

North Coast Regional Water Quality Control Board

ORDER NO. R1-2019-0047
NPDES NO. CA0024333
WDID NO. 1B840350SON

WASTE DISCHARGE REQUIREMENTS
FOR THE
UNIVERSITY OF CALIFORNIA – DAVIS
BODEGA MARINE LABORATORY
SONOMA COUNTY

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

Table 1. Permittee Information

Permittee	University of California - Davis
Name of Facility	Bodega Marine Laboratory
Facility Address	2099 Westshore Road
	Bodega Bay, CA 94923
	Sonoma County
Type of Facility	Marine Laboratory
Facility Design Flow	1.0 million gallons per day (mgd)

Table 2. Discharge Locations

Discharge Point	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
001	Waste Seawater and Filter Backwash	38° 19' 00"	123° 04' 00"	Pacific Ocean
002	Once-through Freshwater	38° 19' 10"	123° 04' 14"	Groundwater
003	Storm Water	38° 19' 09"	123° 04' 18"	Freshwater Marsh
004	Storm Water	38° 19' 04"	123° 04' 12"	Freshwater Marsh
016	Storm Water	38° 19' 02"	123° 04' 13"	Pacific Ocean

Table 3. Administrative Information

This Order was adopted on:	December 19, 2019
This Order shall become effective on:	February 1, 2020
This Order shall expire on:	January 31, 2025
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:	February 1, 2024
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:	Minor

IT IS HEREBY ORDERED, that Waste Discharge Requirements (WDR) Order No. R1-2013-0023 and Monitoring and Reporting Program (MRP) No. R1-2013-0023, are rescinded upon the effective date of this Order except for enforcement purposes, and in order to meet the provisions contained in division 7 of the California Water Code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 **December 19, 2019**.

Matthias St. John, Executive Officer

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I. FACILITY INFORMATION

Information describing the University of California - Davis (Permittee), Bodega Marine Laboratory (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 California Water Code (commencing with section 13370). It shall serve as a NPDES permit authorizing the Permittee to discharge into waters of the United States at the discharge location described in Table 2 subject to the Waste Discharge Requirements (WDRs). This Order also serves as 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), which contains background information and rationale for the requirements in this Order, 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 IV.B, V.B, and VI.C.6.d of this Order and sections VI and X.E of the Monitoring and Reporting Program 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.

III. DISCHARGE PROHIBITIONS

- A.** The discharge of any waste not disclosed by the Permittee or not within the reasonable contemplation of the Regional Water Board is prohibited.
- B.** Creation of pollution, contamination, or nuisance, as defined by section 13050 of the Water Code is prohibited.
- C.** The discharge of waste to land that is not under the control of the Permittee is prohibited except as authorized under Section VI.C.6.d (Solids Disposal).
- D.** 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 Resources Control Board (State Water Board) or another Regional Water Board is prohibited.
- E.** The discharge of exotic organisms (non-endemic, non-naturalized plants, animals, and microorganisms, including gametes, spores, larvae, and parts of such organisms) is prohibited.
- F.** The discharge of waste resulting from cleaning activities is prohibited.
- G.** The discharge of waste containing detectible levels of chemicals used for the treatment and control of disease, other than salt (NaCl), is prohibited.
- H.** The discharge of any constituents to the ocean at levels in excess of the water quality objectives established by Ocean Plan Table 1 (2019) is prohibited.
- I.** The maximum daily discharge rate from the seawater system shall not exceed 1.0 mgd.
- J.** Discharges of non-storm water facility runoff to the ocean (i.e., any discharge runoff from the facility that reaches the ocean and that is not composed entirely of storm water), except those associated with the waste seawater system and emergency firefighting, are prohibited.
- K.** The discharge of any radiological, chemical, or biological warfare agent or high-level radioactive waste into waters of the state 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 seawater 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).

Table 4. Effluent Limitations¹ – Discharge Point 001 (Monitoring Location EFF-001)

Parameter	Units	Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	6-Month Median
Total Suspended Solids (TSS)	mg/L	2	2	2	--	60	--
Settleable Solids	mL/L	1.0 ²	1.5 ²	2	--	3.0 ²	--
pH	s.u.	--	--	--	6.0	9.0	--
Zinc, Total Recoverable ³	µg/L	--	--	80	--	200	20

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- ¹ See Definitions in Attachment A and Compliance Determination discussion in section VII of this Order.
 - ² The discharge shall not contain concentrations of suspended and settleable solids higher than those found in the influent at Monitoring Location INF-001 and shall not cause nuisance or adversely affect beneficial uses. In no case shall effluent concentrations exceed the Ocean Plan Table 2 effluent limitations shown in this table. Section VII.J of this Order further describes how compliance with TSS and settleable solids effluent limitations will be determined.
 - ³ Section VII.K of this Order describes how compliance with Ocean Plan Table 1 pollutants (including zinc) will be determined.

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 and Requirements – Discharge Point 002

1. Water, of freshwater origin, to be discharged from the Salmon Research Facility, shall be discharged to a groundwater recharge area in the sand dunes adjacent to the laboratory, and not to adjacent marsh/wetland areas or to the ocean.
2. The discharge of freshwater shall maintain compliance with the following effluent limitations at Discharge Point 002, with compliance measured at Monitoring Location EFF-002, as described in the attached MRP.

Table 5. Land Discharge Specifications¹ – Discharge Point 002 (Monitoring Location EFF-002)

Parameter	Units	Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Total Suspended Solids (TSS)	mg/L	8 ²	15 ²	--	--
Settleable Solids	mL/L	0.1 ²	0.2 ²	--	--
pH	s.u.	--	--	6.5	8.5
Salinity ³	s.u.	--	2	--	--

¹ See Definitions in Attachment A and Compliance Determination discussion in section VII of this Order.

² There shall not be a net increase above influent concentrations.

³ The salinity limitation at Discharge Point 002 is in effect only during periods when smoltification is occurring in the Salmon Research Facility or when the Permittee is adjusting salinity in its freshwater system. Salinity may be measured and reported as electrical conductivity in µmhos/cm, as salinity in salinity units, or as salinity in parts per thousand.

C. Water Recycling Specifications and Requirements – Not Applicable

This Order does not authorize discharges of recycled water.

D. Other Requirements

1. The Permittee is required to implement and maintain a Storm Water Management Plan (SWMP), which must include best management practices (BMPs) that eliminate or reduce the presence of pollutants in storm water runoff to the technology-based standard of Maximum Extent Practicable to protect water quality. Requirements for the development of a SWMP are described in section VI.C.6.a of the Order.

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

Receiving water limitations are based on water quality objectives contained in the Ocean Plan, State Water Board Resolution No. 2007-0058 (Exception to the California Ocean Plan for the University of California, Davis Marine Laboratory) and the Basin Plan, and are a required part of this Order. Compliance with the Ocean Plan and Resolution No. 2007-0058 shall be determined from samples collected at stations representative of the area within the waste field; and for natural/background water

quality, for constituents other than indicator bacteria, samples shall be collected at the reference station in the Pacific Ocean near Mussel Point. For indicator bacteria, the Ocean Plan bacteria objectives will be used. In situations where water quality objectives from the Ocean Plan and from Resolution No. 2007-0058 may both be applicable, the more stringent water quality objective shall apply. Compliance with other water quality objectives established in the Basin Plan shall be determined by appropriate receiving water monitoring when evidence suggests that the discharges from the freshwater system to the groundwater recharge area have the reasonable potential to cause or contribute to an exceedance of applicable water quality objectives. 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.

If monitoring indicates that natural ocean water quality is not maintained, but there is sufficient evidence that a discharge is not contributing to the alteration of natural water quality, then the Regional Water Board may make that determination. In this case, sufficient information must include runoff and seawater system effluent data that has equal or lower concentrations for the range of constituents at the applicable reference area(s).

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

1. State Water Resources Control Board Resolution No. 2007-0058

Natural water quality conditions in receiving waters, seaward of the surf zone, shall not be altered as a result of discharges from the Facility. The surf zone is defined as the area between the breaking waves and the shoreline at any one time. Natural water quality shall be defined by Regional Water Board staff in consultation with the State Water Board's Division of Water Quality.

2. Ocean Plan Receiving Water Limitations

a. Bacterial Characteristics

i. Water-Contact Standards. Within a zone bounded by the shoreline and a distance of 1,000 feet from the shoreline or the 30-foot depth contour, whichever is further from the shoreline, and in areas outside this zone designated for water contact recreation use by the Regional Water Board, but including all kelp beds, the following bacteriological objectives shall be maintained throughout the water column:

- (a)** A 30-day geometric mean of fecal coliform density not to exceed 200 per 100 mL, calculated based on the five most recent samples from each site, and a single sample maximum not to exceed 400 per 100 mL.

- (b) A 6-week rolling geometric mean of enterococci not to exceed 30 CFU per 100 mL, calculated weekly, and a statistical threshold value of 110 CFU per 100 mL not to be exceeded by more than 10 percent of the samples collected in a calendar month, calculated in a static manner.

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

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

iii. Physical Characteristics

- (a) Floating particulates and oil and grease shall not be visible.
- (b) The discharge of waste shall not cause aesthetically undesirable discoloration of the ocean surface.
- (c) Natural light shall not be significantly reduced at any point outside the initial dilution zone as the result of the discharge of waste.
- (d) The rate of deposition of inert solids and the characteristics of inert solids in ocean sediments shall not be changed such that benthic communities are degraded.

iv. Chemical Characteristics

- (a) The dissolved oxygen concentration shall not at any time be depressed more than 10 percent from that which occurs naturally, as the result of the discharge of oxygen demanding waste materials.
- (b) The pH shall not be changed at any time more than 0.2 units from that which occurs naturally.
- (c) The dissolved sulfide concentration of waters in and near sediments shall not be significantly increased above that present under natural conditions.
- (d) The concentration of substances set forth in Chapter II, Table 1 of the Ocean Plan shall not be increased in marine sediments to levels which would degrade indigenous biota.

- (e) The concentration of organic materials in marine sediments shall not be increased to levels that would degrade marine life.
- (f) Nutrient materials shall not cause objectionable aquatic growths or degrade indigenous biota.
- (g) Discharges shall not cause exceedances of water quality objectives for ocean waters of the state established in Chapter II, Table 1 of the Ocean Plan.
- (h) Discharge of radioactive waste shall not degrade marine life.

v. Biological Characteristics

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

vi. General Standards

- (a) The discharge shall not cause a violation of any applicable water quality standard for the receiving waters adopted by the Regional Water Board or the State Water Board as required by the CWA and regulations adopted thereunder.
- (b) Waste management systems that discharge to the ocean must be designed and operated in a manner that will maintain the indigenous marine life and a healthy and diverse marine community.
- (c) Waste discharged to the ocean must be essentially free of:
 - (1) Material that is floatable or will become floatable upon discharge.
 - (2) Settleable material or substances that may form sediments which will degrade benthic communities or other aquatic life.
 - (3) Substances which will accumulate to toxic levels in marine waters, sediments or biota.
 - (4) Substances that significantly decrease the natural light to benthic communities and other marine life.

- (5) Materials that result in aesthetically undesirable discoloration of the ocean surface.
- (d) Waste effluents shall be discharged in a manner which provides sufficient initial dilution to minimize the concentrations of substances not removed in the treatment.
- (e) Location of waste discharges must be determined after a detailed assessment of the oceanographic characteristics and current patterns to assure that:
 - (1) Pathogenic organisms and viruses are not present in areas where shellfish are harvested for human consumption or in areas used for swimming or other body-contact sports.
 - (2) Natural water quality conditions are not altered in areas designated as being of special biological significance or areas that existing marine laboratories use as a source of seawater.
 - (3) Maximum protection is provided to the marine environment.
 - (4) The discharge does not adversely affect recreational beneficial uses such as surfing and beach walking.

3. Basin Plan Receiving Water Limitations for Surface Waters

- a. Discharges from the Facility shall not cause the dissolved oxygen concentration of freshwater marsh receiving waters to be depressed below 5.0 mg/L.

In those waterbodies for which the aquatic life-based DO requirements are unachievable due to natural conditions, site-specific background DO requirements can be applied as water quality objectives by calculating the daily minimum DO necessary to maintain 85% DO saturation during the dry season and 90% DO saturation during the wet season under site salinity, site atmospheric pressure, and natural receiving water temperature. In no event may controllable factors reduce the daily minimum DO below 5.0 mg/L.

- b. The discharge shall not cause the pH of the receiving waters to be depressed below 6.5 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 0.5 units from that which occurs naturally. If the pH of the receiving water is less than 6.5, the discharge shall not cause a further depression of the pH of the receiving water. If the pH of the receiving water is greater than 8.5, the discharge shall not cause a further increase in the pH of the receiving water.

- c. The discharge shall not cause the turbidity of receiving waters to be increased more than 20 percent above naturally occurring background levels.
- d. The discharge shall not cause receiving waters to contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses.
- e. The discharge shall not cause the receiving waters to contain floating materials, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses.
- f. The discharge shall not cause the 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.
- g. The discharge shall not cause coloration of the receiving waters that causes nuisance or adversely affects beneficial uses.
- h. The discharge shall not contain substances in concentrations that result in the deposition of material in the receiving waters to the extent that such deposits cause nuisance or adversely affect beneficial uses.
- i. The discharge shall not cause the receiving waters to contain concentrations of biostimulatory substances that promote objectionable aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses of the receiving waters.
- j. The discharge shall not cause the receiving waters to contain toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, 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.
- k. The discharge shall not alter the natural temperature of the receiving waters.
- l. The discharge shall not cause an individual pesticide or combination of pesticides to be present in concentrations that adversely affect beneficial uses. There shall be no bioaccumulation of pesticide concentrations found in bottom sediments or aquatic life.
- m. The discharge shall not cause the receiving waters to contain concentrations of pesticides in excess of the Maximum Contaminant Levels (MCLs) established for these pollutants in title 22, division 4, chapter 15, article 5.5 of the CCR.

- n. The discharge shall not cause the 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 adversely affect beneficial uses.
- o. 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 CWA, and regulations adopted thereunder. If more stringent 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 more stringent standards.
- p. The discharge shall not cause concentrations of chemical constituents to occur in excess MCLs and secondary MCLs (SMCLs) established for these pollutants in title 22, division 4, chapter 15, article 4, section 64431; article 5.5, section 64444; and article 16, section 64449 of the CCR.
- q. 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, nor in excess of the MCLs and SMCLs established for these pollutants in title 22, division 4, chapter 15, article 5, sections 64442 and 64443 of the CCR.

B. Groundwater Limitations

Discharges and other activities at the Facility shall not cause exceedance/deviation from the following water quality objectives for groundwater established by the Basin Plan.

1. Groundwater shall not contain taste or odor producing substances in concentrations that cause nuisance or adversely affect beneficial uses.
2. Groundwater used for domestic or municipal supply shall possess a median concentration of less than 1.1 MPN/100 mL of coliform organisms over any 7-day period, or less than 1 colony per 100 mL.
3. Groundwater used for domestic or municipal supply shall not contain concentrations of radionuclides in excess of the maximum contaminant levels (MCLs) secondary MCLs (SMCLs) established for these pollutants in title 22, division 4, chapter 15, article 5, sections 64442 and 64443 of the CCR.
4. Groundwater used for domestic or municipal supply shall not contain concentrations of chemical constituents in excess of the MCLs and SMCLs

established for those pollutants in title 22 division 4, chapter 15, article 4, sections 64431, article 5.5; section 64444; and article 16, section 64449.

5. Groundwaters shall not contain toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in humans, or that adversely affects beneficial uses. This limitation applies regardless of whether the toxicity is caused by a single substance or the synergistic effect of multiple substances.

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:
 - a. 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. b. In the event the Permittee does not comply or will be unable to comply for any reason, with any prohibition, final effluent limitation, land discharge specification, 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, 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 MRP.

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 an effluent limitation, 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 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 modified or imposed to conform this Order to the TMDL requirements.
- e. **Regional Monitoring Program.** If the Permittee chooses to participate in a regional monitoring program to investigate intertidal benthic marine life, bioaccumulation, and sediment toxicity in consultation with the State Water Board Division of Water Quality, this Order may be reopened to amend Special Provisions VI.C.2.a, VI.C.2.b, VI.C.2.c, and/or VI.C.6.c to allow participation in a regional monitoring program to satisfy the applicable study requirements.

2. Special Studies, Technical Reports and Additional Monitoring Requirements

- a. **Intertidal Benthic Marine Life Survey.** At least once during the five-year term of this Order, a quantitative survey of intertidal benthic marine life shall be performed near the point of discharge to the ocean and at a reference site. The survey design must be submitted to the Regional Water Board for approval at least 3 months prior to conducting the survey. The Regional Water Board, in consultation with the State Water Boards Division of Water Quality (DWQ), must approve the survey design. The results of the survey must be completed and submitted to the State and Regional Water Board by **February 1, 2024**. If available, data from other intertidal and subtidal surveys

performed by other researchers in the Bodega Area of Special Biological Significance (ASBS) must be included with the Permittee's submittal to the State and Regional Water Boards.

- b. Bioaccumulation Study.** Once during the five-year term of this Order, a bioaccumulation study using resident California mussels (*Mytilus californianus*) shall be conducted to determine the concentrations of metals at near field (outfall station) and far field (Mussel Point station) monitoring stations. The Regional Water Board, in consultation with DWQ, must approve the study design. The study must be completed and results submitted to the Regional Water Board by **February 1, 2024**. Based on the study results, or on participation in an appropriate regional or state-wide ASBS monitoring effort, the Regional Water Board, in consultation with DWQ, may adjust the study design in subsequent permits, or add additional test organisms.
- c. Sediment Monitoring/Study.** Once annually, in accordance with section IX.C of the MRP, the Permittee shall monitor the subtidal sediment in Horseshoe Cove for the Ocean Plan Table 1 constituents. For sediment toxicity testing, an acute toxicity test using the amphipod *Eohaustorius estuarius* must be performed during the first year of the permit term. Based on the first-year toxicity monitoring results, the Regional Water Board will determine specific constituents in the sediment to be tested during the remainder of each permit cycle, except that sediment must be monitored annually for acute toxicity. Participation in a collaborative regional or statewide ASBS monitoring effort is encouraged. After the first year of monitoring results are reviewed, the Regional Water Board, in conjunction with the DWQ, may modify sediment, receiving water, and bioaccumulation monitoring requirements that are established by this Order, based on the Permittee's participation in an appropriate regional or statewide monitoring program.

3. Best Management Practices and Pollution Prevention

a. Pollutant Minimization Program (PMP)

- i.** If required by the Executive Officer, the Permittee shall develop and conduct a PMP as further described below when there is evidence (e.g., 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 "*Detected but Not Quantified*" (DNQ) and the effluent limitation is less than the reporting level (RL); and

- (b) A sample result is reported as non-detect (ND) and the effluent limitation is less than the method detection limit (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:
 - (a) An annual review and semiannual 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. **Proper Operation and Maintenance.** 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. Operation and Maintenance Manual.** The Permittee shall maintain updated Operation and Maintenance (O&M) Manual(s) (or an equivalent document) for the operational components of the Facility. The Permittee shall update the O&M Manual(s), 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(s). The O&M Manual(s) shall be readily available to operating personnel onsite and for review by state or federal inspectors.
 - c. Notification of Construction Activity.** The Permittee shall notify the Regional Water Board 180 days prior to any construction activity that could result in any new or altered discharge or habitat modification in the Bodega ASBS. In accordance with Section III.E.4.b of the Ocean Plan, the Permittee must receive approval from and comply with any conditions regarding such a discharge that are imposed by the Regional Water Board, prior to performing any significant modification, re-building or renovation of the facilities within the ASBS, including the boat launch.
 - d. UV Disinfection System Operation.** The ultraviolet disinfection/filtration system must be operated and maintained in accordance with approved design specifications and other conditions as determined by California Department of Fish and Wildlife (CDFW).
- 5. Special Provisions for Municipal Facilities (POTWs Only) – Not Applicable**
- 6. Other Special Provisions**
- a. Storm Water Management Plan/Program.** The Permittee shall comply with the monitoring and reporting requirements regarding the discharge of storm water at Discharge Points 003, 004, and 016, as required by sections IV.B.1 and IV.C.1 of the MRP (Attachment E). The Permittee developed and submitted *Bodega Marine Laboratory Stormwater Management Plan (SWMP)* in August 2012. The Permittee’s SWMP shall be reviewed and updated as necessary and at least once during the term of this Order in order to remain current and applicable to the discharge and discharge facilities. The Permittee shall notify the Regional Water Board of its review and either certify that the current SWMP is still current or submit a schedule for revising the SWMP. Any revisions to the SWMP shall be submitted to the Regional Water Board.

The Permittee shall implement the SWMP to comply with the conditions of State Water Board Resolution No. 2007-0058. The SWMP shall be reviewed and updated as necessary to remain current and applicable to the discharge and discharge facilities. The Permittee shall notify the Regional Water Board of this review and submit any revisions of the SWMP within 90 days of notification.

