



Central Valley Regional Water Quality Control Board

5 October 2022

Gerald Hatler
Environmental Program Manager
California Department of Fish and Wildlife
1234 East Shaw Avenue
Fresno, CA 93710

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; ORDER R5-2019-0079 (CAAP GENERAL ORDER, NPDES No. CAG135001); CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE, SAN JOAQUIN FISH HATCHERY AND SALMON CONSERVATION AND RESEARCH FACILITY, FRESNO COUNTY

The California Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) issued an amended Notice of Applicability (NOA) to California Department of Fish and Wildlife (Discharger) on 26 April 2019 for coverage under the CAAP General Order for the San Joaquin Fish Hatchery (Hatchery) and Salmon Conservation and Research Facility (SCARF). The amended NOA superseded the original NOA issued on 20 January 2015, which did not include the SCARF. The Central Valley Water Board and the Discharger have agreed it is appropriate to regulate the Hatchery and the SCARF under the same NOA, since they will share the same outfall into the San Joaquin River.

On 5 December 2019, the Central Valley Water Board adopted Order R5-2019-0079 renewing the CAAP General Order. The Discharger submitted a Notice of Intent on 3 July 2019 to continue coverage for the Hatchery and SCARF under the CAAP General Order. Effective 1 November 2022, this NOA provides continued coverage for the Hatchery and SCARF under the CAAP General Order to discharge to the San Joaquin River, superseding the previous NOA issued 26 April 2019. CAAP General Order R5-2019-0079-012 and National Pollutant Discharge Elimination System (NPDES) Permit No. CAG135001 are assigned for the Hatchery and SCARF. Please reference your CAAP General Order number **R5-2019-0079-012**, in all correspondence and submitted documents. The following attachments are included as part of this NOA:

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

MARK BRADFORD, CHAIR | PATRICK PULUPA, ESQ., EXECUTIVE OFFICER

The enclosed [CAAP General Order](http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders) (http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders) is also available online. You are urged to familiarize yourself with the entire contents of the enclosed document. The Hatchery and SCARF operations and discharges shall be managed in accordance with the requirements contained in the CAAP General Order, this NOA, and with the information submitted by the Discharger.

I. FACILITY INFORMATION/DISCHARGE DESCRIPTION

A. San Joaquin Fish Hatchery

The Hatchery is owned and operated by the Discharger, approximately 20 miles northeast of Fresno in Section 7, Township 11 South, Range 21 East, MDB&M, as shown in Attachment B. The Hatchery is a cold-water flow-through facility that includes an intake structure at the Friant Dam, multiple incubator trays, 124 aluminum and fiberglass rearing troughs, eight 600-foot-long trout rearing ponds, two 400-foot concrete raceways, and a spawning house. Water from Millerton Lake at the Friant Dam is conveyed to the Hatchery via a 44-inch pipeline. There are two intake valves used to deliver water to the Hatchery. A high valve located at the Friant/Kern Canal and a low valve at the base of the Friant Dam are both used to regulate the Hatchery's flow through water temperature, typically between 47 degrees F and 56 degrees F. The average daily flow through the Hatchery is approximately 23 million gallons per day (mgd). Water is delivered to the Hatchery via an underground pipe and passes through an aerator tower to dispel noxious gases and to increase dissolved oxygen concentrations.

The Discharger currently raises approximately 500,000 pounds of rainbow trout, 4,000 pounds of Kokanee salmon, 5,000 pounds of brown trout, and 5,000 pounds of brook trout annually. The Hatchery uses approximately 70,000 pounds of feed during the calendar month of maximum feeding and approximately 650,000 pounds of feed annually. For the Hatchery, the Discharger reported the predicted 5-year maximum annual harvestable fish production as shown in Table 1.

Table 1. 5-Year Maximum Aquatic Animal Production

Species	5-Year Maximum Annual Harvestable Maximum Hatchery Aquatic Animal Production (lbs)
Rainbow trout	540,000
Brook trout	5,000
German brown trout	5,000
Kokanee Salmon	4,000

Prior to discharge to the San Joaquin River, the Hatchery's effluent is distributed between the lower and upper settling ponds. Wastewater from the lower settling ponds is merged into a final settling pond, while wastewater from the upper settling ponds flow to the wetland ponds and eventually to the final pond. The wetland vegetation will serve to remove pollutants from the effluent. Once the wastewater has

reached the final pond, it will be discharged to the San Joaquin River immediately upstream of Lost Lake Park at Discharge Point-001: Latitude 36 degrees 59 minutes 11 seconds North, Longitude 119 degrees 43 minutes 15 seconds West.

Since 2017, the Discharger has converted the worm farm to settling ponds. In the previous permit, the worm farm was used to feed on the waste from the Hatchery's effluent. Without the worm farm the Discharger expects solids to accumulate at a faster rate, thus, pond cleaning is expected to occur more often. There are no future plans to restore the worm farm.

An interim rearing facility (Interim Facility) is also located adjacent to the Hatchery. Currently, the Discharger is operating the Interim Facility to meet the needs of the San Joaquin River Restoration Program while the SCARF is developing. The Interim Facility houses and rears Chinook salmon. The Interim Facility consists of two small buildings, a 500 square foot building containing six 12-stack vertical tray incubators and six 3-ft diameter rearing tanks; and a 960 square foot (Moccasin) building consisting of eight 6-ft diameter circular tanks, outside tanks consisting of three 16-foot circular tanks, and two 20-foot circular tanks. Future plans for the Interim Facility are unknown. However, the Discharger temporarily intends to use the Interim Facility for holding salmon brought from other rivers or facilities, when broodstock is collected, and from the San Joaquin River once the Discharger begins getting adult returns. There may also be an expanded research center at the Interim Facility, and potentially a cold water refugia (as the Interim Facility has chillers in nearly all tanks) in the event river water temperatures become prohibitive to broodstock survival.

The Discharger is authorized to use the drugs and chemicals in Table E-1 at the Hatchery to treat fish for parasites, fungi, and bacteria, as well as to clean rearing raceways in order to reduce the spread of disease among the confined fish population.

