STATEMENT OF BASIS FOR THE HOTCHKISS NATIONAL FISH HATCHERY NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEMS (NPDES) PERMIT CO-0000086

February 2017

Purpose of this Statement of Basis

This statement of basis (SoB) is for the re-issuance of the NPDES Permit to the U.S. Department of Interior (DOI), Fish and Wildlife Service (FWS), for the Hotchkiss National Fish Hatchery (Hatchery). The Permit establishes effluent discharge limitations for discharge of water from the fish hatchery. The SoB explains the nature of the discharges, and the Environmental Protection Agency's (EPA) decisions for limiting the pollutants in the wastewater, as well as the regulatory and technical basis for these decisions.

The EPA Region 8 is the NPDES Permitting Authority for Colorado federal facilities.

Summary

The Hatchery is located in the SW ¼ of Section 3, T15S, R93W, latitude 38.771267 N and longitude 107.768167 W on the north bank of the North Fork of the Gunnison River approximately three miles southwest of the town of Hotchkiss, Colorado, and approximately one half mile east of the town of Lazear, Colorado.

The Hatchery was established in 1967 for the production and distribution of trout throughout Colorado, Utah, New Mexico, Wyoming, Montana, and North Dakota. The Hatchery currently provides over 1.5 million trout for the Colorado River Storage Project and Colorado Division of Wildlife and Southern Ute Indian Reservation. The facility cultures trout species from eggs to catchable size (10 inches) trout on a yearly basis. In 2015, the facility produced 135,000 pounds of rainbow trout, with a maximum weight of 49,400 pounds present at any one time, 300 pounds of cutthroat trout, and 3,200 pounds of brown trout.

All wastewater generated from the Hatchery discharges to the North Fork of the Gunnison River.

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Introduction

The Federal Clean Water Act (CWA, 1972, and later modifications, 1977, 1981, and 1987) established water quality goals for the navigable (surface) waters of the United States. One of the mechanisms for achieving the goals of the CWA is the issuance of NPDES based on technology-based limitations and/or water quality-based limitations, which is administered by the EPA.

Fish hatching and rearing facilities can have a wide variety of rearing pond configurations including lined or unlined ponds, raceways, and circular ponds in which fish are held for culturing purposes. On a daily basis, facility operators give the fish a predetermined ration of pelletized fish food by hand feeding and/or mechanical means to promote growth. Once the fish attain the targeted size, they are released, harvested, or kept as brood stock.

The EPA has promulgated Effluent Guidelines for Concentrated Aquatic Animal Production (CAAP), or aquaculture (40 C.F.R. Part 451). Facilities that use; flow-through, recirculating, or net pen systems, directly discharge, and produce at least 100,000 pounds of fish a year are required to meet the limitations required in Part 451.

Facility Information

Facility Information	
Permittee	U.S. Department of Interior, Fish and Wildlife Service
Facility Name and Address	Hotchkiss National Fish Hatchery 8077 Hatchery Road Hotchkiss, Colorado 81419
Contact at Facility	Mr. Adam Mendoza (Project Leader) (970) 872-3170
Responsible Official	Regional Director U.S. Fish and Wildlife Service P.O. Box 25486, Denver Federal Center Denver, Colorado 80225-0486
Type of Permit	Fish Hatchery-Federal (Renewal)

Summary of Specific Changes from the Previous Permit

1. Removed Chloramine-T limits and monitoring requirements, and replaced with new Total Residual Chlorine (TRC) limits and monitoring requirements for Outfalls 001a, 001b, 002, and 004.
2. Added new Total Nitrogen and Total Phosphorus monitoring requirements.
3. Added new requirement per 40 C.F.R. §451.11, the facility is required to develop, certify, and maintain a Best Management Practices plan on site that describes how the facility will achieve the narrative effluent limitation requirements as established in the Effluent Limitation Guideline (40 C.F.R. Part 451) within 6 months of the effective date of the Permit.

Facility Description

The facility was modified with a construction upgrade including rerouting flows in September 2010. The modified facility includes a spring house, settling pond, aeration tank, hatchery building, residences, 40 outdoor concrete raceways, 24 nursery tanks, and 2 settling ponds (see Figure 1 for flow schematic).

Corey Springs serves as the water supply for the Hatchery. The spring has a constant water temperature of 56 degrees Fahrenheit and flows from 2,200 to 5,000 gallons per minute (gpm), this provides the ideal conditions for trout production. The spring is protected by a covered structure (spring house); from this point, the water is directed into an underground pipe which directs the water downhill approximately 100 feet to a settling pond. From the settling pond, water is directed approximately eight feet to an aeration tank. The aeration tank consists of eight water columns in which influent water is oxygenated to ensure 105-110% oxygen saturation. Approximately every five weeks, water is rerouted directly from the spring to the aeration tank and bypasses the settling pond to allow for the removal of accumulated sediment. The sediment is then given away to community members for domestic purposes.

From the aeration tank, water travels downslope via an underground pipe. At the bottom of the slope, a valve directs water to either the hatchery house or to the water control mixing structure. Approximately 25% of the water is directed to the hatchery house while approximately 75% of the water is directed to the water control mixing structure.

Hatchery House. The hatchery house consists of two discrete components: 1) the rearing tanks and 2) the hatchery area. There are 24 rearing tanks in the hatchery house for rearing trout in various stages of life. pH readings are taken in the hatchery house at the head of one of the tanks.

Feeding. Each tank has an automatic and timed feeding system. Food is typically dispensed every fifteen minutes, however, feed ratios and timing are adjusted as necessary to increase fish growth and size as determined by Hatchery staff. The Hatchery operators observed that there is less food waste inside the hatchery house with fish in their earlier life stages relative to larger fish in the exterior raceways.

Water flow. Water flows continuously through to each of the rearing tanks directly from the aeration tank at a maximum flow of 40 gallons/tank/minute. At the discharge end of each tank, water flows through a screen and into a headbox which contains two drains, a water overflow drain, and a drain used for cleaning the tank. The drain used for cleaning is open only during cleaning. Existing valves are utilized to control through which outfall the effluent will be discharged. Discharge will occur at either Outfall 001a, 001b, and/or 004 when the settling ponds are out of operation. When the settling ponds are in operation, valves for Outfalls 001a, 001b, and 004 normally are closed preventing discharge from these three outfalls and thus directing any discharges towards Outfall 002. The second drain in the headbox continuously drains overflow water to the water control mixing structure to be reused in the raceways and settling ponds. The rate of flow from the rearing tanks to the water control mixing structure is approximately 960 (40 gpm x 24 tanks) gallons per minute when all tanks are in operation.

