Statement of Basis

FACILITY:	U.S. DOI, Fish and Wildlife Service Leadville National Fish Hatchery
PERMIT NO:	CO-0000582
RESPONSIBLE OFFICIAL:	Regional Director U.S. Fish and Wildlife Service P.O. Box 25486, Denver Federal Center Denver, Colorado 80225-0486
CONTACT PERSON:	Mr. Ed Stege (Project Leader) 2846 Highway 300 Leadville, CO 80461
PHONE:	(719) 486-0189
PERMIT TYPE:	Fish Hatchery-Federal (Renewal)

Background Information

Leadville National Fish Hatchery (elevation 10,000 feet) is located approximately six miles SW of the town of Leadville, Colorado, and about 2 miles SSW of the Dam for Turquoise Reservoir. The Hatchery was established in 1889 for the production and distribution of trout in the Rocky Mountain Region. The original design of the hatchery included using six natural ponds for rearing, however, in 1995 the hatchery discovered whirling disease and modified the facility from the natural ponds set up to the current setup which includes 22 concrete raceways.

The Hatchery currently has three water supplies, they are; Turquoise Reservoir, Rock Creek and a small spring. The Hatchery is provided approximately 2400-2600 gpm of water from Turquoise Reservoir via the Mt. Elbert Conduit, this water travels down a trunk line to a small structure/headtank building. Water from this building can either be directed into Lake 2 or the Water Treatment Plant.

Rock Creek was the original water supply for the Hatchery when it was established. Today it serves as the back-up supply for fish production, providing high pressure water for the fire hydrants and water for Evergreen Lakes 1-6. The water flow from Rock creek varies with the season and varies roughly from 900 gpm to 3000 gpm (during spring run-off). Water is diverted from a dam on Rock Creek, about 1-mile from the main hatchery building. Water travels via pipeline and ditch to Lake 1 and through a pipeline to the fire hydrant system by the Hatchery buildings. If the Turquoise water is turned off (i.e. BOR main line inspections), the Hatchery can be operated on Rock Creek water by diverting water from Lake 1 through the water treatment plant. Otherwise, water from Lake 1 normally travels to Lake 2 and then to Lakes 3 or 4.

All water for fish production travels through the water treatment plant where it is filtered to 10 microns and treated with UV light. The filtrate is directed into Lake 3. The fish production water travels through the treatment plant to the hatchery building, display pond and concrete raceways.

Finally, the Hatchery has up to 50 gpm of spring water. Spring water is collected and consolidated in the headbox, where it can be used for domestic uses or for fish culture in the hatchery building. Excess spring water runs into the small ditch just north of the spring water headtank. There is a weir for measuring the spring water flow.

Water from the fish production raceways, Pond 2, Lake 3 and the spring water overflow converge prior to the effluent settling ponds. At the effluent settling ponds, the flow is split and goes to effluent pond 1 or 2. Upon exiting effluent pond 1 the water connects with effluent from Lake 6. The combined effluent pond 1/Lake 6 water then combines with effluent pond 2 waters. Sampling for the hatchery at Outfall 001 will be performed by taking two samples, one from effluent pond 1 and the second from effluent pond 2. The two samples will then be composited using a flow weighted process. This composite sampling procedure will account for all waters used by the hatchery.

Flow calculations for the hatchery will be determined by measuring the digital readout at the water treatment plant, measuring the weir from the spring, and gauging the return from the modified concrete rectangular weir downstream of Lake 3. This flow measurement will account for all of the water used by the facility and will not take into account bypass of the facilities as was done in the previous permit.

Limits for copper and formaldehyde are being removed with this renewal because the hatchery no longer uses copper sulfate, formalin and lime for cleaning. Fish tanks and raceways are broomed down once a week with plastic or stainless steel brushes to remove algae and to facilitate removal of fish waste.