- i. The SWMP must specifically address the prohibition of non-storm water runoff and the reduction of pollutants in storm water discharges draining to the ASBS.
- ii. The SWMP must describe the measures by which non-storm water discharges have been eliminated, how these measures will be maintained over time, and how these measures are monitored and documented.
- iii. The SWMP must address storm water discharges, and how pollutants have been and will be reduced in storm water runoff into the ASBS, through the implementation of BMPs. The SWMP must describe the BMPs currently employed and BMPs planned (including those for construction activities) and must include an implementation schedule for planned BMPs. The BMPs and implementation schedule must be designed to ensure natural water quality conditions in the receiving water, due to either a restriction of flows from impervious surfaces, or reduction in pollutants, or some combination thereof. The BMPs must include the measures taken to prevent the runoff of herbicides and pesticides from the Facility and the Bodega Marine Lab Reserve (identified in Attachment B of this Order) into the ASBS.
- iv. The implementation schedule for BMPs that are currently planned or will be added during the term of this Order must be developed to ensure that the BMPs are implemented as soon as practicable, and no later than one year after the approval date of any SWMP revisions by the Regional Water Board.
- v. The SWMP must include a map of surface drainage of storm water runoff, including areas of sheet runoff, and any structural BMPs employed. The map must also show the storm water conveyances in relation to other facility features such as the laboratory seawater system and discharges, service areas, sewage treatment, and waste and hazardous materials storage areas. The SWMP must also include a procedure for updating the map and plan when other changes are made to the facilities.
- vi. If the results of Horseshoe Cove receiving water monitoring at Monitoring Location RSW-001 indicate that the storm water runoff is causing or contributing to an alteration of natural water quality in the ASBS, as measured at the reference station at Mussel Point (Monitoring Location REF-001), the Permittee is required to submit a report to the Regional Water Board within 30 days of receiving the results. Those constituents in storm water that are found to alter natural water quality or exceed Ocean Plan receiving water objectives must be identified in that report. The report must describe BMPs that are currently being implemented, BMPs that are planned for in the SWMP, and additional BMPs that may be added to the SWMP to address those pollutants. The report shall include

a new or modified implementation schedule. The Regional Water Board may require modifications to the report. Within 30 days following approval of the report by the Regional Water Board, the Permittee must revise its SWMP to incorporate any new or modified BMPs that have been and will be implemented, the implementation schedule, and any additional monitoring required. As long as the Permittee has complied with the procedures described above and is implementing the revised SWMP, then the Permittee does not have to repeat the same procedure for continuing or recurring exceedances of the same constituent.

- b. Waterfront and Marine Operations Non-Point Source Management Plan.** The Permittee submitted a *Waterfront and Marine Operations Non-Point Source Management Plan* (Plan) to the Regional Water Board on October 30, 2012. The Permittee's Plan shall be reviewed and updated as necessary and at least once during the term of this Order in order to remain current and applicable to the discharge and discharge facilities. The Permittee shall notify the Regional Water Board of its review and either certify that the current Plan is still current or submit a schedule for revising the Plan. Any revisions to the Plan shall be submitted to the Regional Water Board.

The Permittee shall continue to implement this Plan to address the prohibition against discharges of pollutants from non-point sources, established by Prohibition III.J of this Order. The Regional Water Board, in consultation with the State Water Board's Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program, shall review the plan. The Waterfront and Marine Operations Non-Point Source Management Plan must be implemented within 6 months of its approval.

- c. Program for Prevention of Biological Pollutants.** The Permittee submitted a *Program for Prevention of Biological Pollutants* (PPBP) to the Regional Water Board on October 20, 2009. The Permittee's PPBP shall be reviewed and updated as necessary and at least once during the term of this Order in order to remain current and applicable to the discharge and discharge facilities. The Permittee shall notify the Regional Water Board of its review and either certify that the current PPBP is still current or submit a schedule for revising the PPBP. Any revisions to the PPBP shall be submitted to the Regional Water Board.

The Permittee shall continue to implement the program in consultation with CDFW, Marine Fisheries Branch. Any non-native species found in the Bodega ASBS must be reported to the State Water Board, Regional Water Board, and CDFW.

- d. Solids Disposal.** Screenings, sludge, and other solids removed from liquid wastes shall be disposed of at a legal point of disposal, and in accordance with the provisions of the Water Code and title 27 of the CCR.

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. Compliance with Effluent Limitations

- 1. Single Constituent Effluent Limitations.** The Permittee is out of compliance with the effluent limitation if the concentration of the pollutant (see section VII.C) in the monitoring sample is greater than the effluent limitation and greater than or equal to the reported Minimum Level (ML).
- 2. Effluent Limitations Expressed as a Sum of Several Constituents.** The Permittee is out of compliance with an effluent limitation which applies to the sum of a group of chemicals (e.g., PCBs) 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 average monthly effluent limitation (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.

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 VII.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 7 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 VII.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 1 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 7 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 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 sum of time during which the pH values are outside the required range of pH values shall not exceed 7 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

- 1. Single Sample Maximum.** All single sample results are compared to single sample maximum limitations. Single sample results are only compared to the median, geometric mean, six-week rolling geometric mean, and statistical threshold value when sampling is required at the frequency required to properly assess compliance, as further stated in 2. through 5, below. Compliance with a single annual sample is determined in comparison to single sample maximum limitations only. If single sample maximums are routinely exceeded, the Regional Water Board may require additional sampling to assess whether the Permittee's discharge is the source of the exceedance in the receiving water.
- 2. Median.** The median is the central tendency concentration of the pollutant. The data set shall be ranked from low to high, ranking any ND concentrations lowest, followed by 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.

3. **Geometric Mean (GM).** The geometric mean is a type of mean or average that indicates the central tendency or typical value of a set of numbers by using the product of their values (as opposed to the arithmetic mean which uses their sum). The geometric mean shall be calculated using the 5 most recent samples from a site using the following formula:
$$GM = \sqrt[n]{(x_1)(x_2)(x_3)\dots(x_n)}$$
, where x is the sample value and n is the number of samples taken.
4. **Six-week Rolling Geometric Mean.** The rolling geometric mean shall be calculated using at least 5 sample results over a 6-week period from a site using the following formula:
$$GM = \sqrt[n]{(x_1)(x_2)(x_3)\dots(x_n)}$$
, where x is the sample value and n is the number of samples taken.
5. **Statistical Threshold Value.** (1) The data set shall be ranked from low to high, ranking any ND concentrations lowest, followed by quantified values. (2) The number of sample results should then be multiplied by 90 percent then rounded up to the nearest whole number. (3) Count the values in the data set starting from lowest to highest until the number indicated in step (2) is reached. (4) To be compliant with the statistical threshold value in Receiving Water Limitation V.A.2.a.i.b, all sample results less than the point described in step 3 must be less than 100 MPN/100 mL.

I. **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.B).

J. **TSS and Settleable Solids Effluent Limitations**

For TSS and settleable solids in seawater discharges, the determination of changes to "*natural water quality*" as defined in Resolution No. 2007-0058 is determined by statistical comparison of the influent and effluent concentrations. The Permittee shall collect samples at Monitoring Locations INF-001 and EFF-001 at approximately the same time. Each sample shall be split into three triplicates and analyzed for TSS and settleable solids. The Permittee shall conduct a t-test to determine if there is a statistical difference between the influent and effluent concentrations. Significant difference is defined as a statistically significant difference in the means of two distributions of sampling results at the 95th percent confidence level. If the average influent concentration is lower than the average effluent concentration and the difference is statistically significant, then the discharge is out of compliance. If the average influent concentration is higher than the effluent concentration or if the difference between the average influent and effluent concentrations is not determined to be statistically significant, then the discharge is in compliance.

Further, compliance with daily maximum effluent limitations for TSS and settleable solids will be assessed with 24-hour composite samples and compliance with instantaneous maximum effluent limitations shall be assessed with grab samples.

K. Ocean Plan Table 1 Effluent Limitations

Ocean Plan section III.C, Implementation Provisions for Table 1 describes how compliance is to be determined with effluent limitations established for Table 1 parameters, and includes the following:

Section III.C.4.f. The **six-month median** effluent limitations shall apply as a moving median of daily values for any 180-day period in which daily values represent flow weighted average concentrations within a 24-hour period. For intermittent discharges, the daily value shall be considered to equal zero for days on which no discharge occurred.

Section III.C.4.g. The **daily maximum** shall apply to flow weighted 24-hour composite samples.

Section III.C.4.h. The **instantaneous maximum** shall apply to grab sample determinations.

ATTACHMENT A – DEFINITIONS

Areas of Special Biological Significance (ASBS)

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

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.

Chlordane

Shall mean the sum of chlordane-alpha, chlordane-gamma, chlordene-alpha, chlordene-gamma, nonachlor-alpha, nonachlor-gamma, and oxychlordane

Chronic Toxicity

Chronic toxicity measures the acceptability of waters for supporting a healthy marine biota until improved methods are developed to evaluate biological response. See also Test of Significant Toxicity.

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.

DDT

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

Degrade

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

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.

Dichlorobenzenes

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

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.

Downstream Ocean Waters

Waters downstream with respect to ocean currents.

Dredged Material

Any material excavated or dredged from the navigable waters of the United States, including material otherwise referred to as “*spoil*.”

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-Kärber. EC25 is the concentration of toxicant (in percent effluent) that causes a response in 25 percent of the test organisms.

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.

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

Endosulfan

The sum of endosulfan-alpha and -beta and endosulfan sulfate.

Estimated Chemical Concentrations

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

Geometric Mean (GM).

The geometric mean is a type of mean or average that indicates the central tendency or typical value of a set of numbers by using the product of their values (as opposed to the arithmetic mean which uses their sum). The geometric mean is defined as the n th root of the product of n numbers. The formula is expressed as: $GM = \sqrt[n]{(x_1)(x_2)(x_3)\dots(x_n)}$, where x is the sample value and n is the number of samples taken.

Halomethanes

The sum of bromoform, bromomethane (methyl bromide) and chloromethane (methyl chloride).

HCH

The sum of the alpha, beta, gamma (lindane) and delta isomers of hexachlorocyclohexane.

Inhibition Concentration (IC)

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).

Kelp Beds

For purposes of the bacteriological standards of the Ocean Plan, are significant aggregations of marine algae of the genera *Macrocystis* and *Nereocystis*. Kelp beds include the total foliage canopy of *Macrocystis* and *Nereocystis* plants throughout the water column.

Mariculture (Marine Community)

The culture of plants and animals in marine waters independent of any pollution source.

Material

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

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.

Natural Light

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

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.

PAHs (polynuclear aromatic hydrocarbons)

The sum of acenaphthylene, anthracene, 1,2-benzanthracene, 3,4 benzofluoranthene, benzo[k]fluoranthene, 1,12-benzoperylene, benzo[a]pyrene, chrysene, dibenzo[ah]anthracene, fluorene, indeno[1,2,3-cd]pyrene, phenanthrene and pyrene.

PCBs (polychlorinated biphenyls)

The sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254 and Aroclor-1260.

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 Ocean Plan Table 1 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.

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 recycling 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.

Reported Minimum Level

The reported ML (also known as the Reporting Level or RL) is the ML (and its associated analytical method) chosen by the Permittee for reporting and compliance determination from the MLs included in this Order, including an additional factor if applicable as discussed herein. The MLs included in this Order correspond to approved analytical methods for reporting a sample result that are selected by the Regional Water Board either from Appendix II of the Ocean Plan in accordance with section III.C.5.a. of the Ocean Plan or established in accordance with section III.C.5.b. of the Ocean Plan. 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.

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.

Six-Month Median Effluent Limitation

The highest allowable moving median of all daily discharges for any 180-day period.

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.

State Water Quality Protection Areas (SWQPAs)

Non-terrestrial marine or estuarine areas designated to protect marine species or biological communities from an undesirable alteration in natural water quality. All AREAS OF SPECIAL BIOLOGICAL SIGNIFICANCE (ASBS) that were previously designated by the State Water Board in Resolution Nos. 74-28, 74-32, and 75-61 are now also classified as a subset of State Water Quality Protection Areas and require special protections afforded by the Ocean Plan.

Statistical Threshold Value (STV)

For the bacteria water quality objective, the statistical threshold value is a set value that approximates the 90th percentile of the water quality distribution of a bacterial population. See page 22 of this Order for further discussion.

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

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).

Toxicity Reduction Evaluation (TRE)

A study conducted in a stepwise 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

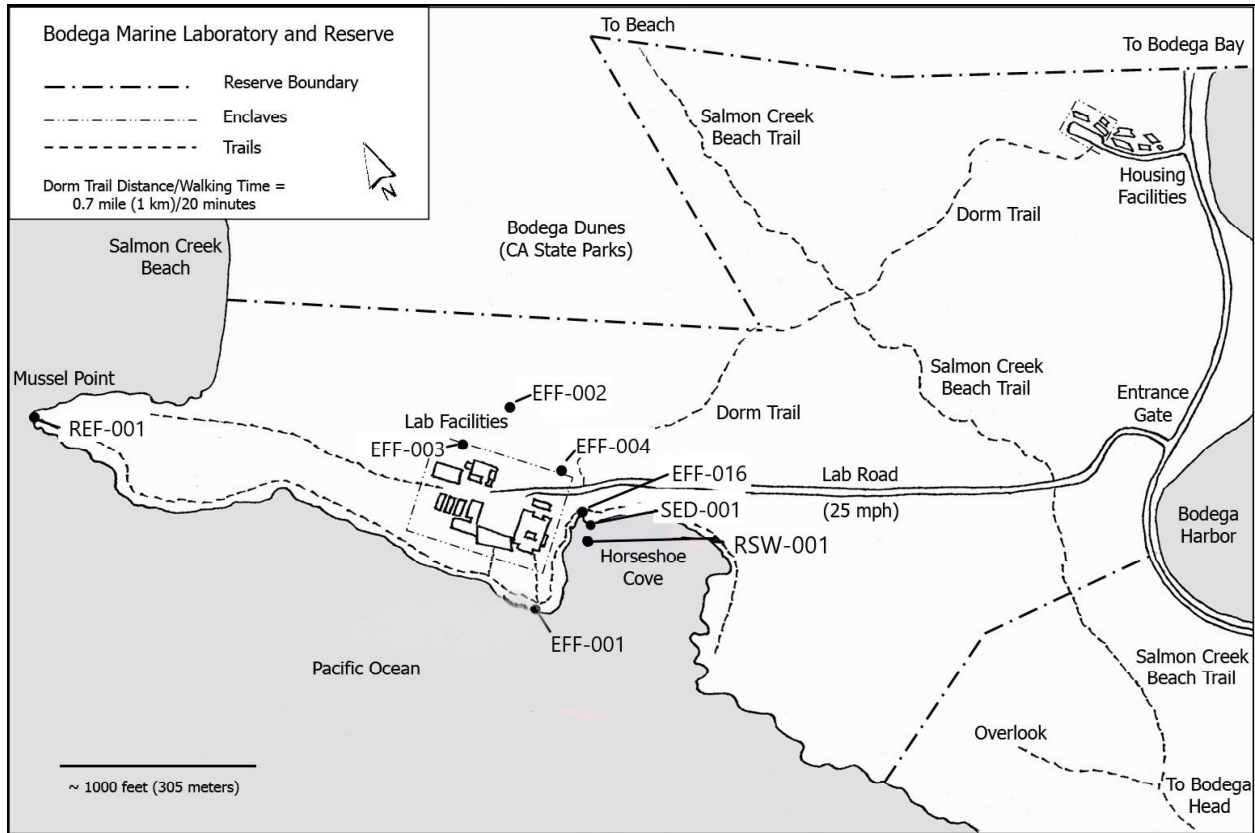
are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests.)

Waste

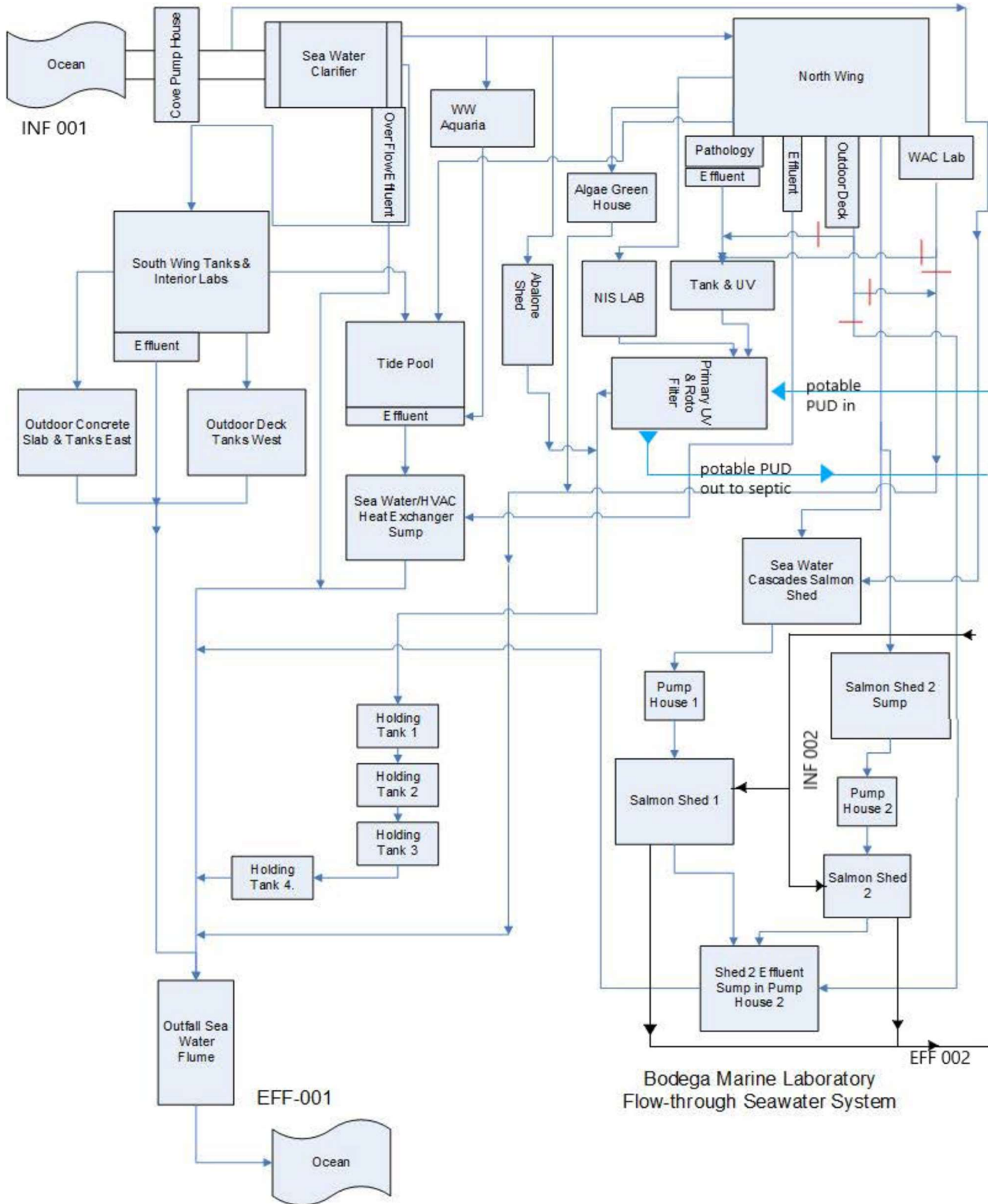
As used in the Ocean Plan, waste includes a discharger's total discharge, of whatever origin, i.e., gross, not net, discharge.

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ATTACHMENT B – MAP



ATTACHMENT C – FLOW SCHEMATIC



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; denial of a permit renewal application; or a combination thereof. (40 C.F.R. § 122.41(a); Wat. Code, §§ 13261, 13263, 13265, 13268, 13000, 13001, 13304, 13350, 13385.)
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 (33 U.S.C. § 1318(a)(4)(b); 40 C.F.R. § 122.41(i); Wat. Code, §§ 13267, 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 (33 U.S.C. § 1318(a)(4)(b)(i); 40 C.F.R. § 122.41(i)(1); Wat. Code, §§ 13267, 13383);
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (33 U.S.C. § 1318(a)(4)(b)(ii); 40 C.F.R. § 122.41(i)(2); Wat. Code, §§ 13267, 13383);
3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (33 U.S.C. § 1318(a)(4)(b)(ii); 40 C.F.R. § 122.41(i)(3); Wat. Code, §§ 13267, 13383); 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. (33 U.S.C. § 1318(a)(4)(b); 40 C.F.R. § 122.41(i)(4); Wat. Code, §§ 13267, 13383.)

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)):
 - a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 C.F.R. § 122.41(m)(4)(i)(A));
 - b. 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 prior notice, if possible, at least 10 days before the date of the bypass. (40 C.F.R. § 122.41(m)(3)(i).)
 - 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
 - e. 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).)

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. chapter 1, 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.

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 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).)

6. Any person providing the electronic signature for documents described in Standard Provisions – V.B.1, V.B.2, or V.B.3 that are submitted electronically shall meet all relevant requirements of Standard Provisions – Reporting V.B, and shall ensure that all relevant requirements of 40 C.F.R. part 3 (Cross-Media Electronic Reporting) and 40 C.F.R. part 127 (NPDES Electronic Reporting Requirements) are met for that submission. (40 C.F.R. § 122.22(e).)

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, sludge use, or disposal practices. As of December 21, 2016, all reports and forms must be submitted electronically to the initial recipient defined in Standard Provisions – Reporting V.J and comply with 40 C.F.R. part 3, 40 C.F.R. section 122.22, and 40 C.F.R. part 127. (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. chapter 1, 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

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 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).)

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.

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).)

J. Initial Recipient for Electronic Reporting Data

The owner, operator, or the duly authorized representative is required to electronically submit NPDES information specified in appendix A to 40 C.F.R. part 127 to the initial recipient defined in 40 C.F.R. section 127.2(b). U.S. EPA will identify and publish the list of initial recipients on its website and in the Federal Register, by state and by NPDES data group [see 40 C.F.R. section 127.2(c)]. U.S. EPA will update and maintain this listing. (40 C.F.R. § 122.41(l)(9).)

VI. STANDARD PROVISIONS – ENFORCEMENT

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

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

A. Non-Municipal Facilities

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

1. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" (40 C.F.R. § 122.42(a)(1)):
 - a. 100 micrograms per liter ($\mu\text{g/L}$) (40 C.F.R. § 122.42(a)(1)(i));
 - b. 200 $\mu\text{g/L}$ for acrolein and acrylonitrile; 500 $\mu\text{g/L}$ for 2,4-dinitrophenol and 2 methyl 4,6 dinitrophenol; and 1 milligram per liter (mg/L) for antimony (40 C.F.R. § 122.42(a)(1)(ii));
 - c. Five (5) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge (40 C.F.R. § 122.42(a)(1)(iii)); or
 - d. The level established by the Regional Water Board in accordance with section 122.44(f). (40 C.F.R. § 122.42(a)(1)(iv).)
2. That any activity has occurred or will occur that would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" (40 C.F.R. § 122.42(a)(2)):
 - a. 500 micrograms per liter ($\mu\text{g/L}$) (40 C.F.R. § 122.42(a)(2)(i));
 - b. 1 milligram per liter (mg/L) for antimony (40 C.F.R. § 122.42(a)(2)(ii));
 - c. Ten (10) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge (40 C.F.R. § 122.42(a)(2)(iii)); or
 - d. The level established by the Regional Water Board in accordance with section 122.44(f). (40 C.F.R. § 122.42(a)(2)(iv).)

