.

17. The discharge shall not cause receiving waters to contain radionuclides in concentrations which are deleterious to human, plant, animal or aquatic life, nor which result in the accumulation of radionuclides in the food web to an extent which presents a hazard to human, plant, animal or indigenous aquatic life.

B. Groundwater Limitations

1. The collection, treatment, storage, and disposal of wastewater shall not cause a statistically significant degradation of groundwater quality unless a technical evaluation is performed that demonstrates that any degradation that could reasonably be expected to occur, after implementation of all regulatory requirements (e.g., title 27 of the CCR) and reasonable best management practices, will not violate groundwater quality objectives or cause impacts to beneficial uses of groundwater.

2. The collection, treatment, storage, and disposal of wastewater shall not cause alterations of groundwater that result in chemical concentrations in excess of limits specified in title 22, sections 64435 (Tables 2 and 3) and 64444, and the Basin Plan.

3. The collection, treatment, storage, and disposal of wastewater shall not cause levels of radionuclides in groundwater in excess of the limits specified in title 22, division 4, chapter 15, article 5, section 64443 of the CCR.

4. The collection, treatment, storage, and disposal of wastewater shall not cause groundwater to contain taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses.

5. In groundwaters used for domestic or municipal supply (MUN), the collection, treatment, storage, and disposal of treated wastewater shall not cause the median of the most probable number of coliform organisms over any 7-day period to exceed 1.1 MPN/100 mL, 1 colony/100 mL.

VI. PROVISIONS

A. Standard Provisions

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

2. **Regional Water Board Standard Provisions**. The Permittee shall comply with the following Regional Water Board standard provisions. In the event that there is any conflict, duplication, or overlap between provisions specified by this Order, the more stringent provision shall apply:

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a. Failure to comply with provisions or requirements of this Order, or violation of other applicable laws or regulations governing discharges from this Facility, may subject the Permittee to administrative or civil liabilities, criminal penalties, and/or other enforcement remedies to ensure compliance. Additionally, certain violations may subject the Permittee to civil or criminal enforcement from appropriate local, state, or federal law enforcement entities.

b. In the event the Permittee does not comply or will be unable to comply for any reason, with any prohibition, interim or final effluent limitation, other specification, receiving water limitation, or provision of this Order that may result in a significant threat to human health or the environment, such as inundation of treatment infrastructure, breach of pond containment, or unauthorized release, etc., that results in a discharge to a drainage channel or a surface water, the Permittee shall notify Regional Water Board staff within 24 hours of having knowledge of such non-compliance. Spill notification and reporting shall be conducted in accordance with Section V.E of Attachment D and X.E of the Monitoring and Reporting Program.

B. Monitoring and Reporting Program (MRP) Requirements

The Permittee shall comply with the MRP, included as Attachment E of this Order, and future revisions thereto.

C. Special Provisions

1. Reopener Provisions

a. Standard Revisions. If applicable water quality standards are promulgated or approved pursuant to Section 303 of the CWA, or amendments thereto, the Regional Water Board may reopen this Order and make modifications in accordance with such revised standards.

b. Reasonable Potential. This Order may be reopened for modification to include additional effluent limitations, if monitoring establishes that the discharge causes, or has the reasonable potential to cause or contribute to, an excursion above a water quality criterion or objective applicable to the receiving water.

c. Whole Effluent Toxicity. As a result of a Toxicity Reduction Evaluation (TRE), this Order may be reopened to include a new chronic toxicity limitation, acute toxicity limitation and/or a limitation for a specific toxicant identified in the TRE. Additionally, if a numeric chronic toxicity water quality objective for enclosed bays is adopted by the State Water Board, this Order may be reopened to include a numeric chronic toxicity effluent limitation based on that objective.

d. 303(d)-Listed Pollutants. If an applicable total maximum daily load (TMDL) (see Fact Sheet, section III.D) program is adopted, this Order may be reopened and effluent limitations for the pollutant(s) that are the subject of the TMDL may be modified or imposed to conform this Order to the TMDL requirements.

e. Water Effects Ratios (WERs) and Metal Translators. A default WER of 1.0 has been used in this Order for calculating CTR criteria for applicable priority pollutant inorganic constituents. If the Permittee performs studies to determine site-specific WERs and/or site-specific dissolved-to-total metal translators and submits a report that

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demonstrates what WER or translator studies were performed in accordance with U.S. EPA or other approved guidance, this Order may be reopened to modify the effluent limitations for the applicable constituents.

f. **Zone of Initial Dilution/Mixing Zone**. Order No. R1-2009-0033 applied a 30:1 zone of initial dilution for the discharge based on Resolution No. 80-10 which relied upon a modeling study performed in 1979. The 1979 study demonstrated that discharge at ebb tide conveyed all effluent out of Humboldt Bay and into the Pacific Ocean. A zone of initial dilution was granted based upon design of the outfall diffuser and application of Ocean Plan criteria. Order No. R1-2009-0033 included a requirement for the Permittee to perform an updated effluent discharge study. The new study, *Effluent Discharge Study for the Elk River Wastewater Treatment Plant, January 7, 2014*, demonstrated that not all of the effluent is conveyed to the Pacific Ocean upon discharge, as previously concluded in the 1979 study (see section II.C of the Fact Sheet, page F-5, for details). Since a significant portion of the effluent remains in Humboldt Bay, the discharge of effluent from the Facility must comply with the SIP as opposed to the Ocean Plan. Based upon this new information, a zone of initial dilution consistent with the Ocean Plan is not retained in this Order. Should the Permittee wish to obtain authorization for a mixing zone and associated dilution credit for the discharge into Humboldt Bay, a mixing zone study as specified in Section 1.4.2 of the SIP must be conducted and submitted to the Regional Water Board for Executive Officer consideration. If approved, this Order may be accordingly revised.

2. **Special Studies, Technical Reports and Additional Monitoring Requirements**

a. **Outfall Inspection**. Divers shall visually inspect the outfall structure, including the diffuser ports, at least once during the life of this permit to verify operational status of the outfall. A report documenting outfall condition and maintenance above and below the water, including a written description and photo documentation of any observed cracks, breaks, malfunctions, and appropriate repairs, shall be submitted within 90 days of completing the inspection and no later than **December 1, 2017**. The Permittee shall submit to the Regional Water Board Executive Officer for approval an Outfall Inspection Work Plan no later than **December 1, 2016**.

b. **Local Limits Study.** The Permittee shall conduct a Local Limits Study to determine the pollutants of concern, collect and analyze data, calculate maximum allowable headworks loadings (MAHLs) for each pollutant of concern, and designate and implement technically-based local limits, where necessary, for industrial users discharging to the Permittee's collection system. The Local Limits Study shall be conducted in accordance with U.S. EPA's July 2004 *Local Limits Development Guidance* (EPA 833-R-04-002A) and shall be submitted to the Regional Water Board by **May 1, 2018.**

c. **Updated Sewer Use Ordinance**. The Permittee shall perform a review of the existing sewer use ordinance to ensure the Permittee has the necessary legal authorities to monitor and enforce source control standards, restrict discharges of toxic materials to the collection system and inspect facilities connected to the system. In conducting the review, the Permittee may consult the January 2007 EPA Model Pretreatment Ordinance (EPA 833-B-06-002). The Permittee shall submit a report documenting the

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results of the review and recommended revisions to the sewer use ordinance, if applicable, to the Regional Water Board by **November 1, 2018**. If the report recommends revisions to the sewer use ordinance, the Permittee shall update the sewer use ordinance accordingly by **November 1, 2019**.

d. Climate Change Readiness Study Plan. Extreme weather events, sea level rise, shifting precipitation patterns and temperature variability, all intensified by climate change, have significant implications for wastewater treatment and operations. In order to ensure that WWTP operations are not disrupted, compliance with conditions of this Order are achieved, and receiving waters are not adversely impacted by permitted and unpermitted discharges, a Climate Change Readiness Study Plan shall be submitted to the Regional Water Board by **July 1, 2020** for Executive Officer review.

The Permittee shall (1) conduct an assessment of the wastewater treatment facility, operations, collection and discharge systems to determine areas of short and long term vulnerabilities related to climate change, (2) identify control measures needed to protect, improve, and maintain wastewater infrastructure, waste discharge compliance, and receiving water quality under changing climate conditions, and (3) develop a schedule to implement necessary control measures. Control measures shall include, but are not limited to, emergency procedures, contingency plans, alarm/notification systems, training, backup power and equipment, and the need for planned mitigations to ameliorate climate-induced impacts such as changing influent and receiving water quality and conditions, as well as the impact of rising sea level, storm surges and back-to-back severe storms that are expected to become more frequent.

3. Best Management Practices and Pollution Prevention

a. Pollutant Minimization Program (PMP)

i. The Permittee shall, if required in writing by the Executive Officer, develop and conduct a PMP as further described below when there is evidence (e.g., sample results reported as detected, but not quantified (DNQ) when the effluent limitation is less than the method detection limit (MDL), sample results from analytical methods more sensitive than those methods required by this Order, presence of whole effluent toxicity, health advisories for fish consumption, results of benthic or aquatic organism tissue sampling) that a priority pollutant is present in the effluent above an effluent limitation and either:

(a) The concentration of the pollutant is reported as DNQ and the effluent limitation is less than the reporting level (RL);

(b) A sample result is reported as non-detect (ND) and the effluent limitation is less than the MDL, using definitions described in Attachment A and reporting protocols described in MRP section X.B.5.

ii. The PMP shall include, but not be limited to, the following actions and submittals acceptable to the Regional Water Board:

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(a) An annual review and semi-annual monitoring of potential sources of the reportable priority pollutant(s), which may include fish tissue monitoring and other bio-uptake sampling;

(b) Quarterly monitoring for the reportable priority pollutant(s) in the influent to the wastewater treatment system;

(c) Submittal of a control strategy designed to proceed toward the goal of maintaining concentrations of the reportable priority pollutant(s) in the effluent at or below the effluent limitation;

(d) Implementation of appropriate cost-effective control measures for the reportable priority pollutant(s), consistent with the control strategy; and

(e) An annual status report that shall be submitted as part of the Annual Facility Report due March 1 to the Regional Water Board and shall include:

(1) All PMP monitoring results for the previous year;

(2) A list of potential sources of the reportable pollutant(s);

(3) A summary of all actions undertaken pursuant to the control strategy; and

(4) A description of actions to be taken in the following year.

4. Construction, Operation and Maintenance Specifications

a. This Order (Attachment D, Standard Provision I.D) requires that the Permittee at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the Permittee to achieve compliance with this Order. Proper operation and maintenance includes adequate laboratory quality control and appropriate quality assurance procedures.

b. The Permittee shall maintain an updated Operation and Maintenance (O&M) Manual for the operational components of the Facility. The Permittee shall update the O&M Manual, as necessary, to conform to changes in operation and maintenance of the Facility. The Permittee shall operate and maintain the Facility in accordance with the most recently updated O&M manual. The O&M Manual shall be readily available to operating personnel onsite and for review by state or federal inspectors. The O&M Manual shall include the following:

i. Description of the Facility's organizational structure showing the number of employees, duties and qualifications and plant attendance schedules (daily, weekends and holidays, part-time, etc.). The description should include documentation that the personnel are knowledgeable and qualified to operate the Facility so as to achieve the required level of treatment at all times.

ii. Detailed description of safe and effective operation and maintenance of treatment processes, process control instrumentation and equipment.

iii. Description of laboratory and quality assurance procedures.

iv. Process and equipment inspection and maintenance schedules.

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v. Description of safeguards to ensure that, should there be reduction, loss, or failure of electric power, the Permittee will be able to comply with requirements of this Order.

vi. Description of preventive (fail-safe) and contingency (response and cleanup) plans for controlling accidental discharges, and for minimizing the effect of such events. These plans shall identify the possible sources (such as loading and storage areas, power outage, waste treatment unit failure, process equipment failure, tank and piping failure) of accidental discharges, untreated or partially treated waste bypass, and polluted drainage.

c. Septage Handling Requirements

i. The Permittee shall implement any necessary legal authorities to monitor and enforce septage handling requirements, including restriction of discharges of toxic materials to the collection system and wastewater treatment facility and inspection of facilities connected to the system.

ii. The Permittee shall maintain a waste hauler manifest that identifies the names of the hauler, county identification number, the date and time the waste load was transferred, and the volume and source of the waste.

iii. The Permittee shall accept the discharge of septage only during business hours and when the Permittee's operations staff is on site.

iv. The Permittee shall accept septage only at an approved septage receiving station/location.

v. The Permittee shall collect representative grab samples of septage loads in accordance with the MRP (Attachment E).

5. Special Provisions for Municipal Facilities (POTWs Only)

a. Wastewater Collection Systems

i. Statewide General WDRs for Sanitary Sewer Systems

The Permittee has coverage under, and is separately subject to, the requirements of State Water Board Order No. 2006-0003-DWQ, Statewide General WDRs for Sanitary Sewer Systems, as amended by Order No. WQ 2013-0058-EXEC. As such, the Permittee provides notification and reporting of SSOs in accordance with the requirements of Order Nos. 2006-0003-DWQ and WQ 2013-0058-EXEC and any revisions thereto for operation of its wastewater collection system.

b. Pretreatment of Industrial Waste

i. The Permittee shall be responsible for the performance of all pretreatment requirements contained in 40 C.F.R. part 403 and shall be subject to enforcement actions, penalties, fines, and other remedies by the U.S. EPA or other appropriate parties as provided in the CWA, as amended (33 USC 1351 et seq.). The Permittee shall implement and enforce its approved Facility Pretreatment Program. The Permittee's approved Facility Pretreatment Program is hereby made an enforceable condition of this Order. U.S. EPA may initiate enforcement action

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against an industrial user for noncompliance with applicable standards and requirements as provided in the CWA.

ii. The Permittee shall enforce the requirements promulgated under Sections 307(b), 307(c), 307(d), and 402(d) of the CWA. The Permittee shall cause industrial users subject to Federal Categorical Standards to achieve compliance no later than the date specified in those requirements or, in the case of a new industrial user, upon commencement of the discharge.

iii. The Permittee shall perform the pretreatment functions as required in 40 C.F.R. part 403 including, but not limited to:

(a) Implement the necessary legal authorities as provided in 40 C.F.R. section 403.8(f)(1);

(b) Enforce the pretreatment requirements under 40 C.F.R. sections 403.5 and 403.6;

(c) Implement the programmatic functions as provided in 40 C.F.R. section 403.8(f)(2);

(d) Provide the requisite funding and personnel to implement the pretreatment program as provided in 40 C.F.R. section 403.8(f)(3).

iv. The Permittee shall implement, as more completely set forth in 40 C.F.R. section 403.5, the necessary legal authorities, programs, and controls to ensure that the following incompatible wastes are not introduced to the treatment system:

(a) Wastes which create a fire or explosion hazard in the treatment works;

(b) Wastes which will cause corrosive structural damage to treatment works, but in no case wastes with a pH lower than 5.0, unless the works is specially designed to accommodate such wastes;

(c) Solid or viscous wastes in amounts which cause obstruction to flow in sewers, or which cause other interference with proper operation of treatment works;

(d) Any waste, including oxygen demanding pollutants (BOD_5, etc.), released in such volume or strength as to cause inhibition or disruption in the treatment works, and subsequent treatment process upset and loss of treatment efficiency;

(e) Heat in amounts that inhibit or disrupt biological activity in the treatment works, or that raise influent temperatures above 40°C (104°F);

(f) Petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through;

(g) Pollutants which result in the presence of toxic gases, vapors, or fumes within the treatment works in a quantity that may cause acute worker health and safety problems; and

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(h) Any trucked or hauled pollutants, except at points predesignated by the Permittee.

v. The Permittee shall implement, as more completely set forth in 40 C.F.R. section 403.5, the legal authorities, programs, and controls necessary to ensure that indirect discharges do not introduce pollutants into the sewerage system that, either alone or in conjunction with a discharge or discharges from other sources:

(a) Flow through the system to the receiving water in quantities or concentrations that cause a violation of this Order, or

(b) Inhibit or disrupt treatment processes, treatment system operations, or sludge processes, use, or disposal and either cause a violation of this Order or prevent sludge use or disposal in accordance with this Order.

c. Sludge Disposal and Handling Requirements

i. Sludge, as used in this Order, means the solid, semisolid, and liquid residues removed during primary, secondary, or advanced wastewater treatment processes. Solid waste refers to grit and screenings generated during preliminary treatment. Biosolids refers to sludge that has been treated, tested, and demonstrated to be capable of being beneficially and legally used pursuant to federal and state regulations as a soil amendment for agriculture, silviculture, horticulture, and land reclamation activities.

ii. All collected sludges and other solid waste removed from liquid wastes shall be removed from screens, sumps, ponds, and tanks as needed to ensure optimal plant operation and disposed of in accordance with applicable federal and State regulations.

iii. The use and disposal of biosolids shall comply with all of the land application and disposal requirements in 40 C.F.R. Part 503, which are enforceable by the U.S. EPA, not the Regional Water Board. If during the life of this Order, the state accepts primacy for implementation of 40 C.F.R. Part 503, the Regional Water Board may also initiate enforcement where appropriate.

iv. Sludge or biosolids that are disposed of in a municipal solid waste landfill or used as daily landfill cover shall meet the applicable requirements of 40 C.F.R. Part 258. In the annual self-monitoring report, the Permittee shall report the amount of sludge placed in a landfill and the landfill(s) which received the sludge or biosolids.

v. The Permittee shall take all reasonable steps to prevent and minimize any sludge use or disposal in violation of this Order that may adversely affect human health or the environment.

vi. Solids and sludge treatment, storage, and disposal or reuse shall not create a nuisance, such as objectionable odors or flies, and shall not result in groundwater contamination.

vii. Solids and sludge treatment and storage sites shall have facilities adequate to divert surface water runoff from adjacent areas, to protect the boundaries of the

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site from erosion, and to prevent drainage from the treatment and storage site. Adequate protection is defined as protection from a design storm with a 100-year recurrence interval and 24-hour duration.

viii. The discharge of sewage sludge and solids shall not cause waste material to be in a position where it is, or can be, conveyed from the treatment and storage sites and deposited in the waters of the state.

ix. For the land application of biosolids as soil amendment, the Permittee shall submit a report of waste discharge or the Permittee may dispose of biosolids at another appropriately permitted facility.

x. New sludge treatment and storage facilities must comply with the requirements of title 27 of the CCR for the protection of water quality.

d. Operator Certification

Supervisors and operators of municipal wastewater treatment facilities shall possess a certificate of appropriate grade in accordance with title 23 of the CCR, section 3680. The State Water Board may accept experience in lieu of qualification training. In lieu of a properly certified wastewater treatment facility operator, the State Water Board may approve use of a water treatment facility operator of appropriate grade certified by the State Water Board, Division of Drinking Water (DDW) where water recycling is involved.

e. Adequate Capacity

If the Facility will reach capacity within 4 years, the Permittee shall notify the Regional Water Board. A copy of such notification shall be sent to appropriate local elected officials, local permitting agencies, and the press. Factors to be evaluated in assessing reserve capacity shall include, at a minimum, (1) comparison of the wet weather design flow with the highest daily flow, and (2) comparison of the average dry weather design flow with the lowest 30-day flow. The Permittee shall demonstrate that adequate steps are being taken to address the capacity problem. The Permittee shall submit a technical report to the Regional Water Board showing how flow volumes will be prevented from exceeding capacity, or how capacity will be increased, within 120 days after providing notification to the Regional Water Board, or within 120 days after receipt of Regional Water Board notification that the Facility will reach capacity within 4 years. The time for filing the required technical report may be extended by the Regional Water Board. An extension of 30 days may be granted by the Executive Officer, and longer extensions may be granted by the Regional Water Board itself. [CCR title 23, section 2232].

6. Other Special Provisions

a. Storm Water

For the control of storm water discharge from the Facility, if required, the Permittee shall seek separate authorization to discharge under the requirements of the State Water Board's Water Quality Order No. 2014-0057-DWQ, NPDES General Permit No. CAS000001, General Permit for Storm Water Discharges Associated with Industrial Activities, which is not incorporated by reference in this Order.

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BMPs to control the run-on of storm water to the Facility site shall be maintained and upgraded as necessary. The Permittee shall describe the effectiveness of these storm water BMPs, as well as activities to maintain and upgrade these BMPs during the previous year, in its annual report to the Regional Water Board.

7. Compliance Schedules – Not Applicable

This Order does not establish interim effluent limitations or schedules of compliance for final numeric effluent limitations.

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, when effluent limitations have been established, 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 Permittee shall be deemed out of compliance with effluent limitations if the concentration of pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reported minimum level (ML).

The Permittee is out of compliance with an effluent limitation which applies to the sum of a group of chemicals (e.g., PCBs, TCDD-equivalents) if the sum of the individual pollutant concentrations is greater than the effluent limitation. Individual pollutants of the group will be considered to have a concentration of zero if the constituent is reported as non-detect (ND) or detected but not quantified (DNQ).

B. Multiple Sample Data

When determining compliance with an AMEL for priority pollutants, and more than one sample result is available, the Permittee 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 Permittee 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 middle values 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 and a value of zero shall be used for the ND or DNQ value in the median calculation for compliance purposes only. Using a value of zero for DNQ or ND samples does not apply when performing reasonable potential or antidegradation analyses.

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C. Average Monthly Effluent Limitation (AMEL)

If the average (or when applicable, the median determined by subsection B above for multiple sample data) of daily discharges over a calendar month exceeds the AMEL for a given parameter, this will represent a single violation, though the Permittee will be considered out of compliance for each day of that month for that parameter (e.g., resulting in 31 days of non-compliance in a 31-day month). If only a single sample is taken during the calendar month and the analytical result for that sample exceeds the AMEL, the Permittee will be considered out of compliance for that calendar month. The Permittee will only be considered out of compliance for days when the discharge occurs. If there are ND or DNQ results for a specific constituent in a calendar month, the Permittee shall calculate the median of all sample results within that month for compliance determination with the AMEL as described in section X.B, above.

D. Average Weekly Effluent Limitation (AWEL)

If the average (or when applicable, the median determined by subsection B above for multiple sample data) of daily discharges over a calendar week exceeds the AWEL for a given parameter, this will represent a single violation, though the Permittee will be considered out of compliance for each day of that week for that parameter, resulting in seven days of non-compliance. If only a single sample is taken during the calendar week and the analytical result for that sample exceeds the AWEL, the Permittee will be considered out of compliance for that calendar week. The Permittee will only be considered out of compliance for days when the discharge occurs. If there are ND or DNQ results for a specific constituent in a calendar week, the Permittee shall calculate the median of all sample results within that week for compliance determination with the AWEL as described in section X.B, above.

E. Maximum Daily Effluent Limitation (MDEL)

If a daily discharge (or when applicable, the median determined by subsection B, above, for multiple sample data of a daily discharge) exceeds the MDEL for a given parameter, the Permittee will be considered out of compliance for that parameter for that one day only within the reporting period.

F. Instantaneous Minimum Effluent Limitation

If the analytical result of a single grab sample is lower than the instantaneous minimum effluent limitation for a parameter, the Permittee will be considered out of compliance for that parameter for that single sample. Non-compliance for each sample will be considered separately (e.g., the results of two grab samples taken within a calendar day that both are lower than the instantaneous minimum effluent limitation would result in two instances of non-compliance with the instantaneous minimum effluent limitation).

If the Permittee monitors pH continuously, pursuant to 40 C.F.R. section 401.17, the Permittee shall be in compliance with the pH limitation specified herein provided that both of the following conditions are satisfied: (1) the total sum of time during which the pH values are outside the required range of pH values shall not exceed seven hours and 26 minutes in any calendar month; and (2) no individual excursion from the range of pH values shall exceed 60 minutes.

G. Instantaneous Maximum Effluent Limitation

If the analytical result of a single grab sample is higher than the instantaneous maximum effluent limitation for a parameter, the Permittee will be considered out of compliance for that parameter

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for that single sample. Non-compliance for each sample will be considered separately (e.g., the results of two grab samples taken within a calendar day that both exceed the instantaneous maximum effluent limitation would result in two instances of non-compliance with the instantaneous maximum effluent limitation).

If the Permittee monitors pH continuously, pursuant to 40 C.F.R. section 401.17, the Permittee shall be in compliance with the pH limitation specified herein provided that both of the following conditions are satisfied: (1) the total time during which the pH values are outside the required range of pH values shall not exceed seven hours and 26 minutes in any calendar month; and (2) no individual excursion from the range of pH values shall exceed 60 minutes.

H. Bacteriological Limitations (Total Coliform)

Median. The median is the central tendency concentration of the pollutant. The data set shall be ranked from low to high, ranking the ND concentrations lowest, followed by DNQ and quantified values. The median value is determined based on the number of data points in the set. 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, the median is the average of the two middle values, unless one or both points are ND or DNQ, in which case the median value shall be the lower of the two middle data points. DNQ is lower than a detected value, and ND is lower than DNQ.

I. Acute Toxicity Limitations

Compliance with the accelerated monitoring and TRE provisions shall constitute compliance with the toxicity requirements, as specified in the MRP (Attachment E, sections V.A and V.C).

J. Chronic Toxicity

Compliance with the accelerated monitoring and TRE provisions shall constitute compliance with the chronic toxicity requirements, all specified in the MRP (Attachment E, sections V.A and V.C).

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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.

Average Weekly Effluent Limitation (AWEL)
The highest allowable average of daily discharges over a calendar week (Sunday through Saturday), calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

Bioaccumulative Pollutants
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
Substances that are known to cause cancer in living organisms.

Coefficient of Variation (CV)
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.

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Detected, but Not Quantified (DNQ)
Sample results that are less than the reported Minimum Level, but greater than or equal to the laboratory's MDL. Sample results reported as DNQ are estimated concentrations.

