

## Central Valley Regional Water Quality Control Board

22 July 2016

### CERTIFIED MAIL

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### **NOTICE OF APPLICABILITY; GENERAL WASTE DISCHARGE REQUIREMENTS FOR COLD WATER CONCENTRATED AQUATIC ANIMAL PRODUCTION FACILITY DISCHARGES TO SURFACE WATERS (CAAP GENERAL ORDER); ORDER R5-2014-0161; CALIFORNIA DEPARTMENT OF WATER RESOURCES AND CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE; THERMALITO ANNEX HATCHERY; BUTTE COUNTY**

The California Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board), issued a Notice of Applicability (NOA) to the California Department of Water Resources and California Department of Fish and Wildlife (hereinafter Discharger) on 17 August 2010 for coverage under Order R5-2010-0018, for the Thermalito Annex Hatchery (hereinafter Facility).

On 5 December 2014, the Central Valley Water Board adopted Order R5-2014-0161, which renewed the CAAP General Order. The Discharger submitted a notice of intent for the Facility on 2 July 2014 to continue coverage under the CAAP General Order. Effective **22 July 2016**, this NOA provides the Facility with continued coverage under the CAAP General Order for the discharge of hatchery wastewater to the Thermalito Afterbay, a reservoir that conveys water to the Feather River, superseding a previous NOA issued on 17 August 2010. This Facility is assigned Order R5-2014-0161-034 and National Pollutant Discharge Elimination System (NPDES) Permit No. CAG135001. Please reference CAAP General Order **R5-2014-0161-034** in all correspondence and submitted documents. The following enclosures are included as part of this NOA:

- 1) Enclosure A - Administrative Information
- 2) Enclosure B - Location Map
- 3) Enclosure C - Flow Schematic
- 4) Enclosure D - Monitoring and Reporting Program
- 5) Enclosure E - Approved Aquaculture Drugs and Chemicals

The CAAP General Order is enclosed and may also be viewed at the following web address: [http://www.waterboards.ca.gov/centralvalley/board\\_decisions/adopted\\_orders/](http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/). The Central Valley Water Board advises the Discharger to be familiar with the entire CAAP General Order. Facility operations and discharges shall be managed in accordance with requirements contained in the CAAP General Order, this NOA, and with information submitted by the Discharger.

**FACILITY INFORMATION/DISCHARGE DESCRIPTION**

The Facility location is adjacent to the western shoreline of the Thermalito Afterbay on property owned by CDWR and operated by CDFW, in Oroville, California, Butte County (near latitude N39°28'43.94" and longitude W 121°41'17.26"), as shown in Enclosure B, a part of this NOA.

The Facility is supplied with groundwater from five groundwater extraction wells owned by CDWR. Groundwater can be pumped from any of the groundwater wells, which changes based on CDWR operations. Freshwater flows through a passive aeration tower before entering four parallel-operated raceways; each raceway is 10 feet (ft.) in width, 4 ft. in depth, and 600 ft. in length. Subsequently, hatchery wastewater enters two sump basins before being pumped to the Thermalito Afterbay using a pump float system; each sump basin has two pumps that operate according to required hydraulic removal rates. The estimated maximum discharge flowrate into the Thermalito Afterbay is about 25 cubic feet per second (cfs) or about 16 million gallons per day (mgd). Other ancillary Facility components include a permanent residential mobile home, a domestic wastewater holding tank, an office building, a maintenance building, and a small freezer.

Fish in the fry stage of the salmonid life cycle are reared at the Facility for approximately 6 to 10 months each year, which typically occurs from late December through June of the following year. Coho or Chinook salmon are occasionally transported from the Feather River Hatchery to the Facility around July/August and remain at the Facility until November. The Facility is mainly utilized to support both the mitigation and enhancement functions of the Feather River Hatchery.

The Discharger reported, in a notice of intent, the estimated maximum five-year annual harvestable fish produced and estimated maximum monthly feed use (Table 1):

**Table 1. Estimated Aquatic Animal Production and Feed Use**

Maximum Annual Harvestable Aquatic Animal Production (lbs)	Maximum Monthly Feed Use (lbs)
Chinook salmon – 77,232	140,400
Coho salmon – 77,548	
Steelhead trout* – 40,000	
Other trout varieties* – 35,000	

\*These fish are only occasionally stored at the Facility.