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

The Code of Federal Regulations (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 approved by the Executive Officer 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) in accordance with the provisions of Water Code section 13176 and must include quality assurance/quality control data with their analytical reports. The Permittee may analyze pollutants with short hold times (e.g., pH, chlorine residual, etc.) with field equipment or its on-site laboratory provided that the Permittee has standard operating procedures (SOPs) that identify quality assurance/quality control procedures to be followed to ensure accurate results.

The Permittee shall keep a manual onsite containing the steps followed in this program and must demonstrate sufficient capability to adequately perform these on-site laboratory and field tests (e.g., qualified and trained employees, properly calibrated and maintained on-site laboratory and field instruments). The program shall conform to U.S. EPA guidelines or other approved procedures.

- D. Instrumentation 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).** Unless otherwise specified by this MRP, all monitoring shall be conducted according to test procedures established at 40 C.F.R. 136, Guidelines Establishing Test Procedures for Analysis of Pollutants. All analyses shall be conducted using the lowest practical quantitation limit achievable

using U.S. Environmental Protection Agency (U.S. EPA) approved methods. For the purposes of the NPDES program, when more than one test procedure is approved under 40 C.F.R., part 136 for the analysis of a pollutant or pollutant parameter, the test procedure must be sufficiently sensitive as defined at 40 C.F.R. 122.21(e)(3) and 122.44(i)(1)(iv). Where effluent limitations are set below the lowest achievable quantitation limits, pollutants not detected at the lowest practical quantitation limits will be considered in compliance with effluent limitations. Analysis for toxics listed in Table 1 of the Water Quality Control Plan for Ocean Waters of California, California Ocean Plan (2019) (Ocean Plan) shall also adhere to guidance and requirements contained in the Ocean Plan. However, there may be situations when analytical methods are published with MLs that are more sensitive than the MLs for analytical methods listed in the Ocean Plan. For instance, U.S. EPA Method 1631E for mercury is not currently listed in Ocean Plan Appendix II, but it is published with an ML of 0.5 ng/L that makes it a sufficiently sensitive analytical method. Similarly, U.S. EPA Method 245.7 for mercury is published with an ML of 5 ng/L.

- F. Discharge Monitoring Report Quality Assurance (DMR-QA) Study.** The Permittee shall ensure that the results of the DMR-QA Study or the most recent Water Pollution Performance Evaluation Study are submitted annually to the State Water Board at the following address:

State Water Resources Control Board
 Quality Assurance Program Officer
 Office of Information Management and Analysis
 1001 I Street, Sacramento, CA 95814

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-1. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	INF-001	A location where representative samples of seawater can be collected prior to introduction into the laboratory system.
--	INF-002	A location where representative samples of freshwater collected from the property well, can be collected prior to introduction into the freshwater laboratory system.

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
001	EFF-001	A location where representative samples of discharges from the seawater system can be collected, following all treatment and contributions to the waste stream, including ultraviolet light (UV) disinfection (or chlorination/dichlorination, if applicable), but prior to contact with the receiving water.
002	EFF-002	A location where representative samples of discharges from the freshwater system can be collected, following all treatment and contributions to the waste stream, but prior to actual discharge to the sand dune groundwater recharge area.
003	EFF-003	A location where representative samples of storm water, discharged to the upper marsh area, can be collected prior to contact with the receiving water.
004	EFF-004	A location where representative samples of storm water, discharged to the vicinity of the marsh outlet culvert, can be collected before contact with the receiving water.
016	EFF-016	A location where representative samples of storm water, discharged from the marsh at Discharge Point 016, can be collected before contact with the receiving water.
--	RSW-001	Receiving water in Horseshoe Cove adjacent to Discharge Point 016 and immediately seaward of the surf zone.
--	REF-001	The reference station in the ocean near Mussel Point, representing background/natural water quality conditions.
--	SED-001	A subtidal sediment monitoring location in Horseshoe Cove.

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Location INF-001

1. The Permittee shall monitor intake to the seawater system at Monitoring Location INF-001 as follows:

Table E-2. Influent Monitoring – Monitoring Location INF-001

Parameter	Units	Sample Type	Minimum Sampling Frequency ¹	Required Analytical Test Method ²
Total Suspended Solids (TSS)	mg/L	24-hr Composite	Monthly	Part 136
Settleable Solids	ml/L	24-hr Composite	Monthly	Part 136
pH	s.u.	Grab	Monthly	Part 136

- ¹ Monitoring for TSS, settleable solids, and pH shall coincide with monitoring of the discharge from the seawater system at Monitoring Location EFF-001. Each sample shall be split into three triplicates and analyzed for TSS, settleable solids, and pH.
- ² Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods approved by the Regional Water Board or State Water Board, such as with the current edition of *Standard Methods for Examination of Water and Wastewater* (American Public Health Administration).

B. Monitoring Location INF-002

1. The Permittee shall monitor intake to the freshwater system during periods of use at Monitoring Location INF-002 as follows:

Table E-3. Influent Monitoring – Monitoring Location INF-002

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Total Suspended Solids (TSS)	mg/L	24-hr Composite	Monthly ¹	Part 136 ²
Settleable Solids	ml/L	24-hr Composite	Monthly ¹	Part 136 ²
pH	s.u.	Grab	Monthly ¹	Part 136 ²
Salinity ³	s.u.	24-hr Composite	Monthly	Part 136 ²
Nitrate (as N)	mg/L	24-hr Composite	Monthly	Part 136 ²

- ¹ Monitoring for TSS, settleable solids, and pH shall coincide with monitoring of the discharge from the freshwater system at Monitoring Location EFF-002.

- ² Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods approved by the Regional Water Board or State Water Board, such as with the current edition of *Standard Methods for Examination of Water and Wastewater* (American Public Health Administration).
- ³ Salinity monitoring is required only during periods when smoltification is occurring in the Salmon Research Facility or when the Permittee is adjusting salinity in its freshwater system. Salinity may be measured and reported as electrical conductivity in $\mu\text{mhos/cm}$, as salinity in salinity units, or as salinity in parts per thousand.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001

1. The Permittee shall monitor treated effluent at Monitoring Location EFF-001 during periods of discharge to the Pacific Ocean at Discharge Point 001 as follows:

Table E-4. Effluent Monitoring – Monitoring Location EFF-001¹

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Effluent Flow ²	mgd	Meter	Continuous	--
Total Suspended Solids (TSS)	mg/L	24-hr Composite ^{3,4}	Monthly ⁵	Part 136 ⁶
Settleable Solids	ml/L	24-hr Composite ^{3,4}	Monthly ⁵	Part 136 ⁶
pH	s.u.	Grab ³	Monthly ^{5,7}	Part 136 ⁶
Salinity ⁸	s.u.	Grab	Monthly ⁷	Part 136 ⁶
Temperature	oC	Grab	Monthly ⁷	Part 136 ⁶
Zinc, Total Recoverable	$\mu\text{g/L}$	24-hr Composite ⁴	Semiannually ^{5,9,10}	Part 136 ⁶
Chlorine, Total Residual	mg/L	Meter	Continuous ¹¹	Part 136 ⁶
Ammonia Nitrogen, Total (as N)	mg/L	Grab	Monthly	Part 136 ⁶
Halomethanes ¹²	$\mu\text{g/L}$	Grab	Monthly ¹¹	Part 136 ⁶
Ocean Plan Table 1 Pollutants ^{13,14}	$\mu\text{g/L}$	24-hr Composite ^{15,16}	Semiannually ^{7,10}	Part 136 ^{6,17}
Chronic Toxicity	Pass or Fail, % Effect	Grab	Semiannually ¹⁸	See Section V below

- 1 During the first year of this permit, the Permittee shall conduct analyses for all parameters in this table on a dry weather discharge sample containing backwash water from the seawater clarifier. The monitoring report shall clearly state that the sampling event included filter backwash water.
- 2 Each quarter, the Permittee shall report the average daily and average monthly flows.
- 3 Monitoring for TSS, settleable solids, and pH shall coincide with monitoring of the intake water at Monitoring Location INF-001. Each sample shall be split into three triplicates and analyzed for TSS, settleable solids, and pH.
- 4 Once per year, sample shall be collected as a grab sample rather than a composite sample.
- 5 Accelerated Monitoring (monthly and semiannual monitoring frequency). If a test result exceeds an effluent limitation the Permittee shall take two more samples, one within 7 days and one within 14 days following receipt of the initial sample result. During the intervention period, the Permittee shall take steps to identify the cause of the exceedance and take the steps needed to return to compliance.
- 6 Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods approved by the Regional Water Board or State Water Board, such as the current edition of *Standard Methods for Examination of Water and Wastewater* (American Public Health Administration).
- 7 In accordance with State Water Board Resolution No. 2007-0058, Ocean Plan Table 1 pollutants, pH, salinity, and temperature shall be monitored twice during the first year of permit term, once during dry weather and once during wet weather. Based on the results from the first year of monitoring, the Regional Water Board will determine Table 1 pollutants to be monitored thereafter as well as the frequency of monitoring; however, monitoring for pH shall be required, at a minimum, once per year during wet weather. All wet weather monitoring events for the Ocean Plan Table 1 pollutants at Monitoring Location EFF-001 shall coincide with monitoring required for Ocean Plan Table 1 pollutants at Monitoring Locations RSW-001, EFF-016, and RSW-001.
- 8 Salinity may be measured and reported as electrical conductivity in $\mu\text{mhos/cm}$, as salinity in salinity units, or as salinity in parts per thousand.
- 9 Analytical results for zinc generated to meet monitoring requirements for the Ocean Plan Table 1 constituents will satisfy this semiannual monitoring requirement if the analysis is performed in the appropriate semiannual period.
- 10 Monitoring requirements for zinc are identified separately in this table because the Permittee's discharge exhibited reasonable potential for zinc during the term of Order R1-2013-0023, therefore the zinc monitoring frequency may not be reduced below semiannual during the term of this Order.
- 11 The Permittee shall conduct continuous monitoring for total residual chlorine and monitoring for halomethanes when chlorine is used in the seawater system. If chlorine is not used in a monitoring period, the Permittee shall certify in the quarterly self-monitoring report (SMR) that the use of chlorine-containing agents in the seawater system did not occur during the monitoring period.
- 12 Halomethanes shall mean the sum of bromoform, bromomethane (methyl bromide), and chloromethane (methyl chloride).

- ¹³ Excluding acute toxicity.
- ¹⁴ The Permittee may, at their option, monitor for total chromium instead of hexavalent chromium.
- ¹⁵ Once per permit term, sample shall be collected as a grab sample rather than a composite sample.
- ¹⁶ Grab samples shall be used for volatile chemicals listed in Table II-1 (Appendix II) of the Ocean Plan (2019). 24-hour composite samples shall be used for all other Ocean Plan Table 1 parameters.
- ¹⁷ Metals shall be analyzed by the approved analytical method with the lowest minimum detection limits (currently Inductively Coupled Plasma/Mass Spectrometry (ICPMS) as described in Appendix II of the Ocean Plan (2019).
- ¹⁸ In accordance with State Water Board Resolution No. 2007-0058, whole effluent chronic toxicity shall be monitored twice during the first year of the permit term, once during dry weather and once during wet weather. Based on the results from the first year, the Regional Water Board will determine the frequency of monitoring thereafter, however monitoring shall be required at a minimum once per year. Whole effluent chronic toxicity shall be monitored in accordance with the requirements of section V of this Monitoring and Reporting Program.

B. Monitoring Locations EFF-003 and EFF-004

1. The Permittee shall monitor storm water runoff at Monitoring Locations EFF-003 and EFF 004 discharged to the freshwater marsh at Discharge Points 003 and 004 as follows:

Table E-5. Storm Water Runoff Monitoring – Monitoring Locations EFF-003 and EFF-004¹

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Rainfall	inches	Gauge	Daily during each storm event	--
Total Suspended Solids (TSS)	mg/L	Grab	Semiannually ^{2,3}	Part 136 ⁴
pH	s.u.	Grab	Semiannually ^{2,3}	Part 136 ⁴
Specific Conductance	µmhos/cm	Grab	Semiannually ^{2,3}	Part 136 ⁴
Total Organic Carbon	mg/L	Grab	Semiannually ^{2,3}	Part 136 ⁴

¹ The Regional Water Board may, at its discretion, and after receiving and analyzing the required water quality monitoring data, at the request of the Permittee, choose to reduce

and/or eliminate certain monitoring requirements for constituents that routinely are found in concentrations below Ocean Plan objectives.

- 2 Storm water samples shall be collected during the first hour of discharge from 1) the first storm event of the wet season and 2) at least one other storm event in the wet season. If the Permittee is unable to collect samples from the first storm event of the wet season, the Permittee shall collect a sample from a subsequent rain event and shall explain in the Annual Report why the first storm event was not sampled. For semiannual monitoring, no less than two storm events are to be sampled during any wet season. For the purpose of monitoring storm water discharged to the freshwater marsh, the monitoring year shall be defined as the wet season, which typically begins on October 1 and ends on May 30.
- 3 The Permittee may conduct sample collection and/or visual observation more than 1 hour after discharge begins if the Permittee determines that the objectives of this section will be better satisfied. The Permittee shall include an explanation in the Annual Report why sample collection and/or visual observations were conducted after the first hour of discharge.
- 4 Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods approved by the Regional Water Board or State Water Board, such as with the current edition of *Standard Methods for Examination of Water and Wastewater* (American Public Health Administration).
 2. The Permittee shall visually observe storm water discharges from one storm event per month during the wet season (October 1 through May 30). These observations shall occur during the first hour of discharge at all discharge locations. Visual observations are only required during daylight hours that are preceded by at least 3 working days without storm water discharges and that occur during scheduled Facility operating hours. Visual observation shall document the presence of any floating and suspended material, oil and grease, discolorations, turbidity, odor, and any source of pollutants.
 3. The Permittee shall visually observe all drainage areas within its Facility for the presence of unauthorized non-storm water discharges and their sources. Visual observations shall occur quarterly, during daylight hours, on days with no storm water discharges, and during scheduled Facility operating hours. Visual observation shall document the presence of any floating and suspended material, oil and grease, discolorations, turbidity, odor, and any source of pollutants.

C. Monitoring Location EFF-016

1. The Permittee shall monitor storm water runoff at Monitoring Location EFF-016 discharged from the marsh at Discharge Point 016 as follows:

Table E-6. Storm Water Runoff Monitoring – Monitoring Location EFF-016¹

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Storm Water Runoff Flow	mgd	Meter or Calculate ²	Each Storm Event	--
Polynuclear Aromatic Hydrocarbons (PAHs) ³	µg/L	Grab	Semiannually ^{4,5}	Part 136 ⁶
Ocean Plan Table 1 Pollutants ⁷	µg/L	Grab	Annually ^{4,5}	Part 136 ⁶
Chronic Toxicity	Pass or Fail, % Effect	Grab	Annually ^{4,5}	See Section V below
Total Coliform Bacteria	MPN/100 mL	Grab	Annually ^{4,5,8}	Part 136 ^{6,9}
Enterococci Bacteria	MPN or CFU/100 mL ¹⁰	Grab	Annually ^{4,5,8}	Part 136 ^{6,9}
Fecal Coliform Bacteria	MPN/100 mL	Grab	Annually ^{4,5,8}	Part 136 ^{6,9}

- ¹ Storm water samples shall be collected during the first hour of discharge from the first storm event of the wet season. If the Permittee is unable to collect samples from the first storm event of the wet season, the Permittee shall collect a sample from a subsequent rain event and shall explain in the Annual Report why the first storm event was not sampled. For the purpose of monitoring storm water discharges at Monitoring Location EFF-016, the monitoring year shall be defined as the wet season, which typically begins on October 1 and ends on May 30.
- ² In accordance with State Water Board Resolution No. 2007-0058, methods for calculating flow must be approved by the Regional Water Board.
- ³ PAHs shall mean the sum of acenaphthylene, anthracene, 1,2-benzanthracene, 3,4-benzofluoranthene, benzo(k)fluoranthene, 1,12-benzoperylene, benzo(a)pyrene, chrysene, dibenzo(a,h)anthracene, fluorene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene.
- ⁴ After the first year of monitoring, the Regional Water Board may, at its discretion, and after receiving and analyzing the required water quality monitoring data, at the request of the Permittee choose to reduce and/or eliminate certain monitoring requirements for constituents that routinely are found in concentrations below Ocean Plan objectives.
- ⁵ In accordance with State Water Board Resolution No. 2007-0058, the parameters identified in Table 1 of the Ocean Plan shall be monitored one time during a storm event in the first year of the permit term. Based on the results of the first year of monitoring, the Regional Water Board will determine which specific Table 1 parameters shall be monitored on an annual basis thereafter. All monitoring events for the Table 1 parameters at Monitoring Location EFF-016 shall coincide with monitoring required for Table 1 parameters at Monitoring Locations EFF-001, REF-001, and RSW-001. The Table 1 Metals shall be analyzed by the approved analytical method with the lowest minimum detection limits (currently ICPMS) as described in Appendix II of the Ocean Plan (2019).

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- ⁶ Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods approved by the Regional Water Board or State Water Board, such as with the current edition of *Standard Methods for Examination of Water and Wastewater* (American Public Health Administration).
- ⁷ Except acute toxicity.
- ⁸ Monitoring for bacteria shall occur once per year during a storm event and shall coincide with monitoring for bacteria at Monitoring Location RSW-001.
- ⁹ Test methods used for coliforms (total and fecal) and enterococci bacteria shall be those presented in Table 1A of 40 C.F.R. Part 136, unless alternate methods have been approved in advance by U.S. EPA pursuant to 40 C.F.R. Part 136.
- ¹⁰ MPN and CFU are comparable units. The Permittee may use any enterococci method specified in 40 CFR 136 for compliance monitoring.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

A. 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 Points 001 and 016, as summarized in Tables E-4 and E-6 above.
- 2. Discharge In-stream Waste Concentration (IWC) for Chronic Toxicity.** The chronic toxicity IWC for this discharge is 100 percent effluent.
- 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.

For toxicity tests requiring renewals (*Atherinops affinis*), a minimum of three 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 on effluent samples at the IWC for the discharge 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 or hypersaline brine prepared from natural seawater 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 1006.0).
 - 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 mussel, *Mytilus spp* (Embryo-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 Order's first required sample collection. The Permittee shall collect a single effluent sample and concurrently conduct chronic toxicity tests using the fish, an invertebrate, and the alga 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 remainder of 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" for chronic toxicity tests using the 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_0) for the TST approach is: Mean discharge IWC response $\leq 0.75 \times$ 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: $((\text{Mean control response} - \text{Mean discharge IWC response}) \div \text{Mean control response}) \times 100$. The IWC for the chronic toxicity test is 100 percent effluent.
 - b. If the effluent toxicity test does not meet the minimum effluent or reference toxicant test acceptability criteria (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.

- d. Monthly reference toxicant testing is sufficient. 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 may be steps 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 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.
 - v. 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.** Accelerated monitoring for chronic toxicity is triggered 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 summary 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 is “Fail”, the Permittee shall immediately implement the TRE Process conditions set forth in section V.B, below.

9. Reporting

a. Routine Reporting. Chronic toxicity monitoring results for Monitoring Locations EFF 001 and REF 001 shall be submitted with the semiannual self-monitoring report (SMR) for the half of the year in which chronic toxicity monitoring was performed. Chronic toxicity monitoring results for Monitoring Locations EFF 016 and RSW 001 shall be submitted with the annual SMR for the year in which chronic toxicity monitoring was performed. Routine reporting shall include the following in order to demonstrate compliance with permit requirements:

- i. WET reports shall include 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) The source and make-up of the laboratory control/diluent water used for the test;
 - (c) Any manipulations done to laboratory control/diluent and effluent such as filtration, nutrient addition, etc.;
 - (d) Tabular summary of test results for control water and each effluent dilution and statistics summary to include calculation of the NOEC, TUc, and IC25;
 - (e) Identification of any anomalies or nuances in the test procedures or results;
 - (f) 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 TST 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:

$$\text{“Percent Effect” (or Effect, in \%)} = ((\text{Control mean response} - \text{IWC mean response}) \div \text{Control mean response}) \times 100$$
- (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 (\pm s.d.) after 96 hours in 100 percent effluent (if applicable);
- (10) NOEC and LOEC values for reference toxicant test(s);
- (11) IC50 or EC50 value(s) for reference toxicant test(s);
- (12) Available water quality measurements for each test (e.g., pH, dissolved oxygen, 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.

- b. **TRE/TIE Results.** The Executive Officer shall be notified no later than 30 days from completion of each aspect of TRE/TIE analyses. TRE/TIE results shall be submitted to the Regional Water Board within 60 days of completion.

B. Toxicity Reduction Evaluation (TRE) Process

1. **TRE Work Plan.** The Permittee submitted a revised TRE Work Plan to the Regional Water Board on December 10, 2008. The Permittee's TRE Work Plan shall be reviewed and updated as necessary and at least once during the term of this Order in order to remain current and applicable to the discharge and discharge facilities. The Permittee shall notify the Regional Water Board of its review and either certify that the current TRE Work Plan is still current or submit a schedule for revising the TRE Work Plan. Any revisions to the TRE Work Plan shall be submitted to the Regional Water Board.