Dilution Credit
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.

Effective Concentration (EC)
A point estimate of the toxicant concentration that would cause an adverse effect on a quantal, "all or nothing," response (such as death, immobilization, or serious incapacitation) in a given percent of the test organisms. If the effect is death or immobility, the term lethal concentration (LC) may be used. EC values may be calculated using point estimation techniques such as probit, logit, and Spearman-Karber. EC25 is the concentration of toxicant (in percent effluent) that causes a response in 25 percent of the test organisms.

Effluent Concentration Allowance (ECA)
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 U.S. EPA guidance (Technical Support Document For Water Quality-based Toxics Control, March 1991, second printing, EPA/505/2-90-001).

Enclosed Bays
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 headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. This definition includes but is not limited to: Humboldt Bay, Bodega Harbor, Tomales Bay, Drakes Estero, San Francisco Bay, Morro Bay, Los Angeles Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay.

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

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

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Inhibition Concentration
The IC25 is typically calculated as a percentage of effluent. It is the level at which the organisms exhibit 25 percent reduction in biological measurement such as reproduction or growth. It is calculated statistically and used in chronic toxicity testing.

Initial Dilution
The process that results in the rapid and irreversible turbulent mixing of wastewater with ocean water around the point of discharge.

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

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

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).

Lowest Observed Effect Concentration (LOEC)
The lowest concentration of an effluent or toxicant that results in adverse effects on the test organism (i.e., where the values for the observed endpoints are statistically different from the control).

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)
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 40 C.F.R. part 136, Attachment B, revised as of July 3, 1999.

Minimum Level (ML)
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.

Mixing Zone
A limited volume of receiving water that is allocated for mixing with a wastewater discharge where water quality criteria can be exceeded without causing adverse effects to the overall water body.

No Observed Effect Concentration (NOEC)
The highest tested concentration of an effluent or a test sample at which the effect is no different from the control effect, according to the statistical test used (see LOEC). The NOEC is usually the highest tested concentration of an effluent or toxicant that causes no observable effects on the aquatic test organisms (i.e., the highest concentration of toxicity at which the values for the observed responses do not statistically differ from the controls). It is determined using hypothesis testing.

Not Detected (ND)
Those sample results less than the laboratory's MDL.

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

Persistent Pollutants
Substances for which degradation or decomposition in the environment is nonexistent or very slow.

Pollutant Minimization Program (PMP)
PMP means waste minimization and pollution prevention actions that include, but are not limited to, product substitution, waste stream recycling, alternative waste management methods, and education of the public and businesses. The goal of the PMP shall be to reduce all potential sources of pollutants through pollutant minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below the water quality-based effluent limitation. Pollution prevention measures may be particularly appropriate for persistent bioaccumulative priority pollutants where there is evidence that beneficial uses are being impacted. The Regional Water Board may consider cost effectiveness when establishing the requirements of a PMP. The completion and implementation of a Pollution Prevention Plan, if required pursuant to Water Code section 13263.3(d), shall be considered to fulfill the PMP requirements.

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Pollution Prevention
Any action that causes a net reduction in the use or generation of a hazardous substance or other pollutant that is discharged into water and includes, but is not limited to, input change, operational improvement, production process change, and product reformulation (as defined in Water Code section 13263.3). Pollution prevention does not include actions that merely shift a pollutant in wastewater from one environmental medium to another environmental medium, unless clear environmental benefits of such an approach are identified to the satisfaction of the State or Regional Water Board.

Publicly Owned Treatment Works (POTW)
A treatment works as defined in section 212 of the Clean Water Act (CWA), which is owned by a government agency as defined by section 502(4) of the CWA. [Section 502(4) of the CWA defines a municipality as a city, town, borough, county, parish, district, association, or other public body created by or pursuant to State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes). This definition includes any devices and systems used in the storage, treatment, recycling, and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes and other conveyances only if they convey wastewater to a POTW Treatment Plant. The term also means the municipality as defined in section 502(4) of the CWA, which has jurisdiction over the Indirect Discharges to and the discharges from such a treatment works.

Reporting Level (RL)
The ML (and its associated analytical method) used for reporting and compliance determination. The MLs included in this Order correspond to approved analytical methods for reporting a sample. 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.

Satellite Collection System
The portion, if any, of a sanitary sewer system owned or operated by a different public agency than the agency that owns and operates the wastewater treatment facility that a sanitary sewer system is tributary to.

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

Significant Difference
Defined as a statistically significant difference in the means of two distributions of sampling results at the 95 percent confidence level.

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

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Standard Deviation (σ)
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.

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

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

Toxicity Reduction Evaluation (TRE)
A study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps of the TRE consist of the collection of data relevant to the toxicity, including additional toxicity testing, and an evaluation of facility operations and maintenance practices, and best management practices. A Toxicity Identification Evaluation (TIE) may be required as part of the TRE, if appropriate. (A TIE is a set of procedures to identify the specific chemical(s) responsible for toxicity. These procedures are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests.))

Test of Significant Toxicity (TST)
The statistical approach described in National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document (EPA 833-R10-003, 2010). TST was developed by the U.S. Environmental Protection Agency (EPA) for analyzing WET and ambient toxicity data. Using the TST approach, the sample is declared toxic if there is greater than or equal to a 25% effect in chronic tests, or if there is greater than or equal to a 20% effect in acute tests at the permitted instream waste concentration (IWC) (referred to as the toxic regulatory management decision (RMD)). The sample is declared non-toxic if there is less than or equal to a 10% effect at the IWC in acute or chronic tests (referred to as the non-toxic RMD).

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

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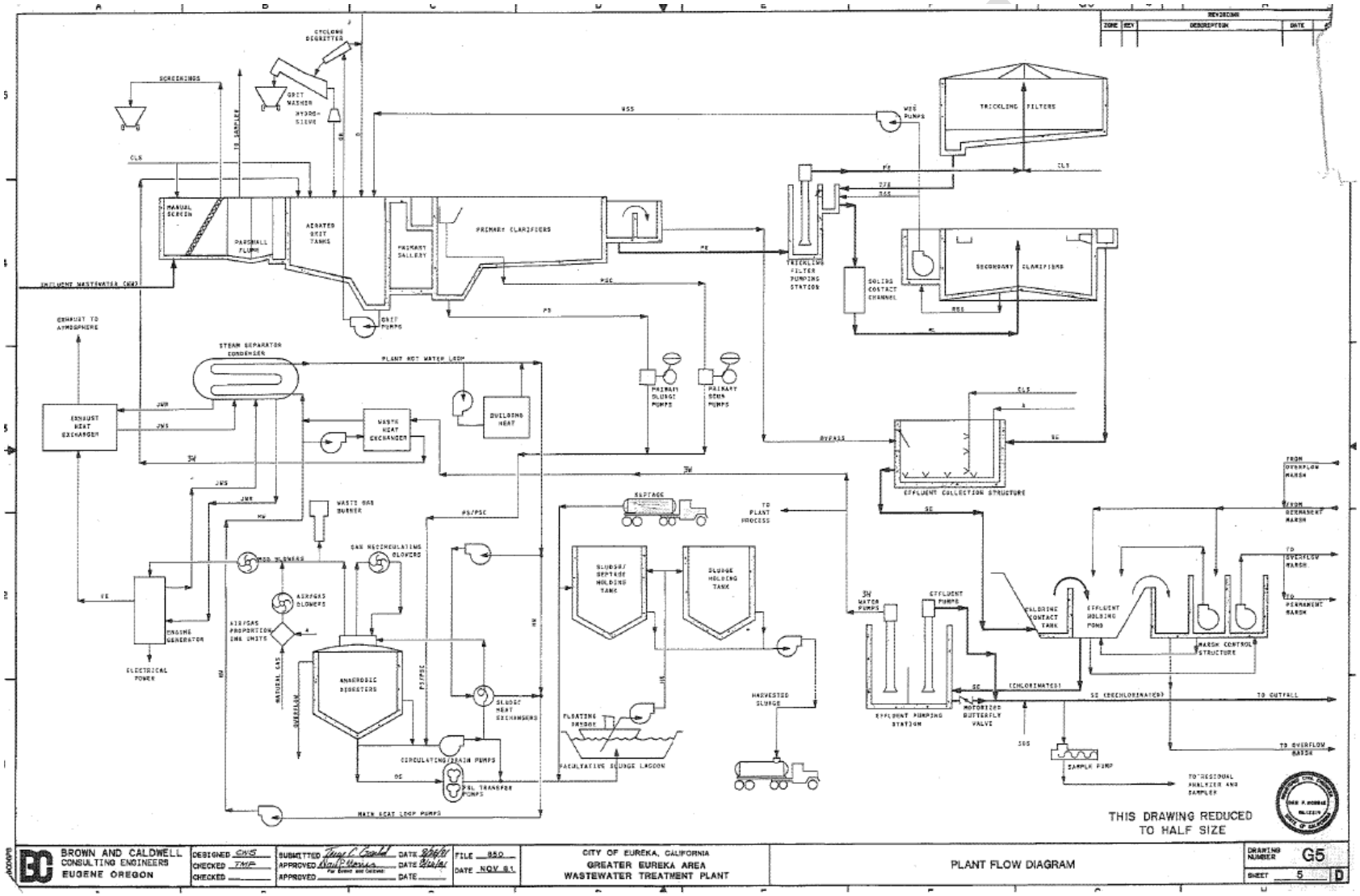
ATTACHMENT B – MAP

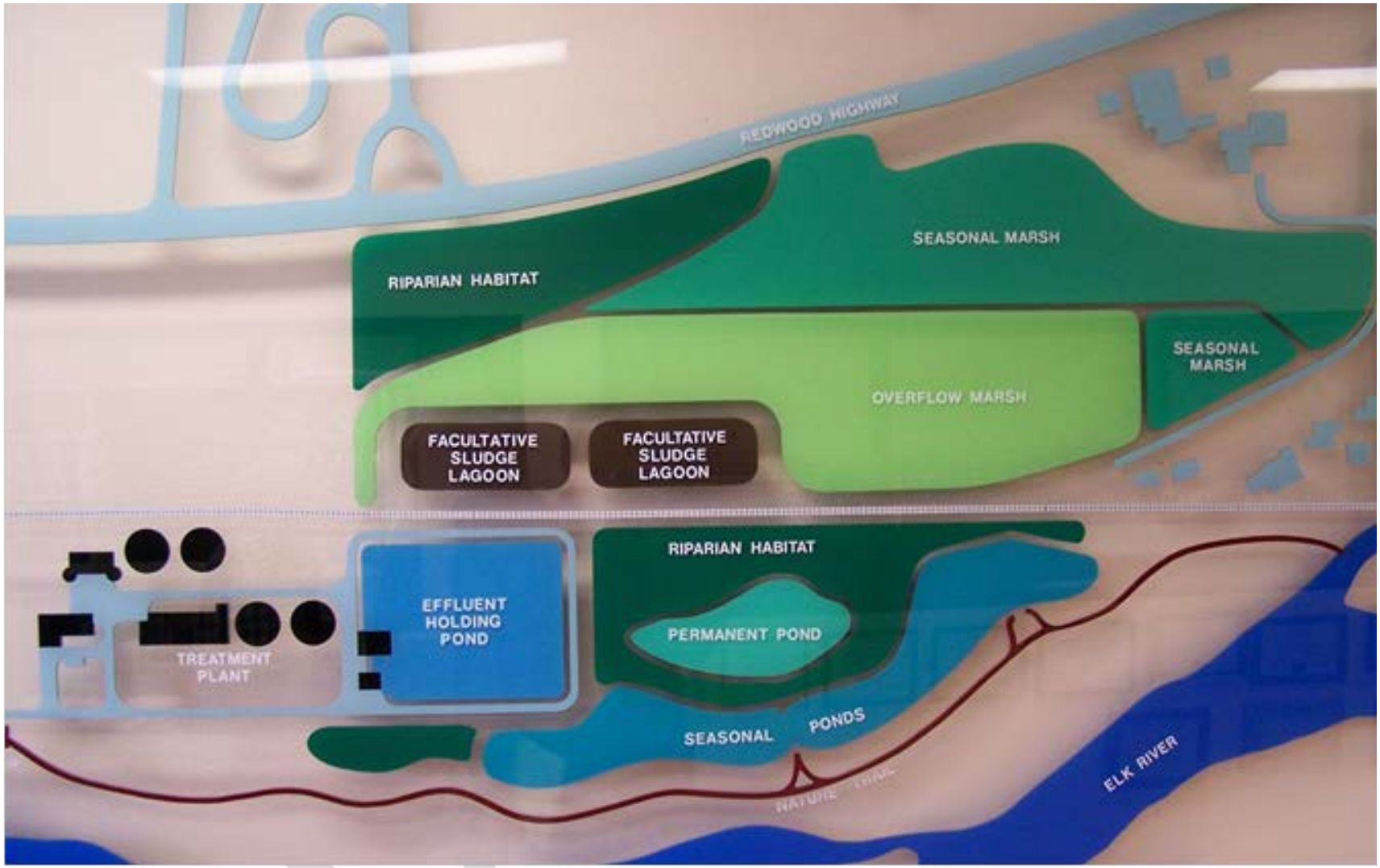
City of Eureka

Elk River Wastewater Treatment Plant

NPDES No. CA0024449

ATTACHMENT C – FLOW SCHEMATICS




REDWOOD HIGHWAY
SEASONAL MARSH
RIPARIAN HABITAT
SEASONAL MARSH
OVERFLOW MARSH
FACULTATIVE SLUDGE LAGOON
FACULTATIVE SLUDGE LAGOON
RIPARIAN HABITAT
EFFLUENT HOLDING POND
PERMANENT POND
TREATMENT PLANT
SEASONAL PONDS
ELK RIVER

ATTACHMENT D – STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

1. The Permittee 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 Permittee 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 Permittee 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 Permittee 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 Permittee 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 Permittee 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 Permittee 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 Permittee shall allow the Regional Water Board, State Water Board, U.S. EPA, 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); Wat. Code, § 13383):

1. Enter upon the Permittee'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));

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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 Permittee 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 Permittee for bypass, unless (40 C.F.R. § 122.41(m)(4)(i)):

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

   c. 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

   c. The Permittee 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. **Burden of Proof**. In any enforcement proceeding, the Permittee seeking to establish the bypass defense has the burden of proof.

5. 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).)

6. Notice

   a. Anticipated bypass. If the Permittee 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).)

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b. Unanticipated bypass. The Permittee 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 Permittee. 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 Permittee 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)):

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

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

c. The Permittee 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

d. The Permittee 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 Permittee seeking to establish the occurrence of an upset has the burden of proof. (40 C.F.R. § 122.41(n)(4).)

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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 Permittee 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 Permittee wishes to continue an activity regulated by this Order after the expiration date of this Order, the Permittee 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 Permittee 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 must be conducted according to test procedures under 40 C.F.R. part 136 for the analyses of pollutants unless another method is required under 40 C.F.R. chapter 1, subchapters N or O. Monitoring must be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 C.F.R. part 136 for the analysis of pollutants or pollutant parameters or required under 40 C.F.R. chapter 1, subchapter N or O. For the purposes of this paragraph, a method is "sufficiently sensitive" when:

1. The method minimum level (ML) is at or below the level of the effluent limitation established in the permit for the measured pollutant or pollutant parameter, and, either the method ML is at or below the level of the applicable water quality criterion for the measured pollutant or pollutant parameter or the method ML is above the applicable water quality criterion, but the amount of the pollutant or pollutant parameter in a facility's discharge is high enough that the method detects and quantifies the level of the pollutant or pollutant parameter in the discharge; or

2. The method has the lowest ML of the analytical methods approved under 40 C.F.R. part 136 or required under 40 C.F.R. chapter 1, subchapter N or O for the measured pollutant or pollutant parameter.

In the case of pollutants for which there are no approved methods under 40 C.F.R. part 136 or otherwise required under 40 C.F.R. subchapters N or O, monitoring must be conducted according to a test procedure specified in this Order for such pollutants. (40 C.F.R. § 122.41(j)(4); § 122.44(i)(1)(iv).)

In the case of sludge use or disposal approved under 40 C.F.R. part 136, monitoring must be conducted according to test procedures in part 503 unless otherwise specified in 40 C.F.R. or other test procedures have been specified in this Order.

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IV. STANDARD PROVISIONS – RECORDS

A. Except for records of monitoring information required by this Order related to the Permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 C.F.R. part 503), the Permittee 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).)

B. 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).)

C. 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 Permittee (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 Permittee shall furnish to the Regional Water Board, State Water Board, or U.S. EPA within a reasonable time, any information which the Regional Water Board, State Water Board, or U.S. EPA 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 Permittee shall also furnish to the Regional Water Board, State Water Board, or U.S. EPA copies of records required to be kept by this Order. (40 C.F.R. § 122.41(h); Wat. Code, § 13267.)

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the Regional Water Board, State Water Board, and/or U.S. EPA 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 U.S. EPA). (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 U.S. EPA shall be signed by a person described in Standard

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Provisions – Reporting V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:

a. 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));

b. 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

c. 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. § 122.41(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 Permittee monitors any pollutant more frequently than required by this Order using test procedures approved under 40 C.F.R. part 136, or another method required for an industry-specific waste stream under 40 C.F.R. subchapters N or O, the results of such 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

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Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Order, shall be submitted no later than 14 days following each schedule date. (40 C.F.R. § 122.41(l)(5).)

E. Twenty-Four Hour Reporting

1. The Permittee shall report any noncompliance that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Permittee becomes aware of the circumstances. A written submission shall also be provided within five (5) days of the time the Permittee 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)):

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

b. 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 Permittee 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 Permittee'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 Permittee 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 this Order's requirements. (40 C.F.R. § 122.41(l)(2).)

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H. Other Noncompliance

The Permittee 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 Permittee 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 U.S. EPA, the Permittee shall promptly submit such facts or information. (40 C.F.R. § 122.41(l)(8).)

VI. STANDARD PROVISIONS – ENFORCEMENT

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. Publicly-Owned Treatment Works (POTWs)

All POTWs shall provide adequate notice to the Regional Water Board of the following (40 C.F.R. § 122.42(b)):

1. Any new introduction of pollutants into the POTW from an indirect discharger that would be subject to sections 301 or 306 of the CWA if it were directly discharging those pollutants (40 C.F.R. § 122.42(b)(1)); and

Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of adoption of this Order (40 C.F.R. § 122.42(b)(2)).

Adequate notice shall include information on the quality and quantity of effluent introduced into the POTW as well as any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW. (40 C.F.R. § 122.42(b)(3)).

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

The Code of Federal Regulations (40 C.F.R. § 122.48) requires that all NPDES permits specify monitoring and reporting requirements. California Water Code section 13383 also authorizes the Regional Water Board to require technical and monitoring reports. This MRP establishes monitoring and reporting requirements that implement federal and California regulations.

I. GENERAL MONITORING PROVISIONS

A. Wastewater Monitoring Provision. Composite samples may be taken by a proportional sampling device or by grab samples composited in proportion to flow. In compositing grab samples, the sampling interval shall not exceed 1 hour.

B. Supplemental Monitoring Provision. If the Permittee monitors any pollutant more frequently than required by this Order, using test procedures approved by 40 C.F.R. part 136 or as specified in this Order, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the monthly and annual discharge monitoring reports.

C. Data Quality Assurance Provision. Laboratories analyzing monitoring samples shall be certified by the State Water Resources Control Board (State Water Board), Division of Drinking Water (DDW) in accordance with the provisions of Water Code section 13176, and must include quality assurance / quality control data with their analytical reports.

D. Instrumental and Calibration Provision. All monitoring instruments and devices used by the Permittee to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy. All flow measurement devices shall be calibrated no less than the manufacturer's recommended intervals or one year intervals, (whichever comes first) to ensure continued accuracy of the devices.

E. Minimum Levels (ML) and Reporting Levels (RL). Compliance and reasonable potential monitoring analyses shall be conducted using detection limits that are lower than the applicable effluent limitations and/or water quality criteria. If no Minimum Level (ML) value is below these levels, the lowest ML shall be selected as the Reporting Level (RL). Table E-1 lists the test methods the Permittee may use for compliance and reasonable potential monitoring to analyze priority pollutants with effluent limitations or specific monitoring requirements. Appendix 4 of the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP) lists the test methods the Permittee may use for reasonable potential monitoring to analyze priority pollutants.

Table E-1. Test Methods and Minimum Levels for Priority Pollutants

CTR No.	Constituent	Types of Analytical Methods MLs (µg/L)		
		Inductively Coupled Plasma/Mass Spectrometry	Stabilized Platform Graphite Furnace Atomic Absorption	Colorimetric
6	Copper, Total Recoverable	0.5	2	--
14	Cyanide	--	--	5
--	TCDD Equivalents	The Permittee shall use U.S. EPA Method 1613		

II. MONITORING LOCATIONS

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

Table E-2. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	INF-001	Influent wastewater prior to treatment and following all significant input of waste to the treatment system and consisting of wastewater from both the collection system and septage receiving station.
--	INT-001	Effluent prior to discharge to the Overflow Marsh.
--	INT-002	Wastewater bypassing secondary treatment.
001	EFF-001	Location where representative samples of treated wastewater, to be discharged to Humboldt Bay at Discharge Point 001, can be collected at a point after treatment and before contact with the receiving water.
--	RSW-001, RSW-002, etc.	[1]
--	SEP-001	Septage receiving station after complete mixing of septage wastes and prior to INF-001.
--	BIO-001	A representative sample of the sludge or biosolids generated when removed for disposal.

Table Notes:
1. The Permittee shall propose receiving water monitoring locations to the Regional Water Board for approval by the Executive Officer within 90 days of the adoption of this permit. The proposed receiving water locations shall be positioned to characterize receiving water quality. Should the Permittee choose to do so, they may propose and participate in group monitoring for the receiving water after receiving written approval from the Executive Officer.

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Location INF-001

The Permittee shall monitor influent to the Facility at Monitoring Location INF-001 as follows:

Table E-3. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method[1]
Influent Flow[2]	mgd	Meter	Continuous	--
Biochemical Oxygen Demand 5-day @ 20°C (BOD_5)	mg/L	24-hr Composite	Weekly[3]	Standard Methods
Total Suspended Solids (TSS)	mg/L	24-hr Composite	Weekly[3]	Standard Methods

Table Notes:
1. In accordance with the current edition of *Standard Methods for Examination of Water and Wastewater* (American Public Health Administration) or current test procedures specified in 40 C.F.R. part 136.
2. The Permittee shall report maximum daily and average daily flows.
3. Monitoring of BOD_5 and TSS in influent shall coincide with monitoring of these parameters in effluent.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001

The Permittee shall monitor treated effluent at Monitoring Location EFF-001 during periods of discharge as follows.

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Table E-4. Effluent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method and (Minimum Level, units), respectively[1]
Effluent Flow[2]	mgd	Meter	Continuous	--
Biochemical Oxygen Demand 5-day @ 20°C (BOD_5)	mg/L	24-hr Composite	Weekly[3]	Standard Methods
Total Suspended Solids (TSS)	mg/L	24-hr Composite	Weekly[3]	Standard Methods
Settleable Solids	mL/L	Grab	Daily	Standard Methods
Turbidity	NTU	Grab	Daily	Standard Methods
Total Residual Chlorine[4]	mg/L	Meter	Continuous	Standard Methods
pH	standard units	Grab	Daily[5]	Standard Methods
Temperature	°C	Grab	Monthly[5]	Standard Methods
Copper, Total Recoverable	µg/L	24-hr Composite	Monthly[6]	ICPMS (ML 0.5 µg/L), SPGFAA (2 µg/L)[7,8]
Cyanide, Total (as CN)	µg/L	24-hr Composite	Monthly[6]	Color[7]
TCDD Equivalents[9]	µg/L	24-hr Composite	Quarterly	EPA Method 1613
Fecal Coliform Bacteria	MPN/100 mL	Grab	Twice Weekly	Standard Methods
Ammonia Nitrogen, Total (as N)	mg/L	24-hr Composite	Monthly[6]	Standard Methods
CTR Priority Pollutants[10,]	µg/L	24-hr Composite[11]	Annually	Standard Methods[12]
Acute Toxicity	% Survival, Pass or Fail, and % Effect	24-hr Composite	Quarterly	See Section V.A below
Chronic Toxicity[13]	Pass or Fail, % Effect	24-hr Composite	Quarterly	See Section V.B below

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Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method and (Minimum Level, units), respectively[1]

Table Notes:

1. In accordance with the current edition of *Standard Methods for Examination of Water and Wastewater* (American Public Health Administration) or current test procedures specified in 40 C.F.R. part 136.
2. The Permittee shall report the maximum daily and average daily effluent flow rates.
3. Accelerated Monitoring (weekly monitoring frequency). If two consecutive weekly test results exceed an effluent limitation, the Permittee shall take two samples each of the two weeks following receipt of the second sample result. During the intervening period, the Permittee shall take steps to identify the cause of the exceedance and take steps to return to compliance.
4. Samples shall be collected at points immediately prior to dechlorination and immediately following dechlorination. All chlorine measurements shall be reported as total residual chlorine. The Permittee shall monitor total residual chlorine in the effluent continuously using a method with a reporting limit as low as technically feasible. Benchtop measurements of effluent chlorine residual shall also be performed at least weekly using the spectrophotometric DPD method 4500-CL G, or equivalent, as a routine check of daily monitoring results.
5. pH and temperature monitoring must coincide with monthly monitoring for ammonia.
6. Accelerated Monitoring (monthly monitoring frequency). If a test result exceeds an effluent limitation the Permittee shall take two more samples, one within 14 days and one within 21 days following receipt of the initial sample result. During the intervening period, the Permittee shall take steps to identify the cause of the exceedance and take steps needed to return to compliance.
7. ICPMS = Inductively Coupled Plasma/Mass Spectrometry
   SPGFAA = Stabilized Platform Graphite Furnace Atomic Absorption
   Color = Colorimetric
8. Effluent and receiving water hardness samples shall be collected on the same day and at approximately the same time as effluent samples for copper.
9. TCDD equivalents shall mean the sum of the concentrations of chlorinated dibenzodioxins (2,3,7,8-CDDs) and chlorinated dibenzofurans (2,3,7,8-CDFs) multiplied by their respective toxicity factors.
10. Those pollutants identified by the California Toxics Rule at 40 C.F.R. section 131.38. The Permittee is not required to sample and analyze for asbestos. Hardness shall be monitored concurrently with the priority pollutant sample.
11. Grab samples shall be used for volatile chemicals. Composite samples shall be used for all other parameters.
12. Analytical methods shall achieve the minimum levels (ML) specified in Appendix 4 of the SIP and, in accordance with section 2.4 of the SIP, the Permittee shall report the ML and MDL for each sample result.
13. The median monthly summary result shall be reported as "Pass" or "Fail". The maximum daily single result shall be reported as "Pass" or "Fail" with a "% Effect". Exactly three independent toxicity results are required when one toxicity test results in "Fail". Refer to section V.B.8 for accelerated monitoring.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

A. Acute Toxicity Testing

The Permittee shall conduct acute whole effluent toxicity testing (WET) in accordance with the following acute toxicity testing requirements.