B. Salmon Conservation and Research Facility

The Discharger is currently in the process of building the SCARF adjacent to the Hatchery, and once completed, the Discharger will operate the SCARF. The SCARF and the Hatchery will share the same outfall into the San Joaquin River. In addition, the SCARF will have its own side outfall discharging into the San Joaquin River at Discharge Point-002: Latitude 36 degrees 59 minutes 13 seconds North, Longitude 119 degrees 43 minutes 6 seconds West. Discharge Point-002, which will pass flow year-round, will allow juveniles to seasonally swim directly from the tanks out to the San Joaquin River side channel. The SCARF's more concentrated wastewater is collected in the bottom drain of the tanks and is directed for treatment to the drum filters. The SCARF will use the same source water as the Hatchery and the same treatment system; with the addition of two drum filters to remove solids and two additional small treatment ponds (Ponds A and B) with emerged and submerged vegetation. During treatment, the SCARF's wastewater will be combined with the Hatchery's wastewater and discharged to Discharge Point-001. The expected average daily flow through the SCARF is approximately 10.3 mgd.

The SCARF is a flow through system with some ability to recirculate and includes seven thirty-foot in diameter circular tanks, 20 twenty-foot in diameter circular tanks, three sixteen-foot in diameter circular tanks, six nine-foot in diameter circular tanks, 19 six-foot in diameter circular tanks, 16 three-foot in diameter circular tanks, 28 12'x4' rectangular tanks, and two 10'x3' rectangular tanks for a total area of 14,264 square feet. Approximately 45 percent of the flow will be directly discharged to Discharge Point-002, the remaining flow will be treated and discharged at Discharge Point-001. The majority of the flow will be pretreated via drum-filters and then sent to Ponds A and B. However, if the drum filters require maintenance, the SCARF's effluent will be redirected to the settling ponds. The SCARF's and the Hatchery's effluent is combined at a distribution box between pond B and the lower settling ponds. The distribution box distributes the wastewater to the lower and upper settling ponds. The effluent from the lower settling ponds eventually leads to the final pond, and the effluent from the upper settling ponds will go through additional treatment in the wetland ponds prior to arriving in the final pond. The combined effluent is eventually discharged to Discharge Point-001.

The SCARF is expected to raise approximately 30,000 pounds of Spring-run Chinook Salmon in the first year of operation, and a maximum of 75,000 pounds in the fifth year. The SCARF will use a maximum of 5,400 pounds monthly and approximately 64,500 pounds annually of Pellet Type Trout/Salmon feed. Frozen krill feed will also be utilized by the SCARF, approximately 1,400 pounds a month and 16,100 pounds per year.

The Discharger is authorized to use the drugs and chemicals in Table E-2 at the SCARF to treat salmon for parasites, fungi, and bacteria, as well as to clean rearing raceways in order to reduce the spread of disease among the confined fish population. Sodium thiosulfate may only be used as part of the operations and maintenance of the SCARF and is not a new chemical that can be directly used on aquatic animals. The Discharger is authorized to use sodium thiosulfate to neutralize chemicals in appropriate doses.

II. DISCHARGE PROHIBITIONS (CAAP GENERAL ORDER SECTION IV)

The Discharge Prohibitions contained in CAAP General Order Section IV are applicable to the Hatchery and SCARF.

III. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS (CAAP GENERAL ORDER SECTION V)

A. Effluent Limitations – Discharge Points 001 and 002

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

Table 2: Effluent Limitations – Discharge Points 001 and 002

Parameter	Units	Average Monthly Effluent Limitation	Maximum Daily Effluent Limitations
Formaldehyde	mg/L	0.65	1.3
Chlorine	mg/L	--	0.018

2. 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.

B. Land Discharge Specifications (CAAP General Order Section V.C)

The Land Discharge Specifications contained in CAAP General Order Section V.C are applicable to the Hatchery and SCARF.

IV. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations (CAAP General Order Section VI.A)

The discharge to the San Joaquin River is subject to the Water Quality Control Plan for the Sacramento and San Joaquin River Basins (Basin Plan), therefore, the receiving water limitations contained in the CAAP General Order based on the Basin Plan, as indicated below, are applicable to this discharge.

- Un-ionized Ammonia (VI.A.1) – Not Applicable;
- Biostimulatory Substances (VI.A.3);
- Chemical Constituents (VI.A.4);
- Color (VI.A.5);
- Dissolved Oxygen (VI.A.6.a.i, ii, iii);
- Electrical Conductivity (VI.A.7) – Shall not exceed 150 micromhos/cm from Friant Dam to Gravelly Ford (90 percentile);
- Floating Material (VI.A.8);
- Oil and Grease (VI.A.9);
- pH (VI.A.10);
- Pesticides ((VI.A.11.a, b, c, d, e, g);
- Radioactivity (VI.A.12);
- Suspended Sediments (VI.A.13);
- Settleable Substances (VI.A.14);
- Suspended Material (VI.A.15);
- Taste and Odors (VI.A.16);
- Temperature (VI.A.17);
- Total Dissolved Solids (VI.A.18) – Not Applicable;
- Toxicity (VI.A.19); and
- Turbidity (VI.A.20.a).

B. Ground Water Limitations (CAAP General Order Section VI.B)

The Groundwater Limitations contained in CAAP General Order Section VI.B are applicable to the Hatchery and SCARF.

V. PROVISIONS

Provisions are contained in Section VII of the CAAP General Order, and the applicable provisions are referenced below.

A. Standard Provisions. (CAAP General Order Section VII.A)

The Standard Provisions contained in CAAP General Order Section VII.A are applicable to the Hatchery and SCARF.

B. Monitoring and Reporting Program Requirements. (CAAP General Order Section VII.B)

Each Discharger shall comply with the Monitoring and Reporting Program, and future revisions thereto, in Attachment C, of the CAAP General Order and as specified in Attachment D of this NOA.

C. Special Provisions. (CAAP General Order Section VII.C)

Special Provisions are contained in Section VII.C of the CAAP General Order. Only the following Special Provision sections from the CAAP General Order specified in Table 3 below apply to the Hatchery and SCARF:

Table 3 Summary of Applicable Special Provisions

Special Provision	CAAP General Order Section Reference
Reopener Provisions	Section VII.C.1
Drug and Other Chemical Use Reporting	Section VII.C.2
Best Management Practices and Pollution Prevention	Section VII.C.3
Waste Disposal	Section VII.C.4
Special Provisions for Municipal Facilities (POTWs Only)	Section VII.C.5 - Not Applicable
Other Special Provisions	Section VII.C.6 - Not Applicable
Compliance Schedules	Section VII.C.7 – Not Applicable

VI. COMPLIANCE DETERMINATION (CAAP GENERAL ORDER SECTION VIII.A)

A. Formaldehyde Effluent Limitations. 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 in Section IX.A of Attachment C, Monitoring and Reporting Program.