**Outfall 001**– Hatchery wastewater from the rearing raceways is discharged to the Thermalito Afterbay at Outfall 001.

The Facility has one 1,000-gallon split aboveground petroleum storage tank. The tank is stand-mounted over a concrete pad with secondary containment.

Domestic wastewater from the onsite private residence and office/maintenance building is discharged to a 6,000-gallon holding tank that, whenever necessary, is pumped by a commercial septage hauler/pumper.

**EFFLUENT LIMITATIONS**

Effluent limitations are specified in Section V., Effluent Limitations and Discharge Specifications, of the CAAP General Order. Copper sulfate is not utilized at the Facility and there is no reasonable potential for total recoverable copper to cause or contribute to an exceedance of water quality objectives. Therefore, an effluent limitation for total recoverable copper was not imposed.

The following effluent limitations (Table 2) are applicable to this discharge and are contained in Sections V.A of the CAAP General Order:

- a) Discharges to surface waters shall not exceed the effluent limitations contained in Table 2 below.

**Table 2. Effluent Limitations**

Parameter	Units	Average Monthly Effluent Limitation	Maximum Daily Effluent Limitation
Formaldehyde	mg/L	0.65 <sup>1</sup>	1.3 <sup>1</sup>
Chlorine	mg/L	--	0.018

<sup>1</sup> Compliance with the effluent limitations for formaldehyde may be evaluated using an estimated effluent concentration in lieu of effluent monitoring data. The estimated effluent concentration shall be calculated as described in the CAAP General Order (Section IX.A of Attachment C, Monitoring and Reporting Program).

- b) The Discharger shall minimize the discharge of total suspended solids through the implementation of the best management practices established in Special Provision VII.C.3 of the CAAP General Order.

**RECEIVING WATER LIMITATIONS**

Discharge from the Facility into the Thermalito Afterbay is within the Sacramento and San Joaquin River Basins, therefore, the receiving water limits contained in the CAAP General Order for the Sacramento and San Joaquin River Basins are applicable to this discharge.

**OTHER REQUIREMENTS**

1. The CDWR, as owner of the property at which a surface water discharge occurs, is responsible for guaranteeing compliance with the CAAP General Order. CDFW retains primary responsibility for compliance with the CAAP General Order, including day-to-day operations and monitoring.
2. Collected screenings and other solids, including fish carcasses, shall be disposed of in a manner approved by the Executive Officer, and consistent with the *Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste*, as set forth in Title 27, California Code of Regulations, Division 2, Subdivision 1, Section 2005, et seq.
3. The Discharger shall continue to electronically submit Self-Monitoring Reports (SMRs) using the State Water Resources Control Board’s California Integrated Water Quality System (CIWQS)

program website (<http://www.waterboards.ca.gov/ciwqs/index.html>). Directions for SMR submittal are provided on the CIWQS website in the event of a service interruption during electronic submittal.

4. Aquaculture activities defined in the Code of Federal Regulations (40 C.F.R. 122.25(b)) will be subject to the annual fee for general NPDES permits and de minimus discharges that are regulated by individual or general NPDES permits, as described in Title 23 of the California Code of Regulations, Division 3, Chapter 9, Article 1, Section 2200(b)(9) for Category 3 discharges.
5. The CAAP General Order expires on **31 December 2019**. Only those CAAP facilities authorized to discharge and who submit a notice of intent **at least 180 days** prior to the expiration date of Order R5-2014-0161 will remain authorized to discharge under administratively continued permit conditions.
6. In accordance with section VII.C.3.a of the CAAP General Order, the Discharger shall certify **within 90 days** from the issuance of this NOA that a Best Management Practices (BMP) Plan has been developed and is being implemented. To satisfy this requirement the Discharger shall submit a letter to the Central Valley Water Board certifying compliance with the BMP Plan requirements **by 20 October 2016**. The Discharger can develop a new BMP Plan or an existing BMP Plan may be modified for use under this requirement. The Discharger shall develop and implement the BMP Plan to prevent or minimize the generation and discharge of wastes and pollutants to waters of the United States and waters of the State and ensure disposal or land application of wastes complies with applicable solid waste disposal regulations. The BMP Plan shall include a salinity evaluation and minimization plan to address salt treatments, if any, at the Facility. The Discharger shall review the BMP Plan annually and must amend the BMP Plan whenever there is a change in the Facility or in the operation of the Facility that materially increases the generation of pollutants or their release or potential release to surface waters.