1. **Test Frequency**. The Permittee shall conduct acute WET testing in accordance with the schedule established by this MRP while discharging at Discharge Point 001, as summarized in Table E-6, above.

2. **Discharge In-stream Waste Concentration (IWC) for Acute Toxicity.** The IWC for this discharge is 100 percent effluent.[1]

3. **Sample Volume and Holding Time.** The total sample volume shall be determined by the specific toxicity test method used. Sufficient sample volume shall be collected to perform the required toxicity test. All toxicity tests shall be conducted as soon as possible following sample collection. No more than 36 hours shall elapse before the conclusion of sample collection and test initiation.

[1] The acute toxicity test shall be conducted using 100 percent effluent collected at Monitoring Location EFF-001.

4. **Acute Marine Test Species and Test Methods.** The Permittee shall conduct the following acute toxicity tests in accordance with species and test methods in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (U.S. EPA Report No. EPA-821-R-02-012, 5th edition or subsequent editions). In no case shall these species be substituted with another test species unless written authorization from the Executive Officer is received.

   a. A 96-hour static renewal or 96-hour static non-renewal toxicity test with an invertebrate, the mysid shrimp, *Mysidopsis bahia*, (Survival Test Method 2007.0).

   b. A 96-hour static renewal or 96-hour static non-renewal toxicity test with a vertebrate, the sheepshead minnow, *Cyprinodon variegatus*, (Survival Test Method 2004.0).

5. **Species Sensitivity Screening.** Species sensitivity screening shall be conducted during this permit's first required sample collection. The Permittee shall collect a single effluent sample and concurrently conduct two acute toxicity tests using the invertebrate and the fish species identified in section V.A.4, above. This sample shall also be analyzed for the parameters required for the discharge. The species that exhibits the highest "Percent (%) Effect" at the discharge IWC during species sensitivity screening shall be used for routine monitoring during the permit term.

6. **Quality Assurance and Additional Requirements.** Quality assurance measures, instructions, and other recommendations and requirements are found in the test methods manual referenced in section V.A.4, above. Additional requirements are specified below.

   a. The discharge is subject to determination of "Pass" or "Fail" and "Percent (%) Effect" from acute toxicity tests using the Test of Significant Toxicity (TST) approach described in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R10-003, 2010), Appendix A, Figure A-1, and Table A-1. The null hypothesis (H_o) for the TST approach is: Mean discharge IWC response ≤0.80 × Mean control response. A test result that rejects this null hypothesis is reported as "Pass". A test result that does not reject this null hypothesis is reported as "Fail". The relative "Percent (%) Effect" at the discharge IWC is defined and reported as: ((Mean control response - Mean discharge IWC response) ÷ Mean control response)) × 100.

   b. If the effluent toxicity test does not meet the minimum effluent test acceptability criteria (TAC) specified in the referenced test method, then the Permittee shall re-sample and re-test within 7 days.

   c. Dilution water and control water shall be laboratory water prepared and used as specified in the test methods manual. If dilution water and control water is different from test organism culture water, then a second control using culture water shall also be used.

   d. Test procedures related to pH control, sample filtration, aeration, temperature control and sample dechlorination shall be performed in accordance with the U.S. EPA method and fully explained and justified in each acute toxicity report submitted to the Regional Water Board. The control of pH in acute toxicity tests is allowed, provided the test pH is maintained at the effluent pH measured at the time of sample collection, and the control of pH is done in a manner that has the least influence on the test water chemistry and on the toxicity of other pH sensitive materials such as some heavy metals, sulfide and cyanide.

   e. **Ammonia Toxicity.** The acute toxicity test shall be conducted without modifications to eliminate ammonia toxicity.

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7. **Notification.** The Permittee shall notify the Regional Water Board verbally within 72 hours and in writing within 14 days after the receipt of test results exceeding the an acute toxicity trigger of 90% during regular or accelerated monitoring. The notification shall describe actions the Permittee has taken or will take to investigate and correct the cause(s) of toxicity. It may also include a status report on any actions required by this Order, with a schedule for actions not yet completed. If no actions have been taken, the reasons shall be given.

8. **Accelerated Monitoring Requirements.** If the result of any acute toxicity test fails to meet the single test minimum trigger (70 percent survival), and the testing meets all TAC, the Permittee shall take two more samples, one within 14 days and one within 21 days following receipt of the initial sample result. If any one of the additional samples do not comply with the three sample median minimum trigger (90 percent survival), the Permittee shall initiate a Toxicity Reduction Evaluation (TRE) in accordance with section V.C.9 of the MRP. If the two additional samples are in compliance with the acute toxicity requirement and testing meets all TAC, then a TRE will not be required. If the discharge stops before additional samples can be collected, the Permittee shall contact the Executive Officer within 21 days with a plan to demonstrate compliance with the effluent limitation.

9. **Reporting.** The Self-Monitoring Report (SMR) shall include a full laboratory report for each toxicity test (WET report). The WET report shall be prepared using the format and content of section 12 (Report Preparation) of *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (U.S. EPA Report No. EPA-821-R-02-012, 5th edition or subsequent editions), including:

   a. The toxicity test results in percent (%) survival for the 100 percent effluent sample.

   b. The toxicity test results for the TST approach, reported as "Pass" or "Fail" and "Percent (%) Effect" at the acute toxicity IWC for the discharge.

   c. Water quality measurements for each toxicity test (e.g., pH, dissolved oxygen, temperature, conductivity, hardness, salinity, chlorine, ammonia).

   d. TRE/TIE results. The Executive Officer shall be notified no later than 30 days from completion of each aspect of TRE/TIE analyses.

   e. Statistical program (e.g., TST calculator, CETIS, etc.) output results for each toxicity test.

B. Chronic Toxicity Testing

The Permittee shall conduct chronic toxicity testing in accordance with the following chronic toxicity testing requirements:

1. **Test Frequency.** The Permittee shall conduct chronic WET testing in accordance with the schedule established by this MRP while discharging at Discharge Point 001, as summarized in Table E-4, above.

2. **Discharge In-stream Waste Concentration (IWC) for Chronic Toxicity.** The chronic toxicity IWC for this discharge is 100 percent effluent.[2]

3. **Sample Volume and Holding Time.** The total sample volume shall be determined by the specific toxicity test method used. Sufficient sample volume shall be collected to perform the

[2] The chronic toxicity test shall be conducted using a series of five dilutions and a control. The series shall consist of the following dilutions: 12.5, 25, 50, 75, and 100 percent. Compliance determination will be based on the IWC (100 percent effluent) and a control as further described in Fact Sheet section IV.C.5.c.

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required toxicity test. All toxicity tests shall be conducted as soon as possible following sample collection. For toxicity test requiring renewals, a minimum of three 24-hour composite samples shall be collected. The lapsed time (holding time) from sample collection to first use of each sample must not exceed 36 hours.

4. **Chronic Marine Test Species and Test Methods.** If effluent samples are collected from outfalls discharging to receiving waters with salinity >1 ppt, the Permittee shall conduct the following chronic toxicity tests in accordance with species and test methods in *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms* (EPA/600/R-95/136, 1995). Artificial sea salts shall be used to increase sample salinity. In no case shall these species be substituted with another test species unless written authorization from the Executive Officer is received.

   a. A static renewal toxicity test with the topsmelt, *Atherinops affinis* (Larval Survival and Growth Test Method 1006.011).

   b. A static non-renewal toxicity test with the purple sea urchin, *Strongylocentrotus purpuratus*, and the sand dollar, *Dendraster excentricus* (Fertilization Test Method 1008.0), or a static non-renewal toxicity test with the red abalone, *Haliotis rufescens* (Larval Shell Development Test Method).

   c. A static non-renewal toxicity test with the giant kelp, *Macrocystis pyrifera* (Germination and Growth Test Method 1009.0).

5. **Species Sensitivity Screening.** Species sensitivity screening shall be conducted during this permit's first required sample collection. The Permittee shall collect a single effluent sample and concurrently conduct three toxicity tests using the fish, an invertebrate, and the algae species identified in section V.B.4, above. This sample shall also be analyzed for the parameters required for the discharge. The species that exhibits the highest "Percent (%) Effect" at the discharge IWC during species sensitivity screening shall be used for routine monitoring during the permit term.

6. **Quality Assurance and Additional Requirements.** Quality assurance measures, instructions, and other recommendations and requirements are found in the test methods manual previously referenced. Additional requirements are specified below.

   a. The discharge is subject to determination of "Pass" or "Fail" and "Percent (%) Effect" from chronic toxicity tests using the Test of Significant Toxicity (TST) approach described in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R10-003, 2010), Appendix A, Figure A-1, and Table A-1. The null hypothesis (H_o) for the TST approach is: Mean discharge IWC response ≤0.75 × Mean control response. A test result that rejects this null hypothesis is reported as "Pass". A test result that does not reject this null hypothesis is reported as "Fail". The relative "Percent (%) Effect" at the discharge IWC is defined and reported as: ((Mean control response - Mean discharge IWC response) ÷ Mean control response)) × 100.

   b. If the effluent toxicity test does not meet the minimum effluent or reference toxicant TAC specified in the referenced test method, then the Permittee shall re-sample and re-test within 14 days.

   c. Dilution water and control water, including brine controls, shall be laboratory water prepared and used as specified in the test methods manual. If dilution water and control water is different from test organism culture water, then a second control using culture water shall also be used.

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d. Monthly reference toxicant testing shall be performed. All reference toxicant test results should be reviewed and reported.

e. The Permittee shall perform toxicity tests on final effluent samples. Chlorine and ammonia shall not be removed from the effluent sample prior to toxicity testing, unless explicitly authorized under this section of the MRP and the rationale is explained in the Fact Sheet (Attachment F).

f. **Ammonia Removal.** Except with prior approval from the Executive Officer of the Regional Water Board, ammonia shall not be removed from bioassay samples. The Permittee must demonstrate the effluent toxicity is caused by ammonia because of increasing test pH when conducting the toxicity test. It is important to distinguish the potential toxic effects of ammonia from other pH sensitive chemicals, such as certain heavy metals, sulfide, and cyanide. The following conditions and steps may be used to demonstrate that the toxicity is caused by ammonia and not other toxicants before the Executive Officer would allow for control of pH in the test.

i. There is consistent toxicity in the effluent and the maximum pH in the toxicity test is in the range to cause toxicity due to increased pH.

ii. Chronic ammonia concentrations in the effluent are greater than 4 mg/L total ammonia.

iii. Conduct graduated pH tests as specified in the toxicity identification evaluation (TIE) methods. For example, mortality should be higher at pH 8 and lower at pH 6.

iv. Treat the effluent with a zeolite column to remove ammonia. Mortality in the zeolite treated effluent should be lower than the non-zeolite treated effluent. Then add ammonia back to the zeolite-treated samples to confirm toxicity due to ammonia.

When it has been demonstrated that toxicity is due to ammonia because of increasing test pH, pH may be controlled using appropriate procedures which do not significantly alter the nature of the effluent.

7. **Notification.** The Permittee shall notify the Regional Water Board verbally within 72 hours and in writing within 14 days after the receipt of a result of "Fail" during routine or accelerated monitoring.

8. **Accelerated Monitoring Requirements.** The trigger for accelerated monitoring for chronic toxicity is exceeded when a chronic toxicity test, analyzed using the TST approach, results in "Fail" and the "Percent Effect" is ≥0.50. Within 24 hours of the time the Permittee becomes aware of a result of "Fail", the Permittee shall implement an accelerated monitoring schedule consisting of four toxicity tests—consisting of 5-effluent concentrations (including the discharge IWC) and a control—conducted at approximately 2 week intervals, over an 8 week period. If each of the accelerated toxicity tests results is "Pass," the Permittee shall return to routine monitoring for the next monitoring period. If one of the accelerated toxicity tests results in "Fail", the Permittee shall immediately implement the TRE Process conditions set forth in section V.C, below.

9. **Reporting**

a. **Routine Reporting.** The SMR shall include a full laboratory report for the month that chronic toxicity monitoring was performed (WET report). Routine reporting shall include the following in order to demonstrate compliance with permit requirements:

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i. WET reports shall include a the contracting laboratory's complete report provided to the Permittee and shall be consistent with the appropriate "Report Preparation and Test Review" sections of the methods manual and this MRP. The WET test reports shall contain a narrative report that includes details about WET test procedures and results, including the following:

(a) Receipt and handling of the effluent sample that includes a tabular summary of initial water quality characteristics (e.g., pH, dissolved oxygen, temperature, conductivity, hardness, salinity, chlorine, ammonia);

(b) Receipt and handling of the effluent sample that includes a tabular summary of initial water quality characteristics (e.g., pH, dissolved oxygen, temperature, conductivity, hardness, salinity, chlorine, ammonia);

(c) Any manipulations done to lab control/diluent and effluent such as filtration, nutrient addition, etc.;

(d) Any manipulations done to lab control/diluent and effluent such as filtration, nutrient addition, etc.;

(e) Tabular summary of test results for control water and each effluent dilution and statistics summary to include calculation of the NOEC, TUc, and IC25;

(f) The toxicity test results for the TST approach, reported as "Pass" or "Fail" and "Percent (%) Effect" at the chronic toxicity IWC for the discharge;

(g) Identification of any anomalies or nuances in the test procedures or results;

(h) Identification of any anomalies or nuances in the test procedures or results;

(i) WET test results shall include, at a minimum, for each test:

(1) Sample date(s);

(2) Test initiation date;

(3) Test species;

(4) Determination of "Pass" or "Fail" and "Percent Effect" following the Test of Significant Toxicity hypothesis testing approach in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, 2010). The "Percent Effect" shall be calculated as follows:

"Percent Effect" (or Effect, in %) = ((Control mean response – IWC mean response) ÷ Control mean response)) x 100

(5) End point values for each dilution (e.g., number of young, growth rate, percent survival);

(6) NOEC value(s) in percent effluent;

(7) IC15, IC25, IC40, and IC50 values (or EC15, EC25…etc.) in percent effluent;

(8) TUc values (100/NOEC);

(9) Mean percent mortality (±s.d.) after 96 hours in 100 percent effluent (if applicable);

(10) NOEC and LOEC values for reference toxicant test(s);

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(11) IC50 or EC50 value(s) for reference toxicant test(s);

(12) Available water quality measurements for each test (e.g., pH, DO, temperature, conductivity, hardness, salinity, ammonia);

(13) Statistical methods used to calculate endpoints;

(14) The statistical program (e.g., TST calculator, CETIS, etc.) output results, which includes the calculation of percent minimum significant difference (PMSD); and

(15) Results of applicable reference toxicant data with the statistical output page identifying the species, NOEC, LOEC, type of toxicant, dilution water used, concentrations used, PMSD and dates tested; the reference toxicant control charts for each endpoint, to include summaries of reference toxicant tests performed by the contracting laboratory; and any information on deviations from standard test procedures or problems encountered in completing the test and how the problems were resolved.

ii. **Compliance Summary.** In addition to the WET reports, the Permittee shall submit a compliance summary that includes an updated chronology of chronic toxicity test results expressed in "Pass"/"Fail", NOEC and TUc for tests conducted during the permit term, and organized by test species, type of test (survival, growth or reproduction), and monitoring frequency (routine, accelerated, or TRE). Each compliance summary report shall clearly identify whether or not the effluent discharge is below the chronic toxicity monitoring triggers and, in the event that the effluent discharge exceeds a single sample or median chronic toxicity trigger, the status of efforts (e.g., accelerated monitoring, TRE, TIE, etc.) to identify the source of chronic toxicity as required by section V.B.8 of this MRP.

b. TRE/TIE results. The Executive Officer shall be notified no later than 30 days from completion of each aspect of TRE/TIE analyses.

C. Toxicity Reduction Evaluation (TRE) Process

1. **TRE Work Plan.** An updated TRE workplan shall be submitted by **October 1, 2016.** The Permittee's TRE Work Plan shall be reviewed and updated as necessary in order to remain current and applicable to waste discharge requirements, the discharge and discharge facilities.

The Permittee shall notify the Regional Water Board of this review and submit any revisions of the TRE Work Plan within 90 days of the notification, to be ready to respond to toxicity events. The TRE Work Plan shall describe the steps the Permittee intends to follow if toxicity is detected, and should include at least the following items:

a. A description of the investigation and evaluation techniques that would be used to identify potential causes and sources of toxicity, effluent variability, and treatment system efficiency.

b. A description of the Facility's methods of maximizing in-house treatment efficiency, good housekeeping practices, and a list of all chemicals used in the operation of this Facility.

c. If a toxicity identification evaluation (TIE) is necessary, an indication of the person who would conduct the TIEs (i.e., an in-house expert or an outside contractor).

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2. **Preparation and Implementation of a Detailed TRE Work Plan.** If one of the accelerated toxicity tests described in either section V.A.8, above, does not comply with the three sample median effluent limitation (90 percent survival) or in section V.B.8, above, results in "Fail", the Permittee shall immediately initiate a TRE using, according to type of treatment facility, EPA manual *Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations* (EPA/600/2-88/070, 1989) and within 30 days of receipt of the accelerated monitoring result submit to the Regional Water Board Executive Officer a detailed TRE Work Plan, which shall follow the generic TRE Work Plan revised as appropriate for the toxicity event described in section V.A.8 or V.B.8 of this MRP. The Detailed TRE Work Plan shall include the following information, and comply with additional conditions set by the Regional Water Board Executive Officer:

   a. Further actions by the Permittee to investigate, identify, and correct causes of toxicity.

   b. Actions the Permittee will take to mitigate effects of the discharge and prevent the recurrence of toxicity.

   c. A schedule for these actions, progress reports, and the final report.

3. **TIE Implementation.** The Permittee may initiate a TIE as part of a TRE to identify the causes of toxicity using the same species and test methods and, as guidance, EPA manuals: *Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures* (EPA/600/6-91/003, 1991); *Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity* (EPA/600/R-92/080, 1993); *Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity* (EPA/600/R-92/081, 1993); and *Marine Toxicity Identification Evaluation (TIE): Phase I Guidance Document* (EPA/600/R-96- 054, 1996). The TIE should be conducted on the species demonstrating the most sensitive toxicity response.

   a. Many recommended TRE elements parallel required or recommended efforts for source control, pollution prevention, and storm water control programs. TRE efforts should be coordinated with such efforts. As toxic substances are identified or characterized, the Permittee shall continue the TRE by determining the sources and evaluating alternative strategies for reducing or eliminating the substances from the discharge. All reasonable steps shall be taken to reduce toxicity to levels consistent with toxicity evaluation parameters.

   b. The Permittee shall conduct routine effluent monitoring for the duration of the TRE process. Additional accelerated monitoring and TRE work plans are not required once a TRE has begun.

   c. The Regional Water Board recognizes that toxicity may be episodic and identification of the causes and reduction of sources of toxicity may not be successful in all cases. The TRE may be ended at any stage if monitoring finds there is no longer toxicity.

VI. LAND DISCHARGE MONITORING REQUIREMENTS – NOT APPLICABLE

This Order does not authorize discharges of waste to land.

VII. RECYCLING MONITORING REQUIREMENTS – NOT APPLICABLE

This Order does not authorize discharges of recycled water.

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VIII. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATER AND GROUNDWATER

A. Monitoring Locations RSW-001, RSW-002, etc.

The Permittee shall monitor Humboldt Bay Monitoring Locations as follows:

Table E-5. Receiving Water Monitoring – Monitoring Locations RSW-001, RSW-002, etc.

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method[1]
Hardness[2]	mg/L	Grab	Monthly	Standard Methods
pH	s.u.	Grab	Monthly	Standard Methods
Electrical Conductivity @ 25°C	µmhos/cm	Grab	Monthly	Standard Methods
Temperature	°C	Grab	Monthly	Standard Methods
Total Dissolved Solids (TDS)	mg/L	Grab	Monthly	Standard Methods

Table Notes:
1. In accordance with the current edition of *Standard Methods for Examination of Water and Wastewater* (American Public Health Administration) or current test procedures specified in 40 C.F.R. part 136.
2. Effluent and receiving water hardness samples shall be collected on the same day and at approximately the same time as effluent samples for copper.

B. Biological Survey. The Permittee shall conduct a comparative evaluation of indigenous biota in the vicinity of the outfall using a qualified aquatic biologist, at least once every 5 years. The biologist shall prepare a report of observations, including objectionable aquatic growths, floating particulates or grease and oil, aesthetically undesirable discoloration of the ocean surface, color of fish or shellfish, and any evidence of degradation of indigenous biota attributable to the rate of deposition of inert solids, settleable material, nutrient materials, increased concentrations of organic materials, or increased concentrations of pollutants of concern such as CTR pollutants. The Permittee shall submit to the Regional Water Board Executive Officer for approval, a Biological Survey work plan no later than **July 1, 2018**, in order to complete the survey and prepare a final report by the due date for receipt of an application for permit renewal. The final report shall be submitted no later than **July 1, 2019**.

C. Groundwater Monitoring – Not Required

This Order does not require groundwater monitoring at this time.

IX. OTHER MONITORING REQUIREMENTS

A. Monitoring Location INT-001

The Permittee shall monitor effluent to be discharged to the Overflow Marsh at Monitoring Location INT-001 as follows:

Table E-6. Internal Monitoring INT-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method[1]
Flow[2]	mgd	Meter	Continuous	--
Total Chlorine Residual	mg/L	Grab	Daily	Standard Methods

Table Notes:
1. In accordance with the current edition of Standard Methods for Examination of Water and Wastewater (American Public Health Administration) or current test procedures specified in 40 C.F.R. part 136 with a detection level of 0.01 mg/L or lower.
2. The Permittee shall report maximum daily and average daily flows.

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B. Monitoring Location INT-002

During periods of high flow the Permittee shall monitor wastewater bypassing secondary treatment at Monitoring Location INT-002 as follows:

Table E-7. Internal Monitoring INT-002

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method[1]
Flow[2]	mgd	Meter	Continuous	--
Biochemical Oxygen Demand 5-day @ 20°C (BOD_5)	mg/L	24-hr Composite	Weekly[3]	Standard Methods
Total Suspended Solids (TSS)	mg/L	24-hr Composite	Weekly[3]	Standard Methods

Table Notes:
1. In accordance with the current edition of *Standard Methods for Examination of Water and Wastewater* (American Public Health Administration) or current test procedures specified in 40 C.F.R. part 136.
2. The Permittee shall report maximum daily and average daily flows.
3. Monitoring of BOD_5 and TSS in influent shall coincide with monitoring of these parameters in effluent.

C. Septage Station Monitoring

1. Monitoring Location SEP-001

a. For each septage load delivered to the Facility, the Permittee shall require the hauler to collect and report a pH value representative of the load.

b. The Permittee shall estimate, prior to the beginning of a quarterly and semiannual monitoring period, the number of anticipated septage deliveries for the given monitoring frequency, and generate a random load number from this total. When the delivery corresponding to the pre-chosen random number is received, the Permittee will collect a representative septage sample and have the samples analyzed in accordance with Table E-8 and with standard sample collection and handling procedures. Each sample shall be analyzed in accordance with the following table.

Table E-8. Septage Monitoring – Monitoring Location SEP-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method[1]
pH	s.u.	Grab	Weekly	Standard Methods
Chemical Oxygen Demand	mg/L	Grab	Quarterly	Standard Methods
Oil and Grease	mg/L	Grab	Quarterly	Standard Methods
Metals and Trace Elements	µg/L	Grab	Quarterly	Standard Methods
Purgeable Organic Compounds[2]	µg/L	Grab	Semiannually	Standard Methods
Semivolatile Organic Compounds[3]	µg/L	Grab	Semiannually	Standard Methods

Table Notes:
1. In accordance with the current edition of *Standard Methods for Examination of Water and Wastewater* (American Public Health Administration) or current test procedures specified in 40 C.F.R. part 136.
2. Purgeable organic compounds shall include the parameters listed in U.S. EPA Method 624.
3. Semivolatile organic compounds shall include the parameters listed in U.S. EPA Method 625.

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D. Septage Hauler Tracking

For any month when septage waste is received by the Facility, the source(s) of the waste shall be documented. A summary table of all septage discharged to the Facility shall be submitted with each quarterly monitoring report and shall include:

a. Date and time of discharge;

b. Name, County identification number, and District identification number of the hauler;

c. Volume discharged;

d. Source(s) of the waste; and

e. pH of the septage load.