VII. OTHER REQUIREMENTS

A. The discharge from the Hatchery shall not exceed a monthly average flow of 24 million gallons per day (mgd). The discharge from the SCARF shall not exceed a monthly average flow of 11 mgd.

- B.** The CAAP General Order expires on **31 January 2025**. Only those CAAP facilities authorized to discharge under the expiring Order and who submit a Notice of Intent at least **one year** prior to the expiration date of the CAAP General Order (unless the Executive Officer grants permission for a later date) will remain authorized to discharge under administratively continued permit conditions.
- C.** Aquaculture activities defined in 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 (California Code of Regulations Section 2200(b)(9) for Category 3 discharges).
- D.** 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 3 January 2023. 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 is in compliance with applicable solid waste disposal regulations. The BMP Plan shall include practices used during salt treatments at the Hatchery and SCARF to minimize salinity discharges to the receiving water. The Discharger shall review the BMP Plan annually and must amend the BMP Plan whenever there is a change in the operation which materially increases the generation of pollutants or their release or potential release to surface waters.

VIII. ENFORCEMENT

Failure to comply with the CAAP General Order may result in enforcement actions, which could include civil liability. Effluent limitation violations are subject to a Mandatory Minimum Penalty (MMP) of \$3,000 per violation, as well as discretionary penalties. In addition, late monitoring reports are subject to discretionary penalties and MMPs. When discharges do not occur during a quarterly monitoring report period, the Discharger must still submit a quarterly monitoring report indicating that no discharge occurred to avoid being subject to enforcement actions.

IX. COMMUNICATION

All notification of non-compliance and questions regarding compliance and enforcement shall be directed to Hossein Aghazeynali of the Central Valley Water Board's NPDES Compliance and Enforcement Unit. Mr. Aghazeynali can be reached at (559) 445-6194 or by email at Hossein.Aghazeynali@waterboards.ca.gov.

Questions regarding the permitting aspects of this Order, and written notification for termination of coverage under the CAAP General Order, shall be directed to Lovdeep

Singh of the Central Valley Water Board's NPDES Permitting Unit. Mr. Singh can be reached at (559) 445-5130 or by email at Lovdeep.Singh@waterboards.ca.gov.

The Central Valley Water Board is implementing a Paperless Office system to reduce our paper use, increase efficiency, and provide a more effective way for our staff, the public, and interested parties to view documents in electronic form. Therefore, the Discharger is required to submit all self-monitoring, technical, and progress reports required by this NOA via CIWQS submittal. In general, if any monitoring data for a monitoring location can be submitted using a computable document format (CDF) file upload, then it should be submitted as a CDF file upload. However, certain parameters that cannot be uploaded to the CIWQS data tables, such as the BMP Plan, should be uploaded as a Portable Document Format (PDF), Microsoft Word, or Microsoft Excel file attachment. Also, please upload or enter a cover letter summarizing the content of the report to the submittal tab of the CIWQS module for each submittal.

All other documents not required to be submitted via CIWQS shall be converted to a searchable PDF and submitted by email to the [Central Valley Water Board email \(centralvalleyfresno@waterboards.ca.gov\)](mailto:centralvalleyfresno@waterboards.ca.gov) with the following information:

- Attention: NPDES Compliance and Enforcement Section
- Discharger: California Department of Fish and Wildlife
- Facility: San Joaquin Fish Hatchery and Salmon Conservation and Research Facility
- County: Fresno County
- CIWQS Place ID: 255315

Documents that are 50 megabytes or larger must be transferred to a DVD or flash drive, and mailed to our office, attention "ECM Mailroom-NPDES".

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Resources Control Board (State Water Board) to review the action in accordance with California Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. 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 NOA 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. [Links to the laws and regulations applicable to filling petitions](http://www.waterboards.ca.gov/public_notices/petitions/water_quality) (http://www.waterboards.ca.gov/public_notices/petitions/water_quality) may be found on the internet or will be provided upon request.

Original Signed by Clay L. Rodgers for:
Patrick Pulupa
Executive Officer

Gerald Hatler
San Joaquin Fish Hatchery and
Salmon Conservation and Research Facility

5 October 2022

Attachments: Attachment A – Administrative Information
Attachment B – Location Map
Attachment C – Flow Schematic
Attachment D – Monitoring and Reporting Program
Attachment E – Approved Aquaculture Drug and Chemical Use

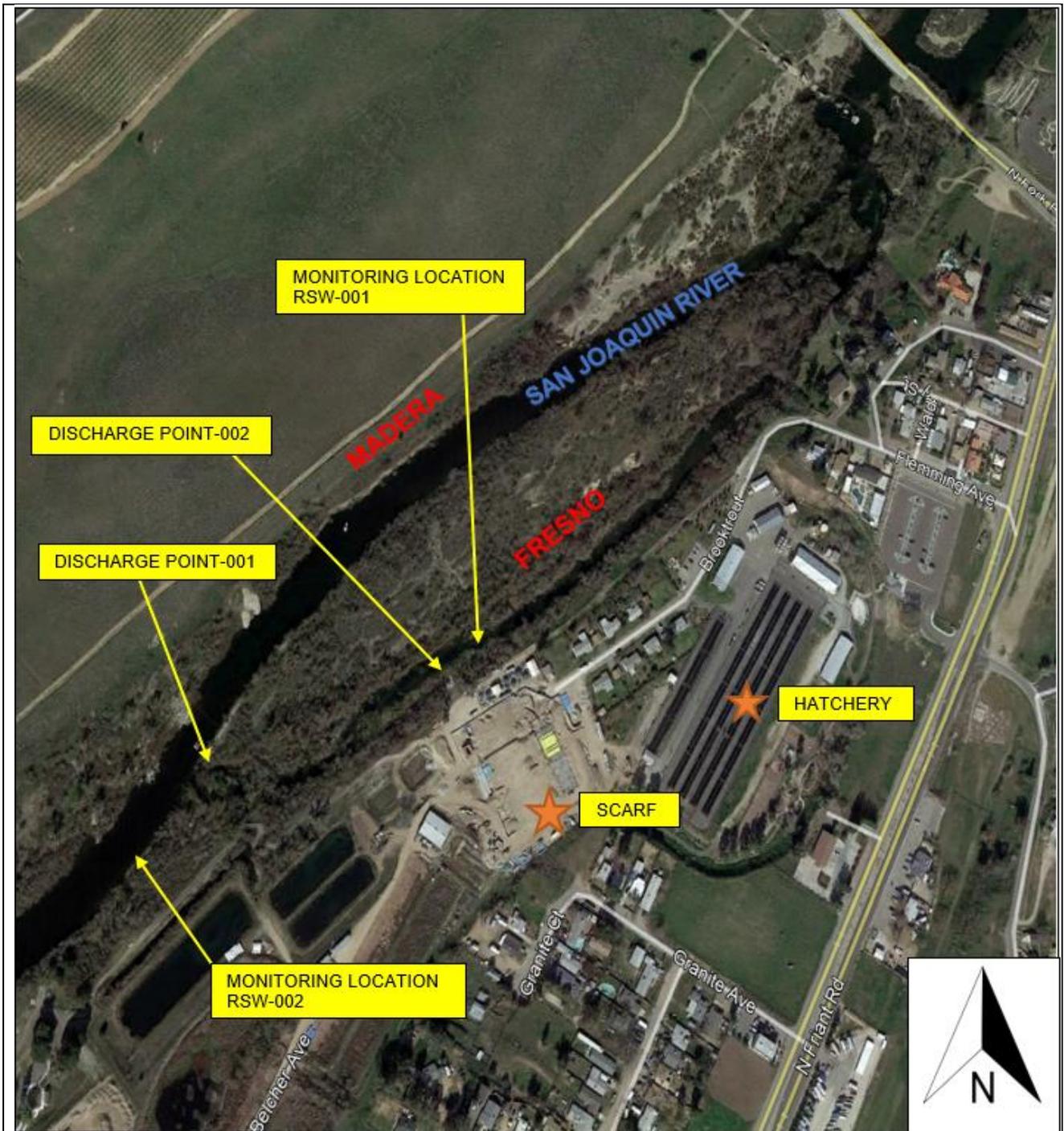
Enclosure: CAAP General Order R5-2019-0079 (Discharger only)