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).
2. **Preparation and Implementation of a Detailed TRE Work Plan.** If one of the accelerated toxicity tests described in section V.A.8, above, results in "Fail", the Permittee shall immediately initiate a TRE using EPA manual *Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations* (EPA/600/2-88/070, 1989) and within 30 days of receipt submit the accelerated monitoring result to the Regional Water Board Executive Officer. The Permittee shall also submit 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

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.
- 4.** 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.
- 5.** 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.
- 6.** 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

A. Monitoring Location EFF-002

1. The Permittee shall monitor discharge from the freshwater system at Monitoring Location EFF-002 when discharging to the sand dune groundwater recharge area at Discharge Point 002 as follows:

Table E-7. Effluent Monitoring – Monitoring Location EFF-002

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Effluent Flow ¹	mgd	Meter	Continuous	--
Total Suspended Solids (TSS)	mg/L	24-hr Composite	Monthly ²	Part 136 ³
Settleable Solids	ml/L	24-hr Composite	Monthly ²	Part 136 ³
pH	s.u.	Grab	Monthly ²	Part 136 ³
Salinity ⁴	s.u.	Grab	Daily	Part 136 ³
Nitrate (as N)	mg/L	24-hr Composite	Monthly	Part 136 ³

¹ Each quarter, the Permittee shall report the average daily and average monthly flows.

² Monitoring for TSS, settleable solids, and pH shall coincide with monitoring of the intake water to the freshwater system at Monitoring Location INF-002.

³ Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods approved by the Regional Water Board or State Water Board, such as with the current edition of *Standard Methods for Examination of Water and Wastewater* (American Public Health Administration).

⁴ Salinity monitoring is required only during periods when smoltification is occurring in the Salmon Research Facility or when the Permittee is adjusting salinity in its freshwater system. Salinity may be measured and reported as electrical conductivity in $\mu\text{mhos/cm}$, as salinity in salinity units, or as salinity in parts per thousand.

VII. RECYCLING MONITORING REQUIREMENTS – NOT APPLICABLE

This Order does not authorize discharges of recycled water.

VIII. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATER AND GROUNDWATER

A. Monitoring Location REF-001

1. The Permittee shall monitor the Pacific Ocean near Mussel Point at Monitoring Location REF-001 as follows:

Table E-8. Receiving Water Monitoring – Monitoring Location REF-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
pH	s.u.	Grab	Semiannually ¹	Part 136 ²
Salinity ³	s.u.	Grab	Semiannually ¹	Part 136 ²
Temperature	°C	Grab	Semiannually ¹	Part 136 ²
Ocean Plan Table 1 Pollutants ⁴	µg/L	Grab	Semiannually ⁵	Part 136 ²
Chronic Toxicity	Pass or Fail, % Effect	Grab	Semiannually ⁶	See Section V above

¹ pH, salinity, and temperature shall be monitored whenever samples are collected at Monitoring Location REF-001 to satisfy the requirements of footnote 4 below.

² Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods approved by the Regional Water Board or State Water Board, such as with the current edition of *Standard Methods for Examination of Water and Wastewater* (American Public Health Administration).

³ Salinity may be measured and reported as electrical conductivity in µmhos/cm, as salinity in salinity units, or as salinity in parts per thousand.

⁴ Except acute toxicity.

⁵ In accordance with State Water Board Resolution No. 2007-0058, Ocean Plan Table 1 constituents, pH, salinity, and temperature shall be monitored twice during the first year of the permit term, once during dry weather and once during wet weather, coinciding with monitoring at Monitoring Location EFF-001. Based on the results from the first year, the Regional Water Board will determine the frequency of monitoring as well as the specific Table 1 parameters to be monitored thereafter. Wet weather samples may be collected immediately after a storm event, but in no case more than 24 hours after, if sampling conditions are unsafe during the storm. The Table 1 Metals shall be analyzed by the approved analytical method with the lowest minimum detection limits (currently ICPMS) as described in Appendix II of the Ocean Plan (2019).

⁶ In accordance with State Water Board Resolution No. 2007-0058, whole effluent chronic toxicity shall be monitored twice during the first year of the permit term, once during dry weather and once during wet weather. Based on the results from the first year, the Regional Water Board will determine the frequency of monitoring thereafter, however

monitoring shall be required at a minimum once per year. Whole effluent chronic toxicity shall be monitored in accordance with the requirements of section V of this Monitoring and Reporting Program.

B. Monitoring Location RSW-001

1. The Permittee shall monitor the receiving water in Horseshoe Cove at Monitoring Location RSW-001 as follows:

Table E-9. Receiving Water Monitoring – Monitoring Location RSW-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Ocean Plan Table 1 Pollutants ¹	µg/L	Grab	Annually ²	Part 136 ³
Chronic Toxicity	Pass or Fail, % Effect	Grab	Annually	See Section V above
Total Coliform Bacteria	MPN/100 mL	Grab	Annually ^{4,5}	Part 136 ³
Enterococci Bacteria	MPN or CFU/100 mL ⁶	Grab	Annually ^{4,5}	Part 136 ³
Fecal Coliform Bacteria	MPN/100 mL	Grab	Annually ^{4,5}	Part 136 ³

¹ Except acute toxicity.

² In accordance with State Water Board Resolution No. 2007-0058, the parameters identified in Table 1 of the Ocean Plan shall be monitored one time during a storm event in the first year of the permit term. Based on the results of the first year of monitoring, the Regional Water Board will determine which specific Table 1 parameters shall be monitored on an annual basis thereafter. All monitoring events for the Table 1 parameters at Monitoring Location EFF-016 shall coincide with monitoring required for Table 1 parameters at Monitoring Locations EFF-001, REF-001, and RSW-001. The Table 1 Metals shall be analyzed by the approved analytical method with the lowest minimum detection limits (currently ICPMS) as described in Appendix II of the Ocean Plan (2019).

³ Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods approved by the Regional Water Board or State Water Board, such as with the current edition of *Standard Methods for Examination of Water and Wastewater* (American Public Health Administration).

⁴ Monitoring for bacteria shall occur once per year during a storm event and shall coincide with monitoring for bacteria at Monitoring Location EFF-016.

⁵ Test methods used for coliforms (total and fecal) and enterococci bacteria shall be those presented in Table 1A of 40 C.F.R. Part 136, unless alternate methods have been approved in advance by U.S. EPA pursuant to 40 C.F.R. Part 136.

⁶ MPN and CFU are comparable units. The Permittee may use any enterococci method specified in 40 CFR 136 for compliance monitoring.

C. Groundwater Monitoring – Not Required

This Order does not require groundwater monitoring at this time.

IX. OTHER MONITORING REQUIREMENTS

A. Intertidal Benthic Marine Life Survey

The Permittee shall conduct a quantitative survey of intertidal benthic marine life, in accordance with section VI.C.2.a of the Order, at least once during the five-year term of this Order. The results of the survey must be completed and submitted to the State and Regional Water Board by **February 1, 2024**.

B. Bioaccumulation Study

The Permittee shall conduct a Bioaccumulation Study, in accordance with section VI.C.2.b of the Order, at least once during the five-year term of this Order. The study must be completed and results submitted to the Regional Water Board by **February 1, 2024**.

C. Sediment Monitoring and Study

The Permittee shall monitor subtidal sediment, in accordance with VI.C.2.c, at Monitoring Location SED-001 in Horseshoe Cove according to the following schedule.

Table E-10. Sediment Monitoring Requirements – Monitoring Location SED-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Ocean Plan Table 1 Pollutants (except chronic toxicity)	µg/L	Grab	Annually ¹	2 ²
Acute Toxicity	TUa	Grab	Annually	3

¹ In accordance with State Water Board Resolution No. 2007-0058, subtidal sediment in Horseshoe Cove shall be monitored annually. Based on the results of the first year of sediment monitoring, the Regional Water Board will determine which specific Table 1 Parameters shall be monitored on an annual basis thereafter.

² All samples will be tested in accordance with U.S. EPA or American Society for Testing and Materials (ASTM) methodologies where such methods exist. Where no U.S. EPA or ASTM method exists, the State Water Board or Regional Water Board (Collectively Water Boards)

shall approve the use of other methods. Analytical tests shall be conducted by laboratories certified by the California Department of Public Health in accordance with Water Code Section 13176.

- ³ The presence of sediment toxicity shall be estimated as specified in U.S. EPA's Methods for Assessing the Toxicity of Sediment-Associated Contaminants with Estuarine and Marine Amphipods (U.S. EPA Report 600/R-94/025, June 1994), using amphipod *Eohaustorius* estuaries.

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:

Table E-11. 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)
Each Storm Event	Permit effective date	All	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)
Semiannually	Closest of January 1 or July 1 following (or on) permit effective date	January 1 through June 30 July 1 through December 31	September 1, each year March 1, each year
Annually	January 1 following (or on) permit effective date	January 1 through December 31	March 1, each year (with annual report)

- 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 data quality may be percent accuracy (\pm 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:
- e. 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.
 - f. The Permittee shall include the statistical comparison of influent and effluent seawater concentrations. This analysis is required pursuant to section VII of the Order in order to demonstrate compliance with TSS and settleable solids effluent limitations.
 - g. 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.
- h. 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://www.waterboards.ca.gov/northcoast>.

C. Discharge Monitoring Reports (DMRs)

1. 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. 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, and November 1). Electronic DMR submittal shall be in addition to electronic SMR submittal. Information about electronic DMR submittal is available at the DMR web site at: http://www.waterboards.ca.gov/water_issues/programs/discharge_monitoring/.

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-12. Reporting Requirements for Special Provisions Reports

Order Section	Special Provision Requirement	Reporting Requirements
Special Provision VI.C.2.a and MRP Other Monitoring Requirement IX.A	Intertidal Benthic Marine Life Survey	February 1, 2024
Special Provision VI.C.2.b and MRP Other Monitoring Requirement IX.B	Bioaccumulation Study	February 1, 2024
Special Provision VI.C.2.c and MRP Other Monitoring Requirement IX.C	Sediment Monitoring/Study	March 1 , each year
Special Provision VI.C.3	Pollutant Minimization Program, Annual Facility Report	March 1 , annually, following development of a Pollutant Minimization Program
Special Provision VI.C.4.c	Notification of Construction Activity	180 days prior to any construction activity described in this provision
Special Provision VI.C.6.a	Storm Water Management Plan/Program	At least once every five years or as necessary
Special Provision VI.C.6.b	Waterfront and Marine Operations Non-Point Source Management Plan	At least once every five years or as necessary
Special Provision VI.C.6.c	Program for Prevention of Biological Pollutants	At least once every five years or as necessary
Special Provision VI.C.6.d	Solids Disposal Plan	August 1, 2020
MRP General Monitoring Provision I.F	DMR-QA Study	Annually , per State Water Board instructions
MRP Monitoring Requirement V.A.7	Verbal and written notification of chronic toxicity fail result	Within 72 hours (verbal) and 14 days (written) after the receipt of a fail result
MRP WET Testing Requirement V.A.9.b	TRE/TIE Results	Within 60 days of completion of TRE/TIE analyses
MRP WET Testing Requirement V.B.1	TRE Work Plan Revisions	At least once every five years or as necessary

Order Section	Special Provision Requirement	Reporting Requirements
MRP WET Testing Requirement V.B.2	Detailed TRE Work Plan	Within 30 days of an accelerated monitoring test that results in "Fail"
MRP Reporting Requirement X.D.2	Annual Report	March 1 , each year
MRP Reporting Requirement X.E	Spills and Unauthorized Discharge Reporting	Oral reporting within 24 hours and written report within 5 days

- 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 (<http://www.waterboards.ca.gov/ciwqs/index.html>). In the event that an alternate method for submittal of the annual report is required, the Permittee shall submit the annual report electronically via the email address in section X.B.6.c., above. The report shall be submitted by March 1st of the following year and certified as required by Standard Provisions (Attachment D) of this Order. 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. 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.
 - 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. **Storm Water Reporting.** The Permittee shall submit, as part of its annual report to the Regional Water Board, an evaluation of the effectiveness of the

Permittee's best management practices (BMPs) to control the run-on of storm water to the treatment facility site, as well as activities to maintain and upgrade these BMPs.

- g. DMR-QA Study Report.** The Permittee shall submit, as part of its annual report to the Regional Water Board, an electronic copy of the annual DMR-QA study report submitted to the State Water Board, Quality Assurance Program Officer pursuant to section I.F of this MRP.
- h. Chronic Toxicity Results.** The Permittee shall submit chronic toxicity results for discharge points with a monitoring frequency of annually or less with the annual report following the year that chronic toxicity is monitored pursuant to sections IV.A.1, IV.B.1, IV.C.2, and VIII.B.1 of this MRP. All chronic toxicity that is required less than annually shall be completed and reported no later than December 1, 2023.
- i. Document Updates.** The Permittee shall identify whether it reviewed any documents required as part of this Order including, but not limited to its TRE and TIE work plans, Operation and Maintenance Manual, Storm Water Management Plan/Program, and Program for Prevention of Biological Pollutants, and the results of the review. If the review found that the document requires revision, the annual report shall state when the revision will be completed. Upon completion of any document revision, the Permittee shall submit a copy of the revised document to the Regional Water Board.

E. Spill Notification

- 1. Spills and Unauthorized Discharges.** Information regarding all spills and unauthorized discharges that may endanger health or the environment shall be provided orally to the Regional Water Board 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 or unauthorized discharge occurrence;
- c.** Estimates of spill or unauthorized discharge volume, rate of flow, and spill or unauthorized discharge duration, if available and reasonably accurate;
- d.** Surface water bodies impacted, if any;
- e.** Cause of spill or unauthorized discharge, if known at the time of the notification;

- f.** Actions taken or repairs made at the time of the notification to cleanup and/or address the cause of the spill or unauthorized discharge; and
- g.** Responding agencies.

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ATTACHMENT F – FACT SHEET

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ATTACHMENT F – FACT SHEET

As described in section I, 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 discharge requirements for dischargers in California. Only those sections or subsections of this Order that are specifically identified as “not applicable” have been determined not to apply to this Permittee. Sections or subsections of this Order not specifically identified as “not applicable” 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	1B84035OSON
Permittee	University of California - Davis
Name of Facility	Bodega Marine Laboratory
Facility Address	2099 Westside Road
	Bodega Bay, CA 94923
	Sonoma County
Facility Contact, Title and Phone	Patrick Helbling, Associate Director, (707) 875-1958
Authorized Person to Sign and Submit Reports	Albert Carranza, Laboratory Manager, (707) 875-2016
Mailing Address	P.O. Box 247, Bodega Bay, CA 94923
Billing Address	Same as Mailing Address
Type of Facility	Marine Laboratory
Major or Minor Facility	Minor
Threat to Water Quality	3
Complexity	C
Pretreatment Program	Not Applicable
Recycling Requirements	Not Applicable
Facility Permitted Flow	1.0 million gallons per day (mgd) (maximum pump capacity of the seawater system)
Facility Design Flow	1.0 mgd (maximum pump capacity of the seawater system)
Watershed	Russian/Bodega Watershed Management Area (WMA)
Receiving Water	Pacific Ocean
Receiving Water Type	Ocean Waters

- A.** The University of California – Davis (hereinafter Permittee) is the owner and operator of the Bodega Marine Laboratory (hereinafter Facility), a marine laboratory.

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.

The Permittee is authorized to discharge subject to waste discharge requirements in this Order at the discharge locations described in Table 2 on the cover page of this Order. The Code of Federal Regulations at 40 C.F.R. section 122.46 limits the duration of NPDES permits to be effective for a fixed term not to exceed five years. Accordingly, Table 3 of this Order limits the effective period for the discharge authorized by this Order. Pursuant to California Code of Regulations (CCR), title 23, section 2235.4, the terms and conditions of an expired permit are automatically continued pending issuance of a new permit if all requirements of the federal NPDES regulations on continuation of expired permits are complied with.

- B.** The Facility discharges waste seawater, filter backwash, and storm water to the Pacific Ocean, a water of the United States. The Permittee was previously regulated by Order No. R1-2013-0023 and NPDES Permit No. CA0024333 adopted on June 13, 2013 and expired on July 31, 2018. The terms and conditions of the current Order and 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 a flow schematic 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 February 1, 2018. Supplemental information was submitted on April 18, 2018 and January 11, 2019. An inspection was conducted on June 11, 2019 to verify Facility operations prior to completing the permit renewal. The application was deemed complete on June 11, 2019.

II. FACILITY DESCRIPTION

The Permittee owns and operates a teaching and marine research institute. Researchers at the institute investigate population dynamics of marine invertebrates and fishes, fisheries management, fish health, aquaculture, invertebrate diseases, and many other topics. Annually, approximately 1,000 undergraduate students participate in classes and field trips, and marine science graduate students conduct thesis research at the Facility. The Facility is not a public aquarium, but tours are provided to approximately 10,000 visitors per year for public education regarding the science conducted at the laboratory and maintaining healthy coastal marine ecosystems.

The Bodega Marine Laboratory is located on the 362-acre Bodega Marine Reserve, approximately 3 miles from the town of Bodega Bay and 40 minutes from Santa Rosa and Petaluma. The site is known for the intensity of its coastal upwelling, strong influence of

marine process on coastal ecosystems, and the diverse soils and geology of the San Andreas fault zone. Terrestrial and marine habitats are owned or managed by the Permittee. Plant communities, soils, and microclimates vary sharply on small scales, and include rocky subtidal and intertidal habitats, protected and exposed sandy beaches, bay mudflats, sand flats, and tidal marsh. Upland habitats include sand dunes, bluffs, coastal prairie, and shrubland. Access to the reserve is by permission only, to ensure protection of water quality in the Bodega Area of Special Biological Significance (ASBS), organisms in the newly established marine protected area Bodega Head State Marine Reserve and Conservation Areas, and long-term research projects situation on the Reserve.

A. Description of Wastewater and Biosolids Treatment and Controls

The Facility utilizes a computer-controlled flow-through seawater system in the majority of the research laboratories. Seawater for the flow-through system is pumped continuously from the Pacific Ocean with two intake lines located approximately 260 feet offshore in Horseshoe Cove. Each line is fitted with intake screens that are removed, cleaned, and replaced three to four times per year. Two centrifugal pumps provide up to 500 gallons per minute (gpm) to a clarification system, which can be bypassed for researchers requiring unfiltered seawater. The clarification system removes large debris with screens and includes a settling pre-chamber for large-grained sediment. Six parallel light weight gravel beds filter the seawater through passive upwelling of the seawater before it is pumped to the north and south wing storage reservoirs. From the storage reservoirs, seawater is distributed to research laboratories by gravity flow. The pre-chamber is cleaned by shovel, and the gravel beds are backwashed once per week using high volume, low pressure air, and the backwash drains to the waste seawater outfall at Discharge Point 001.

Approximately 10 percent of the seawater, up to 60 gallons per minute (gpm), is used in pathology laboratories. To prevent escape of any disease-causing organisms, effluent from the pathology laboratories was previously chlorinated with sodium hypochlorite, and then dechlorinated with gaseous sulfur dioxide before commingling with untreated seawater prior to discharge. In February 2015, the Permittee replaced the chlorine disinfection system with a new ultraviolet light (UV) disinfection system, which treats up to 150 gpm seawater from the shellfish pathology laboratory and the non-indigenous species (NIS) laboratory. The discharge from these areas is filtered by a rotary microscreen drum filter, which automatically backwashes with high-pressure potable water supplied by the local water purveyor, Bodega Bay Public Utilities District, and drains to the septic system. From the filters, the seawater discharge passes through a set of UV lights which sterilizes the seawater before in joins the main seawater drain.

The UV system is backed up with redundancy in several places. Intake at the pathology and white abalone culture (WAC) laboratories are UV-sterilized to prevent any local disease from infecting animals in the laboratories. The pathology laboratory discharge line also contains a subset of filters and UV lights for 100 gpm to be sterilized once before being rotofiltered in the main UV system shed. Alarms are

activated in the event of a high seawater tank level or UV failure. As the drum filter collects debris, rising water contacts a level switch that activates the automatic drum rotation and backwash system. If the filter is clogged, rising water contacts a high water level alarm and switch which forces the system to switch operation to a redundant drum filter unit. In the event of bulb failure/low light intensity, the flow is then switched to a redundant system of UV lights. In the event of pump failure and UV failure, the influent supply valves in the NIS laboratory shut down. The remaining effluent runs, by gravity, through the overflow pipes into underground tanks that can hold untreated water until the system is operating, or for batch chlorination and dechlorination as a last resort. With the exception of possible occasional batch chlorination and dechlorination, the Permittee does not employ physical, chemical, or biological wastewater treatment processes prior to discharging.

Storm water runoff from the grounds of the Facility drains over the surrounding soil and vegetation before draining into a nearby freshwater marsh, located approximately 220 feet from the beach at Horseshoe Cove. The flow continues through the marsh to a culvert pipe and concrete trough, which carry storm water to Horseshoe Cove Beach at Discharge Point 016. As storm water flows over the vegetation and through the marsh, natural treatment of the run-off may occur. The freshwater marsh is a water of the State and potentially a water of the United States. The Permittee implements appropriate storm water best management practices (BMPs) and storm water monitoring to minimize the discharge of pollutants in the storm water runoff that enters the freshwater marsh at Discharge Points 003 and 004 from the parking lot and operations support areas.

The receiving water for the ocean discharges is designated by the State Water Resources Control Board (State Water Board) as the Bodega ASBS. The California Ocean Plan prohibits waste discharges to ASBSs. The State Water Board contacted the Permittee on October 18, 2004 to inform the Permittee that its discharges into the ASBS are subject to the Ocean Plan waste discharge prohibition. On January 31, 2005, the Permittee applied for an exception to the California Ocean Plan for discharge into the Bodega ASBS. An Initial Study and Mitigated Negative Declaration (IS/MND) was circulated for public review, and on September 18, 2007, the State Water Board approved this Exception and the IS/MND with Resolution No. 2007-0058.

The Facility also includes a Salmon Research Facility, which has not been in operation since 2009. When the Salmon Research Facility is operational, it utilizes freshwater produced from a well on the property, which has a salinity of 3 parts per thousand and does not meet potable standards. The well water is first filtered using two sequential gravel beds and then distributed to Salmon Sheds I and II via open pressure lines. Within Salmon Shed I, the water is directed to three settling tanks, and then to the pumphouse. Within the Salmon Shed I pumphouse there are three pumps. Pump I water passes through two 30-micron pleated cartridge filters and a chiller and is rerouted back to the settling tanks or directly to Salmon Shed I tanks. Pump II water is filtered through two pleated cartridge filters and re-routed back to the settling tanks or directly to Salmon Shed I tanks. Pump III water is filtered through one cartridge filter

prior to use in the pathology laboratory. Salmon Shed I water is currently flow-through but can be recirculated. Salmon Shed II freshwater is delivered from the gravel beds to an underground tank before being pumped through filter canisters without filters, unless the water appears murky, in which case filters are used. Salmon Shed II is drained to a small settlement catch basin before being recirculated, at not less than 15 gpm. Waste freshwater is discharged to a groundwater recharge area at Discharge Point 002 in the sand dunes adjacent to the laboratory. The freshwater discharge to groundwater is subject to Waste Discharge Requirements (WDRs) that are incorporated into this Order but is not regulated under the NPDES program.