## ENFORCEMENT

Failure to comply with the CAAP General Order may result in enforcement actions, which could include civil liability. Effluent limitation violations can be subject to a mandatory minimum penalty (MMP) of \$3,000 per violation. In addition, late monitoring reports can be subject to penalties. When discharges do not occur during a monitoring period, the Discharger must still submit monitoring reports indicating that no discharge occurred to avoid being subject to enforcement actions.

## COMMUNICATION

All monitoring report submittals, notification of the beginning and end of discharge, questions regarding compliance and enforcement, and questions regarding permitting aspects shall be directed to the Central Valley Water Board's NPDES unit at (530) 224-4845.

Please note that we are transitioning to a paperless office. Therefore, all documents other than monitoring reports shall be converted to a searchable portable document format (i.e., a document with a "pdf" extension) and submitted by email to [centralvalleyredding@waterboards.ca.gov](mailto:centralvalleyredding@waterboards.ca.gov). Documents

that are 50 MB or larger should be transferred to a CD, DVD, or flash drive and mailed to our office, attention "ECM Mailroom."

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Board to review the action in accordance with California Water Code section 13320 and California Code of Regulations, title 23, sections 2050 et seq. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date of this NOA, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day.

Copies of the law and regulations applicable to filing petitions may be found on the Internet at: [http://www.waterboards.ca.gov/public\\_notices/petitions/water\\_quality](http://www.waterboards.ca.gov/public_notices/petitions/water_quality) or will be provided upon request.

*Original signed by Clint Snyder, for*

Pamela C. Creedon  
Executive Officer

ZHC:reb

Enclosures (6):