E. Sludge Monitoring (Monitoring Location BIO-001)

a. Sludge sampling shall be conducted according to the requirements specified by the location and type of disposal activities undertaken.

b. Sampling records shall be retained for a minimum of 5 years. A log shall be maintained for sludge quantities generated and of handling and disposal activities. The frequency of entries is discretionary, however, the log must be complete enough to serve as a basis for developing the Sludge Handling and Disposal report that is required as part of the Annual Report.

X. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

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

B. Self-Monitoring Reports (SMRs)

1. The Permittee shall submit electronic Self-Monitoring Reports (eSMRs) using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (http://www.waterboards.ca.gov/ciwqs/index.html). The CIWQS Web site will provide additional directions for SMR submittal in the event there will be service interruption for electronic submittal. The Permittee shall maintain sufficient staffing and resources to ensure it submits eSMRs that are complete and timely. This includes provision of training and supervision of individuals (e.g., Permittee personnel or consultant) on how to prepare and submit eSMRs.

2. The Permittee shall report in the SMR the results for all monitoring specified in this MRP under sections III through IX. The Permittee shall submit quarterly SMRs including the results of all required monitoring using U.S. EPA-approved test methods or other test methods specified in this Order. SMRs are to include all new monitoring results obtained since the last SMR was submitted. If the Permittee 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 SMR.

3. All monitoring results reported shall be supported by the inclusion of the complete analytical report from the laboratory that conducted the analyses.

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

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Table E-9. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On	Monitoring Period	SMR Due Date
Continuous	Permit effective date	All	First day of second calendar month following the end of each quarter (February 1, May 1, August 1, November 1)
Daily	Permit effective date	(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling.	First day of second calendar month following the end of each quarter (February 1, May 1, August 1, November 1)
Weekly	Sunday following permit effective date or on permit effective date if on a Sunday	Sunday through Saturday	First day of second calendar month following the end of each quarter (February 1, May 1, August 1, November 1)
Twice Weekly	Sunday following permit effective date or on permit effective date if on a Sunday	Sunday through Saturday	First day of second calendar month following the end of each quarter (February 1, May 1, August 1, November 1)
Monthly	First day of calendar month following permit effective date or on permit effective date if that date is first day of the month	First day of calendar month through last day of calendar month	First day of second calendar month following the end of each quarter (February 1, May 1, August 1, November 1)
Quarterly	First day of calendar quarter following permit effective date or on permit effective date if that date is first day of the month	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31	First day of second calendar month following the end of each quarter (February 1, May 1, August 1, November 1)
Annually	January 1 following (or on) permit effective date	January 1 through December 31	March 1, each year.

5. **Reporting Protocols**. The Permittee shall report with each sample result the applicable ML, the RL, and the current Method Detection Limit (MDL), as determined by the procedure in 40 C.F.R. part 136.

   The Permittee 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 reported ML, 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

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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. The Permittee is 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 Permittee to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.

6. The Permittee shall submit SMRs in accordance with the following requirements:

a. The Permittee 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 interim and/or final effluent limitations. The reported data shall include calculation of all effluent limitations that require averaging, taking of a median, or other computation. The Permittee is not required to duplicate the submittal of data that is entered in a tabular format within CIWQS. When electronic submittal of data is required and CIWQS does not provide for entry into a tabular format within the system, the Permittee shall electronically submit the data in a tabular format as an attachment.

b. The Permittee shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify:

i. Facility name and address;

ii. WDID number;

iii. Applicable period of monitoring and reporting;

iv. Violations of the WDRs (identified violations must include a description of the requirement that was violated and a description of the violation);

v. Corrective actions taken or planned; and

vi. The proposed time schedule for corrective actions.

c. SMRs must be submitted to the Regional Water Board, signed and certified as required by the Standard Provisions (Attachment D), to the CIWQS Program Web site (http://www.waterboards.ca.gov/ciwqs/index.html). In the event that an alternate method for submittal of SMRs is required, the Permittee shall submit the SMR electronically via e-mail to NorthCoast@waterboards.ca.gov or on disk (CD or DVD) in Portable Document Format (PDF) file in lieu of paper-sourced documents. The guidelines for electronic submittal of documents can be found on the Regional Water Board website at http://waterboards.ca.gov/northcoast.

C. Discharge Monitoring Reports (DMRs)

DMRs are U.S. EPA reporting requirements. The Permittee shall electronically certify and submit DMRs together with SMRs using Electronic Self-Monitoring Reports module eSMR 2.5 or any upgraded version. Electronic submittal of DMRs will be in addition to electronic submittal of SMRs. DMRs shall be submitted quarterly on the first day of the second calendar month following the end of each quarter (February 1, May 1, August 1, November 1). Information about electronic submittal of DMRs is available at the Discharge Monitoring Report web site at: (http://www.waterboards.ca.gov/water_issues/programs/discharge_monitoring/).

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D. Other Reports

1. **Special Study Reports and Progress Reports.** As specified in the Special Provisions contained in section VI of the Order and in the MRP, special study and progress reports shall be submitted in accordance with the following reporting requirements.

Table E-10. Reporting Requirements for Special Provisions Reports

Special Provision Report	Reporting Requirements
Outfall Inspection Workplan (Special Provision VI.C.2.a)	**December 1, 2016**
Outfall Inspection Report (Special Provision VI.C.2.a)	**December 1, 2017**
Local Limits Study (Special Provision VI.C.2.b)	**May 1, 2018**
Updated Sewer Use Ordinance Evaluation Report (Special Provision VI.C.2.c)	**November 1, 2018**
Updated Sewer Use Ordinance (Special Provision VI.C.2.c)	**November 1, 2019**
Climate Change Readiness Study (Special Provision VI.C.2.d)	**July 1, 2020**
Pollutant Minimization Program (Special Provision VI.C.3.a.i)	If required by the Executive Officer
Pollutant Minimization Program, Annual Facility Report (Special Provision VI.C.3.a.ii(e))	**March 1**, annually following development of Pollutant Minimization Program
Adequate Capacity, Technical Report (Special Provision VI.C.5.e)	**Within 120 days** of notification that the Facility will reach capacity within 4 years
TRE Work Plan Revisions (MRP section V.C.1)	**October 1, 2016**
Detailed TRE Work Plan (MRP section V.C.2)	**Within 30 days** of accelerated monitoring result that exceeds the acute toxicity effluent limitation or results in a chronic toxicity result of "Fail"
Biological Survey Workplan (MRP section VIII.B)	**July 1, 2018**
Biological Survey Report (MRP section VIII.B)	**July 1, 2019**

2. **Annual Report**. The Permittee shall submit an annual report to the Regional Water Board for each calendar year through the CIWQS Program Web site. In the event that an alternate method of submitting the annual report is required, the Permittee shall submit the report to the e-mail address in section X.B.6.c., above. The report shall be submitted by March 1st of the following year. The report shall, at a minimum, include the following:

   a. Where appropriate, tabular and/or graphical summaries of the monitoring data and disposal records from the previous year v. If the Permittee monitors any pollutant more frequently than required by this Order, using test procedures approved under 40 C.F.R. part 136 or as specified in this Order, the results of this monitoring shall be included in the calculation and report of the data submitted SMR.

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b. A comprehensive discussion of the Facility's compliance (or lack thereof) with all effluent limitations and other WDRs, and the corrective actions taken or planned, which may be needed to bring the discharge into full compliance with the Order.

c. The names and general responsibilities of all persons employed at the Facility;

d. The names and telephone numbers of persons to contact regarding the Facility for emergency and routine situations; and

e. A statement certifying when the flow meter(s) and other monitoring instruments and devices were last calibrated, including identification of who performed the calibration.

f. **Sludge Handling and Disposal Activity Reporting.** The Permittee shall submit, as part of its annual report to the Regional Water Board, a description of the Permittee's solids handling, disposal and reuse activities over the previous 12 months. At a minimum, the report shall contain:

i. Annual sludge production, in dry tons and percent solids;

ii. Sludge monitoring results;

iii. A schematic diagram showing sludge handling facilities (e.g., digesters, thickeners, drying beds, etc.), if any and a solids flow diagram;

iv. Methods of final disposal of sludge:

(a) For any portion of sludge discharged to a sanitary landfill, the Permittee shall provide the volume of sludge transported to the land fill, the names and locations of the facilities receiving sludge, the Regional Water Board's WDRs order number for the regulated landfill, and the landfill classification.

(b) For any portion of sludge discharged through land application, the Permittee shall provide the volume of biosolids applied, the date and locations where biosolids were applied, the Regional Water Board's WDRs order number for the regulated discharge, a demonstration that the discharge was conducted in compliance with applicable permits and regulations, and, if applicable, corrective actions taken or planned to bring the discharge into compliance with WDRs.

(c) For any portion of sludge further treated through composting, the Permittee shall provide a summary of the composting process, the volume of sludge composted, and a demonstration and signed certification statement that the composting process and final product met all requirements for Class A biosolids.

v. Results of internal or external third-party audits of the Biosolids Management System, including reported program deficiencies and recommendations, required corrective actions, and a schedule to complete corrective actions.

g. **Storm Water Reporting.** The Permittee shall report, as part of its annual report to the Regional Water Board, an evaluation of the effectiveness of the Permittee's BMPs to control the run-on of storm water to the treatment facility site, as well as activities to maintain and upgrade these BMPs.

h. **Septage Monitoring and Reporting.** The results of septage monitoring shall be provided as follows:

i. A narrative description of all preparatory, monitoring, sampling, and analytical testing activities for the septage monitoring program. The narrative shall be

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sufficiently detailed to verify compliance with waste discharge requirements and this MRP.

ii. A summary table of all discharges of septage to the Facility. At a minimum, the table shall include: the name, County identification number, and District identification number of each hauler discharging to the Facility over the past calendar year.

iii. A summary table of analytical results for all samples of septage collected in compliance with waste discharge requirements and this MRP. When directed by the Regional Water Board, the Permittee shall also append analytical reports, chains of custody, and other documentation necessary to confirm the validity of the monitoring samples.

3. Annual Pretreatment Reporting Requirements. The Permittee shall submit annually a report to the Regional Water Board, with copies to U.S. EPA Region 9 and the State Water Board, describing the Permittee's pretreatment activities over the previous 12 months. In the event that the Permittee is not in compliance with any conditions or requirements of this Order, including noncompliance with pretreatment audit/compliance inspection requirements, then the Permittee shall also include the reasons for noncompliance and state how and when the Permittee shall comply with such conditions and requirements.

An annual report shall be submitted by March 1st of the following year, and include at least the following items:

a. A summary of analytical results from representative, flow proportioned, 24-hour composite sampling of the POTWs influent and effluent for those pollutants U.S. EPA has identified under section 307(a) of the CWA which are known or suspected to be discharged by industrial users. Sludge shall be sampled during the same 24-hour period and analyzed for the same pollutants as influent and effluent sampling and analysis. The sludge analyzed shall be a composite sample of a minimum of 12 discrete samples taken at equal time intervals over the 24-hour period. Wastewater and sludge sampling and analysis shall be performed at least annually. The Permittee shall also provide any influent, effluent or sludge monitoring data for nonpriority pollutants which may be causing or contributing to Interference, Pass-Through or adversely impacting sludge quality. Sampling and analysis shall be performed in accordance with the techniques prescribed in 40 C.F.R. part 136 and amendments thereto.

b. A discussion of Upset, Interference, or Pass-Through incidents, if any, at the treatment plant, which the Permittee knows or suspects were caused by industrial users of the POTW. The discussion shall include the reasons why the incidents occurred, the corrective actions taken and, if known, the name and address of, the industrial user(s) responsible. The discussion shall also include a review of the applicable pollutant limitations to determine whether any additional limitations, or changes to existing requirements, may be necessary to prevent Pass-Through, Interference, or noncompliance with sludge disposal requirements.

c. The cumulative number of industrial users that the Permittee has notified regarding Baseline Monitoring Reports and the cumulative number of industrial user responses.

d. An updated list of the Permittee's industrial users including their names and addresses, or a list of deletions and additions keyed to a previously submitted list. The Permittee shall provide a brief explanation for each deletion. The list shall identify the industrial users subject to federal categorical standards by specifying which set(s) of standards are applicable. The list shall indicate which categorical industries, or specific pollutants

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from each industry, are subject to local limitations that are more stringent than the federal categorical standards. The Permittee shall also list the noncategorical industrial users that are subject only to local discharge limitations. The Permittee shall characterize the compliance status through the year of record of each industrial user by employing the following descriptions:

i. complied with baseline monitoring report requirements (where applicable);

ii. consistently achieved compliance;

iii. inconsistently achieved compliance;

iv. significantly violated applicable pretreatment requirements as defined by 40 C.F.R. section 403.8(f)(2)(vii);

v. complied with schedule to achieve compliance (include the date final compliance is required);

vi. did not achieve compliance and not on a compliance schedule; and

vii. compliance status unknown.

e. A summary of the inspection and sampling activities conducted by the Permittee during the past year to gather information and data regarding the industrial users. The summary shall include:

i. The names and addresses of the industrial users subjected to surveillance and an explanation of whether they were inspected, sampled, or both and the frequency of these activities at each user; and

ii. The conclusions or results from the inspection or sampling of each industrial user.

iii. A summary of the compliance and enforcement activities during the past year. The summary shall include the names and addresses of the industrial users affected by the following actions:

iv. Warning letters or notices of violation regarding the industrial users' apparent noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the apparent violation concerned the federal categorical standards or local discharge limitations.

v. Administrative orders regarding the industrial users noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the violation concerned the federal categorical standards or local discharge limitations.

vi. Civil actions regarding the industrial users' noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the violation concerned the federal categorical standards or local discharge limitations.

vii. Criminal actions regarding the industrial users' noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the violation concerned the federal categorical standards or local discharge limitations.

viii. Assessment of monetary penalties. For each industrial user identify the amount of the penalties.

ix. Restriction of flow to the POTW.

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x. Disconnection from discharge to the POTW.

xi. A description of any significant changes in operating the pretreatment program which differ from the information in the Permittee's approved Pretreatment Program including, but not limited to, changes concerning: the program's administrative structure, local industrial discharge limitations, monitoring program or monitoring frequencies, legal authority or enforcement policy, funding mechanisms, resource requirements, or staffing levels.

xii. A summary of the annual pretreatment budget, including the cost of pretreatment program functions and equipment purchases.

Duplicate signed copies of these Pretreatment Program reports shall be submitted to the North Coast Regional Water Board at NorthCoast@waterboards.ca.gov and the:

STANDARD MAIL	FEDEX/UPS/OTHER PRIVATE CARRIERS
State Water Resources Control Board Division of Water Quality c/o Discharge Monitoring Report Processing Center Post Office 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

E. Spill Notification

1. **Spills and Unauthorized Discharges.** Information regarding all spills and unauthorized discharges (except SSOs) that may endanger health or the environment shall be provided orally to the Regional Water Board[3] within 24 hours from the time the Permittee becomes aware of the circumstances and a written report shall also be provided within five (5) days of the time the Permittee becomes aware of the circumstances, in accordance with Section V.E of Attachment D.

   Information to be provided verbally to the Regional Water Board includes:

   a. Name and contact information of caller;

   b. Date, time, and location of spill occurrence;

   c. Estimates of spill volume, rate of flow, and spill duration, if available and reasonably accurate;

   d. Surface water bodies impacted, if any;

   e. Cause of spill, if known at the time of the notification;

   f. Cleanup actions taken or repairs made at the time of the notification; and

   g. Responding agencies.

2. **Sanitary Sewer Overflows.** Notification and reporting of sanitary sewer overflows is conducted in accordance with the requirements of Order No. 2006-0003-DWQ (Statewide General WDRs for Sanitary Sewer Systems), which is not incorporated herein by reference, and any revisions thereto.

[3] The contact number of the Regional Water Board during normal business hours is (707) 576-2220. After normal business hours, spill reporting to the California Governor's Office of Emergency Services Warning Center (CalOES) will satisfy the 24 hour spill reporting requirement for the Regional Water Board. The contact number for spill reporting for the CalOES is (800) 852-7550.

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ATTACHMENT F – FACT SHEET

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ATTACHMENTS

Attachment F-1 – City of Eureka Wastewater Treatment Plant SIP RPA Summary F-1

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ATTACHMENT F – FACT SHEET

As described in section I of the Order, the Regional Water Board incorporates this Fact Sheet as findings of the Regional Water Board supporting the issuance 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 requirements for dischargers in California. Unless identified as "not applicable, all sections or subsections of this Order are fully applicable to this Permittee.

I. PERMIT INFORMATION

The following table summarizes administrative information related to the Facility.

Table F-1. Facility Information

WDID	1B82151OHUM
Permittee	City of Eureka
Name of Facility	Elk River Wastewater Treatment Plant
Facility Address	4301 Hilfiker Lane Eureka, CA 95503 Humboldt County
Facility Contact, Title and Phone	Dan Duncan, Utilities Operations Manager, (707) 441-4360
Authorized Person to Sign and Submit Reports	Dan Duncan, Utilities Operations Manager, (707) 441-4360
Mailing Address	531 K Street, Eureka, CA 95501
Billing Address	Same as Mailing Address
Type of Facility	Publicly Owned Treatment Works (POTW)
Major or Minor Facility	Major
Threat to Water Quality	1
Complexity	A
Pretreatment Program	Yes
Recycling Requirements	N/A
Facility Permitted Flow	8.6 million gallons per day (mgd) (peak dry weather treatment capacity) 12 mgd (peak wet weather treatment capacity)
Facility Design Flow	5.24 mgd (average dry weather flow capacity) 8.6 mgd (peak dry weather treatment capacity) 12 mgd (peak wet weather treatment capacity)
Watershed	Eureka Plain Hydrologic Unit
Receiving Water	Humboldt Bay
Receiving Water Type	Enclosed Bay

A. The City of Eureka (hereinafter Permittee) is the owner and operator of the Elk River Wastewater Treatment Plant (hereinafter Facility), a POTW.

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 Permittee herein.

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B. The Facility discharges treated effluent to Humboldt Bay, a water of the United States. The Permittee was previously regulated by Order No. R1-2009-0033 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0024449 adopted on June 4, 2009, and expired on July 24, 2014. The terms and conditions of the current Order and Monitoring and Reporting Program (MRP) have been automatically continued and remain in effect until new Waste Discharge Requirements (WDRs) and NPDES permit are adopted pursuant to this Order. Attachment B provides a map of the area around the Facility. Attachment C provides flow schematics of the Facility.

C. The Permittee filed a report of waste discharge (ROWD) and submitted an application for reissuance of its WDRs and NPDES permit on December 31, 2013. Two special study reports required in accordance with Order No. R1-2009-0033 were received on January 8, 2014. The application was deemed complete on January 8, 2014.

II. FACILITY DESCRIPTION

The Permittee owns and operates a wastewater collection, treatment, and disposal facility that serves a population of approximately 44,000 from the City of Eureka and unincorporated areas within the Humboldt Community Services District. The Facility treats domestic, commercial, and industrial wastewater as well as treated groundwater from remediation projects and septage from local area haulers. The Facility is located at 4301 Hilfiker Lane in Eureka, Humboldt County, California.

A. Description of Wastewater and Biosolids Treatment and Controls

The Facility reports an average dry weather treatment capacity of 5.24 mgd, a peak dry weather treatment capacity of 8.6 mgd, and a peak wet weather secondary treatment capacity of 12 mgd. Wastewater is conveyed to the Facility through an extensive sanitary sewer system consisting of 125 miles of sewer mains, 9,500 service laterals, 17 lift stations, 3 pump stations, interceptor lines, collection lines, and manholes. The system collects and conveys over 1.5 billion gallons of wastewater per year, including infiltration and inflow (I/I). Once at the Facility, wastewater undergoes primary treatment with mechanical bar screens, grit removal, and primary clarification. Biological secondary treatment is accomplished using two trickling filters, followed by secondary clarification, and chlorine disinfection. The chlorinated effluent is stored in a holding pond then dechlorinated and discharged at Discharge Point 001 to Humboldt Bay in conjunction with ebb tide cycles.

During periods of high flows, excess treated wastewater from the effluent holding pond can be directed to the 13-acre freshwater holding marsh (Overflow Marsh) and pumped back to the effluent storage pond once flows subside. The Overflow Marsh is a component of the Facility, as described in the "*Final Environmental Impact Report – Wastewater Management Plan for the Greater Eureka Area*" (July 10, 1980), and as established in Waste Discharge Requirements Order No. 81-1 adopted for the Facility by the Regional Water Board on January 22, 1981.

Solids are treated by anaerobic digestion and may be processed on site using a centrifuge or stored in one of two facultative sludge lagoons.

B. Discharge Points and Receiving Waters

Effluent is discharged at Discharge Point 001 via an outfall structure consisting of a 48-inch diameter pipe, 4,100 feet in length, and equipped with a multiple discharge port diffuser. Effluent is discharged in conjunction with ebb tides at Discharge Point 001 into Humboldt Bay at 40° 46' 24" N latitude and 124° 12' 45" W longitude. Humboldt Bay, an enclosed bay, is a water of the United States. The existing outfall was constructed in conjunction with the Facility in the early 1980s. Discharge at this outfall location was permitted with the stipulation that the discharge of effluent would be allowed only during ebb-tide, thereby using the outgoing tide to convey the effluent to the Pacific Ocean.

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C. Order No. R1-2009-0033 Special Studies

1. **Effluent Discharge Study**. The discharge of treated effluent via the outfall in Humboldt Bay was permitted in 1981 based upon mathematical modeling, tidal monitoring, and a dye study completed in 1979, which indicated that discharging at ebb tide was expected to convey all effluent to the Pacific Ocean. Based upon findings from these 1979 studies completed by the Permittee, the Regional Water Board concluded in Resolution No. 80-10 that the ebb discharge concept was a viable alternative to ocean outfall as a means of implementing the statewide *Water Quality Control Policy for the Enclosed Bays and Estuaries of California* (Bays and Estuaries Policy) adopted in 1974. Resolution No. 80-10 was ratified by the State Water Board in Resolution No. 80-87, which found that the ebb tide currents in Humboldt Bay were sufficient in strength to carry the proposed Greater Eureka Area Wastewater discharges out of the Humboldt Bay to the Pacific Ocean. Thus, if effluent were released only on ebb tide, it was believed possible to have no Bay discharge. Based upon these findings, Resolution 80-87 found the ebb-tide discharge to be consistent with the intent of the Bays and Estuaries Policy.

   Order No. R1-2009-0033 required the Permittee to perform an effluent discharge study to assess the transport and fate of pollutants discharged from the Facility as well as the potential impacts to beneficial uses associated with the ebb-tide discharge. In compliance with Order No. R1-2009-0033, on January 8, 2014, the Permittee submitted the *Effluent Discharge Study for the Elk River Wastewater Treatment Plant* (2014 Effluent Discharge Study). The study utilized two models to simulate effluent transport: (1) advanced circulation (ADCIRC) as the primary model to predict currents within the Humboldt Bay that are the dominant mechanism of conveying effluent out to the ocean; and (2) particle tracking model (PTM) as a secondary model to track particles of effluent released by the Facility (utilizing currents predicted by ADCIRC). For baseline simulations, discharges began at slack tide and continued through the designated discharge window. Simulations were then conducted to determine the fate of effluent discharged under various tidal and Facility flow conditions. The 2014 Effluent Discharge Study modeling analysis shows that under all simulations the effluent is never completely conveyed to the ocean, and under certain conditions, up to 90% of the effluent remains in the Humboldt Bay. Thus, the findings of the original 1979 studies are contradicted by the 2014 Effluent Discharge Study results. Based on the conclusions of the 2014 Effluent Discharge Study, the discharge is not consistent with the findings of Resolutions 80-10 and 80-87 since a significant portion of the Facility's effluent remains in the Humboldt Bay.

   Regional Water Board staff finds that the 2014 Effluent Discharge Study is representative of current conditions and more accurately describes the discharge compared to the 1979 studies. Consequently, the Regional Water Board has determined that the discharge does not qualify as an ocean discharge subject to the Ocean Plan but rather a bay discharge subject to the Bays and Estuaries Policy.

   The method to comply with the Bays and Estuaries Policy has not yet been determined, but is likely to be complex and require extended time to achieve. During the interim, this Order requires the following:

   a. Regulation of the Facility in accordance with the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP); and

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b. Modification of the discharge timing to coincide with findings of the 2014 Effluent Discharge Study, which shows that the Permittee must begin discharging 45 minutes prior to slack high tides (45 minutes prior to ebb tide) in order for the maximum volume of effluent to be carried out into the ocean.

2. **Feasibility Analysis for Treating Peak Wet Weather Discharges**. Federal regulations at 40 C.F.R section 122.41(m) define bypass as an "intentional diversion of waste streams from any portion of a treatment facility." These regulations further state that bypasses are prohibited unless: (1) they are unavoidable to prevent severe property damage or personal injury; (2) there are no feasible alternatives to bypass; and (3) the NPDES authority was notified. 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 above. U.S. EPA strongly discourages reliance on peak wet weather flow diversions around secondary treatment units as a long-term wet weather management approach[1]. As contemplated by U.S. EPA's 2005 proposed policy, a utility analysis must demonstrate that there are no feasible alternatives to bypass, which includes multiple approaches to resolve the bypass condition and an evaluation of a Permittee's ability to finance associated costs.

   Order No. R1-2009-0033 required the Permittee to complete a comprehensive analysis to determine whether it is feasible to eliminate anticipated wet weather bypasses of its secondary treatment units. In response to this requirement, on January 8, 2014, the City submitted *Feasibility Analysis for Treating Peak Wet Weather Discharges* (Utility Analysis). The Utility Analysis provided an overview of existing hydraulic conditions at the Facility. Review of the Utility Analysis indicates that upgrades are necessary to better measure flows, improve secondary treatment capacity, manage or otherwise provide temporary storage for influent flows, and reduce infiltration and inflow (I/I) into the collection system to minimize or prevent bypass of secondary treatment during routine wet weather flow conditions. The Permittee has indicated that they are conducting I/I reduction work on the collection system. However the work done to date has not eliminated bypass occurrences. Further, the Permittee has not documented that alternatives to bypass, such as the use of auxiliary treatment facilities or retention of untreated wastes are infeasible.