cc's: Elizabeth Sablad, USEPA, Region IX, San Francisco (via email only)
Peter Kozelka, USEPA, Region IX, San Francisco (via email only)
Prasad Gullapalli, U.S. EPA Region IX, San Francisco (email only)
Division of Water Quality, State Water Resources Control Board, Sacramento
(via email only)
Terry Jackson, California Department of Fish and Wildlife, Fresno, CA (via email)
Brian Erlandsen, California Department of Fish and Wildlife, Fresno, CA (via email)
Ron Samra, California Department of Fish and Wildlife, Fresno, CA (via email)
Sarah Torres, PG Environmental (via email)

ATTACHMENT A - ADMINISTRATIVE INFORMATION

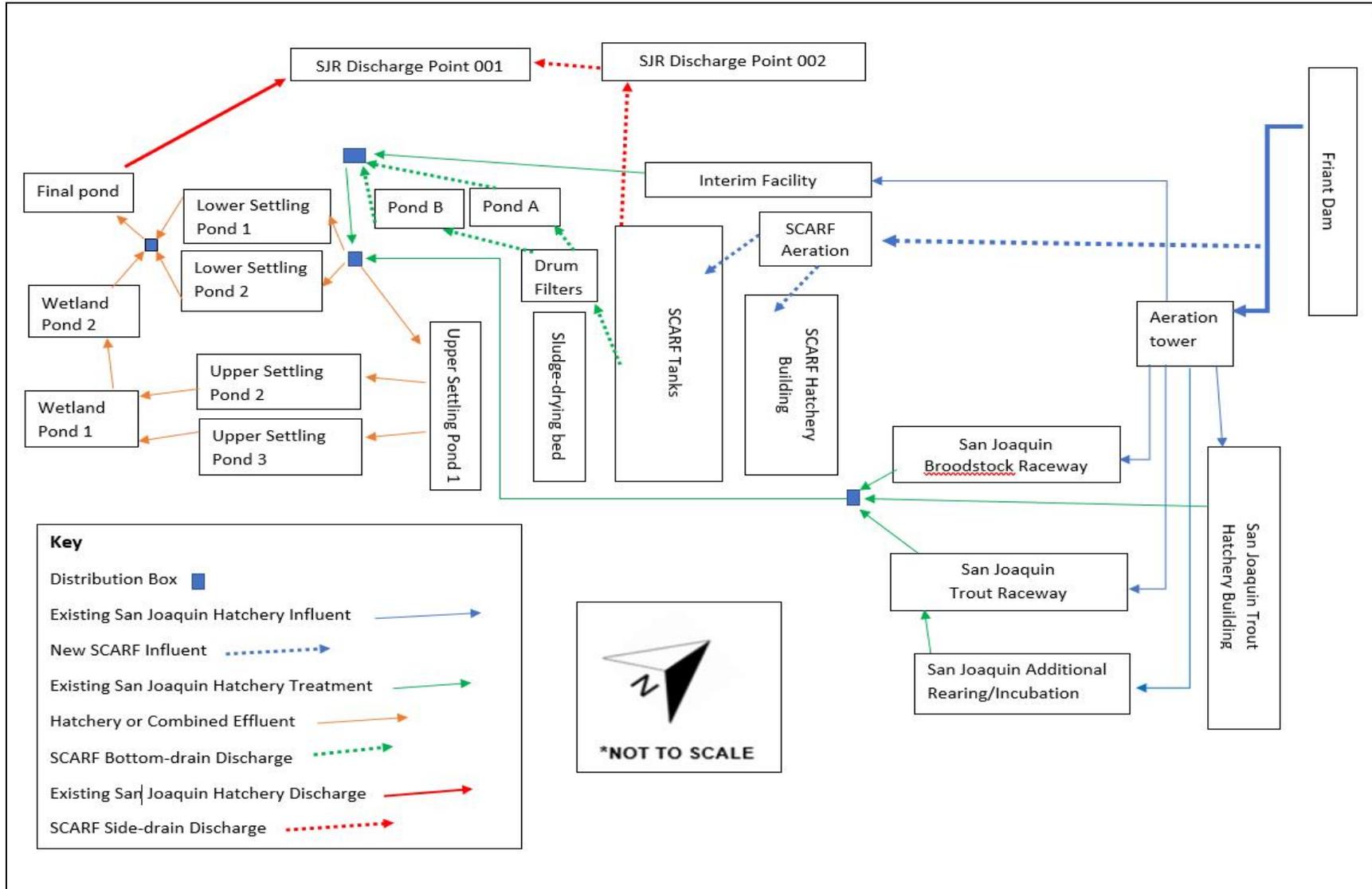
Waste Discharge ID:	5D100804002
CIWQS Facility Place ID:	255315
General Order NOA Enrollee Number:	R5-2019-0079-012
Discharger:	California Department of Fish and Wildlife
Name of Facility:	San Joaquin Fish Hatchery and Salmon Conservation and Research Facility
Facility Address:	17372 Brook Trout Drive
Facility City, State Zip:	Friant, CA 93626
Facility County:	Fresno County
Facility Contact, Title and Phone Number:	Ron Samra, Hatchery Manager (559) 822-2374 Brian Erlandsen, SCARF Contact (559) 243-4014 ext. 220
Landowner Address:	1234 East Shaw Avenue
Landowner City, State Zip:	Fresno, CA 93710
Authorized Person to Sign and Submit Reports:	Gretchen Murphey
Mailing Address:	Same
Billing Address:	Same
Total Weight Produced (Year one through five):	Hatchery: 514,000 – 554,000 lbs/year SCARF: 30,000 – 75,000 lbs/year
Type of Facility:	Cold Water Concentrated Aquatic Animal Production Facility, SIC Code 0921
Major or Minor Facility:	Minor
Threat to Water Quality:	2
Complexity:	B
Pretreatment Program:	No
Recycling Requirements:	No
Facility Permitted Flow:	Hatchery: 24 million gallons per day SCARF: 11 million gallons per day
Watershed:	San Joaquin River Basin
Receiving Water:	San Joaquin River
Receiving Water Type:	Inland surface water