Cleaning. Each tank is cleaned once a day. During cleaning, the flow is increased to about 50

gpm. No chemicals are used during cleaning. It takes about one hour to clean all 24 tanks.

Hatchery area. The hatchery area is only used when the Hatchery receives a batch of eggs. The Hatchery receives approximately 7-8 batches of eggs per year; each batch requires approximately 17 days in the hatchery area. When in operation, water flows directly from the aeration tank to the hatchery area at a continuous rate of 20-50 gallons per minute. No food is used in the hatchery area, the only waste product being egg shells. Water from the hatchery area flows directly to the water control mixing structure.

Water Control Mixing Structure. The water control mixing structure mixes fresh water from the aeration tank with reuse water from the hatchery house and delivers the water to both the raceways and the settling ponds.

Raceways. There are 32 raceways arranged in eight parallel lines of four raceways each for Bank A to D. The first raceway in each line is considered to be in Bank A, the second raceway in each line Bank B, the third raceway in each line Bank C, and the fourth raceway in each line Bank D. Bank E is a new set of eight (8) raceways below the existing raceways and before the two settling ponds. A control box is established to direct water flow from up-gradient raceways via the main water line into this new set of raceways. The Bank E raceways is directly connected to Outfall 004 located above current Outfall 003 and below Outfall 001b. The Bank E raceways will be cleaned daily; during cleaning, water will be pumped to the settling ponds. The valve for Outfall 004 normally is closed when the settling ponds are in operation, so all flow from Bank E raceways normally will be pumped to the settling ponds for treatment and discharge from Outfall 002.

The flow through each line of the raceways is consecutively from Bank A through Bank D. Raceways in Banks A and B are approximately 504 ft^3 in volume each, while raceways in Bank C are 819 ft^3, Bank D raceways are 861 ft^3, and Bank E raceways are 1160 ft^3. Water flows continuously through the raceways and is stopped only during cleaning. Water flows from the water control mixing structure to the Bank A raceways. From Bank A raceways, water flows to the adjacent raceway in the line to Bank B raceways; from Bank B, water flows to the adjacent raceway in Bank C and from Bank C to Bank D. When the Hatchery is in full operation and the settling ponds are in operation, water from the raceways discharge from the bottom of Bank D to the settling ponds. If the settling ponds are not in operation, water from the bottom of Bank D will discharge directly to Outfall 001b. Raceways are in use for approximately 50-70% of the year (generally November through July). From July through October, use of raceways is sporadic and may only be running at 50% capacity; however, the quantity of water being used remains the same as during peak production. Each raceway is cleaned with brushes every other day (no chemicals are used). The facility estimates that it takes approximately 2-3 hours for water to move from Bank A to Outfall 002.

Valves were installed to control the flow of effluent from Outfalls 001a, 001b, and 004. The valves to Outfalls 001a, 001b, and 004 will be closed most of the time; to the extent practicable, the facility discharges raceway effluent through a single outfall (Outfall 002). However, when the raceways of Banks A, B, C, D, and/or E are being cleaned, there is possibility of discharge via Outfalls 001a, 001b, and/or 004.

During cleaning of raceways, water from the raceways will be drained to the drain pipe parallel to the river, and pumped from the base of Bank E raceways to the effluent settling ponds.

A pump lift station was installed at the bottom of the new raceways to direct water flow uphill to a control box. From the control box, water moves via gravity flow to effluent settling ponds. The water will move in sequence from Pond A to Pond B and then through Outfall 002.

Settling Ponds. There are two plastic lined, settling ponds (Ponds A and B) down slope from the raceways. The source of water for the ponds comes from outflow from Bank D and/or Bank E raceways together with water from the water mixing control structure. Flow from these sources into the ponds is at a combined rate of 2200-2300 gpm. The ponds are designed to handle and discharge any flow from the facility by making adjustments with the control valves. The water flows from Pond A to Pond B. From Pond B, effluent is discharged to Outfall 002. The ponds are cleaned once a week with a siphon vacuum to remove all material which has settled at the bottom of the ponds. The waste material from vacuuming is discharged to the field located between the settling ponds and the North Fork of the Gunnison River. Flows are measured at the end of Pond B.

Cleaning / Disinfection House. The cleaning/disinfection house is used to clean/disinfect the truck used to transport fish on an occasional basis (the manager indicated that this structure has been used about 1-2 times per year since it was constructed in 2003). Bleach is used for cleaning/disinfection and it is then neutralized with sodium thiosulfate and held for 24 hours in a holding tank underground directly west of the disinfection station building. The discharge is tested with a chlorometer to ensure that it is neutralized. Then it will discharge to the North Fork of the Gunnison River from Outfall 003.

Points of Discharge

Wastewater from the hatchery house, raceways, settling ponds, and cleaning/disinfection house are discharged from Outfalls 001a, 001b, 002, 003, or 004 as follows:

Outfall 001a. Control valves were installed to control the flow of effluent from Outfall 001a in September 2010. Discharge to Outfall 001a will occur in the following situations: 1) discharge during cleaning of tailboxes and raceways in Banks A and B will be to Outfall 001a, 2) when water is directed only to raceways in Banks A and B, and 3) when the settling ponds are out of operation, the effluent is discharged through Outfall 001a. However, the valves to Outfall 001a will be closed most of the time; to the extent practicable, the facility discharges effluent through a single outfall (Outfall 002). The location of Outfall 001a is located at latitude 38.771150 N and longitude 107.768600 W.

Outfall 001b. Control valves were installed to control the flow of effluent from Outfall 001b in September 2010. Discharge to Outfall 001b will occur in the following situations: 1) discharge during cleaning of tailboxes and raceways in Banks C and D will be to Outfall 001b, 2) when water is directed only to raceways in Banks C and D, and 3) when the earthen settling ponds are out of operation, the effluent is discharged through Outfall 001b. However, the valves to Outfall 001b will be closed most of the time; to the extent practicable, the facility discharges effluent through a single outfall (Outfall 002). The location of Outfall 001b is located at latitude