   Although the Regional Water Board has authorized bypass at the Facility in past Orders dating back to 1984, this Order recognizes that ebb tide currents in North Bay and entrance channels of Humboldt Bay are not sufficient in strength to carry effluent discharges out of Humboldt Bay and prohibits discharges to Humboldt Bay that do not receive full biological secondary treatment. Elimination of bypass conditions is necessary for the protection of Humboldt Bay because: (1) Humboldt Bay is an enclosed bay subject to the Bays and Estuaries Policy; (2) the Bays and Estuaries Policy allows wastewater discharges to enclosed bays "<u>only</u> when the Regional Board finds that the wastewater in question would consistently be treated and discharged in such a manner that it would enhance the quality of receiving waters above that which would occur in the absence of the discharge"; (3) the Bays and Estuaries Policy prohibits the discharge or by-passing of untreated wastes; (4) Humboldt Bay hosts the largest oyster production area in the country; and (5) oysters are filter feeders and subject to bioaccumulation of toxics and pathogens that may be present at low levels in the effluent.

[1] Proposed EPA Policy on Permit Requirements for Peak Wet Weather Discharges from Wastewater Treatment Plants Serving Sanitary Sewer Collection Systems, December 2005

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

Effluent limitations contained in the existing Order No. R1-2009-0033 for discharges from Discharge Point 001 (Monitoring Location EFF-001) and representative monitoring data from the term of the Order No. R1-2009-0033 are as follows:

Table F-2. Historic Effluent Limitations and Monitoring Data

Parameter	Units	Effluent Limitation			Monitoring Data (August 2009 – November 2015)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Biochemical Oxygen Demand 5-day @ 20°C (BOD_5)	mg/L	30	45	60	23.4	32	32
	lbs/day[1]	2,151	3,227	4,303	1,131	2,175	2,175
	lbs/day[2]	3,002	4,503	6,005			
	% Removal	85	--	--	80[3]	--	--
Total Suspended Solids (TSS)	mg/L	30	45	60	20	28	28
	lbs/day[1]	2,151	3,227	4,303	910	4,028	4,028
	lbs/day[2]	3,002	4,503	6,005			
	% Removal	85	--	--	16[3]	--	--
Oil and Grease	mg/L	25	40	75	< 5	< 5	< 5
Settleable Solids	ml/L	0.1	--	0.2	0.1	--	1.5
pH	s.u.	--	--	6.0 – 9.0	--	--	6.1 – 7.5
Total Residual Chlorine	µg/L	--	62[4]	248/ 1,860[5]	--	--	1,570
	lbs/day[1]	--	4.45[4]	17.8/ 133.4[5]	--	--	19
	lbs/day[2]	--	6.20[4]	24.8/ 186[5]	--	--	
Turbidity	NTU	75	100	225	19	29	46
Copper, Total Recoverable	µg/L	--	33[4]	312/ 870[5]	--	--	55
	lbs/day[1]	--	2.37[4]	22.4/ 62.4[5]	--	--	34.3
	lbs/day[2]	--	3.30[4]	31.1 87.1[5]	--	--	
Cyanide, Total (as CN)	µg/L	--	31[4]	124/ 310[5]	--	--	21
	lbs/day[1]	--	2.22[4]	8.89/ 22.2[5]	--	--	1.46
	lbs/day[2]	--	3.10[4]	12.4/ 31.0[5]	--	--	
Ammonia, Total (as N)	mg/L	--	18.6[4]	74.4/ 186[5]	--	--	13
	lbs/day[1]	--	1,334[4]	5,336/ 13,341[5]	--	--	472

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Parameter	Units	Effluent Limitation			Monitoring Data (August 2009 – November 2015)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
	lbs/day[2]	--	1,861[4]	7,446/ 18,615[5]	--	--	
Fecal Coliform Bacteria	MPN/100 mL	14[6]	--	43[7]	--	--	>1,600

Table Notes:
1. Mass-based limitations based on the peak dry weather design flow of 8.6 mgd.
2. Alternate mass-based limitations applied during periods of high infiltration/inflow when influent flow to the Facility exceeded 8.6 mgd for the limitation period (daily, weekly, or monthly), and are based on the secondary treatment capacity of the Facility (12.0 mgd).
3. Represents the minimum observed percent removal.
4. Applied as a 6-month median effluent limitation.
5. Applied as an instantaneous maximum effluent limitation.
6. The median value of fecal coliform bacteria shall not exceed a Most Probable Number (MPN) of 14 per 100 milliliters (mL), in a calendar month.
7. In not more than 10 percent of samples collected in a calendar month shall fecal coliform bacteria exceed 43 MPN/100 mL.

E. Compliance Summary

1. On October 6, 2009, the Executive Officer issued Administrative Civil Liability (ACL) Complaint No. R1-2009-0113 for violations of Order No. R1-2004-0013 and R1-2009-0033 for violations of effluent limitations for total chlorine residual and fecal coliform from May 14, 2008, through September 30, 2008, and sewer system overflows (SSOs) that occurred between June 16, 2009, and July 5, 2009. The ACL Complaint assessed a penalty of $10,000 for these violations.

2. On May 24, 2013, the Executive Officer issued ACL Complaint No. R1-2013-0037 for violations of Order No. R1-2009-0033 for the discharge of approximately 90,000 gallons of untreated wastewater to Martin Slough on March 29, 2012. The ACL Complaint assessed a penalty of $89,122 for these violations. On April 22, 2014, the Executive Officer issued a Settlement Agreement and Stipulation for Entry of ACL Order No. R1-2013-0037 requiring the Permittee to pay $46,361 in administrative civil liability. The remaining $42,761 was suspended pending the completion of a Supplemental Environmental Project with the goal of supporting and enhancing watershed education programs at Sequoia Park Zoo.

3. On September 4, 2014, the Executive Officer issued an Acceptance of Conditional Resolution and Waiver of Right to Hearing (Waiver) for violations of effluent limitations for total coliform, copper, and settleable solids during the period of October 1, 2011, through February 28, 2014. By accepting the Waiver the Permittee agreed to pay the Expedited Payment Amount of $9,000 for these violations.

F. Planned Changes

Due to land application permitting issues, processing from the facultative sludge lagoons has not effectively maintained pace with solids production. Solids have accumulated and the lagoons are currently exceeding design capacity for solids storage. To address this issue, the Permittee has recently obtained coverage under the State Water Resources Control Board Water Quality Order No. 2004-0012–DWQ, General Waste Discharge Requirements for the Discharge of Biosolids to

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Land for Use as a Soil Amendment in Agricultural, Silvicultural, Horticultural, and Land Reclamation Activities to allow for land application of processed Biosolids.

This Order prohibits the discharge of wastewater that does not receive full biological secondary treatment. The 2014 Effluent Discharge Study committed to implementing a long-term, sustainable approach to limiting infiltration and inflow through projects like collection system improvements, trickling filter pump station rehabilitation, and primary diversion overflow weir improvements. Additional actions beyond these may be necessary to achieve compliance.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in this 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 (U.S. EPA) and chapter 5.5, division 7 of the California Water Code (commencing with section 13370). It shall serve as a 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 is exempt from the provisions of Chapter 3 of CEQA, (commencing with section 21100) of Division 13 of the Public Resources Code.

C. State and Federal Laws, Regulations, Policies, and Plans

1. **Water Quality Control Plan.** The Regional Water Board adopted a *Water Quality Control Plan for the North Coast Region* (hereinafter Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan.

   The Basin Plan designates a beneficial use of municipal and domestic supply (MUN) to Humboldt Bay. In addition, the Basin Plan implements State Water Board Resolution No. 88-63, which establishes state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for MUN. Salinity in Humboldt Bay in the vicinity of the discharge was reported as high as 50,000 µS/cm, which well exceeds the salinity threshold in Resolution No. 88-63 of 5,000 µS/cm. Therefore this Order does not apply the MUN designation when considering Humboldt Bay in the vicinity of Discharge Point 001. Beneficial uses applicable to Humboldt Bay in this Order are summarized in Table F-3, below:

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Table F-3. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Humboldt Bay	Existing: Municipal and Domestic Water Supply (MUN) – not applied Agricultural Supply (AGR); Industrial Service Supply (IND); Freshwater Replenishment (FRSH); Navigation (NAV); Water Contact Recreation (REC-1); Non-Contact Water Recreation (REC-2); Commercial and Sport Fishing (COMM); Aquaculture (AQUA); Cold Freshwater Habitat (COLD); Marine Habitat (MAR); Wildlife Habitat (WILD); Preservation of Rare, Threatened, or Endangered Species (RARE); Migration of Aquatic Organisms (MIGR); Spawning, Reproduction, and/or Early Development (SPWN); Shellfish Harvesting (SHELL); Estuarine Habitat (EST); and Native American Culture (CUL). Potential: Hydropower Generation (POW); and Industrial Process Supply (PRO).

Requirements of this Order implement the Basin Plan.

2. **Bays and Estuaries Policy.** The State Water Board adopted State Water Board Resolution 74-43, *Water Quality Control Policy for the Enclosed Bays and Estuaries of California* (Bays and Estuaries Policy) on May 16, 1974. The Bays and Estuaries Policy prohibits new discharges[2] of municipal wastewaters to enclosed bays and estuaries, which are not consistently treated and discharged in a manner that would enhance the quality of receiving waters above that which would occur in the absence of the discharge. Regional Water Board Resolution No. 80-10 and State Water Board Resolution No. 80-87 concluded that the discharge to Humboldt Bay at ebb tide at a point near the mouth of Humboldt Bay is consistent with the intent of State Water Board Resolution 74-43. However, as described in section II.B of this Fact Sheet, based on the Permittee's Effluent Discharge Study, modeling indicates that the discharge is not completely conveyed to the ocean and thus the Permittee's discharges to Humboldt Bay are not consistent with the Bays and Estuaries Policy. This Order requires discharges to Humboldt Bay be conducted in a manner consistent with the Bays and Estuaries Policy.

3. **Thermal Plan.** The State Water Board adopted a *Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California* (Thermal Plan) on January 7, 1971, and amended this plan on September 18, 1975. This plan contains temperature objectives for coastal waters. The

[2] The Bays and Estuaries Policy defines a new discharge as one for which the Regional Board had not received a report of waste discharge by or which was not in existence prior to May 16, 1974.

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Permittee does not discharge thermal waste; therefore, the Order does not include effluent limitations for temperature in response to the requirements of the Thermal Plan.

4. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** U.S. EPA adopted the NTR on December 22, 1992, and later amended it on May 4, 1995 and November 9, 1999. About forty criteria in the NTR applied in California. On May 18, 2000, U.S. EPA 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 federal water quality criteria for priority pollutants.

5. **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 U.S. EPA 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 U.S. EPA 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.

6. **Compliance Schedules and Interim Requirements.** The State Water Board adopted Resolution No. 2008-0025 on April 15, 2008, titled *Policy for Compliance Schedules in National Pollutant Discharge Elimination System Permits*, which includes compliance schedule policies for pollutants that are not addressed by the SIP. This Policy became effective on August 27, 2008.

   This Order does not include any compliance schedules or interim effluent limitations.

7. **Antidegradation Policy.** 40 C.F.R. 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. The permitted discharge must be consistent with the antidegradation provision of 40 C.F.R. section 131.12 and State Water Board Resolution No. 68-16. As discussed in detail in section IV.D.2 of this Fact Sheet, the permitted discharge is consistent with the antidegradation provision of 40 C.F.R. section 131.12 and State Water Board Resolution No. 68-16.

8. **Anti-Backsliding Requirements.** Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations at 40 C.F.R. section 122.44(l) restrict 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. Some effluent limitations in this Order have been removed or are less stringent than those in the previous Order. As discussed in detail in section IV.D.1. of this Fact Sheet, removal or relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.

9. **Endangered Species Act Requirements.** This Order does not authorize an 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

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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 Permittee is responsible for meeting all requirements of the applicable Endangered Species Act.

D. Impaired Water Bodies on CWA 303(d) List

Section 303(d) of the federal CWA requires states to identify waterbodies that do not meet water quality standards and are not supporting their beneficial uses after implementation of technology-based effluent limitations on point sources. Each state must submit an updated list, the 303(d) List of Impaired Waterbodies, every two years. In addition to identifying the waterbodies that are not supporting beneficial uses, the 303(d) list also identifies the pollutant or stressor causing impairment and establishes a schedule for developing a control plan to address the impairment. The CWA requires development of a total maximum daily load (TMDL) or alternate program of implementation for each 303(d) listed pollutant and water body to remedy the impairment. TMDLs establish the maximum quantity of a given pollutant that can be added to a water body from all sources without exceeding the applicable water quality standard for that pollutant and determine wasteload allocations (the portion of a TMDL allocated to existing and future point sources) and load allocations (the portion of a TMDL attributed to existing and future nonpoint sources).

On June 26, 2015, the U.S. EPA provided final approval of the 2012 303(d) list of impaired water bodies for the North Coast Region prepared by the state. The list identifies Humboldt Bay (Eureka Plain Hydrologic Unit) as impaired by dioxin equivalents and polychlorinated biphenyls (PCBs). Pursuant to CWA section 303(d), the Regional Water Board will develop a TMDL or alternate program of implementation to address these impairments, which will be implemented through various programs, including through provisions of NPDES permits. The Regional Water Board expects to adopt TMDLs for dioxin toxic equivalents and PCBs in the future. Discharges from the Facility have shown reasonable potential for discharge of dioxin toxic equivalents. This Order establishes new effluent limitations for dioxin toxic equivalents at levels protective of beneficial uses.

E. Other Plans, Polices and Regulations

1. On May 2, 2006, the State Water Board adopted State Water Board Order No. 2006-0003-DWQ, Statewide General WDRs for Sanitary Sewer Systems and on August 6, 2013 adopted Order No. WQ 2013-0058-EXEC Amending Monitoring and Reporting Program for Statewide General Waste Discharge Requirements for Sanitary Sewer Systems. Order No. 2006-0003-DWQ requires that all public agencies that currently own or operate sanitary sewer systems apply for coverage under the General WDRs. The deadline for dischargers to apply for coverage was November 2, 2006. The Permittee applied for coverage and is subject to the requirements of Order Nos. 2006-0003-DWQ and WQ 2013-0058-EXEC and any future revisions thereto for operation of its wastewater collection system.

2. Storm water falling within the Facility is routed to the Facility headworks. State Water Board Water Quality Order No. 2014-0057-DWQ, NPDES General Permit No. CAS000001, General Permit for Storm Water Discharges Associated with Industrial Activities (Industrial Storm Water General Permit) does not require facilities to obtain coverage if storm water is captured and treated and/or disposed of within the facility's NPDES permitted process wastewater or if storm water is disposed of in evaporation ponds, percolation ponds, or combined sewer systems. Therefore, coverage under the Industrial Storm Water General Permit is not required for this Facility.

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3. The discharge of waste other than hazardous waste to land for treatment, storage and disposal in waste management units is regulated pursuant to title 27 of the CCR, except when expressly exempted. With respect to domestic sewage, section 20090 of title 27 of the CCR specifies the available exemption as follows:

   Exemptions. (C15: section 2511): The following activities shall be exempt from the SWRCB-promulgated provisions of this subdivision, so long as the activity meets, and continues to meet, all preconditions listed: (a) Sewage – Discharges of domestic sewage or treated effluent which are regulated by WDRs issued pursuant to Chapter 9, Division 3, Title 23 of this code, or for which WDRs have been waived, and which are consistent with applicable water quality objectives, and treatment or storage facilities associated with municipal wastewater treatment plants, provided that residual sludges or solid waste from wastewater treatment facilities shall be discharged only in accordance with the applicable SWRCB-promulgated provisions of this division.

   The applicable provisions of division 2 (Solid Waste) include prescriptive waste containment unit siting criteria, waste unit construction standards, and liner requirements. The waste containment units for digested sludge at the Facility have been permitted for use since the commencement of the operation of the Facility in 1984.

4. On July 22, 2004, the State Water Board adopted State Water Board Order No. 2004-0012-DWQ, General Waste Discharge Requirements for the Discharge of Biosolids to Land for Use as a Soil Amendment in Agricultural, Silvicultural, Horticultural, and Land Reclamation Activities. The Order requires the Permittee to obtain coverage under Order No. 2004-0012-DWQ prior to any removal of biosolids from the Facility that will be land disposed on property owned or controlled by the Permittee. As stated in section II.F of this Fact Sheet, the Permittee has applied for coverage under this Statewide Order.

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 Code of Federal Regulations: 40 C.F.R. section 122.44(a) requires that permits include applicable technology-based limitations and standards; and 40 C.F.R. section 122.44(d) requires that permits include WQBELs to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water where a reasonable potential to exceed those criteria exist.

A. Discharge Prohibitions

1. **Discharge Prohibition III.A.** The discharge of waste to Humboldt Bay is prohibited unless it complies with the State Board, Water Quality Control Policy for the Enclosed Bays and Estuaries of California (1974, 1995).

   This prohibition is retained from Order. No. R1-2009-0033 and has been revised to more clearly indicate the need to maintain consistency with the Bays and Estuaries Policy. However, as described in section II.B of this Fact Sheet, based on the Permittee's Effluent Discharge Study, the discharge is not completely conveyed to the Pacific Ocean and thus is not currently in compliance with the Bays and Estuaries Policy or this prohibition.

2. **Discharge Prohibition III.B.** The discharge of any waste not disclosed by the Permittee and not within the reasonable contemplation of the Regional Water Board is prohibited.

   This prohibition has been retained from Order No. R1-2009-0033 and is based on the Basin Plan and State Water Board Order No. WQO 2002-0012 regarding the petition of WDRs Order No. 01-072 for the East Bay Municipal Utility District and Bay Area Clean Water

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Agencies. In State Water Board Order No. WQO 2002-0012, the State Water Board found that this prohibition is acceptable in orders, but should be interpreted to apply only to constituents that are not disclosed by the Permittee, and are not reasonably anticipated to be present in the discharge. It specifically does not apply to constituents in the discharge that do not have "reasonable potential" to exceed water quality objectives.

The State Water Board has stated that the only pollutants not covered by this prohibition are those which were "*disclosed to the permitting authority and…can be reasonably contemplated*." [In re the Petition of East Bay Municipal Utilities District et al., (State Water Board, 2002) Order No. WQO 2002-0012, p. 24.] In that Order, the State Water Board cited a case which held the Permittee is liable for the discharge of pollutants "*not within the reasonable contemplation of the permitting authority…<u>whether spills or otherwise</u>…*" [*Piney Run Preservation Assn. v. County Commissioners of Carroll County, Maryland* (4th Cir. 2001) 268 F. 3d 255, 268.] Thus the State Water Board authority provides that, to be permissible, the constituent discharged: (1) must have been disclosed by the Permittee; and (2) can be reasonably contemplated by the Regional Water Board.

3. **Discharge Prohibition III.C.** Creation of pollution, contamination, or nuisance, as defined by section 13050 of the Water Code is prohibited.

   This prohibition has been retained from Order No. R1-2009-0033 and is based on section 13050 of the Water Code and section 5411 of the California Health and Safety Code. It is a standard condition/prohibition included in NPDES permits and waste discharge requirements adopted by the Regional Water Board.

4. **Discharge Prohibition III.D.** The discharge of sludge or digester supernatant is prohibited, except as authorized under section VI.C.5.c of the Order. (Solids Disposal and Handling requirements).

   This prohibition is retained from Order No. R1-2009-0033 and is based on restrictions on the disposal of sewage sludge found in federal regulations [40 C.F.R. Part 503 (Biosolids), Part 527, and Part 258] and title 27 of the California Code of Regulations (CCR).

5. **Discharge Prohibition III.E.** The discharge of untreated or partially treated waste (receiving a lower level of treatment than secondary treatment as described in section II.A of the Fact Sheet) from anywhere within the collection, treatment, or disposal systems is prohibited, except as provided for in Attachment D, Standard Provisions G (Bypass) and H (Upset).

   This prohibition has been retained from Order No. R1-2009-0033 and is based on the Basin Plan and Bays and Estuaries Policy to protect the beneficial uses of the receiving water from unpermitted discharges, and the intent of the Water Code sections 13260 through 13264 relating to the discharge of waste to waters of the state without filing for and being issued an Order. This prohibition applies to spills not related to sanitary sewer overflows (SSOs) and other unauthorized discharges of wastewater within the collection, treatment, and disposal facilities. The discharge of untreated or partially treated wastewater from the collection, treatment, or disposal facility represents an unauthorized bypass pursuant to 40 C.F.R. section 122.41(m) or an unauthorized discharge which poses a threat to human health and/or aquatic life, and therefore is explicitly prohibited by this Order.

   The Regional Water Board adopted Resolution No. 80-10 which concluded that the Permittee's ebb-tide discharge to Humboldt Bay implements the Basin Plan because all effluent was conveyed to the Pacific Ocean. This Resolution was based on modeling and tidal monitoring with a dye study completed in 1979. Thus, since 1987, the Regional Water Board has viewed the practice of blending at the Facility as a permissible exception to the bypass prohibition. The Permittee has bypassed secondary treatment when influent flows exceed

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the trickling filter capacity (approximately 12 mgd). When this occurs, the water surface elevation in the primary effluent channel rises allowing primary effluent to spill over a long weir into the bypass channel. This effluent is diverted around secondary treatment and then is recombined with secondary effluent, disinfected, and stored prior to discharge.

40 C.F.R. section 122.41(m) defines a bypass as "*…the intentional diversion of waste streams from any portion of a treatment facility*." Further, 40 C.F.R. section 122.41(m)(2) states that bypass may only be allowed under the condition that it "*…does not cause effluent limitations to be exceeded, but only if it is also for essential maintenance to assure efficient operation*." Chapter III, section 7 of the Bays and Estuaries Policy states, "*The discharge or by-passing of untreated waste to bays and estuaries shall be prohibited*." The current operations at the Facility include the intentional diversions around the secondary treatment portion of the treatment facility (including the trickling filters, solids contact, and secondary clarification units). Further, these intentional diversions are not for the essential maintenance of the treatment facility, but instead are used to manage peak hydraulic flows to the Facility. The Permittee's January 7, 2014 *Feasibility Analysis for Treating Peak Wet Weather Discharges* (Feasibility Analysis) acknowledges the significant increase in the Facility's peak wet weather flows as a result of rainfall-derived infiltration and inflow.

In accordance with the NPDES regulations at 40 C.F.R. section 122.41(m) and chapter III, section 7 of the Bays and Estuaries Policy, this Order discontinues the exception granting bypass of peak wet weather flows above 12 mgd when recombined with secondary treatment flows and discharge. It is recognized that the Permittee will be in immediate noncompliance with this prohibition, and as a result discharges from the Facility during times of peak flow when blending occurs will be managed outside of this Order.

6. **Discharge Prohibition III.F.** Any sanitary sewer overflow (SSO) that results in a discharge of untreated or partially treated wastewater to (a) waters of the state or (b) land that creates pollution, contamination, or nuisance, as defined in Water Code section 13050(m) is prohibited.

   This prohibition is retained from Order No. R1-2009-0033 with a minor modification. A reference to groundwater has been removed because groundwater is captured in the broader term, "waters of the state". This prohibition applies to spills related to SSOs and is based on state standards, including section 13050 of the Water Code and the Basin Plan. This prohibition is consistent with the State's antidegradation policy as specified in State Water Board Resolution No. 68-16 (*Statement of Policy with Respect to Maintaining High Quality of Water in California*) in that the prohibition imposes conditions to prevent impacts to water quality, the degradation of water quality, negative effects on receiving water beneficial uses, and lessening of water quality beyond that prescribed in State Water Board or Regional Water Board plans and policies.

   This prohibition is stricter than the prohibitions stated in State Water Board Order 2006-003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems. Order No. 2006-0003-DWQ prohibits SSOs that result in the discharge of untreated or partially treated wastewater to waters of the United States and SSOs that cause a nuisance, compared to Prohibition III.E of this Order, which prohibits SSO discharges that create nuisance or pollution to waters of the state and land for a more complete protection of human health. This prohibition is necessary because of the prevalence of high groundwater in the North Coast Region, and this Region's reliance on groundwater as a drinking water source.

7. **Discharge Prohibition III.G.** The discharge of waste at any point not described in Finding II.B of the Fact Sheet or authorized by a permit issued by the State Water Board or another Regional Water Board is prohibited.

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This prohibition is newly established in this Order and is a standard Regional Water Board prohibition that allows the Permittee to discharge waste only in accordance with WDRs. It is based on sections 301 and 402 of the federal CWA and section 13263 of the Water Code.

8. **Discharge Prohibition III.H**. The discharge of waste from the Facility to the Elk River and its tributaries, and to seasonal and tidal marshes adjacent to the Facility is prohibited.

   This prohibition is retained from Order No. R1-2009-0033. It is based on the Bays and Estuaries Policy, which prohibits discharges to enclosed bays, with certain exceptions. As the Elk River is directly tributary to Humboldt Bay, discharges to the Elk River are prohibited. This prohibition also expressly prohibits any discharge of waste to the seasonal or tidal marshes located adjacent to the Facility.

9. **Discharge Prohibition III.I**. The discharge of more than 8.6 mgd as a peak dry weather flow, or 12.0 mgd as a peak wet weather flow, is prohibited.

   This prohibition is retained from Order No. R1-2009-0033 and is based on the engineering design and historic reliable treatment capacity of the Facility. This prohibition limits the peak dry weather flow to the peak dry weather design flow stated in the ROWD and peak wet weather flow to the hydraulic capacity stated in the ROWD. Flows exceeding the design capacities may result in a lower achievement of compliance with water quality objectives established in this Order.