ATTACHMENT B – LOCATION MAP



CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE
SAN JOAQUIN FISH HATCHERY AND
SALMON CONSERVATION AND RESEARCH FACILITY
FRESNO COUNTY

ATTACHMENT C – FLOW SCHEMATIC



ATTACHMENT D – MONITORING AND REPORTING PROGRAM

The Discharger is required to comply with all the Monitoring and Reporting Requirements contained in Attachment C of the CAAP General Order, as specified in this NOA Attachment D.

This Hatchery and SCARF are the category of production of greater than 100,000 pounds of aquatic animals produced per year. Tables D-2, D-3, and D-4 below are based on the monitoring in the CAAP General Order, Attachment C for facilities producing greater than 100,000 pounds of aquatic animals produced per year (Attachment C - Sections III.A, IV.A.1, and VIII.C).

I. GENERAL MONITORING PROVISIONS

The Discharger shall comply with the General Monitoring Provisions specified in the CAAP General Order, Attachment C, Section I.

II. MONITORING LOCATIONS

The monitoring locations are defined as follows in Table D-1 below, and a flow schematic showing the site-specific monitoring locations is provided in Attachment C of this NOA.

Table D-1. Monitoring Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
	INF-001	Location where representative samples of the influent can be obtained prior to entering the Hatchery and SCARF.
001	EFF-001	Location where representative samples of the Hatchery's and SCARF's effluent can be obtained prior to discharge to the San Joaquin River at Discharge Point 001.
002	EFF-002	Location where representative samples of the SCARF's effluent can be obtained prior to discharge to the San Joaquin River side channel at Discharge Point 002.
	RSW-001	Approximately 100 feet upstream of Discharge Point 002 in the side channel of the San Joaquin River. During periods of no flow in the side channel of the San Joaquin River, the Discharger shall sample from the main channel if accessible.
	RSW-002	Approximately 300 feet downstream of Discharge Point 001 in the San Joaquin River.

III. INFLUENT MONITORING REQUIREMENTS (INF-001)

- A. The Discharger shall monitor the source water supply to the Hatchery and SCARF at Monitoring Location INF-001 as specified in Table D-2 below. Samples shall be collected at approximately the same time as effluent and receiving water samples.

Table D-2. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow	mgd	Meter	Continuously
pH	S.U.	Grab	1/month
Electrical Conductivity @ 25 degrees Celsius	µmhos/cm	Grab	1/month
Copper, Total Recoverable	µg/L	Grab	1/month during CuSO ₄ use
Hardness (as CaCO ₃)	mg/L	Grab	1/month during CuSO ₄ use
Total Suspended Solids	mg/L	Grab	1/month

B. Table D-2 Testing Requirements. The Discharger shall comply with the following testing requirements when monitoring for the parameters described in Table D-2.

1. Influent flow shall be monitored continuously using either a flow measurement device or method as required by CAAP General Order, Attachment C, Section I.D.
2. Parameters shall be analyzed using the analytical methods described in 40 C.F.R. Part 136 or by methods approved by the Central Valley Water Board or the State Water Board.
3. Hardness and copper samples shall be collected approximately at the same time as effluent samples.
4. Constituents shall be monitored using analytical methods with sufficiently sensitive reporting levels consistent with the SSM Rule specified in 40 C.F.R. 122.21(e)(3) and 122.44(i)(1)(iv).

C. Influent Monitoring for Facilities with Intake Water Credits. Not applicable

IV. EFFLUENT MONITORING REQUIREMENTS (EFF-001 AND EFF-002)

A. The Discharger shall monitor the effluent at Monitoring Location EFF-001 and EFF-002 as specified in Table D-3 below. Effluent samples shall be representative of the volume and quality of the discharge. Effluent samples shall be collected during or immediately following raceway cleaning or administration of drug or chemical treatments and must be representative of the volume and quality of the discharge at the time when representative levels of solids, drugs, chemicals, or other pollutants are present in the discharge. Time of collection of samples shall be recorded.

Table D-3. Effluent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow	mgd	Flow Measurement Device	1/week
Total Suspended Solids (TSS)	mg/L	Grab	1/month
Net TSS (effluent minus influent)	mg/L	Net Calculation	1/month
Turbidity	NTU	Grab	1/month
pH	S.U.	Grab	1/month
Electrical Conductivity @ 25 degrees Celsius	µmhos/cm	Grab	1/month
Copper, Total Recoverable	µg/L	Grab	1/month during CuSO ₄ use
Hardness (as CaCO ₃)	mg/L	Grab	1/month during CuSO ₄ use
Formaldehyde	mg/L	Grab	1/month during Formaldehyde use
Chlorine	mg/L	Grab	1/quarter during chlorine use

B. Table D-3 Testing Requirements. The Discharger shall comply with the following testing requirements when monitoring for the parameters described in Table D-3.

