

Compliance Guide for the Concentrated Aquatic Animal Production Point Source Category

Appendix V: SDAFS BMP Plan

Full document available at
<http://www.epa.gov/waterscience/guide/aquaculture>

**BMP PLAN FOR STATE FISH HATCHERIES (DEVELOPED BY THE SOUTHERN
DIVISION OF AMERICAN FISHERIES SOCIETY (SDAFS) AQUACULTURE
TECHNICAL COMMITTEE**

(Italicized text will need to be re-worded to describe each individual hatchery, and areas left blank and/or underlined will have to be filled in and may need to be updated occasionally.)

*SDAFS Aquaculture Technical Committee
BMP PLAN
FOR STATE FISH HATCHERIES*

Dated: _____

Facility Name: _____

Facility Address: _____

NPDES Number and Expiration Date: _____

Hatchery Superintendent: _____

Phone number: _____

Email address: _____

1) INTRODUCTION:

The [*fill in the name of your hatchery*] fish hatchery operates under the NPDES permit number referenced above. The NPDES permit is issued by [*fill in the US EPA or a state agency such as DENR, Division of Water Quality*]. The contact person at the permit issuing authority is _____ and the contact phone number is _____ or they can be contacted by email at _____ the mailing address for the permitting authority is _____

_____. The hatchery typically produces the following types of fish, in approximately these numbers of fish and pounds of fish per year.

<i>Species of Fish</i>	<i>Number of Fish</i>	<i>Pounds of Fish</i>

[THIS FACILITY DESCRIPTION MAY BE TAKEN FROM ANOTHER SOURCE SUCH AS YOUR NPDES PERMIT] The hatchery consists of indoor raceways in the hatchery building and a series of re-use raceways in six parallel rows providing 46 individual outdoor culture tanks or raceways (see attached facility layout diagram). Raceways are typically 100 feet long by 8 feet wide with the first or up-stream row being twelve raceways across and each raceway being 4 feet wide.

Water is supplied through an underground pipe from a surface intake from the Wild River. Water flow is typically between 2,000 and 5,000 gallons per minute. The primary water discharge point is the outflow pipe from the lower raceway, but water can be discharged at nine locations upstream of the main water discharge point during quiescent zone cleaning. Incoming water passes through a screen at the intake and is not chemically treated or aerated before use.

2) REPORTING

The following reporting is undertaken to meet Effluent Limitations Guidelines:

1) When we **sign up** for participation in an INAD study of a reportable drug (i.e. the drug may be discharged and is not a use similar to an approved use), we submit a **written report**, which identifies the method of use, the dosage and the disease or condition being treated, **to the permitting authority within seven days**.

2) When we **use a reportable drug an oral report is given to the permitting authority within 7 days** of the use. The report includes the drug used, method of application and the reason for using the drug. **A written report is sent to the permitting authority within 30 days** of the use and the report includes the reason for treatment, date(s) and time(s) of the addition (including duration), method of application and the amount added.

3) In the event of **damage to or failure of a hatchery structure** that results in a discharge of pollutants, an **oral report is given to the permitting authority within 24 hours**. The oral report describes the cause of the failure or damage and identifies the materials released. **A written report is sent to the permitting authority within 7 days** of the problem and the written report documents the cause, the estimated time elapsed until the problem was repaired, and estimates the material released, and steps being taken to prevent a recurrence.

4) In the event of a **spill** of drugs, pesticides or feed that results in a discharge, **an oral report is given to the permitting authority within 24 hours**. The oral report describes the identity and quantity of the material spilled. **A written report is sent to the permitting authority within 7 days** of the spill and the written report describes the identity and quantity of the material spilled. Spills that are contained before they discharge to waters of the U.S. are not subject to this reporting requirement.

5) This BMP plan is finalized and being implemented at the fish hatchery. The permittee sent a letter *on [fill in date]* certifying that a BMP plan has been implemented and is available to the permitting authority upon request.

3) SOLIDS CONTROL

A) High quality feed is utilized to minimize waste. Periodically the feed formulation and manufacturing process are assessed so that the most appropriate feed is used. *Feed is either applied by hand with feed being distributed via scoop from a bucket, by belt feeder or by blower from a truck mounted automatic feeder. The feed contract specifies a high quality, extruded commercial floating trout feed with a minimum protein content of 42% and minimum 16% fat content for all trout grower and finisher feeds.* Feeding is adjusted to meet requirements of the fish based

on the number of fish, size of the fish, feeding response of the fish, and the temperature of the water. Feed consumption is visually monitored and when the floating feed is not readily consumed by the fish the feed rate is adjusted to prevent overfeeding either during that feeding or for the next feeding that is to occur.

B) Fish inventories are continuously updated based on stocking rates, records of mortalities and fish growth. The following measures are taken to minimize solids discharge during grading, harvesting and inventorying of fish: 1) fish are not fed for 24 hours before handling, and 2) screens and quiescent zones are cleaned before fish are handled (etc). Raceways are stocked with proper numbers of fish to facilitate movement of solids through the raceway system. *Feed rates are adjusted weekly based on fish inventory and other considerations mentioned above. Fish inventory is reported monthly. We use feeding records and inventory records to calculate feed conversion on a monthly and annual basis. Feed conversion ratios are reported in monthly and annual reports. A physical inventory of the fish based on weight of fish in each raceway and size (from sub-sampling) of the fish is conducted as needed, but at least once each year.*

C) *There is a perimeter fence around the raceways to keep wildlife from capturing and removing fish. Quiescent zones are maintained in the downstream end of each raceway by screening the fish out of the area. Quiescent zones are four feet long and are cleaned at least once weekly on a rotating basis. Solids from each quiescent zone are brushed out and flushed through the discharge system to the stream through the drain at the bottom of each quiescent zone. No more than one section of quiescent zones (one fourth of the facility) is cleaned each day.*

D) *Two settling ponds collect solids during cleaning of the quiescent zones. Solids are removed from the settling ponds every other month by a septic tank pump truck, and land applied at agricultural rates.*

E) Trout mortalities are collected from each raceway at least twice per week. The carcasses are disposed of on site well away from receiving waters so that there is no chance of mortalities making their way to receiving waters. Mortalities are collected before they deteriorate and discharge back to the river.