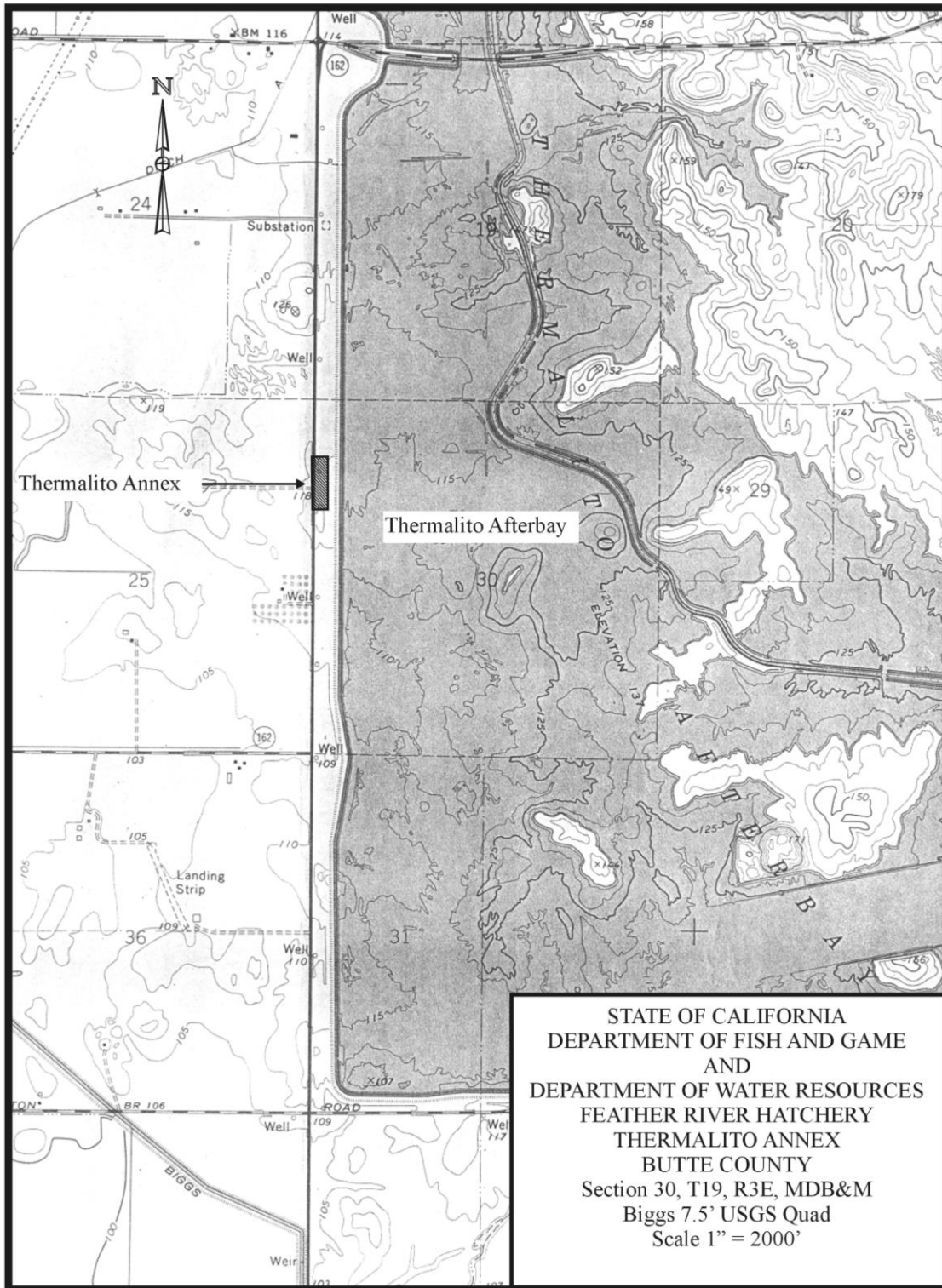
- 1) Enclosure A – Administrative Information
- 2) Enclosure B – Location Map
- 3) Enclosure C – Flow Schematic
- 4) Enclosure D – Monitoring and Reporting Program
- 5) Enclosure E – Approved Aquaculture Drug and Chemical Use
- 6) CAAP General Order R5-2014-0161 (Discharger only)

cc w/encl. via email: Terry Jackson, California Department of Fish and Wildlife, Rancho Cordova  
Anna Kastner, California Department of Fish and Wildlife, Oroville  
David Smith, U.S. EPA, Region IX, San Francisco  
Phil Isorena, State Water Resources Control Board, Sacramento