Salmon research at the Facility can entail raising newly hatched or young fish to adult salmon. Some projects may include introducing the young salmon to seawater when they are at smolting age. Smolting is a physiological hormonal process that allows salmon to gradually transition from fresh water to seawater. During smoltification periods, which may last up to 21 days per year, a portion of the freshwater flow is mixed with seawater to create waters with varying salinities for the Salmon Research Facility. This brackish water is discharged with the waste seawater effluent. When salmon are held in the Fish Pathology laboratory in low salinity water, the effluent must pass through the disinfection system and can contribute up to 4% of the seawater discharge.

A housing enclave is located approximately 1 mile from the laboratory, and includes a visiting scientist lodge and two dormitories, providing a total of 63 beds plus a bunkhouse. Domestic wastewater from the housing enclave and the laboratory is treated using septic tank-leachfield systems and is not regulated by this Order.

Influent seawater solids are natural materials such as sand, seaweed, and shells, and are manually removed from the clarifier as needed. The material is stockpiled for future use in construction projects, including foundations for building vegetated berms for storm water runoff. UV filter solids are backwashed with freshwater to the septic system.

B. Discharge Points and Receiving Waters

The Facility discharges to the Pacific Ocean through two points of discharge: Discharge Point 001, which discharges once-through seawater and filter backwash; and Discharge Point 016 which discharges storm water runoff via the freshwater marsh. The Facility and Discharge Points 001 and 016 are located in the Russian/Bodega WMA within the Bodega ASBS.

1. Once-through sea water and filter backwash is discharged at Discharge Point 001 at 38° 19 00" N latitude and 123° 04' 00" W longitude, to the Pacific Ocean. Based on flow data collected since 2008, the maximum pumping rate for waste seawater at Discharge Point 001 was 1.0 mgd and the average daily discharge flow reported in the application was 0.601 mgd.

2. Storm water is discharged at Discharge Point 016 at 38° 19' 02" N latitude and 123° 04' 13" W longitude, to the Pacific Ocean.

The Ocean Plan prohibits discharges to ASBS waters, unless an exception to the prohibition is granted by the State Water Board. The Ocean Plan states that the State Water Board may, in compliance with California Environmental Quality Act (CEQA), subsequent to a public hearing, and with the concurrence of U.S. EPA, grant exceptions where the Board determines: (a) the exception will not compromise protection of ocean waters for beneficial uses, and (b) the public interest will be served.

The State Water Board granted an exception to this prohibition for the Facility on September 18, 2007 with Resolution No. 2007-0058, which establishes terms and conditions of approval that must be incorporated into this Order. The following table provides a summary of these terms and conditions, and reference to the section of the Order in which they are located.

Table F-2. Terms and Conditions of Resolution No. 2007-0058 Incorporated into the Order

Resolution Provision	Description of Provision	Order Section Number
2.a	Mussel Point station to be used to determine natural water quality conditions.	Receiving Water Limitation V.A
2.a	Natural water quality conditions in the receiving water shall not be altered as a result of the discharge.	Receiving Water Limitation V.A.1, MRP Receiving Water Monitoring Requirements VIII.A.1 and VIII.B.1
2.b	Constituents in excess of Ocean Plan Table 1 water quality objectives shall not be discharged.	Discharge Prohibition III.H
2.b	Chemical additives, including, but not limited to, antibiotics, shall not be discharged in the seawater system effluent. Discharge of halomethanes and chlorine must be minimized.	Discharge Prohibition III.G
2.c	Total residual chlorine must be continuously monitored.	MRP Effluent Monitoring Requirement IV.A.1
2.d	The current approved analytical method with the lowest detection limit shall be used for metals analysis.	MRP General Monitoring Provisions I.E, Effluent Monitoring Requirements IV.A.1 and IV.C.1, and Receiving Water Monitoring Requirements VIII.A.1 and VIII.B.1

Resolution Provision	Description of Provision	Order Section Number
2.e	The waste seawater effluent flow rate shall not exceed 1.5 mgd. Storm water effluent flow rate shall be measured or calculated.	Discharge Prohibition III.I, and MRP Effluent Monitoring Requirements IV.A.1 and IV.C.1
2.f	Freshwater discharge must be discharged to the groundwater recharge area in the sand dunes adjacent to the laboratory.	Discharge Prohibition III.C, MRP Monitoring Location II, and Land Discharge Monitoring Requirement VI.A.1
2.g	Non-storm water facility runoff, except for the waste seawater discharge and emergency fire-fighting runoff, must be prevented.	Discharge Prohibition III.J
2.h	A Storm Water Management Plan/Program (SWMP) shall be developed and address the prohibition of non-storm water runoff and the reduction of pollutants in storm water discharges to the ASBS	Special Provision VI.C.6.a.i
2.i	The SWMP must include measured that describe how non-storm water discharges have been eliminated and how the measures are maintained, monitored, and documented.	Special Provision VI.C.6.a.ii
2.j	The SWMP must include a map of storm water runoff and BMPs employed.	Special Provision VI.C.6.a.v
2.k	The SWMP must address how pollutants have been and will be reduced in storm water runoff into the ASBS, and the BMPs employed and BMPs planned, with an implementation plan for those BMPs	Special Provision VI.C.6.a.iii
2.l	A quantitative survey of intertidal benthic life must be performed near the discharge and a reference site at least once per term.	Special Provision VI.C.2.a and MRP Other Monitoring Requirement IX.A
2.m	A bioaccumulation study using California mussels must be performed near the discharge and a reference site once per permit term.	Special Provision VI.C.2.b and MRP Other Monitoring Requirement IX.B

Resolution Provision	Description of Provision	Order Section Number
2.n	Sampling for the waste seawater effluent and the reference station must occur twice the first year of the permit term and annually thereafter for analysis of Table 1 parameters, pH, salinity, and temperature.	MRP Effluent Monitoring Requirement IV.A.1 and Receiving Water Monitoring Requirements IV.C.1 and VIII.B.1
2.o	Storm water runoff and the Horseshoe Cove receiving water must be sampled once annually for Table 1 parameters and Ocean Plan indicator bacteria.	Receiving Water Monitoring Requirement VIII.A.1
2.p	Subtidal sediment in Horseshoe Cove must be sampled annually for Table 1 parameters.	Special Provision VI.C.2.c and MRP Other Monitoring Requirement IX.C
2.q	If Horseshoe Cove Receiving water monitoring indicates the storm water runoff is altering natural water quality, a report must be submitted 30 days within receiving the results.	Special Provisions VI.C.6.a.vi and MRP Receiving Water Monitoring Requirement VIII.B.1
2.r	A program for prevention of biological pollutants must be developed and implemented.	Special Provision VI.C.6.c
2.s	A waterfront and marine operations non-point source management plan must be prepared.	Special Provision VI.C.6.b
2.t	The Regional Water Quality board must be notified 180 days prior to any construction activity that could result in any discharge or habitat modification in the ASBS.	Special Provision VI.C.4.c
2.u	The conditions of approval (as described above) shall be included in the NPDES permit.	Throughout

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

Effluent limitations contained in Order No. R1-2013-0023 for discharges from Discharge Point 001 (Monitoring Location EFF-001) and representative monitoring data from the term of Order No. R1 2013-0023 are as follows:

Table F-3. Historic Effluent Limitations and Monitoring Data – Discharge Point 001

Parameter	Units	Effluent Limitation Average Monthly	Effluent Limitation Average Weekly	Effluent Limitation Maximum Daily	Monitoring Data (August 2013 – January 2018) Highest Average Monthly Discharge	Monitoring Data (August 2013 – January 2018) Highest Average Weekly Discharge	Monitoring Data (August 2013 – January 2018) Highest Daily Discharge
Total Suspended Solids	mg/L	1	1	1	54 ²	54 ²	54 ²
Settleable Solids	ml/L	1.0 ¹	1.5 ¹	1	<1.0 ²	<1.0 ²	<1.0 ²
pH	s.u.	--	--	6.0 – 9.0	--	--	7.5 – 8.3
Bis(2-Ethylhexyl) Phthalate	µg/L	3.5	--	--	16	--	--
Chromium VI, Total Recoverable	µg/L	2.0 ³	--	8.0/20 ⁴	0.87 ⁵	--	1.4
Copper, Total Recoverable	µg/L	3.0 ³	--	12/30 ⁴	1.0 ⁵	--	1.1
Lead, Total Recoverable	µg/L	2.0 ³	--	8.0/20 ⁴	0.28 ⁵	--	0.39
Nickel, Total Recoverable	µg/L	5.0 ³	--	20/50 ⁴	0.97 ⁵	--	0.97
Silver, Total Recoverable	µg/L	0.70 ³	--	2.8/7.0 ⁴	0.06 ⁵	--	0.06
Zinc, Total Recoverable	µg/L	20 ³	--	80/200 ⁴	5.9 ⁵	--	6.4
Total Residual Chlorine	mg/L	--	--	Non-Detect ⁴	Non-Detect ⁵	--	<10

¹ The discharge shall not contain concentrations of suspended and settleable solids higher than those found in the influent at Monitoring Location INF-001 and shall not cause nuisance or adversely affect beneficial uses. In no case shall effluent concentrations exceed the Table 2 Ocean Plan effluent limitations.

² Represents the highest observed gross effluent concentration.

³ Represents the 6-month median effluent limitation.

⁴ Represents the instantaneous maximum effluent limitation.

⁵ Represents the highest observed 6-month median.

D. Compliance Summary

1. During the term of Order No. R1-2013-0023, the Permittee had one effluent limitation violation and one accidental discharge.

The effluent violation for bis(2-ethylhexyl) phthalate occurred in March 2017. The Permittee suspects the violation was caused by PVC dust and debris entering a seawater drain as a result of pipe installation near the drain. Bis(2-ethylhexyl) phthalate was not found in subsequent samples, and the Permittee now requires PVC cutting to be performed in dry locations away from drains.

The accidental discharge of oxytetracycline (OTC) antibiotic occurred in September 2017 and was caused by removing a non-operational pump from a tank, and leaving tubing in the tank, creating a siphon which resulted in discharge of tank solution containing OTC to a floor sump. The biologically active component range was calculated and determined to be non-detect. The Permittee updated their Standard Operating Procedures and Notification Procedures and reviewed them with relevant personnel.

2. On February 12, 2019, the Permittee submitted a signed Acceptance of Conditional Resolution and Waiver of Right to Hearing Relating to Violations of NPDES Permit No. CA0024333. The Permittee accepted the Regional Water Board's "Offer to Participate in Expedited Payment Program" and paid a \$3,000 mandatory penalty that resulted from the effluent limitation violation for bis(2-ethylhexyl) phthalate.

E. Planned Changes

The Permittee does not have any changes planned for this permit term.

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 authorizing the Permittee to discharge into waters of the U.S. at the discharge location described in Table 2 subject to the WDRs in this Order. This Order also serves as 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. Before the Regional Water Board could consider adoption of this NPDES permit, however, the Permittee was required to seek an exception to the California Ocean Plan to allow discharges to the Bodega ASBS. On September 18, 2007, with Resolution No. 2007-0058 the State Water Board approved an exception to the California Ocean Plan for the Facility, a decision that was subject to the requirements of CEQA. The State Water Board, as the lead agency for the CEQA analysis, prepared and circulated an IS/MND for the proposed exception; held a public hearing on June 30, 2007 to hear comments regarding the exception and the IS/MND; and formally respond to comments. Based on the entire record including the IS/MND, comments received, and the response to comments, the State Water Board concluded that there was no substantial evidence that approval of such an exception would have a significant effect on the environment, so long as the Permittee applied for coverage under the NPDES permit program and the specific terms and conditions were incorporated into the Facility's NPDES permit. Resolution No. 2007-0058, therefore approved an exception to the California Ocean Plan, approved an MND and required that certain specific terms and conditions be included into the NPDES permit to ensure on-going protection of the Bodega ASBS. These actions satisfy CEQA requirements for Discharge Point 001.

The issuance of WDRs for discharge of once-through freshwater at Discharge Point 002 is not covered by an exemption from the provisions of CEQA under Water Code section 13389. However, because this action to adopt an NPDES permit involves the re-issuance of WDRs for an existing facility that discharges treated wastewater to land, discharges from Discharge Point 002 are exempt from CEQA pursuant to title 14, CCR, section 15301 as an existing facility for which no expansion of use is being permitted.

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. 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 municipal or domestic supply (MUN). With high concentrations of total dissolved solids, ocean waters meet an exception to State Water Board Resolution No. 88-63; and therefore, the MUN designation is not applicable to the ocean receiving water for this Permittee. Beneficial uses applicable to the Pacific Ocean, area groundwater, and the freshwater marsh are summarized in Table F-4, below:

Table F-4. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001 and 016	Pacific Ocean	Existing: Navigation (NAV); Water contact recreation (REC-1); Non-contact water recreation (REC-2); Commercial and sport fishing (COMM); Wildlife habitat (WILD); Rare, threatened, or endangered species (RARE); Marine habitat (MAR); Migration of aquatic organisms (MIGR); Spawning, reproduction, and/or early development (SPAWN); Shellfish harvesting (SHELL); Aquaculture (AQUA); and Preservation of Areas of Special Biological Significance (ASBS). Potential: Industrial water supply (IND); and Industrial process supply (PRO);
002	Groundwater	Existing: Municipal and domestic supply (MUN); Agricultural supply (AGR); Industrial service supply (IND); and Native American Culture (CUL). Potential Industrial Process Supply (PRO); and Aquaculture (AQUA).

Discharge Point	Receiving Water Name	Beneficial Use(s)
003 and 004	Freshwater Marsh	Existing: Wetland habitat (WET). Potential: Municipal and domestic supply (MUN); Agricultural supply (AGR); Industrial service supply (IND); Groundwater recharge (GWR); Freshwater replenishment (FRSH); Navigation (NAV); Water contact recreation (REC-1); Non-contact water recreation (REC-2); Commercial and sport fishing (COMM); Warm freshwater habitat (WARM); Cold freshwater habitat (COLD); Wildlife habitat (WILD); Rare, threatened, or endangered species (RARE); Migration of aquatic organisms (MIGR); Spawning, reproduction, and/or early development (SPAWN); Shellfish harvesting (SHELL); Estuarine habitat (EST); Aquaculture (AQUA); Native American Culture (CUL); Flood peak attenuation/flood water storage (FLD); and Water quality enhancement (WQE).

Requirements of this Order implement the Basin Plan.

- 2. 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 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.

3. California Ocean Plan. The State Water Board adopted the Water Quality Control Plan for Ocean Waters of California, California Ocean Plan (Ocean Plan) in 1972 and amended it in 1978, 1983, 1988, 1990, 1997, 2000, 2005, 2009, 2012, 2015, and 2019. The State Water Board adopted the latest amendment on August 7, 2018, and it became effective on February 4, 2019. The Ocean Plan is applicable, in its entirety, to point source discharges to the Pacific Ocean. In order to protect the beneficial uses, the Ocean Plan establishes water quality objectives and a program for implementation. The Ocean Plan identifies the beneficial uses of ocean waters of the state to be protected as summarized below:

Table F-5. Ocean Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001 and 016	Pacific Ocean	Existing: Industrial water supply; Water contact and non-contact recreation, including aesthetic enjoyment; Navigation; Commercial and sport fishing; Mariculture; Preservation and enhancement of designated Areas of Special Biological Significance (ASBS); Rare and endangered species; Marine habitat; Fish migration; Fish spawning; and Shellfish harvesting.

Requirements of this Order implement the Ocean Plan.

4. 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 Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Policy or SIP). This Policy became effective on August 27, 2008.

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

- 5. 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.
- 6. 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 from the previous 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.
- 7. 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 and Game Code sections 2050 or 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, including protecting rare, threatened, and endangered species. The Permittee is responsible for meeting all requirements of the applicable Endangered Species Act.

D. Impaired Water Bodies on the CWA section 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 April 6, 2018, the U.S. EPA provided final approval of the 2014 and 2016 303(d) List of Impaired Water Bodies prepared by the state. The coastal waters which are the receiving waters for this Facility are not listed on the 303(d) list as being impaired; however, there are several sections of the Pacific Ocean which are on the 303 (d) list. The nearest 303(d) listed waters are 810 acres of Bodega Harbor, which are listed as impaired by invasive species. It is not anticipated that the discharge will affect the 303(d) listed waters of Bodega Harbor because the discharge of exotic species is prohibited by Discharge Prohibition III.E of this Order.

E. Other Plans, Policies and Regulations

1. On September 18, 2007, with Resolution No. 2007-0058, the State Water Board approved an exception to the California Ocean Plan's prohibition regarding discharges to ASBS, thereby allowing continued discharges from the Facility to the Bodega ASBS. In its CEQA analysis, the State Water Board concluded that there was no substantial evidence that approval of such an exception would have a significant effect on the environment, so long as specific terms and conditions were incorporated into the Facility's NPDES permit. Resolution No. 2007-0058, therefore, included several specific terms and conditions that have been incorporated into this Order (refer to Table F-2, in Section II.B of this Fact Sheet).

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 water quality-based effluent limitations (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 any waste not disclosed by the Permittee or not within the reasonable contemplation of the Regional Water Board is prohibited.

This prohibition has been retained from Order No. R1-2013-0023 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 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 either not disclosed by the Permittee, or are not reasonably anticipated to be present in the discharge but have not been disclosed by the Permittee. 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...whether spills or otherwise...*” [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.

- 2. Discharge Prohibition III.B.** 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. R1-2013-0023 and is based on section 13050 of the Water Code and section 5411 of the California Health and Safety Code.

- 3. Discharge Prohibition III.C.** The discharge of waste to land that is not under the control of the Permittee is prohibited except as authorized under Section VI.C.6.d (Solids Disposal).

This prohibition is retained from Order R1-2013-0023. Land used for the application of wastewater must be owned by the Permittee or be under the control of the Permittee by contract so that the Permittee maintains a means for ultimate disposal of treated wastewater.

- 4. Discharge Prohibition III.D.** 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.

This prohibition has been retained from Order No. R1-2013-0023. This prohibition is a general 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.

- 5. Prohibition III.E.** The discharge of exotic organisms (non-endemic, non-naturalized plants, animals, and microorganisms, including gametes, spores, larvae, and parts of such organisms) is prohibited.

This prohibition has been retained from Order No. R1-2013-0023. This prohibition is based on the Regional Water Board's concern regarding the introduction of non-native and/or exotic species and/or fish pathogens to the Bodega ASBS, specifically in light of the fact that Bodega Harbor is 303(d) listed as impaired by invasive species.

- 6. Prohibition III.F.** The discharge of waste resulting from cleaning activities is prohibited.

This prohibition is retained from Order No. R1-2013-0023 and is based on the Basin Plan Policy on Regulation of Fish Hatcheries, Fish Rearing Facilities, and Aquaculture Operations. This prohibition is based on the Regional Water Board's concern that cleaning and maintenance activities may produce wastes that may include cleaning chemicals, concentrate pollutants, or generate solids that should not be discharged to the seawater outfall. Storm drain inlets and filters must be maintained in accordance with the Facility storm water management plan to ensure that solids and debris are removed from the inlets and disposed of properly. Solids that are removed from any location on the Facility shall not be deposited into any manhole or other connection to the seawater discharge outfall.

- 7. Prohibition III.G.** The discharge of waste containing detectible levels of chemicals used for the treatment and control of disease, other than salt (NaCl), is prohibited.

This prohibition is retained from Order No. R1-2013-0023 and reflects the importance of protecting the Bodega ASBS. This prohibition based on the Basin Plan Policy on Regulation of Fish Hatcheries, Fish Rearing Facilities, and Aquaculture Operations, and is consistent with Provision 2.b of State Water Board Resolution No. 2007-0058.

- 8. Prohibition III.H.** The discharge of any constituents to the ocean at levels in excess of the water quality objectives established by Ocean Plan Table 1 (2019) is prohibited.

This prohibition is retained from Order No. R1-2013-0023 and is consistent with Provision 2.b of State Water Board Resolution No. 2007-0058.

- 9. Prohibition III.I.** The discharge rate from the seawater system shall not exceed 1.0 mgd.

This prohibition is retained from Order No. R1-2013-0023 and is consistent with Provision 2.e of State Water Board Resolution No. 2007-0058 and was based on the maximum flow estimate provided by the Permittee in the October 22, 2012 ROWD. The maximum flow reported in the 2018 ROWD was 0.818 mgd; thus, the Permittee has maintained compliance with this prohibition over the term of Order No. R1-2013-0023.

- 10. Prohibition III.J.** Discharges of non-storm water facility runoff to the ocean (i.e., any discharge runoff from the facility that reaches the ocean and that is not composed entirely of storm water), except those associated with the waste seawater system and emergency firefighting, are prohibited.

This prohibition is retained from Order No. R1-2013-0023 and is consistent with Provision 2.g of State Water Board Resolution No. 2007-0058.

- 11. Prohibition III.K.** 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. R1-2013-0023 and is based on the discharge prohibitions contained in section III.I of the Ocean Plan and section 13375 of the Water Code.

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 Best Professional Judgement (BPJ) in accordance with 40 C.F.R. section 125.3.

The CWA requires that technology-based effluent limitations are established based on several levels of controls:

- a. Best practicable treatment control technology (BPT) represents the average of the best existing performance by well-operated facilities within an industrial category or subcategory. BPT standards apply to toxic, conventional, and non-conventional pollutants.
- b. Best available technology economically achievable (BAT) represents the best existing performance of treatment technologies that are economically achievable within an industrial point source category. BAT standards apply to toxic and non-conventional pollutants.