A disposal log is maintained at the hatchery and updated each time solids (typically dead fish) are removed. The log contains:

- 1. date of disposal*
- 2. area where solids were applied*
- 3. amount of solids applied*
- 4. initials of applicator*

4) MATERIALS STORAGE

A) Employees are trained in proper handling and storage of materials used in the hatchery. The facility maintains a list of all materials that require special handling in the hatchery together with relevant MSDS sheets. A spill response plan is attached as Appendix A. Particular materials of concern are:

- *Feed in bags*

- *Bulk feed*
- *Medicated feed*
- *Therapeutants (formalin, salt, anesthetics, etc.)*
- *Fuels and lubricants*
- *Disinfectants*

B) New employees and existing staff are trained to avoid any spills that could enter public waters, and properly dispose of spilled substances. The hatchery superintendent schedules training on an annual basis to update hatchery staff. The training addresses each of the types of materials of concern listed above (Appendix A, Spill Response Plan).

5) STRUCTURAL MAINTENANCE

A) New employees and existing staff are trained to be alert to leakage from or deterioration of production and waste storage facilities when feeding or working around the raceways. When any malfunctioning of facilities is observed it is immediately reported to the superintendent who takes appropriate action to correct the situation. In addition, as part of the annual training, an annual inspection of production and waste storage facilities is conducted.

B) Maintenance of intake screens, raceway screens, *LHOs and other facility systems* is done on a daily basis (as described by the manufacturer's specifications if available) during feeding and other activities. Feed storage bins and areas are kept clean and pest free on a daily basis. *A notebook that lists maintenance on vehicles and equipment is maintained on site.*

6) RECORD KEEPING

A) Feeding records are maintained daily and feed usage is summarized and reported monthly. *Monthly reports are stored for a period of at least five years. Monthly reports are compiled into an annual report, which summarizes production and feeding data including FCR, total feed usage, and total production in numbers and pounds of fish.* All records are available on site upon request.

B) Forms that track cleaning, inspections, maintenance, waste disposal, training and repairs are kept on site, compiled on an annual basis and kept with the annual reports.

7) TRAINING

A) Once each year, *during January*, the hatchery superintendent arranges a *half-day* training session for all employees at the hatchery. During the training session, the BMP plan is reviewed in detail and each section is discussed. *Other operational plans such as the fire exit plan, safety plan, spill response plan, stocking procedures and hatchery operational procedures are also reviewed.*

B) Each new employee at the hatchery is given an orientation that includes a detailed review of and training in the BMP plan. This training is conducted within the first two weeks that the employee is on the job.

8) FACILITY LAYOUT DIAGRAM

A layout diagram of the hatchery facility is attached indicating where water intakes are located, where water discharges are located, where feed and chemical storage is located, where culture facilities are located, and where waste storage facilities (including disposal for fish carcasses) are located.

APPENDIX A -- SPILL RESPONSE PLAN

1) IMMEDIATE RESPONSE

- Don't panic. **Call 911 if public safety is threatened.** Get help on site and call for more help if necessary.
- Define the problem (leaking valve, broken container, overflow, etc.).
- Assess risks (where will spill go and will it enter your water discharge).
- Keep people safe. Away from the spill, upwind or evacuate as necessary.
- Stop the source of spill if possible, safe and necessary.
- Stop sources of ignition if relevant (shut off motors, engines, no-smoking, etc.).
- Contain the spill if safe and possible.
 - Collect the spill in a bucket or drip pan.
 - Block the spill from spreading or getting into the water (build dike or block with sandbags, etc.).
- Call for help.

2) STABILIZATION

- Clean up the spill safely if you can or arrange for a contractor to clean it up.
- Log the spill, and review Spill Response plans and update as needed.

3) IMPORTANT PHONE NUMBERS AND CONTACT INFORMATION

- 911
- Agency Contacts
 - Hatchery Superintendent – Home _____ Work _____
 - Production Coordinator - Home _____ Work _____
 - Regional Supervisor - Home _____ Work _____
 - Program Coordinator - Home _____ Work _____
- NPDES Permit Liaison: Name _____ Phone Number _____
- Other Government Agencies, Local Officials, and Neighboring Facilities.

4) PREVENTION

Preventative measures and procedures are listed below.

- *Chemical storage room or cabinet with lip to prevent spills in storage room.*
- *Containment barrier around fuel tanks, and overflow protection on generator tank.*
- *Material Safety Data Sheets are maintained for all chemicals used.*
- *Security fence, locks, and lights.*
- *Inspection logs and procedures.*
- *Labeling of tanks and containers.*
- *Diagram of site, storage areas, and exit plans.*

5) PREPAREDNESS

- Available equipment and supplies that can be used to control spills:
 - *Shovels and brooms*
 - *Empty buckets and drums*
 - *Plastic sheeting and plastic bags*
 - *Sand bags and absorbent materials*
- *Spill containment materials are located in the feed storage room.*
- *Annual training and new employee training includes spill response training.*