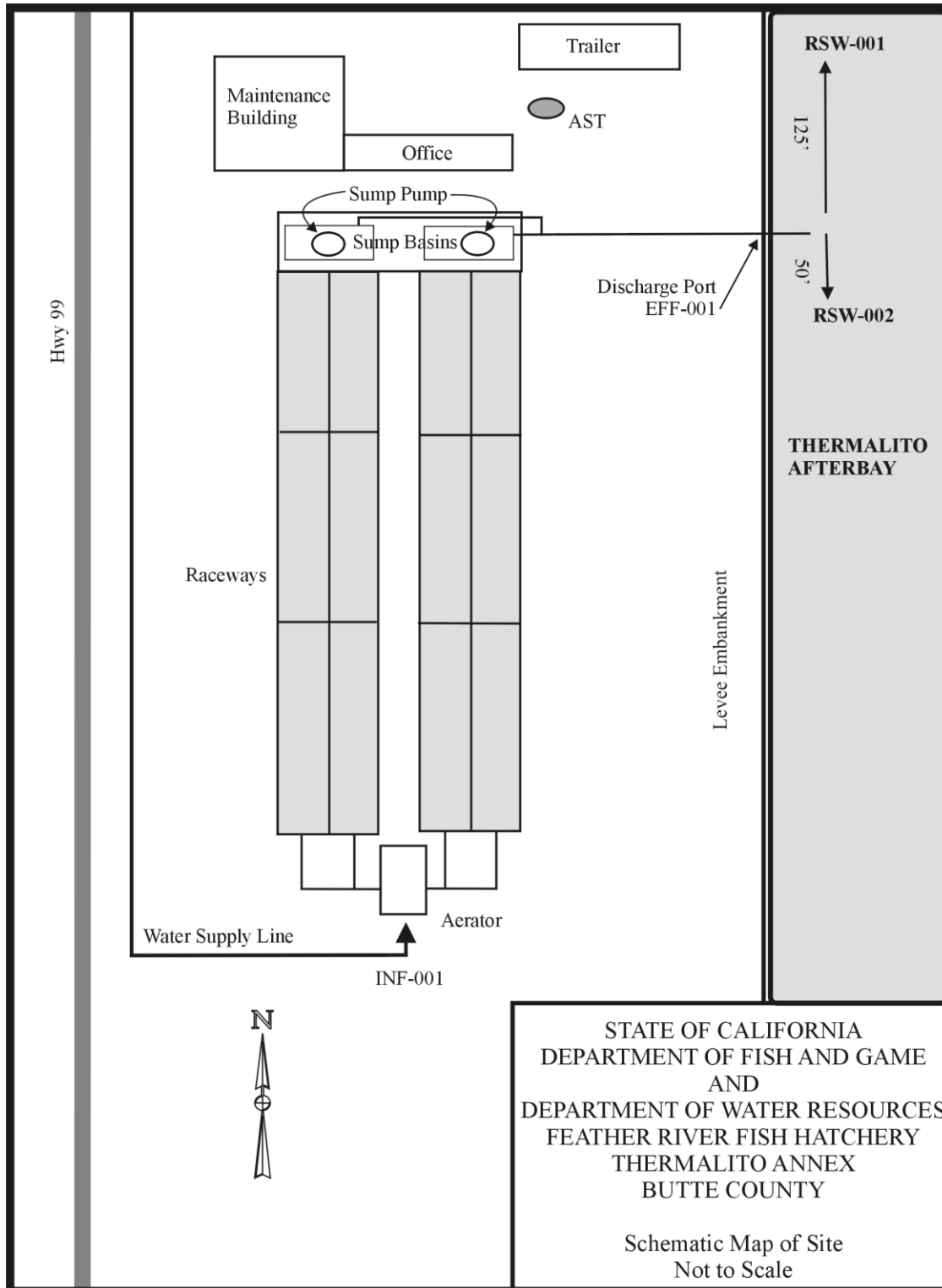
**ENCLOSURE A – ADMINISTRATIVE INFORMATION**

<b>Name of Facility</b>	Thermalito Annex Hatchery
<b>Type of Facility</b>	Cold Water Concentrated Aquatic Animal Production Facility, SIC Code 0921
<b>WDID</b>	5A040804002
<b>General Order NOA Enrollee Number</b>	R5-2014-0161-034
<b>Discharger</b>	State of California Department of Fish and Wildlife (Operator) and Department of Water Resources (Facility and Land Owner)
<b>Facility Address</b>	4700 Hwy 99E Oroville, CA 95965
<b>Land Owner (Address)</b>	California Department of Water Resources 460 Glen Drive Oroville, CA 95966
<b>Facility Contact, Title, and Phone</b>	Anna Kastner, Fish Hatchery Manager II, (530) 538-2222
<b>Authorized Person to Sign and Submit Reports</b>	Jay Rowan, Acting Senior Environmental Scientist Supervisor, (916) 358-2883
<b>Mailing Address</b>	5 Table Mountain Boulevard Oroville, CA 95965
<b>Billing Address</b>	5 Table Mountain Boulevard Oroville, CA 95965
<b>Estimated Total Annual Weight of Fish Production</b>	229,780 lbs
<b>Major or Minor Facility</b>	Minor
<b>Threat to Water Quality</b>	2
<b>Complexity</b>	B
<b>Expected Maximum Total Discharge from Facility</b>	25 cfs (or 16 mgd)
<b>Watershed</b>	Sacramento River Basin
<b>Receiving Water</b>	Thermalito Afterbay, a reservoir that conveys water to the Feather River
<b>Receiving Water Type</b>	Inland surface water

**ENCLOSURE B – LOCATION MAP**



**ENCLOSURE C – FLOW SCHEMATIC**





**ENCLOSURE D – MONITORING AND REPORTING PROGRAM**

The Discharger is obligated to comply with the monitoring and reporting requirements contained in the CAAP General Order, Attachment C – Monitoring and Reporting Program. To the extent of the CAAP General Order, Attachment C provides conditions that the NOA specify certain requirements and Enclosure D provides such specificity. Enclosure D also provides a summary of other requirements described in Attachment C of the CAAP General Order.