10. **Discharge Prohibition III.J**. The discharge of any radiological, chemical, or biological warfare agent or high-level radioactive waste into waters of the state is prohibited.

    This prohibition is retained from Order No. R1-2009-0033 and is based on the discharge prohibitions contained in section 13375 of the Water Code.

11. **Discharge Prohibition III.K**. The discharge of septage to a location other than an approved septage receiving station is prohibited.

    This prohibition is newly established by this Order and is necessary to ensure that the Permittee is aware of all discharges of septage into the treatment system so that pollutants associated with domestic septage do not pass through or interfere with the operation or performance of the Facility.

B. Technology-Based Effluent Limitations

1. Scope and Authority

Section 301(b) of the CWA and implementing U.S. EPA permit regulations at 40 C.F.R. section 122.44 require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements based on Secondary Treatment Standards at 40 C.F.R. part 133 and Best Professional Judgment (BPJ) in accordance with 40 C.F.R. section 125.3.

Regulations promulgated in 40 C.F.R. section 125.3(a)(1) require technology-based effluent limitations for municipal dischargers to be placed in NPDES permits based on Secondary Treatment Standards or Equivalent to Secondary Treatment Standards.

The Federal Water Pollution Control Act Amendments of 1972 (PL 92-500) established the minimum performance requirements for POTWs [defined in section 304(d)(1)]. Section 301(b)(1)(B) of that Act requires that such treatment works must, as a minimum, meet effluent limitations based on secondary treatment as defined by the U.S. EPA Administrator.

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Based on this statutory requirement, U.S. EPA developed secondary treatment regulations, which are specified in 40 C.F.R. part 133. These technology-based regulations apply to all municipal wastewater treatment plants and identify the minimum level of effluent quality attainable by secondary treatment in terms of BOD_5, TSS, and pH, as follows:

a. BOD_5 and TSS

i. The 30-day average shall not exceed 30 mg/L.

ii. The 7-day average shall not exceed 45 mg/L.

iii. The 30-day average percent removal shall not be less than 85%.

b. pH

The pH shall be maintained within the limits of 6.0 to 9.0.

The effluent limitation for pH required to meet the water quality objective for hydrogen ion concentration (pH) is contained in the Basin Plan, Table 3-1.

In addition, 40 C.F.R. section 122.45(f) requires the establishment of mass-based effluent limitations for all pollutants limited in Orders, except for 1) pH, temperature, radiation, or other pollutants which cannot be appropriately expressed by mass, and 2) when applicable standards and limitations are expressed in terms of other units of measure.

2. Applicable Technology-Based Effluent Limitations

a. Secondary Treatment Standards (BOD_5, TSS, and pH). As described above, the secondary treatment standards at 40 C.F.R. part 133 establish the minimum level of effluent quality attainable by secondary treatment in terms of BOD_5, TSS, and pH. Numeric effluent limitations for BOD_5, TSS, and pH, including the percent removal requirements for BOD_5 and TSS, are retained from Order No. R1-2009-0033 and reflect the secondary treatment standards at 40 C.F.R. part 133.

b. Mass-Based Effluent Limitations. Federal regulations at 40 C.F.R. section 122.45(f) require that, except under certain conditions, all permit limits, standards, or prohibitions be expressed in terms of mass units. Among the conditions exempting the application of mass-based limitations is section 40 C.F.R. section 122.45(f)(1)(i), which states "*for pH, temperature, and radiation, or other pollutants which cannot appropriately be expressed by mass*" and 40 C.F.R. section 122.45(f)(1)(ii), which states "*when applicable standards and limitations are expressed in terms of other units of measure.*" Consistent with Order No. R1-2009-0033, this Order includes mass-based effluent limitations for BOD_5 and TSS. Because settleable solids, turbidity, and pH cannot appropriately be expressed by mass, this Order does not include mass-based effluent limitations for pH per the exception in 40 C.F.R. section 122.45(f)(1)(i).

Order No. R1-2009-0033 contained mass-based effluent limitations for BOD_5 and TSS based on the peak dry weather design capacity of 8.6 mgd, and alternative limitations based on the peak wet weather design capacity of 12 mgd applicable during periods of high infiltration/inflow when influent flow to the Facility exceeds 8.6 mgd for the limitation period. The purpose of mass-based effluent limitations is to ensure that dilution is not used as a substitute for treatment. Application of less stringent mass limitations during periods of high infiltration/inflow is inconsistent with the intent of mass-based effluent limitations. Therefore, this Order applies mass-based effluent limitations based on the Facility peak dry weather design flow of 8.6 mgd under all flow conditions.

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C. Water Quality Based Effluent Limitations (WQBELs)

1. Scope and Authority

CWA Section 301(b) and 40 C.F.R. section 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards.

Section 122.44(d)(1)(i) of 40 C.F.R. 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, WQBELs must be established using: (1) U.S. EPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) 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).

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 other state plans and policies, or any applicable water quality criteria contained in the CTR, and NTR.

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

a. Beneficial Uses. Beneficial use designations for receiving waters for discharges from the Facility are presented in sections III.C.1 and III.C.3 of this Fact Sheet.

b. Basin Plan Water Quality Objectives. In addition to the specific water quality objectives indicated above, the Basin Plan contains narrative objectives for color, tastes and odors, floating material, suspended material, settleable material, oil and grease, biostimulatory substances, sediment, turbidity, pH, dissolved oxygen, bacteria, temperature, toxicity, pesticides, chemical constituents, and radioactivity that apply to inland surface waters, enclosed bays, and estuaries, including Humboldt Bay. For waters designated for use as domestic or municipal supply (MUN), the Basin Plan establishes as applicable water quality criteria the Maximum Contaminant Levels (MCLs) established by the State Water Board, Division of Drinking Water (DDW) for the protection of public water supplies at title 22 of the California Code of Regulations section 64431 (Inorganic Chemicals) and section 64444 (Organic Chemicals).

c. SIP, CTR, and NTR. Water quality criteria and objectives applicable to this receiving water are established by the California Toxics Rule (CTR), established by the U.S. EPA at 40 C.F.R. 131.38, and the National Toxics Rule (NTR), established by the U.S. EPA at 40 C.F.R. 131.36. Criteria for most of the 126 priority pollutants are contained within the CTR and NTR.

The SIP, which is described in section III.C.3 of this Fact Sheet, includes procedures for determining the need for, and the calculation of, WQBELs and requires Permittees to submit data sufficient to do so.

At title 22, division 4, chapter 15 of the CCR, DDW has established MCLs for certain pollutants for the protection of drinking water. Chapter 3 of the Basin Plan establishes these MCLs as water quality objectives applicable to receiving waters with the beneficial use designation of municipal and domestic supply. As described in section

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III.C.1 of this Fact Sheet, the municipal and domestic supply use is not applicable to the receiving water in the vicinity of the discharge.

Aquatic life freshwater and saltwater criteria are identified as criterion maximum concentrations (CMC) and criterion continuous concentrations (CCC). The CTR defines the CMC as the highest concentration of a pollutant to which aquatic life can be exposed for a short period of time without deleterious effects and the CCC as the highest concentration of a pollutant to which aquatic life can be exposed for an extended period of time (4 days) without deleterious effects. The CMC is used to calculate an acute or 1-hour average numeric effluent limitation and the CCC is used to calculate a chronic or 4-day average numeric effluent limitation. The CTR at 40 C.F.R. section 131.38(c)(3)(ii) states that the saltwater criteria are applicable for waters in which the salinity is equal to or greater than 10 parts per thousand (ppt) 95% or more of the time. Based on two samples collected from the receiving water in the vicinity of the discharge on December 2, 2013, the receiving water salinity was 31 ppt and 32 ppt. Therefore, the saltwater criteria were used for the RPA.

Human health criteria are further identified as "water and organisms" and "organisms only". "Water and organism" criteria are designed to address risks to human health from multiple exposure pathways. As stated in section III.C.1 of this Fact Sheet, the municipal and domestic supply use is not applicable to the receiving water in the vicinity of the discharge; therefore, the "water and organisms" criteria therefore do not apply and the "organisms only" criteria were used for the RPA.

3. Determining the Need for WQBELs

NPDES regulations at 40 C.F.R. section 122.44(d) require effluent limitations to control all pollutants which are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard. RPAs for this Facility were conducted using the procedures in the SIP, as follows.

a. SIP

i. Priority Pollutants

The SIP establishes procedures to implement water quality criteria from the NTR and CTR for priority, toxic pollutant objectives established in the Basin Plan. The implementation procedures of the SIP include methods to determine reasonable potential (for pollutants to cause or contribute to excursions above State water quality standards) and to establish numeric effluent limitations, if necessary, for those pollutants demonstrating reasonable potential.

Section 1.3 of the SIP requires the Regional Water Board to use all available, valid, relevant, and representative receiving water and effluent data and information to conduct an RPA. Effluent data from August 2009 through October 2014 and receiving water monitoring data from a monitoring event on December 2, 2013 was used for the RPA.

The CTR and the NTR contain water quality criteria for seven metals that vary as a function of hardness; the lower the hardness, the lower the water quality criteria. The SIP requires water quality criteria be properly adjusted for hardness, using the hardness of the receiving water. 40 C.F.R. section 131.38(c)(4)(i) states, "For waters with a hardness of over 400 mg/L as calcium carbonate, a hardness of 400 mg/L shall be used with a default Water-Effect Ratio (WER) of 1, or the actual hardness of the ambient surface water shall be used with a WER." The Permittee was not previously required to monitor effluent or receiving water for hardness

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because the Ocean Plan metals criteria are not hardness-based. For the RPA, a hardness of 400 mg/L and a WER of 1 was used to calculate the criteria for hardness-dependent metals because saline waters found in estuaries typically has hardness concentrations in excess of 400 mg/L. The Permittee is conducting a WER study for copper. Future RPAs for copper will be conducted with the copper WER and actual receiving water hardness.

To conduct the RPA, Regional Water Board staff identified the maximum effluent concentration (MEC) and maximum background (B) concentration for each priority, toxic pollutant from effluent and receiving water data provided by the Permittee, and compared this information to the most stringent applicable water quality criterion (C) for each pollutant with applicable water quality criteria from the NTR, CTR, and the Basin Plan. Section 1.3 of the SIP establishes three triggers for a finding of reasonable potential.

Trigger 1. If the MEC is greater than C, there is reasonable potential, and an effluent limitation is required.

Trigger 2. If B is greater than C, and the pollutant is detected in effluent (MEC > ND), there is reasonable potential, and an effluent limitation is required.

Trigger 3. After a review of other available and relevant information, a permit writer may decide that a WQBEL is required. Such additional information may include, but is not limited to: the facility type, the discharge type, solids loading analyses, lack of dilution, history of compliance problems, potential toxic impact of the discharge, fish tissue residue data, water quality and beneficial uses of the receiving water, CWA 303(d) listing for the pollutant, and the presence of endangered or threatened species or their critical habitat.

ii. Reasonable Potential Determination

The RPA demonstrated reasonable potential for discharges of copper, cyanide, and TCDD equivalents from the Facility to cause or contribute to exceedances of applicable water quality criteria. Reasonable potential could not be determined for all pollutants, as there are not applicable water quality criteria for all pollutants. The RPA determined that there is either no reasonable potential or there was insufficient information to conclude affirmative reasonable potential for 123 of the 126 priority pollutants.

Table F-7 summarizes the RPA for each pollutant that was reported in detectable concentrations in the effluent or the receiving water. The MECs, most stringent water quality objectives/water quality criteria (WQO/WQCs), and background concentrations (B) used in the RPA are presented, along with the RPA results (Yes or No and which trigger) for each toxic pollutant analyzed. No other pollutants with applicable, numeric water quality criteria from the NTR, CTR, and the Basin Plan were measured above detectable concentrations during the monitoring events conducted by the Permittee.

Attachment F-1 includes a summary of RPA results for all priority pollutants with water quality criteria/objectives that are applicable to the Humboldt Bay.

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Table F-4. Summary of SIP RPA Results

CTR #	Pollutants	C or Most Stringent WQO/WQC (µg/L)	MEC or Minimum DL (µg/L)[1]	B or Minimum DL (µg/L)	RPA Result[2]
5a	Chromium (III), Total Recoverable	No Criteria	1.21	1.8	No
5b	Chromium (VI), Total Recoverable	50	6.9	<5.0	No
6	Copper, Total Recoverable	3.7	55	3.1	Yes (Trigger 1)
9	Nickel, Total Recoverable	8.0	6.2	2.6	No
13	Zinc, Total Recoverable	86	70	17	No
14	Cyanide, Total (as CN)	1.0	21	<0.9	Yes (Trigger 1)
16	TCDD Equivalents	1.4×10^{-8}	8.55×10^{-6}	--	Yes (Trigger 1)
20	Bromoform	360	0.63	<0.2	No
23	Chlorodibromomethane	34	2	<0.17	No
26	Chloroform	No Criteria	6	<0.19	No
27	Dichlorobromomethane	46	5	<0.16	No

Table Notes:

1. The Maximum Effluent Concentration (MEC) or maximum background concentration (B) is the actual detected concentration unless it is preceded by "<", in which case the value shown is the minimum detection level as the analytical result was reported as not detected (ND).
2. RPA Results:
   = Yes, if MEC > WQO/WQC, or B > WQO/WQC and MEC is detected.
   = No, if MEC and B or < WQO/WQC or all effluent data are undetected.
   = Undetermined (UD).

b. Other Pollutants

i. Ammonia. Untreated domestic wastewater contains ammonia nitrogen. Nitrification is a biological process that converts ammonia to nitrite and nitrate. Denitrification is a process that converts nitrate to nitrogen gas, which is then released to the atmosphere. Inadequate or incomplete nitrification may result in the discharge of ammonia to the receiving water.

Ammonia is known to cause toxicity to aquatic organisms in surface waters. The Basin Plan establishes a narrative water quality objective for toxicity stating that "[a]*ll waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life*." Due to concerns regarding ammonia toxicity, the Regional Water Board relies on U.S. EPA's recommended water quality criteria for ammonia in saltwater from the 1989 *Ambient Water Quality Criteria for Ammonia*, EPA-440/5-88-004 (April 1989) to interpret the Basin Plan's narrative objective for toxicity. The 1989 criteria document includes three tables of recommended criteria for receiving water salinities of 10 g/kg, 20 g/kg, and 30 g/kg. Based on two samples collected from the receiving water in the vicinity of the discharge on December 2, 2013, the receiving water salinity was 31 ppt and 32 ppt (ppt is equivalent to g/kg). Therefore, the table for receiving waters with salinity greater than 30 g/kg was used. The acute and chronic criteria are based on pH and temperature.

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The Permittee did not conduct effluent monitoring for temperature or receiving water monitoring for pH or temperature during the term of Order No. R1-2009-0033. Based on effluent monitoring collected between August 2009 and October 2014, the maximum observed effluent pH was 7.5. Based on receiving water monitoring data collected in the vicinity of the discharge by the National Oceanic and Atmospheric Administration (NOAA) station at North Spit, CA (Station ID 9418767), the maximum daily average temperature was 17°C and the maximum monthly average temperature was 15°C. In the absence of additional receiving water pH or temperature data, the criteria were calculated using a pH of 7.5 and a temperature of 15°C. The resulting acute and chronic criteria are 40 mg/L and 5.6 mg/L, respectively.

The maximum effluent ammonia concentration was 13 mg/L based on 89 samples collected between August 2009 and October 2014. Because ammonia levels in the effluent have been measured at concentrations greater than U.S. EPA's 1989 recommended water quality criteria for saltwater, the Regional Water Board concludes that discharges from the Facility have a reasonable potential to cause or contribute to exceedances of the Basin Plan's narrative water quality criterion for toxicity. Therefore, this Order includes effluent limitations for ammonia for the protection of aquatic life. This Order establishes an average monthly effluent limitations (AMEL) of 4.1 mg/L and maximum daily effluent limitation (MDEL) of 10 mg/L for total ammonia, expressed as N. Calculations of these effluent limitations are included in section IV.C.4 of this Fact Sheet.

ii. Chlorine Residual. The Basin Plan establishes a narrative water quality objective for toxicity, stating that "[a]*ll waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" The Regional Water Board considers any chlorinated discharge as having the reasonable potential to cause or contribute to exceedances of this water quality objective for toxicity, and therefore, this Order establishes effluent limitations for chlorine. U.S. EPA has established the following criteria for chlorine-produced oxidants for protection of saltwater aquatic life in *Quality Criteria for Water 1986* (The Gold Book, 1986, EPA 440/5-86-001).

Chronic Criterion	Acute Criterion
0.0075 mg/L	0.013 mg/L

The water quality criteria for total chlorine residual recommended by U.S. EPA have been translated to an AMEL and MDEL in this Order.

iii. Fecal Coliform Organisms. Order No. R1-2009-0033 specified that the disinfected effluent discharged through Discharge Point 001 shall not contain concentrations of fecal coliform bacteria exceeding the following limitations:

(a) The median concentration shall not exceed a Most Probable Number (MPN) of 14 per 100 mL for a calendar month.

(b) Not more than 10 percent of samples collected in a calendar month shall exceed an MPN of 43 per 100 mL.

Although Order No. R1-2009-0033 specified compliance with the limitation in (b) above using the results of 10 consecutive samples, this Order applies the limitation as a single sample limitation for ease of determining compliance with the limitation.

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These effluent limitations for fecal coliform were first established in WDRs for the Permittee in 1987 (WDR Order No. 87-124) and reflect standards at the time for shellfish growing areas by DDW. The effluent limitations are consistent with the National Shellfish Sanitation Program's Fecal Coliform Standard for Adverse Pollution Conditions in the 2003 *Guide for the Control of Molluscan Shellfish, Model Ordinance for Shellstock Growing Areas* (U. S. Department of Health and Human Services, Public Health Service, Food and Drug Administration).

iv. **pH**. Chapter 3, Table 3-1 of the Basin Plan includes site-specific water quality objectives for pH for Humboldt Bay which specify that the pH shall not be depressed below natural background levels nor raised above 8.5. This Order includes an instantaneous minimum effluent limitation for pH of 6.0 based on secondary treatment requirements at 40 C.F.R. part 133 and an instantaneous maximum effluent limitation for pH of 8.5 based on the site-specific maximum water quality objective for Humboldt Bay established in Chapter 3, Table 3-1 of the Basin Plan. The technology-based maximum requirement prescribed in the secondary treatment standards at 40 C.F.R. part 133 is not sufficient to meet the Basin Plan water quality standard.

v. **Settleable Solids.** Effluent limitations for settleable solids are retained from Order No. R1-2009-0033 and reflect levels of treatment attainable by secondary treatment facilities. This limitation is based on the Basin Plan water quality objective prohibiting bottom deposits for all surface waters of the North Coast Region. Consistent with Order No. R1-2009-0033, this Order applies the effluent limitations for settleable solids at Discharge Point 001.

4. WQBEL Calculations

WQBELs were calculated for constituents with reasonable potential following the SIP procedures, and the most stringent limitations were established as the final effluent limitations in this Order.

Final WQBELs for ammonia, chlorine, copper, cyanide, and TCDD equivalents have been determined using the methods described in Section 1.4 of the SIP.

Step 1: To calculate the effluent limits, an effluent concentration allowance (ECA) is calculated for each pollutant found to have reasonable potential using the following equation, which takes into account dilution and background concentrations:

$ECA = C + D (C - B)$,

Where:

C = the applicable water quality criterion (adjusted for receiving water hardness and expressed as the total recoverable metal, if necessary)

D = dilution credit (here D = 0)

B = background concentration

Here, no credit for dilution is allowed, which results in the ECA being equal to the applicable criterion (ECA = C).

Order No. R1-2009-0033 required the Permittee to perform another effluent discharge study, and the *Effluent Discharge Study for the Elk River Wastewater Treatment Plant* was submitted on January 7, 2014. This new study, as discussed in section II.B of this Fact Sheet, demonstrated that the ebb tide does not convey all of the effluent to the ocean, demonstrating that the discharge and mixing characteristics in the Bay are

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different than at the time of the initial study. Thus the initial study and its findings are not considered representative for purposes of establishing a mixing zone.

Step 2: For each ECA based on an aquatic life criterion/objective (ammonia, chlorine, copper, and cyanide), the long term average discharge condition (LTA) is determined by multiplying the ECA by a factor (multiplier), which adjusts the ECA to account for effluent variability. The multiplier depends on the coefficient of variation (CV) of the data set and whether it is an acute or chronic criterion/objective. Table 1 of the SIP provides pre-calculated values for the multipliers based on the values of the CV. When the data set contains less than 10 sample results, or when 80 percent or more of the data set is reported as non-detect (ND), the CV is set equal to 0.6. Derivation of the multipliers is presented in Section 1.4 of the SIP.

Table F-5. Determination of Long Term Averages

Pollutant	ECA		ECA Multiplier		LTA (µg/L)	
	Acute	Chronic	Acute	Chronic	Acute	Chronic
Ammonia, Total (as N)	40	5.6	0.20	0.37	8.2	2.1
Copper, Total Recoverable	5.8	3.7	0.58	0.75	3.3	2.8
Cyanide, Total (as CN)	1.0	1.0	0.32	0.53	0.32	0.53
Chlorine, Total Residual	0.013	0.0075	0.32	0.53	0.0042	0.0040

Step 3: WQBELs, including an AMEL and MDEL are calculated using the most limiting (lowest) LTA. The LTA is multiplied by a factor that accounts for averaging periods and exceedance frequencies of the effluent limitations, and for the AMEL, the effluent monitoring frequency. Here, the CV is set to 1.0 for ammonia, 0.25 for copper, 0.6 for chlorine, and 0.6 for cyanide, and the sampling frequency is set equal to 4 (n=4) for the acute and chronic criteria. The 99th percentile occurrence probability was used to determine the MDEL multiplier and 95th percentile occurrence probability was used to determine the AMEL multiplier. The MDEL and AMEL multipliers from Table 2 of the SIP are shown in Table F-7. Final WQBELs for ammonia, copper, chlorine, and cyanide are determined as follows.

Table F-6. Determination of Final WQBELs Based on Aquatic Life Criteria

Pollutant	LTA (µg/L)	MDEL Multiplier	AMEL Multiplier	MDEL (µg/L)	AMEL (µg/L)
Ammonia, Total (as N)	2.1	4.9	1.9	10	4.1
Copper, Total Recoverable	2.8	1.7	1.2	4.8	3.4
Cyanide, Total (as CN)	0.32	3.1	1.6	1.0	0.50
Chlorine, Total Residual	0.0040	3.1	1.6	0.012	0.0061

Step 4: When the most stringent water quality criterion/objective is a human health criterion/objective (as for TCDD equivalents), the AMEL is set equal to the ECA. From Table 2 in the SIP, when CV = 0.6 and n = 4, the MDEL multiplier at the 99th percentile occurrence probability equals 3.1, and the AMEL multiplier at the 95th percentile occurrence probability equals 1.6 (for TCDD equivalents). The MDEL for protection of human health is calculated by multiplying the ECA by the ratio of the MDEL multiplier to the AMEL multiplier. Final WQBELs for TCDD equivalents are determined as follows.

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Table F-7. Determination of Final WQBELs Based on Human Health Criteria

Pollutant	ECA (µg/L)	MDEL/AMEL Multiplier	MDEL (µg/L)	AMEL (µg/L)
TCDD Equivalents	1.4×10^{-8}	2.01	2.8×10^{-8}	1.4×10^{-8}

As discussed earlier in this Fact Sheet, RPAs were conducted and effluent limitations were calculated using both the SIP procedures. The table below contains the final summary of WQBELs applicable to this Facility.

Table F-8. Summary of Water Quality Based Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
pH	standard units	--	--	--	--	8.5
Ammonia, Total (as N)	mg/L	4.1	--	10	--	--
Copper, Total Recoverable	µg/L	3.4	--	4.8	--	--
Chlorine, Total Residual	µg/L	0.0061	--	0.012	--	--
Cyanide, Total (as CN)	µg/L	0.50	--	1.0	--	--
TCDD Equivalents	µg/L	1.4×10^{-8}	--	2.8×10^{-8}	--	--
Fecal Coliform Bacteria	MPN/ 100 mL	14[1]		43[2]	--	--

Table Notes:
1. The median value of fecal coliform bacteria shall not exceed 14 MPN/100 mL.
2. No samples shall exceed 43 MPN/100 mL.

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5. Whole Effluent Toxicity (WET)

Monitoring for acute and chronic toxicity protects the receiving water from the aggregate effect of a mixture of pollutants that may be present in effluent. There are two types of WET tests - acute and chronic. An acute toxicity test is conducted over a short time period and measures mortality. A chronic test is conducted over a longer period of time and may measure mortality, reproduction, and/or growth.

WET requirements are derived from the CWA and the Basin Plan. The Basin Plan establishes a narrative water quality objective for toxicity that states "*All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, or aquatic life*." Detrimental responses may include, but are not limited to, decreased growth rate, decreased reproductive success of resident or indicator species, and/or significant alterations in population, community ecology, or receiving water biota. For compliance with the Basin Plan's narrative toxicity objective, this Order requires the Permittee to conduct WET testing for acute and chronic toxicity, as specified in the MRP (Attachment E, section V).