38.771167 N and longitude 107.769317 W.

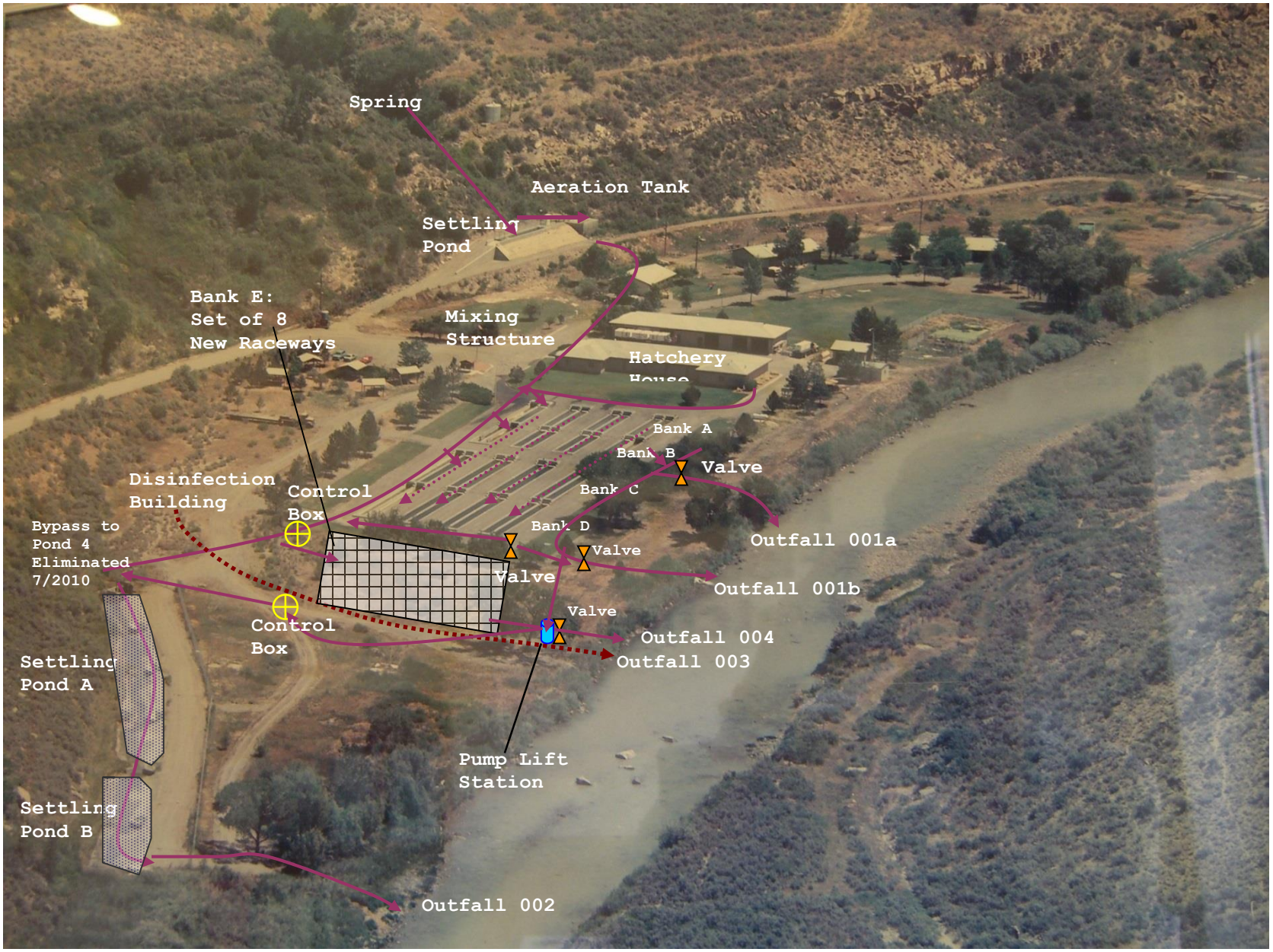
Outfall 002. During normal operation, all effluent is discharged through Outfall 002 (settling ponds). Valves to Outfalls 001a, 001b, and 004 will be closed and discharge will occur at Outfall 002. The location of Outfall 002 is located at latitude 38.771283 N and longitude 107.771633 W.

Outfall 003. There are discharges to this outfall when the disinfection house is in use and this outfall is also used for excess runoff and spring runoff along the hillside adjacent to the Hatchery. However, the disinfection house was used only 1-2 times per year since construction in 2003. The location of Outfall 003 is located at latitude 38.771183 N and longitude 107.769883 W.

Outfall 004. Discharge to this outfall is expected to occur in the following situations: 1) when the Bank E tailboxes and raceways are being cleaned, 2) if pumps are not working, and 3) when the settling ponds are out of operation. The valves to Outfall 004 will be closed most of the time; to the extent practicable, the facility discharges effluent through a single outfall (Outfall 002). The location of Outfall 004 is located at latitude 38.771200 N and longitude 107.769783 W.

The discharge from these outfalls discharges to the North Fork of the Gunnison River.

Figure 1. Flow diagram for facility including modifications, Summer 2010



Receiving Waters and Water Quality Considerations

All outfalls from this facility discharge to Segment 3 of the North Fork of the Gunnison River of the Gunnison River Basin as described in Colorado Regulation No. 35. The United States Geological Survey (USGS) flow gauge station 09134100 below Paonia, Colorado, about 9 miles northeast from Hotchkiss, Colorado, indicates the mean flow for the North Fork of the Gunnison River is about 170 ft^3/sec.

Segment 3 of the North Fork of the Gunnison River has been classified by the state of Colorado as: Class 1 Cold Water Aquatic Life, Recreation P (October 1 to March 31), Recreation E (April 1 to September 30), Water Supply, and Agriculture. Water quality standards that are of potential concern for the discharges from this Hatchery include:

DO = 6.0 mg/l
DO (spring) = 7.0 mg/l
pH = 6.5 – 9.0
Cl_2 (acute) = 0.019 mg/l
Cl_2 (chronic) = 0.011 mg/l
Temperature (^oC) = CS-II (Cold Stream Temperature Tier Two)

				Temperature Standard (^oC)	
Temperature Tier	Tier Code	Species expected to be present	Applicable Months	Maximum weekly average temperature	Daily maximum temperature
Cold Stream Tier 2	CS-II	All other cold-water species	April-Oct. Nov. - March	18.3 9.0	23.9 13.0

This segment of the North Fork of the Gunnison River is not identified as either an Outstanding Water or Use Protected by the state of Colorado, thereby qualifying it as a Reviewable Water under Colorado's antidegradation regulation.

Monitoring Data

Table 1 below is a summary of the discharge monitoring report (DMR) self-monitoring results for Outfalls 001a, 001b, 002, and 004 from June 2011 – June 2015. It shows there were some TSS exceedances for all outfalls and one Chloramine-T exceedance for Outfall 002. The operator indicated that the 0.73 mg/L of Chloramine-T exceedance was caused by cleaning two raceways at the same time in December, 2011. The operator changed to only clean one raceway at a time

after December, 2011 and they have not had any additional exceedances. The facility did not report discharges from Outfall 003.