This Facility produces more than 100,000 pounds of aquatic animals per year. Tables D-2, D-3, and D-4 are based on the monitoring and reporting program shown in Attachment C of the CAAP General Order for facilities producing more than 100,000 pounds of aquatic animals per year (CAAP General Order, Attachment C – Sections III.B, IV.A.2, and VIII.D).

**A. Monitoring Locations.** Monitoring locations are defined as follows in Table D-1 and a flow schematic showing site-specific monitoring locations is provided in Enclosure C, a part of this NOA.

**Table D-1. Monitoring Locations**

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	INF-001	Influent shall be collected at a location where a representative sample can be obtained, prior to source water entering the aeration tower [Approximate location: 39°28'36.16"N latitude and 121°41'18.00"W longitude].
Outfall 001	EFF-001	Hatchery wastewater shall be collected and sampled after the last point of treatment and prior to hatchery wastewater entering the Thermalito Afterbay [Approximate location: 39°28'43.18"N latitude and 121°41'13.63"W longitude].
--	RSW-001	The receiving water, upgradient of the Facility, shall be collected at a safe location in the Thermalito Afterbay approximately 120 feet north of Outfall 001 [Approximate location: 39°28'44.40"N latitude and 121°41'13.64"W longitude].
--	RSW-002	The receiving water, downgradient of the Facility, shall be collected at a safe location in the Thermalito Afterbay approximately 50 feet south of Outfall 001 [Approximate location: 39°28'42.70"N latitude and 121°41'13.61"W longitude].

**B. Influent Monitoring Requirements.** The Discharger shall monitor influent to the Facility at monitoring location INF-001, for the frequencies/parameters shown in Table D-2, when the Facility is in operation and there is a discharge at Outfall 001. Samples shall be collected at approximately the same time as effluent samples.

**Table D-2. Influent Monitoring**

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
pH	S.U.	Grab	1/month <sup>2</sup>	1
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/month <sup>2</sup>	1
Copper (Total recoverable)	µg/L	Grab	1/month during CuSO <sub>4</sub> use <sup>2,3</sup>	1
Hardness (as CaCO <sub>3</sub> )	mg/L	Grab	1/month during CuSO <sub>4</sub> use <sup>2</sup>	1
Total Suspended Solids	mg/L	Grab	1/month <sup>2</sup>	1

<sup>1</sup> Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. Part 136.

<sup>2</sup> Samples shall be collected approximately at the same time as effluent samples.

<sup>3</sup> The maximum reporting level required for total recoverable copper is 0.5 µg/L, in accordance with Section 2.4.2 and Appendix 4 of the SIP.

**C. Effluent Monitoring Requirements.** The Discharger shall monitor effluent for the frequencies/parameters shown in Table D-3, when the Facility is in operation and there is a discharge at Outfall 001. Samples shall be collected at approximately the same time as influent samples.

**Table D-3. Effluent Monitoring**

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	cfs	Flow Measurement Device <sup>1</sup>	1/month	--
Total Suspended Solids (TSS)	mg/L	Grab	1/month	2
<b>Net TSS</b> (effluent minus influent)	mg/L	Net Calculation	1/month	--
Turbidity	NTU	Grab	1/month	2
pH	S.U.	Grab	1/month <sup>4</sup>	2
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/month <sup>3,7</sup>	2
Copper (Total Recoverable)	µg/L	Grab	1/month during CuSO <sub>4</sub> use <sup>4,7</sup>	2
Hardness (as CaCO <sub>3</sub> )	mg/L	Grab	1/month during CuSO <sub>4</sub> use <sup>4</sup>	2
Formaldehyde	mg/L	Grab	1/month during Formalin use <sup>7</sup>	2,5
Chlorine	mg/L	Grab	1/quarter during chlorine use <sup>7</sup>	2,6