Previous Order No. R1-2009-0033 allowed the Permittee a dilution credit of 30:1 for chronic toxicity. This dilution credit was based on the assumption that all effluent was conveyed to the ocean based on a 1979 effluent discharge study. The Facility demonstrated toxicity above 1TUc but below the previous trigger of 31 TUc. As discussed in section II.B of this Fact Sheet, the new effluent discharge study performed during the term of Order No. R1-2009-0033 demonstrated that all effluent is not conveyed to the ocean and it can be concluded that the area is hydrologically different than it was at the time the previous study was performed. As a result of these new findings, it is uncertain to what extent mixing in the vicinity of the discharge effects the toxicity of the discharge. Due to this uncertainty, no WET effluent limitations are established in this Order. However, acute and chronic WET monitoring will be required as described further below.

a. Acute Aquatic Toxicity

Consistent with Order No. R1-2009-0033, this Order includes effluent monitoring for acute toxicity. The Order implements federal guidelines (Regions 9 and 10 Guidelines for Implementing Whole Effluent Toxicity Testing Programs) by requiring the Permittee to conduct acute toxicity tests on a fish species and on an invertebrate species to determine the most sensitive species. According to the U.S. EPA manual, *Methods for Estimating the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (EPA/600/4-90/-27F), the acceptable vertebrate species for the acute toxicity test is the sheepshead minnow, *Cyprinodon variegatus.* The acceptable invertebrate species for the acute toxicity test is the mysid shrimp, *Mysidopsis bahia.* This Order requires the Permittee to conduct a screening test using a vertebrate and invertebrate species. After the screening test is completed, monitoring can be reduced to the most sensitive species. Attachment E of this Order requires quarterly acute WET monitoring.

b. Chronic Aquatic Toxicity

The SIP requires the use of short-term chronic toxicity tests to determine compliance with the narrative toxicity objectives for aquatic life in the Basin Plan. The SIP requires that the Permittee demonstrate the presence or absence of chronic toxicity using tests on the topsmelt, *Atherinops affinis*, the purple sea urchin, *Strongylocentrotus purpuratus*, the sand dollar, *Dendraster excentricus*, the red abalone, *Haliotis rufescens*, and the giant kelp, *Macrocystis pyrifera*. Attachment E of this Order requires quarterly chronic WET testing to determine compliance with the narrative toxicity objective.

The Permittee conducted quarterly chronic toxicity testing using *M. pyrifera*, *H. rufescens*, and *A. affinis*. The following table summarizes the chronic toxicity testing results from August 2009 through April 2014.

Table F-9. Summary of Chronic Toxicity Results

Date	*Macrocystis pyrifera*		*H rufescens*	*Atherinops affinis*	
	Survival (TUc)	Growth (TUc)	Reproduction (TUc)	Survival (TUc)	Growth (TUc)
8/31/2009	8	10	8	8	8
11/30/2009	8	8	8	8	8
2/8/2010	8	8	--	--	--
5/24/2010	8	8	--	--	--
8/17/2010	8	8	--	--	--
12/7/2010	8	8	--	--	--
1/18/2011	40	8	--	--	--
5/16/2011	8	8	--	--	--
8/29/2011	8	8	--	--	--
11/21/2011	8	8	--	--	--
3/13/2012	8	8	--	--	--
5/21/2012	8	8	--	--	--
8/13/2012	8	8	--	--	--
12/10/2012	10	8	--	--	--
3/7/2013	8	8	--	--	--
4/26/2013	8	8	--	--	--
7/29/2013	8	8	--	--	--
10/16/2013	8	8	--	--	--
2/10/2014	8	8	--	--	--
4/21/2014	8	8	--	--	--

Numeric chronic toxicity effluent limitations have not been included in the Order for consistency with the SIP, which implements narrative toxicity objectives in basin plans and specifies use of a numeric trigger for accelerated monitoring and implementation of a Toxicity Reduction Evaluation (TRE) in the event that persistent toxicity is detected. The SIP contains implementation gaps regarding the appropriate form and implementation of chronic toxicity limits. This has resulted in the petitioning of a NPDES permit in the Los Angeles Region that contained numeric chronic toxicity effluent limitations. To address the petition, the State Water Board adopted WQO 2003-0012 directing its staff to revise the toxicity control provisions in the SIP. The State Water Board states the following in WQO 2003-012, "*In reviewing this petition and receiving comments from numerous interested persons on the propriety of including numeric effluent limitations for chronic toxicity in NPDES permits for publicly-owned treatment works, that discharge to inland waters, we have determined that this issue should be considered in a regulatory setting, in order to allow for full public discussion and deliberation. We intend to modify the SIP to specifically address the issue. We anticipate that review will occur within the next year. We therefore decline to make a determination here regarding the propriety of the final numeric effluent limitations for chronic toxicity contained in these permits*." The process to revise the SIP is underway. Proposed changes include clarifying the appropriate form of effluent toxicity limits in NPDES permits and general expansion and standardization of toxicity control implementation related to the NPDES permitting process. Since the toxicity control provisions in the SIP are under revision, it is infeasible to develop numeric effluent limitations for chronic toxicity at this time. The SIP revision may require a permit modification to incorporate new statewide toxicity criteria established by the upcoming SIP revision.

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This Order includes a reopener that allows the Regional Water Board to reopen the permit and include a numeric acute or chronic toxicity limitation, a revised acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE.

Attachment E, section V.C (MRP) of this Order requires the Permittee to investigate the causes of, and identify and implement corrective actions to reduce or eliminate effluent toxicity. If the discharge demonstrates toxicity exceeding the numeric toxicity monitoring trigger, the Permittee is required to initiate a TRE in accordance with an approved TRE work plan. The numeric toxicity monitoring trigger is not an effluent limitation; it is the toxicity threshold at which the Permittee is required to perform accelerated chronic toxicity monitoring, as well as the threshold to initiate a TRE if a pattern of effluent toxicity has been demonstrated.

c. Test of Significant Toxicity (TST)

Order No. R1-2009-0033 established a numeric chronic toxicity trigger of 31 TUc, using a five-concentration hypothesis test. In 2010, U.S. EPA endorsed the peer-reviewed *Test of Significant Toxicity (TST) two-concentration hypothesis testing approach in National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, 2010) as an improved hypothesis-testing tool to evaluate data from U.S. EPA's toxicity test methods. The TST hypothesis testing approach more reliably identifies toxicity—in relation to the chronic (0.25 or more) mean response of regulatory management concern—than the NOEC hypothesis-testing approach. The TST hypothesis testing approach more reliably identifies toxicity—in relation to the acute (0.20 or more) mean responses of regulatory management concern—than the current approach used to establish effluent limitations for acute toxicity.

Since the TST approach has not previously been applied for determining reasonable potential or establishing effluent limitations for acute toxicity, this Order does not include effluent limitations for acute toxicity based on the TST approach. However, this Order does require the Permittee to monitor and report results in a manner that will allow the Regional Water Board to conduct an RPA in accordance with the TST approach at the time of the next permit renewal.

The State Water Board is developing a toxicity amendment to the Water Quality Control Plan for Enclosed Bays and Estuaries of California that will standardize the regulation of aquatic toxicity for all non-oceanic surface waters. U.S. EPA's TST approach is an essential component of this draft toxicity amendment as it forms the basis for utilizing numeric water quality objectives and acts as the primary means of determining compliance with the proposed effluent limitations.

In a letter dated February 12, 2014, the State Water Board submitted an alternative test procedure (ATP) request to U.S. EPA Region 9 for the statewide use of a two-concentration test design when using the TST approach. This two-concentration test design is composed of a single effluent concentration and a control concentration. U.S. EPA approved the ATP request on March 17, 2014. In June 2014, the approval was challenged in court on procedural grounds under the Administrative Procedure Act by the Southern California Alliance of Publicly Owned Treatment Works (SCAP) and the Central Valley Clean Water Association (CVCWA). The U.S. EPA withdrew the approval and notified State Water Board in a memo dated February 11, 2015.

It is important to note that U.S. EPA's rescission of its approval of the ATP is not based on the substantive TST statistical analysis or the scientific validity of a two-concentration test design. The withdrawal letter also states that currently there is a

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proposed rulemaking to change the language in the ATP regulations at Code of Federal Regulations, title 40, section 136.

The benefits of requiring the TST in new or amended permits include improving the statistical power of the toxicity test, and simplifying the analysis as compared to traditional hypothesis statistical approaches or point estimates. The calculations are straightforward and provide a clear pass/fail result. With the withdrawal of the two-concentration test design approval, an NPDES permit can still require the TST for statistical analyses. Toxicity tests shall be run using a multi-concentration test design in accordance with Code of Federal Regulations, title 40, section 126.3, and the TST shall be utilized with the biological responses from the permitted IWC and the control (effluent concentration of zero). However, even with only two of the five concentration biological responses being used, cost savings in the form of time and effort are still realized for the statistical analysis and data interpretation carried out by the Permittee, lab, and permit manager. This Order requires application of TST for statistical analysis of whole effluent toxicity data.

Test of Significant Toxicity Design

The TST's null hypothesis for chronic toxicity is:

H_0: Mean response (In-stream Waste Concentration (IWC) in % effluent) ≤ 0.75 mean response (control)

Results are analyzed using the TST approach and an acceptable level of chronic toxicity is demonstrated by rejecting the null hypothesis and reporting "Pass" or "P".

The chronic IWC (in % effluent) for Discharge Point 001 is 100%. The chronic toxicity trigger for Discharge Point 001 is expressed as a null hypothesis (H_0) and regulatory management decision (b value) of 0.75 for the chronic toxicity methods in the MRP. The null hypothesis for this discharge is:

H_0: Mean response (100% effluent) ≤ 0.75 mean response (control)

Results shall be analyzed using the TST hypothesis testing approach in section V.B.6.a of the MRP. Compliance with this chronic toxicity limitation is demonstrated by rejecting the null hypothesis and reporting "Pass" or "P".

When the chronic toxicity test results in a "Fail" or "F", the Permittee must initiate accelerated monitoring as specified in the MRP (Attachment E, section V). After accelerated monitoring, if conditions of chronic toxicity are found to persist, the Permittee will be required to conduct a TRE, as described by the MRP.

Notification requirements for chronic WET testing include a 72-hour verbal notification requirement and a 14 day written report requirement, if test results indicate toxicity. The 14 day written notification is established in the U.S. EPA WET Guidance documents cited in the MRP. The 72-hour verbal notification requirement is being added to provide the Regional Water Board with knowledge of the toxicity in advance of the written report. The 72-hour requirement is intended to give the Permittee sufficient time to make a telephone call to Regional Water Board staff and accounts for non-working days (e.g., weekends). Verbal notification of WET test exceedances may be left by voice mail if the Regional Water Board staff person is not immediately available by telephone.

This Order includes a requirement for the Permittee to conduct a screening test using one vertebrate and one invertebrate for acute toxicity and at least one vertebrate,

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invertebrate, and plant species for chronic toxicity. After the screening test is completed, monitoring can be reduced to the most sensitive species.

Acute and/or chronic WET limitations will be established if future monitoring results demonstrate that discharges from the Facility are causing or contributing to acute or chronic toxicity in the receiving water.

D. Final Effluent Limitation Considerations

1. Anti-Backsliding Requirements

Sections 402(o) and 303(d)(4) of the CWA and federal regulations at 40 C.F.R. 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. All effluent limitations in this Order are at least as stringent as the effluent limitations in Order No. R1-2009-0033 with the exception of oil and grease and mass-based effluent limitations for copper, ammonia, cyanide, and chlorine residual.

Order No. R1-2009-0033 contained an effluent limitation of 75 mg/L for oil and grease based on Table 2 of the Ocean Plan. Monitoring results reported for oil and grease during the term of Order No. R1-2009-0033 indicated < 5 mg/L for all samples analyzed. In addition, based upon findings from the Effluent Discharge Study, discharges from the Facility are to Humboldt Bay, not the Pacific Ocean and therefore this Order implements requirements of the SIP, which does not require limits for oil and grease, not requirements of the Ocean Plan. Facility specific criteria satisfies the anti-backsliding exceptions at both section 122.44 (l)(i)(A) and section 122.44 (l)(i)(B)(1). Section 122.44 (l)(i)(A) allows a permit to contain less stringent effluent limitations when material and substantial alterations or additions to the permitted facility occurred after permit issuance that justify the application of a less stringent effluent limitation. Section 122.44 (l)(i)(B)(1) allows a permit to contain less stringent effluent limitations when information is available that was not available at the time of permit issuance and that information would have justified the application of a less stringent effluent limitation at the time of permit issuance.

Order No. R1-2009-0033 established final mass-based effluent limitations for copper, ammonia, cyanide, and chlorine residual. 40 CFR 122.45(f)(1)(ii) states that mass limitations are not required when applicable standards and limitations are expressed in terms of other units of measurement. The numerical effluent limitations for these pollutants established in this Order are based on the effluent limitations required by the CTR, which are expressed in terms of concentration. Pursuant to 40 CFR 122.45(f)(1)(ii), expressing the effluent limitations in terms of concentration is in accordance with federal regulations.

2. Antidegradation Policies

This Order is consistent with applicable federal and State antidegradation policies, as it does not authorize the discharge of increased concentrations of pollutants or increased volumes of treated wastewater beyond that which was permitted to discharge in accordance with Order No. R1-2009-0033.

3. Stringency of Requirements for Individual Pollutants

This Order contains both technology-based effluent limitations and WQBELs for individual pollutants. The technology-based effluent limitations consist of restrictions on BOD_5, pH, settleable solids, TSS, and turbidity. Restrictions on these pollutants are discussed in section IV.B of this Fact Sheet. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements. In addition, this Order contains effluent limitations for ammonia, chlorine residual, copper, cyanide, fecal coliform

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bacteria, pH, and TCDD equivalents that are more stringent than the minimum, federal technology-based requirements but are necessary to meet water quality standards. These requirements are discussed in section IV.C.3 of the Fact Sheet.

WQBELs 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. Most beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by U.S. EPA prior to May 30, 2000. Any water quality objectives and beneficial uses submitted to U.S. EPA prior to May 30, 2000, but not approved by U.S. EPA before that date, are nonetheless "*applicable water quality standards for purposes of the CWA*" pursuant to 40 C.F.R. 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.

The Regional Water Board has considered the factors in Water Code section 13263, including the provisions of Water Code section 13241, in establishing these requirements.

Table F-16 summarizes all final effluent limitations included in the Order and the basis for their inclusion.

Table F-10. Summary of Final Effluent Limitations

Parameter	Units	Effluent Limitations					Basis[1]
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Biochemical Oxygen Demand 5-day @ 20°C (BOD_5)	mg/L	30	45	60	--	--	CFR
	lbs/day[2]	2,151	3227	4,303	--	--	
	% Removal	85	--	--	--	--	
Total Suspended Solids (TSS)	mg/L	30	45	60	--	--	CFR
	lbs/day[2]	2,151	3227	4,303	--	--	
	% Removal	85	--	--	--	--	
Settleable Solids	mL/L	0.1	--	0.2	--	--	PO
Turbidity	NTU	75	100	--	--	225	PO
pH	s.u.	--	--	--	6.0	8.5	CFR, BP
Chlorine, Total Residual	µg/L	0.0061	--	0.012	--	--	NAWQC
Ammonia, Total (as N)	mg/L	4.1	--	10	--	--	NAWQC
Copper, Total Recoverable	µg/L	3.4	--	4.8	--	--	CTR
Cyanide, Total (as CN)	µg/L	0.50	--	1.0	--	--	CTR
TCDD Equivalents	µg/L	1.4×10^{-8}	--	2.8×10^{-8}	--	--	CTR
Fecal Coliform Bacteria	MPN/ 100 mL	14[3]	--	--	--	43[4]	Title 22

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Parameter	Units	Effluent Limitations					Basis[1]
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	

Table Notes:

1. Definitions of acronyms in Table F-16:
   CFR 40 C.F.R. part 133
   BP Basin Plan
   PO Previous Order No. R1-2009-0033
   CTR California Toxics Rule
   NAWQC U.S. EPA National Ambient Water Quality Criteria
   Title 22 California Code of Regulations, title 22, division 4, chapter 3, section 60301.225
2. Mass-based effluent limitations are based on the peak dry weather design flow of 8.6 mgd.
3. The median value of fecal coliform bacteria shall not exceed a Most Probable Number (MPN) of 14 per 100 milliliters (mL), in a calendar month.
4. This Order applies the limitation as a single sample limitation for ease of determining compliance with the limitation.

E. Interim Effluent Limitations – Not Applicable

This Order does not establish interim effluent limitations or schedules for compliance with final limitations.

F. Land Discharge Specifications – Not Applicable

This Order does not authorize discharges to land.

G. Recycling Specifications – Not Applicable

This Order does not authorize water recycling discharges.

H. Other Requirements

1. This Order requires the Permittee to begin discharge 45 minutes before slack tide. This requirement has been added because the Permittee's Effluent Discharge Study determined that this was the optimal timing to maximize the volume of effluent that is conveyed to the Pacific Ocean. Given the current circumstances of the discharge, discharging under this scenario provides the greatest level of consistency with the State Board, Water Quality Control Policy for the Enclosed Bays and Estuaries of California (1974, 1995) and the intent of State Water Board Resolution 80-87 which requires that all effluent be discharged to the Pacific Ocean.

2. This Order contains discharge specifications for total chlorine residual that apply to treated wastewater discharged from the effluent storage pond to the Overflow Marsh. In accordance with this provision, discharges of treated wastewater to the Overflow Marsh must have no detectable chlorine residual. Compliance with this discharge specification shall be determined using a total chlorine detection method with a minimum detection level of 0.01 mg/L. This provision is consistent with the effluent daily maximum effluent limit of 0.01 mg/L for total chlorine residual contained in all previous Orders for discharges to the Wildlife Management Area. The purpose of the limitation was to ensure that the treated wastewater discharged to the Wildlife Management Area for the purpose of enhancing wetland and riparian habitat and for temporary storage of treated effluent would not contain concentrations of residual chlorine that could impair the function of the Wildlife Management Area.

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V. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Surface Water

CWA section 303(a-c) requires states to adopt water quality standards, including criteria where they are necessary to protect beneficial uses. The Regional Water Board adopted water quality criteria as water quality objectives in the Basin Plan.

The Basin Plan states that *"[t]he numerical and narrative water quality objectives define the least stringent standards that the Regional [Water] Board will apply to regional waters in order to protect the beneficial uses*." The Basin Plan includes numeric and narrative water quality objectives for various beneficial uses and water bodies. This Order contains Receiving Surface Water Limitations based on the Basin Plan numerical and narrative water quality objectives for biostimulatory substances, bacteria, chemical constituents, color, dissolved oxygen, floating material, oil and grease, pH, pesticides, radioactivity, sediment, settleable material, suspended material, tastes and odors, temperature, toxicity, and turbidity. Chemical and biological survey data are necessary to ensure compliance with Basin Plan objectives.

B. Groundwater

1. The beneficial uses of the underlying ground water are municipal and domestic supply, industrial service supply, industrial process supply, agricultural supply, and freshwater replenishment to surface waters.
2. Groundwater limitations are required to protect the beneficial uses of the underlying groundwater.
3. Discharges from the Facility shall not cause exceedance of applicable water quality objectives or create adverse impacts to beneficial uses of groundwater.
4. The Basin Plan requires that waters designated for use as MUN shall not contain concentrations of chemical constituents in excess of the limits specified in CCR, title 22, division 4, chapter 15, article 4.1, section 64435, and article 5.5, section 64444.

VI. RATIONALE FOR PROVISIONS

A. Standard Provisions

1. Federal Standard Provisions

Standard Provisions, which apply to all NPDES permits in accordance with 40 C.F.R. section 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 C.F.R. section 122.42, are provided in Attachment D to the Order. The Permittee must comply with all standard provisions and with those additional conditions that are applicable under 40 C.F.R. section 122.42. The rational for the special conditions contained in the Order is provided in section VI.B, below.

Sections 122.41(a)(1) and (b) through (n) of 40 C.F.R. establish conditions that apply to all state-issued NPDES permits. These conditions must be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the Order. Section 123.25(a)(12) allows the state to omit or modify conditions to impose more stringent requirements. In accordance with 40 C.F.R. section 123.25, this Order omits federal conditions that address enforcement authority specified in 40 C.F.R. 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).

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2. Regional Water Board Standard Provisions

In addition to the Federal Standard Provisions (Attachment D), the Permittee shall comply with the Regional Water Board Standard Provisions provided in Standard Provisions VI.A.2 of the Order.

a. Order Provision VI.A.2.a identifies the state's enforcement authority under the Water Code, which is more stringent than the enforcement authority specified in the federal regulations (e.g., 40 C.F.R. sections 122.41(j)(5) and (k)(2)).

b. Order Provision VI.A.2.b requires the Permittee to notify Regional Water Board staff, orally and in writing, in the event that the Permittee does not comply or will be unable to comply with any Order requirement. This provision requires the Permittee to make direct contact with a Regional Water Board staff person.

B. Special Provisions

1. Reopener Provisions

a. Standard Revisions (Special Provision VI.C.1.a). Conditions that necessitate a major modification of a permit are described in 40 C.F.R. section 122.62, which include the following:

i. When standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision. Therefore, if revisions of applicable water quality standards are promulgated or approved pursuant to Section 303 of the CWA or amendments thereto, the Regional Water Board will revise and modify this Order in accordance with such revised standards.

ii. When new information that was not available at the time of permit issuance would have justified different permit conditions at the time of issuance.

b. Reasonable Potential (Special Provision VI.C.1.b). This provision allows the Regional Water Board to modify, or revoke and reissue, this Order if present or future investigations demonstrate that the Permittee governed by this Permit is causing or contributing to excursions above any applicable priority pollutant criterion or objective, or adversely impacting water quality and/or the beneficial uses of receiving waters.

c. Whole Effluent Toxicity (Special Provision VI.C.1.c). This Order requires the Permittee to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity through a TRE. This Order may be reopened to include a new chronic toxicity limitation, acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE.

d. 303(d)-Listed Pollutants (Special Provision VI.C.1.d). This provision allows the Regional Water Board to reopen this Order to modify existing effluent limitations or add effluent limitations for pollutants that are the subject of any future TMDL action.

e. Water Effects Ratios (WERs) and Metal Translators (Special Provision VI.C.1.e). This provision allows the Regional Water Board to reopen this Order if future studies undertaken by the Permittee provide new information and justification for applying a water effects ratio or metal translator to a water quality objective for one or more priority pollutants.

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f. **Mixing Zone Study (Special Provision VI.C.1.f).** This provision allows the Regional Water Board to reopen this Order if a future mixing zone study undertaken by the Permittee provides new information and justification for granting a mixing zone to the Facility.

2. **Special Studies and Additional Monitoring Requirements**

a. **Outfall Inspection (Special Provision VI.C.2.a).** This Order requires the Permittee to visually inspect the outfall structure, including the diffuser ports, to verify operational status of the outfall at least once during the 5-year term of this Order.

b. **Biosolids Use or Disposal Plan (Special Provision VI.C.2.b).** During an inspection of the Facility in September 2013, Regional Water Board staff noted that the sludge lagoons appeared to be filled beyond their design capacity. In order to ensure compliance with the sludge disposal and handling requirements in Special Provision VI.C.5.c of this Order, this Order requires the Permittee to submit a Biosolids Use or Disposal Plan within 180 days of the permit effective date.

c. **Local Limits Study (Special Provision VI.C.2.c).** As discussed further in section VI.B.5.b of this Fact Sheet, this Order requires the Permittee to develop a pretreatment program that conforms to federal regulations. Thus, in order to prevent interference with the POTW or pass through of pollutants to the receiving water, this Order requires the Permittee to conduct a local limits study and review and update, if necessary, their sewer use ordinances.

d. **Updated Sewer Use Ordinance(Special Provision VI.C.2.d).** This Order requires the Permittee to evaluate the effectiveness of sewer use ordinances and update requirements as necessary to ensure the ordinnances are applicable and enforceable thereby preventing interference with the POTW or pass through of pollutants to the receiving water.

e. **Dilution Credit Evaluation (Special Provision VI.C.2.e).** The Ocean Plan RPA and WQBEL calculations in Order No. R1-2009-0033 were based on a calculated initial dilution of 30:1. As described in the *Effluent Discharge Study for the Elk River Wastewater Treatment Plant* submitted by the Permittee on January 7, 2014, the ebb tide does not convey all of the effluent to the ocean. the initial dilution credit of 30:1 in not appropriate for use in performing an RPA in as this Order does not implement the Ocean Plan.

3. **Best Management Practices and Pollution Prevention**

a. **Pollutant Minimization Program (Special Provision VI.C.3.a).** This provision is included in this Order pursuant to section 2.4.5 of the SIP. The Regional Water Board includes standard provisions in all NPDES permits requiring development of a Pollutant Minimization Program when there is evidence that a toxic pollutant is present in the effluent at a concentration greater than an applicable effluent limitation.

4. **Construction, Operation, and Maintenance Specifications**

a. **Operation and Maintenance (Special Provisions VI.C.4.a and b).** 40 C.F.R. section 122.41(e) requires proper operation and maintenance of permitted wastewater systems and related facilities to achieve compliance with permit conditions. An up-to-date operation and maintenance manual, as required by Provision VI.C.4.b of this Order, is an integral part of a well-operated and maintained facility.

b. **Septage Handling Requirements (Special Provision VI.C.4.c).** The Permittee currently accepts and treats septage at the Facility. Domestic septage is defined as the

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liquid or solid material removed from a septic tank, cesspool, portable toilet, type III marine sanitation device, recreational vehicle's sanitation tank, or similar storage or treatment works that receives only domestic septage. Septage is characterized by high organic strength, high solids content, high odor potential, high vector attraction potential, and high potential to pollute groundwater. Septage may be 6 to 80 times more concentrated than typical municipal wastewater and may also contain heavy metals and illicitly dumped hazardous materials. Septage has the potential to upset treatment plant operations or process performance or both if the plant is not designed to handle septage. Some of the impacts of septage addition to WWTFs include: potential toxic shock to biological processes; increased odor emissions; increased volume of grit, scum, screenings, and sludge; increased organic loading to biological processes; and increased housekeeping requirements. This Order requires the Permittee to manage septage accepted at the Facility in a manner that ensures that pollutants associated with domestic septage do not pass through or interfere with the operation or performance of the Facility.