Table 1. Summary of Self-Monitoring Results for Outfalls 001a, 001b, 002, and 004 from June 2011 – June 2015

Summary of Self - Monitoring Results for Outfall 001a June 2012 - June 2013						
Effluent Characteristic	Monthly Average		Daily Maximum		Effluent Limitation	
	Min.	Max.	Min.	Max.	Monthly	Daily
Flow (mgd)	0.087	0.216	0.09	0.216	-	-
TSS (mg/L)	15.1	62	24	108	20	30
TSS (lbs/day)	11.1	44.5	21	77.5	801	1201
Total Dissolved Solids (TDS) (mg/L)	-	-	0	40	-	100
Oil and Grease (mg/L)	0				No sheen & 10 mg/L max.	
pH	-		7.01	7.28	Not less than 6.5 nor greater than 9	
Summary of Self - Monitoring Results for Outfall 001b December 2011 - June 2015						
Effluent Characteristic	Monthly Average		Daily Maximum		Effluent Limitation	
	Min.	Max.	Min.	Max.	Monthly	Daily
Flow (mgd)	0.22	1.296	0.22	1.296	-	-
TSS (mg/L)	1.8	37.9	2.8	44	20	30
TSS (lbs/day)	4.4	175.7	6.7	248.5	801	1201
TDS (mg/L)	-	-	0	100	-	100
Oil and Grease (mg/L)	0				No sheen & 10 mg/L max.	
pH	-		6.97	7.28	Not less than 6.5 nor greater than 9	
Summary of Self - Monitoring Results for Outfall 002 June 2011 - June 2015						
Effluent Characteristic	Monthly Average		Daily Maximum		Effluent Limitation	
	Min.	Max.	Min.	Max.	Monthly	Daily
Flow (mgd)	3.06	5.544	3.24	5.616	-	-
TSS (mg/L)	1.8	29.2	2.6	55.8	20	30
TSS (lbs/day)	48.9	903.5	75	1736	801	1201
TDS (mg/L)	-	-	0	112	-	100
Chloramine-T (mg/L)	-	-	0.005	0.73	-	0.13

Oil and Grease (mg/L)	0			No sheen & 10 mg/L max.
pH	-	6.97	7.28	Not less than 6.5 nor greater than 9

Summary of Self - Monitoring Results for Outfall 004 June 2011 - June 2015

Effluent Characteristic	Monthly Average		Daily Maximum		Effluent Limitation	
	Min.	Max.	Min.	Max.	Monthly	Daily
Flow (mgd)	0.288	1.584	0.29	1.728	-	-
TSS (mg/L)	3	31.4	3	55.6	20	30
TSS (lbs/day)	17.9	187.7	17.9	299.9	801	1201
TDS (mg/L)	-	-	0	54	-	100
Oil and Grease (mg/L)	0				No sheen & 10 mg/L max.	
pH	-		6.97	7.4	Not less than 6.5 nor greater than 9	

Pollutants of Potential Concern

The primary pollutants of concern in hatchery and rearing pond wastewater are the waste food and feces. The main chemical constituents of concern in the waste food and feces are primarily nitrogen and phosphorus. The pollutant loading in the effluent is characterized with total suspended solids (TSS) limits and monitoring requirements.

The EPA also considers the disease control chemicals (such as Chloramine-T) used at these facilities as pollutants of concern. Fish hatching and rearing facilities use these chemicals to treat both internal and external fish diseases and to prevent the spread of disease at or between facilities. Chloramine-T (n-sodium-n-chloro-para-toluenesulfonamide) is an organic N-chloramine and used in hatcheries to control for bacterial gill disease and external flavobacterial infections on freshwater fish. Chloramine-T has been in use at this facility since the mid-1980s. Chloramine-T is generally administered during a 60-minute static or flow through bath treatment. Both before and after discharge, Chloramine-T can remain unchanged, release its chlorine as aqueous free chlorine, or donate its chlorine directly to produce ammonia chloramines or other chlorinated organic-N or non-N compounds. As Chloramine-T degrades, it also produces p-TSA, the dechlorinated remainder of the Chloramine-T molecule as its primary degradation product. An independent report (Schmidt, et. al, 2007) submitted to the U.S. Food and Drug Administration indicates that potential biological impacts exist if Hatchery effluent containing either Chloramine-T or any of its chlorine-exchange products are released into or produced in receiving waters after discharge. The Environmental Assessment for Chloramine-T developed by the United States Geological Survey suggested that the kinetics of Chloramine-T breakdown demonstrated a low possibility of free chlorine toxicity, and that observed toxicity impacts were most likely attributed to the Chloramine-T compound itself. Since Chloramine-T is

a chlorine based chemical, and is detected using TRC monitoring, the Chloramine-T limit in the previous permits is being replaced with a TRC limit for this Permit as described in more detail below.

All disease control chemicals must be used in accordance with label instructions. The Permit also prohibits the discharge of these chemicals in concentrations that would exceed federal or state water quality standards and requires facilities to use Best Management Practices (BMPs) to minimize the concentration of these chemicals in the discharge.

Effluent Limitations

Effluent limitations are the same for Outfalls 001a, 001b, 002, and 004 are summarized below in Table 2. Effluent limitations for Outfall 003 are summarized below in Table 3.

Table 2. Effluent limitations for Outfalls 001a, 001b, 002, and 004
The limitations established in the table apply separately to each outfall with the exception of the total mass limitation on TSS.

	Effluent Limitation			
Effluent Characteristic	**30-Day Avg. a/**	**7-Day Avg. a/**	**Daily Max. a/**	**Basis for Limitation e/**
Total Suspended Solids, mg/L	20	N/A	30	PP
Total Suspended Solids, lbs/day b/	801	N/A	1,201	PP
Total Residual Chlorine, mg/L c/	N/A	N/A	0.019	WQS
The pH of the discharge shall not be less than 6.5 nor greater than 9.0 at any time.				CWA
There shall be no discharge of floating solids or visible foam in other than trace amounts. A daily inspection shall be made.				CWA
The concentration of oil and grease in any single sample shall not exceed 10 mg/L nor shall there be any visible sheen in the discharge or receiving water. If a sheen is observed, a grab sample of the discharge shall be taken and analyzed for oil and grease.				BPJ
Colorado River Salinity Control Program: the concentration of TDS in the effluent from either Outfall 001a, 001b, 002 or 004 shall not be more than 100 mg/l greater than the TDS concentration of the raw water supply (water supply before treatment). d/				Colorado River Salinity Control Program

a/ See Definitions, Part 1.1., for definitions.