STATE OF CALIFORNIA  
DEPARTMENT OF WATER RESOURCES AND  
DEPARTMENT OF FISH AND WILDLIFE  
THERMALITO ANNEX HATCHERY  
BUTTE COUNTY

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- 1 Effluent flow shall be monitored monthly using either a flow measurement device or method as required by CAAP General Order, Attachment C, Section I.E.
- 2 Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. Part 136.
- 3 Samples shall be collected monthly. If sodium chloride is used, the monthly monitoring of EC shall be conducted during treatment.
- 4 The maximum reporting level required for total recoverable copper is 0.5 µg/L, in accordance with Section 2.4.2 and Appendix 4 of the SIP. The monthly sample shall be collected during the time of peak discharge of copper, at least one hour after start of treatment. Effluent hardness and pH shall be measured at the same time as total recoverable copper.
- 5 Estimated concentrations of formaldehyde may be reported in lieu of analytical monitoring during Formalin use. See Section IX.A of the CAAP General Order for calculation procedures. If analytical monitoring is conducted, when Formalin is added to the waters of the Facility, formaldehyde concentration shall be measured during time of peak discharge of Formalin, at least one hour after start of treatment.
- 6 Total chlorine residual must be monitored with a method sensitive to and accurate at the permitted level of 0.018 mg/L.
- 7 Per Section IX.A of the CAAP General Order, the discharger shall report all aquaculture drug and chemical use as part of the Monthly Drug and Chemical Use Report that is submitted on a quarterly basis.

**D. Receiving Water Monitoring Requirements.** Receiving water samples shall be collected from monitoring locations RSW-001 and RSW-002, for the frequencies/parameters shown in Table D-4, when the Facility is in operation and there is a discharge at Outfall 001. Samples shall be collected at approximately the same time as effluent samples.

**Table D-4. Receiving Water Monitoring**

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Dissolved Oxygen	mg/L	Grab	1/month	1
Temperature	°C	Grab	1/month	1
Turbidity	NTU	Grab	1/month	1
pH	S.U.	Grab	1/month	1
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/month	1
Hardness (as CaCO <sub>3</sub> )	mg/L	Grab	1/month during CuSO <sub>4</sub> use <sup>2</sup>	1

<sup>1</sup> Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. Part 136.

<sup>2</sup> When copper sulfate is added to waters of the facility, hardness (as CaCO<sub>3</sub>) shall be measured monthly during treatment.

In conducting the receiving water sampling, a log shall be kept of the receiving water conditions. Attention shall be given to the presence or absence of:

- a. Floating or suspended matter
- b. Discoloration
- c. Bottom deposits
- d. Aquatic life

- e. Visible films, sheens, or coatings
- f. Fungi, slimes, or objectionable growths
- g. Potential nuisance conditions

Notes on receiving water conditions shall be summarized in the quarterly monitoring report.

- E. Monthly Drug and Chemical Use Report.** The Discharger shall develop a monthly drug and chemical use report describing all aquaculture drugs or chemicals used at the Facility in accordance with Section IX.A of the CAAP General Order. The report shall be submitted with the quarterly self-monitoring reports.
- F. Annual Feeding and Production Report.** The Discharger shall develop an annual feeding and production report in accordance with the CAAP General Order, Attachment C, Section IX.C. The report shall be submitted **28 February, annually**, and include 1) monthly food usage in pounds for each calendar month of the previous year, and 2) annual production of aquatic animals in pounds per year for the previous year.
- G. Priority Pollutant Metals Monitoring.** In accordance with the CAAP General Order, Attachment C, Section IX.B., the Discharger shall monitor the effluent (at monitoring location EFF-001) and the upstream receiving water (RSW-001) for the metals listed in Table G-1 of the CAAP General Order once during the term of Order R5-2014-0161. **The monitoring shall occur after 1 January 2018, but no later than 1 July 2019.** The discharger shall electronically submit the priority pollutants metals monitoring results using the State Water Board's California Integrated Water Quality System program website (<http://www.waterboards.ca.gov/ciwqs/index.html>), **within 60 days of the final sampling event.** Refer to CAAP General Order, Attachment G, for the specific monitoring requirements.