- c. Best conventional pollutant control technology (BCT) represents the control from existing industrial point sources of conventional pollutants including five-day biochemical oxygen demand (BOD), total suspended solids (TSS), fecal coliform, pH, and oil and grease. The BCT standard is established after considering a two-part reasonableness test. The first test compares the relationship between the cost of attaining a reduction in effluent discharge and the resulting benefits. The second test examines the cost and level of reduction of pollutants from the discharge from publicly owned treatment works to the cost and level of reduction of such pollutants from a class or category of industrial sources. Effluent limitations must be reasonable under both tests.
- d. New source performance standards (NSPS) represent the best available demonstrated control technology standards. The intent of NSPS guidelines is to set limitations that represent state-of-the-art treatment technology for new sources.

The CWA requires U.S. EPA to develop effluent limitations, guidelines and standards (ELGs) representing application of BPT, BAT, BCT, and NSPS. Section 402(a)(1) of the CWA and 40 C.F.R section 125.3 authorize the use of BPJ to derive technology-based effluent limitations on a case-by-case basis where ELGs are not available for certain industrial categories and/or pollutants of concern. Where BPJ is used, the Regional Water Board must consider specific factors outlined in Section 125.3.

2. Applicable Technology-Based Effluent Limitations

- a. **Ocean Plan Table 2 Effluent Limitations.** The State Water Board, in Table 2 of the Ocean Plan, has established technology-based effluent limitations that apply to POTWs, and also to industrial discharges for which Effluent Limitations Guidelines have not been established pursuant to Sections 301, 302, 304, or 306 of the federal CWA. Compliance with Table 2 effluent limitations, or ELGs for industrial discharges, based on BCT, shall be the minimum level of treatment acceptable under the Ocean Plan, and shall define reasonable treatment and waste control technology. The Facility is not subject to ELGs at this time; therefore, technology-based limitations contained in Table 2 of the Ocean Plan are applicable to the Permittee.

The terms contained in Resolution No. 2007-0058 require that the “*natural water quality conditions in the receiving water, seaward of the surf zone, must not be altered as a result of the discharge.*” Therefore, the Permittee must not add pollutants beyond what is present in the receiving water at the discharge site. Since elevated TSS and settleable solids are common in filter backwash and storm water, this Order limits effluent TSS and settleable solid concentrations to the concentrations in the influent water at the time of discharge. Procedures for determining compliance with this limitation are

described in the Order section VII.J. In any event, effluent TSS and settleable solids concentrations must not exceed Ocean Plan Table 2 effluent limitations. Requirements for TSS, settleable solids, and pH reflect a reasonable level of pollutant control for facilities that hold and grow aquatic organisms.

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 Ocean 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 Ocean Plan.

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 section III.C.1 and III.C.3 of this Fact Sheet.
- b. **Ocean Plan Water Quality Objectives.** Water quality criteria applicable to ocean waters of the Region are established by the Ocean Plan, which includes general provisions and water quality objectives for bacterial characteristics, physical characteristics, chemical characteristics, biological characteristics, and radioactivity. These water quality objectives from the Ocean Plan are incorporated as receiving water limitations in section V.A of the Order. Table 1 of the Ocean Plan contains numeric water quality

objectives for 83 toxic pollutants for the protection of marine aquatic life and human health. Pursuant to NPDES regulations at 40 C.F.R. section 122.44(d)(1), and in accordance with procedures established by the Ocean Plan, the Regional Water Board has performed an Ocean Plan reasonable potential analysis (RPA) to determine the need for effluent limitations for the Table 1 toxic pollutants.

c. Minimum Initial Dilution

All effluent limitations are calculated with no initial dilution.

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. The reasonable potential analysis (RPA) for the Facility was conducted as follows:

- a. Ocean Plan Reasonable Potential Analysis (RPA).** Procedures for performing an RPA for ocean dischargers are described in Section III.C. and Appendix VI of the Ocean Plan. In general, the procedure is a statistical method that projects an effluent data set while taking into account the averaging period of water quality objectives, the long term variability of pollutants in the effluent, limitations associated with sparse data sets, and uncertainty associated with censored data sets. The procedure assumes a lognormal distribution of the effluent data set and compares the 95th percentile concentration at 95 percent confidence of each Table 1 pollutant, accounting for dilution, to the applicable water quality criterion. The RPA results in one of three following endpoints.

Endpoint 1 – There is “reasonable potential,” and a WQBEL and monitoring are required.

Endpoint 2 – There is “no reasonable potential.” WQBELs are not required, and monitoring is required at the discretion of the Regional Water Board.

Endpoint 3 – The Ocean Plan RPA is inconclusive. Existing WQBELs are retained, and monitoring is required.

The State Water Resources Control Board has developed a reasonable potential calculator, which is available at <http://www.waterboards.ca.gov/plnspols/docs/oplans/rpcalc.zip>. The calculator (RPcalc 2.2) was used in conducting the RPA and considers several pathways in the determination of reasonable potential.

i. First Path

If available information about the receiving water or the discharge supports a finding of reasonable potential without analysis of effluent data, the Regional Water Board may decide that WQBELs are necessary after a review of such information. Such information may include: the facility or discharge type, solids loading, lack of dilution, history of compliance problems, potential toxic effects, fish tissue data, 303(d) status of the receiving water, or the presence of threatened or endangered species or their critical habitat, or other information.

ii. Second Path

If any pollutant concentration, adjusted to account for dilution, is greater than the most stringent applicable water quality objective, there is reasonable potential for that pollutant.

iii. Third Path

If the effluent data contains three or more detected and quantified values (i.e., values that are at or above the ML), and all values in the data set are at or above the ML, a parametric RPA is conducted to project the range of possible effluent values. The 95th percentile concentration is determined at 95 percent confidence for each pollutant and compared to the most stringent applicable water quality objective to determine reasonable potential. A parametric analysis assumes that the range of possible effluent values is distributed log normally. If the 95th percentile value is greater than the most stringent applicable water quality objective, there is reasonable potential for that pollutant.

iv. Fourth Path

If the effluent data contains three or more detected and quantified values (i.e., values that are at or above the ML), but at least one value in the data set is less than the ML, a parametric RPA is conducted according to the following steps.

- (a)** If the number of censored values (those expressed as a “less than” value) account for less than 80 percent of the total number of effluent values, calculate the ML (the mean of the natural log of transformed data) and SL (the standard deviation of the natural log of transformed data) and conduct a parametric RPA, as described above for the Third Path.
- (b)** If the number of censored values account for 80 percent or more of the total number of effluent values, conduct a non-parametric RPA,

as described below for the Fifth Path. (A non-parametric analysis becomes necessary when the effluent data is limited, and no assumptions can be made regarding its possible distribution.)

v. Fifth Path

A non-parametric RPA is conducted when the effluent data set contains less than three detected and quantified values, or when the effluent data set contains three or more detected and quantified values but the number of censored values accounts for 80 percent or more of the total number of effluent values. A non-parametric analysis is conducted by ordering the data, comparing each result to the applicable water quality objective, and accounting for ties. The sample number is reduced by one for each tie, when the dilution adjusted method detection limit (MDL) is greater than the water quality objective. If the adjusted sample number, after accounting for ties, is greater than 15, the pollutant has no reasonable potential to exceed the water quality objective. If the sample number is 15 or less, the RPA is inconclusive, monitoring is required, and any existing effluent limitations in the expiring permit are retained.

b. Reasonable Potential Determination

The RPA for the waste seawater was conducted using effluent monitoring data generated from semiannual monitoring events for Ocean Plan Table 1 parameters in November 2013, March and December 2014, May and October 2015, March and December 2016, and March and November 2017, and from routine monitoring events conducted between August 2013 and December 2017 for ammonia, chlorine, halomethanes, and PAHs, as required by the Monitoring and Reporting Program for Order No. R1-2013-0023. Results from the RPA have been used to determine the need for effluent limitations for Table 1 parameters given in the Ocean Plan. No credit for dilution was allowed in conducting the RPA.

Table F-6, below, identifies the RPA endpoint for each Table 1 parameter detected in the effluent and shows the analysis reached an Endpoint 3 for most of the parameters analyzed. An Endpoint 3 RPA is inconclusive and results when a majority of the effluent data is reported as ND (not detected). In these circumstances, the Regional Water Board views the “inconclusive” result as an indication of no concern for a particular pollutant; however, additional monitoring will be required for those parameters during the term of the permit.

The RPA conducted for the Facility demonstrated reasonable potential (Endpoint 1) for discharges from the Facility to cause or contribute to exceedances of applicable water quality criteria for zinc.

The RPA conducted for the Facility demonstrated reasonable potential (Endpoint 1) for discharges from the Facility to cause or contribute to exceedances of applicable water quality criteria for hexavalent chromium and bis (2-ethylhexyl) phthalate. However, laboratory result for the March 4, 2014, December 9, 2014, October 13, 2015, March 22, 2016, December 6, 2016, March 21, 2017, and November 14, 2017 hexavalent chromium samples indicated blank contamination. Additionally, the laboratory result of 16 µg/L for the March 21, 2017 bis (2-ethylhexyl) phthalate sample was identified in the annual report as an anomaly, likely caused by PVC pipe shavings entering the floor drains during a remodeling project. Bis(2-ethylhexyl) phthalate was not detected in a follow-up sample collected a month later, on April 19, 2017.

Appendix VI of the Ocean Plan states, “In determining the need for an effluent limitation, the Regional Water Board shall use all representative information to characterize the pollutant discharge...” Given the blank contamination identified in the laboratory reports, the Regional Water Board finds that the March 4, 2014, December 9, 2014, October 13, 2015, March 22, 2016, December 6, 2016, March 21, 2017, and November 14, 2017 total chromium results are not representative of the effluent for purposes of conducting the RPA. Additionally, given the anomalous nature of the March 21, 2017 sample, the Regional Water Board finds that the bis (2-ethylhexyl) phthalate result is not representative of the effluent for the purposes of conducting the RPA. Based on the remaining effluent data, the RPAs for hexavalent chromium and bis (2-ethylhexyl) phthalate were inconclusive (Endpoint 3).

Order No. R1-2013-0023 established effluent limitations for hexavalent chromium, silver, and bis (2-ethylhexyl) phthalate based on the numeric water quality criteria from the Ocean Plan. As shown in the table below, and described above, the RPA conducted for the Facility was inconclusive (Endpoint 3) for hexavalent chromium, silver, and bis (2-ethylhexyl) phthalate. For RPA results of Endpoint 3, the Ocean Plan specifies that existing effluent limitations for the pollutant shall remain in the permit, unless the permit includes monitoring for the pollutant or whole effluent toxicity testing, consistent with the monitoring frequency specified in Appendix III of the Ocean Plan and a reopener clause to allow for subsequent modification of the permit to include an effluent limitation if the monitoring establishes that the discharge causes, has the reasonable potential to cause, or contributes to an excursion above a Table 1 water quality objective. Effluent limitations for hexavalent chromium, silver, and bis (2-ethylhexyl) phthalate have been removed from this Order because it includes semiannual monitoring for Table 1 pollutants and chronic toxicity and a reopener clause to allow for subsequent modification of the permit to include effluent limitations for any pollutant(s) that exhibit reasonable potential. Removal of the effluent limitations for hexavalent chromium, silver, and bis (2-ethylhexyl) phthalate is consistent with the requirements of the Ocean Plan.

Order No. R1-2011-0019 established effluent limitations for copper, lead, nickel, and total residual chlorine. As shown in Table F-6, below, the RPA conducted for the Facility demonstrated no reasonable potential (Endpoint 2) for discharges to cause or contribute to exceedances of applicable water quality criteria for copper, lead, nickel, and total residual chlorine. Furthermore, the Permittee has discontinued use of the chlorine disinfection system and now uses UV disinfection. Therefore, effluent limitations for copper, lead, nickel, and total residual chlorine are not retained in this Order.

The following table summarizes the RPA for each priority pollutant that was reported in detectable concentrations in the effluent. The MECs, most stringent water quality objectives (WQO), and background concentrations (B) used in the RPA are presented, along with the RPA results for each toxic pollutant analyzed. No other pollutants with applicable numeric water quality criteria from the Ocean Plan were measured above detectable concentrations or analyzed for during the monitoring events conducted by the Permittee.

Attachment F-1 to this Order includes a summary of RPA results for all priority toxic pollutants with water quality criteria/objectives that are applicable to the Pacific Ocean.

Table F-6. Summary of Reasonable Potential Analysis Results

Table 1 Pollutant	Most Stringent WQO (µg/L)	No. of Samples	No. of Non-Detects	Back-ground Conc (µg/L) Cs ¹	Max Effluent Conc (µg/L) Ce	Calculated Max Conc. (µg/L) ² X-obs	RPA Results, Comment
Objectives for Protection of Marine Aquatic Life							
Arsenic	8	9	0	3	1.3	2.5377 ³	Endpoint 2 - An effluent limitation is not required for the pollutant. Monitoring may be required as appropriate.

Table 1 Pollutant	Most Stringent WQO (µg/L)	No. of Samples	No. of Non-Detects	Background Conc (µg/L) Cs ¹	Max Effluent Conc (µg/L) Ce	Calculated Max Conc. (µg/L) ² X-obs	RPA Results, Comment
Cadmium	1	9	0	0	0.11	0.2330 ³	Endpoint 2 - An effluent limitation is not required for the pollutant. Monitoring may be required as appropriate.
Chromium (VI)	2	2	0	0	0.36	0.36	Endpoint 3 - RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Copper	3	9	0	2	1.1	1.8176 ³	Endpoint 2 - An effluent limitation is not required for the pollutant. Monitoring may be required as appropriate.
Total Residual Chlorine	2	610	610	0	<10	<10	Endpoint 3 - RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Lead	2	9	0	0	0.39	0.8778 ³	Endpoint 2 - An effluent limitation is not required for the pollutant. Monitoring may be required as appropriate.

Table 1 Pollutant	Most Stringent WQO (µg/L)	No. of Samples	No. of Non-Detects	Background Conc (µg/L) Cs ¹	Max Effluent Conc (µg/L) Ce	Calculated Max Conc. (µg/L) ² X-obs	RPA Results, Comment
Nickel	5	9	0	0	0.97	1.4256 ³	Endpoint 2 - An effluent limitation is not required for the pollutant. Monitoring may be required as appropriate.
Selenium	15	8	7	0	0.37	0.37	Endpoint 3 - RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Silver	0.7	9	8	0.16	0.06	0.06	Endpoint 3 - RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Zinc	20	9	0	8	6.4	24.3730 ³	Endpoint 1 - An effluent limitation must be developed for the pollutant. Monitoring is required.
Chronic Toxicity	1 TUc	17	0	0	1 TUc	1 TUc	Endpoint 2 - An effluent limitation is not required for the pollutant. Monitoring may be required as appropriate.

Table 1 Pollutant	Most Stringent WQO (µg/L)	No. of Samples	No. of Non-Detects	Background Conc (µg/L) Cs ¹	Max Effluent Conc (µg/L) Ce	Calculated Max Conc. (µg/L) ² X-obs	RPA Results, Comment
Objectives for Protection of Human Health – Noncarcinogens							
Antimony	1,200	9	5	0	0.35	0.6602 ³	Endpoint 2 - An effluent limitation is not required for the pollutant. Monitoring may be required as appropriate.
Toluene	85,000	9	8	0	1.3	1.3	Endpoint 3 - RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Objectives for Protection of Human Health – Carcinogens							
Bis(2-Ethylhexyl) Phthalate	3.5	9	9	0	<5	<5	Endpoint 3 - RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Halomethanes	130	30	8	0	2.5	3.0121 ³	Endpoint 2 - An effluent limitation is not required for the pollutant. Monitoring may be required as appropriate.

¹ Background (Cs) is zero (0) for all pollutants except those with background concentrations specified in Table 3 of the Ocean Plan.

- ² Represents the maximum concentration after complete mixing, calculated according to Step 4 of Appendix VI of the Ocean Plan using the permitted dilution ratio (Dm) of 0 as follows: $X\text{-obs} = (C_e + D_m * C_s) / (D_m + 1)$, unless otherwise noted. The calculated maximum concentration is compared to the most stringent water quality objective to determine if effluent limitations are required. Effluent limitations are then calculated as described in Fact Sheet section IV.C.4, below.
- ³ Represents the one-sided, upper 95% confidence bound for the 95th percentile of the effluent distribution after complete mixing (i.e., the lognormal UCB) calculated per Step 4 of Appendix VI of the Ocean Plan. This was compared to the most stringent water quality objective in lieu of X-obs because 1) X-obs is less than the water quality objective (Step 4), 2) there are three or more detected observations (Step 6), and 3) the data consists entirely of detected values or the data is censored by 80% or less (Steps 7 and 8).

4. WQBEL Calculations

Based on results of the RPA, performed in accordance with methods of the Ocean Plan for discharges to the Pacific Ocean, the Regional Water Board is establishing WQBELs for zinc at Discharge Point 001.

As described by Section III.C of the Ocean Plan, effluent limits for Table 1 pollutants are calculated according to the following equation.

$$C_e = C_o + D_m (C_o - C_s)$$

Where ...

C_e = the effluent limitation ($\mu\text{g/L}$)

C_o = the concentration (the water quality objective) to be met at the completion of initial dilution ($\mu\text{g/L}$)

C_s = background seawater concentration ($\mu\text{g/L}$)

D_m = minimum probable initial dilution expressed as parts seawater per part wastewater (here, $D_m = 0$)

For the Facility, the D_m of 0 is retained from Order No. R1-2013-0023, as the Permittee has not initiated a dilution study. Initial dilution is the process that results in the rapid and irreversible turbulent mixing of wastewater with ocean water around the point of discharge. In accordance with Table 1 implementation procedures, C_s equals zero for all parameters, except the following:

Table F-7. Background Seawater Concentrations – Ocean Plan

Pollutant	Background Seawater Concentration (µg/L)
Arsenic	3
Copper	2
Mercury	0.0005
Silver	0.16
Zinc	8

Applicable water quality objectives from Table 1 of the Ocean Plan are as follows.

Table F-8. Water Quality Objectives – Ocean Plan

Pollutant	Units	6-Month Median	Daily Maximum	Instantaneous Maximum
Zinc	µg/L	20	80	200

Using the equation, $C_e = C_o + D_m (C_o - C_s)$, effluent limitations are calculated as follows. Here, D_m is equal to 0 for each effluent limitation calculation. The effluent limitations established in this Order have been rounded to two significant figures.

Zinc

$$C_e = 20 + 0 (20 - 8) = 20 \text{ µg/L (6-Month Median)}$$

$$C_e = 80 + 0 (80 - 8) = 80 \text{ µg/L (Daily Maximum)}$$

$$C_e = 200 + 0 (200 - 8) = 200 \text{ µg/L (Instantaneous Maximum)}$$

5. Whole Effluent Toxicity (WET)

Monitoring triggers for chronic toxicity protect 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 chronic toxicity, as specified in the MRP (Attachment E, section V).

The Permittee conducted chronic toxicity testing using *Atherinops affinis*, *Macrocystis pyrifera*, and *Stronglycentrotus purpuratus*. The following tables summarize the chronic toxicity testing results collected at Monitoring Locations EFF-001 and REF-001 between November 2013 and November 2017 and at Monitoring Locations EFF-016 and RSW-001 between March 2014 and March 2017.

Table F-9. Summary of Chronic Toxicity Results (TUc) at Monitoring Location EFF-001

Date	<i>Atherinops affinis</i> Growth (TUc)	<i>Atherinops affinis</i> Survival (TUc)	<i>Macrocystis pyrifera</i> Germ-Tube Length (TUc)	<i>Macrocystis pyrifera</i> Germination (TUc)	<i>Stronglycentrotus purpuratus</i> Larval Development (TUc)
November 19, 2013	1	1	--	--	--
March 4, 2014	1	1	--	--	--
December 9, 2014	1	1	--	--	--
May 26, 2015	1	1	1	1	--
March 22, 2016	--	--	--	--	1
December 6, 2016	1	1	--	--	--
March 21, 2017	1	1	--	--	--
November 14, 2017	1	1	--	--	--
May 31, 2018	1	1	--	--	--
November 28, 2018	1	1	--	--	--

Table F-10. Summary of Chronic Toxicity Results (TUc) at Monitoring Location EFF-016

Date	<i>Atherinops affinis</i> Growth (TUc)	<i>Atherinops affinis</i> Survival (TUc)	<i>Macrocystis pyrifera</i> Germ-Tube Length (TUc)	<i>Macrocystis pyrifera</i> Germination (TUc)	<i>Stronglycentrotus purpuratus</i> Larval Development (TUc)
March 4, 2014	1	1	--	--	--
March 22, 2016	--	--	--	--	1
March 21, 2017	1	1	--	--	--

Table F-11. Summary of Chronic Toxicity Results (TUc) at Monitoring Location REF-001

Date	<i>Atherinops affinis</i> Growth (TUc)	<i>Atherinops affinis</i> Survival (TUc)	<i>Macrocystis pyrifera</i> Germ-Tube Length (TUc)	<i>Macrocystis pyrifera</i> Germination (TUc)	<i>Stronglycentrotus purpuratus</i> Larval Development (TUc)
November 19, 2013	1	1	--	--	--
March 4, 2014	1	1	--	--	--
December 9, 2014	1	1	--	--	--
May 26, 2015	1	1	1	1	--
March 22, 2016	--	--	--	--	1
December 6, 2016	1	1	--	--	--
March 21, 2017	1	1	--	--	--
November 14, 2017	1	1	--	--	--
May 31, 2018	1	1	--	--	--
November 28, 2018	1	1	--	--	--

Table F-12. Summary of Chronic Toxicity Results (TUc) at Monitoring Location RSW-001

Date	<i>Atherinops affinis</i> Growth (TUc)	<i>Atherinops affinis</i> Survival (TUc)	<i>Macrocystis pyrifera</i> Germ-Tube Length (TUc)	<i>Macrocystis pyrifera</i> Germination (TUc)	<i>Stronglycentrotus purpuratus</i> Larval Development (TUc)
March 4, 2014	1	1	--	--	--
March 22, 2016	--	--	--	--	1
March 21, 2017	1	1	--	--	--

The Ocean Plan contains toxicity testing requirements based on minimum initial dilution (Dm) factors in section III.C.4.c. Following the implementation procedures of the Ocean Plan, dischargers with Dm factors that fall below 100:1 are required to conduct chronic toxicity testing. This Order allows for a Dm of 0 for the chronic condition. As shown in Table F-6 of this Fact Sheet, the RPA conducted for the Facility demonstrated that the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the water quality objective for chronic toxicity (Endpoint 2). In addition, the Ocean Plan, Appendix VI, states, “*The Regional Water Board may use an alternative approach for assessing reasonable potential such as an appropriate stochastic dilution model that incorporates both*

ambient and effluent variability. The permit fact sheet or statement of basis will document the justification or basis for the conclusions of the reasonable potential assessment.” As discussed further below, the discharge also does not exhibit reasonable potential to cause or contribute to an exceedance of the water quality objective for chronic toxicity based on the Test of Significant Toxicity (TST) approach in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, 2010). Therefore, this Order does not contain WET limitations. However, in accordance with the terms provided in State Water Board Resolution No. 2007-0058 and the Ocean Plan (section III.C, Implementation Provisions for Table 1), this Order retains chronic toxicity monitoring requirements for the discharge of seawater effluent at Discharge Point 001, the discharge of storm water effluent at discharge Point 016, the receiving water in Horseshoe Cove at Monitoring Location RSW-001, and the reference station at Monitoring Location REF-001.