b/ The effluent limitation for Total Suspended Solids (TSS) is established as the sum of total TSS in discharge from Outfalls 001a, 001b, 002, and 004.

c/ Analytical limitations exist for establishing TRC concentrations. The concentration of TRC shall not exceed this value in any grab sample or single measurement. The analysis for TRC must be done with an approved analytical method that has a method detection limit of no greater than 0.050 mg/L. In the calculation of average TRC concentrations, those analytical results that are less than 0.050 mg/L shall be considered to be zero for calculation purposes. If all individual analytical results that would be used in the calculations are less than 0.050 mg/L, then "less than 0.050 mg/L" shall be reported on the discharge monitoring report form. Otherwise, report the maximum value and the calculated average value.

d/ Colorado River Salinity Control Program: TDS limitations are applicable to all discharges within the Colorado River Basin. TDS shall be monitored in the raw water source as well as the effluent by grab sample. The yearly sample shall be taken at the time of year during which the fish population is greatest. The concentration of TDS in the effluent from Outfalls 001a, 001b, 002, and 004 shall not be more than 100 mg/l greater than the TDS concentration of the raw water supply (water supply before treatment). If the monitoring data for a calendar year show an incremental increase in TDS concentration greater than 100 mg/l, the Permittee may request from the Colorado Department of Public Health and Environment, Water Quality Control Division, a waiver from the TDS limitation. The request is to be made by April 1 of each year, if appropriate. If a waiver is not granted, the Permittee has an additional six months to submit a report addressing salt removal in accordance with Sections 3.10.0-3.10.5 of the Colorado Water Quality Control Commission Regulations and Appendix A of the Regulations for Implementation of the Colorado River Salinity Standards through the NPDES permit program. Copies of the report shall be submitted to the EPA and the Colorado Department of Public Health and Environment.

e/ Basis for Limitation: BPJ is best professional judgment for technology based limitation. PP is for same limitation as in previous permit and is kept the same based on anti-backsliding. CWA is Clean Water Act.

Additionally,

- Only commercially produced fish feed shall be used (no unprocessed offal or other animal byproduct).
- No sanitary wastes shall be introduced into this discharge.
- No chlorine containing compounds other than chloramine-T may be used.

Table 3. Effluent limitations for Outfall 003
There shall be no discharge until samples from the holding tank show that the concentration of TRC and the pH will meet the respective effluent limitations.

Effluent Characteristic	Effluent Limitation			
	30-Day Avg. a/	**7-Day Avg. a/**	**Daily Max. a/**	**Basis for Limitation c/**
Total Residual Chlorine, mg/L b/	N/A	N/A	0.019	WQS
Total Suspended Solids, mg/L	30	45	N/A	PP
The pH of the discharge shall not be less than 6.5 nor greater than 9.0 at any time.				CWA
There shall be no discharge of floating solids or visible foam in other than trace amounts. A daily inspection shall be made.				CWA
The concentration of oil and grease in any single sample shall not exceed 10 mg/L nor shall there be any visible sheen in the discharge or receiving water. If a sheen is observed, a grab sample of the discharge shall be taken and analyzed for oil and grease.				BPJ

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

b/ Analytical limitations exist for establishing TRC concentrations. The concentration of TRC shall not exceed this value in any grab sample or single measurement. The analysis for TRC must be done with an approved analytical method that has a method detection limit of no greater than 0.050 mg/L. In the calculation of average TRC concentrations, those analytical results that are less than 0.050 mg/L shall be considered to be zero for calculation purposes. If all individual analytical results that would be used in the calculations are less than 0.050 mg/L, then "less than 0.050 mg/L" shall be reported on the discharge monitoring report form. Otherwise, report the maximum value and the calculated average value.

c/ Basis for limitation: BPJ is best professional judgment for technology based limitation. PP is for same limitation as in previous permit and is kept same based on anti-backsliding. CWA is Clean Water Act.

Justification of Effluent Limitations

Total Suspended Solids. The limits for total suspended solids (801 lbs/day, 30 day average; 1201 lbs/day, daily maximum) are based on Best Professional Judgement (BPJ) and carried forward from the previous permit. Numeric limits for TSS are maintained in this Permit due to Anti-backsliding Rules as provided by Clean Water Act Section 402(o). The EPA Region 8 NPDES policy on effluent limitations for TSS from fish hatcheries was developed by Jim Harris, a retired EPA permit writer in the mid-1970s. The limitations for TSS are calculated in the following manner: 1) waste production is calculated at 0.75 pounds of TSS per pound of food per day, and 2) Best Practical Treatment will be calculated to be twenty percent removal of TSS

through either sedimentation or cleaning/vacuum cleaning of raceways. TSS limits established in the previous permit were based on estimated food usage (assumed to equal 2% of fish weight). TSS limits based on actual food usage (22,451 pounds during the maximum month of feeding for 2015) figures provided by the facility, would result in a TSS limit of 449 pounds TSS/day. This Permit recognizes that carrying forward the TSS limit from the previous permit would allow for a higher TSS limit that calculated from actual food usage figures from 2015. However, because 1) current Effluent Guidelines require only a BMP-based permit, and 2) anti-backsliding rules prevent relaxing previously established limits, this Permit will maintain the limits as established in the previous permit.

TSS concentration limitations for Outfalls 001a, 001b, 002, and 004 established in this Permit are based on best professional judgement (BPJ) and carried forth from the previous permit and are more stringent than the state of Colorado's limitation of 30 mg/L (30-day average) and 45 mg./L (daily maximum). TSS concentration limitations for Outfall 003 is based on Colorado's effluent limitation Regulation 62 of 30 mg/L (30-day average) and 45 mg/L (daily maximum).

pH. The limit for pH is based on the water quality standards for the North Fork of the Gunnison River.

Oil and Grease. The limits for oil and grease and no floating solids are based on the EPA Region 8 best professional judgement.

Total Residual Chlorine. The TRC limitation applies to Outfalls 001a, 001b, 002, 003, and, 004. The effluent limitation for TRC is based on the state of Colorado's acute criterion for chlorine to ensure protection for aquatic life. The state of Colorado does not allow for dilution when determining acute criterion for TRC limits. If there were to be an effluent limitation based on the chronic criterion of 0.011 mg/L TRC, an allowance would have been made for dilution. With an allowance for dilution, the 0.019 mg/L limitation is the more stringent. Since 0.019 mg/L TRC limitation is the maximum limitation, there is no need for the less stringent effluent limitation based on the chronic criterion.