Occasionally equipment/gear is disinfected using a chlorine bath. The neutralized "bath" water is not dumped into drains that lead to the discharge water. When the "bath" water is no longer needed for cleaning, the chlorine is neutralized with sodium thiosulfate and disposed of via the domestic waste septic system. There are two septic tanks and fields to handle domestic (restroom, household) wastewater.

Receiving Waters

Wastewater from the raceways, Pond 2, Lake 3 and the spring water overflow are captured in one of two effluent settling ponds (effluent pond 1 and 2). The discharge from these settling ponds discharges to Lake Fork, a tributary of the Upper Arkansas River.

In accordance with the Water Quality Control Commission Regulations for Effluent Limitations, Regulation 62, (5 C.C.R. 1002-62), Section 62.4, and State Discharge Permit System Regulations, Regulation 61, (5 C.C.R. 1002-61), Section 61.8(2), Lake Fork and the Upper Arkansas River have been classified by the State of Colorado a Class 2 Recreation, Class 1 Cold Water Aquatic Life, and Agriculture. Applicable Water Quality Standards for the segment

(COARUA05) include fecal coliform 2000/100 ml., pH 6.5-9.0, residual chlorine 0.003 mg/L, and metals. Fecal and chlorine limits were not included in the previous permit and will not be added based on BPJ. The reasoning for this is that fecals are associated with mammals not fish, and chlorine is not added to the system and would also affect hatchery fish prior to any testing at the discharge.

Monitoring Data

A summary of monitoring data from June 2003 to December 2007 shows compliance with previous limits. Reported maximum and minimum values collected from Envirofacts and DMRs are presented below in Table 1.

Table 1.

USFWS Leadville max/min data from 2003-2007		
pH	7.56 Max.	6.5 Min.
TSS	242 total load *	4.83 mg/L
Oil & Grease visual	0	0
Cu	0	0
Floating solids	0	0
Flow	6.9 mgd	2.412 mgd
Formaldhyde	0	0
Oil & grease	0	0

*The facility calculates flow by reading the digitally metered incoming water from Turquoise Reservoir, adding the measurements from the modified concrete rectangular weir downstream of Lake 3, and adding the weir measurement from the spring. This combined flow is then used to determine and report TSS data for the facility. For purposes of permitting limits and reporting requirements, the calculation is adequate and it is this permit writer's determination that the need for additional gauges would be unnecessary and would cause a burden on the facility. Additionally, based on the lack of TSS exceedances, this permit writer does not see the need to require a different form of flow measurement.

Inspections

The hatchery was inspected on June 20, 2007 by Jennifer Meints and Lee Hanley of the US. EPA, Region 8 office. Findings from the inspection have been noted in the permit file and changes to process are being incorporated in this permit revision.

Effluent Limitations

Proposed effluent limitations are summarized below in Table 2.

Table 2.

Effluent Characteristic Outfall 001	Effluent Limitation		
	30-Day Average a/	7-Day Average a/	Daily Maximum a/
Flow, MGD	Report	N/A	Report
Total Suspended Solids, mg/L	20	N/A	30
Total Suspended Solids, lbs/day	480	N/A	720
Oil and Grease, mg/L	N/A	N/A	10
The pH of the discharge shall not be less than 6.5 or greater than 9.0 at any time.			

a/ See Definitions, Part 1.1., for definition of terms.

b/ Flow values used for calculating pounds of total suspended solids shall be based on the combined flow measurements from the Turquoise Reservoir at the Water Treatment Plant, effluent flow from the modified concrete weir below Lake 3 and the weir at the natural spring. The flow rate of 2.87 MGD was used to calculate the TSS loads.

Only commercially produced fish feed shall be used (no unprocessed offal or other animal byproduct). No sanitary wastes shall be introduced into this discharge.

The limits for total suspended solids are based on Best Professional Judgement (BPJ) and carried forward from the previous permit. Determination of flow volumes and TSS loading shall be made by combining the digitally metered incoming water from Turquoise Reservoir, adding the measurements from the modified rectangular weir downstream of Lake 3, and adding the weir measurement from the spring. This combined flow shall then used to determine and report TSS data for the facility. The average flow rate (in million gallons per day) during the reporting period and the maximum flow rate observed (in mgd) shall be reported.