Test of Significant Toxicity

The Ocean Plan establishes a daily maximum chronic toxicity objective of 1.0 TU_c = 100/NOEC, using a five-concentration hypothesis test, and a daily maximum acute toxicity objective of 0.3 TU_a = 100/LC₅₀, using a point estimate model. 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) and acute (0.20 or more) mean responses of regulatory management concern—than the current NOEC hypothesis-testing approach used in the Ocean Plan.

This Order does not include effluent limitations for 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 process (ATP) request to U.S. EPA Region 9 for the statewide use of a two-concentration toxicity 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 17th, 2014.

In June 2014, the approval was challenged in court on procedural grounds under the Administrative Procedures 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 proposed rulemaking to change the language in the ATP regulations at 40 C.F.R. part 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 the 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. If the two-concentration test design is approved at a future date, the MRP may be modified to remove the need for a five-concentration test. Toxicity tests shall be run using a multi-concentration test design in accordance with 40 C.F.R. section 136.3, and the TST shall be utilized with the biological responses from the permitted in-stream waste concentration (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, toxicity laboratory, and permit manager. This Order requires application of the TST for statistical analysis of whole effluent toxicity data.

Test of Significant Toxicity Design

The TST's null hypothesis for chronic toxicity is:

H0: Mean response (In-stream Waste Concentration (IWC) in % effluent) \leq 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 Points 001 and 016, and Monitoring Locations REF-001 and RSW-001 is 100%. The chronic toxicity trigger for Discharge Points 001 and 016 and Monitoring Locations REF-001 and RSW-001 is expressed as a null hypothesis (H0) and regulatory management decision (b value) of 0.75 for the chronic toxicity methods in the MRP. The null hypothesis for this discharge is:

H0: Mean response (100% effluent) ≤ 0.75 mean response (control)

The Permittee conducted chronic toxicity testing at the IWC of 100% during the term of Order No. R1-2013-0023. As shown in the following table, all chronic toxicity tests collected between November 2013 and November 2017 resulted in “Pass” at the IWCs of 100%, indicating that the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of water quality objectives for chronic toxicity using the TST approach. Therefore, this Order does not include an effluent limitation for chronic toxicity.

Table F-13. Summary of Chronic Toxicity Results (TST Approach) at Monitoring Location EFF 001

Date	In-Stream Waste Concentration (% Effluent)	<i>Atherinops affinis</i> Growth	<i>Atherinops affinis</i> Survival	<i>Macrocystis pyrifera</i> Germ-Tube Length	<i>Macrocystis pyrifera</i> Germination	<i>Stronglycentrotus purpuratus</i> Larval Development
November 19, 2013	100	Pass	Pass	--	--	--
March 4, 2014	100	Pass	Pass	--	--	--
December 9, 2014	100	Pass	Pass	--	--	--
May 26, 2015	100	Pass	Pass	Pass	Pass	--
March 22, 2016	100	--	--	--	--	Pass
December 6, 2016	100	Pass	Pass	--	--	--
March 21, 2017	100	Pass	Pass	--	--	--
November 14, 2017	100	Pass	Pass	--	--	--
May 31, 2018	100	Pass	Pass	--	--	--
November 28, 2018	100	Pass	Pass	--	--	--

Table F-14. Summary of Chronic Toxicity Results (TST Approach) at Monitoring Location EFF 016

Date	In-Stream Waste Concentration (% Effluent)	<i>Atherinops affinis</i> Growth	<i>Atherinops affinis</i> Survival	<i>Macrocystis pyrifera</i> Germ-Tube Length	<i>Macrocystis pyrifera</i> Germination	<i>Stronglycentrotus purpuratus</i> Larval Development
March 4, 2014	100	Pass	Pass	--	--	--

Date	In-Stream Waste Concentration (% Effluent)	<i>Atherinops affinis</i> Growth	<i>Atherinops affinis</i> Survival	<i>Macrocystis pyrifera</i> Germ-Tube Length	<i>Macrocystis pyrifera</i> Germination	<i>Stronglycentrotus purpuratus</i> Larval Development
March 22, 2016	100	--	--	--	--	Pass
March 21, 2017	100	Pass	Pass	--	--	--

Table F-15. Summary of Chronic Toxicity Results (TST Approach) at Monitoring Location REF 001

Date	In-Stream Waste Concentration (% Effluent)	<i>Atherinops affinis</i> Growth	<i>Atherinops affinis</i> Survival	<i>Macrocystis pyrifera</i> Germ-Tube Length	<i>Macrocystis pyrifera</i> Germination	<i>Stronglycentrotus purpuratus</i> Larval Development
November 19, 2013	100	Pass	Pass	--	--	--
March 4, 2014	100	Pass	Pass	--	--	--
December 9, 2014	100	Pass	Pass	--	--	--
May 26, 2015	100	Pass	Pass	Pass	Pass	--
March 22, 2016	100	--	--	--	--	Pass
December 6, 2016	100	Pass	Pass	--	--	--
March 21, 2017	100	Pass	Pass	--	--	--
November 14, 2017	100	Pass	Pass	--	--	--
May 31, 2018	100	Pass	Pass	--	--	--
November 28, 2018	100	Pass	Pass	--	--	--

Table F-16. Summary of Chronic Toxicity Results (TST Approach) at Monitoring Location RSW 001

Date	In-Stream Waste Concentration (% Effluent)	<i>Atherinops affinis</i> Growth	<i>Atherinops affinis</i> Survival	<i>Macrocystis pyrifera</i> Germ-Tube Length	<i>Macrocystis pyrifera</i> Germination	<i>Stronglycentrotus purpuratus</i> Larval Development
March 4, 2014	100	Pass	Pass	--	--	--
March 22, 2016	100	--	--	--	--	Pass
March 21, 2017	100	Pass	Pass	--	--	--

This Order requires monitoring for chronic toxicity two times per year at Monitoring Locations EFF-001 and REF-001, and annual monitoring at Monitoring Locations EFF-016 and RSW-001. Results shall be analyzed using the TST hypothesis testing approach in section V.A.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 retains the requirement for the Permittee to conduct screening testing over a period of three years using at least one vertebrate, invertebrate, and plant species (one species each year). After the screening test is completed, monitoring can be reduced to the most sensitive species for the remainder of the permit term.

Chronic WET limitations will be established if future monitoring results demonstrate that discharges from the Facility are causing or contributing to 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. R1-2013-0023, except for bis(2-ethylhexyl) phthalate, hexavalent chromium, copper, lead, nickel, silver, and total residual chlorine.

Order No. R1-2013-0023 established final effluent limitations for copper, lead, nickel, and total residual chlorine. As shown in Table F-6 of this Fact Sheet, effluent data demonstrate that the discharge no longer demonstrates reasonable potential to cause or contribute to an exceedance of the water quality objective for these four pollutants. Furthermore, the Permittee has discontinued use of the chlorine disinfection system and now uses UV disinfection. The updated effluent data for copper, lead, nickel, and total residual chlorine and the conversion to UV disinfection constitutes new information, which permits the removal of effluent limitations consistent with CWA section 402(o)(2)(B). Therefore, the Order does not retain the effluent limitations for copper, lead, nickel, and total residual chlorine.

Order No. R1-2013-0023 established final effluent limitations for bis (2-ethylhexyl) phthalate, hexavalent chromium, and silver. As shown in Table F-6 of this Fact Sheet, effluent data demonstrate that the reasonable potential analysis is inconclusive for these three pollutants. As discussed in section IV.C.3.b of this Fact Sheet, the Ocean Plan allows for removal of effluent limitations for an inconclusive RPA, provided the permit includes a reopener clause and monitoring for the pollutant or whole effluent toxicity. Since this Order includes a reopener clause and monitoring for the pollutants and whole effluent toxicity at more than the annual frequency required by the Ocean Plan, effluent limitations for discharges of treated wastewater have been removed because the Regional Water Board staff misinterpreted the requirements of the Ocean Plan. Therefore, the Order does not retain the effluent limitations for bis (2-ethylhexyl) phthalate hexavalent chromium, and silver.

2. Antidegradation Policies

Provisions of the Order are consistent with applicable antidegradation policy expressed by State Water Board Resolution No. 68-16 and NPDES regulations at 40 C.F.R. 131.12, which require that water quality be maintained and protected where high quality waters constitute an outstanding National resource, such as waters of National and State parks and wildlife refuges and waters of exceptional recreational or ecological significance. The Bodega State Marine Reserve, into

which the Facility discharges waste seawater, filter backwash, and storm water, is identified in the Ocean Plan as an ASBS. In issuing Resolution No. 2007-0058 approving an exception to the Ocean Plan's prohibition against discharges to ASBSs, the State Water Board stated:

"The North Coast Water Board is in support of the exception. If UCD/BML complies with the conditions in the exception, to be set forth in the NPDES permit, the discharges will not adversely impact biological communities in the ASBS nor will the discharges compromise protection of the ocean waters for beneficial uses..."

"The UCD/BML occupies a prominent role in marine science research and education, providing programs and facilities to UCD and non-UCD scientists and students and visitors from many other institutions. The UCD/BML research activities and teaching laboratory aquaria both depend on the use of the flow-through (open) seawater system. There are no reasonable alternatives to ocean disposal of waste seawater due to the remote location of the facility. If the exception is not granted, UCD/BML will be forced to shut down its open seawater system. The State Water Board therefore finds that the public interest will be served by granting this exception..."

"The waste seawater discharge from the BML has been permitted since 1975. The North Coast Water Board has stated that UCD/BML has maintained a record of good compliance. Since the Final Report on Discharges into State Water Quality Protection Areas was published in 2003, BML has implemented best management practices and engineering modifications to control storm water runoff. Furthermore, the MND and exception contain sufficient measures to maintain and protect water quality. The conditions require that natural water quality in the receiving water be maintained and require both receiving water and reference water monitoring to ensure that this condition is met. In addition, the seawater effluent discharge must meet the Ocean Plan Table B objectives at the end-of-pipe. The conditions prohibit non-storm water facility runoff except for flows associated with emergency fire fighting. Further, the MND must develop a storm water management plan that is designed to ensure that natural water quality conditions are maintained in the receiving water; the plan must be approved by the North Coast Water Board; and the plan must be implemented within one year of the date of approval by the North Coast Water Board.

Recent actions by UCD/BML and the conditions specified in the MND and exception will improve water quality over previously permitted levels. Federal and state antidegradation policies have been considered. Granting the exception will not violate federal antidegradation requirements because water quality will not be lowered, but rather will be improved. Allowance of the exception will not violate the State Water Board's antidegradation policy (Resolution no. 68-16. Since water quality conditions will improve; the discharge will not unreasonably affect present and anticipated beneficial uses; the discharge will not result in water quality lower

than that prescribed in the Ocean Plan; and the people of California will benefit from the research and education provided by UCD/BML while beneficial uses will still be protected.”

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 settleable solids, TSS, and pH. Restrictions on these pollutants are discussed in section IV.B of this Fact Sheet. This Order’s technology-based pollutant restrictions implement section III.B, Table 2, of the Ocean Plan.

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.

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 and Requirements

1. Scope and Authority

Section 13263 of the Water Code requires the Regional Water Board to prescribe requirements for proposed discharges, existing discharges, or material changes in an existing discharge based upon the conditions of the disposal area or receiving waters upon or into which the discharge is made or proposed. The prescribed requirements shall implement any relevant water quality control plans that have been adopted, and shall take into consideration the beneficial uses to be protected, the water quality objectives reasonably required for that purpose, other waste discharges, the need to prevent nuisance, and the provisions of Water

Code section 13241. In prescribing requirements, the Regional Water Board is not obligated to authorize the full waste assimilation capacities of the receiving water.

Here, the Regional Water Board considered all of these factors when developing the WDRs for the land discharge to the groundwater recharge area at Discharge Point 002. Limitations for TSS, settleable solids, and pH were scientifically derived to implement water quality objectives that protect beneficial uses. Both beneficial uses and the water quality objectives have been approved pursuant to state law. In addition, the Regional Water Board considered the factors set forth in Water Code section 13241, including the consideration of past, present, and probable future beneficial uses of the receiving water, which the Regional Water Board anticipates to be the same as set forth in the Basin Plan. The Regional Water Board considered the environmental characteristics, including water quality of the Russian/Bodega Watershed Management Area, the water bearing capacity of groundwater basins in the vicinity of the discharge, and the need to maintain a land discharge. The Permittee did not submit any evidence regarding whether the WDRs for discharges to land would interfere with the development of needed housing within the region or the costs of compliance, particularly anything to show that the costs of compliance with the Order would be unmanageable.

2. **Applicable Beneficial Uses and Water Quality Criteria and Objectives**

- a. **Beneficial Uses.** Beneficial use designations for groundwater established in the Basin Plan include MUN, AGR, IND, and CUL.
- b. **Basin Plan Water Quality Objectives.** The Basin Plan contains narrative objectives for taste and odor, bacteria, radioactivity, and chemical constituents (including those chemicals that adversely affect agricultural water supply) that apply to groundwater.

3. **Determining the Need for Requirements for Discharges to Land**

The following land discharge specifications apply to land discharges to the groundwater recharge area in the sand dunes adjacent to the Salmon Research Facility at Discharge Point 002.

- a. **TSS and Settleable Solids.** Consistent with Order No. R1-2013-0023, this Order includes effluent limitations for TSS and settleable solids. The limitations for these parameters were based on BPJ. The Regional Water Board finds that these limitations are necessary to achieve applicable water quality standards.
- b. **pH.** Consistent with Order No. R1-2013-0023, this Order includes instantaneous minimum and maximum effluent limitations for pH of 6.5 and 8.5, respectively. These pH limitations are included in the Order to ensure that pH levels are appropriate for the protection of groundwater.

- c. **Salinity.** Consistent with Order No. R1-2013-0023, this Order includes effluent limitations for salinity to prevent degradation of groundwater quality with respect to background salinity concentrations in local groundwater. These limitations serve as a check to ensure that brackish water, present in the freshwater system during the smoltification period, is not discharged. Accordingly, the salinity limitation is only in effect during months when smoltification is occurring in the Salmon Research Facility or during months when the Permittee is adjusting salinity in its freshwater system.

G. Recycling Specifications – Not Applicable

This Order does not authorize discharges of recycled water.

H. Other Requirements

The Order contains additional specifications that apply to the Facility when discharging to the recycled water system, including:

1. **Storm Water Management Plan.** The Permittee is required to implement and maintain a Storm Water Management Plan (SWMP), which must include BMPs that eliminate or reduce the presence of pollutants in storm water runoff to the technology-based standard Maximum Extent Practicable to protect water quality. Requirements for development of the SWMP are described in section VI.C.6.a of the Order.

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Surface Water – Ocean Plan

CWA section 303(a-c) requires states to adopt water quality standards, including criteria where they are necessary to protect beneficial uses. The State Water Board adopted water quality criteria as water quality objectives in the Ocean Plan. Receiving water limitations within this Order, relevant to Discharge Points 001 and 016, reflect all applicable, general water quality objectives of the Ocean Plan, and the terms and conditions required by State Water Board Resolution No. 2007-0058.

The Ocean Plan includes numeric and narrative water quality objectives for various beneficial uses. This Order contains receiving water limitations for discharges to the Pacific Ocean based on the Ocean Plan numerical and narrative water quality objectives for bacteria, dissolved oxygen, floating particulates, oil and grease, pH, discoloration, natural lighting, deposition of solids, dissolved sulfides, organic materials in sediments, Table 1 parameters, nutrient materials, radioactive wastes, and biological characteristics.

On August 7, 2018 the State Water Board adopted the Amendment to the Water Quality Control Plan for Ocean Waters of California – Bacteria Provisions and a Water Quality Standards Variance Policy (Bacteria Provisions). This amendment revised

State bacteria water quality objectives for enterococci for water contact recreation to be expressed as a six-week rolling geometric mean and a statistical threshold value. Total coliform water contact objectives have been removed from the Ocean Plan, however, while the shellfish harvesting standards for total coliform were unchanged. This Order includes the new enterococci water quality objectives as receiving water limitations.

B. Surface Water – Basin Plan

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.

The dissolved oxygen limitation in this Order reflects the new Basin Plan dissolved oxygen limit that was adopted by the Regional Water Board on June 18, 2015, and effective beginning April 24, 2017, after receiving approval from U.S. EPA. The new Basin Plan dissolved oxygen limitation specifies limits for the WARM, COLD, and SPWN beneficial uses. The WARM beneficial use is expected to occur in the freshwater marsh.

C. Groundwater – Basin Plan

Groundwater limitations are included in the Order to protect the beneficial uses of the underlying groundwater. The beneficial uses of the underlying groundwater are MUN, IND, PRO, AGR, and FRSH. Discharges from the Facility shall not cause exceedance of applicable water quality objectives or create adverse impacts to beneficial uses of groundwater. Groundwater data must be evaluated using appropriate statistical tools to determine when groundwater degradation is occurring.

Groundwater limitations in this Order have been retained from the previous Order with minor modifications to reflect revised sections of title 22. The Order includes a new groundwater toxicity limitation that was adopted by the Regional Water Board on June 18, 2015, and effective beginning July 18, 2016 after receiving approval from the California Office of Administrative Law. This new Basin Plan limit requires that groundwaters shall not contain toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in humans, or that adversely affects

beneficial uses. This limitation applies regardless of whether the toxicity is caused by a single substance or the synergistic effect of multiple substances.

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 rationale 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).

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 numeric acute and/or chronic 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 subject of any future TMDL action.
- e. **Regional Monitoring Program (Special Provision VI.C.1.f).** This provision allows the Regional Water Board to reopen this Order to amend Special Provisions VI.C.2.a, VI.C.2.b, VI.C.2.c, and/or VI.C.6.c to allow participation in a regional monitoring program to satisfy the applicable study requirements.

2. Special Studies and Additional Monitoring Requirements

- a. **Intertidal Benthic Marine Life Survey (Special Provision VI.C.2.a).** This Order requires the Permittee to perform a quantitative survey of intertidal benthic marine life near the discharge and at a reference site at least once during the term of this permit to comply with the conditions of State Water Board Resolution No. 2007-0058.

- b. **Bioaccumulation Study (Special Provision VI.C.2.b).** This Order requires the Permittee to perform a bioaccumulation study using California mussels (*Mytilus californianus*) to determine the concentrations of metals near field (outfall station) and far field (Mussel Point) at least once during the term of this permit to comply with conditions of State Water Board Resolution No. 2007-0058.
- c. **Sediment Monitoring/Study (Special Provision VI.C.2.c).** This Order requires the Permittee to sample and analyze the subtidal sediment for Ocean Plan Table 1 constituents annually during the term of this permit to comply with the conditions of State Water Board Resolution No. 2007-0058.

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 III.C.9 of the Ocean Plan. 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 Provision VI.C.4.a and VI.C.4.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(s) (or an equivalent document), as required by Provision VI.C.4.b of this Order, is an integral part of a well-operated and maintained facility.
- b. **Notification of Construction Activity (Special Provision VI.C.4.c).** This provision requires the Permittee to notify the Regional Water Board 180 days prior to construction activity that could result in any new or altered discharge or habitat modification in the Bodega ASBS and is based on conditions required by State Water Board Resolution No. 2007-0058 and section III.E.2 of the Ocean Plan. This provision is necessary to prevent permanent or long-term water quality degradation within the ASBS.
- c. **UV Disinfection System Operation.** This provision requires the Permittee to operate and maintain the UV/filtration disinfection system in accordance with approved design specifications and other conditions as determined by California Department of Fish and Wildlife (CDFW). In a letter dated December 29, 2011, CDFW provided preliminary approval of the Permittee's design specifications. This provision is necessary to ensure that the UV/filtration system prevents the spread of disease that could result from research activities.

5. Special Provisions for Municipal Facilities (POTWs Only) – Not Applicable

6. Other Special Provisions

- a. Storm Water Management Plan/Program (Special Provision VI.C.6.a).** This provision requires the Permittee to implement and maintain a SWMP to comply with the conditions of State Water Board Resolution No. 2007-0058.
- b. Waterfront and Marine Operations Non-Point Source Management Plan (Special Provision VI.C.6.b).** This provision requires the Permittee to prepare and implement a waterfront and Marine Operations Non-Point Source Management Plan to comply with the conditions of State Water Board Resolution No. 2007-0058.
- c. Program for Prevention of Biological Pollutants (Special Provision VI.C.6.c).** This provision requires the Permittee to implement a program for prevention of biological pollutants (non-native invasive species), in consultation with CDFW Marine Resources Division, to comply with conditions of State Water Board Resolution No. 2007-0058.
- d. Solids Disposal (Special Provision VI.C.6.d).** This provision requires the Permittee to properly dispose of screenings, sludge, and other solids removed from liquid waste in accordance with the provisions of the Water Code and title 27 of the CCR and is retained from Order No. R1-2013-0023.