## REPORTING REQUIREMENTS

Self-monitoring reports (SMRs) are required to be submitted quarterly and annually. Table D-5, below, summarizes SMR due dates required under the CAAP General Order. Quarterly monitoring reports must be submitted until coverage is formally terminated in accordance with the CAAP General Order, even if there is no discharge during a reporting quarter.

**Table D-5. SMRs required in the Monitoring and Reporting Program (Attachment C, CAAP General Order)**

<b>Sampling Frequency</b>	<b>Monitoring Period Begins On...</b>	<b>Monitoring Period</b>	<b>SMR Due Date</b>
1/month	1 January	First day of calendar month through last day of calendar month	1 May (1 Jan – 31 Mar) 1 Aug (1 Apr – 30 Jun) 1 Nov (1 Jul – 30 Sep) 1 February of following year (1 Oct – 31 Dec)
1/quarter	1 January	1 January through 31 March 1 April through 30 June 1 July through 30 September 1 October through 31 December	1 May 1 Aug 1 Nov 1 February of following year
1/year	1 January	January 1 through December 31	1 February of following year

In the event the Discharger does not comply or will be unable to comply for any reason, with any prohibition and/or limitation of the CAAP General Order, the Discharger shall notify the Central Valley Water Board by telephone at (530) 224-4845 within 24 hours of having knowledge of such noncompliance, and shall confirm this notification in writing within five days, unless the Central Valley Water Board waives confirmation. Written notification shall state the nature, time, duration, and cause of noncompliance, and shall describe measures being taken to remedy current noncompliance and prevent recurrence including, where applicable, a schedule of implementation. Other noncompliance requires written notification as above at the time of the normal self-monitoring report.

**ENCLOSURE E – APPROVED AQUACULTURE DRUGS AND CHEMICALS USE**

The following drugs and chemicals are used at the Facility to prevent/medicate fish for any potential contamination by bacteria, fungi, viruses and pathogens, and to reduce the spread of disease among the confined fish population. Some chemicals may be used to clean Facility treatment/operation components.

<b>Drug or Chemical</b>	<b>Estimated Maximum Daily Amount Used</b>	<b>Method of Application</b>	<b>Estimated Maximum Concentration in Effluent</b>
Amoxicillin trihydrate	40 mg of drug per kg of fish body weight	Intraperitoneal injection	Unknown
Carbon dioxide	Bubbled in water until effective	Immersion bath	Unknown
Chloramine T	10 parts per million (ppm)	Bath	0.55 to 10 ppm
Erythromycin	40 mg of drug per kg of b fish body weight at 30 day intervals. Also used in medicated feed or fish pills at a rate of 100 mg of drug per kg of body weight	Intraperitoneal injection or used in feed	Unknown
Florfenicol	10 mg of drug per kg of fish body weight per day	Feed	Unknown
Formalin	25 ppm	Bath	1.38 to 25 ppm
Hydrogen peroxide	100 ppm or less	Bath	5.6 to 100 ppm
Iodophor	100 mg/L	Bath	0.024-0.07 ppm
Oxytetracycline HCl (Terramycin)	100 ppm or approximately 270 grams per 600 gallon tank	Bath	5.6 - 100 ppm
Oxytetracycline medicated feed	3.75 grams per 100 lbs of fish per day	Feed	Unknown
Penicillin G Potassium	150 IU/mL (500,000,000 IU per 311.8 grams) ~ 100 ppm	Bath	2.6 ppm
Potassium permanganate	Flush treatment – 2 ounces per cfs Bath – 2 ppm or less	Flush or bath	Flush – 0.13 to 2.32 ppm Bath – 0.11 ppm to 2 ppm
Romet (sulfadimethoxine ormetoprim)	50 mg of drug per kg of fish body weight per day	Feed	Unknown
Sodium chloride	150-200 lbs/cfs or 2.67-3.56 parts per trillion	Flush	200 to 3,600 ppm
Sodium bicarbonate	142-642 mg/L	Immersion bath	Not discharged
Tricaine methanesulfonate (MS-222)	50-250 mg/L	Immersion bath	Not discharged