- Parameters shall be analyzed using the analytical methods described in 40 C.F.R. Part 136 or by methods approved by the Central Valley Water Board or the State Water Board.
- Electrical conductivity samples shall be collected monthly. If sodium chloride is used, the monthly monitoring of electrical conductivity shall be conducted during treatment.
- Pollutants shall be monitored using analytical methods with sufficiently sensitive reporting levels consistent with the SSM Rule specified in 40 C.F.R. 122.21(e)(3) and 122.44(i)(1)(iv).
- Estimated concentrations of formaldehyde may be reported in lieu of analytical monitoring during formaldehyde use. If calculations are reported then formaldehyde concentrations should be reported daily to match the concentrations reported in the Monthly Chemical Use Report (Attachment F). See Section IX.A for calculation procedures. If analytical monitoring is conducted, when Formaldehyde is added to the waters of the facility, formaldehyde concentration shall be measured during time of peak discharge of Formaldehyde, at least one hour after start of treatment.
- Total chlorine residual must be monitored with a method sensitive to and accurate at the permitted level of 0.018 mg/L.

6. Per Section IX.A, 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.
7. Effluent flow shall be monitored weekly using either a flow measurement device or method as required by the CAAP General Order, Attachment C, Section I.D. The Discharger may use the corresponding weekly recorded influent flow to determine the effluent flow from the EFF-001 and EFF-002 to the San Joaquin River.
8. The monthly copper 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.

C. Effluent Monitoring for Facilities with Intake Water Credits. Not applicable

V. LAND DISCHARGE MONITORING REQUIREMENTS.

- A. Septic Tank/Leachfields.** The monitoring requirements contained in CAAP General Order, Attachment C, Section VI.A are applicable.
- B. Sewage Lagoons.** Not applicable.

VI. RECEIVING WATER MONITORING REQUIREMENTS.

- A. Sampling Locations.** Receiving water samples shall be collected from Monitoring Locations RSW-001 and RSW-002 as specified below.
- B. Receiving Water Observations.** 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 monitoring report.

- C. Receiving Water Monitoring.** The Discharger shall monitor the receiving water at Monitoring Locations RSW-001 and RSW-002 as follows:

Table D-4. Receiving Water Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency
Dissolved Oxygen	mg/L	Grab	1/month
Temperature	Degrees C	Grab	1/month
Turbidity	NTU	Grab	1/month

Parameter	Units	Sample Type	Minimum Sampling Frequency
pH	S.U.	Grab	1/month
Electrical Conductivity @ 25 degrees Celsius	µmhos/cm	Grab	1/month
Hardness (as CaCO ₃)	mg/L	Grab	1/month during CuSO ₄ use

B. Table D-4 Testing Requirements. The Discharger shall comply with the following testing requirements when monitoring for the parameters described in Table D-4.

- Parameters shall be analyzed using the analytical methods described in 40 C.F.R. Part 136 or by methods approved by the Central Valley Water Board or the State Water Board.
- When copper sulfate is added to waters of the facility, hardness (as CaCO₃) shall be measured monthly during treatment.

VII. OTHER MONITORING REQUIREMENTS.

A. Monthly Drug and Chemical Use Report. The Discharger shall develop a monthly drug and chemical use report in accordance with CAAP General Order, Attachment C, Section IX.A describing all aquaculture drugs or chemicals used at the Hatchery and SCARF. The report shall be submitted with the quarterly self-monitoring reports.

B. Priority Pollutant Metals Monitoring. In accordance with CAAP General Order, Attachment C, Section IX.B., the Discharger shall monitor the effluent (Monitoring Location EFF-001 and EFF-002) and the upstream receiving water (Monitoring Location RSW-001) for the metals listed in Table G-1 of the CAAP General Order once during the term of the CAAP General Order. **The monitoring shall occur no later than 1 January 2023.** The Discharger shall electronically submit the priority pollutants metals monitoring results using the State Water Board's [California Integrated Water Quality System](http://www.waterboards.ca.gov/water_issues/programs/ciwqs) (CIWQS) Program Web site (http://www.waterboards.ca.gov/water_issues/programs/ciwqs) **within 60 days of the final sampling event.** Refer to CAAP General Order, Attachment G for the specific monitoring requirements. Constituents shall be monitored using analytical methods with sufficiently sensitive reporting levels consistent with the SSM Rule specified in 40 C.F.R. 122.21(e)(3) and 122.44(i)(1)(iv).

C. Annual Feeding and Production Report. The Discharger shall develop an annual feeding and production report in accordance with CAAP General Order, Attachment C, Section IX.C. The annual report shall be submitted on **1 February, annually**, and include the following information:

- Monthly food usage in pounds for each calendar month.
- Annual production of aquatic animals in pounds per year.

VIII. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements. The Discharger shall comply with the General Monitoring and Reporting Requirements specified in the CAAP General Order, Attachment C, Section X.A.

B. Self-Monitoring Reports (SMRs). The Discharger shall comply with the Self-Monitoring Report requirements specified in the CAAP General Order, Attachment C, Section X.B. Monitoring in accordance with the renewed CAAP General Order is required to begin on the effective date of 1 November 2022. SMRs are required to be submitted quarterly and annually. The Discharger shall comply with the reporting requirements specified in CAAP General Order, Attachment C, Section X. The first SMR required under the renewed CAAP General Order is due 1 February 2023 and shall include monitoring conducted from 1 November through 31 December. Table D-5, below, summarizes the SMR due dates required under the CAAP General Order. Quarterly monitoring reports must be submitted until your coverage is formally terminated in accordance with the CAAP General Order, even if there is no discharge during the reporting quarter.

Table D-5. SMRs required in the MRP (Attachment C, CAAP General Order)

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period	SMR Due Date
1/month	1 November 2022	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 Feb of following year (1 Oct – 31 Dec)
1/quarter	1 November 2022	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 Feb of following year
1/year	1 November 2022	January 1 through December 31	1 Feb of following year

C. Other Reports

1. Analytical Methods Report. The Discharger shall complete and submit an Analytical Methods Report by 2 December 2022. The Analytical Methods Report shall include the following for each constituent to be monitored in accordance with this Order: 1) applicable water quality objective, 2) reporting level (RL), 3) method detection limit (MDL), and 4) analytical method. The analytical methods shall be sufficiently sensitive with RLs consistent with the SSM Rule per 40 C.F.R. 122.21(e)(3) and 122.44(i)(1)(iv), and with the Minimum Levels (MLs) in the SIP, Appendix 4. The “Reporting Level or RL” is synonymous with the “Method Minimum Level” described in the SSM Rule. If an RL is not less than or equal to the applicable objective for a constituent, the Discharger shall explain how the proposed analytical method complies with the SSM Rule. Central Valley Water Board staff will provide a tool with the NOA to assist the Discharger in completing

this requirement. The tool will include the constituents and associated applicable water quality objectives to be included in the Analytical Methods Report.