The EPA has performed an anti-degradation review and determined that the discharge will not result in significant degradation of reviewable waters with respect to adopted narrative or numeric standards as long as all of the permit limitations are met. The discharge does not result in a new or increased load to the receiving waters.

The limit for pH is based on the water quality standards for the Upper Arkansas River and its tributaries. The limits for oil and grease and no floating solids are based on Colorado State Effluent Limitations. All limits are retained from the previous permit and are more stringent than Colorado State limitations. Effluent limitation guidelines (40CFR 451) do not apply to this facility based on the 100,000 lbs. production trigger and the reported 75,000 lbs. supplied by the Leadville NFH.

Self-Monitoring Requirements

The following self-monitoring requirements are included in this permit:

Outfall 001

Effluent Characteristic	Frequency	Sample Type a/
Total Flow, mgd b/	Quarterly	Instantaneous
Total Suspended Solids, mg/L	Quarterly	Grab
pH, units	Quarterly	Grab
Oil and grease, visual c/	Quarterly	Visual

a/ See Definitions, Part 1.1., for definition of terms.

b/ Flow measurements of effluent volume shall be made by reading the metered incoming water from Turquoise Reservoir at the water treatment plant, adding the flow measurement from the modified concrete weir below Lake 3, and adding the weir measurement from the natural spring. This combined flow shall then used to determine and report TSS data for the facility. The average flow rate (in million gallons per day) during the reporting period and the maximum flow rate observed (in mgd) shall be reported.

c/ The visual observation for oil and grease shall be performed on the sample taken for TSS and pH analysis. If a visible sheen is detected, a grab sample shall be taken and analyzed immediately. The concentration of oil and grease shall not exceed 10 mg/L in any sample.

With this permit renewal monitoring requirements have been reduced at the request of the permittee. This reduction in monitoring is based on facility history, parameter performance history, and consideration of burden on the facility.

Reporting Requirements

The facility is required to report semi-annually on a discharge monitoring report. If no discharge occurred during that six month period, the report is to be marked "no discharge". Sampling periods will be specified on the DMR forms and should follow the six month periods from January - June and July - December as had been done for the previous DMRs.

In addition to the semi-annual DMRs, the facility shall send production data to EPA on an annual basis. The data will include: annual production (lbs. of fish), amount of food fed in maximum production month, daily food usage during maximum month, and annual mean water flow through the hatchery. The report shall accompany the six month DMR due, January 28th of each year.

Drafted by: VelRey A. Lozano, U.S. EPA Wastewater Unit, 2/27, 4/10, 4/23, 2008
Peer review by: Robert Shankland, SEE, U.S. EPA Wastewater Unit, 2/27 & 4/7, 2008

Comments received and addressed below:

Response to Comments, Leadville National Fish Hatchery (CO-0000582)

Comments were received from the Colorado Department of Public Health and Environment. A summary of the comments and the responses to those comments are given below:

The Division submits the following comments for possible addition to clarify certain aspects of the Statement of Basis.

Comment:

1. The EPA has performed an antidegradation review and determined that the discharge will not result in significant degradation of reviewable waters with respect to adopted narrative or numeric standards as long as all of the permit limitations are met. The discharge does not result in a new or increased load to the receiving waters.
2. Footnote b to the effluent limitations table should include a statement that a flow rate of 2.87 mgd is used to in calculating the TSS loads.
3. The last sentence on page 2 should insert, in parenthesis, the Colorado waterbody identification (COARUA05) after the word segment.

Response:

EPA has added the language requested on all comments.

Updated by: VelRey A. Lozano, U.S. EPA Wastewater Unit, 8/27/2008.

Facility Layout created using info submitted by Ed Stege, Leadville NFH.