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 (MRP section III)

1. Monitoring Location INF-001 (Table E-2)

- a.** Influent monitoring requirements at Monitoring Location INF-001 for TSS, settleable solids, and pH are retained from Order No. R1-2013-0023 and are necessary to provide characterization of natural/background water quality in

order to determine compliance with effluent limitations expressed as allowable increases from those concentrations measured in the intake water.

2. Monitoring Location INF-002 (Table E-3)

- a. Influent monitoring requirements at Monitoring Location INF-002 for TSS, settleable solids, pH, salinity, and nitrate are retained from Order No. R1-2013-0023 and are necessary to provide characterization of natural/background water quality in order to determine compliance with effluent limitations expressed as allowable increases from those concentrations measured in the intake water.

B. Effluent Monitoring (MRP section IV)

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 for discharges to the Pacific Ocean. Effluent monitoring requirements pursuant to State Water Board Resolution No. 2007-0058 have been included in the MRP.

a. Monitoring Location EFF-001 (Table E-4)

- i. Effluent monitoring frequencies and sample types for flow, TSS, settleable solids, salinity, temperature, pH, ammonia, PAHs, zinc, Ocean Plan Table 1 metals, and Ocean Plan Table 1 pollutants have been retained from Order No. R1-2013-0023, and are consistent with the terms of State Water Board Resolution No. 2007-0058.
- ii. The effluent monitoring frequency for PAHs has been increased to semiannual with a footnote that allows the Permittee to request a reduction in Table 1 monitoring requirements to no less than once per year based on monitoring results during the first year of the permit term, consistent with Resolution No. 2007-0058. Order No. R1-2013-0023 required annual monitoring for PAHs. This monitoring frequency was retained from Order No. R1-2008-0002 with the justification that the Regional Water Board authorized the reduction in monitoring frequency for PAHs and other Table 1 parameters (in response to the Permittee's August 12, 2009 written request) by letter to the Permittee dated November 29, 2009. PAHs will be monitored as part of the Ocean Plan Table 1 Pollutants requirement in Table E-4 of the MRP. Fact Sheet section VII.F.1, below, discusses U.S. EPA's sufficiently sensitive methods rule. PAHs is one of the pollutants that was not collected using sufficiently sensitive analytical methods.

- iii. Effluent monitoring frequencies and sample types for total residual chlorine and halomethanes have been retained from Order No. R1-2013-0023, as required by State Water Board Resolution No. 2007-0058. However, since the Facility completed construction of the UV disinfection system, and ceased use of the chlorination/dechlorination system in early 2015, monitoring for total residual chlorine and halomethanes, as described in the MRP, is only required in the event of planned or unplanned use of chlorine in the seawater system. This monitoring would be required to demonstrate compliance with the Discharge Prohibition III.G requirement that the discharge contain no detectible levels of chemicals used for the treatment or control of disease.
- iv. Monitoring data collected during the term of Order No. R1-2013-0023 indicates that the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the Ocean Plan water quality objectives for copper, lead, and nickel. In addition, the RPA was inconclusive for bis(2-ethylhexyl) phthalate, hexavalent chromium, and silver and the Ocean Plan does not require continued pollutant specific monitoring in this case because this Order includes a reopener clause and monitoring for whole effluent toxicity. Therefore, this Order discontinues semiannual effluent monitoring requirements for copper, lead, nickel, bis(2-ethylhexyl) phthalate, hexavalent chromium, and silver from Order No. R1-2013-0023.
- v. Consistent with Order No. R1-2013-0023, effluent monitoring requirements for Ocean Plan Table 1 metals and pollutants is required semiannually to generate adequate data to perform an RPA.
- vi. A requirement has been added as Footnote 1 of Table E-4 for the effluent to be sampled during a dry weather clarifier backwash event during the first year of the permit term. The need for this new requirement is supported by language in Fact Sheet section IV.B.2.a that states, "Since elevated TSS and settleable solids are common in filter backwash and storm water, this Order limits effluent TSS and settleable solid concentrations to the concentrations in the influent water at the time of discharge."
- vii. New requirements to collect samples as grab have been added as Footnotes 16 and 17 of Table E-4. For Ocean Plan Table 1 pollutants that have semiannual monitoring requirements, one sample during the permit term shall be collected as a grab sample rather than a composite sample. For Ocean Plan Table 2 pollutants that have monthly monitoring requirements, one sample per year shall be collected as a grab sample rather than a composite sample. Grab sample data is needed to assess compliance with instantaneous maximum effluent limitations in Table E-4.

See Sections VII.J and VII.K of this Order for a discussion of compliance determinations for Ocean Plan Table 1 and Table 2 pollutants.

b. Monitoring Locations EFF-003 and EFF-004 (Table E-5)

- i. Effluent monitoring frequencies and sample types for TSS, pH, specific conductance, and total organic carbon have been retained from Order No. R1 2013-0023.

c. Monitoring Location EFF-016 (Table E-6)

- i. Effluent monitoring frequencies and sample types for storm water runoff flow, PAHs, Ocean Plan Table 1 pollutants, total coliform bacteria, enterococci bacteria, and fecal coliform bacteria have been retained from Order No. R1-2013-0023 and are consistent with the terms of State Water Board Resolution No. 2007-0058.

C. Whole Effluent Toxicity Testing Requirements (MRP Section V)

Whole effluent toxicity (WET) monitoring requirements are established for discharges to the Pacific Ocean from Discharge Points 001 and 016 at Monitoring Locations EFF-001 and EFF-016, respectively, and for the receiving water at Monitoring Locations REF-001 and RSW-001, and are included in the 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. The Ocean Plan (section III.C.4.c.(4)) requires only chronic testing where the minimum initial dilution of the effluent is below 100:1. Because this Order does not allow for any dilution (Dm of 0) for the Facility, WET monitoring shall consist of chronic toxicity testing. This Order includes monitoring requirements for chronic toxicity to assess whether there is reasonable potential to exceed the Ocean Plan's narrative water quality objectives for toxicity. Consistent with Order No. R1-2013-0023, this Order requires semiannual chronic toxicity testing at Monitoring Locations EFF-001 and REF-001, and annual chronic toxicity testing at Monitoring Locations EFF-016 and RSW-001. In accordance with State Water Board Resolution No. 2007-0058, the Regional Water Board may adjust the frequency of certain toxicity testing requirements after the first year of monitoring.

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. Land Discharge Monitoring Requirements (MRP Section VI)

1. Land discharge monitoring requirements are necessary to determine compliance with prohibitions and/or effluent limitations established by the Order. Monitoring at Monitoring Location EFF-002 is necessary to demonstrate whether or not the discharge poses reasonable potential for a pollutant to exceed any numeric or narrative water quality objectives.

a. Monitoring Location EFF-002 (Table E-7)

- i. Monitoring frequencies and sample types for flow, TSS, settleable solids, salinity and nitrate have been retained from Order No. R1-2013-0023. Monthly effluent monitoring for nitrate is necessary, because the concentration of nitrate in monthly effluent samples from the freshwater system is routinely greater than the contemporaneous influent nitrate concentrations (but at concentrations well below the water quality objective of 10 mg/L for nitrate as nitrogen). Effluent monitoring for salinity is necessary to prevent degradation of groundwater quality with respect to background salinity concentrations in local groundwater, and to serve as a check to ensure that brackish water present in the freshwater system during the smoltification period is not discharged at Discharge Point 002.

E. Receiving Water Monitoring (MRP section VIII)

1. Surface Water

a. Monitoring Location REF-001

- i. Monitoring frequencies and sample types for pH, salinity, temperature and Ocean Plan Table 1 pollutants have been retained from Order No. R1-2013-0023 and are consistent with the terms of State Water Board Resolution No. 2007-0058.

b. Monitoring Location RSW-001

- i. Monitoring frequencies and sample types for Ocean Plan Table 1 pollutants, total coliform bacteria, enterococci bacteria, and fecal coliform bacteria have been retained from Order No. R1-2013-0023 and are consistent with the terms of State Water Board Resolution No. 2007-0058.
- ii. Although the new receiving water limits for enterococci are expressed in colony-forming units (CFU) to reflect the new enterococci water quality objectives in the Bacteria Provisions added to the Ocean Plan, compliance monitoring may be conducted using any enterococci method specified in 40 CFR 136. The U.S. EPA and State Water Board consider CFU and most probable number (MPN) to be comparable. Testing

methods that produce results in either of these units are equally protective of water quality objectives.

2. Groundwater Discharge Monitoring Requirements – Not Applicable

This Order does not require groundwater monitoring at this time.

F. Other Monitoring Requirements

- 1. Flow Monitoring (MRP section I.D).** Section I.D of the MRP requires proper installation, calibration, operation, and maintenance of flow metering devices.
- 2. Minimum Levels (ML) and Reporting Levels (RL) (MRP section I.E).** In August 2014, U.S. EPA finalized minor amendments to the CWA to require NPDES permittees to use sufficiently sensitive analytical test methods for NPDES permit applications and reporting. This amendment, known as the “sufficiently sensitive methods rule”, clarifies that where U.S. EPA has promulgated or otherwise approved analytical methods under 40 CFR Part 136, or 40 CFR Chapter I, subchapters N and O, permittees must use “sufficiently sensitive methods” that are capable of detecting and measuring pollutants at, or below, the applicable water quality criteria or permit limits.

Regional Water Board staff reviewed data collected during the previous permit term and identified 28 Ocean Plan Table 1 pollutants that were not analyzed using sufficiently sensitive methods. These pollutants have been flagged in Attachment F-1 (RPA Summary) so that the Permittee is aware of this matter and can make appropriate changes to ensure that monitoring data collected during the term of this Order is analyzed using sufficiently sensitive methods.

3. Discharge Monitoring Report Quality Assurance (DMR-QA) Study Program (MRP section I.F)

Under the authority of section 308 of the CWA (33 U.S.C. § 1318), U.S. EPA requires major and select minor permittees under the NPDES Program to participate in the annual DMR-QA Study Program. The DMR-QA Study evaluates the analytical ability of laboratories that routinely perform or support self-monitoring analyses required by NPDES permits. There are two options to satisfy the requirements of the DMR-QA Study Program: (1) The Discharger can obtain and analyze a DMR-QA sample as part of the DMR-QA Study; or (2) Per the waiver issued by U.S. EPA to the State Water Board, the Discharger can submit the results of the most recent Water Pollution Performance Evaluation Study from its own laboratories or its contract laboratories. A Water Pollution Performance Evaluation Study is similar to the DMR-QA Study. Thus, it also evaluates a laboratory’s ability to analyze wastewater samples to produce quality data that ensure the integrity of the NPDES Program. The Discharger shall ensure that the results of the DMR-QA Study or the results of the most recent Water Pollution

Performance Evaluation Study are submitted annually to the State Water Board. The State Water Board's Quality Assurance Program Officer will send the DMR-QA Study results or the results of the most recent Water Pollution Performance Evaluation Study to U.S. EPA's DMR-QA Coordinator and Quality Assurance Manager.

4. **Accelerated Monitoring Requirements (MRP section IV).** Table E-4 includes accelerated monitoring requirements for parameters that are required to be monitored monthly and semiannually.
5. **Intertidal Benthic Marine Life Survey (MRP section IX.A).** Consistent with Order No. R1-2013-0023, and pursuant to State Water Board Resolution No. 2007-0058, this Order requires the Permittee to conduct a survey of intertidal benthic marine life, once during the term of this Order.
6. **Bioaccumulation Study (MRP section IX.B).** Consistent with Order No. R1-2013-0023, and pursuant to State Water Board Resolution No. 2007-0058, this Order requires the Permittee to conduct a bioaccumulation study once during the term of this Order.
7. **Sediment Monitoring/Study (MRP section IX.C).** Consistent with Order No. R1-2013-0023, and pursuant to State Water Board Resolution No. 2007-0058, this Order requires the Permittee to conduct a sediment monitoring study, annually during the term of this Order. The Permittee may participate in a State Water Board approved regional monitoring program to meet the sediment monitoring study requirements of State Water Board Resolution No. 2007-0058.
8. **Chemical Drug Use (MRP section IX.D).** Consistent with Order No. R1-2013-0023, this Order requires the Permittee to report on the chemicals and drugs used for disease control, disinfection, and health maintenance at the Facility, annually during the term of this Order.
9. **Spill Notification (MRP section X.E).** The MRP that is part of this Order establishes requirements for reporting spills and unauthorized discharges,.

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 University of California – Davis, Bodega Marine Laboratory. 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 Press Democrat on September 11, 2019.

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 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://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 October 11, 2019.

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: **December 18/19, 2019**
Time: 8:30 a.m. or as announced in the Regional Water Board's agenda
Location: Regional Water Quality Control Board
5550 Skylane Blvd. Suite A
Santa Rosa, California

Interested persons were invited to attend. At the public hearing, the Regional Water Board heard 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 Cathleen Goodwin at Cathleen.Goodwin@waterboards.ca.gov or (707) 576-2687.

Attachment F-1 – University of California – Davis, Bodega Marine Laboratory RPA Summary

Pollutant	Unit	Qualifier	MEC ¹	No. Samples	No. ND ²	Co ³	Cs ⁴	X-obs ⁵	Endpoint
Arsenic	µg/L	=	1.3	9	0	8	3	2.5377	2
Cadmium	µg/L	=	0.11	9	0	1	0	0.233	2
Chromium (Total)	µg/L	=	0.36	9	0	2	0	0.36	3
Copper	µg/L	=	1.1	9	0	3	2	1.8176	2
Lead	µg/L	=	0.39	9	0	2	0	0.8778	2
Mercury	µg/L	<	0.005	9	8	0.04	0.0005	<0.005	3
Nickel	µg/L	=	0.97	9	0	5	0	1.4256	2
Selenium	µg/L	=	0.37	8	7	15	0	0.37	3
Silver	µg/L	=	0.06	9	8	0.7	0.16	0.06	3
Zinc ⁶	µg/L	=	6.4	9	0	20	8	24.373	1
Cyanide ⁷	µg/L	<	0.48	2 ⁸	2	1	0	<0.48	3
Total Chlorine Residual ⁷	µg/L	<	10	610	610	2	0	<10	3
Ammonia (as N)	µg/L	<	0.2	54	54	600	0	<0.2	2
Chronic Toxicity	Tuc	=	1	17	0	1	0	1	2
Phenolic Compounds (non-chlorinated)	µg/L	<	0.16	9	9	30	0	<0.16	3
Chlorinated Phenolics	µg/L	<	0.19	9	9	1	0	<0.19	3
Endosulfan	µg/L	<	0.0017	9	9	0.009	0	<0.0017	3
Endrin ⁷	µg/L	<	0.0028	9	9	0.002	0	<0.0028	3
HCH, Sum ⁷	µg/L	<	0.0018	9	9	0.004	0	<0.0018	3
Acrolein	µg/L	<	0.44	9	9	220	0	<0.44	3
Antimony	µg/L	=	0.35	9	5	1,200	0	0.6602	2
Bis(2-Chloroethoxy) Methane	µg/L	<	0.25	9	9	4.4	0	<0.25	3

Pollutant	Unit	Qualifier	MEC ¹	No. Samples	No. ND ²	Co ³	Cs ⁴	X-obs ⁵	Endpoint
Bis(2-Chloroisopropyl) Ether	µg/L	<	0.38	9	9	1,200	0	<0.38	3
Chlorobenzene	µg/L	<	0.46	9	9	570	0	<0.46	3
Di-N-Butyl Phthalate	µg/L	<	0.24	9	9	3,500	0	<0.24	3
Dichlorobenzenes	µg/L	<	0.53	9	9	5,100	0	<0.53	3
Diethyl Phthalate	µg/L	<	0.15	9	9	33,000	0	<0.15	3
Dimethyl Phthalate	µg/L	<	0.18	9	9	820,000	0	<0.18	3
4,6-Dinitro-2-Methylphenol	µg/L	<	1.7	9	9	220	0	<1.7	3
2,4-Dinitrophenol	µg/L	<	1.6	9	9	4	0	<1.6	3
Ethylbenzene	µg/L	<	0.43	9	9	4,100	0	<0.43	3
Fluoranthene	µg/L	<	0.22	9	9	15	0	<0.22	3
Hexachlorocyclopentadiene	µg/L	<	1.5	9	9	58	0	<1.5	3
Nitrobenzene	µg/L	<	0.36	9	9	4.9	0	<0.36	3
Thallium	µg/L	<	0.05	9	9	2	0	<0.05	3
Toluene	µg/L	=	1.3	9	8	85,000	0	1.3	3
Tributyltin ⁷	µg/L	<	0.0012	28	2	0.0014	0	<0.0012	3
1,1,1-Trichloroethane	µg/L	<	0.39	9	9	540,000	0	<0.39	3
Acrylonitrile ⁷	µg/L	<	0.27	9	9	0.1	0	<0.27	3
Aldrin ⁷	µg/L	<	0.0015	9	9	0.000022	0	<0.0015	3
Benzene	µg/L	<	0.3	9	9	5.9	0	<0.3	3
Benzidine ⁷	µg/L	<	3.7	9	9	0.000069	0	<3.7	3
Beryllium ⁷	µg/L	<	0.039	9	9	0.033	0	<0.039	3
Bis(2-Chloroethyl) Ether ⁷	µg/L	<	0.27	9	9	0.045	0	<0.27	3
Bis(2-Ethylhexyl) Phthalate ⁷	µg/L	<	5	9	8	3.5	0	<5	3

Pollutant	Unit	Qualifier	MEC ¹	No. Samples	No. ND ²	Co ³	Cs ⁴	X-obs ⁵	Endpoint
Carbon Tetrachloride ⁷	µg/L	<	0.32	9	9	0.9	0	<0.32	3
Chlordane ⁷	µg/L	<	0.005	9	9	0.000023	0	<0.005	3
Chlorodibromomethane	µg/L	<	0.29	9	9	8.6	0	<0.29	3
Chloroform	µg/L	<	0.31	9	9	130	0	<0.31	3
DDT ⁷	µg/L	<	0.0031	9	9	0.00017	0	<0.0031	3
1,4-Dichlorobenzene	µg/L	<	0.55	9	9	18	0	<0.55	3
3,3'-Dichlorobenzidine ⁷	µg/L	<	1.2	9	9	0.0081	0	<1.2	3
1,2-Dichloroethane	µg/L	<	0.28	9	9	28	0	<0.28	3
1,1-Dichloroethylene ⁷	µg/L	<	0.34	9	9	0.9	0	<0.34	3
Dichlorobromomethane	µg/L	<	0.32	9	9	6.2	0	<0.32	3
Dichloromethane	µg/L	<	0.34	9	9	450	0	<0.34	3
1,3-Dichloropropene	µg/L	<	0.51	9	9	8.9	0	<0.51	3
Dieldrin ⁷	µg/L	<	0.0021	9	9	0.00004	0	<0.0021	3
2,4-Dinitrotoluene ⁷	µg/L	<	0.18	9	9	2.6	0	<0.18	3
1,2-Diphenylhydrazine ⁷	µg/L	<	0.25	9	9	0.16	0	<0.25	3
Halomethanes	µg/L	=	2.5	30	8	130	0	3.0121	2
Heptachlor ⁷	µg/L	<	0.005	9	9	0.00005	0	<0.005	3
Heptachlor Epoxide ⁷	µg/L	<	0.0019	9	9	0.00002	0	<0.0019	3
Hexachlorobenzene ⁷	µg/L	<	0.49	9	9	0.00021	0	<0.49	3
Hexachlorobutadiene	µg/L	<	0.47	9	9	14	0	<0.47	3
Hexachloroethane	µg/L	<	0.52	9	9	2.5	0	<0.52	3
Isophorone	µg/L	<	0.21	9	9	730	0	<0.21	3
N-Nitrosodimethylamine	µg/L	<	0.14	9	9	7.3	0	<0.14	3

Pollutant	Unit	Qualifier	MEC ¹	No. Samples	No. ND ²	Co ³	Cs ⁴	X-obs ⁵	Endpoint
N-Nitrosodi-N-Propylamine ⁷	µg/L	<	0.26	9	9	0.38	0	<0.26	3
N-Nitrosodiphenylamine	µg/L	<	0.19	9	9	2.5	0	<0.19	3
PAHs, Sum ⁷	µg/L	<	0.1	9	9	0.0088	0	<0.1	3
PCBs, Sum ⁷	µg/L	<	0.05	9	9	0.000019	0	<0.05	3
TCDD Equivalent ⁷	µg/L	<	0.00000226	58	5	3.9E-09	0	<0.00000226	3
1,1,2,2-Tetrachloroethane	µg/L	<	0.34	9	9	2.3	0	<0.34	3
Tetrachloroethylene	µg/L	<	0.5	9	9	2	0	<0.5	3
Toxaphene ⁷	µg/L	<	0.12	9	9	0.00021	0	<0.12	3
Trichloroethylene	µg/L	<	0.35	9	9	27	0	<0.35	3
1,1,2-Trichloroethane	µg/L	<	0.29	9	9	9.4	0	<0.29	3
2,4,6-Trichlorophenol ⁷	µg/L	<	0.22	9	9	0.29	0	<0.22	3
Vinyl Chloride	µg/L	<	0.33	9	9	36	0	<0.33	3

¹ MEC = Maximum Effluent Concentration

² ND = Non-Detects

³ Co = The concentration (water quality objective) to be met at the completion of initial dilution (from Table 1 of the 2019 Ocean Plan).

⁴ Cs = The background seawater concentrations (From Table 3 of the 2019 Ocean Plan).

⁵ X-obs = The maximum input data after complete mixing or the LogNormal upper confidence bound (UCB) of the population percentile after complete mixing, when data are Lognormally distributed.

⁶ Zinc was detected in all 9 samples collected between November 2013 and November 2017, with results ranging from 0.62 µg/L to 6.4 µg/L.

⁷ This pollutant was not analyzed using sufficiently sensitive methods, as discussed in Fact Sheet section VII.F.1 of this Order.

- ⁸ Routine monitoring was waived by Regional Water Board staff after the Permittee's monitoring data demonstrated that the pollutant is not present in the discharge.

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