2. Analytical Methods Report Certification. Prior to beginning the Priority Pollutant Metals Monitoring, the Discharger shall provide a certification acknowledging the scheduled start date of the Priority Pollutant Metals Monitoring and confirming that samples will be collected and analyzed as described in the previously submitted Analytical Methods Report. If there are changes to the previously submitted Analytical Methods Report, the Discharger shall outline those changes. A one-page certification form will be provided by Central Valley Water Board staff with the NOA that the Discharger can use to satisfy this requirement. Central Valley Water Board staff will provide a tool with the NOA to assist the Discharger in completing this requirement. The tool will include the Analytical Methods Report Certification form, which will acknowledge the scheduled start date of the Effluent and Receiving Water Characterization monitoring and certifies that samples will be taken and analyzed as described in the previously submitted and approved Analytical Methods Report. If there are changes to the approved Analytical Methods Report, the Discharger shall outline those requested changes in the form and not commence characterization monitoring until the requested changes have been reviewed and approved by Central Valley Water Board staff.

ATTACHMENT E – APPROVED AQUACULTURE DRUGS AND CHEMICALS USE

The following drugs and chemicals are used at the Hatchery and SCARF to treat fish for parasites, fungi, and bacteria, as well as to clean rearing raceways to reduce the spread of disease among the confined fish population.

A. San Joaquin Fish Hatchery

Table E-1. Approved Aquaculture Drugs and Chemicals Use

Drug or Chemical	Maximum Daily Amount Used	Method of Application	Maximum Amount in Effluent
Acetic Acid	500 – 1,000 ppm	Dip in container	Not discharged
Amoxicillin trihydrate	40 mg/kg of fish	Injected	Negligible
Carbon dioxide gas	variable	Injected into tank	Unknown
Chloramine T	20 ppm/1 hr/raceway	Drip	1.3 ppm
Chorulon® - Chorionic Gonadotropin	50-1816 IU/lb	Intramuscular injection	Not discharged
Magnesium Sulfate (Epsom Salt)	100 mg/kg	Feed	Negligible
Erythromycin	40 mg/kg of fish	Injected	Negligible
Enteric Redmouth (ERM) Vaccine		Dip	Not discharged
Florfenicol	15 mg/kg of feed	In feed	Negligible
Formalin (37% formaldehyde solution)	50-250 ppm	Bath	1.3 ppm EFF 001, 30 cfs
Hydrogen peroxide (35%)	100 ppm/1hr/raceway	Drip, bath or eggs	6.4 ppm with no breakdown of chemical
Oxytetracycline dehydrate (Terramycin® 200 for Fish)	3.75 g/100 lbs of fish	Additive to fish	Not discharged
Oxytetracycline HCL	100 ppm	Bath in tanks	0.22 ppm
Penicillin G Potassium	150 IU/mL	bath	0.33 IU/mL

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Drug or Chemical	Maximum Daily Amount Used	Method of Application	Maximum Amount in Effluent
PVP Iodine	100 ppm	Egg bath in container	Not discharged
Potassium permanganate	2 ppm/1 hr/raceway	Drip	0.13 ppm
Romet-30	50 mg/kg of feed	In feed	Negligible
Sodium Bicarbonate	Variable (142 – 642 mg/L)	Bath in tank	Unknown
Sodium Chloride	3%	Added directly to head	65 ppm
SLICE (emamectin benzoate)	50 ug/kg	In feed	Negligible
Tricaine methanesulfonate (MS-222)	40 ppm in container	In container	Not discharged
Vibrio Vaccine		Dip	Not discharged

B. Salmon Conservation and Research Facility

Table E-2. Approved Aquaculture Drugs and Chemicals Use

Drug or Chemical	Purpose of Application	Maximum Daily Use	Expected Method(s) of Application or Treatment	Maximum Amount in Discharge Low flow (LF)=46cfs High flow (HF)=55cfs
Acetic acid	Control of external parasites.	5 gallons	Flush: 1.5-2.2 gallons of glacial acetic acid added as a bolus to tank. Gives a treatment level of approximately 335-500 ppm acetic acid. Bath: used at a concentration of 500-2,000 ppm for 1 to 10 minutes.	Not Discharged

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Drug or Chemical	Purpose of Application	Maximum Daily Use	Expected Method(s) of Application or Treatment	Maximum Amount in Discharge Low flow (LF)=46cfs High flow (HF)=55cfs
Amoxicillin trihydrate	Antibiotic (for control and prevention of external and systemic bacterial infections).	40mg/kg x 500 fish x average weight of 5 kg = 100g	Injected intraperitoneally: into broodstock twice a week, prior to spawning, at a dose of 40 mg/kg.	Not Discharged
Carbon Dioxide	Anesthetic.	20 lbs/day	Bath: bubbled in water. Usually used in small volumes of water. With aeration will equilibrate with atmospheric CO ₂	Unknown
Chloramine-T (Halamid® Aqua)	Control of external gill bacteria.	30 ft tank at 2 ft x 20 mg/L x 10 tanks = 8kg/day	Flush or bath: concentration of 12-20 mg/L for 60 min daily or every other day for 3 treatments or as prescribed	Dose 20mg/L: LF 0.33ppm; HF 0.30ppm
Chorulon® - Chorionic Gonadotropin	Aid in improving spawning function	=1800 IU x 500 fish = 90,000 IU	Intramuscular injection: Males: 50-510 IU/lb, Females: 67-1816 IU/lb, inject up to 3 doses; not to exceed 25,000 IU in fish for human consumption	Not Discharged
Magnesium Sulfate (Epsom Salt)	Control internal parasites	100 mg/kg of fish x 5,000 fish x 3 kg/fish = 1.5 kg	Feed: used in "medicated" feed or fish pills at a rate of 100 mg/kg of fish, or top coated onto feed at 3% (30 g/kg) for 3 days	Small amount by uneaten feed
Erythromycin	Antibiotic (for control and prevention of external and systemic bacterial infections).	100 mg/kg feed x 26 tanks x 10 kg feed/tank = 26 g	Injected intraperitoneally: at a dose of 40 mg/kg, at 30-day intervals or as prescribed. Feed: used in medicated feed or fish pills at a dose of up to 100 mg/kg or as prescribed.	Injection-not discharged Feed-Small amount by uneaten feed