The previous permit included two effluent limits related to chlorine-based pollutants: chloramine-T and TRC. Chloramine-T effluent limits were included for Outfalls 001a, 001b, 002 and, 004, and a TRC limit was included for Outfall 3. The EPA is removing the chloramine-T effluent limitation for Outfalls 001a, 001b, 002, and 004, and replacing it with the same TRC limitation that continues to apply to Outfall 003.

The EPA is making this change for two reasons. First, there is no approved method to measure chloramine-T in 40 C.F.R. Part 136. Instead, chloramine-T concentrations are calculated by applying a multiplier of 3.97 to TRC measurements taken using an approved method. Thus, in order to determine its chloramine-T concentrations, the facility is conducting TRC monitoring at all five permitted outfalls, then back-calculating its chloramine-T concentrations. The EPA has concluded that requiring an additional calculation based on the TRC measurements provides no additional information about the quality of the effluent from the Hatchery and is not necessary.

Second, the EPA has concluded that the chloramine-T limits in the previous permit were not properly justified. The chloramine-T limits were based on a joint United States Fish and Wildlife Service (FWS)/United States Department of Agriculture (USDA) study of chloramine-T that included an interim recommended concentration of 0.13 mg/L to avoid acute aquatic life toxicity in waters receiving discharges from facilities using chloramine-T. In contrast, the TRC limit was based on the EPA-approved acute aquatic life criterion for chlorine (Cl) applicable to the North Fork of the Gunnison River. Section 301(b)(1)(C) and 40 C.F.R. § 122.44(d)(1) require that NPDES permits include any more stringent effluent limitations necessary to protect state water quality standards. The link between TRC and the criterion for chlorine is explicit, and thus a TRC limit has a clear statutory basis. Moreover, a TRC effluent limit is more protective than a chloramine-T effluent limit. Using the 3.97 multiplier identified in the previous permit, a chloramine-T limit of 0.13 mg/L equates to a measured TRC concentration of 0.033 mg/L, which is well above the state of Colorado's acute chlorine criterion of 0.019 mg/L. Thus, by replacing the chloramine-T limit with a TRC limit, the EPA can ensure that the discharge meets the applicable state water quality standard for chlorine as is required by the Clean Water Act.

E.coli limits were not included in the previous permit, because *E. coli* are associated with mammals and not fish.

Narrative effluent limitation requirements. 40 C.F.R. §451.11 establishes that flow-through aquatic production facilities that produce over 100,000 pounds of aquatic animals a year must also meet the following requirements, expressed as practices representing the application of Best Practicable Control Technology. In FY 2015, the Hotchkiss National Fish Hatchery produced 135,000 pounds of rainbow trout. Thus, the effluent limitation guidelines (40 C.F.R. Part 451) also apply to this facility since this facility produces over the minimum 100,000 pound per year production trigger of aquatic animals. The narrative effluent limitation requirements as established in the Effluent Limitation Guidelines are:

a) Develop, certify BMP certification forms found on website below, and maintain a BMP plan on site that describes how the facility will manage the following within 6 months of the effective date of the Permit:

   (a) *Solids control.* The Permittee must:

   (1) Employ efficient feed management and feeding strategies that limit feed input to the minimum amount reasonably necessary to achieve production goals and sustain targeted rates of aquatic animal growth in order to minimize potential discharges of uneaten feed and waste products to waters of the U.S.
   (2) In order to minimize the discharge of accumulated solids from settling ponds and basins and production systems, identify and implement procedures for routine cleaning of rearing units and off-line settling basins, and procedures to minimize any discharge of accumulated solids during the inventorying, grading and harvesting aquatic animals in the production system.

(3) Remove and dispose of aquatic animal mortalities properly on a regular basis to prevent discharge to waters of the U.S., except in cases where the permitting authority authorizes such discharge in order to benefit the aquatic environment.

(b) *Materials storage.* The Permittee must:

(1) Ensure proper storage of drugs, pesticides, and feed in a manner designed to prevent spills that may result in the discharge of drugs, pesticides or feed to waters of the U.S.
(2) Implement procedures for properly containing, cleaning, and disposing of any spilled material.

(c) *Structural maintenance.* The Permittee must:

(1) Inspect the production system and the wastewater treatment system on a routine basis in order to identify and promptly repair any damage.
(2) Conduct regular maintenance of the production system and the wastewater treatment system in order to ensure that they are properly functioning.

(d) *Recordkeeping.* The Permittee must:

(1) In order to calculate representative feed conversion ratios, maintain records for aquatic animal rearing units documenting the feed amounts and estimates of the numbers and weight of aquatic animals.
(2) Keep records documenting the frequency of cleaning, inspections, maintenance and repairs.

(e) *Training.* The Permittee must:

(1) In order to ensure the proper clean-up and disposal of spilled material, adequately train all relevant facility personnel in spill prevention and how to respond in the event of a spill.
(2) Train staff on the proper operation and cleaning of production and wastewater treatment systems including training in feeding procedures and proper use of equipment.

Examples of BMP plans, record keeping requirements and reporting forms can be found at: https://www.epa.gov/eg/concentrated-aquatic-animal-production-effluent-guidelines.

Antidegradation Review

As set out in "The State of Colorado's *Basic Standards and Methodologies for Surface Water*", Section 31.8(2)(b), an antidegradation analysis is required except in cases where the receiving water is designated as "Use Protected". The antidegradation section of the regulation became

effective in December 2000, and therefore, antidegradation considerations are applicable to the establishment of effluent limitations in this Permit.

According to "The State of Colorado's Classifications and Numeric Standards for the North Fork of the Gunnison River", Segment 3 of the North Fork of the Gunnison River is Undesignated. Thus, this segment is a "reviewable water" and an antidegradation review is required for this segment if new or increased impacts are found to occur.

Introduction to the Antidegradation Process. The antidegradation process conducted as part of this water quality assessment is designed to determine if an antidegradation review is necessary and if necessary, to complete the required calculations to determine the limits that can be selected as the antidegradation-based effluent limit, absent further analyses that must be conducted by the facility. As outlined in "The State of Colorado's Antidegradation Significance Determination for New or Increased Water Quality Impacts, Procedural Guidance (AD Guidance)", the first consideration of an antidegradation evaluation is to determine if new or increased impacts are expected to occur. This is determined by a comparison of the newly calculated WQBELs versus the existing permit limitations in place as of September 30, 2000, and is described in more detail in the analysis. Note that the AD Guidance refers to the Permit limitations as of September 30, 2000 as the existing limits. If new or increased impacts are found to occur, then the next step of the antidegradation process is to go through the significance determination tests. These tests include: 1) bioaccumulative toxic pollutant test; 2) temporary impacts test; 3) dilution test (100:1 dilution at low flow) and; 4) a concentration test.