5. Special Provisions for Municipal Facilities (POTWs Only)

a. Wastewater Collection Systems

i. Statewide General WDRs for Sanitary Sewer Systems. On May 2, 2006, the State Water Board adopted General Waste Discharge Requirements for Sanitary Sewer Systems, Water Quality Order No. 2006-0003-DWQ (General Order). The General Order requires public agencies that own or operate sanitary sewer systems with greater than 1 mile of pipes or sewer lines to enroll for coverage under the General Order. The General Order requires agencies to develop sanitary sewer management plans (SSMPs) and report all SSOs, among other requirements and prohibitions. The Permittee has enrolled under the General Order as required.

On February 20, 2008, the State Water Board adopted Order No. WQ 2008-0002-EXEC Adopting Amended Monitoring and Reporting Requirements for Statewide General Waste Discharge Requirements for Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, to ensure adequate and timely notifications are made to the Regional Water Board and appropriate local, state, and federal authorities in case of sewage spills. On August 6, 2013, the State Water Board adopted Order No. WQ 2013-0058-EXEC Amending Monitoring and Reporting Program for Statewide General Waste Discharge Requirements for Sanitary Sewer Systems. Order No. WQ 2013-0058-EXEC addressing compliance and enforceability of the Monitoring and Reporting Program and superseding the amendments in Order No. WQ-2008-0002-EXEC. Notification and reporting of SSOs is conducted in accordance with the requirements of Order Nos. 2006-0003-DWQ and WQ 2013-0058-EXEC, and any revisions thereto for operation of its wastewater collection system.

b. Pretreatment of Industrial Waste (Provisions VI.C.5.b). Section 402(b)(8) of the CWA requires that POTWs receiving pollutants from significant industrial sources subject to section 307(b) standards establish an industrial pretreatment program to ensure compliance with these standards. The implementing regulations at 403.8(a) state, "*any POTW (or combination of POTWs operated by the same authority) with a total design flow greater than 5 million gallons per day (mgd) and receiving from industrial users pollutants which pass through or interfere with the operation of the POTW or are otherwise subject to pretreatment standards will be required to establish a POTW pretreatment program unless the NPDES State exercises its option to assume local responsibilities as provided in 403.10(e)*." The Facility receives industrial wastewater

from two non-categorical significant industrial users and has a design treatment capacity greater than 5 mgd (peak dry weather treatment capacity of 8.6 mgd), therefore, the Facility is subject to pretreatment standards as described in section 307(b) of the CWA and section 403.8(a).

c. **Sludge Disposal and Handling Requirements (Provision VI.C.5.c)**. The disposal or reuse of wastewater treatment screenings, sludges, or other solids removed from the liquid waste stream is regulated by 40 C.F.R. parts 257, 258, 501, and 503, and the State Water Board promulgated provisions of title 27 of the CCR. Solids are treated by anaerobic digestion and are stored in two facultative sludge lagoons. In the summer, the Facility dredges sludge from the lagoons and land-applies it on a 98-acre parcel of land they own.

   This provision also requires the Permittee to comply with the state's regulations relating to the discharge of biosolids to the land. The discharge of biosolids through land application is not currently regulated under this Order. The Permittee is required to either submit a ROWD or dispose of biosolids at another permitted facility.

d. **Operator Certification (Provisions VI.C.5.d)**. This provision requires the Facility to be operated by supervisors and operators who are certified as required by title 23, section 3680 of the CCR.

e. **Adequate Capacity (Provisions VI.C.5.e)**. The goal of this provision is to ensure appropriate and timely planning by the Permittee to ensure adequate capacity for the protection of public health and water quality.

6. Other Special Provisions

a. **Stormwater (Special Provision VI.C.6.a)**. This provision requires the Permittee, if applicable, to obtain coverage under the State Water Board's Water Quality Order No. 2014-0057-DWQ, NPDES General Permit No. CAS000001, General Permit for Storm Water Discharges Associated with Industrial Activities (or subsequent renewed versions of the NPDES General Permit CAS000001). Currently, the Facility is exempted from these requirements because all storm water is captured and treated and/or disposed of within the Facility's NPDES permitted process wastewater.

7. Compliance Schedules – Not Applicable

This Order does not establish interim effluent limitations or schedules of compliance for final numeric effluent limitations.

VII. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

Section 122.48 of 40 C.F.R. requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code section 13383 authorizes the Regional Water Board to require technical and monitoring reports. The MRP, Attachment E, establishes monitoring and reporting requirements that implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the MRP for this Facility.

A. Influent Monitoring

Influent monitoring requirements for flow, BOD_5, and TSS are retained from Order No. R1-2009-0033 and are necessary to determine compliance with the Order's 85 percent removal requirement for these parameters.

B. Effluent Monitoring

1. Effluent monitoring requirements are necessary to determine compliance with prohibitions and/or effluent limitations established by the Order. Monitoring at Monitoring Location

EFF-001 is necessary to demonstrate compliance with effluent limitations and demonstrate whether or not the discharge poses reasonable potential for a pollutant to exceed any numeric or narrative water quality objectives.

a. Effluent monitoring frequencies and sample types for flow, BOD_5, TSS, settleable solids, fecal coliform bacteria, chlorine residual, pH, turbidity, cyanide, copper, and ammonia have been retained from Order No. R1-2009-0033.

b. In accordance with Section 1.3 of the SIP, periodic monitoring for priority pollutants for which criteria or objectives apply and for which no effluent limitations have been established is required. Therefore, this Order establishes monitoring requirements for priority pollutants annually to generate adequate data to perform an RPA.

c. Monitoring data collected over the term of Order No. R1-2009-0033 demonstrated that the discharge exhibits reasonable potential to cause or contribute to an exceedance of water quality criteria for TCDD-equivalents and this Order establishes new effluent limitations for TCDD-equivalents to determine compliance with the applicable effluent limitations.

d. Effluent monitoring requirements for temperature have been established, concurrent with monthly monitoring for ammonia, to properly adjust the pH- and temperature-dependent criteria for ammonia.

e. Monitoring requirements for blending events have not been retained from Order No. R1-2009-0033 because this Order prohibits blending.

C. Whole Effluent Toxicity Testing Requirements

Whole effluent toxicity (WET) monitoring requirements are retained from Order No. R1-2009-0033 for acute and chronic toxicity and are included in this Order to protect the receiving water quality from the aggregate effect of a mixture of pollutants in the effluent. Acute toxicity testing measures mortality in 100 percent effluent over a short test period and chronic toxicity testing is conducted over a longer time period and may measure mortality, reproduction, and/or growth.

In addition to routine toxicity monitoring, this Order requires the Permittee to maintain and update their TRE Work Plan, in accordance with appropriate U.S. EPA guidance to ensure that the Permittee has a plan to immediately move forward with the initial tiers of a TRE in the event effluent toxicity is encountered in the future. The TRE is initiated by evidence of a pattern of toxicity demonstrated through the additional effluent monitoring provided as a result of an accelerated monitoring program.

D. Receiving Water Monitoring

1. Receiving water monitoring requirements have been established in this Order to better characterize the receiving water. The Permittee will propose locations for two (2) receiving water monitoring locations within 90 days of the adoption of this permit that will accurately characterize the impact of the discharge on the receiving water for approval by the Executive Officer. Should the Permittee choose to do so, and after they receive approval from the Executive Officer, they may propose and participate in group monitoring of the receiving water with other Permittee's discharging to Humboldt Bay.

E. Other Monitoring Requirements

1. Disinfection System Monitoring (Monitoring Location INT-001)

During periods when high influent flow exceeds the hydraulic capacity of the Facility, excess flow from the effluent holding pond can be directed to a 13-acre freshwater holding marsh (Overflow Marsh) and pumped back to the effluent storage pond once flows subside.

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Although the Overflow Marsh is a component of the Facility, monitoring of treated wastewater from the effluent storage pond to the Overflow Marsh is required to ensure that the discharge does not contain concentrations of residual chlorine that could impair the biological function of the marsh, which provides beneficial wildlife habitat. The requirement that the discharge to this area contains no detectable level of chlorine, using a minimum detection limit of 0.01 mg/L, is retained from Order No. R1-2009-0033.

2. **Septage Station Monitoring.** The Permittee currently accepts and treats septage at the Facility. This Order establishes monitoring requirements to characterize discharges of septage into the treatment system and to ensure that pollutants associated with domestic septage do not pass through or interfere with the operation or performance of the Facility.

3. **Sludge Monitoring.** New sludge monitoring requirements at Monitoring Location BIO-001 serve as a basis for the Permittee to develop the Sludge Handling and Disposal report that is required as part of the Annual Report pursuant to section X.D.3.g of the MRP.

F. Reporting Requirements

The reporting frequency has been changed from monthly to quarterly for routine influent and effluent monitoring. The Permittee is still required to perform monitoring at the frequencies specified in the MRP, but will submit monitoring reports quarterly. The reduced reporting frequency is intended to improve reporting efficiency. Although Regional Water Board staff will receive monitoring reports less frequently, the Order retains the requirement for the Permittee to notify Regional Water Board staff within 24-hours of any non-compliance issues that may result in a significant threat to human health or the environment.

VIII. PUBLIC PARTICIPATION

The California Regional Water Quality Control Board, North Coast Region (Regional Water Board) has considered the issuance of waste discharge requirements (WDRs) that will serve as a National Pollutant Discharge Elimination System (NPDES) permit for the City of Eureka, Elk River Wastewater Treatment Plant. As a step in the WDR adoption process, the Regional Water Board staff has developed tentative WDRs and has encouraged public participation in the WDR adoption process.

A. Notification of Interested Parties

The Regional Water Board notified the Permittee and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and provided an opportunity to submit written comments and recommendations. Notification was provided through the following posting on the Regional Water Board's Internet site at: http://www.waterboards.ca.gov/northcoast/public_notices/public_hearings/npdes_permits_and_wdrs.shtml and through publication in the Eureka Times Standard on **March 2, 2016.**

B. Written Comments

Interested persons were invited to submit written comments concerning these tentative WDRs as provided through the notification process. Comments were due to the Regional Water Board Executive Office electronically via email to NorthCoast@waterboards.ca.gov or on disk (CD or DVD) in Portable Document Format (PDF) file in lieu of paper-sourced documents. The guidelines for electronic submittal of documents can be found on the Regional Water Board website at http://www.waterboards.ca.gov/northcoast.

To be fully responded to by staff and considered by the Regional Water Board, the written comments were due at the Regional Water Board office by 5:00 p.m. on **April 4, 2016**.

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C. Public Hearing

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

Date:	June 16, 2016
Time:	8:30 a.m. or as announced in the Regional Water Board's agenda
Location:	Regional Water Board Hearing Room 5550 Skylane Boulevard, Suite A Santa Rosa, CA 95403

Interested persons were invited to attend. At the public hearing, the Regional Water Board will hear testimony pertinent to the discharge, WDRs, and permit. For accuracy of the record, important testimony was requested in writing.

Please be aware that dates and venues may change. Our Web address is http://www.waterboards.ca.gov/northcoast where you can access the current agenda for changes in dates and locations.

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 received by the State Water Board at the following address within 30 calendar days of the Regional Water Board's action:

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

For instruction on how to file a petition for review see http://www.waterboards.ca.gov/public_notices/petitions/water_quality/wqpetition_instr.shtml.

E. Information and Copying

The Report of Waste Discharge (ROWD), related documents, tentative effluent limitations and special provisions, comments received, and other information are on file and may be inspected at the address identified in section VIII.C 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 (707) 576-2220.

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 Lisa Bernard at Lisa.Bernard@waterboards.ca.gov or (707) 576-2677.

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Attachment F-1 – City of Eureka Wastewater Treatment Plant SIP RPA Summary

Constituent	Units	Qualifier	MEC	Qualifier	B	C	CMC	CCC	Water & Org	Org. Only	MCL	Reasonable Potential
Antimony	µg/L	<	1.0	--	0.24	4,300	--	--	--	--	--	No
Arsenic	µg/L	<	1.0	--	5.1	36	69	36	--	--	--	No
Beryllium	µg/L	<	0.20	<	0.10	No Criteria	--	--	--	--	--	No
Cadmium	µg/L	<	1.0	<	0.10	9.4	42.25	9.36	--	--	--	No
Chromium (III)	µg/L	--	1.2	--	1.8	No Criteria	--	--	--	--	--	No
Chromium (VI)	µg/L	--	6.9	<	5.0	50	1,107	50.4	--	--	--	No
Copper	µg/L	--	55	--	3.1	3.7	5.78	3.73	--	--	--	Yes
Lead	µg/L	<	1.0	--	0.28	8.5	221	8.52	--	--	--	No
Mercury	µg/L	<	0.02	--	0.0011	0.051	--	--	--	0.051	--	No
Nickel	µg/L	--	6.2	--	2.6	8	75	8.3	--	4,600	--	No
Selenium	µg/L	<	1.0	--	3.1	71.1	291	71	--	--	--	No
Silver	µg/L	<	1.0	<	0.04	2.2	2.24	--	--	--	--	No
Thallium	µg/L	<	1.0	<	0.10	6.3	--	--	--	6.3	--	No
Zinc	µg/L	--	70	--	17	86	95	85.6	--	--	--	No
Cyanide	µg/L	--	21	<	0.90	1.0	1.0	1.0	--	220,000	--	Yes
Asbestos	MFL	--	--	--	--	No Criteria	--	--	--	--	--	No
2,3,7,8 TCDD	µg/L	<	0.000001	--	--	$1.4x10^{-8}$	--	--	--	$1.4x10^{-8}$	--	No
Acrolein	µg/L	<	0.40	<	1.7	780	--	--	--	780	--	No
Acrylonitrile	µg/L	<	1.0	<	1.0	0.66	--	--	--	0.66	--	No
Benzene	µg/L	<	0.10	<	0.18	71	--	--	--	71	--	No
Bromoform	µg/L	--	0.63	<	0.2	360	--	--	--	360	--	No
Carbon Tetrachloride	µg/L	<	0.10	<	0.16	4.4	--	--	--	4.4	--	No
Chlorobenzene	µg/L	<	0.10	<	0.18	21,000	--	--	--	21,000	--	No
Chlorodibromomethane	µg/L	--	2.0	<	0.17	34	--	--	--	34	--	No
Chloroethane	µg/L	<	0.50	<	0.38	No Criteria	--	--	--	----	--	No
2-Chloroethylvinyl ether	µg/L	--	--	<	0.28	No Criteria	--	--	--	----	--	No
Chloroform	µg/L	--	6.0	<	0.19	No Criteria	--	--	--	----	--	No
Dichlorobromomethane	µg/L	--	5.0	<	0.16	46	--	--	--	46	--	No
1,1-Dichloroethane	µg/L	<	0.50	<	0.19	No Criteria	--	--	--	--	--	No
1,2-Dichloroethane	µg/L	<	0.10	<	0.18	99	--	--	--	99	--	No
1,1-Dichloroethylene	µg/L	<	0.10	<	0.21	3.2	--	--	--	3.2	--	No
1,2-Dichloropropane	µg/L	<	0.50	<	0.18	39	--	--	--	39	--	No
1,3-Dichloropropylene	µg/L	<	1.0	<	0.16	1,700	--	--	--	1,700	--	No
Ethylbenzene	µg/L	<	0.10	<	0.26	29,000	--	--	--	29,000	--	No
Methyl Bromide	µg/L	<	0.50	<	0.17	4,000	--	--	--	4,000	--	No
Methyl Chloride	µg/L	<	0.50	<	0.23	No Criteria	--	--	--	--	--	No

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Constituent	Units	Qualifier	MEC	Qualifier	B	C	CMC	CCC	Water & Org	Org. Only	MCL	Reasonable Potential
Methylene Chloride	µg/L	<	0.10	<	0.30	16,000	--	--	--	16,000	--	No
1,1,2,2-Tetrachloroethane	µg/L	<	0.10	<	0.20	11	--	--	--	11	--	No
Tetrachloroethylene	µg/L	<	0.10	<	0.19	8,085	--	--	--	8,085	--	No
Toluene	µg/L	<	0.10	<	0.19	200,000	--	--	--	200,000	--	No
1,2-Trans-Dichloroethylene	µg/L	--	--	--	--	140,000	--	--	--	140,000	--	No
1,1,1-Trichloroethane	µg/L	<	0.10	<	0.19	No Criteria	--	--	--	--	--	No
1,1,2-Trichloroethane	µg/L	<	0.10	<	0.16	42	--	--	--	42	--	No
Trichloroethylene	µg/L	<	0.10	<	0.20	81	--	--	--	81	--	No
Vinyl Chloride	µg/L	<	0.10	<	0.25	525	--	--	--	525	--	No
2-Chlorophenol	µg/L	<	9.8	--	--	400	--	--	--	400	--	No
2,4-Dichlorophenol	µg/L	<	9.8	<	0.99	790	--	--	--	790	--	No
2,4-Dimethylphenol	µg/L	<	9.8	<	0.90	2,300	--	--	--	2,300	--	No
2-Methyl- 4,6-Dinitrophenol	µg/L	<	10	<	0.91	765	--	--	--	765	--	No
2,4-Dinitrophenol	µg/L	<	10	<	1.0	14,000	--	--	--	14,000	--	No
2-Nitrophenol	µg/L	<	9.8	<	0.89	No Criteria	--	--	--	--	--	No
4-Nitrophenol	µg/L	<	10	<	0.83	No Criteria	--	--	--	--	--	No
3-Methyl 4-Chlorophenol	µg/L	<	9.8	<	0.91	No Criteria	--	--	--	--	--	No
Pentachlorophenol	µg/L	<	10	<	1.0	7.9	13	7.9	--	8.2	--	No
Phenol	µg/L	<	0.10	<	0.69	4,600,000	--	--	--	4,600,000	--	No
2,4,6-Trichlorophenol	µg/L	<	2.0	<	0.97	6.5	--	--	--	6.5	--	No
Acenaphthene	µg/L	<	9.8	<	0.03	2,700	--	--	--	2,700	--	No
Acenaphthylene	µg/L	<	9.8	<	0.03	No Criteria	--	--	--	--	--	No
Anthracene	µg/L	<	9,8	<	0.03	110,000	--	--	--	110,000	--	No
Benzidine	µg/L	<	10	<	5	0.00054	--	--	--	0.00054	--	No
Benzo(a)Anthracene	µg/L	<	9.8	<	0.03	0.049	--	--	--	0.049	--	No
Benzo(a)Pyrene	µg/L	<	9.8	<	0.03	0.049	--	--	--	0.049	--	No
Benzo(b)Fluoranthene	µg/L	<	9.8	<	0.03	0.049	--	--	--	0.049	--	No
Benzo(ghi)Perylene	µg/L	<	9.8	<	0.03	No Criteria	--	--	--	--	--	No
Benzo(k)Fluoranthene	µg/L	<	9.8	<	0.03	0.049	--	--	--	0.049	--	No
Bis(2-Chloroethoxy)Methane	µg/L	<	2.0	<	0.93	No Criteria	--	--	--	--	--	No
Bis(2-Chloroethyl)Ether	µg/L	<	5.0	<	0.95	1.4	--	--	--	1.4	--	No

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Constituent	Units	Qualifier	MEC	Qualifier	B	C	CMC	CCC	Water & Org	Org. Only	MCL	Reasonable Potential
Bis(2-Chloroisopropyl)Ether	µg/L	<	2.0	<	0.80	170,000	--	--	--	170,000	--	No
Bis(2-Ethylhexyl)Phthalate	µg/L	<	2.0	<	1.0	5.9	--	--	--	5.9	--	No
4-Bromophenyl Phenyl Ether	µg/L	<	9.8	<	0.97	No Criteria	--	--	--	--	--	No
Butylbenzyl Phthalate	µg/L	<	9.8	<	0.98	5,200	--	--	--	5,200	--	No
2-Chloronaphthalene	µg/L	<	9.8	<	0.98	4,300	--	--	--	4,300	--	No
4-Chlorophenyl Phenyl Ether	µg/L	<	9.8	<	0.99	No Criteria	--	--	--	--	--	No
Chrysene	µg/L	<	9.8	<	0.030	0.049	--	--	--	0.049	--	No
Dibenzo(a,h)Anthracene	µg/L	<	9.8	<	0.030	0.049	--	--	--	0.049	--	No
1,2-Dichlorobenzene	µg/L	<	0.5	<	0.27	17,000	--	--	--	17,000	--	No
1,3-Dichlorobenzene	µg/L	<	0.5	<	0.18	2,600	--	--	--	2,600	--	No
1,4-Dichlorobenzene	µg/L	<	0.1	<	0.18	2,600	--	--	--	2,600	--	No
3,3 Dichlorobenzidine	µg/L	<	5.0	<	5.0	0.077	--	--	--	0.077	--	No
Diethyl Phthalate	µg/L	<	2.0	<	0.86	120,000	--	--	--	120,000	--	No
Dimethyl Phthalate	µg/L	<	2.0	<	0.97	2,900,000	--	--	--	2,900,000	--	No
Di-n-Butyl Phthalate	µg/L	<	2.0	<	0.91	12,000	--	--	--	12,000	--	No
2,4-Dinitrotoluene	µg/L	<	2.0	<	0.96	9.1	--	--	--	9.1	--	No
2,6-Dinitrotoluene	µg/L	<	9.8	<	0.98	No Criteria	--	--	--	--	--	No
Di-n-Octyl Phthalate	µg/L	<	9.8	<	0.92	No Criteria	--	--	--	--	--	No
1,2-Diphenylhydrazine	µg/L	<	0.40	<	0.9	0.54	--	--	--	0.54	--	No
Fluoranthene	µg/L	<	2.0	<	0.030	370	--	--	--	370	--	No
Fluorene	µg/L	<	9.8	<	0.030	14,000	--	--	--	14,000	--	No
Hexachlorobenzene	µg/L	<	2.0	<	0.91	0.00077	--	--	--	0.00077	--	No
Hexachlorobutadiene	µg/L	<	0.10	<	0.92	50	--	--	--	50	--	No
Hexachlorocyclopentadiene	µg/L	<	5.0	<	0.90	17,000	--	--	--	17,000	--	No
Hexachloroethane	µg/L	<	0.40	<	0.94	8.9	--	--	--	8.9	--	No
Indeno(1,2,3-cd)Pyrene	µg/L	<	9.8	<	0.030	0.049	--	--	--	0.049	--	No
Isophorone	µg/L	<	2.0	<	0.93	600	--	--	--	600	--	No
Naphthalene	µg/L	<	1.0	<	0.030	No Criteria	--	--	--	--	--	No
Nitrobenzene	µg/L	<	2.0	<	0.95	1,900	--		--	1,900	--	No
N-Nitrosodimethylamine	µg/L	<	2.0	<	0.88	8.1	--	--	--	8.1	--	No

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Constituent	Units	Qualifier	MEC	Qualifier	B	C	CMC	CCC	Water & Org	Org. Only	MCL	Reasonable Potential
N-Nitrosodi-n-Propylamine	µg/L	<	2.0	<	0.97	1.4	--	--	--	1.4	--	No
N-Nitrosodiphenylamine	µg/L	<	2.0	<	0.83	16	--	--	--	16	--	No
Phenanthrene	µg/L	<	9.8	<	0.030	No Criteria	--	--	--	--	--	No
Pyrene	µg/L	<	9.8	<	0.030	11,000	--		--	11,000	--	No
1,2,4-Trichlorobenzene	µg/L	<	0.50	<	0.98	No Criteria	--	--	--	--	--	No
Aldrin	µg/L	<	0.020	<	0.10	0.00014	1.3	--	--	0.00014	--	No
alpha-BHC	µg/L	<	0.10	<	0.10	0.013	--	--	--	0.013	--	No
beta-BHC	µg/L	<	0.10	<	0.10	0.046	--	--	--	0.046	--	No
gamma-BHC	µg/L	<	0.10	<	0.10	0.063	0.16	--	--	0.063	--	No
delta-BHC	µg/L	<	0.10	<	0.10	No Criteria	--	--	--	--	--	No
Chlordane	µg/L	<	0.20	--	--	0.00059	0.09	0.004	--	0.00059	--	No
4,4'-DDT	µg/L	<	0.10	<	0.10	0.00059	0.13	0.001	--	0.00059	--	No
4,4'-DDE	µg/L	<	0.10	<	0.10	0.00059	--	--	--	0.00059	--	No
4,4'-DDD	µg/L	<	0.10	<	0.10	0.00084	--	--	--	0.00084	--	No
Dieldrin	µg/L	<	0.020	<	0.10	0.00014	0.71	0.0019	--	0.00014	--	No
alpha-Endosulfan	µg/L	<	0.10	<	0.10	0.009	0.034	0.0087	--	240	--	No
beta-Endosulfan	µg/L	<	0.10	<	0.10	0.009	0.034	0.0087	--	240	--	No
Endosulfan Sulfate	µg/L	<	0.10	<	0.10	240	--	--	--	240	--	No
Endrin	µg/L	<	0.20	<	0.10	0.002	0.037	0.0023	--	0.81	--	No
Endrin Aldehyde	µg/L	<	0.10	<	0.10	0.81	--	--	--	0.81	--	No
Heptachlor	µg/L	<	0.020	<	0.10	0.00021	0.053	0.0.0036	--	0.00021	--	No
Heptachlor Epoxide	µg/L	<	0.020	<	0.10	0.00011	0.053	0.0036	--	0.00011	--	No
PCBs sum	µg/L	<	1.4	<	1.0	0.00017	--	0.030	--	0.00017	--	No
Toxaphene	µg/L	<	0.20	<	1.0	0.00020	0.21	0.0002	--	0.00075	--	No
TCDD-Equivalents	µg/L	--	0.00000855	<	1.0	1.4×10^{-8}	--	--	--	1.4×10^{-8}	--	Yes

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