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Drug or Chemical	Purpose of Application	Maximum Daily Use	Expected Method(s) of Application or Treatment	Maximum Amount in Discharge Low flow (LF)=46cfs High flow (HF)=55cfs
Enteric Redmouth (ERM) Vaccine	Prevent Redmouth disease	20,000 fish/liter dosage x 300,000 fish = 15 liters	Dip. (Vaccine dumped after use. Not surface discharged.)	Not Discharged
Florfenicol (Aquaflor®)	Antibiotic (for control and prevention of external and systemic bacterial infections)	15 mg/kg of feed x 26 tanks x 10 kg feed/tank = 3.9 g	Medicated Feed: 10-15 mg/kg for 10 consecutive days	Small amount by uneaten feed
Formalin (37% formaldehyde solution)	Control of external parasites. Fungus control on fish and eggs.	2,000 mg/l for 15 min at 5gpm for 34 stacks 20 kg/day	Bath: Low dose - used at a concentration of 25 ppm of formalin up to 8 hours. High dose - used at a concentration of 50-250 ppm formalin for one hour and repeat in 5 to 10 days if needed, or as prescribed Eggs: used at a concentration of 2,000 ppm formalin, or less, for 15 minutes, or as prescribed.	**Bath: Low Dose 25mg/L: LF 0.42 ppm; HF 0.38ppm High Dose 250mg/L: LF 4.2ppm; HF 3.8ppm *Eggs: LF 0.048 ppm; HF 0.044 ppm

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Drug or Chemical	Purpose of Application	Maximum Daily Use	Expected Method(s) of Application or Treatment	Maximum Amount in Discharge Low flow (LF)=46cfs High flow (HF)=55cfs
Hydrogen peroxide	Control of external parasites and fungus.	100 mg/l for 1 hr at 5gpm for 34 stacks 4L/day	Flush or bath: used at a concentration of 100 ppm or less, for 30 minutes to 1 hour every other day for up to 3 treatments, or as prescribed Eggs: 500-1000 mg/L in continuous flow system once daily on consecutive or alternative days until hatch or as prescribed.	**Bath: Dose 100ppm: LF 1.68 ppm; HF 1.52ppm *Eggs 1000ppm: LF 0.064 ppm; HF 0.058ppm
MS-222 / tricaine methanesulfonate (Finquel®, Tricaine-S®)	Anesthetic or euthanasia	150ppm x 90L bath x 20 uses per day = 270 grams	Bath: used at a concentration of 10-1000 mg/L, usually in a small volume of water and timed to effect.	Not Discharged
Oxytetracycline dehydrate (Terramycin® 200)	Antibiotic (for control and prevention of external and systemic bacterial infections).	57,200lbs of fish @3.75 g/100 lb = 2.1 kg Oxytet	Additive to feed: 3.75 g/100 lbs of fish per day for 10 consecutive days	Small amount by uneaten feed
Oxytetracycline HCl	Antibiotic (for control and prevention of external and systemic bacterial infections).	30 ft tank at 2 ft x 100 mg/L x 10 tanks = 40kg/day	Bath: used at a concentration of 100 ppm or less for up to 8 hr and up to 3 treatment days, or as prescribed.	**Bath: Bath: Dose 100ppm: LF 1.68 ppm; HF 1.52ppm

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Drug or Chemical	Purpose of Application	Maximum Daily Use	Expected Method(s) of Application or Treatment	Maximum Amount in Discharge Low flow (LF)=46cfs High flow (HF)=55cfs
Penicillin G Potassium	Antibiotic (for control and prevention of external and systemic bacterial infections).	6ft tank at 2-ft = 1600L x 20 tanks. 4.8 billion IU	Bath: used in tanks for 6-8 hours at a concentration of up to 150 IU/ml for up to 3 treatment days or as prescribed.	**Bath: LF 2.53 IU/ml; HF 2.29 IU/ml Not Discharged
Potassium Permanganate (Cairox™)	Control of external parasites and bacteria.	2mg/l for 1 hr for 20 tanks at 200 gpm per tank + some = 2kg	Flush or bath: up to 2 ppm for one hour and up to 3 consecutive daily treatments.	**Bath: LF 0.0041 ppm; HF 0.0037ppm
PVP Iodine	Disinfect and control pathogens on fish eggs.	8 oz x 34 stacks per day = 8.2L	Bath: used at a concentration of 100 mg/L Iodine for 10 to 30 minutes.	***Eggs Dose 100ppm: LF 0.0064 ppm; HF 0.0058ppm
SLICE® (emamectin benzoate;0.2% aquaculture premix)	Control of copepods	50 microgram/kg x 26 tanks x 1000 kg fish/tank x 2% (of fish body weight in feed). = 30g/day	Medicated feed: 50 ug/kg for 7 consecutive days.	Small amount presents as uneaten feed

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Drug or Chemical	Purpose of Application	Maximum Daily Use	Expected Method(s) of Application or Treatment	Maximum Amount in Discharge Low flow (LF)=46cfs High flow (HF)=55cfs
Sodium bicarbonate	Anesthetic.	15 lbs / day	Bath: used at a concentration of 142-642 mg/L, usually in a small volume of water.	**Bath: Low Dose 146mg/L: LF 2.46 ppm; HF 2.22ppm High Dose 642mg/L: LF 10.8ppm; HF 9.79ppm
Sodium chloride (salt)	Fish cleansing, disease control, and stress reduction.	2,000 pounds per day	Flush or Bath: up to 3% for 1 hour daily, if needed, or at a lesser concentration during transport	Bath: LF 45 ppm; HF 38ppm
Sodium thiosulfate	Neutralizes chemical solutions	5 pounds per day	Mixed with chlorine bleach (7:1 neutralizer to bleach ratio [bleach being a 5% concentration in solution]), and iodine (2:1 neutralizer to iodine).	Not Discharged
Sulfadimethoxin e-ormetoprim (Romet-30®)	Antibiotic (for control and prevention of External and systemic bacterial infections).	50g/mg feed = 26 tanks x 1000 kg fish x 0.02 (of fish body weight in feed) = 26 grams	Feed: used at a dose of 50 mg/kg for 5 consecutive days.	Small amount by uneaten feed
Vibrio Vaccine	Prevention of Vibrio infections	No info	Dip: Vaccine dumped after use. Not discharged.	Not discharged