New or Increased Impact. This facility was in place as a discharger as of September 30, 2000. The design flow at this facility has not changed since that time. The effluent limitations established in the NPDES permit effective as of September 30, 2000 (effluent limitations were established for Total Suspended Solids, pH and Oil and Grease) are the same as that which are established in this current Permit, with one exception: 1) a TRC limitation is established for Outfall 003. With respect to TRC, the EPA has determined that the discharge will not result in a significant degradation of reviewable waters with respect to numeric standards for two reasons: 1) the use of the disinfection facilities is rare, and 2) when bleach is used in the facilities to disinfect equipment, it is neutralized before release to the North Fork of the Gunnison River.

Self-Monitoring Requirements

During normal operation, discharges will occur from Outfall 002. However, in very limited circumstances, when the tailboxes and raceways of Banks A, B, C, D, and/or E are being cleaned, there is possibility of discharge via Outfalls 001a, 001b, and/or 004. The following self-monitoring requirements for Outfalls 001a, 001b, and 004 are included in Table 4 of this Permit. Self-monitoring requirements for Outfall 002 are included in Table 5 of this Permit. Self-monitoring requirements for Outfall 003 are included in Table 6 of this Permit.

Table 4. Self-Monitoring Requirements for Outfalls 001a, 001b, and 004

Parameter	Frequency	Sample Type
Flow, mgd a/	Each Discharge	Instantaneous
Total Suspended Solids, mg/L	Each Discharge	Grab
pH, standard units	Each Discharge	Grab
Oil and Grease, mg/L b/	Each Discharge	Visual
Total Dissolved Solids, mg/L c/	Each Discharge	Grab
Total Residual Chlorine, mg/L d/	Each Discharge When Chloramine-T is used	Grab

In addition,

- The facility will log when discharge is occurring from Outfalls 001a, 001b, and 004. It shall be assumed that discharge will be continuously occurring from Outfall 002.

a/ Flow measurements of effluent volume for Outfalls 001a, 001b, and 004 will be estimated based on best professional judgement because there is no flow measuring device available for the aforementioned outfalls. Operators know approximately how much water is going into each raceway and the total flow going into the facility. It is not practical to require the Hatchery to install flow measuring devices for these outfalls for occasional discharge.

b/ 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.

c/ Samples of raw water intake before treatment and effluent from Outfalls 001a, 001b, and 004 shall be collected and analyzed for TDS with each discharge. Electrical conductivity measurements may be substituted for TDS measurements if a satisfactory correlation is established on a minimum of five samples.

d/ The analysis for TRC must be done with an approved analytical method that has a method detection limit of no greater than 0.050 mg/L. In the calculation of average TRC concentrations, those analytical results that are less than 0.050 mg/L shall be considered to be zero for calculation purposes. If all individual analytical results that would be used in the calculations are less than 0.050 mg/L, then "less than 0.050 mg/L" shall be reported on the discharge monitoring report form. Otherwise, report the maximum value and the calculated average value. A representative sample shall be collected at the anticipated time of travel of total residual chlorine to these outfalls.

Per Colorado Department of Public Health and Environment, Water Quality Control Commission, Regulation No. 85, *Nutrients Management Control Regulation*, effective September 30, 2012, non-domestic wastewater treatment works discharging prior to May 31, 2013 (which would include Hotchkiss Fish Hatchery) will not be required to comply with the

numeric nutrients limits in subsections 85.5(1)(a)(iii)(a) and (b) prior to May 31, 2022. This requirement applies to existing permitted facilities discharging to the Lower and Upper Gunnison River except for dischargers that are discharging effluent concentrations of total nitrogen or total phosphorus that are greater than 53 mg/L and 6 mg/L, respectively. According to Hotchkiss Fish Hatchery, there is no current total nitrogen (TN) or total phosphorus (TP) data available to confirm that the Hatchery is discharging effluent concentrations of TN or TP less than 53 mg/L and 6 mg/L, respectively. Therefore, TN or TP monitoring will be required quarterly for Outfall 002.

Table 5. Self-Monitoring Requirements for Outfall 002

Parameter	Frequency	Sample Type
Flow, mgd a/	Weekly	Instantaneous
Total Suspended Solids, mg/L	Quarterly	Composite
pH, standard units	Quarterly	Grab
Oil and Grease, mg/L b/	Weekly	Visual
Total Dissolved Solids, mg/L c/	Quarterly	Grab
Total Nitrogen, mg/L	Quarterly	Composite
Total Phosphorus, mg/L	Quarterly	Composite
Total Residual Chlorine, mg/L d/	Each Discharge When Chloramine-T is used	Grab

a/ Flow measurement of effluent volume for Outfall 002 will be based on weir flow.

b/ 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.

c/ Samples of raw water intake before treatment and effluent from Outfall 002 shall be collected and analyzed for TDS on a quarterly basis. Electrical conductivity measurements may be substituted for TDS measurements if a satisfactory correlation is established on a minimum of five samples.

d/ The analysis for TRC must be done with an approved analytical method that has a method detection limit of no greater than 0.050 mg/L. In the calculation of average TRC concentrations, those analytical results that are less than 0.050 mg/L shall be considered to be zero for calculation purposes. If all individual analytical results that would be used in the calculations are less than 0.050 mg/L, then "less than 0.050 mg/L" shall be reported on the discharge monitoring report form. Otherwise, report the maximum value and the calculated average value. A representative sample shall be collected at the anticipated time of travel of residual chlorine to this outfall. Based on the Hatchery operator experience, it takes about 1.5 to 2.5 hours for the total residual chlorine to make its way through the facility to effluent Outfall 002.

Table 6. Self-Monitoring Requirements for Outfall 003

Parameter	Frequency	Sample Type
Total Residual Chlorine, mg/L a/	Prior to each controlled release of wastewater	Grab
Total Suspended Solids, mg/L	Once during each discharge event	Grab
pH, Standard units	Once during each discharge event	Grab
Oil and Grease, mg/L b/	Once during each discharge event	Visual or Grab

The wastewater from the disinfection house will be held in the holding tank until the analytical results show that the TRC concentration and pH will be meeting the effluent limitations.

a/ The analysis for TRC must be done with an approved analytical method that has a method detection limit of no greater than 0.050 mg/L. In the calculation of average TRC concentrations, those analytical results that are less than 0.050 mg/L shall be considered to be zero for calculation purposes. If all individual analytical results that would be used in the calculations are less than 0.050 mg/L, then "less than 0.050 mg/L" shall be reported on the discharge monitoring report form. Otherwise, report the maximum value and the calculated average value.

b/ 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 immediately and analyzed in accordance with 40 C.F.R. 136. The concentration of oil and grease shall not exceed 10 mg/L in any sample.

Reporting Requirements

The Permittee must electronically report all data at the frequencies listed in the tables in Part 1.3.2. of the Permit with quarterly DMR submittal required. If no discharge occurred during that quarter period, the report is to be marked "no discharge".

With this Permit reissuance, the Permittee must electronically report DMRs using *NetDMR*. If you have any DMR questions or concerns regarding *NetDMR*, please contact EPA's Policy, Information Management & Environmental Justice Program, DMR Coordinator at (303) 312-6056. See Section 2.4 of the Permit, Reporting of Monitoring Results for additional information.

Until December 21, 2020, all other reports (e.g., Parts 2.8 and 2.9) are to be submitted by mail to the given addresses. Effective December 21, 2020, these report are to be submitted using the National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Tool (NeT). NeT is a tool suite developed by the EPA to facilitate electronic submittal of data by the regulated community directly to the EPA and its partners. It uses commercial "off-the-shelf" software and can support diverse form and data submission formats. For more information about NeT, please visit: https://www.epa.gov/compliance/national-pollutant-discharge-elimination-system-npdes-electronic-reporting-tool-net-fact.
Prior to December 21, 2020, all other reports required herein (e.g., Parts 2.8 and 2.9), shall be signed and certified in accordance with the Signatory Requirements (see Part 4), and submitted to the EPA Region 8 Policy, Information Management & Environmental Justice Program and the state of Colorado at the addresses given below. Effective no later than December 21, 2020, these reports shall be submitted electronically using "NeT".

original to: U.S. EPA, Region 8 (8ENF-PJ)
Attention: *DMR Coordinator*
1595 Wynkoop Street
Denver, Colorado 80202-1129

copy to: Colorado Department of Public Health and Environment (CDPHE)
Water Quality Control Division
WQCD-PE-B2
4300 Cherry Creek Drive South
Denver, Colorado 80246-1530

Endangered Species Act (ESA) Requirements

Section 7(a) of the Endangered Species Act requires federal agencies to ensure that any actions authorized, funded, or carried out by an Agency are not likely to jeopardize the continued existence of any federally-listed endangered or threatened species or adversely modify or destroy critical habitat of such species.

The U. S. Fish and Wildlife (FWS) Information for Planning and Conservation (IPaC) website program was utilized to determine federally-Listed Endangered, Threatened, Proposed and Candidate Species. The federally listed threatened and endangered species found in Delta County, Colorado include:

Species/Critical Habitat	**Scientific Name**	**Status**
Gunnison Sage-grouse	*Centrocercus minimus*	Threatened
Yellow-billed Cuckoo	*Coccyzus americanus*	Threatened
Bonytail Chub	*Gila elegans*	Endangered
Colorado Pikeminnow	*Ptychocheilus lucius*	Endangered
Greenback Cutthroat Trout	*Oncorhynchus clarki stomias*	Threatened

Humpback Chub	*Gila cypha*	Endangered
Razorback Sucker	*Xyrauchen texanus*	Endangered
Clay-loving Wild Buckwheat	*Eriogonum pelinophilum*	Endangered
Colorado Hookless Cactus	*Sclerocactus glaucus*	Threatened

The EPA is utilizing the information provided by the U.S. FWS IPaC system and the public notice period of the Permit to inform of this Permit action. The U.S. FWS has the federal responsibility to oversee the Hotchkiss Fish Hatchery and to meet regulations pertaining to U.S. FWS threatened and endangered species.

The EPA determines this Permit is "not likely to adversely affect" any of the species listed by the U.S. Fish and Wildlife Service under the Endangered Species Act. This facility discharges into the North Fork of the Gunnison River which flows into the mainstem of the Gunnison River. Limits established in this Permit are being protective of aquatic life. TSS resulting from fish waste and uneaten food is anticipated to be settled in ponds before discharging.

National Historic Preservation Act (NHPA) Requirements

Section 106 of the National Historic Preservation Act (NHPA), 16 U.S.C. § 470(f) requires that federal agencies consider the effects of federal undertakings on historic properties. The EPA has evaluated its planned reissuance of the NPDES Permit for Hotchkiss National Fish Hatchery to assess this action's potential effects on any listed or eligible historic properties or cultural resources. The EPA does not anticipate any impacts on listed/eligible historic properties or cultural resources because this Permit is a renewal and will not be associated with any new ground disturbance or significant changes to the volume or point of discharge. However, this conclusion will need to be reassessed pending receipt of a letter to amend the application associated with modifications to be undertaken at the facility. During the public comment period, the EPA notified the State Historic Preservation Officer (SHPO) of the planned issuance of this NPDES Permit and requested their input on potential effects on historic properties and EPA's preliminary determination in this regard. The EPA did not received input from the SHPO.

Permit and Statement of Basis drafted by:
Qian Zhang P.E., EPA Region 8, 8P-W-WW
May 20, 2016

Permit and Statement of Basis reviewed by:
Wastewater staff (8WP-CWW) and Everett Volk (8RC)
October 13, 2016

Addendum 1:

This permit was public noticed on December 14, 2016. The 30 day public comment period closed on January 13, 2017. There were no public comments received. On November 10, 2016,

the EPA received concurrence from the USFWS Acting Colorado Field Supervisor that this permit is "not likely to adversely affect" any of the species listed by the USFWS under the ESA.

The EPA did not receive the Section 401 Water Quality Certification for this permit by December 19, 2016, from the CDPHE as requested in the October 19, 2016, letter. Therefore, the EPA considers that the CDPHE waived the certification requirement according to 40 CFR 124.53(c)(3).

The quarterly temperature monitoring requirement is removed based on Colorado regulation 31.9(3)(b) which states "No temperature effluent limit will be applied to a discharge of water from a natural hot springs, so long as that water enters the receiving water in the vicinity of its natural outflow." This temperature monitoring requirement removal is confirmed with the CDPHE Water Quality Control Division, Permits Section, Unit Manager. Corey Springs serves as the water supply for the Hatchery. The spring has a constant water temperature of 56 degrees Fahrenheit year around. This spring is considered a natural hot spring. This permit is required to re-public notice because removing the temperature monitoring requirement is not a minor modification per 40 CFR 122.63(b).

Qian Zhang, EPA Region 8, 8WP-CWW
January 23, 2017

Addendum 2:

This permit was re-public noticed on February 15, 2017. The 30 day public comment period closed on March 17, 2017. There were no public comments received.

Qian Zhang, EPA Region 8, 8WP-CWW
March 29, 2017